REDDITCH BOROUGH COUNCIL

PROPOSED DIVERSIFICATION PARK DEVELOPMENT

LAND AT WINYATES GREEN TRIANGLE, REDDITCH

TRANSPORT ASSESSMENT

MT/NWK/VRG/835/HOC

NOVEMBER 2009

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CONTENTS

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APPENDICES

A	Scoping Note
B	Location Plan (**JN835-NWK-001**)
C	Personal Injury Collision Data
D	2009 Base Traffic Flows (**JN835-NWK-002**) ATC Speed Data A435 Birmingham Road ATC Speed Data Far Moor Lane Speed Survey Data A4023 Coventry Highway
E	Sustainable Transport Information: Pedestrian Catchment Area (**JN835-NWK-003**) Cycle Catchment Area (**JN835-NWK-004**) Public Transport Catchment Area (**JN835-NWK-005**)
F	Newark Beacon Multimodal Transport Survey (Business Innovation Centre use) TRICS Outputs (Business Park and Residential uses) Development Trip Assignment Diagrams: (**JN835-NWK-006**) - (**JN835-NWK-008**)
G	Traffic Distribution Diagrams: 2012 Without Development Traffic Flow Distribution (**JN835-NWK-009**) 2017 Without Development Traffic Flow Distribution (**JN835-NWK-010**)
H	ARCADY and PICADY Outputs Development Site Access Options: Far Moor Lane (**JN835-NWK-011**) A435 Birmingham Road (**JN835-NWK-012A**) A4023 Coventry Highway (**JN835-NWK-013**) LinSig Outputs

1 INTRODUCTION

1.1 Morgan Tucker has been commissioned by Redditch Borough Council to investigate and advise on the transport and highways issues associated with a proposed diversification park on land sandwiched between the A4023 Coventry Highway and A435 Birmingham Road, and to produce a transport assessment which meets the requirements of both Worcestershire County Council and Warwickshire County Council.

1.2 The format and layout of this report take account of the latest transport assessment guidance, as issued by the Department for Transport in March 2007 and also Worcestershire and Warwickshire County Council's own policies and advice.

1.3 As recommended by national guidance, a scoping note was prepared in advance of the drafting of the full TA, in order to reach agreement with Worcestershire and Warwickshire County Councils, as highway authority for the town's internal road network, on the nature of the key issues to be examined in the report and various other technical parameters. The scoping note was mailed to Officers at both County Councils for comment.

1.4 Brian Sharp responded from Worcestershire County Council to confirm that the scoping note met his requirements and to draw our attention to Worcestershire County Council's TA Guidance Note. Warwickshire County Council failed to respond on the scoping note. A copy of the scoping note is included at **Appendix A.**

1.5 The transport assessment will provide supporting technical evidence to the overall planning appraisal process. Specifically, the report assesses the accessibility of the development site by a variety of modes of transport. The sustainability of the site is also considered with respect to relevant policy guidance and an assessment of the traffic impact of the proposal on the surrounding road network is provided and appropriate mitigation measures identified.

2 EXISTING SITE INFORMATION

2.1 Introduction

2.1.1 In order to assess the impact of the Diversification Park development proposal to be constructed on land at Winyates Green Triangle, Redditch, on the transport network surrounding the site, it has been necessary to establish the existing site conditions.

2.2 Site Location

2.2.1 A location plan (drawing number **JN835-NWK-001**) confirming the position of the development site within the context of the surrounding area is included in **Appendix B.**

2.2.2 The town of Redditch is situated approximately 15 miles south of Birmingham and is located on the northeastern boundary of Worcestershire. The town lies on the A435, which skirts to the east. The main route of access is the A441, which extends between Birmingham and Cookhill. The M42 motorway is a short drive away and it is linked by dual carriageways and A class roads to the surrounding towns of Bromsgrove and Evesham.

2.2.3 The town has a long history of successful manufacturing. In the 19th century, the town manufactured needles and diversified into fishing tackle, with other metal-based trades also growing in importance. Today 22.8% of jobs in Redditch are in the manufacturing sector, compared with 14% in the West Midlands and only 10.6% in Great Britain. The sector is crucial to the local economy.

