Land to the west of Chilgrove Drive, North of Camp Road and adjoining former RAF Upper Heyford, Upper Heyford incorporating former MOD Gymnasium

Transport Assessment

EP Barrus

21 November 2014
Submission Report
PB2420

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APPENDICIES

1 INTRODUCTION

1.1.1 This Transport Assessment has been prepared by Royal Haskoning DHV on behalf of EP Barrus in order to support a Hybrid Planning Application proposing the introduction of floor area of up to circa 22,000 sq. m GIA of B1/B2/B8 floor space on Land to the west of Chilgrove Drive, North of Camp Road and adjoining former RAF Upper Heyford, Upper Heyford incorporating former MOD Gymnasium. The site is located within the District of Cherwell, Oxfordshire.

1.1.2 The new development would accommodate the relocation of the current EP Barrus premises from their existing locations which are located throughout the District.

1.1.3 EP Barrus provide a wide range of different manufacturing services including the testing, servicing and repair of motors for marine craft. In addition, the firm has significant storage facilities for Marine outboard motors as well as garden machinery.

1.1.4 At present, the company provides storage facilities at the existing Upper Heyford Base whilst the Company's main operational Headquarters is provided at Launton Road Bicester. The Launton Road site also provides the Company's main manufacturing facilities together with some storage of goods. Finally, the Launton Road site also provides from time to time, training facilities for those employed within the manufacture and restoration of Marine motors. Consequently the firm currently operate within the B1, B2 and B8 land use classes at their premises at Bicester and Upper Heyford.

1.1.5 The construction of the new building is to create a purpose built facility tailored to the operational requirements of EP Barrus' existing operations and which is needed in order to safeguard the long term future of the company within Cherwell. In addition the proposals would provide premises which house all of EP Barrus operations within one site. This would create greater efficiency in operational terms as well as providing a presence for the firm at the site.

1.1.6 In view of the above, the purpose of this document is to consider the Transport elements of the proposed development and in particular the relocation of existing EP Barrus operations throughout Cherwell to one single site.

1.1.7 The development would consist of two phases. Phase one would consist of the introduction of 9,844 sqm of B8 floor space at the site and this would accommodate the relocation of EP Barrus' existing storage premises from Upper Heyford.

1.1.8 The second phase of development would consist of the introduction of B2 and B1 floor space together with floor space set aside for training purposes. This would see the introduction of floor area amounting to 9,137 sqm set aside for the manufacturing arm of the business and 3,000 sqm set aside for the firms operations side together with the training area.

1.1.9 In respect of the nature of the application, all matters would be reserved except for access and consequently it is necessary to consider the introduction of the full quantum of development floor space at the site and this would be up to 22,000 sqm.

1.1.10 The purpose of this document is to consider the transport implications of the proposals and to demonstrate that the residual cumulative impacts of the development proposals are not severe, in accordance with the requirements of the National Planning Policy

Framework (March 2012). Paragraph 32 of the NPPF states that all developments that generate significant amounts of movement should be supported by a Transport Assessment.

1.1.11 Oxfordshire County Council have been approached as Highway Authority in order to commence Scoping discussions in relation to the transport elements of the proposals. Details of the Scoping input provided to the County Council is provided at Appendix A together with the response provided by the Highway Authority. Where necessary, reference is made within this document to the Scoping Opinion provided by the County Council.

1.2 Scope

1.2.1 The scope of assessment has regard to the DfT document Guidance on Transport Assessment. Consideration is also given to the Planning Practice Guidance Note "Travel plans, transport assessments and statements in decision-taking". The content of this document is structured in the following way: -

1.2.2 Section 2 will provide a description of the application site together with its surroundings and will also provide a description of the existing highway conditions of the roads that serve the site. This section will also provide details of opportunities to travel by non-car modes.

1.2.3 Section 3 will provide a description of the development proposals as they relate to transport.

1.2.4 Section 4 will provide a review of Policy matters as they relate to Transport. This will be provided at the National and Local Level.

1.2.5 Section 5 will consider the highway implications of the proposals. This will consider the level of traffic associated with the relocation of the EP Barrus premises from the Upper Heyford Base and from Launton Road to the site and in addition, will consider the highways implications of the relocation.

1.2.6 Section 6 will provide a summary and conclusion to the assessment.

2 SITE APPRAISAL

2.1.1 This section provides a description of the site and surrounding highway network. It also considers the nature of the operations of EP Barrus at their sites in Bicester and Upper Heyford and provides details of the level of traffic that is associated with each of the firms existing sites.

2.2 Site Description

2.2.1 The site is located at the junction of Camp Road and Chilgrove Drive on the edge of the former RAF Upper Heyford airbase. The site has no specific policy designation, and is currently in arable farmland use. It extends to an area of approximately 15 acres.

2.2.2 In terms of the strategic location of the site, it is some 10 km to the north west of Bicester.

2.2.3 The wider road network can be accessed along two main routes from Upper Heyford. First amongst these is the link from Camp Road to the junction with the B430 and from there travelling north to junction 10 of the M40. This then provides links to Oxford and further afield, the M25 and London to the south as well as Birmingham to the north. This junction is some 5 km to the north east of the site.

2.2.4 There are residential properties to the west of the site, on both sides of Camp Road and the former RAF airbase to the north is allocated within the Local Plan for a mix of residential and employment uses and where development is currently taking place.

2.3 Highway Network

2.3.1 Camp Road is a classified road which in the vicinity of the site is subject to a speed limit of 30 mph with street lighting present. To the west of the site, traffic calming features are present which are provided by way of kerb build outs which designate which stream of traffic has priority.

2.3.2 Camp Road forms a four arm priority junction with Chilgrove Drive to the north whilst Camp Road continues to the south. A further spur road is provided to the east which provides connections to the B430 and towards Junction 10 of the M40. Strategic traffic towards the M40 is directed to use this route.

2.3.3 The junction configuration provides priority to Camp Road in a west to south direction. Therefore traffic travelling from the east needs to cede priority to traffic from the south. Chilgrove Drive gives way to the eastern spur road.

2.3.4 Visibility from Chilgrove Drive to the west is obstructed by existing vegetation however this point is considered in more detail later in this report.

2.3.5 In terms of carriageway width, Camp Road is 6 metres wide however footways are not present at this point. They are however available further to the west with the Upper Heyford settlement.

2.4 Highway Conditions

2.4.1 In order to identify the existing highway conditions along Camp Road, a traffic survey was undertaken in order to identify traffic flow, speed and classification. This survey was carried out using an Automatic Traffic Counting device (ATC) which was installed over a one week period between Wednesday 10 September 2014 and Tuesday 16 September 2014 inclusive. Full details of the survey are provided at Appendix B including a photograph showing the location of the where the survey was undertaken to the west of the site. Summarised results of the surveys are shown in Table 2.1 below.

	Average 5 Day Traffic Flows		**Daily % HGV**	**85th %ile Traffic Speed (mph)**
	AM Peak Hour	**PM Peak Hour**		
Camp Road East Bound	150	247	6.2	44.7
Camp Road West Bound	309	154	6.0	40.6

Table 2.1: - Summarised Results of ATC Survey

2.4.2 The results of the exercise show that 2 way traffic flows along Camp Road equate to 400 – 450 vehicles per hour during peak times. This equates to 6 – 7.5 vehicles per minute during peak times. This level of traffic is well within the link flow capacity of Camp Road.

2.4.3 In terms of traffic movements at the Camp Road / Chilgrove Drive junction, these have been obtained from a survey undertaken in 2013 on behalf of Peter Brett Associates in relation to a Planning Application at the main Upper Heyford development site. These traffic flows are provided at Appendix C. These surveys show that during the morning peak hour, the dominant traffic movements at this junction are west to east, east to west, west to south and south to west. During the PM peak hour, these dominant traffic streams are still apparent.

2.5 Existing EP Barrus Traffic Activity

2.5.1 Details of the nature of the activity associated with EP Barrus has been provided within the Introduction section. This section provides details of the traffic movements associated with their existing operations.

2.5.2 In relation to the existing warehouse operations, these provide deliveries between the storage premises operated by EP Barrus and their existing facility at Launton Road. We understand that typically three HGV movements per day take place between Upper Heyford and Launton Road Bicester which equates to six two way trips. Generally these trips take place outside of peak times during the normal working day. In addition, some three members of staff work at the warehouse who start work before 8am and finish before 5pm therefore they would not travel during peak times.

2.5.3 In relation to the existing operations at EP Barrus' premises at Launton Road, a traffic survey was undertaken in order to identify the level of existing vehicular activity. This survey was undertaken on Thursday 11 September between the hours of 0630 and 1830. The survey was classified and recorded details of car, HGV, motor cycle and pedal cycle movements. Details of the surveys are provided at Appendix D and summarised results are provided in Table 2.2 below: -

	Inbound		**Outbound**	
	Car	**HGV**	**Car**	**HGV**
AM Peak Hour (0800 – 0900)	37	1	4	0
PM Peak Hour (1700 – 1800)	10	0	53	0
0630 - 1830	197	8	195	8

Table 2.2: - Summarised Traffic Survey Results - EP Barrus Site

2.5.4 Table 2.2 one shows the level of peak hour traffic associated with the EP Barrus' existing operations at Launton Road Bicester is relatively low, with less than one vehicle per minute shown to either enter or exit the site. The survey indicates that traffic flows at the site are subject to periods of peak demand, with lower vehicular activity shown to occur at other times of the day. The relevance of these traffic flows will be considered within Section 5 of this report.

2.6 Highway Safety

2.6.1 Personal Injury Accident data has been obtained from Oxfordshire County Council for the most recent 5 year period. The assessment cordon and accident details are provided at Appendix E. Within this period there were 5 accidents with the vicinity of the site. The first accident occurred on Camp road approximately 90m west of the junction with gate 8 which is to the west of the application site. In this accident a cyclist was found unconscious in the road and had no recollection of the incident. Judging by the injuries it was concluded that no other vehicle was involved. This was classified as serious.

2.6.2 The next accident occurred at the roundabout junction of Camp Road adjacent to the police station. This was a result of a drunk driver falling asleep at the wheel and going straight over the roundabout and colliding with a road sign. This was classified as slight.

2.6.3 The next PIA occurred on B340 approximately 1.1km west of the junction with the B340. It was a result of vehicle 1 travelling into dazzling sun and hitting a cyclist, this was classified as slight.

2.6.4 The fourth PIA occurred at the junction between Camp Road and Chilgrove Drive, this was a result of vehicle 1 colliding with a motorcycle and causing injuries to the rider of and this was classified as slight.

2.6.5 The final PIA occurred at the junction between Camp Road and Larsen Road. It was a result of a minibus hitting a motor cycle and resulted in 2 casualties one of which was classed as serious.

2.6.6 It is considered that all of these incidents have arisen as a consequence of driver error as there is no particular pattern in respect of the accidents that have occurred. Consequently it is our judgement that there are no deficiencies of the highway network.

2.7 Opportunities for Non Car Travel

2.7.1 Upper Heyford has 1 bus service the 2A which connects it with Oxford and Bicester. This service runs every hour Monday to Saturday and takes 40 minutes to get to Oxford and 15 minutes to get to Bicester. Details of service frequencies are provided at Table 2.3 below.

Destination	Route Number	Frequency per hour				
		Mon-Fri (AM Peak)	Mon-Fri (Daytime)	Mon-Fri (PM Peak)	Saturday	Sunday
Bicester	25A	1	1	1	1	N/A
Oxford	25A	1	1	1	1	N/A

Table 2.3: Bus Frequencies

2.7.2 The nearest Railway Station is Heyford which is approximately 4.8km from the site. Trains from this station run to Banbury and to London Paddington in the opposite direction. Whilst these services are infrequent a more frequent and extensive service can be accessed from both Bicester and Oxford. Bicester provides a regular service to London Paddington and Birmingham whilst Oxford also provides a regular service to London Paddington as well as a number of other destinations.

Destination	Frequency (per Hour)				
	Mon –Fri AM Peak	Mon-Fri Daytime	Mon-Fri PM Peak	Saturday	Sunday
Banbury	N/A	0.5	1	0.5	3 Trains per Day
London Paddington	N/A	3 During the Day	1	0.5	3 Trains per Day

Table 2.4: Rail Frequencies

2.7.3 As can be seen from this the proposed development site has ample access to the wider network both via public transport and by car.

3 DEVELOPMENT PROPOSALS

3.1.1 This Section provides a description of the transport related elements of the proposed development and also considers those elements of the scheme which will influence traffic matters.

3.1.2 As explained in Section 1, the planning application seeks the introduction of up to 22,000 sqm of mixed B1/B2/B8 land use at the site. The purpose of the introduction of this floor area is to provide new premises for the relocation of EP Barrus from their existing operations at Upper Heyford and Launton Road Bicester.

3.1.3 The development would consist of two phases. Phase one would consist of the introduction of 9,844 sqm of B8 floor space at the site and this would accommodate the relocation of EP Barrus' existing storage premises from Upper Heyford.

3.1.4 Access to the first Phase of development would be from the northern end of Chilgrove Drive into a service yard. It is proposed that a carriageway widening would be provided to the north of Chilgrove Drive and this would extend for a distance of 40 metres. Here the carriageway width would be increased to in the order of 7 metres. This would allow two articulated Heavy Goods Vehicles to pass one another in the event inbound and outbound traffic meet along Chilgrove Drive. Whilst the Highway Authority have requested that Chilgrove Drive be widened along its entire length in order to accommodate 2 way traffic, this would not be necessary in order to accommodate the low numbers of HGV movements associated with the development proposals. This is considered in greater detail in section 5.

3.1.5 The second phase of development would consist of the introduction of B2 and B1 floor space together with floor space set aside for training purposes. This would see the introduction of floor area amounting to 9,137 sqm set aside for the manufacturing arm of the business and 3,000 sqm set aside for the firms operations side together with the training area. However this would be largely ancillary to the main operations in the same way that is the case at present.

3.1.6 Access to the second phase would be from a new junction with Camp Road which would consist of a priority arrangement. This access road would provide a 6 metre carriageway provided over a distance of approximately 100 metres which would then lead into a parking area where some 147 spaces would be provided. Access to the Phase 1 element of the site would be retained via Chilgrove Drive. This would provide a separate service yard away from staff and visitor traffic which is desirable in operational terms.

3.1.7 Cycle parking would be provided for both phases of the development.

4 POLICY CONSIDERATIONS

4.1.1 This Section will review the Policy Considerations in relation to Transport matters. This will be at the National and Local level.

4.2 National Planning Policy Framework

4.2.1 The National Planning Policy Framework (NPPF) was published in March 2012 and seeks to provide guidance in relation to achieving sustainable development, this being development that means ensuring that better lives for ourselves don't mean worse lives for future generations.

4.2.2 With regard to transport matters, this specifically considers promoting sustainable transport as set out in Section 4 of the NPPF. Set out below is a review of Section 4 of the NPPF which has been considered in the context of the development proposals together with how the transport elements of the development proposals address the requirements of the NPPF..

Paragraph 29 states that *"the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel".*

4.2.3 Paragraph 32 requires that all developments generating significant amounts of movement should be supported by a Transport Statement or Assessment. In this respect it should be considered whether

- *"The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
- *Safe and suitable access to the site can be achieved for all people; and*
- *Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe".*

4.2.4 It will be shown that the proposed highway works provide safe and suitable access for all. Finally, the document shows that the residual cumulative impacts of the development proposals will not be severe.

4.2.5 Paragraph 35 suggests that opportunities for the use of sustainable transport modes should be protected. This states inter alia that developments should be located and designed where practical to

- *Accommodate the efficient delivery of goods and supplies*
- *Give priority to pedestrians and cycle movement, and have access to high quality public transport facilities;*
- *Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians,*

4.2.6 With regard to servicing, the development will provide the necessary regime to ensure deliveries can be made in a satisfactory manner.

4.3 Cherwell Local Plan

4.3.1 At the local level, the Cherwell Local Plan provides details of Transport related policies. Whilst this document is not adopted, it is understood it provides interim planning policy for development control purposes and provides advice whilst the Local Development Framework is being prepared.

4.3.2 Details of parking standards are provided which are now considered. The document provides recommended maximum standards as set out in Table 4.1 below. These standards are accompanied by the development floor area together with the resultant parking provision.

Land Use	Parking Standard	Development Quantum (sqm)	Maximum parking provision
B8	1 per 200 sqm	9,600	48
B2	1 per 50 sqm	9 200	184
B1	3,000 sqm	30	100

Table 4.1: - Parking Standards

4.3.3 On the basis of the above, the development could provide up to 332 parking spaces. Given that the proposal seeks to introduce 147 spaces, this provision would be within the maximum standards of the Local Planning Authority. Therefore the proposed parking provision meets the requirements of the Planning Authority.

4.3.4 Other relevant policy considerations concern providing the ability to accommodate vehicle turning within the curtilage of a development site plus seeking to separate conflict between traffic and pedestrian movement. The development accords with these requirements by way of the provision of a separate access that serves the Phase 1 element of the site.

4.3.5 In summary, it can be seen that the development proposals accord with the transport related policies of the NPPF and the Development Plan.

5 HIGHWAY IMPLICATIONS

5.1.1 This section considers the highway implications of the development proposals. Consequently this section will consider the following: -

- Details of the levels of traffic associated with each Phase of the development;
- Discussion of net changes in traffic arising from the development proposals;
- Consideration in respect of change in traffic flows arising from development;
- Consideration of cumulative assessment traffic;
- Capacity analysis of Chilgrove Drive / Camp Road Junction;
- Capacity analysis of New Site Access junction with Camp Road;
- Consideration of highway improvements necessary to facilitate traffic movements;
- Assessment of parking adequacy;
- Consideration of acceptability of service yard and parking arrangements.

5.1.2 Dealing with each in turn.

5.2 Traffic Attraction

5.2.1 The normal approach when assessing the traffic attraction associated with development proposals is to assess the TRICS database in order to identify similar sites in respect of location and scale. The TRICS database is the Transport Planning Industry accepted method adopted to assess traffic implications and it provides a wide range of traffic surveys undertaken at sites of differing land uses across the British Isles.

5.2.2 It is used when assessing most development proposals as it provides a range of different sites and this is useful when dealing with most planning applications for commercial development. This is because in most cases, the end user of the development is not known at the time of an application being submitted. Generally, planning applications for commercial developments are of a speculative nature and construction of premises tends to occur once a pre let of a building has been secured.

5.2.3 However in this case, the end user of the planning application is known and given that ultimately it will provide a direct replacement for EP Barrus' existing facilities within Cherwell, the optimum method to identify the traffic that would arise from the proposed development would be from the understanding of the existing activity at their premises at Upper Heyford and Launton Road.

5.2.4 Therefore whilst the Highway Authority have requested the use of the TRICS database as the means to identify traffic forecast to be associated with the development, in this instance, it is considered that the use of this method is not meaningful. The applicant is not a speculative commercial developer, rather an owner occupier proposing a purpose built facility to relocate its existing operations into. Consequently, it is considered wholly

appropriate to use the traffic surveys of the existing use as the basis upon which to calculate development traffic associated with the proposed development.

5.3 Phase 1 Traffic

5.3.1 Given that the 1st Phase of development concerns the relocation of EP Barrus' existing warehouse premises at Upper Heyford, it stands to reason that the same level of traffic activity would occur once this relocation has taken place. Consequently the Phase 1 traffic movements are provided below:

	Inbound		Outbound	
	Car	**HGV**	**Car**	**HGV**
AM Peak Hour (0800 – 0900)	0	0	0	0
PM Peak Hour (1700 – 1800)	0	0	0	0
0630 - 1830	3	3	3	3

Table 5.1 – Phase 1 Traffic

5.3.2 Given that the existing site is located within Upper Heyford, these traffic movements would already form part of the existing traffic that uses Camp Road and the surrounding Highway Network. Consequently there would be no net increase in traffic using the highway network surrounding the site as part of the 1st Phase of development.

5.3.3 Given that the net change in trips shown by way of the proposed development during the 1st Phase of development is below the standard threshold of 30 trips above which assessment would normally be considered, as specified within the DfT document "Guidance on Transport Assessment", it is not considered necessary to further assess the impact of trip generation on the local highway network at this time.

5.4 Phase 2 Traffic

5.4.1 In relation to Phase 2 traffic, this would deal with the relocation of the existing premises of EP Barrus at Launton Road. it stands to reason that the traffic associated with the Second Phase would be the same as existing position at the Launton Road.

5.4.2 However, given that EP Barrus' facilities would be provided within a single site, it would not be necessary for them to transport goods between the existing warehouse at Upper Heyford and the Launton Road site.

5.4.3 Clearly warehouse staff would continue to be employed but a reduction in HGV movements would occur over the day as a whole. Consequently, the resultant traffic associated with the combination of Phase 1 and Phase 2 is provided within Table 5.2. this reflects the reduction in HGV movements that would occur across the day as a whole.

	Inbound		Outbound	
	Car	**HGV**	**Car**	**HGV**
AM Peak Hour (0800 – 0900)	37	1	4	0
PM Peak Hour (1700 – 1800)	10	0	53	0
0630 - 1830	200	5	198	5

Table 5.2: - Phase 1 and Phase 2 Development Traffic

5.4.4 Table 5.2 shows that peak hour traffic flows would remain as existing at the EP Barrus premises at Launton Road however there would be a minor increase shown in car movements over the day together with a reduction in overall HGV numbers. This has occurred as a consequence of EP Barrus' operations being accommodated within a single site and would reflect the diversion of trips associated with the existing warehouse use. However this would only result in a net diversion of this small number of trips given that they currently use Camp Road.

5.4.5 However, given that the increase in vehicle trips is beyond the 30 vehicle per hour threshold provided within the DfT Guidance on Transport Assessment document, it will be necessary to carry out further analysis of the highway network. This is required in order to demonstrate that the development will not have a severe residual impact in terms of highway matters and is considered within the remaining sections of this Chapter.

5.5 Traffic Distribution and Assignment

5.5.1 The distribution of development traffic has been based upon the turning movements of traffic shown at the Junction of Camp Road and Chilgrove Drive where an average distribution has been calculated based upon the AM and PM peak hour traffic flows. Figure 1 shows the resultant development traffic assignment associated with both the Phase 1 and Phase 2 development traffic.

5.5.2 As a worst case it has been assumed that the existing warehouse would be reoccupied and no reduction in traffic flows arising from the consolidation of traffic activity onto one site that would occur as a consequence of the proposal has been allowed for.

5.6 Future Year Assessments

5.6.1 The DfT document Guidance on Transport Assessment requires that future year analysis of transport matters is carried for a design horizon 5 years from the submission of the planning application in question. Consequently, given a submission of 2014, it will be necessary to undertake a future year peak hour assessment of 2019. The traffic flows provided at Appendix C have therefore been factored up from 2013 to 2019 using DfT growth factors. Provided at Figure 2 are the resultant 2019 traffic flows for the AM and PM peak hours.

5.6.2 The traffic flows provided at Figure 2 have been added to the resultant Phase 1 and 2 traffic generation to provide the 2019 with development traffic flows. These are shown at Figure 3. This assessment will concern link flow analysis together with a capacity

assessment of the Chilgrove Drive / Camp Road junction and the new junction that will be provided by the Phase 2 development with Camp Road.

5.6.3 In addition, consideration is given to a cumulative assessment which allows for the inclusion of traffic associated with the consented scheme at Upper Heyford. Details of the traffic associated with this consented scheme are provided within the PBA report referred to at Appendix C. Details of the approved traffic for this scheme have been obtained from the PBA document and are provided at Appendix F of this report. The traffic associated with this development has been applied to the Highway Network and is provided at Figure 4.

5.6.4 For assessment purposes, the traffic flows provided at Figure 4 have been added to the 2019 Flows provided at Figure 2. These provide the Base Cumulative Traffic flows and reflect existing traffic flows using Camp Road with the traffic associated with the consented Upper Heyford Development and are shown at Figure 5. A separate scenario has been considered where Figure 4 has been added to Figure 3 to create the Base + Development Cumulative Traffic flows shown at Figure 6. This represents the traffic flow position assuming the committed development in the area together with the traffic associated with the development proposal.

5.7 Link Flow Analysis

5.7.1 An assessment has been undertaken of traffic flows using the local highway network assuming the introduction of the 2nd Phase of development. This assessment considers the highway links of the Camp Road / Chilgrove Drive junction. A comparative assessment has been undertaken examining the difference in link flows between the 2019 Base and 2019 with Development conditions. Table 5.3 below presents this analysis.

	2013 Flows		2019		Development Traffic		2019 Plus Development		% Difference	
Link	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Camp Road West	536	270	594	299	22	34	616	333	4%	11%
Camp Road East	337	164	374	182	18	26	392	208	5%	14%
Camp Road South	115	270	128	299	4	24	132	323	3%	8%

Table 5.3: - Link Flow Analysis

5.7.2 The results of this assessment show that generally percentage changes in link flow on the Camp Road arms of the junction are in the order of five percent during the AM peak hour however a more marked increase is shown during the PM peak hour where an increase of up to 14% is shown. This would be due to staff leaving the premises for the day whilst background traffic flows are at a lower level during this time. However these traffic flow increases do not give rise to a material increase in traffic numbers.

5.8 Capacity Analysis – Chilgrove Drive / Camp Road Junction

5.8.1 In order to identify the ability of Chilgrove Drive / Camp Road to accommodate traffic associated with the full Phase 1 and Phase 2 development in capacity terms, a model of the junction has been prepared using the PICADY computer program. PICADY is the Central Government approved package for assessing priority junctions. A comparative assessment has been undertaken that considers the 2019 Base and 2019 Base with development traffic flows. An additional assessment has been undertaken for each peak hour which examines the capacity position assuming the addition of the traffic

associated with the consented Upper Heyford Scheme and this also includes for the Camp Road junction.