2.2.4 Redditch was designated a New Town in 1964 and the population increased dramatically with the construction of housing developments such as Church Hill, Matchborough, Winyates, Lodge Park and Woodrow created to accommodated overspill from nearby areas such as Birmingham. Redditch was built as a flagship town using new methods and town planning, examples

of this innovation being that all the main roads are banked to reduce noise to the housing estates, with a network of footpaths and underpasses segregating pedestrians from primary routes.

2.2.5 According to the 2001 Census, Redditch has a population of approximately 78,800.

2.3 Existing Land Uses in the vicinity of the Development Site

2.3.1 The development site is situated on the Winyates Green Triangle on the northeastern boundary of Redditch, with a residential area to the west and south, the A435 Birmingham Road to the east, and the A4023 Coventry Highway to the north. **Plate 1** below highlights the proposed Diversification Park development in context.

Plate 1 – Proposed Development Context

2.4 Existing use of the Development Site

2.4.1 The site is currently agricultural / unused. **Plate 2** refers:

Plate 2 – Development Site

2.5 Air Quality

2.5.1 Under the Environment Act 1995**,** local authorities are responsible for ensuring that air quality standards are not exceeded within their area after 2005. The National Air Quality Strategy sets standards for the eight main air pollutants and objectives for the UK.

2.5.2 Managing local air quality requires local authorities to identify and take action to tackle any local air quality problems from these pollutants. If conclusions point to objectives being exceeded, an Air Quality Management Area (AQMA) must be declared covering the area affected. Action plans must then be drawn up, involving the many different stakeholders, setting out how further objectives are to be achieved.

2.5.3 As part of this process, the local authority reviews and assesses local air quality on an annual basis and submits a report of their findings to DEFRA. In 2007 Redditch Borough Council published the 2007 Progress Report which indicated that none of the tested locations would exceed acceptable levels for pollutants. An extended diffusion tube survey took place in 2008 to monitor NO2 levels and a further progress report was due in 2008 but is not on the website.

2.6 Abnormal Usage

2.6.1 The Construction and Use regulations provide the basic law by which normal motor vehicles and trailers (up to a maximum of 40 tonnes) are built and operate on the road. The movement of large or heavy loads and cranes (abnormal loads) that exceed dimensions set down by the regulations is permitted provide they follow the Special Types General Order (STGO) provided by the Department for Transport.

2.6.2 An abnormal load can potentially travel on any road provided the haulier complies with the law including weight limits; however, some roads are more suitable, such as A Class Roads. Before a haulier can move an abnormal load the Police must be notified. In addition if the gross weight or axle weights exceed those specified on the Construction and Use regulations the Highway Authority and bridge owners along the route must be informed e.g. Network Rail. The law requires a minimum of two days notice before moving the load.

2.6.3 At the present time no abnormal loads visit the site and this situation is unlikely to alter as a result of the development.

3 BASELINE TRANSPORT DATA

3.1 Introduction

3.1.1 This chapter firstly describes the character of the surrounding highway network and provides information on recent injury collisions recorded in the vicinity of the development site and baseline 2009 traffic flows from critical junctions in the town confirmed as being within the scope of the assessment.

3.2 Highway Network

3.2.1 The proposed development site is situated on land bounded by Far Moor Lane to the west, the A435 Birmingham Road to the east and the A4023 Coventry Highway to the north.

3.2.2 The A435 Birmingham Road is a de-trunked road, which links Birmingham and Cirencester. The section of the route to the east of the town is single lane carriageway with a 40 mph speed limit changing to a dual carriageway adjacent to the site and the junction with the A4023.

3.2.3 The A4023 Coventry Highway connects the eastern boundary of Redditch with the town centre where it forms the Redditch Ringway. The section of the route to the north of the development site is dual carriageway with a 70 mph speed limit. There is a well-used lay-by on this section of the road adjacent to the development site, along with a Route Information Point. **Plates 3** and **4** refer:

Plate 3 – Route Information Point adjacent to Development Site

Plate 4 – A4023 Coventry Highway adjacent to Development Site

3.2.4 Far Moor Lane runs between the A4023 Coventry Highway / Moons Moat North Industrial Estate roundabout and Alders Drive to the south. Far Moor Lane is a local distributor road with a 30 mph speed limit in place along its length. **Plate 5** refers:

Plate 5 – Far Moor Lane near to Development Site

3.3 Personal Injury Collision Statistics (PICS)

3.3.1 In order to confirm the safety record on the road network within the area of influence of the proposed development site, the personal injury collision statistics for the five year period from January 2004 to August 2009 have been obtained from Warwickshire and Worcestershire County Councils.