5.8.2 Summarised results of the assessments are provided in Tables 5.4 and 5.5 below:

	Base Traffic				Base + Cumulative Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	RFC	Delay	RFC	Delay	RFC	Delay	RFC
Chilgrove Drive	0.14	0.002	0.13	0.002	0.2	0.002	0.14	0.003
Camp Road ahead & right turn	0	0	0	0	0	0	0	0
Total Delay		0		0		0		0

Table 5.4: - 2019 Base Assessments

	Development Conditions				Development + Cumulative Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	RFC	Delay	RFC	Delay	RFC	Delay	RFC
Chilgrove Drive	0.14	0.005	0.13	0.002	0.16	0.003	0.14	0.003
Camp Road ahead & right turn	0	0	0	0	0	0	0	0
Total Delay		0		0		0		0

Table 5.5: - 2019 Base + Development Assessment

5.8.3 Table 5.4 shows that the junction of Chilgrove Drive / Camp Road operates within capacity during both AM and PM peaks with the 2019 traffic flows and with the addition of traffic associated with the committed scheme at Upper Heyford. The addition of development traffic does not compromise the operation of the junction as shown by the summarised results of the assessments provided in Table 5.5. This position is not altered by way of the addition of development traffic associated with the consented Upper Heyford scheme. Significant reserve capacity is shown at this junction due to the absence of traffic turning movements into or out of Chilgrove Drive during peak times either by way of the existing or proposed position. This will allow any traffic growth that may occur at EP Barrus' operations to be accommodated.

5.8.4 Finally, an assessment has been undertaken of the Camp Road junction as a standalone 3 arm priority junction. This assessment has been carried out using the cumulative plus development traffic flows provided at Figure 6. Summarised results are presented in Table 5.6 below: -

	AM Peak		PM Peak	
	Delay	**RFC**	**Delay**	**RFC**
Camp Road East	0.69	0.836	0.22	0.452
Camp Road South right turn	0.09	0.013	0.09	0.015
Total Delay	0.16		0.05	

Table 5.6: - Camp Road – Junction Cumulative Assessment

5.8.5 Again this junction operates within capacity even allowing for traffic associated with the consented scheme at Upper Heyford.

5.8.6 Therefore it can be seen that the Camp Road / Chilgrove Drive junctions operate within capacity with the development in place. Details of the PICADY assessments undertaken are provided at Appendix G.

5.9 Capacity Analysis – Camp Road – Site Access

5.9.1 An assessment has also been taken of the operation of the new junction with Camp Road which would serve the Phase 2 development. Given that this proposes a priority junction, an additional PICADY model has been prepared to reflect the traffic flows using this junction and the geometry of the proposed arrangement. Table 5.7 presents details of the summarised PICADY results obtained in respect of the 2019 Base + Development and 2019 Base + Development Cumulative traffic conditions.

	Base + Development				Base + Development Cumulative			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	RFC	Delay	RFC	Delay	RFC	Delay	RFC
Site Access	0.11	0.006	0.11	0.097	0.18	0.11	0.15	0.13
Camp Road ahead & right turn	0.1	0.031	0.1	0.011	0.1	0.058	0.08	0.017
Total Delay	0.05		0.1		0.05		0.1	

Table 5.7: - Camp Road / Site Access Junction Assessment

5.9.2 Table 5.6 shows that the proposed site access junction that would serve the development with Camp Road would operate within capacity both with the development in place and allowing for the inclusion of traffic associated with the committed Upper Heyford scheme. Details of the PICADY assessments undertaken are provided at Appendix H.

5.10 Adequacy of Access & Mitigation

5.10.1 In terms of the adequacy of the junction of Chilgrove Drive / Camp Road to accommodate additional development traffic, it has been necessary to provide an improved junction visibility splay to the west towards Camp Road.

5.10.2 It is proposed that modifications would be needed to the existing vegetation in order to accommodate the visibility splay required and this is shown on drawing PB2420/01. A visibility splay of 160 metres is provided towards the east in order to reflect the speed of traffic using Camp Road (as provided in Table 2.1). The visibility splay has been measured from a set back distance of 2.4 metres from the stop line of Chilgrove Drive and is measured to the nearside kerb along Camp Road on its western arm. The visibility splay has been measured in this way to reflect that traffic travelling eastbound from Camp Road has priority over traffic from the south which would turn right into the junction.

5.10.3 Sufficient width is available along Chilgrove Drive to accommodate a passing area on the approach to the site entrance. Consequently it can be seen that an acceptable access to the site can be provided in respect of Phase 1.

5.10.4 In relation to the access for the Phase 2 scheme, as specified in Section 3, access to the site will be taken by way of a new priority junction with Camp Road. An access width of 6.0 metres is provided which is sufficient for Commercial Developments as recommended by the Freight Transport Association document "Designing for Deliveries" and this would connect to Camp Road by way of 10 metre kerb radii. Visibility splays of 160 metres can be provided as required due to the speed of traffic using Camp Road. These visibility splays can be provided within land under the control of the applicant and the Highway Authority. This junction arrangement is shown on drawing PB2420/02.

5.10.5 Comment has been made by the Highway Authority that provision should be made by the development to provide works previously agreed in relation to the committed Upper Heyford Scheme to convert the Camp Road / Chilgrove Drive junction to a 4 arm roundabout.

5.10.6 Given that the capacity assessments undertaken above do not show that the junction of Camp Road / Chilgrove Drive would operate above capacity as a consequence of the traffic associated with this proposal, it is not considered that this is necessary in order to make the development acceptable. In addition, should the Upper Heyford scheme be implemented that it would be incumbent upon the applicant of that scheme to deliver these works and it is understood that they are legally obliged to do so.

5.10.7 Sufficient mitigation is provided in order to accommodate traffic movements along Chilgrove Drive which would be required in order to accommodate traffic movements and junction visibility, as shown on drawing PB2420/02.

5.10.8 Consequently, there can be no requirement to introduce a roundabout junction improvement at the Camp Road / Chilgrove Drive junction in order to make the planning application acceptable.

5.11 Adequacy of Layout & Parking Provision

5.11.1 Provided at Appendix I is a parking accumulation exercise and this shows that the proposed 147 parking spaces that the development would provide would be sufficient to accommodate the traffic associated with EP Barrus.

5.11.2 Sufficient space is provided within the Phase 1 Delivery areas to allow vehicles to pull clear of Chilgrove Drive within the curtilage of the site. In relation to Phase 2, the car park area is provided some 100 metres from the junction with Camp Road which allows traffic to pull clear from the public highway so as to not result in any queuing back whilst vehicles manoeuvre into parking spaces.

5.11.3 Consequently it can be seen that an acceptable site layout can be provided in traffic terms.

6 SUMMARY AND CONCLUSIONS

6.1.1 This Transport Assessment has been prepared by Royal Haskoning DHV on behalf of EP Barrus in order to support a Hybrid Planning Application proposing the introduction of floor area of up to circa 22,000 sq. m GIA of B1/B2/B8 floor space on Land to the west of Chilgrove Drive, North of Camp Road and adjoining former RAF Upper Heyford, Upper Heyford incorporating former MOD Gymnasium.

6.1.2 The new development would accommodate the relocation of the current EP Barrus premises from their existing locations which are located throughout the District. The development would consist of two phases; Phase 1 would deal with the relocation of the firms warehouse operations from Upper Heyford to the site.

6.1.3 Phase 2 would involve the relocation of the company's main operational Headquarters from Launton Road Bicester. The Launton Road site also provides the Company's main manufacturing facilities together with some storage of goods. These operations would move to the proposed development site.

6.1.4 The development proposal will provide modern, purpose built facilities which are able to accommodate all of the current and future EP Barrus operations on a single site, in order to secure improved operating efficiencies, accommodate future growth and to safeguard the future of the Company within Cherwell.

6.1.5 The report has shown that: -

- Traffic associated with the scheme would be similar to the existing levels associated with EP Barrus' current operations;
- Access to Phase 1 can be provided in an acceptable form via Chilgrove Drive;
- Access to Phase 2 can be provided in an acceptable form via the introduction of a new junction with Camp Road;
- The adequacy of these points of access would not be compromised by traffic associated with the committed scheme at Upper Heyford;
- There is no requirement as part of this planning application to introduce a roundabout improvement scheme at the Camp Road / Chilgrove Drive junction;
- Sufficient car parking can be provided in order to serve the development proposals.

6.1.6 In view of the above, it can be seen that there would be no severe residual cumulative impacts arising from the proposed redevelopment as it relates to transport matters.

6.1.7 Therefore there can be no transportation reasons why the proposed development should not be granted planning permission.

APPENDIX A

LOCAL HIGHWAY AUTHORITY CONSULTATION

To: Royal Haskoning

Planning Application No	Pre-application advice	**Planning Officer**	
CC ref No		**CC Officer**	Chris Nichols
Date	11 February 2014	**Comments**	
Proposal: Introduction of B2 / B8 Warehousing premises. Relocation of existing facility from Launton Road, Bicester.			
Location: Land at the corner of Camp Road and Chilgrove Drive, Upper Heyford			

Comments

OCC is in receipt of Scoping for Transport Assessments Form for the above proposed development. This report provides pre-application advice in response to that form.

The development site comprises land on the north west corner of the junction of Camp Road and Chilgrove Drive, with access proposed to be taken from two points on Chilgrove Drive. The site is located immediately to the east of the Heyford Park development which is under construction and will comprise some 1,000 residential dwellings together with associated land uses taking access from Camp Road.

The comments set out below relate to items on the Scoping for Transport Assessments Form where OCC requires clarification in the Transport Assessment or where its requirements are at variance with those put forward.

Brief description of the development
This section makes no reference to the offices and training school shown on drawing No.13087 / P-01, and it is not clear whether this is ancillary to the warehousing and manufacturing or whether it comprises head office functions. The TA will need to make this clear and include separate trip generation estimates as appropriate.

Approximate traffic volume level on adjacent road network
It is not clear whether the traffic flows quoted are existing flows or include the committed Heyford Park development. The TA will need to include the traffic flows from the committed Heyford Park development in the base traffic case.

How will potential traffic generation from the site be established
Data from the existing premises would be informative, but would need to be compared to suitable data from TRICS with the TRICS data to be used if it implies a higher trip generation. This will ensure a suitable assessment of the generic land use classes being applied for.

Locations of new/modified accesses of the development onto the existing road network
Suitable improvements to Chilgrove Drive will need to be made between Camp Road and the access to the Phase 1 Service Yard in order to accommodate the two way passage of goods vehicles. These will need to be demonstrated with vehicle swept path analysis at both access points and on Chilgrove Drive itself.

Describe committed development to be taken into account
The TA will need to include the traffic flows from the entire committed Heyford Park development in the base traffic case.

Area of Impact
As a result of the Heyford Park development the four arm priority junction of Camp Road and Chilgrove Drive is proposed to be converted to a roundabout. Given the immediate proximity of the development proposals that are the subject of this advice, and their likely impact on the junction in question, the developer would be expected to enter into an agreement to provide these junction improvements.

Will the development be split into phases?
The TA would need to explain the timing and other aspects of Phases 1 and 2, and would need to present a separate impact analysis for Phase 1 alone and phases 1 and 2 combined.

Will construction traffic be significant?
Should planning permission be granted a condition of that permission would be the development and implementation of a construction traffic management plan in accordance with OCCs guidelines.

Car parking levels for each land use
Drawing No.13087 / P-01 shows 166 car parking spaces. The TA will need to justify this provision in relation to parking standards for each proposed land use.

Informative
Prior to commencement of development, a separate consent must be obtained from OCC Road Agreements Team for the new highway vehicular access under S278 of the Highway Act. Contact: 01865 815700; RoadAgreements@oxfordshire.gov.uk.

Signed: Chris Nichols, Transport Consultant
For Oxfordshire County Council as Local Highway Authority
11 February 2014

APPENDIX B

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Wed 10-Sep-14																
00:00	8	-	37.3	7.5	0	0	2	0	3	3	0	0	0	0	0	0
01:00	4	-	43.5	8.2	0	0	0	1	0	2	0	1	0	0	0	0
02:00	6	-	37.7	5.1	0	0	0	3	1	2	0	0	0	0	0	0
03:00	6	-	33.9	9.7	0	0	3	0	2	0	1	0	0	0	0	0
04:00	7	-	40.6	11.5	0	0	2	0	1	2	0	2	0	0	0	0
05:00	29	47.2	39.4	7.2	0	0	2	9	6	6	5	1	0	0	0	0
06:00	116	45.1	38.1	6.7	0	0	8	44	29	21	9	5	0	0	0	0
07:00	153	45.1	39.1	6.1	0	0	8	36	58	34	13	3	1	0	0	0
08:00	150	44.4	37.7	6.8	0	0	18	37	57	22	11	5	0	0	0	0
09:00	142	44.7	37.9	6.9	0	0	14	44	45	23	11	3	2	0	0	0
10:00	107	42	35.6	6.7	0	1	17	41	29	12	6	1	0	0	0	0
11:00	108	43.2	36.8	6	0	0	12	37	34	19	6	0	0	0	0	0
12:00	140	43.4	36.1	7.5	0	0	31	37	41	20	6	4	1	0	0	0
13:00	138	41.8	35.5	6.5	0	0	26	49	39	17	6	1	0	0	0	0
14:00	154	44.2	38	7.3	0	0	13	54	44	30	5	5	2	0	0	1
15:00	166	44	37.2	6.7	0	0	23	46	54	29	11	3	0	0	0	0
16:00	265	43.8	37.3	6.4	0	0	28	83	89	44	17	3	1	0	0	0
17:00	250	44.6	37.7	7.2	0	2	28	64	91	38	18	5	4	0	0	0
18:00	120	45.6	38.1	8.4	0	0	25	17	33	29	9	4	3	0	0	0
19:00	82	44.3	37.6	7.5	0	0	13	19	26	17	4	1	2	0	0	0
20:00	57	45.3	37.6	7.9	0	0	9	16	16	8	5	2	1	0	0	0
21:00	34	45	38.4	8.9	0	0	6	7	9	8	1	2	0	1	0	0
22:00	15	40.5	38	6.6	0	0	1	4	8	0	1	1	0	0	0	0
23:00	9	-	35.7	7.2	0	0	2	3	1	3	0	0	0	0	0	0
12H,7-19	1893	44.2	37.3	6.9	0	3	243	545	614	317	119	37	14	0	0	1
16H,6-22	2182	44.3	37.4	7	0	3	279	631	694	371	138	47	17	1	0	1
18H,6-24	2206	44.3	37.4	7	0	3	282	638	703	374	139	48	17	1	0	1
24H,0-24	2266	44.4	37.4	7	0	3	291	651	716	389	145	52	17	1	0	1

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Thu 11-Sep-14																
00:00	5	-	37.5	4.4	0	0	0	2	2	1	0	0	0	0	0	0
01:00	6	-	38.9	8.8	0	0	1	1	2	0	2	0	0	0	0	0
02:00	7	-	43.5	7.7	0	0	0	2	0	2	2	1	0	0	0	0
03:00	8	-	35.1	12.8	0	1	2	2	0	1	1	1	0	0	0	0
04:00	7	-	39.2	10.2	0	0	2	0	1	3	0	1	0	0	0	0
05:00	27	46.8	40	7.3	0	0	2	6	7	7	3	2	0	0	0	0
06:00	96	45.1	39.8	5.9	0	0	3	19	38	26	6	3	1	0	0	0
07:00	168	45	39.2	6.7	0	0	11	39	57	44	11	3	2	0	1	0
08:00	152	44.2	36.6	7.6	0	0	29	44	41	23	10	3	2	0	0	0
09:00	174	44.8	38.1	6.5	0	0	16	50	55	35	14	4	0	0	0	0
10:00	100	42.7	36.8	6.7	0	0	15	26	39	13	5	1	1	0	0	0
11:00	116	42.7	35.8	7.6	0	0	27	31	35	15	5	0	3	0	0	0
12:00	130	44.1	37.2	6.8	0	0	20	32	42	26	8	2	0	0	0	0
13:00	147	43	36.3	7.1	0	0	28	41	47	21	6	3	1	0	0	0
14:00	130	43	36.7	6.6	0	0	16	48	40	15	8	2	1	0	0	0
15:00	171	43	36.2	7.3	1	0	28	58	50	20	8	5	1	0	0	0
16:00	269	43.2	35.9	7.3	0	4	47	85	75	39	15	2	2	0	0	0
17:00	276	43.5	36.4	7.3	0	2	46	86	79	43	15	3	1	0	1	0
18:00	132	45.9	38.3	7.5	0	0	16	31	48	17	13	5	2	0	0	0
19:00	73	47.6	39.5	9.2	0	0	8	20	20	12	5	3	3	1	1	0
20:00	66	43.6	34.9	9	0	0	22	20	10	7	4	2	0	0	1	0
21:00	40	40.5	34.7	7.8	0	1	10	10	14	2	2	1	0	0	0	0
22:00	19	47.6	40.6	6.7	0	0	0	5	7	3	2	2	0	0	0	0
23:00	8	-	44.1	5.1	0	0	0	0	2	4	1	1	0	0	0	0
12H,7-19	1965	44	36.9	7.2	1	6	299	571	608	311	118	33	16	0	2	0
16H,6-22	2240	44.1	37	7.3	1	7	342	640	690	358	135	42	20	1	4	0
18H,6-24	2267	44.2	37.1	7.3	1	7	342	645	699	365	138	45	20	1	4	0
24H,0-24	2327	44.3	37.1	7.4	1	8	349	658	711	379	146	50	20	1	4	0

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Fri 12-Sep-14																
00:00	3	-	41	13.9	0	0	1	0	0	1	0	1	0	0	0	0
01:00	4	-	39.8	2.8	0	0	0	0	3	1	0	0	0	0	0	0
02:00	2	-	34.8	12.4	0	0	1	0	0	1	0	0	0	0	0	0
03:00	8	-	37.3	10.3	0	0	2	3	0	1	1	1	0	0	0	0
04:00	7	-	41.4	7.6	0	0	0	2	2	1	1	1	0	0	0	0
05:00	32	48.8	40.8	7.3	0	0	1	8	9	7	3	4	0	0	0	0
06:00	105	44.7	38.7	6.9	0	0	10	20	44	20	6	3	2	0	0	0
07:00	169	44.9	37.5	6.7	0	0	18	57	47	27	18	2	0	0	0	0
08:00	163	42.3	36.5	6.5	0	0	23	53	57	20	6	3	1	0	0	0
09:00	142	42.2	35.5	7	0	0	32	42	42	18	5	3	0	0	0	0
10:00	107	43.5	36.6	6.9	0	0	20	25	35	21	4	2	0	0	0	0
11:00	128	43.5	37.4	6.2	0	1	13	29	55	21	9	0	0	0	0	0
12:00	159	43.1	36.6	6.4	0	1	21	48	55	23	11	0	0	0	0	0
13:00	131	43.1	37.1	5.9	0	0	15	36	50	24	6	0	0	0	0	0
14:00	144	44.8	38.1	6.7	0	0	12	44	49	22	12	4	1	0	0	0
15:00	158	43.4	37.4	6.9	0	3	15	35	69	25	7	3	1	0	0	0
16:00	233	44.2	36.1	7.7	0	1	48	76	50	35	16	5	2	0	0	0
17:00	182	45.2	38.7	7.1	0	0	17	44	63	36	15	4	2	0	1	0
18:00	106	45.3	38.9	7.1	0	0	10	24	33	26	10	1	1	1	0	0
19:00	80	44.9	37.2	7.9	0	2	13	16	21	20	7	1	0	0	0	0
20:00	76	43.7	34.9	8.7	0	1	26	14	16	13	3	2	1	0	0	0
21:00	27	40.8	37.9	6.4	0	0	2	7	14	0	3	1	0	0	0	0
22:00	16	41.5	37.4	8.5	0	0	3	3	7	1	1	0	1	0	0	0
23:00	7	-	35.3	9.1	0	1	0	1	4	1	0	0	0	0	0	0
12H,7-19	1822	44	37.2	6.9	0	6	244	513	605	298	119	27	8	1	1	0
16H,6-22	2110	44.1	37.2	7	0	9	295	570	700	351	138	34	11	1	1	0
18H,6-24	2133	44.1	37.2	7	0	10	298	574	711	353	139	34	12	1	1	0
24H,0-24	2189	44.2	37.2	7.1	0	10	303	587	725	365	144	41	12	1	1	0

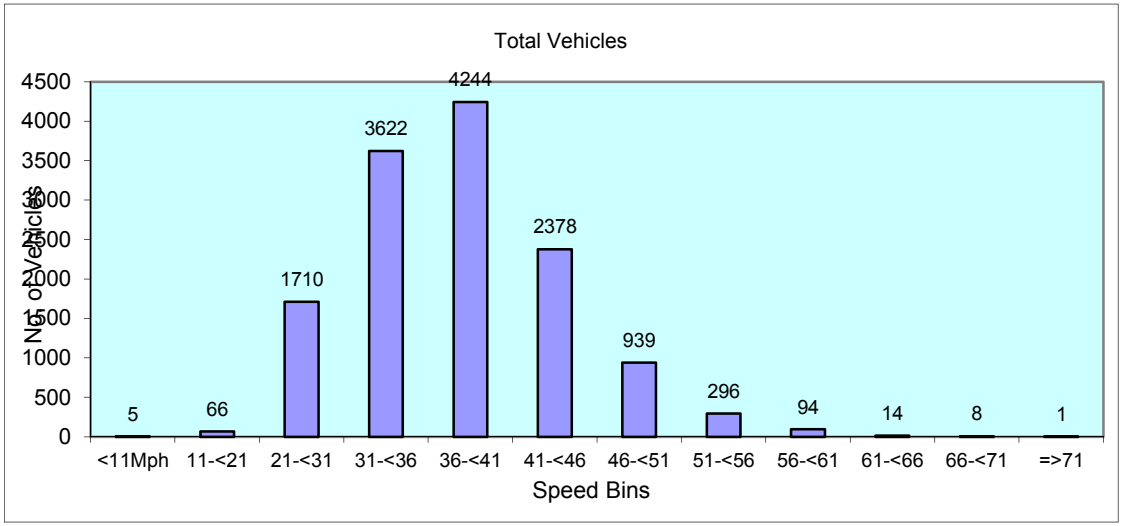
17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Sat 13-Sep-14																
00:00	9	-	37.7	6.5	0	0	1	2	4	1	1	0	0	0	0	0
01:00	6	-	38.1	7.9	0	0	1	1	2	1	1	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	3	-	30.2	16.6	0	1	1	0	0	0	1	0	0	0	0	0
04:00	8	-	38.8	7.5	0	0	1	2	1	3	1	0	0	0	0	0
05:00	13	49.2	43.1	7.3	0	0	0	2	4	2	4	0	1	0	0	0
06:00	30	46	39	8.6	0	0	6	3	7	9	4	0	1	0	0	0
07:00	45	50.7	40.7	9	0	0	5	8	12	10	3	4	3	0	0	0
08:00	95	45	38.2	7.9	0	2	11	16	37	18	6	3	2	0	0	0
09:00	90	48.1	40.3	8.1	0	0	7	21	22	21	12	4	2	0	1	0
10:00	78	46.9	39.4	7.4	0	0	7	20	19	18	10	3	1	0	0	0
11:00	88	44.4	38.6	8.2	1	0	6	24	31	18	3	0	4	0	1	0
12:00	91	45.2	38.3	7	0	1	6	27	31	14	8	4	0	0	0	0
13:00	75	44.8	37.6	7	0	0	10	20	25	11	7	2	0	0	0	0
14:00	72	43.8	36.9	7.4	0	1	13	11	29	12	5	1	0	0	0	0
15:00	75	43.6	38.2	6.3	0	0	6	18	30	18	1	1	0	1	0	0
16:00	80	48.3	39.2	9.6	0	5	6	13	20	18	12	4	2	0	0	0
17:00	61	43.7	37	7.3	1	0	7	15	24	8	6	0	0	0	0	0
18:00	72	46.8	39.3	7.1	0	1	4	17	22	15	11	2	0	0	0	0
19:00	40	43.5	37.2	7.1	0	2	1	12	15	7	3	0	0	0	0	0
20:00	30	43	36.2	7.6	0	0	6	10	7	5	0	2	0	0	0	0
21:00	21	42.8	35	8.2	0	0	7	4	6	1	3	0	0	0	0	0
22:00	27	45.6	40.4	7.4	0	0	1	6	9	7	2	0	2	0	0	0
23:00	17	45	37.5	8.8	0	1	2	3	4	5	2	0	0	0	0	0
12H,7-19	922	45.7	38.6	7.8	2	10	88	210	302	181	84	28	14	1	2	0
16H,6-22	1043	45.6	38.4	7.8	2	12	108	239	337	203	94	30	15	1	2	0
18H,6-24	1087	45.6	38.5	7.8	2	13	111	248	350	215	98	30	17	1	2	0
24H,0-24	1126	45.7	38.5	7.8	2	14	115	255	361	222	106	30	18	1	2	0

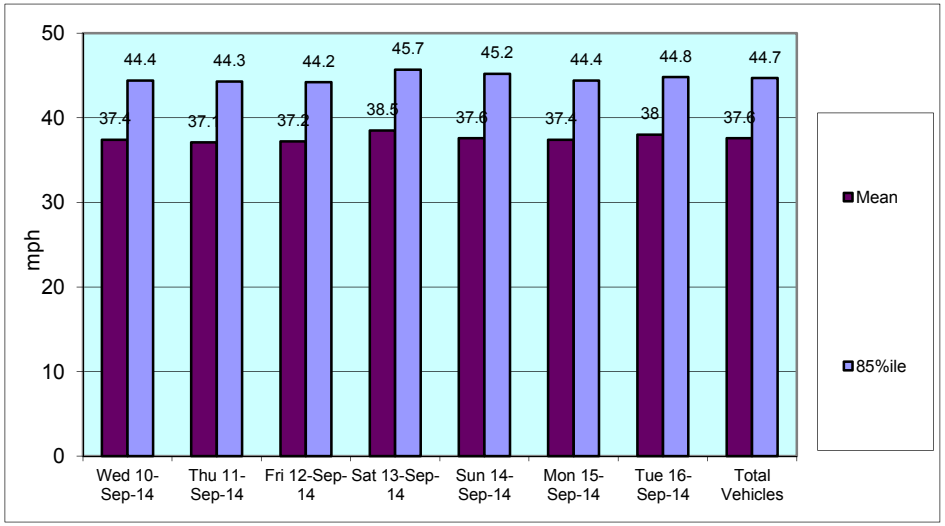
17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Sun 14-Sep-14																
00:00	9	-	37.9	6	0	0	0	5	1	2	1	0	0	0	0	0
01:00	8	-	34.1	6.3	0	0	2	3	2	1	0	0	0	0	0	0
02:00	3	-	31	4.5	0	0	1	2	0	0	0	0	0	0	0	0
03:00	4	-	36	11.9	0	0	2	0	0	1	1	0	0	0	0	0
04:00	8	-	38.5	6.7	0	0	0	3	4	0	0	1	0	0	0	0
05:00	9	-	39.9	8.8	0	0	1	2	3	0	2	1	0	0	0	0
06:00	20	45.2	38	7	0	0	2	7	4	4	3	0	0	0	0	0
07:00	32	44.4	38.4	5.6	0	0	1	10	13	4	4	0	0	0	0	0
08:00	42	46.2	38	7.6	0	0	6	12	9	8	6	1	0	0	0	0
09:00	71	43.6	37.3	7.4	0	1	10	14	27	15	3	0	0	1	0	0
10:00	84	45.7	37.6	8.4	1	1	12	18	24	16	9	3	0	0	0	0
11:00	99	43.5	35.6	7.7	0	3	18	31	23	17	6	1	0	0	0	0
12:00	93	45	37.5	7.6	0	0	14	24	31	12	9	2	0	1	0	0
13:00	69	43.6	37.2	7.2	0	0	12	13	28	10	3	3	0	0	0	0
14:00	84	45.3	38.5	7.4	0	1	8	18	31	15	6	5	0	0	0	0
15:00	63	46	39.6	6	0	0	2	18	16	17	10	0	0	0	0	0
16:00	77	45.9	37	9.2	0	1	19	12	25	8	4	7	1	0	0	0
17:00	70	44.4	37.9	7	0	1	8	14	23	19	4	1	0	0	0	0
18:00	71	44.5	38.7	5.9	0	0	3	20	25	17	4	2	0	0	0	0
19:00	34	46.4	38	8.1	0	0	5	10	8	5	5	0	1	0	0	0
20:00	33	48.6	38.7	8	0	0	3	11	10	1	5	3	0	0	0	0
21:00	22	44	34.9	10.3	0	2	6	1	8	2	2	1	0	0	0	0
22:00	15	44.1	37.3	9	0	0	3	4	4	2	1	0	1	0	0	0
23:00	10	41	36.8	7.6	0	0	1	5	2	1	0	1	0	0	0	0
12H,7-19	855	45	37.6	7.5	1	8	113	204	275	158	68	25	1	2	0	0
16H,6-22	964	45.1	37.6	7.6	1	10	129	233	305	170	83	29	2	2	0	0
18H,6-24	989	45.1	37.6	7.6	1	10	133	242	311	173	84	30	3	2	0	0
24H,0-24	1030	45.2	37.6	7.6	1	10	139	257	321	177	88	32	3	2	0	0

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Mon 15-Sep-14																
00:00	3	-	34.3	8.8	0	0	1	1	0	1	0	0	0	0	0	0
01:00	5	-	38.5	19.3	0	1	1	1	0	0	0	0	2	0	0	0
02:00	1	-	48.5	-	0	0	0	0	0	0	1	0	0	0	0	0
03:00	5	-	37.5	6.6	0	0	0	3	1	0	1	0	0	0	0	0
04:00	12	43.1	34.1	8.3	0	0	5	2	1	4	0	0	0	0	0	0
05:00	37	44.7	36.7	7.3	0	0	7	10	11	4	5	0	0	0	0	0
06:00	106	44.3	37.3	7.4	0	0	15	33	29	19	6	3	0	1	0	0
07:00	155	46.1	39.2	7.2	0	0	16	33	43	39	20	1	3	0	0	0
08:00	162	41.8	35.6	6.5	0	0	29	60	45	19	7	2	0	0	0	0
09:00	146	40.9	34.9	7.3	0	2	36	39	47	14	5	3	0	0	0	0
10:00	109	44	36.7	7.2	0	1	17	32	30	20	8	0	1	0	0	0
11:00	118	43.8	36.7	6.9	0	0	17	41	34	14	10	1	1	0	0	0
12:00	148	43.1	36.7	6.4	0	0	23	38	54	25	7	1	0	0	0	0
13:00	126	44	37.3	6.5	0	0	14	43	34	26	6	3	0	0	0	0
14:00	136	44.4	38	6.2	0	2	5	43	51	21	13	1	0	0	0	0
15:00	200	43.4	37.1	6.2	0	0	23	58	72	35	10	2	0	0	0	0
16:00	239	45.3	37.9	7.3	0	2	30	56	73	49	23	6	0	0	0	0
17:00	267	42.5	37.4	5.5	0	0	17	88	110	37	11	4	0	0	0	0
18:00	140	47.3	40.6	7.7	0	0	9	29	35	42	14	7	2	1	1	0
19:00	85	45.9	38.5	7.8	0	2	7	21	24	18	9	4	0	0	0	0
20:00	46	45.3	37.7	8.1	0	0	6	16	12	5	3	3	1	0	0	0
21:00	28	44.2	39.8	5.8	0	0	1	4	12	10	0	0	1	0	0	0
22:00	18	43	37.7	6.4	0	0	2	4	8	2	2	0	0	0	0	0
23:00	15	41.6	36.5	7.4	0	0	4	0	8	2	1	0	0	0	0	0
12H,7-19	1946	44.3	37.4	6.8	0	7	236	560	628	341	134	31	7	1	1	0
16H,6-22	2211	44.4	37.4	6.9	0	9	265	634	705	393	152	41	9	2	1	0
18H,6-24	2244	44.4	37.4	6.9	0	9	271	638	721	397	155	41	9	2	1	0
24H,0-24	2307	44.4	37.4	7	0	10	285	655	734	406	162	41	11	2	1	0

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Tue 16-Sep-14																
00:00	5	-	36.5	6.9	0	0	0	4	0	0	1	0	0	0	0	0
01:00	1	-	26	-	0	0	1	0	0	0	0	0	0	0	0	0
02:00	6	-	40.2	3	0	0	0	0	4	2	0	0	0	0	0	0
03:00	3	-	31.8	10.4	0	0	2	0	0	1	0	0	0	0	0	0
04:00	11	44.2	40.1	5.5	0	0	1	0	4	6	0	0	0	0	0	0
05:00	27	45.1	38.8	7.2	0	0	3	7	5	9	2	1	0	0	0	0
06:00	104	47.6	39.1	7.6	0	0	8	31	31	14	12	6	2	0	0	0
07:00	166	44.3	38	7	0	3	12	41	63	33	11	1	1	1	0	0
08:00	125	44.5	37.6	6.8	0	0	15	37	33	30	8	1	1	0	0	0
09:00	138	44.4	37.3	7.3	0	0	17	47	40	19	10	3	1	1	0	0
10:00	102	44.6	38.5	6.5	0	0	9	23	39	21	6	4	0	0	0	0
11:00	111	42.6	36.3	7.2	0	2	16	32	40	12	7	1	1	0	0	0
12:00	135	45.2	38.1	7.2	0	0	19	28	42	30	12	4	0	0	0	0
13:00	114	42.5	36.5	5.9	0	0	15	35	40	21	3	0	0	0	0	0
14:00	116	44.6	38.9	6.9	0	0	12	18	45	32	4	3	1	1	0	0
15:00	161	44.3	37.7	6.5	0	0	17	49	45	38	9	3	0	0	0	0
16:00	244	45.5	39.1	7.2	0	1	23	52	71	66	19	9	3	0	0	0
17:00	258	44.2	37.4	7.1	1	4	27	67	81	60	14	4	0	0	0	0
18:00	140	47.6	39.4	8.2	0	1	10	39	41	23	14	8	1	3	0	0
19:00	66	43.3	37.3	6.3	0	0	5	25	22	8	5	0	1	0	0	0
20:00	42	47.8	38.6	8.6	0	0	7	9	12	5	6	2	1	0	0	0
21:00	32	42.7	36.7	6.5	0	0	5	8	12	5	2	0	0	0	0	0
22:00	12	45.3	35.8	7.9	0	0	3	3	4	0	2	0	0	0	0	0
23:00	13	44.6	38.7	6.5	0	0	1	4	2	5	1	0	0	0	0	0
12H,7-19	1810	44.7	38	7.1	1	11	192	468	580	385	117	41	9	6	0	0
16H,6-22	2054	44.8	38	7.1	1	11	217	541	657	417	142	49	13	6	0	0
18H,6-24	2079	44.8	38	7.1	1	11	221	548	663	422	145	49	13	6	0	0
24H,0-24	2132	44.8	38	7.1	1	11	228	559	676	440	148	50	13	6	0	0

17916			UPPER HEYFORD				Site No: 17916001			Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Eastbound									
Time Period	**Total Vehicles**	**85%ile Speed**	**Mean Speed**	**Stand Dev.**	**<11Mph**	**11-<21**	**21-<31**	**31-<36**	**36-<41**	**41-<46**	**46-<51**	**51-<56**	**56-<61**	**61-<66**	**66-<71**	**=>71**
Daily Totals																
Wed 10-Sep-14	**2266**	44.4	37.4	7	0	3	291	651	716	389	145	52	17	1	0	1
Thu 11-Sep-14	**2327**	44.3	37.1	7.4	1	8	349	658	711	379	146	50	20	1	4	0
Fri 12-Sep-14	**2189**	44.2	37.2	7.1	0	10	303	587	725	365	144	41	12	1	1	0
Sat 13-Sep-14	**1126**	45.7	38.5	7.8	2	14	115	255	361	222	106	30	18	1	2	0
Sun 14-Sep-14	**1030**	45.2	37.6	7.6	1	10	139	257	321	177	88	32	3	2	0	0
Mon 15-Sep-14	**2307**	44.4	37.4	7	0	10	285	655	734	406	162	41	11	2	1	0
Tue 16-Sep-14	**2132**	44.8	38	7.1	1	11	228	559	676	440	148	50	13	6	0	0
Total Vehicles																
[--]	**13377**	44.7	37.6	7.3	5	66	1710	3622	4244	2378	939	296	94	14	8	1

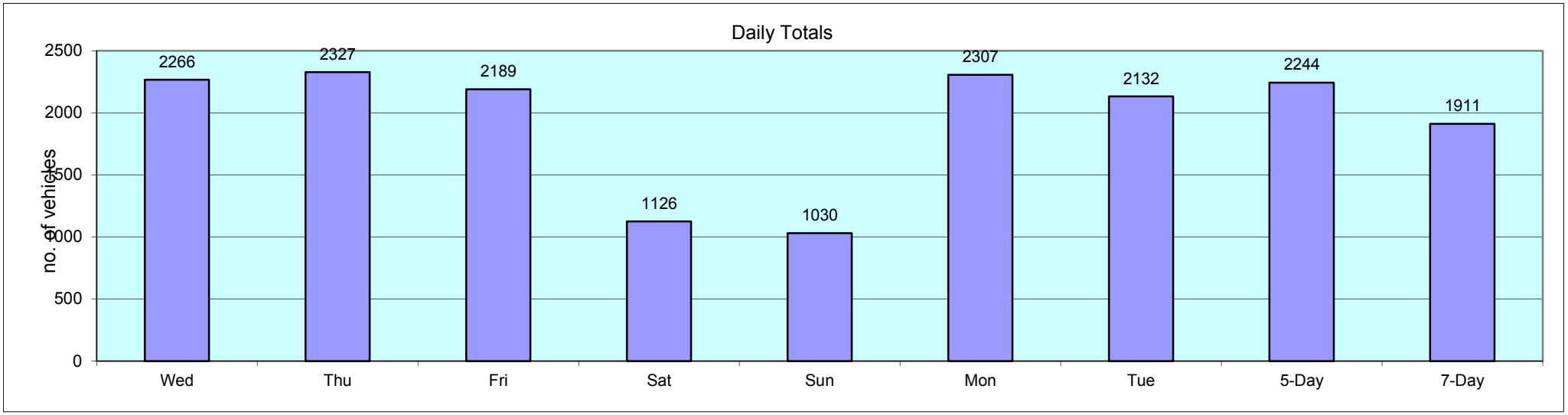




17916		UPPER HEYFORD		Site No: 17916001 Channel: Eastbound		Location	Camp Road, Upper Heyford (LC)		
TIME PERIOD	Wed 10/09/14	Thu 11/09/14	Fri 12/09/14	Sat 13/09/14	Sun 14/09/14	Mon 15/09/14	Tue 16/09/14	5-Day Av	7-Day Av
Week Begin: 10-Sep-14									
00:00	**8**	5	3	9	9	3	5	5	6
01:00	**4**	6	4	6	8	5	1	4	5
02:00	**6**	7	2	0	3	1	6	4	4
03:00	**6**	8	8	3	4	5	3	6	5
04:00	**7**	7	7	8	8	12	11	9	9
05:00	**29**	27	32	13	9	37	27	30	25
06:00	**116**	96	105	30	20	106	104	105	82
07:00	**153**	168	169	45	32	155	166	162	127
08:00	**150**	152	163	95	42	162	125	150	127
09:00	**142**	174	142	90	71	146	138	148	129
10:00	**107**	100	107	78	84	109	102	105	98
11:00	**108**	116	128	88	99	118	111	116	110
12:00	**140**	130	159	91	93	148	135	142	128
13:00	**138**	147	131	75	69	126	114	131	114
14:00	**154**	130	144	72	84	136	116	136	119
15:00	**166**	171	158	75	63	200	161	171	142
16:00	**265**	269	233	80	77	239	244	250	201
17:00	**250**	276	182	61	70	267	258	247	195
18:00	**120**	132	106	72	71	140	140	128	112
19:00	**82**	73	80	40	34	85	66	77	66
20:00	**57**	66	76	30	33	46	42	57	50
21:00	**34**	40	27	21	22	28	32	32	29
22:00	**15**	19	16	27	15	18	12	16	17
23:00	**9**	8	7	17	10	15	13	10	11
12H,7-19	**1893**	**1965**	**1822**	**922**	**855**	**1946**	**1810**	**1887**	**1602**
16H,6-22	**2182**	**2240**	**2110**	**1043**	**964**	**2211**	**2054**	**2159**	**1829**
18H,6-24	**2206**	**2267**	**2133**	**1087**	**989**	**2244**	**2079**	**2186**	**1858**
24H,0-24	**2266**	**2327**	**2189**	**1126**	**1030**	**2307**	**2132**	**2244**	**1911**
Am	**07:00**	**09:00**	**07:00**	**08:00**	**11:00**	**08:00**	**07:00**	**-**	**-**
Peak	**153**	**174**	**169**	**95**	**99**	**162**	**166**	**165**	**145**
Pm	**16:00**	**17:00**	**16:00**	**12:00**	**12:00**	**17:00**	**17:00**	**-**	**-**
Peak	**265**	**276**	**233**	**91**	**93**	**267**	**258**	**260**	**212**

17916	UPPER HEYFORD	Site No: 17916001	Location	Camp Road, Upper Heyford (LC)
		Channel: Eastbound		

TIME PERIOD	Wed 10/09/14	Thu 11/09/14	Fri 12/09/14	Sat 13/09/14	Sun 14/09/14	Mon 15/09/14	Tue 16/09/14	5-Day Av	7-Day Av



17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Westbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Wed 10-Sep-14																
00:00	7	-	36	5.7	0	0	1	2	3	1	0	0	0	0	0	0
01:00	10	41	36.8	5.4	0	0	1	3	4	2	0	0	0	0	0	0
02:00	6	-	32.7	6	0	0	2	2	2	0	0	0	0	0	0	0
03:00	2	-	38.5	7.1	0	0	0	1	0	1	0	0	0	0	0	0
04:00	7	-	38.1	8.8	0	0	1	2	2	1	0	1	0	0	0	0
05:00	49	43.6	37.2	6.4	0	1	3	17	15	10	3	0	0	0	0	0
06:00	101	40.5	36.1	6.2	0	0	10	44	35	9	0	0	3	0	0	0
07:00	284	40.2	34.7	5.7	0	0	50	129	73	26	5	1	0	0	0	0
08:00	298	40.1	34.7	5.7	0	0	57	119	93	25	4	0	0	0	0	0
09:00	148	40.1	34.5	6.2	0	1	29	62	41	11	3	0	1	0	0	0
10:00	129	39.7	33.1	6.5	0	0	44	46	26	11	1	1	0	0	0	0
11:00	110	39.7	34.1	5.9	0	0	24	49	27	7	3	0	0	0	0	0
12:00	130	40.9	35.3	6.2	0	0	21	56	34	15	2	1	1	0	0	0
13:00	150	40	33.8	6.4	0	1	42	49	44	11	3	0	0	0	0	0
14:00	108	39.8	33.8	5.9	0	0	29	39	31	9	0	0	0	0	0	0
15:00	138	42.9	36	6.7	0	0	23	51	35	21	5	3	0	0	0	0
16:00	130	41	35.7	6.6	0	0	21	50	39	15	2	2	0	1	0	0
17:00	160	40.7	35.2	5.8	0	0	28	59	52	19	2	0	0	0	0	0
18:00	139	42.2	35.7	6.3	0	0	22	57	34	19	6	1	0	0	0	0
19:00	94	40.3	34.9	6.3	0	0	17	41	25	9	1	0	0	1	0	0
20:00	56	39.1	33.2	6.4	0	0	17	24	10	4	0	1	0	0	0	0
21:00	29	39.8	35.1	5.5	0	0	4	14	8	2	1	0	0	0	0	0
22:00	21	43.4	36.4	6.8	0	0	4	6	4	7	0	0	0	0	0	0
23:00	11	38.1	33.3	5.9	0	0	3	5	2	1	0	0	0	0	0	0
12H,7-19	1924	40.5	34.7	6.1	0	2	390	766	529	189	36	9	2	1	0	0
16H,6-22	2204	40.5	34.8	6.1	0	2	438	889	607	213	38	10	5	2	0	0
18H,6-24	2236	40.5	34.8	6.1	0	2	445	900	613	221	38	10	5	2	0	0
24H,0-24	2317	40.6	34.8	6.2	0	3	453	927	639	236	41	11	5	2	0	0

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Westbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Thu 11-Sep-14																
00:00	10	36	31.5	5.5	0	0	4	4	2	0	0	0	0	0	0	0
01:00	10	39.6	34.5	7.8	0	1	1	1	7	0	0	0	0	0	0	0
02:00	5	-	42	10	0	0	1	0	1	0	3	0	0	0	0	0
03:00	4	-	34.8	11.1	0	0	2	0	1	0	1	0	0	0	0	0
04:00	10	41	36	7.3	0	0	2	3	3	1	1	0	0	0	0	0
05:00	45	44	37.7	6.3	0	0	2	20	11	8	2	2	0	0	0	0
06:00	120	40.8	35.9	5.9	0	0	18	40	44	13	5	0	0	0	0	0
07:00	285	40	34.6	5.6	0	1	49	126	83	23	1	2	0	0	0	0
08:00	327	39.4	33.1	6.4	0	9	85	129	81	20	3	0	0	0	0	0
09:00	150	39.5	33.2	6.3	0	0	47	62	26	11	4	0	0	0	0	0
10:00	122	39.7	33.3	6.1	0	0	37	49	23	12	1	0	0	0	0	0
11:00	116	38.9	33.9	5.7	0	0	25	56	29	2	3	1	0	0	0	0
12:00	123	40.7	33.8	7.5	0	1	42	30	33	12	3	1	1	0	0	0
13:00	129	40.3	34.5	6	0	0	29	46	40	12	2	0	0	0	0	0
14:00	134	39.9	33.9	6.1	0	0	33	60	26	13	1	1	0	0	0	0
15:00	156	39.3	34	5.7	0	0	35	67	45	6	2	1	0	0	0	0
16:00	151	40.8	35.4	5.7	0	0	24	58	48	18	3	0	0	0	0	0
17:00	135	40.7	34.6	6.6	0	1	27	61	27	13	4	2	0	0	0	0
18:00	129	41.3	35.1	6	0	0	22	58	28	19	1	1	0	0	0	0
19:00	85	40.4	34.1	6.8	0	1	21	32	20	7	4	0	0	0	0	0
20:00	52	40.6	35	7	0	0	12	18	15	3	3	1	0	0	0	0
21:00	25	42.8	37.1	6.2	0	0	2	10	7	5	0	1	0	0	0	0
22:00	29	39	32.8	6.1	0	0	10	10	7	2	0	0	0	0	0	0
23:00	11	42.4	35.8	6.6	0	0	2	4	2	3	0	0	0	0	0	0
12H,7-19	1957	40	34	6.2	0	12	455	802	489	161	28	9	1	0	0	0
16H,6-22	2239	40.2	34.2	6.2	0	13	508	902	575	189	40	11	1	0	0	0
18H,6-24	2279	40.2	34.2	6.2	0	13	520	916	584	194	40	11	1	0	0	0
24H,0-24	2363	40.3	34.3	6.3	0	14	532	944	609	203	47	13	1	0	0	0

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Westbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Fri 12-Sep-14																
00:00	6	-	34.8	10.3	0	0	3	0	1	1	1	0	0	0	0	0
01:00	4	-	35.4	7.5	0	0	1	1	1	1	0	0	0	0	0	0
02:00	5	-	33	4.6	0	0	1	3	1	0	0	0	0	0	0	0
03:00	5	-	33	4.6	0	0	1	3	1	0	0	0	0	0	0	0
04:00	9	-	36	5.2	0	0	1	3	4	1	0	0	0	0	0	0
05:00	50	43.2	37	6.6	0	0	7	14	17	9	2	1	0	0	0	0
06:00	126	40.1	35.4	5.1	0	0	14	56	45	8	3	0	0	0	0	0
07:00	286	39.4	33.8	5.9	1	1	61	137	63	18	4	1	0	0	0	0
08:00	272	40.1	33.6	6.4	0	1	77	108	54	24	8	0	0	0	0	0
09:00	145	40.1	34	6.7	0	0	38	61	29	12	2	2	1	0	0	0
10:00	94	40	34.3	6	0	0	20	42	22	7	3	0	0	0	0	0
11:00	141	40.1	34.4	6	0	0	32	54	41	12	1	1	0	0	0	0
12:00	124	40.7	36	6.3	0	0	16	51	40	11	3	1	2	0	0	0
13:00	135	38.6	32.6	5.8	0	0	46	51	33	4	1	0	0	0	0	0
14:00	118	39.9	34.4	5.7	0	0	26	42	41	8	1	0	0	0	0	0
15:00	174	40.8	34.3	7	0	3	46	49	51	20	5	0	0	0	0	0
16:00	145	42.5	35.8	6.6	0	2	23	45	45	26	4	0	0	0	0	0
17:00	167	40.2	34.8	6	0	0	34	61	55	12	5	0	0	0	0	0
18:00	105	42.6	36	6.2	0	0	15	41	27	18	3	1	0	0	0	0
19:00	87	39.6	33.4	6.4	0	0	26	36	16	6	3	0	0	0	0	0
20:00	63	40.2	33.8	6.7	0	0	20	18	18	5	2	0	0	0	0	0
21:00	32	40.5	34	7.7	0	0	11	9	7	3	1	1	0	0	0	0
22:00	32	38.8	33.5	5.3	0	0	8	12	12	0	0	0	0	0	0	0
23:00	17	39	33.8	5.6	0	0	4	7	5	1	0	0	0	0	0	0
12H,7-19	1906	40.3	34.3	6.3	1	7	434	742	501	172	40	6	3	0	0	0
16H,6-22	2214	40.3	34.4	6.3	1	7	505	861	587	194	49	7	3	0	0	0
18H,6-24	2263	40.3	34.3	6.3	1	7	517	880	604	195	49	7	3	0	0	0
24H,0-24	2342	40.3	34.4	6.3	1	7	531	904	629	207	52	8	3	0	0	0