3.3.2 Analysis of the collision statistics confirms that since January 2004, there have been a total of 32 collisions within the search area surrounding the development site. **Tables 1** and **2** below identify the severity breakdown of these collisions and information on their locations on the road network.

Category	Number of Collisions between January 2004 – August 2009
Slight	29
Serious	2
Fatal	1

Table 1 - Collision Category

Location	Number of Collisions	Percentage (%)
Far Moor Lane	3	9.4%
A4189 Warwick Highway / Alders Drive Roundabout inc. all approaches	4	12.5%
A4023 Coventry Highway / Far Moor Lane Roundabout inc. all approaches	11	34.4%
A435 Birmingham Road / A4023 Coventry Highway Junction inc. all approaches	8	25%
A4189 Warwick Highway / A435 Birmingham Road Roundabout inc. all approaches	3	9.4%
A435 Birmingham Road between the junction with A4023 Coventry Highway & A4189 Warwick Highway	3	9.4%

Table 2 – Location of Collisions

3.3.3 **Tables 1** and **2** above demonstrate that the vast majority of collisions which have occurred since 2004 resulted in slight injury. They are grouped into 6

locations, with 34.4% occurring on the approaches to or on the A4023 Coventry Highway / Far Moor Lane roundabout and 25% occurring on the approaches to or on the A435 Birmingham Road / A4023 Coventry Highway grade-separated junction. The next highest location with 12.5% was the A4189 Warwick Highway / Alders Drive roundabout and its approaches. Further details regarding the causes of these collisions are provided in **Tables 3** – **8** below:

Collision Reference	Severity	Vehicles Involved	Cause
04DF39326	Serious	HGV	Loss of control due to slippery carriageway surface
06DF49456	Slight	Car v. Car	Foreign National driving on the wrong side of the carriageway
07DE86692	Slight	Car v. Car	Failure to look properly and turned in to the path of an oncoming car

Table 3 – Far Moor Lane

Collision Reference	Severity	Vehicles Involved	Cause
04DF40432	Slight	Car v. Pedal Cycle	Failure to look properly resulting in a car pulling in to the path of an oncoming pedal cyclist
04DF41651	Slight	Car v. Motorcycle	Car collided with the rear of a stationary motorcycle
06DE50316	Slight	Car v. Car	Car collided with the rear of a stationary car

09D900988	Slight	HGV v. Car	HGV collided with the rear of a stationary car

Table 4 – A4189 Warwick Highway / Alders Drive Roundabout inc. all approaches

Collision Reference	Severity	Vehicles Involved	Cause
04DF42068	Slight	Car v. Taxi	Failure to look properly and turned in to the path of an oncoming taxi
05DF48582	Slight	HGV v. Car	HGV collided with the rear of a stationary car
06DE49886	Slight	Car	Loses Control for unknown reason
06DE51627	Slight	Car	Intoxicated car driver loses control of vehicle
06DE52415	Slight	Car v. Car	Collided with the rear of a stationary car
06DE85255	Slight	Car v. Car	Collided with the rear of a stationary car
07DE86865	Slight	Car v. Car	Loses control of vehicle whilst braking suddenly
07DE87058	Slight	Car v. Car	Collided with the rear of a car changing lane
08DE88588	Slight	Car v. Car	Collided with the rear of a stationary car
09D903514	Slight	Motorcycle	Loss of control whilst negotiating bend

09D903977	Slight	Car v. Car	Driving on the wrong side of the carriageway

Table 5 – A4023 Coventry Highway / Far Moor Lane Roundabout inc. all approaches

Collision Reference	Severity	Vehicles Involved	Cause
S031868	Slight	Car	Loss of control whilst swerving to avoid another vehicle
S030658	Slight	Car	Loss of control whilst overtaking
S031137	Slight	Car v. Car	Intoxicated car driver loses control of vehicle
S031463	Slight	Car v. Car v. Car v. Car	Collided with the rear of a stationary car in queuing traffic
S030250	Slight	Car	Loses control whilst on slip road
S030603	Serious	Car	Loss of control due to wet carriageway and excessive speed
S031558	Slight	Motorcycle	Loss of control whilst overtaking
S031675	Slight	Car v. Car	Loss of control due to icy carriageway