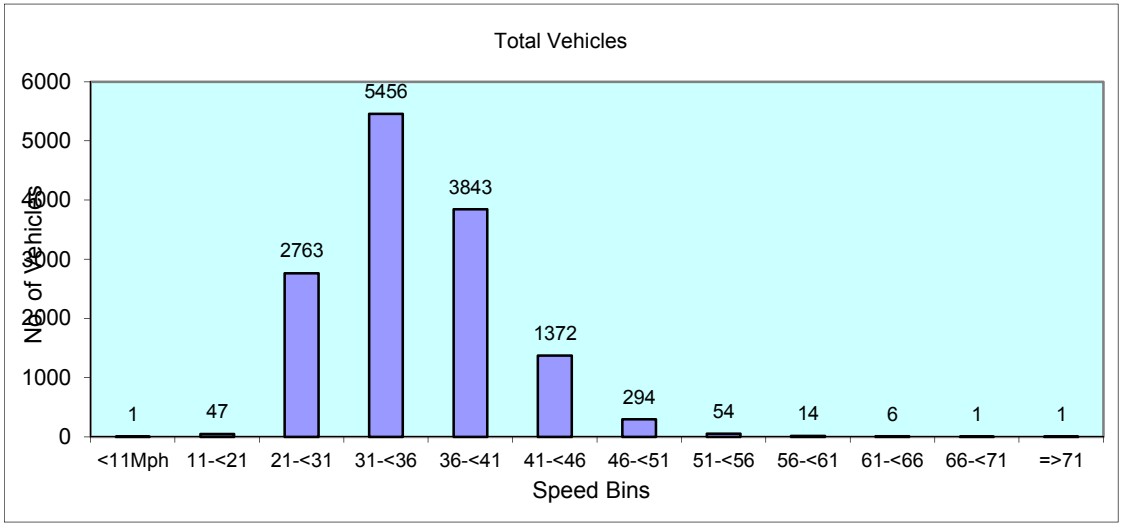
17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Westbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Sat 13-Sep-14																
00:00	11	38.9	35.1	4.2	0	0	1	5	5	0	0	0	0	0	0	0
01:00	5	-	36	6.7	0	0	1	1	2	1	0	0	0	0	0	0
02:00	5	-	37	6.6	0	0	1	0	3	1	0	0	0	0	0	0
03:00	3	-	31	4.5	0	0	1	2	0	0	0	0	0	0	0	0
04:00	6	-	34.8	5.1	0	0	1	2	3	0	0	0	0	0	0	0
05:00	8	-	37.9	5.1	0	0	0	4	1	3	0	0	0	0	0	0
06:00	32	40	34.9	5.6	0	0	6	11	12	3	0	0	0	0	0	0
07:00	55	43.7	36.5	8.2	0	1	10	13	19	6	5	0	0	1	0	0
08:00	57	43.5	37.3	6.1	0	0	6	17	20	10	4	0	0	0	0	0
09:00	63	41	35.7	5.7	0	0	9	24	20	9	1	0	0	0	0	0
10:00	69	39.8	34	6.8	0	1	17	25	20	3	2	1	0	0	0	0
11:00	79	40.9	34.4	6.6	0	2	15	30	20	12	0	0	0	0	0	0
12:00	79	42.3	36.9	5.4	0	0	7	25	31	14	2	0	0	0	0	0
13:00	75	40.9	36.5	5.3	0	0	5	32	27	8	2	1	0	0	0	0
14:00	79	40.5	35.4	5.9	0	1	9	35	24	7	3	0	0	0	0	0
15:00	88	40.6	35.1	6	0	0	17	30	30	9	2	0	0	0	0	0
16:00	84	41.8	36.2	6	0	1	9	30	29	12	3	0	0	0	0	0
17:00	93	40.6	35.1	6.5	0	0	20	32	29	7	4	1	0	0	0	0
18:00	88	42.2	36.1	6.1	0	0	14	28	29	14	3	0	0	0	0	0
19:00	54	40.7	35.1	6.3	0	1	6	28	11	5	3	0	0	0	0	0
20:00	44	38	31.9	6.4	0	1	16	16	10	0	1	0	0	0	0	0
21:00	33	39.3	34.8	4.6	0	0	3	20	7	3	0	0	0	0	0	0
22:00	29	40.4	35.1	5.4	0	0	4	14	7	4	0	0	0	0	0	0
23:00	17	37.2	31	6.6	0	1	6	6	4	0	0	0	0	0	0	0
12H,7-19	909	41.4	35.7	6.3	0	6	138	321	298	111	31	3	0	1	0	0
16H,6-22	1072	41	35.5	6.2	0	8	169	396	338	122	35	3	0	1	0	0
18H,6-24	1118	41	35.4	6.2	0	9	179	416	349	126	35	3	0	1	0	0
24H,0-24	1156	40.9	35.4	6.2	0	9	184	430	363	131	35	3	0	1	0	0

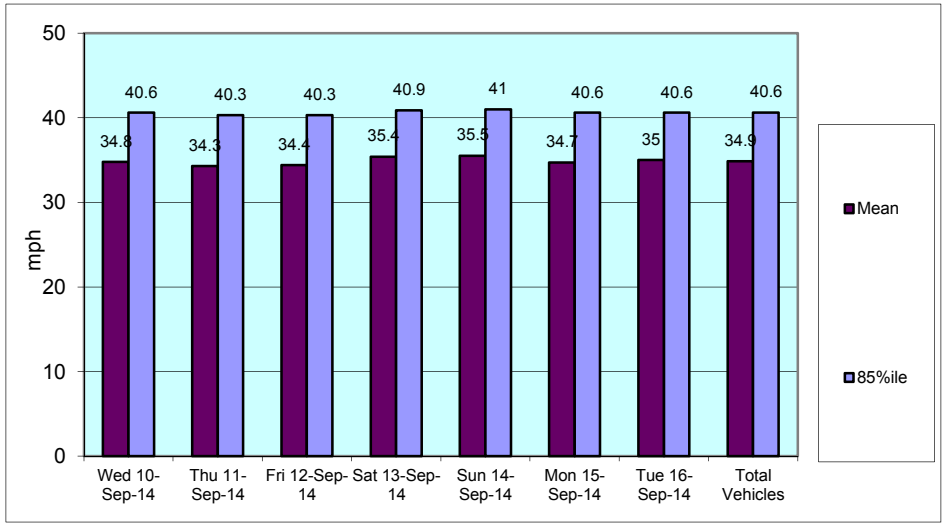
17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Westbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Sun 14-Sep-14																
00:00	9	-	32.1	5.4	0	0	3	4	2	0	0	0	0	0	0	0
01:00	14	39.7	35.3	5.2	0	0	2	5	6	1	0	0	0	0	0	0
02:00	8	-	39.1	5.1	0	0	0	3	1	4	0	0	0	0	0	0
03:00	6	-	36.8	4.3	0	0	0	3	2	1	0	0	0	0	0	0
04:00	5	-	36.5	3.1	0	0	0	2	3	0	0	0	0	0	0	0
05:00	5	-	35	6.6	0	0	1	2	1	1	0	0	0	0	0	0
06:00	17	39.7	35.4	4.5	0	0	1	10	4	2	0	0	0	0	0	0
07:00	48	42.1	36.3	6.3	0	0	7	16	16	6	3	0	0	0	0	0
08:00	31	41.7	36.8	5.3	0	0	3	9	13	6	0	0	0	0	0	0
09:00	59	40.5	36.3	6.9	0	0	7	22	23	4	2	0	0	0	1	0
10:00	62	42.8	37	6.1	0	0	6	21	22	9	3	1	0	0	0	0
11:00	81	40.5	34.3	6.5	0	3	10	42	15	9	2	0	0	0	0	0
12:00	85	41.7	35.8	5.8	0	0	9	43	18	12	2	1	0	0	0	0
13:00	82	40.6	34.8	6.2	0	1	14	35	21	9	2	0	0	0	0	0
14:00	73	40.7	36.3	6.2	0	0	6	36	20	7	1	2	1	0	0	0
15:00	76	41.1	35.6	8.2	0	1	14	28	21	7	2	2	0	0	0	1
16:00	79	40.3	34.1	6	0	0	18	35	16	9	1	0	0	0	0	0
17:00	68	40.3	35.4	5.4	0	0	7	35	18	5	3	0	0	0	0	0
18:00	71	40.9	36.2	5.7	0	0	8	26	26	8	3	0	0	0	0	0
19:00	59	42.7	36.3	7.7	0	0	11	19	17	8	1	2	0	1	0	0
20:00	37	40.6	35.2	6.1	0	0	7	13	12	4	1	0	0	0	0	0
21:00	42	39.1	33.6	5.9	0	0	11	18	10	2	1	0	0	0	0	0
22:00	22	39.2	34.2	7.4	0	0	6	9	5	0	1	1	0	0	0	0
23:00	13	38.8	35.2	7	0	0	3	4	4	1	1	0	0	0	0	0
12H,7-19	815	41.1	35.6	6.3	0	5	109	348	229	91	24	6	1	0	1	1
16H,6-22	970	41	35.6	6.4	0	5	139	408	272	107	27	8	1	1	1	1
18H,6-24	1005	41	35.5	6.4	0	5	148	421	281	108	29	9	1	1	1	1
24H,0-24	1052	41	35.5	6.4	0	5	154	440	296	115	29	9	1	1	1	1

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Westbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Mon 15-Sep-14																
00:00	11	45.6	38.7	7.1	0	0	1	3	3	2	2	0	0	0	0	0
01:00	9	-	35.2	7.2	0	0	2	3	3	0	1	0	0	0	0	0
02:00	1	-	33.5	-	0	0	0	1	0	0	0	0	0	0	0	0
03:00	2	-	29.8	5.3	0	0	1	1	0	0	0	0	0	0	0	0
04:00	10	41	36	6.5	0	0	2	2	4	2	0	0	0	0	0	0
05:00	41	43.2	37.6	6.1	0	1	2	10	17	10	1	0	0	0	0	0
06:00	111	40.9	35.5	5.6	0	0	14	51	29	14	3	0	0	0	0	0
07:00	260	40.4	34.7	5.9	0	0	51	105	74	26	3	1	0	0	0	0
08:00	344	39.6	33.8	5.9	0	2	81	138	98	21	4	0	0	0	0	0
09:00	156	40	34.6	5.5	0	0	30	63	49	13	1	0	0	0	0	0
10:00	107	40.1	34.1	6.7	0	0	29	41	25	7	3	2	0	0	0	0
11:00	120	40	33.9	6.4	0	1	29	50	27	10	2	1	0	0	0	0
12:00	121	41.9	35	6.5	0	0	28	40	31	19	3	0	0	0	0	0
13:00	140	40.5	35.4	6	0	0	20	64	38	12	5	0	1	0	0	0
14:00	123	41	35	6.6	0	0	28	40	36	14	4	1	0	0	0	0
15:00	150	40	34.7	5.9	0	0	28	65	42	10	4	1	0	0	0	0
16:00	141	41.9	35.2	6.7	0	1	33	35	46	23	3	0	0	0	0	0
17:00	147	41.9	34.9	6.7	0	1	35	44	40	24	3	0	0	0	0	0
18:00	119	39.7	33.1	6.2	0	1	35	49	21	13	0	0	0	0	0	0
19:00	92	39.7	34.3	5.5	0	0	18	42	24	7	1	0	0	0	0	0
20:00	59	41.4	35	6.1	0	0	11	25	13	9	1	0	0	0	0	0
21:00	25	40.4	35.9	8.5	0	0	6	6	10	1	1	0	0	1	0	0
22:00	23	39.8	34.8	5.5	0	0	4	9	8	2	0	0	0	0	0	0
23:00	8	-	37.3	5.4	0	0	0	4	3	0	1	0	0	0	0	0
12H,7-19	1928	40.5	34.5	6.2	0	6	427	734	527	192	35	6	1	0	0	0
16H,6-22	2215	40.5	34.6	6.2	0	6	476	858	603	223	41	6	1	1	0	0
18H,6-24	2246	40.5	34.6	6.2	0	6	480	871	614	225	42	6	1	1	0	0
24H,0-24	2320	40.6	34.7	6.2	0	7	488	891	641	239	46	6	1	1	0	0

17916			UPPER HEYFORD				Site No: 17916001				Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14							Channel: Westbound										
Time Period	Total Vehicles	85%ile Speed	Mean Speed	Stand Dev.	<11Mph	11-<21	21-<31	31-<36	36-<41	41-<46	46-<51	51-<56	56-<61	61-<66	66-<71	=>71
Tue 16-Sep-14																
00:00	12	35.1	31.4	4.7	0	0	4	7	1	0	0	0	0	0	0	0
01:00	5	-	33.5	7.9	0	0	2	1	1	1	0	0	0	0	0	0
02:00	3	-	36	11.5	0	0	1	1	0	0	1	0	0	0	0	0
03:00	2	-	36	3.5	0	0	0	1	1	0	0	0	0	0	0	0
04:00	8	-	34.4	4.4	0	0	1	4	3	0	0	0	0	0	0	0
05:00	51	43	37.5	5.8	0	0	3	19	16	12	0	0	1	0	0	0
06:00	121	40.9	35.3	6.1	0	0	22	44	37	14	4	0	0	0	0	0
07:00	264	40.4	35.1	5.7	0	0	42	113	78	24	6	1	0	0	0	0
08:00	305	39	33.6	5.4	0	0	70	141	79	13	2	0	0	0	0	0
09:00	128	40.6	35.1	5.7	0	0	21	54	36	15	2	0	0	0	0	0
10:00	105	41.3	35.5	6	0	0	17	42	29	13	4	0	0	0	0	0
11:00	116	40.2	34.5	5.9	0	0	24	48	31	10	3	0	0	0	0	0
12:00	110	42.1	36.6	5.5	0	0	11	39	39	18	3	0	0	0	0	0
13:00	129	40.6	35.6	5.6	0	0	18	49	46	13	3	0	0	0	0	0
14:00	131	41.9	35.3	7.2	0	0	33	34	41	16	5	1	1	0	0	0
15:00	152	40.6	34.7	5.8	0	0	30	61	41	19	1	0	0	0	0	0
16:00	166	40.7	35.6	5.5	0	0	23	64	57	20	2	0	0	0	0	0
17:00	159	41.8	35.7	6.4	0	0	26	60	45	23	3	1	0	1	0	0
18:00	123	40.4	34.3	6.1	0	1	26	50	31	14	1	0	0	0	0	0
19:00	92	40.9	35.4	6.5	0	0	15	41	22	10	2	1	1	0	0	0
20:00	49	37.8	32.4	6.4	0	1	15	23	6	3	1	0	0	0	0	0
21:00	43	39.3	33.5	6.2	0	0	14	10	18	0	1	0	0	0	0	0
22:00	18	39.5	35.3	4.4	0	0	1	11	4	2	0	0	0	0	0	0
23:00	10	39.8	35	5.9	0	0	2	3	4	1	0	0	0	0	0	0
12H,7-19	1888	40.6	35	5.9	0	1	341	755	553	198	35	3	1	1	0	0
16H,6-22	2193	40.6	34.9	6	0	2	407	873	636	225	43	4	2	1	0	0
18H,6-24	2221	40.6	34.9	6	0	2	410	887	644	228	43	4	2	1	0	0
24H,0-24	2302	40.6	35	6	0	2	421	920	666	241	44	4	3	1	0	0

17916		UPPER HEYFORD			Site No: 17916001					Location	Camp Road, Upper Heyford (LC)					
Wed 10-Sep-14 to Tue 16-Sep-14					Channel: Westbound											
Time Period	**Total Vehicles**	**85%ile Speed**	**Mean Speed**	**Stand Dev.**	**<11Mph**	**11-<21**	**21-<31**	**31-<36**	**36-<41**	**41-<46**	**46-<51**	**51-<56**	**56-<61**	**61-<66**	**66-<71**	**=>71**
Daily Totals																
Wed 10-Sep-14	**2317**	40.6	34.8	6.2	0	3	453	927	639	236	41	11	5	2	0	0
Thu 11-Sep-14	**2363**	40.3	34.3	6.3	0	14	532	944	609	203	47	13	1	0	0	0
Fri 12-Sep-14	**2342**	40.3	34.4	6.3	1	7	531	904	629	207	52	8	3	0	0	0
Sat 13-Sep-14	**1156**	40.9	35.4	6.2	0	9	184	430	363	131	35	3	0	1	0	0
Sun 14-Sep-14	**1052**	41	35.5	6.4	0	5	154	440	296	115	29	9	1	1	1	1
Mon 15-Sep-14	**2320**	40.6	34.7	6.2	0	7	488	891	641	239	46	6	1	1	0	0
Tue 16-Sep-14	**2302**	40.6	35	6	0	2	421	920	666	241	44	4	3	1	0	0
Total Vehicles																
[--]	**13852**	40.6	34.9	6.2	1	47	2763	5456	3843	1372	294	54	14	6	1	1

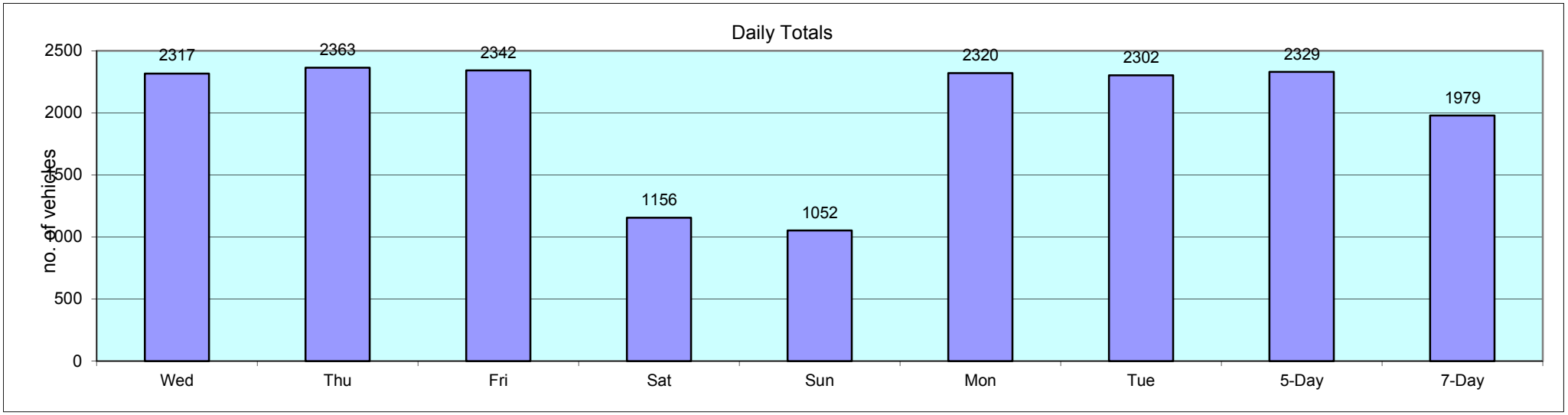




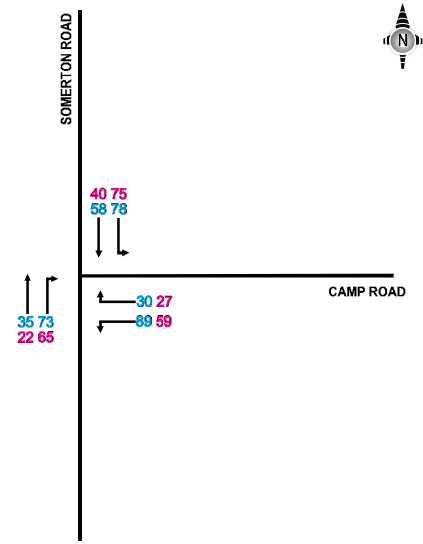
17916		UPPER HEYFORD		Site No: 17916001 Channel: Westbound		Location	Camp Road, Upper Heyford (LC)		
TIME PERIOD	Wed 10/09/14	Thu 11/09/14	Fri 12/09/14	Sat 13/09/14	Sun 14/09/14	Mon 15/09/14	Tue 16/09/14	5-Day Av	7-Day Av
Week Begin: 10-Sep-14									
00:00	**7**	10	6	11	9	11	12	9	9
01:00	**10**	10	4	5	14	9	5	8	8
02:00	**6**	5	5	5	8	1	3	4	5
03:00	**2**	4	5	3	6	2	2	3	3
04:00	**7**	10	9	6	5	10	8	9	8
05:00	**49**	45	50	8	5	41	51	47	36
06:00	**101**	120	126	32	17	111	121	116	90
07:00	**284**	285	286	55	48	260	264	276	212
08:00	**298**	327	272	57	31	344	305	309	233
09:00	**148**	150	145	63	59	156	128	145	121
10:00	**129**	122	94	69	62	107	105	111	98
11:00	**110**	116	141	79	81	120	116	121	109
12:00	**130**	123	124	79	85	121	110	122	110
13:00	**150**	129	135	75	82	140	129	137	120
14:00	**108**	134	118	79	73	123	131	123	109
15:00	**138**	156	174	88	76	150	152	154	133
16:00	**130**	151	145	84	79	141	166	147	128
17:00	**160**	135	167	93	68	147	159	154	133
18:00	**139**	129	105	88	71	119	123	123	111
19:00	**94**	85	87	54	59	92	92	90	80
20:00	**56**	52	63	44	37	59	49	56	51
21:00	**29**	25	32	33	42	25	43	31	33
22:00	**21**	29	32	29	22	23	18	25	25
23:00	**11**	11	17	17	13	8	10	11	12
12H,7-19	**1924**	**1957**	**1906**	**909**	**815**	**1928**	**1888**	**1921**	**1618**
16H,6-22	**2204**	**2239**	**2214**	**1072**	**970**	**2215**	**2193**	**2213**	**1872**
18H,6-24	**2236**	**2279**	**2263**	**1118**	**1005**	**2246**	**2221**	**2249**	**1910**
24H,0-24	**2317**	**2363**	**2342**	**1156**	**1052**	**2320**	**2302**	**2329**	**1979**
Am	**08:00**	**08:00**	**07:00**	**11:00**	**11:00**	**08:00**	**08:00**	**-**	**-**
Peak	**298**	**327**	**286**	**79**	**81**	**344**	**305**	**312**	**246**
Pm	**17:00**	**15:00**	**15:00**	**17:00**	**12:00**	**15:00**	**16:00**	**-**	**-**
Peak	**160**	**156**	**174**	**93**	**85**	**150**	**166**	**161**	**141**

17916	UPPER HEYFORD	Site No: 17916001	Location	Camp Road, Upper Heyford (LC)
		Channel: Westbound		

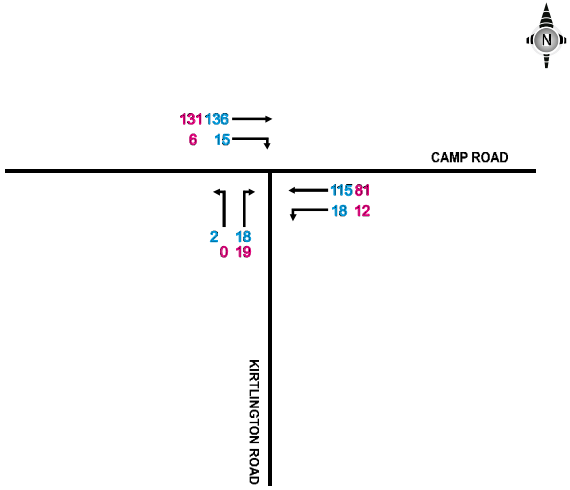
TIME PERIOD	Wed 10/09/14	Thu 11/09/14	Fri 12/09/14	Sat 13/09/14	Sun 14/09/14	Mon 15/09/14	Tue 16/09/14	5-Day Av	7-Day Av



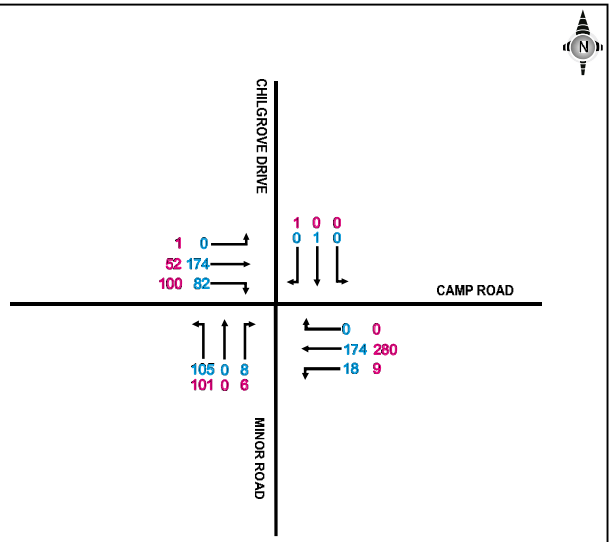
APPENDIX C



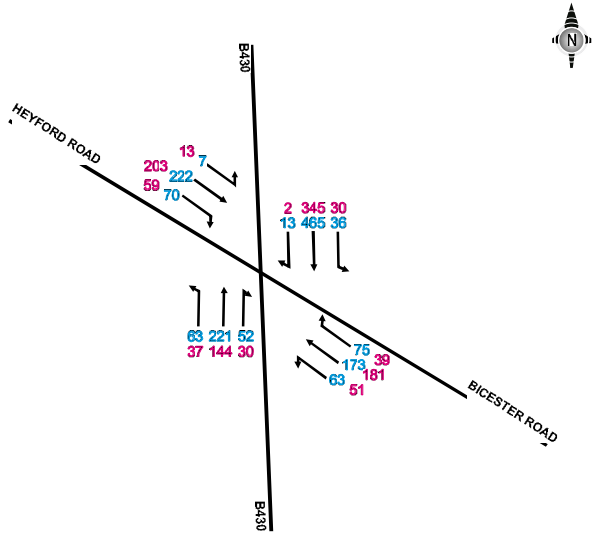
AM Peak Observed Flows
Junction 1 : Somerton Road / Camp Road



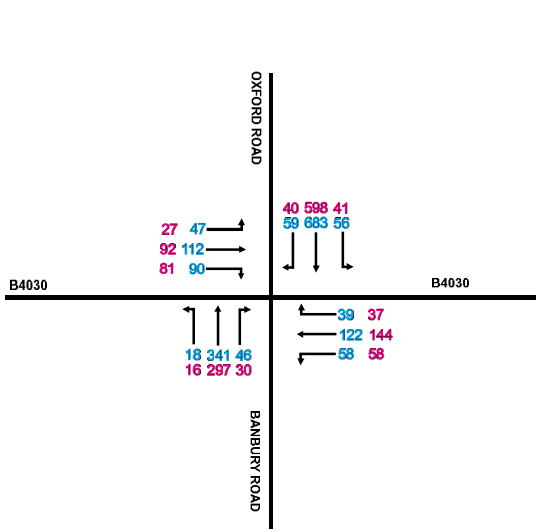
AM Peak Observed Flows
Junction 2 : Camp Road / Kirtlington Road