Table 6 – A435 Birmingham Road /A4023 Coventry Highway Grade Separated Junction inc. all approaches

Collision Reference	Severity	Vehicles Involved	Cause
S032000	Slight	Car v. Agricultural Tractor	Car collides with the rear of broken down tractor
S030959	Slight	Car v. Car	Failure to look properly results in a car trying to overtake the other car turning right
S030834	Fatal	Car v. Car v. Car	Loses control after exiting roundabout

Table 7 – A4189 Warwick Highway / A435 Birmingham Road Roundabout inc. all approaches

Collision Reference	Severity	Vehicles Involved	Cause
S031383	Slight	Car v. Car v. Car	Car collides with the rear of a car attempting u-turn
S031767	Slight	Car v. Car	Car collides with rear of a car who has braked suddenly
S031707	Slight	Car v. LGV. Car	Car collides with rear of stationary car who was waiting to turn right

Table 8 – A435 Birmingham Road between A4023 Coventry Highway and A4189 Warwick Highway

3.3.4 Closer inspection of the interpreted listings reveals that the majority of collisions have occurred as a result of driver error for example, failing to look properly, following too closely and poor judgement. In addition, several of

these collisions occurred when the road conditions were wet/icy or there were objects in the carriageway.

3.3.5 One fatality occurred in the search area between 2004 and 2009, which occurred on 28 June 2008 at 1730 at the roundabout of A435 Birmingham Road and A4189 Warwick Highway. This occurred during the day, on a dry carriageway and in fine weather. The driver of the first car was travelling northwest bound on the A435 and exited the roundabout where they lost control, colliding with an oncoming southbound travelling car. A third car then collided with the rear of the second car as they were unable to stop in time. The driver of vehicle 1 aged 76 suffered fatal injuries.

3.3.6 Based on the information identified in the collision analysis, it is considered likely that the development proposals will not result in a statistically significant increase in the frequency or severity of collisions in the area surrounding the development site. The full listings from both authorities are contained in **Appendix C**.

3.4 Base Traffic Flows

3.4.1 In order to establish the 2009 base traffic flows on the A4023 Coventry Highway, a classified traffic survey was undertaken for the morning, afternoon and evening peak periods on the 8th September 2009. The data is contained in **Appendix D**.

3.4.2 In order to establish the 2009 base traffic flows on the A4189 Warwick Highway and Alders Drive / Far Moor Lane junction, a classified traffic survey was undertaken for the morning, afternoon and evening peak periods on the 9th September 2009.

3.4.3 In order to establish the 2009 base traffic flows on Far Moor Lane, an Automatic Traffic Counter (ATC) was laid between Wednesday the 9th September and Friday the 11th September 2009 between the junctions of Ilshaw Close and Hollyberry Close. **Plate 6** refers:

Plate 6 – Location of ATC on Far Moor Lane

3.4.4 Warwickshire County Council has provided ATC data for the A435 Birmingham Road (south of Gorcott Hill) from Monday the 1st June until Tuesday the 30th June 2009. This data includes vehicle count and speed survey information. **Plate 7** refers:

Plate 7 – Location of ATC on A435 Birmingham Road

3.4.5 The resulting 2009 peak hour base flows for the local road network are illustrated on the summary distribution diagram on drawing number **JN835-**

NWK-002 and the ATC data Speed Data for the A435 Birmingham Road and Far Moor Lane is contained in **Appendix D**.

3.5 Speed Data

3.5.1 In order to ascertain the speed of traffic travelling along Far Moor Lane, the A4023 Coventry Highway and the A435 Birmingham Road past the proposed development site, either a manual speed survey or ATC data was required. A manual speed survey was undertaken on the A4023 Coventry Highway on the 3rd September 2009, and the ATC data for Far Moor Lane and the A435 Birmingham Road was used to obtain speed survey information for those roads.