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

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Client
DORCHESTER GROUP

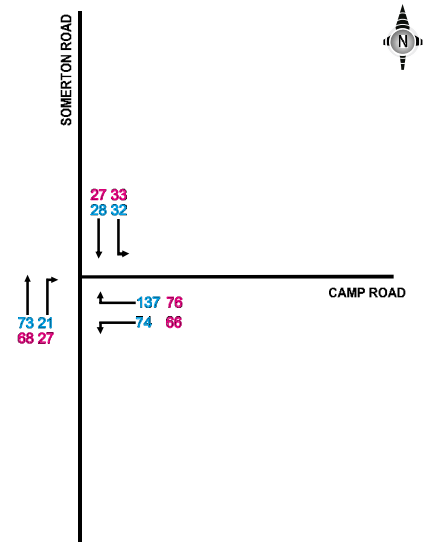
OUTLINE APPLICATION FOR UP TO 60 DWELLINGS ON THE FORMER PRIMARY SCHOOL SITE, HEYFORD PARK
TRANSPORTATION STATEMENT

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

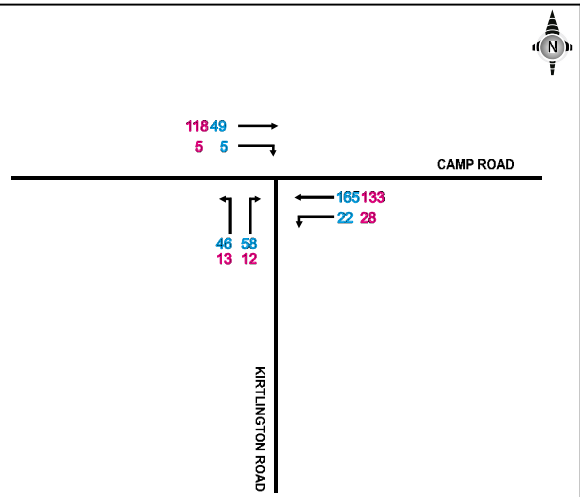
Mark	Revision	Drawn	Date	Chkd
Date	18.11.2013			
Scale	A3 - N.T.S			
Drawn by	ASa			
Checked by	SP			

FIGURE 4 -

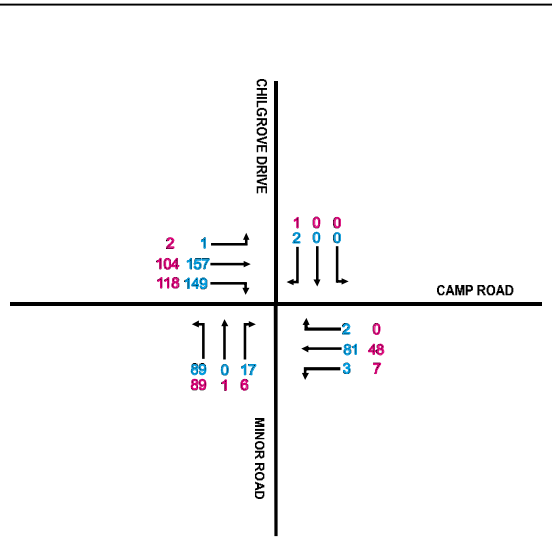
J:\23824 Heyford Park\Technical\Corel\Supplementary TS\Figure 4 - AM 2006 & 2013 Observed Flows.cdr



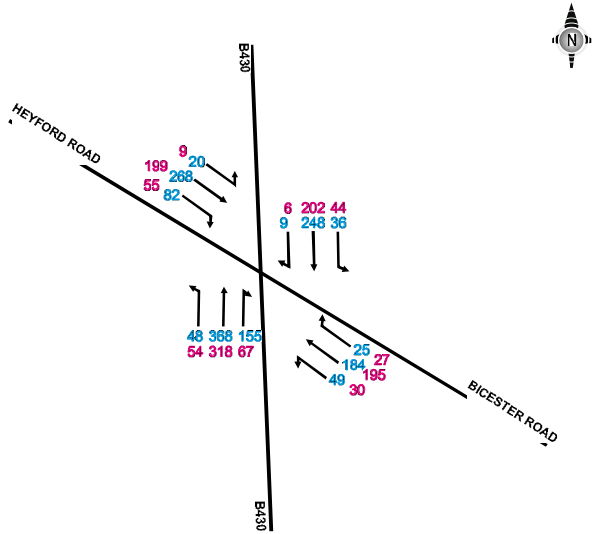
AM Peak Observed Flows
Junction 1 : Somerton Road / Camp Road



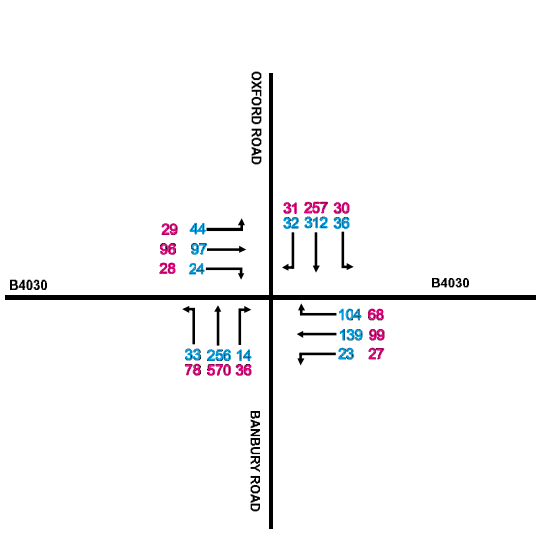
AM Peak Observed Flows
Junction 2 : Camp Road / Kirtlington Road



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

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Client
DORCHESTER GROUP

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

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

Mark	Revision	Drawn	Date	Chkd

Date	18.11.2013
Scale	A3 - N.T.S
Drawn by	ASa
Checked by	SP

FIGURE 5 -

J:\23824 Heyford Park\Technical\Corel\Supplementary TS\Figure 5 - PM 2006 & 2013 Observed Flows.cdr

APPENDIX D

K&M TRAFFIC SURVEYS

DATE : THURSDAY 11TH SEPTEMBER 2014

LOCATION : EP BARRUS ACCESS, BICESTER

	EP BARRUS SITE ACCESS IN						EP BARRUS SITE ACCESS OUT					
	CAR	HGV	BUS	MCY	PCY	TOTAL	CAR	HGV	BUS	MCY	PCY	TOTAL
0630-0645	4	0	0	0	2	**6**	0	0	0	0		**0**
0645-0700	6	0	0	0	3	**9**	0	0	0	0	0	**0**
0700-0715	4	0	0	0	0	**4**	0	0	0	0	0	**0**
0715-0730	7	0	0	1	1	**9**	2	0	0	0	0	**2**
0730-0745	7	0	0	0	1	**8**	1	0	0	0	0	**1**
0745-0800	6	0	0	0	3	**9**	0	0	0	0	0	**0**
0800-0815	9	1	0	1	0	**11**	2	0	0	0	0	**2**
0815-0830	15	0	0	0	1	**16**	1	0	0	0	0	**1**
0830-0845	16	0	0	0	0	**16**	2	1	0	0	0	**3**
0845-0900	17	0	0	0	0	**17**	1	0	0	0	0	**1**
0900-0915	12	0	0	0	0	**12**	3	0	0	0	0	**3**
0915-0930	5	0	0	0	0	**5**	3	0	0	0	0	**3**
0930-0945	6	1	0	0	0	**7**	4	1	0	0	0	**5**
0945-1000	5	0	0	0	0	**5**	0	0	0	0	0	**0**
1000-1015	2	0	0	0	0	**2**	2	0	0	0	0	**2**
1015-1030	3	0	0	0	0	**3**	3	0	0	0	0	**3**
1030-1045	1	0	0	0	0	**1**	1	0	0	0	0	**1**
1045-1100	0	0	0	0	0	**0**	3	0	0	0	0	**3**
1100-1115	0	0	0	0	1	**1**	3	0	0	0	0	**3**
1115-1130	1	0	0	0	0	**1**	3	0	0	0	0	**3**
1130-1145	1	1	0	0	0	**2**	3	1	0	0	0	**4**
1145-1200	2	0	0	0	0	**2**	3	0	0	0	0	**3**
1200-1215	1	0	0	0	0	**1**	2	0	0	0	0	**2**
1215-1230	0	0	0	0	0	**0**	7	0	0	0	0	**7**
1230-1245	3	0	0	0	0	**3**	11	0	0	0	0	**11**
1245-1300	3	1	0	0	0	**4**	3	1	0	0	0	**4**
1300-1315	6	0	0	0	0	**6**	1	0	0	0	0	**1**
1315-1330	7	0	0	0	0	**7**	6	0	0	0	0	**6**
1330-1345	6	1	0	0	0	**7**	6	0	0	0	0	**6**
1345-1400	8	0	0	0	0	**8**	6	1	0	0	1	**8**
1400-1415	5	1	0	0	0	**6**	6	1	0	0	0	**7**
1415-1430	2	0	0	0	0	**2**	3	0	0	0	0	**3**
1430-1445	1	0	0	0	0	**1**	3	0	0	0	0	**3**
1445-1500	4	0	0	0	0	**4**	5	0	0	0	0	**5**
1500-1515	5	1	0	0	0	**6**	3	0	0	0	1	**4**
1515-1530	1	0	0	0	0	**1**	5	0	0	0	0	**5**
1530-1545	0	0	0	0	1	**1**	3	0	0	0	0	**3**
1545-1600	2	0	0	0	0	**2**	0	1	0	0	0	**1**
1600-1615	0	0	0	0	0	**0**	7	0	0	0	2	**9**
1615-1630	3	0	0	0	0	**3**	2	0	0	0	0	**2**
1630-1645	1	0	0	0	0	**1**	8	0	0	0	0	**8**
1645-1700	3	0	0	0	1	**4**	2	0	0	0	0	**2**
1700-1715	4	0	0	0	0	**4**	30	0	0	1	5	**36**
1715-1730	2	0	0	0	0	**2**	13	0	0	0	0	**13**
1730-1745	0	1	0	0	0	**1**	12	0	0	0	0	**12**
1745-1800	0	0	0	0	0	**0**	8	0	0	0	0	**8**
1800-1815	1	0	0	0	0	**1**	3	1	0	0	0	**4**
1815-1830	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0630-1830	**197**	**8**	**0**	**2**	**14**	**221**	**195**	**8**	**0**	**1**	**9**	**213**

K&M TRAFFIC SURVEYS

DATE : THURSDAY 11TH SEPTEMBER 2014

LOCATION : EP BARRUS ACCESS, BICESTER

	EP BARRUS SITE ACCESS IN						EP BARRUS SITE ACCESS OUT					
	CAR	HGV	BUS	MCY	PCY	**TOTAL**	CAR	HGV	BUS	MCY	PCY	**TOTAL**
0700-0800	21	0	0	1	6	**28**	2	0	0	0	0	**2**
0715-0815	24	0	0	1	5	**30**	3	0	0	0	0	**3**
0730-0830	24	0	0	1	5	**30**	3	0	0	0	0	**3**
0745-0845	29	1	0	2	5	**37**	5	0	0	0	0	**5**
0800-0900	37	1	0	1	5	**44**	4	0	0	0	0	**4**
0815-0915	46	1	0	1	4	**52**	5	1	0	0	0	**6**
0830-0930	57	1	0	1	1	**60**	6	1	0	0	0	**7**
0845-0945	60	0	0	0	1	**61**	7	1	0	0	0	**8**
0900-1000	50	0	0	0	0	**50**	9	1	0	0	0	**10**
0915-1015	40	1	0	0	0	**41**	11	1	0	0	0	**12**
0930-1030	28	1	0	0	0	**29**	10	1	0	0	0	**11**
0945-1045	18	1	0	0	0	**19**	9	1	0	0	0	**10**
1000-1100	16	1	0	0	0	**17**	9	1	0	0	0	**10**
1015-1115	11	0	0	0	0	**11**	6	0	0	0	0	**6**
1030-1130	6	0	0	0	0	**6**	9	0	0	0	0	**9**
1045-1145	4	0	0	0	1	**5**	10	0	0	0	0	**10**
1100-1200	2	0	0	0	1	**3**	10	0	0	0	0	**10**
1115-1215	2	1	0	0	1	**4**	12	1	0	0	0	**13**
1130-1230	4	1	0	0	1	**6**	12	1	0	0	0	**13**
1145-1245	5	1	0	0	0	**6**	11	1	0	0	0	**12**
1200-1300	4	1	0	0	0	**5**	15	1	0	0	0	**16**
1215-1315	6	0	0	0	0	**6**	23	0	0	0	0	**23**
1230-1330	7	1	0	0	0	**8**	23	1	0	0	0	**24**
1245-1345	12	1	0	0	0	**13**	22	1	0	0	0	**23**
1300-1400	19	1	0	0	0	**20**	21	1	0	0	0	**22**
1315-1415	22	2	0	0	0	**24**	16	1	0	0	0	**17**
1330-1430	27	1	0	0	0	**28**	19	1	0	0	1	**21**
1345-1445	26	2	0	0	0	**28**	24	2	0	0	1	**27**
1400-1500	21	2	0	0	0	**23**	21	2	0	0	1	**24**
1415-1515	16	1	0	0	0	**17**	18	2	0	0	1	**21**
1430-1530	12	1	0	0	0	**13**	17	1	0	0	0	**18**
1445-1545	12	1	0	0	0	**13**	14	0	0	0	1	**15**
1500-1600	11	1	0	0	0	**12**	16	0	0	0	1	**17**
1515-1615	10	1	0	0	1	**12**	16	0	0	0	1	**17**
1530-1630	8	1	0	0	1	**10**	11	1	0	0	1	**13**
1545-1645	3	0	0	0	1	**4**	15	1	0	0	2	**18**
1600-1700	5	0	0	0	1	**6**	12	1	0	0	2	**15**
1615-1715	6	0	0	0	0	**6**	17	1	0	0	2	**20**
1630-1730	7	0	0	0	1	**8**	19	0	0	0	2	**21**
1645-1745	11	0	0	0	1	**12**	42	0	0	1	5	**48**
1700-1800	10	0	0	0	1	**11**	53	0	0	1	5	**59**
1715-1815	9	1	0	0	1	**11**	57	0	0	1	5	**63**
1730-1830	6	1	0	0	0	**7**	63	0	0	1	5	**69**
1745-1845	3	1	0	0	0	**4**	36	1	0	0	0	**37**
1800-1900	1	1	0	0	0	**2**	23	1	0	0	0	**24**

HOURLY TOTALS

APPENDIX E

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Manual Selection

Friday 22/01/2010 Time 1810 Serious at CAMP RD APPROX 90M W OF J/W GATE 8 UPPER HEYFORD

E: 451153 N: 225807 Junction Detail: Not within 20m of j Control:
Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit
Vehicle Reference 1 Pedal Cycle Moving from to Going ahead other On main carriageway

Casualty Reference: 1 Age: 50 Female Driver/rider Severity: Serious Injured by vehicle: 1

Friday 03/08/2012 Time 0435 Slight at CAMP RD AT RBT J/W U/C RD ADJACENT TO POLICE STATION UPPER HEYFORD

E: 451452 N: 225765 Junction Detail: Roundabout Control: Give way or controlled
Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit
Vehicle Reference 1 Car Moving from E to W Going ahead other On main carriageway

Casualty Reference: 1 Age: 22 Male Driver/rider Severity: Slight Injured by vehicle: 1

Friday 23/08/2013 Time 0640 Slight at B430 TO UPPER HEYFORD RD APPROX 1.1KM W OF J/W B430 ARDLEY

E: 452686 N: 225723 Junction Detail: Not within 20m of j Control:
Fine without high winds Road surface Dry Daylight
Vehicle Reference 1 Van or Goods 3.5 to Moving from W to E Going ahead other On main carriageway

Vehicle Reference 2 Pedal Cycle Moving from W to E Going ahead other On main carriageway

Casualty Reference: 1 Age: 51 Female Driver/rider Severity: Slight Injured by vehicle: 2

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Manual Selection

Wednesday 05/03/2014 Time 0739 Slight at CAMP RD J/W CHILGROVE DRIVE UPPER HEYFORD

E: 452169 N: 225673 Junction Detail: T or staggered junct Control: Give way or controlled
Fine without high winds Road surface Wet/Damp Daylight
Vehicle Reference 1 Motor Cycle over 1 Moving from W to SE Going ahead right bend On main carriageway
Casualty Reference: 1 Age: 48 Male Driver/rider Severity: Slight Injured by vehicle: 1
Vehicle Reference 2 Car Moving from E to W Starting On main carriageway

Saturday 08/03/2014 Time 0826 Serious at CAMP RD J/W LARSEN RD UPPER HEYFORD

E: 451809 N: 225723 Junction Detail: T or staggered junct Control: Give way or controlled
Fine without high winds Road surface Dry Daylight
Vehicle Reference 1 Motorcycle over 500 Moving from E to W Going ahead other On main carriageway
Casualty Reference: 1 Age: 24 Male Driver/rider Severity: Serious Injured by vehicle: 1
Vehicle Reference 2 Minibus Moving from E to N Turning right On main carriageway
Casualty Reference: 2 Age: 37 Female Driver/rider Severity: Slight Injured by vehicle: 2

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months

Selection:
Selected using Manual Selection

Notes:

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	1	1	2
Pedal cycles	0	1	1	2
Horses & other	0	0	0	0
Total	0	2	3	5

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	2	2
Passenger	0	0	0	0
Motorcycle rider	0	1	1	2
Cyclist	0	1	1	2
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	2	4	6

Number of casualties meeting the criteria: **6**

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Friday 22/01/2010 Time 1810 Serious at CAMP RD APPROX 90M W OF J/W GATE 8 UPPER HEYFORD

E: 451153 N: 225807 Junction Detail: Not within 20m of j Control:
Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit

PC1 TRAV IN U/K DIRECTION FOUND UNCONSCIOUS IN ROAD BY PEDAL CYCLE - RIDER HAD NO RECOLLECTION OF INCIDENT AND APPEARS FROM INJURIES ETC THAT UNLIKELY THAT OTHER VEHICLE INVOLVED

Road Type Single carriageway Vehicles 1 Casualties 1 Police Ref. P2070110 Speed limit 30
Crossing: Control None within 50 metres Facilities No physical crossing facility within 50 metres Local Authority: Cherwell Parish: 0388
Road Section: Accident Type(s) SG

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Pedal Cycle Moving from to Going ahead other On main carriageway

No skidding, jack-knifing or overturning

First point of impact Did not impact Age of Driver 50 Sex of Driver Female Breath test Not applicable
Casualty Reference: 1 Age: 50 Female Driver/rider Severity: Serious Injured by vehicle: 1
Ped. Location Ped. Movement Ped. Direction
Ped. Injury Not applicable School pupil: Not a pupil

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months

Selection: **Notes:**

Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Friday 03/08/2012 Time 0435 Slight at CAMP RD AT RBT J/W U/C RD ADJACENT TO POLICE STATION UPPER HEYFORD

E: 451452 N: 225765 Junction Detail: Roundabout Control: Give way or controlled
Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit

C1 (22 YRS - GAVE POS BREATH TEST) TERAV W IN WET CONDITIONS ON CAMP RD APPEARS TO HAVE FALLEN ASLEEP & ENTERED RBT & LOST CONTROL CARRIED STRAIGHT ON OVER RBT & EXITED CWAY TO OSIDE HIT RD SIGN

Road Type Roundabout Vehicles 1 Casualties 1 Police Ref. P0370812 Speed limit 30
Crossing: Control None within 50 metres Facilities No physical crossing facility within 50 metres Local Authority: Cherwell Parish: 0388
Road Section: Accident Type(s) SG CM

Causation

	Factor:	Participant:	Confidence:
1st:	Impaired by alcohol	Vehicle 1	Very Likely
2nd:	Loss of control	Vehicle 1	Very Likely
3rd:	Failed to look properly	Vehicle 1	Very Likely
4th:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
5th:	Fatigue	Vehicle 1	Very Likely
6th:			

Vehicle Reference 1 Car Moving from E to W Going ahead other On main carriageway

No skidding, jack-knifing or overturning

First point of impact Front Age of Driver 22 Sex of Driver Male Breath test Positive
Casualty Reference: 1 Age: 22 Male Driver/rider Severity: Slight Injured by vehicle: 1
Ped. Location Ped. Movement Ped. Direction
Ped. Injury Not applicable School pupil: Not a pupil

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months

Selection: **Notes:**

Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Friday 23/08/2013 Time 0640 Slight at B430 TO UPPER HEYFORD RD APPROX 1.1KM W OF J/W B430 ARDLEY

E: 452686 N: 225723 Junction Detail: Not within 20m of j Control:
Fine without high winds Road surface Dry Daylight

C1 TRAV E ON B430 TOWARDS DAZZLING SUN HIT OSIDE OF PC2 TRAV E AHEAD OF C1 & RIDER FELL

Road Type Single carriageway Vehicles 2 Casualties 1 Police Ref. P2220813 Speed limit 60
Crossing: Control None within 50 metres Facilities No physical crossing facility within 50 metres Local Authority: Cherwell Parish: 0109
Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Dazzling sun	Vehicle 1	Very Likely
2nd:	Passing too close to cyclist, horse rider or pedestrian	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Van or Goods 3.5 to Moving from W to E Going ahead other On main carriageway

No skidding, jack-knifing or overturning

First point of impact Front Age of Driver 50 Sex of Driver Male Breath test Negative

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Vehicle Reference 2 Pedal Cycle Moving from W to E Going ahead other On main carriageway

No skidding, jack-knifing or overturning

First point of impact Back Age of Driver 51 Sex of Driver Female Breath test Not applicable

Casualty Reference: 1 Age: 51 Female Driver/rider Severity: Slight Injured by vehicle: 2

Ped. Location Ped. Movement Ped. Direction
Ped. Injury School pupil: Not a pupil

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Wednesday 05/03/2014 Time 0739 Slight at CAMP RD J/W CHILGROVE DRIVE UPPER HEYFORD

E: 452169 N: 225673 Junction Detail: T or staggered junct Control: Give way or controlled
Fine without high winds Road surface Wet/Damp Daylight

Road Type Single carriageway Vehicles 2 Casualties 1 Police Ref. P0320314 Speed limit 30
Crossing: Control None within 50 metres Facilities No physical crossing facility within 50 metres Local Authority: Cherwell Parish: 0388
Road Section: Accident Type(s) ZZ

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Motor Cycle over 1 Moving from W to SE Going ahead right bend On main carriageway

No skidding, jack-knifing or overturning

First point of impact Did not impact Age of Driver 48 Sex of Driver Male Breath test Negative
Casualty Reference: 1 Age: 48 Male Driver/rider Severity: Slight Injured by vehicle: 1

Ped. Location Ped. Movement Ped. Direction
Ped. Injury School pupil: Not a pupil

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Vehicle Reference 2 Car Moving from E to W Starting On main carriageway

No skidding, jack-knifing or overturning

First point of impact Did not impact Age of Driver 33 Sex of Driver Male Breath test Negative

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Saturday 08/03/2014 Time 0826 Serious at CAMP RD J/W LARSEN RD UPPER HEYFORD

E: 451809 N: 225723 Junction Detail: T or staggered junct Control: Give way or controlled
Fine without high winds Road surface Dry Daylight

Road Type Single carriageway Vehicles 2 Casualties 2 Police Ref. P1340314 Speed limit 30
Crossing: Control None within 50 metres Facilities No physical crossing facility within 50 metres Local Authority: Cherwell Parish: 0388
Road Section: Accident Type(s) IB

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Motorcycle over 500 Moving from E to W Going ahead other On main carriageway

No skidding, jack-knifing or overturning

First point of impact Nearside Age of Driver 24 Sex of Driver Male Breath test Negative
Casualty Reference: 1 Age: 24 Male Driver/rider Severity: Serious Injured by vehicle: 1

Ped. Location Ped. Movement Ped. Direction
Ped. Injury School pupil: Not a pupil

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months
Selection: **Notes:**
Selected using Build Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Vehicle Reference 2 Minibus Moving from E to N Turning right On main carriageway

No skidding, jack-knifing or overturning

First point of impact Offside Age of Driver 37 Sex of Driver Female Breath test Negative
Casualty Reference: 2 Age: 37 Female Driver/rider Severity: Slight Injured by vehicle: 2

Ped. Location Ped. Movement Ped. Direction
Ped. Injury School pupil: Not a pupil

Accidents between dates **01/01/2009** **and** **30/06/2014** (66) months

Selection:

Selected using Build Query :

Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION - NOT TO BE TRANSMITTED TO THIRD PARTIES:
The description of the accident circumstances (and causation factors if supplied) reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation.

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	1	1	2
Pedal cycles	0	1	1	2
Horses & other	0	0	0	0
Total	0	2	3	5

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	2	2
Passenger	0	0	0	0
Motorcycle rider	0	1	1	2
Cyclist	0	1	1	2
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	2	4	6

Number of casualties meeting the criteria: **6**

OXFORDSHIRE COUNTY COUNCIL - HIGHWAYS & TRANSPORT

Accidents between following dates:
01/01/2009 and 30/06/2014

OXFORDSHIRE COUNTY COUNCIL

Date drawn: 11/08/2014
Drawn by: CJM

Map centre:
easting. 451920, northing. 225740

APPENDIX F

Outline Application for up to 60 Dwellings on the Former Primary School Site, Heyford Park

Transport Statement

On behalf of **The Dorchester Group**

Project Ref: 23824-018 | Rev: 00 | Date: November 2013

Office Address: 10 Queen Square, Bristol, BS1 4NT
T: +44 (0)117 928 1560 F: +44 (0)117 928 1570 E: bristol@peterbrett.com

6 Development Impact

6.1.1 This section of the TS provides an overview of the likely vehicular travel demand resulting from the proposed development proposals.