3.5.2 The 85th percentile speeds have been obtained in accordance with TA22/81 (Vehicle speed measurement on All Purpose Roads) of the Design Manual for Roads and Bridges.

3.5.3 With regards to the manual speed survey on the A4023 Coventry Highway, it was undertaken during neutral hours, i.e. non-peak hours, for a 2-hour period using a radar speed measurement gun. The enumerator was positioned in an unmarked car on the A4023 Coventry Highway so as not to affect traffic speeds and so that motorists were not aware of his presence. The weather was dry and sunny.

3.5.4 The speeds of 100 vehicles in a westbound direction were recorded in free flow conditions in order to obtain as accurate a sample as possible. The speeds were recorded as vehicles passed the speed survey point. As the sample size of the survey was less than 200 vehicles the standard deviation method of calculation was used to determine the 85th percentile speed.

3.5.5 The detailed survey results are attached at the rear of this report in **Appendix D** and the calculated 85th percentile speeds are confirmed in **Table 9** – **11** below:

Direction of Traffic Flow	Dry Weather 85th Percentile Speed	Wet Weather 85th Percentile Speed
Westbound towards the Moons Moat roundabout	63.09mph	58.12mph

Table 9 – Speed Survey Results – A4023 Coventry Highway

Direction of Traffic Flow	Dry Weather 85th Percentile Speed	Wet Weather 85th Percentile Speed
Northbound	44.73mph	42.23mph
Southbound	43.27mph	40.77mph

Table 10 – Speed Survey Results – Far Moor Lane

Direction of Traffic Flow	Dry Weather 85th Percentile Speed	Wet Weather 85th Percentile Speed
Northbound towards the junction with the A4023 Coventry Highway	44.6mph	42.1mph
Southbound towards the junction with the A4189 Warwick Highway	43.9mph	41.4mph

Table 11 – Speed Survey Results – A435 Birmingham Road

3.5.6 The speed survey results above show that vehicles in both directions are travelling in excess of the 30 mph speed limit along Far Moor Lane and in excess of the 40 mph speed limit along the A435 Birmingham Road. The higher speeds can be attributed to the inactive frontage on Far Moor Lane, lack of pedestrian activity or parked cars, and on the A435 Birmingham Road this can be attributed to the nature of the road and again its largely inactive frontage.

3.6 Existing Trip Generation

3.6.1 The site is currently agricultural / unused and is generating minimal trips.

4 SUSTAINABLE TRANSPORT MODES AND ACCESSIBILITY

4.1 Introduction

4.1.1 This chapter discuss in detail access to the development by sustainable modes of travel and how this could be improved through the use of a Travel Plan.

4.2 Pedestrian and Cycling Facilities

4.2.1 Walking and cycling have significant roles to play in delivering a more sustainable transport system. Nearly a quarter of all car driver trips are less than 2 miles and 56 per cent are less than 5 miles (DfT, 2008). For some of these journeys, walking and cycling can be a real alternative. Not only does this help reduce congestion and pollution, but it can also improve our health and wellbeing and reduce obesity.

4.2.2 PPG13 (paragraph 75) identifies walking as being “the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly under 2 kilometres.”

4.2.3 The Institution of Highways and Transportation (IHT) publication ‘Guidelines for providing for journeys on foot’ (2000) provides guidance on how to encourage pedestrian travel. Within paragraph 3.3.1 it identifies the following factors as being the main influence on acceptable walking distances: -

- An individual’s fitness and physical ability
- Encumbrances, e.g. shopping pushchair
- Availability, cost and convenience
- Time savings
- Journey purpose
- Personal Motivation
- General deterrents to walking

4.2.4 The Guidelines also note that walking accounts for over a quarter of all journeys and four-fifths of journeys less than one mile, (1.6 kilometres). Furthermore, walking is also an essential part of much car and almost all public transport travel, as bus stops are usually accessed on foot. The promotion of sustainable, integrated transport therefore involves providing good pedestrian links to public transport facilities. A drawing is contained in **Appendix E** (**JN835-NWK-004**) which demonstrates the area accessible within a comfortable 2 kilometre walk distance of the site.