6.2 Consented Vehicular Trip Rates

6.2.1 The ARUP TA included trip rates that were agreed with Oxfordshire County Council for the traffic generation of the consented residential development. The agreed residential trip rates that were used to calculate traffic generated by the total 1075 dwellings are presented in Section 9.1 of the Arup 2007 TA. The trip rates used and the resultant vehicle trips are detailed in **Table 3.1** below:

Table 6.1: Arup TA Residential Trip Rates and Resultant Trips

Peak Hour Period	Trip 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

6.3 Proposed Development Vehicular Impact

6.3.1 It is considered appropriate for robustness that the agreed residential trip rates associated with the consented scheme are used to determine the traffic impact of the current proposals.

6.3.2 The resultant vehicle trips that could be associated with the proposed residential redevelopment of the site for 60 dwellings are shown in **Table 6.2** below.

Table 6.2: Proposed Development Residential Trip Rates and Resultant Trips

Peak Hour Period	Trip Rates (per dwelling) Agreed with the 2007 TA			Number of Trips		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	0.17	0.63	0.80	10	38	48
PM	0.51	0.29	0.80	31	17	48

6.3.3 The trip rate results table above predicts that the proposals for 60 dwellings will generate 48 two way vehicle trips in the AM peak and in the PM peak.

6.3.4 In order to demonstrate the impact of the proposals across the study area, the proposed development traffic has been distributed in accordance with the 2007 TA. The resultant junction by junction impact is shown below in **Table 6.3**, the figures represent total additional movements at the junction.

APPENDIX G

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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TRL SOFTWARE SALES
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: software@trl.co.uk

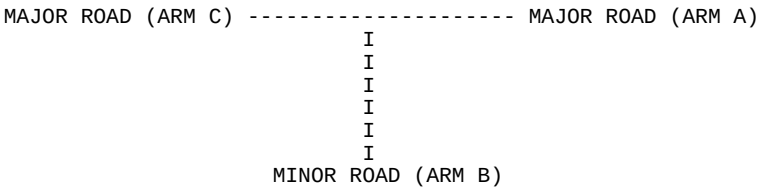
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Chilgrove Drive Jct\2019 Base Flows AM Peak 0800_0900.vpi"
(drive-on-the-left) at 14:41:35 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: 2019 Base flows - AM peak 08:00-09:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: 2019 Base Flows - AM peak 08:00-09:00

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK TO RISE	FLOW STOPS IS REACHED	FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00		0.81	1.22	0.81
ARM B	15.00	45.00	75.00		0.01	0.02	0.01
ARM C	15.00	45.00	75.00		4.01	6.02	4.01

Demand set: 2019 Base Flows - AM peak 08:00-09:00

TIME	FROM/TO	ARM A	ARM B	ARM C
07.45 - 09.15				
	ARM A	0.000	0.015	0.985
		0.0	1.0	64.0
		(0.0)	(10.0)	(10.0)
	ARM B	1.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		321.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.01	7.78	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.80	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	0.80								

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									
B-AC	0.01	7.61	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.76	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	0.96								

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									
B-AC	0.02	7.38	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.71	0.000		0.00	0.00	0.0		0.00
A-B	0.02								
A-C	1.17								

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)
08.30-08.45									
B-AC	0.02	7.38	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.71	0.000		0.00	0.00	0.0		0.00
A-B	0.02								
A-C	1.17								

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)
08.45-09.00									
B-AC	0.01	7.61	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.76	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	0.96								

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									
B-AC	0.01	7.78	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.80	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	0.80								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	1.4	0.9	0.2	0.13	0.2	0.13
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	1.4	0.9				
A-C	88.1	58.7				
ALL	532.7	355.1	0.2	0.00	0.2	0.00

* 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 RUN*******

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

Printed at 14:41:44 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk

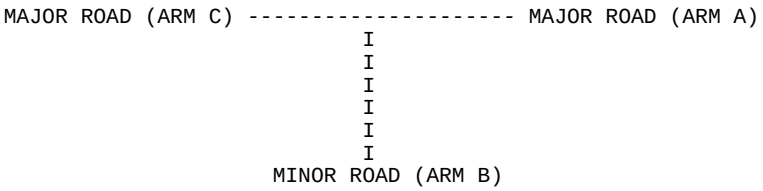
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Chilgrove Drive Jct\2019 Base Flows PM Peak 1700_1800.vpi"
(drive-on-the-left) at 14:42:32 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: 2019 Base flows - PM peak 17:00-18:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: 2019 Base Flows - PM peak 17:00-18:00

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO RISE	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	1.55	2.32	1.55	
ARM B	15.00	45.00	75.00	0.01	0.02	0.01	
ARM C	15.00	45.00	75.00	0.76	1.14	0.76	

Demand set: 2019 Base Flows - PM peak 17:00-18:00

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15		TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S)		
	ARM A	0.000 0.0 (0.0)	0.016 2.0 (10.0)	0.984 122.0 (10.0)
	ARM B	1.000 0.0 (10.0)	0.000 0.0 (0.0)	0.000 0.0 (10.0)
	ARM C	1.000 61.0 (10.0)	0.000 0.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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										
	B-AC	0.01	8.13	0.002		0.00	0.00	0.0		0.12
	C-AB	0.00	9.61	0.000		0.00	0.00	0.0		0.00
	A-B	0.03								
	A-C	1.53								
17.00-17.15										
	B-AC	0.01	8.03	0.002		0.00	0.00	0.0		0.12
	C-AB	0.00	9.54	0.000		0.00	0.00	0.0		0.00
	A-B	0.03								
	A-C	1.83								
17.15-17.30										
	B-AC	0.02	7.88	0.002		0.00	0.00	0.0		0.13
	C-AB	0.00	9.43	0.000		0.00	0.00	0.0		0.00
	A-B	0.04								
	A-C	2.24								
17.30-17.45										
	B-AC	0.02	7.88	0.002		0.00	0.00	0.0		0.13
	C-AB	0.00	9.43	0.000		0.00	0.00	0.0		0.00
	A-B	0.04								
	A-C	2.24								

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)
17.45-18.00									
B-AC	0.01	8.03	0.002		0.00	0.00	0.0		0.12
C-AB	0.00	9.54	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	1.83								

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									
B-AC	0.01	8.13	0.002		0.00	0.00	0.0		0.12
C-AB	0.00	9.61	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	1.53								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	1.4	0.9	0.2	0.12	0.2	0.12
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	2.8	1.8				
A-C	167.9	111.9				
ALL	256.0	170.7	0.2	0.00	0.2	0.00

* 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 RUN*******

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

Printed at 14:42:41 on 21/11/2014]

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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TRL SOFTWARE SALES
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: software@trl.co.uk

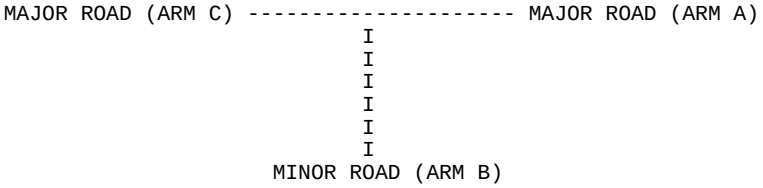
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Chilgrove Drive Jct\
2019 Base + Development Flows AM Peak 0800_0900.vpi"
(drive-on-the-left) at 14:43:49 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: 2019 Base + Development flows - AM peak 08:00-09:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: 2019 Base + Development Flows - AM peak 08:00-09:00

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK TO RISE	FLOW STOPS IS REACHED	FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00		0.82	1.24	0.82
ARM B	15.00	45.00	75.00		0.03	0.04	0.03
ARM C	15.00	45.00	75.00		4.05	6.08	4.05

Demand set: 2019 Base + Development Flows - AM peak 08:00-09:00

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.45 - 09.15	ARM A	0.000	0.015	0.985
		0.0	1.0	65.0
		(0.0)	(10.0)	(10.0)
	ARM B	1.000	0.000	0.000
		2.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		324.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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										
	B-AC	0.03	7.77	0.003		0.00	0.00	0.0		0.13
	C-AB	0.00	9.80	0.000		0.00	0.00	0.0		0.00
	A-B	0.01								
	A-C	0.82								
08.00-08.15										
	B-AC	0.03	7.60	0.004		0.00	0.00	0.1		0.13
	C-AB	0.00	9.76	0.000		0.00	0.00	0.0		0.00
	A-B	0.01								
	A-C	0.97								
08.15-08.30										
	B-AC	0.04	7.36	0.005		0.00	0.00	0.1		0.14
	C-AB	0.00	9.70	0.000		0.00	0.00	0.0		0.00
	A-B	0.02								
	A-C	1.19								
08.30-08.45										
	B-AC	0.04	7.36	0.005		0.00	0.01	0.1		0.14
	C-AB	0.00	9.70	0.000		0.00	0.00	0.0		0.00
	A-B	0.02								
	A-C	1.19								

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									
B-AC	0.03	7.60	0.004		0.01	0.00	0.1		0.13
C-AB	0.00	9.76	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	0.97								

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									
B-AC	0.03	7.77	0.003		0.00	0.00	0.0		0.13
C-AB	0.00	9.80	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	0.82								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	2.8	1.8	0.4	0.13	0.4	0.13
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	1.4	0.9				
A-C	89.5	59.6				
ALL	539.6	359.7	0.4	0.00	0.4	0.00

* 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 RUN*******

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

Printed at 14:43:58 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: software@trl.co.uk

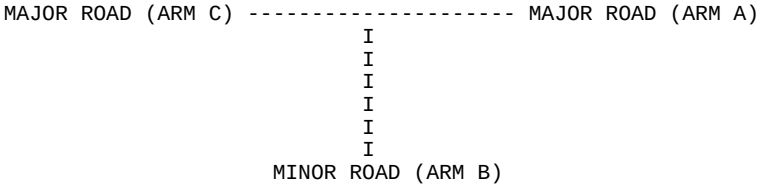
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Chilgrove Drive Jct\
2019 Base + Development Flows PM Peak 0800_0900.vpi"
(drive-on-the-left) at 14:44:39 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: 2019 Base + Development flows - PM peak 17:00-18:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: 2019 Base + Development Flows - PM peak 17:00-18:00

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	TO RISE					
ARM A	15.00	45.00	75.00	1.71	2.57	1.71
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.79	1.18	0.79

Demand set: 2019 Base + Development Flows - PM peak 17:00-18:00

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15		TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S)		
	ARM A	0.000 0.0 (0.0)	0.015 2.0 (10.0)	0.985 135.0 (10.0)
	ARM B	1.000 0.0 (10.0)	0.000 0.0 (0.0)	0.000 0.0 (10.0)
	ARM C	1.000 63.0 (10.0)	0.000 0.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.01	8.08	0.002		0.00	0.00	0.0		0.12
C-AB	0.00	9.57	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	1.69								

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									
B-AC	0.01	7.97	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.49	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	2.02								

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									
B-AC	0.02	7.82	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.37	0.000		0.00	0.00	0.0		0.00
A-B	0.04								
A-C	2.48								

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									
B-AC	0.02	7.82	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.37	0.000		0.00	0.00	0.0		0.00
A-B	0.04								
A-C	2.48								

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									
B-AC	0.01	7.97	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.49	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	2.02								

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									
B-AC	0.01	8.08	0.002		0.00	0.00	0.0		0.12
C-AB	0.00	9.57	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	1.69								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY occur

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	1.4	0.9	0.2	0.13	0.2	0.13
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	2.8	1.8				
A-C	185.8	123.9				
ALL	276.7	184.4	0.2	0.00	0.2	0.00

* 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 RUN*******

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

Printed at 14:44:47 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

FOR SALES AND DISTRIBUTION INFORMATION,
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EMAIL: software@trl.co.uk

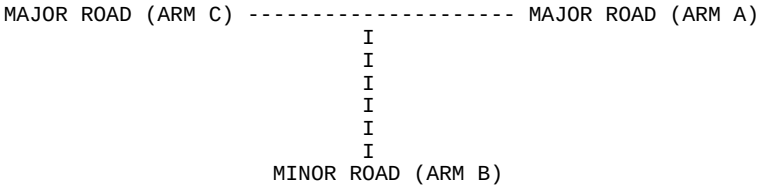
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Base Cumulative Flows AM Peak 0800_0900.vpi"
(drive-on-the-left) at 15:36:24 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Base Cumulative flows - AM peak 08:00-09:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base Cumulative Flows - AM peak 08:00-09:00

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK TO RISE	FLOW STOPS IS REACHED	AFTER FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00		3.01	4.52	3.01
ARM B	15.00	45.00	75.00		0.01	0.02	0.01
ARM C	15.00	45.00	75.00		4.60	6.90	4.60

Demand set: Base Cumulative Flows - AM peak 08:00-09:00

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.45 - 09.15	ARM A	0.000	0.004	0.996
		0.0	1.0	240.0
		(0.0)	(10.0)	(10.0)
	ARM B	1.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		368.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.01	7.10	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.24	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.01								

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									
B-AC	0.01	6.80	0.002		0.00	0.00	0.0		0.15
C-AB	0.00	9.09	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.60								

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									
B-AC	0.02	6.38	0.003		0.00	0.00	0.0		0.16
C-AB	0.00	8.88	0.000		0.00	0.00	0.0		0.00
A-B	0.02								
A-C	4.40								

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									
B-AC	0.02	6.38	0.003		0.00	0.00	0.0		0.16
C-AB	0.00	8.88	0.000		0.00	0.00	0.0		0.00
A-B	0.02								
A-C	4.40								

TRL TRL Viewer 3.2 AG I:\PB2420\Technical_Data\Calculations\PICADY\Base Cumulative Flows AM Peak 0800_0900.v

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									
B-AC	0.01	6.80	0.002		0.00	0.00	0.0		0.15
C-AB	0.00	9.09	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.60								

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									
B-AC	0.01	7.10	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.24	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.01								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	1.4	0.9	0.2	0.15	0.2	0.15
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	1.4	0.9				
A-C	330.3	220.2				
ALL	839.6	559.7	0.2	0.00	0.2	0.00

* 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 RUN*******

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

Printed at 15:36:34 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk

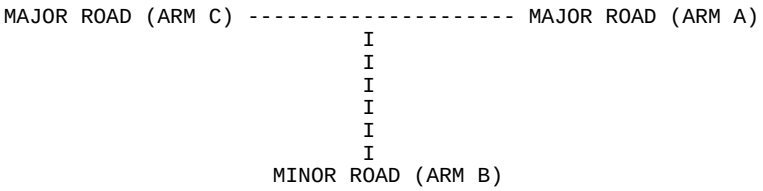
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Chilgrove Drive Jct\Base Cumulative Flows PM Peak 1700_1800.vpi"
(drive-on-the-left) at 15:37:45 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Base Cumulative flows - PM peak 17:00-18:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base Cumulative Flows - PM peak 17:00-18:00

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.56	3.84	2.56
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	2.56	3.84	2.56

Demand set: Base Cumulative Flows - PM peak 17:00-18:00

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
16.45 - 18.15	ARM A	0.000 0.0 (0.0)	0.010 2.0 (10.0)	0.990 203.0 (10.0)
	ARM B	1.000 0.0 (10.0)	0.000 0.0 (0.0)	0.000 0.0 (10.0)
	ARM C	1.000 205.0 (10.0)	0.000 0.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.01	7.56	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.35	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	2.55								

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									
B-AC	0.01	7.35	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.23	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	3.04								

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									
B-AC	0.02	7.06	0.003		0.00	0.00	0.0		0.14
C-AB	0.00	9.05	0.000		0.00	0.00	0.0		0.00
A-B	0.04								
A-C	3.73								

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									
B-AC	0.02	7.06	0.003		0.00	0.00	0.0		0.14
C-AB	0.00	9.05	0.000		0.00	0.00	0.0		0.00
A-B	0.04								
A-C	3.73								

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									
B-AC	0.01	7.35	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.23	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	3.04								

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									
B-AC	0.01	7.56	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.35	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	2.55								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	1.4	0.9	0.2	0.14	0.2	0.14
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	2.8	1.8				
A-C	279.4	186.3				
ALL	565.7	377.1	0.2	0.00	0.2	0.00

* 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 RUN*******

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

Printed at 15:37:54 on 21/11/2014]

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk

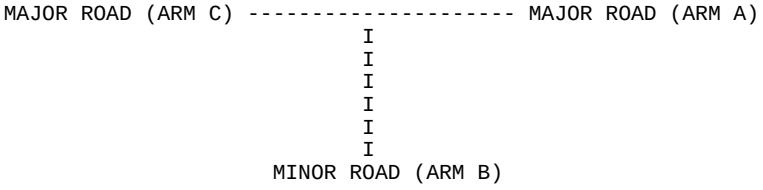
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Chilgrove Drive Jct\
Base + Development Cumulative Flows AM Peak 0800_0900.vpi"
(drive-on-the-left) at 15:46:01 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Base + Development Cumulative flows - AM peak 08:00-09:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base + Development Cumulative Flows - AM peak 08:00-09:00

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	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	3.03	4.54	3.03
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	4.64	6.96	4.64

Demand set: Base + Development Cumulative Flows - AM peak 08:00-09:00

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.45 - 09.15	ARM A	0.000 0.0 (0.0)	0.004 1.0 (10.0)	0.996 241.0 (10.0)
	ARM B	1.000 0.0 (10.0)	0.000 0.0 (0.0)	0.000 0.0 (10.0)
	ARM C	1.000 371.0 (10.0)	0.000 0.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.01	7.10	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.24	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.02								

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									
B-AC	0.01	6.79	0.002		0.00	0.00	0.0		0.15
C-AB	0.00	9.08	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.61								

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									
B-AC	0.02	6.37	0.003		0.00	0.00	0.0		0.16
C-AB	0.00	8.88	0.000		0.00	0.00	0.0		0.00
A-B	0.02								
A-C	4.42								

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									
B-AC	0.02	6.37	0.003		0.00	0.00	0.0		0.16
C-AB	0.00	8.88	0.000		0.00	0.00	0.0		0.00
A-B	0.02								
A-C	4.42								

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									
B-AC	0.01	6.79	0.002		0.00	0.00	0.0		0.15
C-AB	0.00	9.08	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.61								

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									
B-AC	0.01	7.10	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.24	0.000		0.00	0.00	0.0		0.00
A-B	0.01								
A-C	3.02								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	1.4	0.9	0.2	0.15	0.2	0.15
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	1.4	0.9				
A-C	331.7	221.1				
ALL	845.1	563.4	0.2	0.00	0.2	0.00

* 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 RUN*******

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

Printed at 15:46:11 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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TRL SOFTWARE SALES
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: software@trl.co.uk

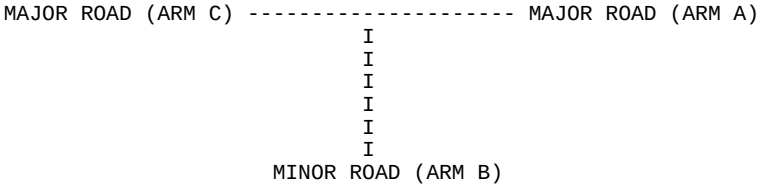
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Chilgrove Drive Jct\
Base + Development Cumulative Flows PM Peak 1700_1800.vpi"
(drive-on-the-left) at 15:47:05 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Base + Development Cumulative flows - PM peak 17:00-18:00
LOCATION	: Bicester
DATE	: 24/10/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Chilgrove Drive
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (1)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 2.32 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
675.33	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
571.77	0.26	0.10	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base + Development Cumulative Flows - PM peak 17:00-18:00

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.72	4.09	2.72
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	2.59	3.88	2.59

Demand set: Base + Development Cumulative Flows - PM peak 17:00-18:00

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
16.45 - 18.15	ARM A	0.000	0.009	0.991
		0.0	2.0	216.0
		(0.0)	(10.0)	(10.0)
	ARM B	1.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		207.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.01	7.52	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.31	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	2.71								

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									
B-AC	0.01	7.29	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.18	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	3.24								

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)
17.15-17.30									
B-AC	0.02	6.99	0.003		0.00	0.00	0.0		0.14
C-AB	0.00	8.99	0.000		0.00	0.00	0.0		0.00
A-B	0.04								
A-C	3.96								

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									
B-AC	0.02	6.99	0.003		0.00	0.00	0.0		0.14
C-AB	0.00	8.99	0.000		0.00	0.00	0.0		0.00
A-B	0.04								
A-C	3.96								

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									
B-AC	0.01	7.29	0.002		0.00	0.00	0.0		0.14
C-AB	0.00	9.18	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	3.24								

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)
18.00-18.15									
B-AC	0.01	7.52	0.002		0.00	0.00	0.0		0.13
C-AB	0.00	9.31	0.000		0.00	0.00	0.0		0.00
A-B	0.03								
A-C	2.71								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY occur

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	1.4	0.9	0.2	0.14	0.2	0.14
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
A-B	2.8	1.8				
A-C	297.3	198.2				
ALL	586.4	390.9	0.2	0.00	0.2	0.00

* 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 RUN*******

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

Printed at 15:47:14 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk

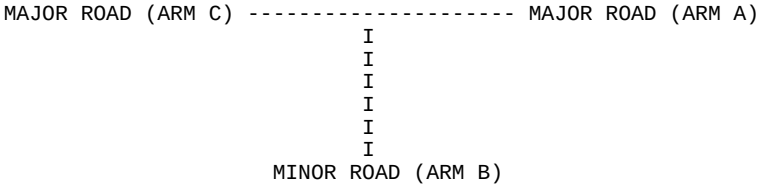
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\New folder\
Base + Development Cumulative Traffic Flows AM Peak 0800_0900.vpi"
(drive-on-the-left) at 12:40:53 on Monday, 24 November 2014

RUN INFORMATION

RUN TITLE	: Base + Development Cumulative Traffic AM Peak 08:00-09:00
LOCATION	:
DATE	: 21/11/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Minor Arm
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.95 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
724.66	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
613.54	0.26	0.10	0.16	0.37

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base + Development Cumulative Traffic Flows AM Peak 08:00-09:00

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO RISE	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		5.57	8.36	5.57
ARM B	15.00	45.00	75.00		4.76	7.14	4.76
ARM C	15.00	45.00	75.00		1.89	2.83	1.89

Demand set: Base + Development Cumulative Traffic Flows AM Peak 08:00-09:00

TIME	FROM/TO	ARM A	ARM B	ARM C
07.45 - 09.15				
	ARM A	0.000	0.527	0.473
		0.0	235.0	211.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.974	0.000	0.026
		371.0	0.0	10.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.960	0.040	0.000
		145.0	6.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	4.78	8.96	0.533		0.00	1.11	15.3		0.23
C-AB	0.09	10.93	0.008		0.00	0.01	0.1		0.09
C-A	1.80								
A-B	2.95								
A-C	2.65								

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									
B-AC	5.71	8.71	0.655		1.11	1.80	24.9		0.32
C-AB	0.11	10.93	0.010		0.01	0.01	0.2		0.09
C-A	2.15								
A-B	3.52								
A-C	3.16								

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									
B-AC	6.99	8.36	0.836		1.80	4.15	52.2		0.60
C-AB	0.14	10.94	0.013		0.01	0.01	0.2		0.09
C-A	2.63								
A-B	4.31								
A-C	3.87								

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									
B-AC	6.99	8.36	0.836		4.15	4.53	65.5		0.69
C-AB	0.14	10.94	0.013		0.01	0.01	0.2		0.09
C-A	2.63								
A-B	4.31								
A-C	3.87								

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									
B-AC	5.71	8.71	0.655		4.53	2.02	34.3		0.37
C-AB	0.11	10.93	0.010		0.01	0.01	0.2		0.09
C-A	2.15								
A-B	3.52								
A-C	3.16								

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)
09.00-09.15									
B-AC	4.78	8.96	0.533		2.02	1.18	18.9		0.25
C-AB	0.09	10.93	0.008		0.01	0.01	0.1		0.09
C-A	1.80								
A-B	2.95								
A-C	2.65								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.1	*
08.15	1.8	**
08.30	4.1	****
08.45	4.5	*****
09.00	2.0	**
09.15	1.2	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	524.4	349.6	211.1	0.40	211.2	0.40
C-AB	10.4	6.9	1.1	0.10	1.1	0.10
C-A	197.5	131.6				
A-B	323.5	215.6				
A-C	290.4	193.6				
ALL	1346.1	897.4	212.2	0.16	212.3	0.16

* 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 RUN*******

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

Printed at 12:41:34 on 24/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk

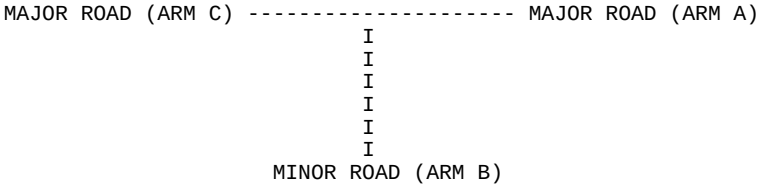
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\New folder\
Base + Development Cumulative Traffic Flows PM Peak 1700_1800.vpi"
(drive-on-the-left) at 12:42:52 on Monday, 24 November 2014

RUN INFORMATION

RUN TITLE	: Base + Development Cumulative Traffic PM Peak 17:00-18:00
LOCATION	:
DATE	: 21/11/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS Minor Arm
ARM C IS Camp Road (S)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.95 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
724.66	0.26	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
613.54	0.26	0.10	0.16	0.37

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.23	0.23

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base + Development Cumulative Traffic Flows PM Peak 17:00-18:00

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	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	5.05	7.58	5.05
ARM B	15.00	45.00	75.00	2.59	3.88	2.59
ARM C	15.00	45.00	75.00	2.33	3.49	2.33

Demand set: Base + Development Cumulative Traffic Flows PM Peak 17:00-18:00

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.517	0.483
		0.0	209.0	195.0
		(0.0)%	(0.0)%	(0.0)%
	ARM B	0.961	0.000	0.039
		199.0	0.0	8.0
		(0.0)%	(0.0)%	(0.0)%
	ARM C	0.962	0.038	0.000
		179.0	7.0	0.0
		(0.0)%	(0.0)%	(0.0)%

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	2.60	9.00	0.289		0.00	0.40	5.7		0.15
C-AB	0.11	11.33	0.010		0.00	0.01	0.2		0.09
C-A	2.22								
A-B	2.62								
A-C	2.45								

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									
B-AC	3.10	8.75	0.355		0.40	0.54	7.8		0.18
C-AB	0.14	11.41	0.012		0.01	0.01	0.2		0.09
C-A	2.65								
A-B	3.13								
A-C	2.92								

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									
B-AC	3.80	8.40	0.452		0.54	0.81	11.5		0.22
C-AB	0.18	11.52	0.015		0.01	0.02	0.3		0.09
C-A	3.24								
A-B	3.84								
A-C	3.58								

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									
B-AC	3.80	8.40	0.452		0.81	0.81	12.2		0.22
C-AB	0.18	11.52	0.015		0.02	0.02	0.3		0.09
C-A	3.24								
A-B	3.84								
A-C	3.58								

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									
B-AC	3.10	8.75	0.355		0.81	0.56	8.7		0.18
C-AB	0.14	11.41	0.012		0.02	0.01	0.2		0.09
C-A	2.65								
A-B	3.13								
A-C	2.92								

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									
B-AC	2.60	9.00	0.289		0.56	0.41	6.4		0.16
C-AB	0.11	11.33	0.010		0.01	0.01	0.2		0.09
C-A	2.22								
A-B	2.62								
A-C	2.45								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	*
17.30	0.8	*
17.45	0.8	*
18.00	0.6	*
18.15	0.4	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	284.9	189.9	52.4	0.18	52.4	0.18
C-AB	12.7	8.4	1.2	0.10	1.2	0.10
C-A	243.3	162.2				
A-B	287.7	191.8				
A-C	268.4	178.9				
ALL	1097.0	731.3	53.6	0.05	53.6	0.05

* 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 RUN*******

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

Printed at 12:43:00 on 24/11/2014]

APPENDIX H

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk

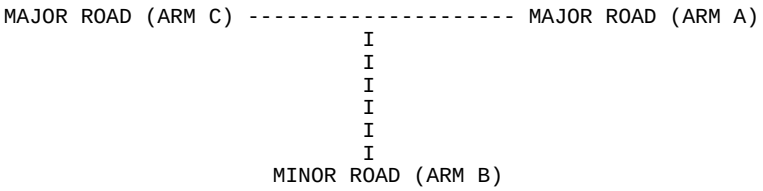
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\New Access Jct\Development Traffic Flows AM Peak 0800_0900.vpi"
(drive-on-the-left) at 14:15:04 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Development Traffic AM Peak 08:00-09:00
LOCATION	:
DATE	: 21/11/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS New Access
ARM C IS Camp Road (E)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 76.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
724.66	0.28	0.11

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.80	0.27	0.11	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Development Traffic AM Peak 08:00-09:00

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	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	0.25	0.38	0.25
ARM B	15.00	45.00	75.00	0.04	0.06	0.04
ARM C	15.00	45.00	75.00	0.21	0.32	0.21

Demand set: Development Traffic AM Peak 08:00-09:00

TIME	FROM/TO	ARM A	ARM B	ARM C
07.45 - 09.15				
	ARM A	0.000	1.000	0.000
		0.0	20.0	0.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.667	0.000	0.333
		2.0	0.0	1.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.000	1.000	0.000
		0.0	17.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.04	9.36	0.004		0.00	0.00	0.1		0.11
C-AB	0.21	9.95	0.021		0.00	0.02	0.3		0.10
C-A	0.00								
A-B	0.25								
A-C	0.00								
08.00-08.15									
B-AC	0.04	9.34	0.005		0.00	0.00	0.1		0.11
C-AB	0.25	9.94	0.026		0.02	0.03	0.4		0.10
C-A	0.00								
A-B	0.30								
A-C	0.00								
08.15-08.30									
B-AC	0.06	9.31	0.006		0.00	0.01	0.1		0.11
C-AB	0.31	9.92	0.031		0.03	0.03	0.5		0.10
C-A	0.00								
A-B	0.37								
A-C	0.00								
08.30-08.45									
B-AC	0.06	9.31	0.006		0.01	0.01	0.1		0.11
C-AB	0.31	9.92	0.031		0.03	0.03	0.5		0.10
C-A	0.00								
A-B	0.37								
A-C	0.00								

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									
B-AC	0.04	9.34	0.005		0.01	0.00	0.1		0.11
C-AB	0.25	9.94	0.026		0.03	0.03	0.4		0.10
C-A	0.00								
A-B	0.30								
A-C	0.00								

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									
B-AC	0.04	9.36	0.004		0.00	0.00	0.1		0.11
C-AB	0.21	9.95	0.021		0.03	0.02	0.3		0.10
C-A	0.00								
A-B	0.25								
A-C	0.00								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	4.1	2.8	0.4	0.11	0.4	0.11
C-AB	23.4	15.6	2.4	0.10	2.4	0.10
C-A	0.0	0.0				
A-B	27.5	18.4				
A-C	0.0	0.0				
ALL	55.1	36.7	2.9	0.05	2.9	0.05

* 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 RUN*******

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

Printed at 14:15:12 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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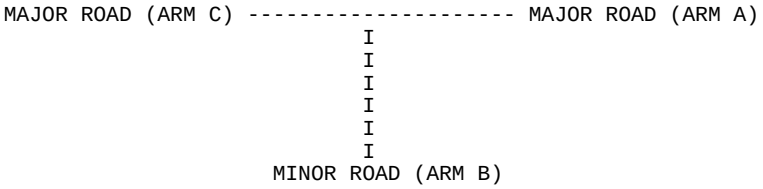
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\New Access Jct\Development Traffic Flows PM Peak 1700_1800.vpi"
(drive-on-the-left) at 14:15:55 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Development Traffic PM Peak 17:00-18:00
LOCATION	:
DATE	: 21/11/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS New Access
ARM C IS Camp Road (E)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 76.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
724.66	0.28	0.11

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.80	0.27	0.11	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Development Traffic PM Peak 17:00-18:00

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	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	0.05	0.08	0.05
ARM B	15.00	45.00	75.00	0.66	0.99	0.66
ARM C	15.00	45.00	75.00	0.08	0.11	0.08

Demand set: Development Traffic PM Peak 17:00-18:00

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000 0.0 (0.0)	1.000 4.0 (10.0)	0.000 0.0 (10.0)
	ARM B	0.377 20.0 (10.0)	0.000 0.0 (0.0)	0.623 33.0 (10.0)
	ARM C	0.000 0.0 (10.0)	1.000 6.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS (TURNING COUNTS, PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.67	10.04	0.066		0.00	0.07	1.0		0.11
C-AB	0.08	10.00	0.008		0.00	0.01	0.1		0.10
C-A	0.00								
A-B	0.05								
A-C	0.00								

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									
B-AC	0.79	10.03	0.079		0.07	0.09	1.3		0.11
C-AB	0.09	10.00	0.009		0.01	0.01	0.1		0.10
C-A	0.00								
A-B	0.06								
A-C	0.00								

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									
B-AC	0.97	10.03	0.097		0.09	0.11	1.6		0.11
C-AB	0.11	9.99	0.011		0.01	0.01	0.2		0.10
C-A	0.00								
A-B	0.07								
A-C	0.00								

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									
B-AC	0.97	10.03	0.097		0.11	0.11	1.6		0.11
C-AB	0.11	9.99	0.011		0.01	0.01	0.2		0.10
C-A	0.00								
A-B	0.07								
A-C	0.00								

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									
B-AC	0.79	10.03	0.079		0.11	0.09	1.3		0.11
C-AB	0.09	10.00	0.009		0.01	0.01	0.1		0.10
C-A	0.00								
A-B	0.06								
A-C	0.00								

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									
B-AC	0.67	10.04	0.066		0.09	0.07	1.1		0.11
C-AB	0.08	10.00	0.008		0.01	0.01	0.1		0.10
C-A	0.00								
A-B	0.05								
A-C	0.00								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	73.0	48.6	7.9	0.11	7.9	0.11
C-AB	8.3	5.5	0.8	0.10	0.8	0.10
C-A	0.0	0.0				
A-B	5.5	3.7				
A-C	0.0	0.0				
ALL	86.7	57.8	8.7	0.10	8.7	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 RUN*******

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

Printed at 14:16:05 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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TRL SOFTWARE SALES
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: software@trl.co.uk

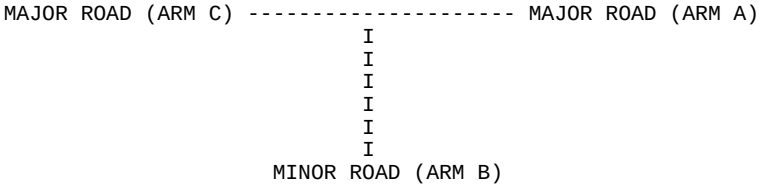
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Proposed Access Jct\
Base + Development Cumulative Traffic Flows AM Peak 0800_0900.vpi"
(drive-on-the-left) at 15:48:58 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Base + Development Cumulative Traffic AM Peak 08:00-09:00
LOCATION	:
DATE	: 21/11/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS New Access
ARM C IS Camp Road (E)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 76.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
724.66	0.28	0.11

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.80	0.27	0.11	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base + Development Cumulative Traffic Flows AM Peak 08:00-09:00

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO RISE	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		5.84	8.76	5.84
ARM B	15.00	45.00	75.00		0.04	0.06	0.04
ARM C	15.00	45.00	75.00		6.46	9.69	6.46

Demand set: Base + Development Cumulative Traffic Flows AM Peak 08:00-09:00

TIME	FROM/TO	ARM A	ARM B	ARM C
07.45 - 09.15				
	ARM A	0.000	0.043	0.957
		0.0	20.0	447.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.667	0.000	0.333
		2.0	0.0	1.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.967	0.033	0.000
		500.0	17.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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									
B-AC	0.04	6.95	0.005		0.00	0.01	0.1		0.14
C-AB	0.39	12.65	0.031		0.00	0.04	0.6		0.08
C-A	6.10								
A-B	0.25								
A-C	5.61								

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									
B-AC	0.04	6.45	0.007		0.01	0.01	0.1		0.16
C-AB	0.52	13.16	0.040		0.04	0.06	0.8		0.08
C-A	7.22								
A-B	0.30								
A-C	6.70								

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									
B-AC	0.06	5.75	0.010		0.01	0.01	0.1		0.18
C-AB	0.82	14.20	0.058		0.06	0.09	1.4		0.07
C-A	8.66								
A-B	0.37								
A-C	8.20								

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									
B-AC	0.06	5.74	0.010		0.01	0.01	0.1		0.18
C-AB	0.82	14.20	0.058		0.09	0.09	1.4		0.07
C-A	8.66								
A-B	0.37								
A-C	8.20								

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									
B-AC	0.04	6.45	0.007		0.01	0.01	0.1		0.16
C-AB	0.52	13.16	0.040		0.09	0.06	0.9		0.08
C-A	7.22								
A-B	0.30								
A-C	6.70								

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									
B-AC	0.04	6.95	0.005		0.01	0.01	0.1		0.14
C-AB	0.39	12.65	0.031		0.06	0.04	0.6		0.08
C-A	6.10								
A-B	0.25								
A-C	5.61								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	4.1	2.8	0.7	0.16	0.7	0.16
C-AB	52.1	34.7	5.7	0.11	5.7	0.11
C-A	659.5	439.7				
A-B	27.5	18.4				
A-C	615.3	410.2				
ALL	1358.5	905.7	6.4	0.00	6.4	0.00

* 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 RUN*******

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

Printed at 15:49:06 on 21/11/2014]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk

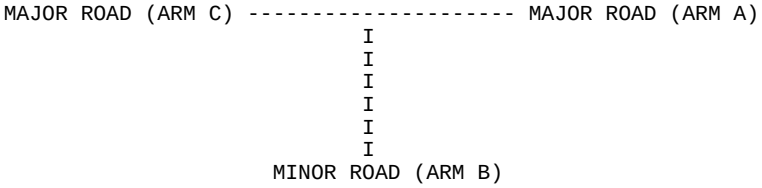
Run with file:-
"I:\PB2420\Technical_Data\Calculations\PICADY\Proposed Access Jct\
Base + Development Cumulative Traffic Flows PM Peak 1700_1800.vpi"
(drive-on-the-left) at 15:50:28 on Friday, 21 November 2014

RUN INFORMATION

RUN TITLE	: Base + Development Cumulative Traffic PM Peak 17:00-18:00
LOCATION	:
DATE	: 21/11/14
CLIENT	:
ENUMERATOR	: 310037 [L06146]
JOB NUMBER	: PB2420
STATUS	:
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Camp Road (W)
ARM B IS New Access
ARM C IS Camp Road (E)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)150.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (0)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 76.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
724.66	0.28	0.11

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.80	0.27	0.11	0.17	0.38

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
660.83	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

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

Demand set: Base + Development Cumulative Traffic PM Peak 17:00-18:00

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	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	4.71	7.07	4.71
ARM B	15.00	45.00	75.00	0.66	0.99	0.66
ARM C	15.00	45.00	75.00	4.72	7.09	4.72

Demand set: Base + Development Cumulative Traffic PM Peak 17:00-18:00

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.011	0.989
		0.0	4.0	373.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.377	0.000	0.623
		20.0	0.0	33.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.984	0.016	0.000
		372.0	6.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS (TURNING COUNTS (PERCENTAGE OF H.V.S))

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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										
	B-AC	0.67	8.31	0.080		0.00	0.09	1.2		0.13
	C-AB	0.12	11.89	0.010		0.00	0.01	0.2		0.08
	C-A	4.62								
	A-B	0.05								
	A-C	4.68								

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										
	B-AC	0.79	7.96	0.100		0.09	0.11	1.6		0.14
	C-AB	0.16	12.26	0.013		0.01	0.01	0.2		0.08
	C-A	5.51								
	A-B	0.06								
	A-C	5.59								

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										
	B-AC	0.97	7.46	0.130		0.11	0.15	2.2		0.15
	C-AB	0.21	12.78	0.017		0.01	0.02	0.3		0.08
	C-A	6.72								
	A-B	0.07								
	A-C	6.84								

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										
	B-AC	0.97	7.46	0.130		0.15	0.15	2.2		0.15
	C-AB	0.21	12.78	0.017		0.02	0.02	0.3		0.08
	C-A	6.72								
	A-B	0.07								
	A-C	6.84								

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									
B-AC	0.79	7.96	0.100		0.15	0.11	1.7		0.14
C-AB	0.16	12.26	0.013		0.02	0.01	0.2		0.08
C-A	5.51								
A-B	0.06								
A-C	5.59								

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									
B-AC	0.67	8.31	0.080		0.11	0.09	1.3		0.13
C-AB	0.12	11.89	0.010		0.01	0.01	0.2		0.08
C-A	4.62								
A-B	0.05								
A-C	4.68								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	73.0	48.6	10.3	0.14	10.3	0.14
C-AB	14.7	9.8	1.3	0.09	1.3	0.09
C-A	505.6	337.1				
A-B	5.5	3.7				
A-C	513.4	342.3				
ALL	1112.2	741.4	11.7	0.01	11.7	0.01

* 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 RUN*******

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

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APPENDIX I

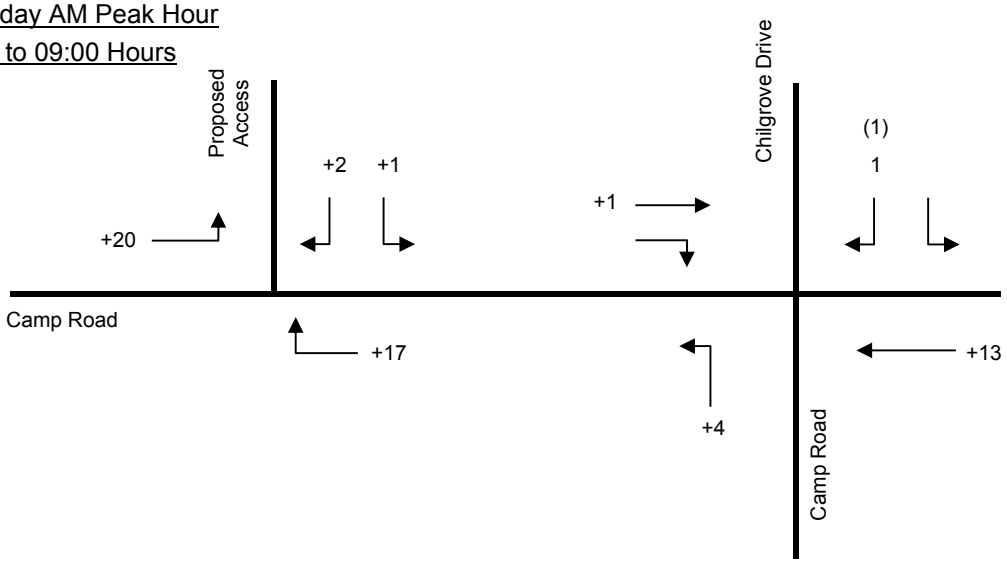
EP Barrus - Upper Heyford
Parking Accumulation

	Trips In	Trips Out	Accumulation	Utilisation
0700-0800	21	2	19	13%
0800-0900	37	4	52	35%
0900-1000	50	9	93	63%
1000-1100	16	9	100	68%
1100-1200	2	10	92	63%
1200-1300	4	15	81	55%
1300-1400	19	21	79	54%
1400-1500	21	21	79	54%
1500-1600	11	16	74	50%
1600-1700	5	12	67	46%
1700-1800	10	53	24	16%

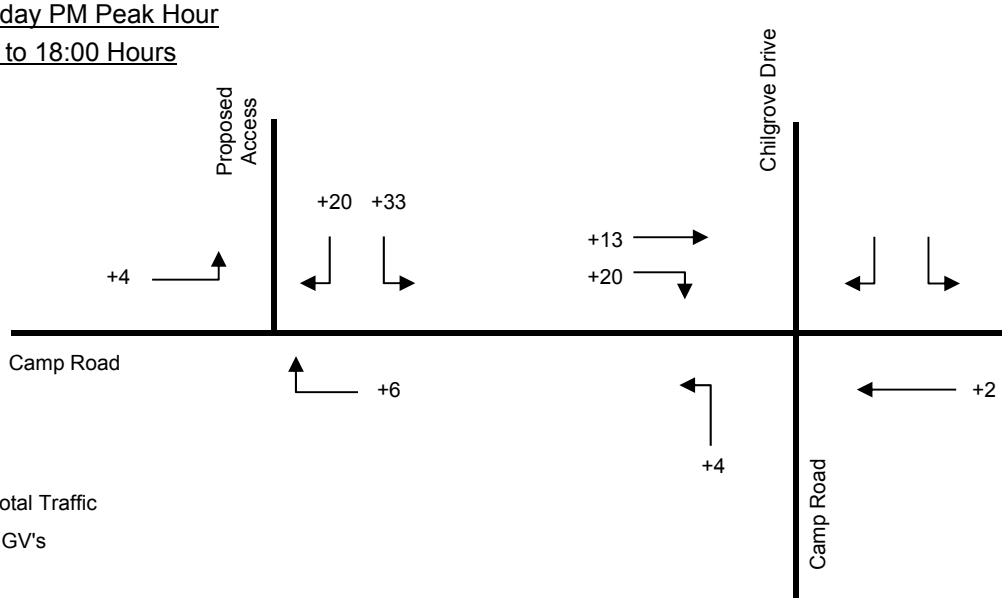
spaces= 147

FIGURES

Weekday AM Peak Hour
08:00 to 09:00 Hours



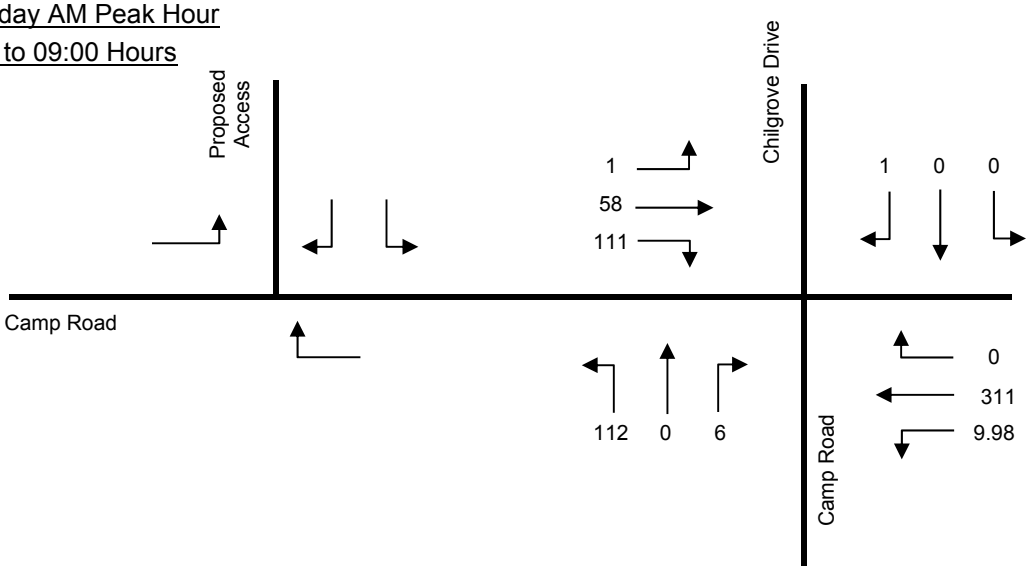
Weekday PM Peak Hour
17:00 to 18:00 Hours



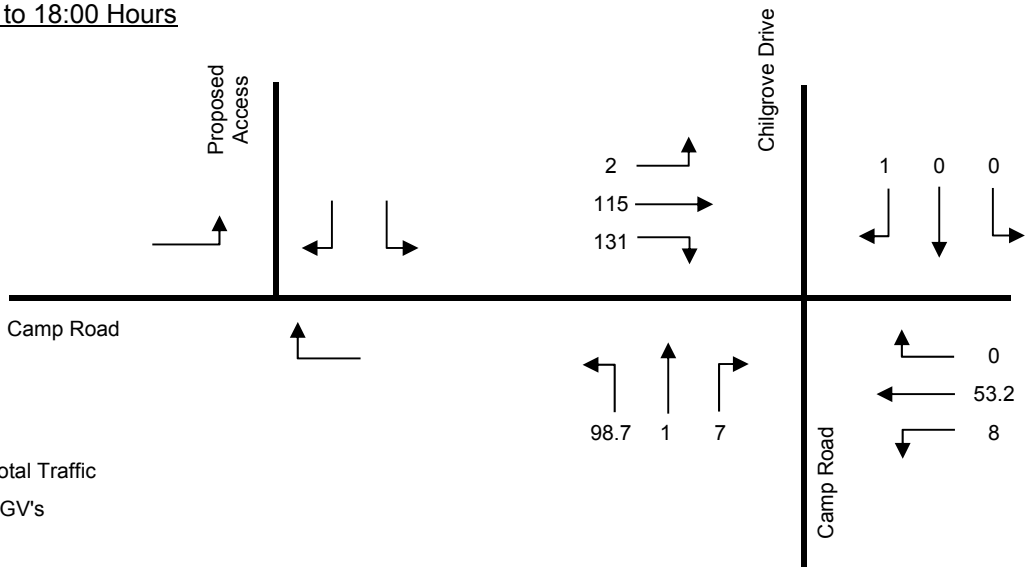
Key:
12 Total Traffic
(34) HGV's

Royal HaskoningDHV Enhancing Society Together	Project Wings		Development Traffic Flows	
	Date: Nov-14	Job No: PB2420	Author: 310037	Figure: 1

Weekday AM Peak Hour
08:00 to 09:00 Hours



Weekday PM Peak Hour
17:00 to 18:00 Hours



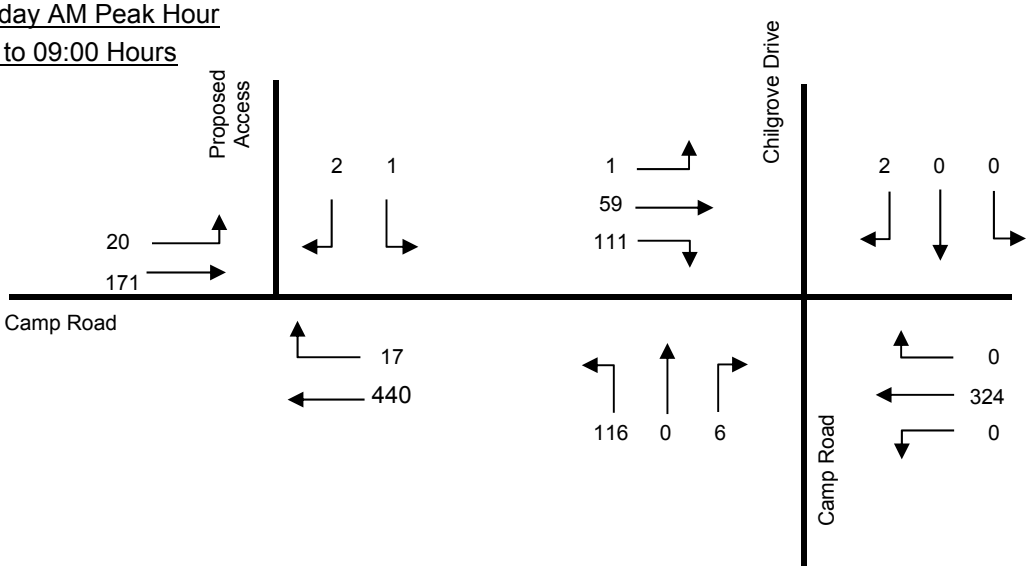
Key:

12 Total Traffic

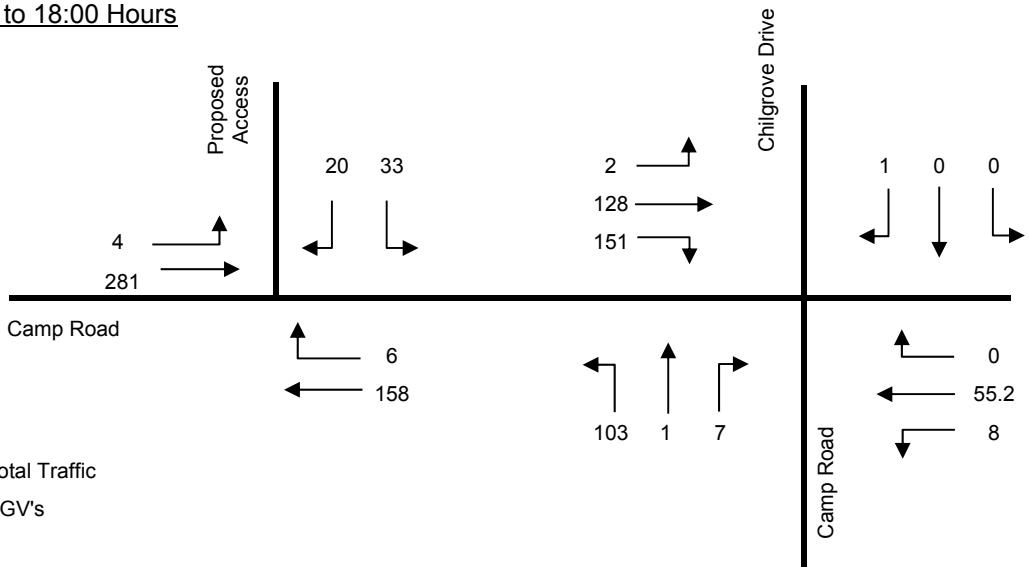
(34) HGV's

Royal HaskoningDHV Enhancing Society Together	Project Wings		2019 Base Flows Weekday AM & PM Peak Hours	
	Date: Nov-14	Job No: PB2420	Author: 310037	Figure: **2**

Weekday AM Peak Hour
08:00 to 09:00 Hours



Weekday PM Peak Hour
17:00 to 18:00 Hours



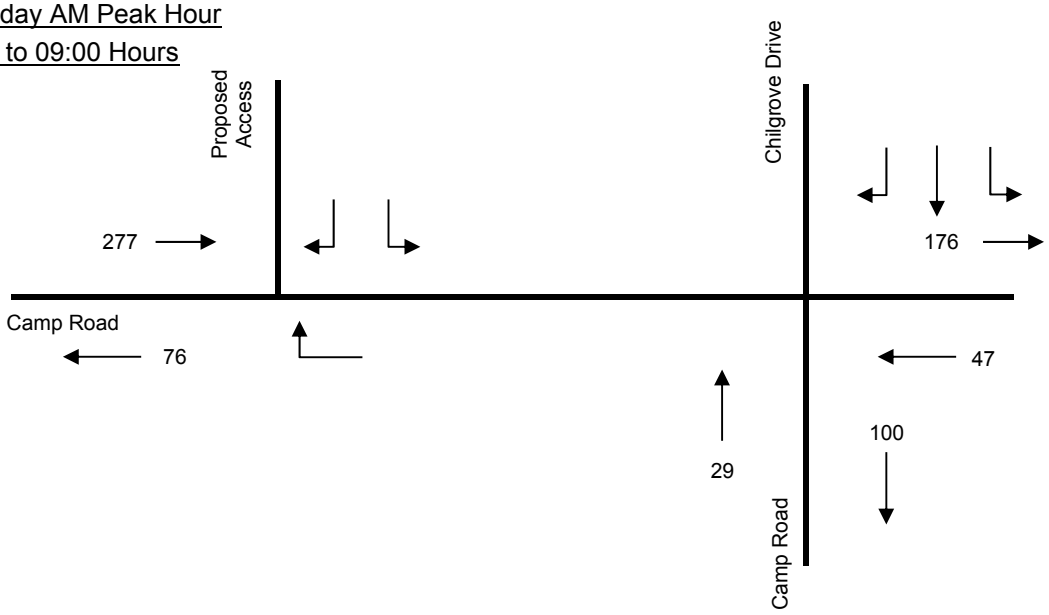
Key:

12 Total Traffic

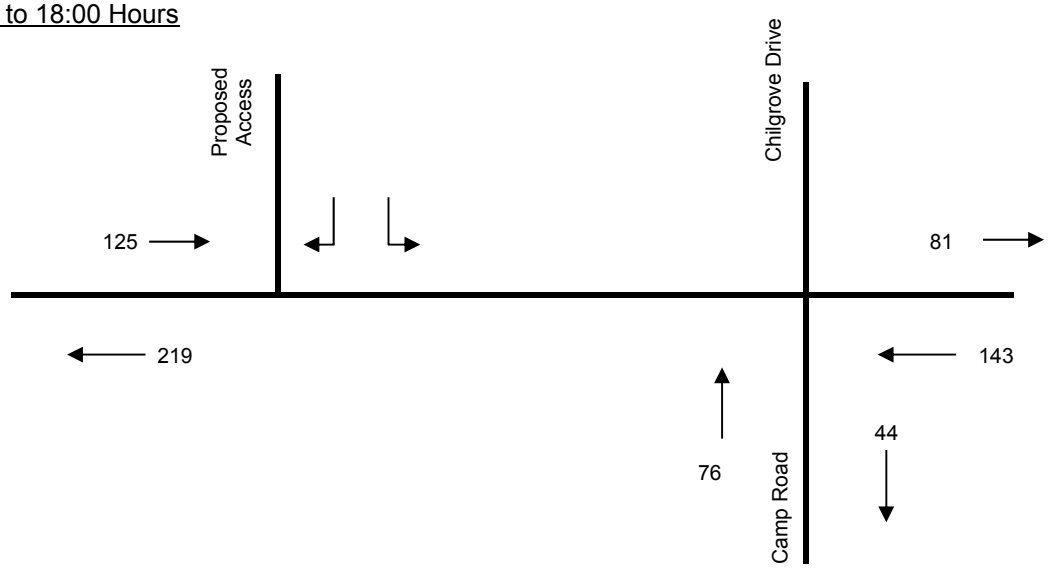
(34) HGV's

Royal HaskoningDHV Enhancing Society Together	Project Wings		2019 Base + Development Flows Weekday AM & PM Peak Hours	
	Date: Nov-14	Job No: PB2420	Author: 310037	Figure: 3

Weekday AM Peak Hour
08:00 to 09:00 Hours

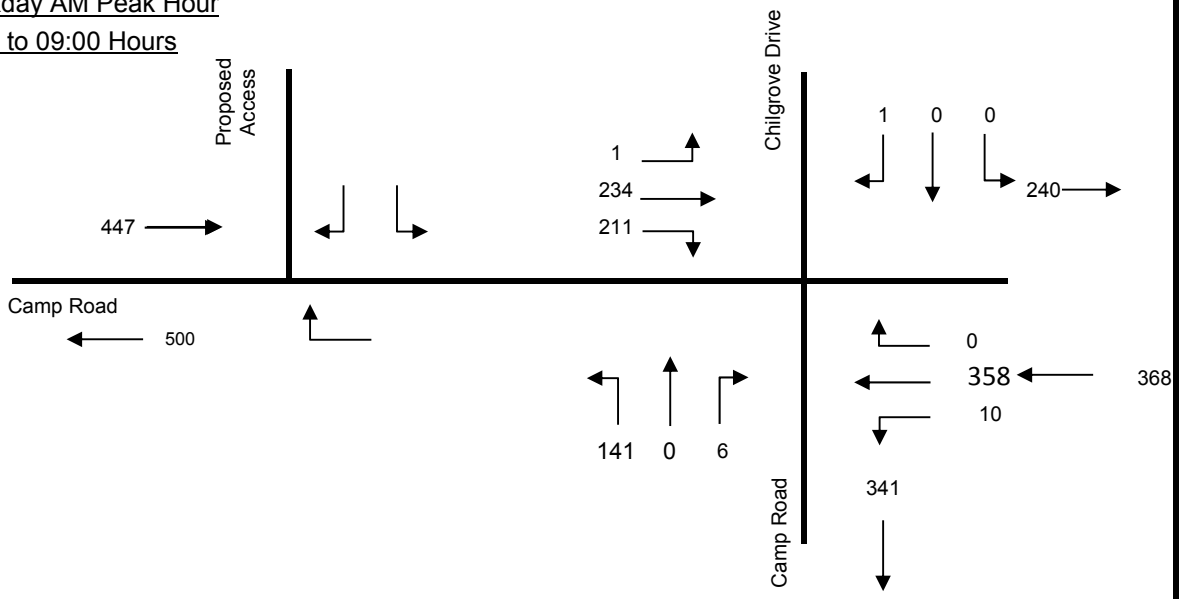


Weekday PM Peak Hour
17:00 to 18:00 Hours

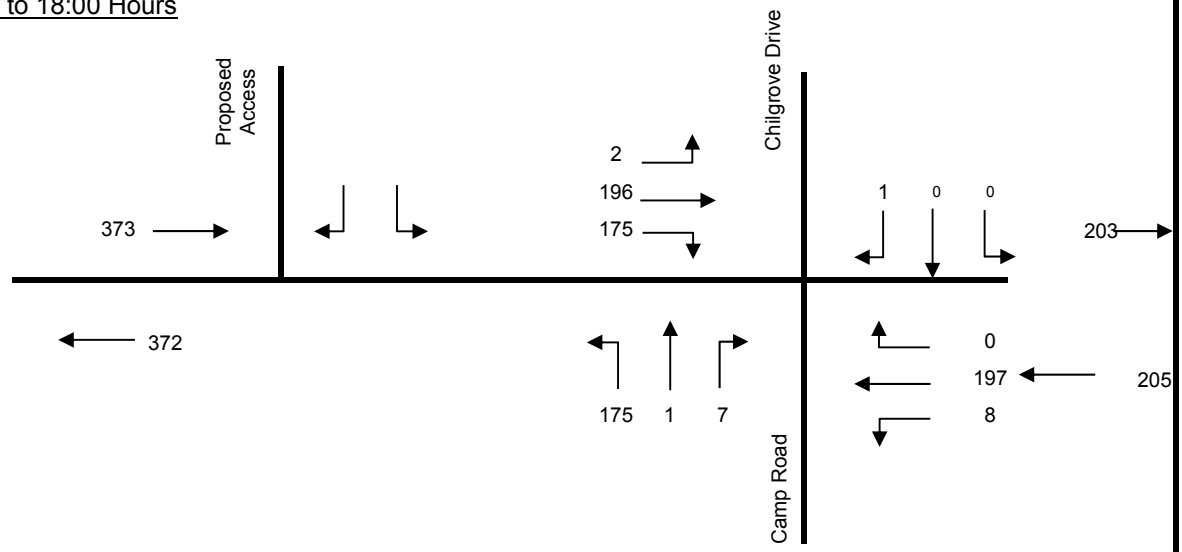


Royal HaskoningDHV Enhancing Society Together	Project Wings		Cumulative Development Traffic Weekday AM & PM Peak Hours	
	Date: Nov-14	Job No: PB2420	Author: 310037	Figure: **4**

Weekday AM Peak Hour
08:00 to 09:00 Hours

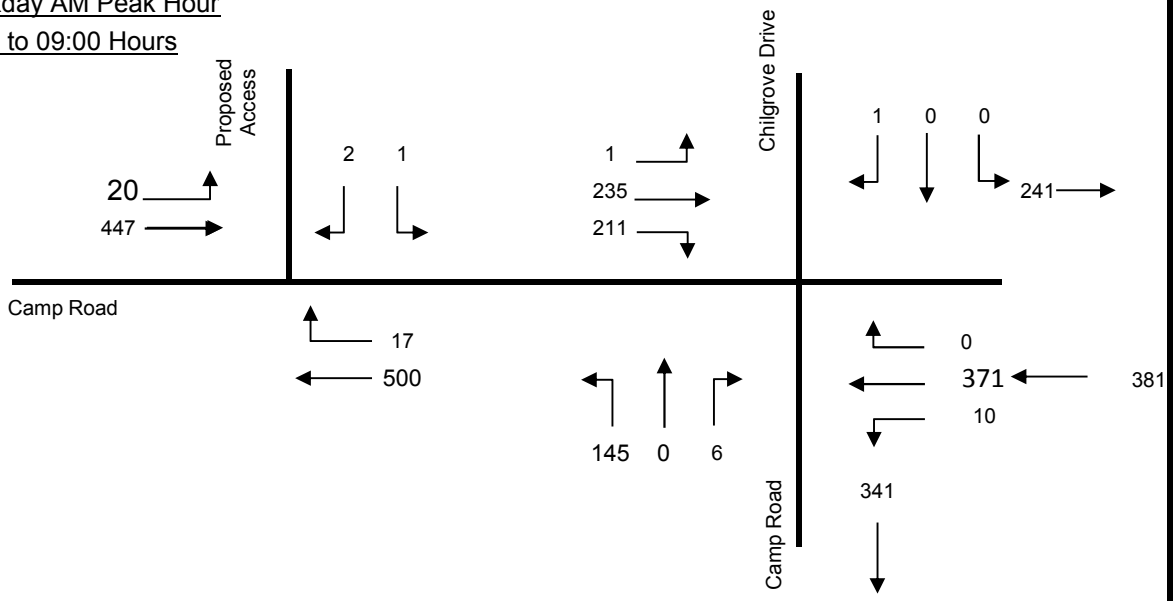


Weekday PM Peak Hour
17:00 to 18:00 Hours

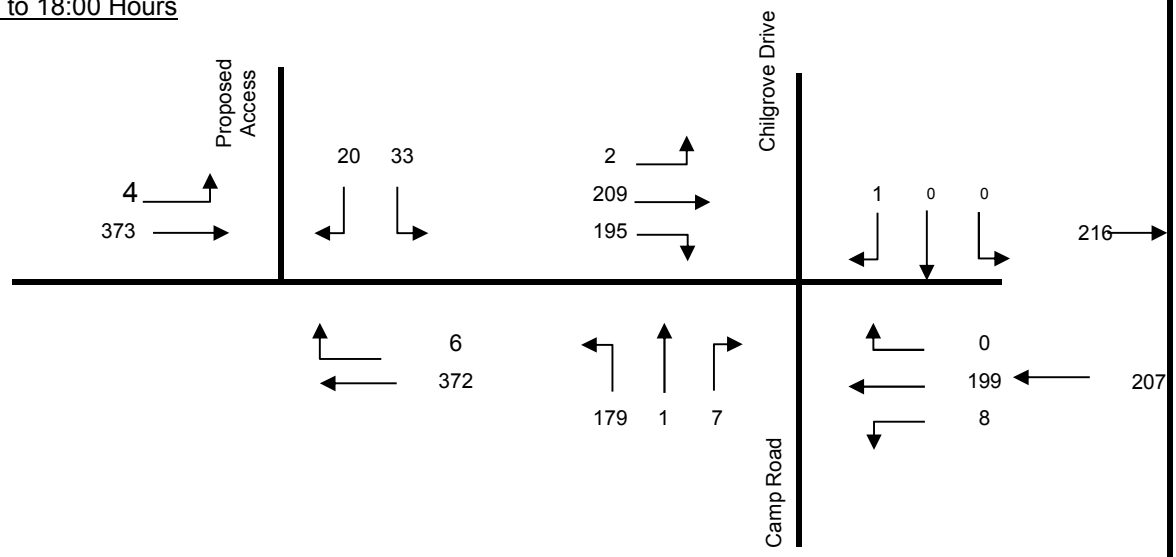


Royal HaskoningDHV Enhancing Society Together	Project Wings		Base Cumulative Flows Weekday AM & PM Peak Hours	
	Date: Nov-14	Job No: PB2420	Author: 310037	Figure: **5**

Weekday AM Peak Hour
08:00 to 09:00 Hours



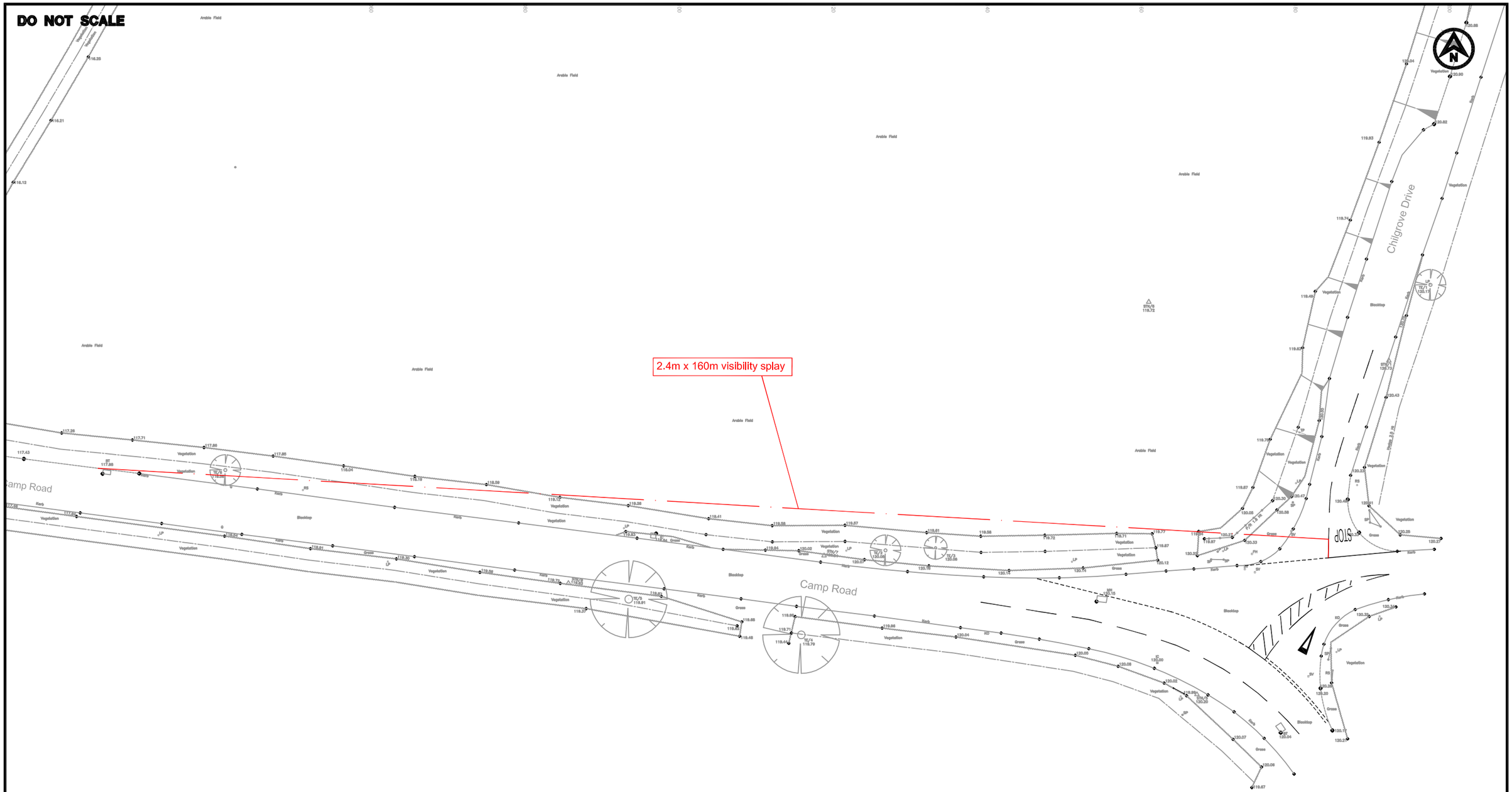
Weekday PM Peak Hour
17:00 to 18:00 Hours



Royal HaskoningDHV Enhancing Society Together	Project Wings		Base + Development Cumulative Flows Weekday AM & PM Peak Hours	
	Date: Nov-14	Job No: PB2420	Author: 310037	Figure: **6**

DRAWINGS

DO NOT SCALE



This drawing has been based upon survey information supplied by Tower Surveys Ltd, and HaskoningDHV UK Ltd can not guarantee the accuracy of data.

TITLE: VISIBILITY SPLAY PROVISION	PROJECT: PROJECT WINGS	Royal HaskoningDHV — Enhancing Society Together	JOB No. PB2420	DATE OCT 14	SCALE 1:500
			DRAWN DH	CHECKED IRF	PASSED IRF
			AUTOCAD REF.	DRG No. PB2420/01	REV P0

Bleys House, Wick Road
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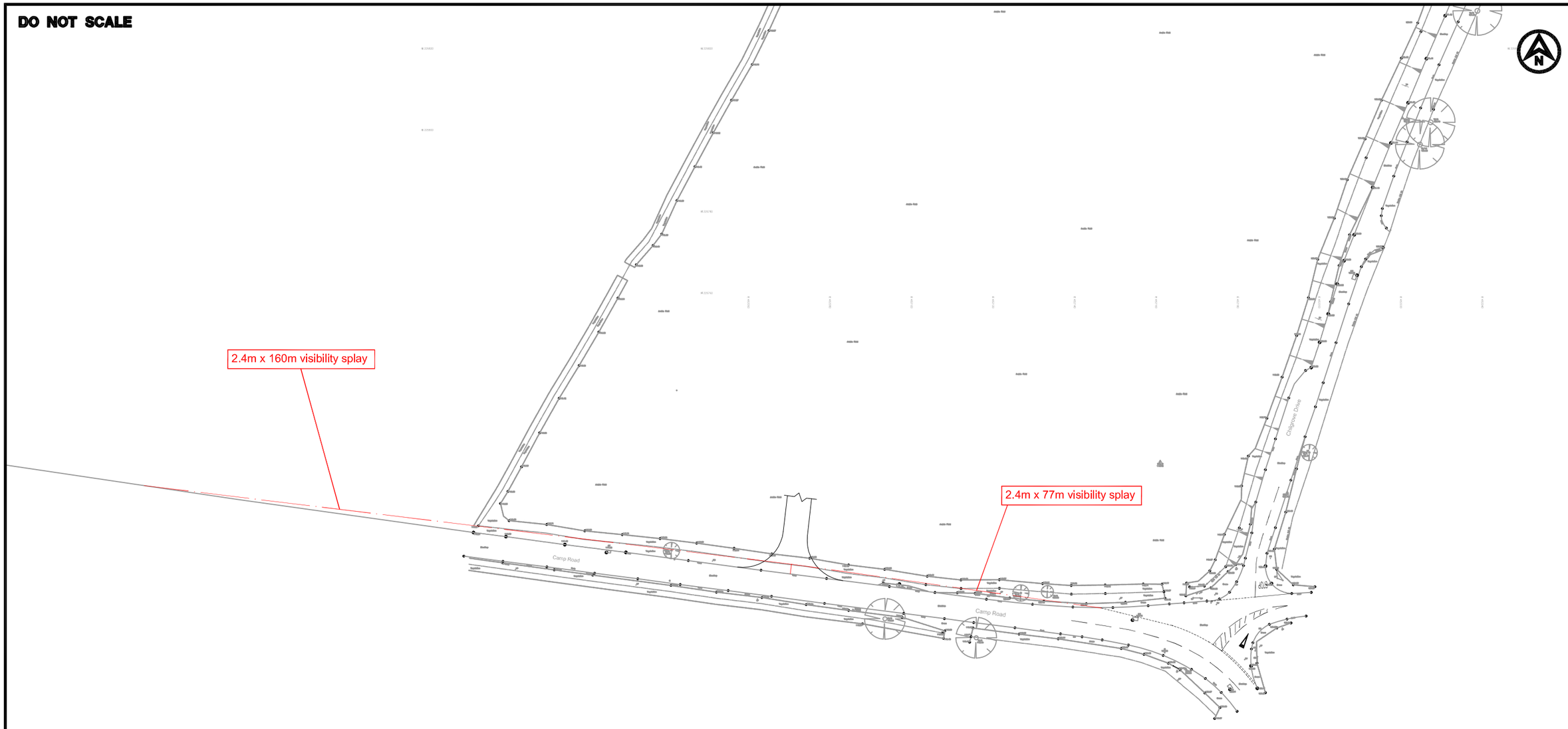
www.royalhaskoningdhv.com

DO NOT SCALE



This drawing has been based upon survey information supplied by Tower Surveys Ltd, and HaskoningDHV UK Ltd can not guarantee the accuracy of data.

TITLE: VISIBILITY SPLAY PROVISION	PROJECT: PROJECT WINGS	Royal HaskoningDHV Enhancing Society Together	JOB No. PB2420	DATE NOV 14	SCALE 1:1000
			DRAWN DH	CHECKED IRF	PASSED IRF
			AUTOCAD REF.	DRG No. PB2420/02	REV P0

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