4.2.5 A footpath is adjacent to the development site on Far Moor Lane and forms a continuous wide path of approximately 2 metres behind a 9.5 metre wide highway verge. There is regular street lighting, along with interconnecting underpasses (approximately 3.8 metres wide) under Far Moor Lane into the neighbouring residential estate. **Plates 8** - **10** refer:

Plate 8 – Footpath on Far Moor Lane

Plate 9 – Typical underpass under Far Moor Lane

Plate 10 – Typical linkage into neighbouring residential estate

4.2.6 PPG13 (paragraph 78) identifies cycling as having "the potential to substitute for short car trips, particularly those under 5km, and to form part of a longer journey by public transport." A drawing is contained in **Appendix E** (**JN835-NWK-005**) which demonstrates the area accessible within a comfortable 5 kilometre cycle distance of the site.

4.2.7 Redditch's urban road infrastructure is conducive to cycling, with its network of residential roads and footpath/underpass connections bypassing busier

roads. However the area would benefit from pedestrian/cycle signage to encourage the use of these sustainable modes of travel.

4.2.8 Redditch is on the National Cycle Network Routes 5 and Regional Route 55. NCN5 is a long distance route which when compete will connect Reading and Holyhead via Oxford, Banbury, Stratford-upon-Avon, Redditch, Bromsgrove, Birmingham, Walsall, Stafford, Stoke-on-Trent, Chester, Colwyn Bay and Bangor. NCN55 is a regional route linking Redditch to Kings Norton in the West Midlands. **Plate 11**, courtesy of Worcestershire County Council's LTP2, refers:

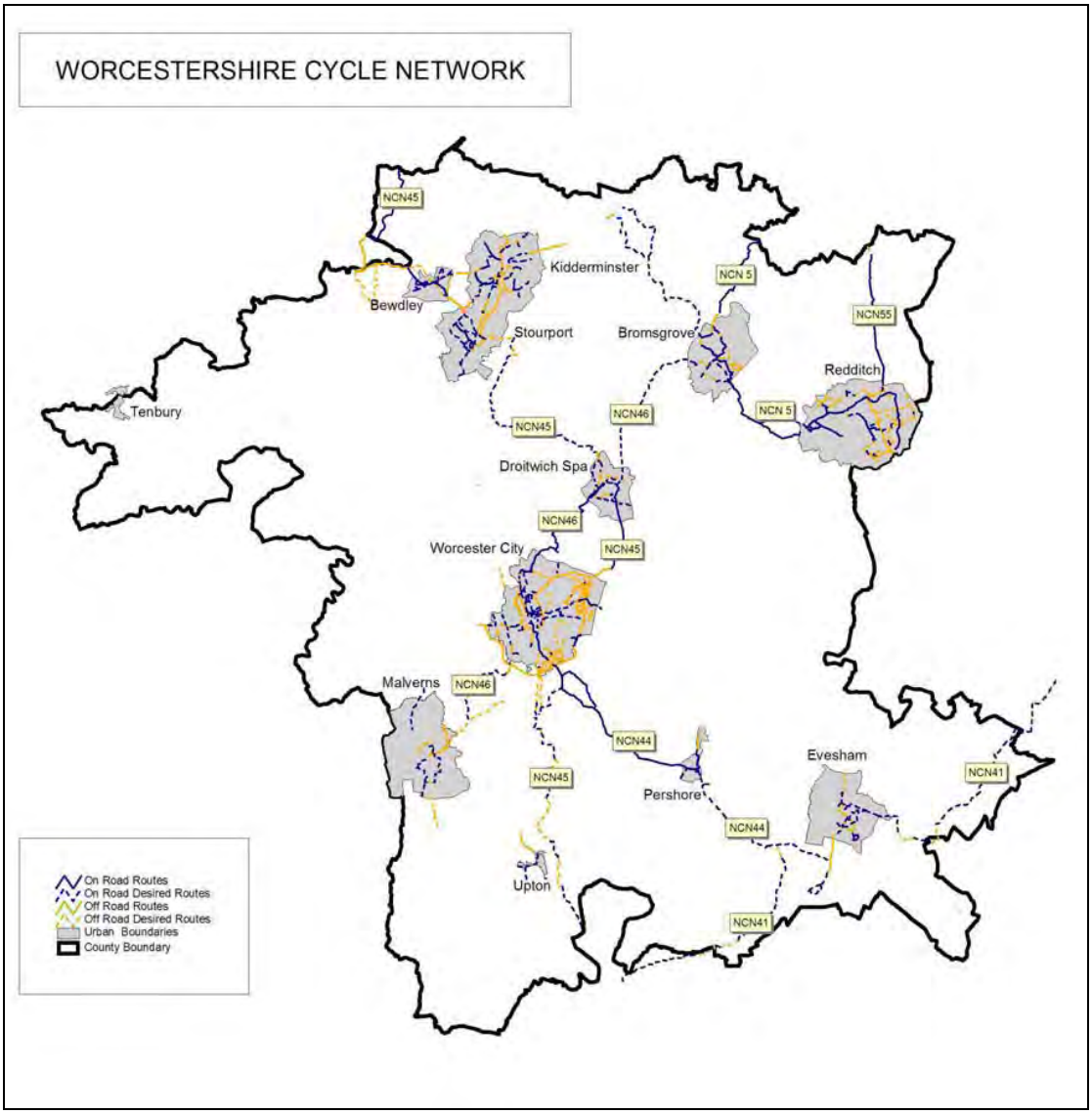

Plate 11 – Worcestershire Cycle Network

4.2.9 It is proposed that the development will provide undercover cycle parking to meet local standards.

4.3 Passenger Transport Facilities - Bus

4.3.1 An assessment of the existing bus facilities within the vicinity of the proposed development has been undertaken following a site visit on the 3rd September 2009.

4.3.2 The development site is well located for access to public transport with bus stops within comfortable walking distance of the proposed site access on Far Moor Lane. The nearest bus stops are near Illshaw Close and Furze Lane, which are located less then 20 metres from the potential vehicular access to the development site and approximately 200 metres apart from one another. A drawing (**JN835-NWK-006)** is contained in **Appendix E** which confirms the bus stop infrastructure within a 400-metre walk distance of the site.

4.3.3 The bus stops both consist of hard standing, a post, with a flag and timetable information attached. In addition, the Furze Lane stop is linked to the footpath adjacent to the development site by a further footpath. **Plates 12** and **13** refer:

Plate 12 – Near Illshaw Close, Far Moor Lane

Plate 13 – Near Furze Lane, Far Moor Lane

4.3.4 An assessment of the existing bus services within the vicinity of the proposed development has been undertaken, and route and timetable information has been obtained courtesy of the Worcestershire County Council website. All bus timetables and routes operating along Far Moor Lane e.g. within 400 metres of the development site are summarised in **Tables 9** - **10** below.

4.3.5 Services 52 and 53 are circular routes operating along Far Moor Lane, hourly Monday to Saturday.

	Direction/Route/Operator	Frequency of Service		
		Morning	Daytime	Evening
Monday- Saturday	Redditch - Church Hill - Matchborough East - Alexandra Hospital - Winyates West - Riverside - Redditch 52 First	0906	1006 1106 1206 1306 1406 1506	

Monday- Saturday	Redditch - Riverside - Winyates West - Alexandra Hospital - Matchborough East - Church Hill - Redditch 53 First		1004 1104 1204 1304 1404	

Table 9 – Services 52 and 53, Far Moor Lane

4.3.6 Service 61 is a circular route operating along Far Moor Lane, hourly Monday to Saturday.

		Frequency of Service		
	Direction / Route	**Morning**	**Daytime**	**Evening**
Monday - Saturday	Sainsbury's - Redditch - Winyates Green - Matchborough East (Circular) 61 Diamond	0804 0854	1014 1114 1214 1314 1414 1514 1614	1714 1804

Table 10 – Service 61, Far Moor Lane

4.3.7 The contents of the above tables were correct at the time of printing and clearly illustrate that there are already frequent opportunities for travel around Redditch by bus.

4.4 Travel Plan

4.4.1 A Travel Plan is a specific package of measures tailored to suit the needs of individual sites aimed at promoting greener, cleaner travel choices and reducing single occupancy car journeys.

4.4.2 The objectives for the Business Travel Plan would be to enable modal choice for visitors to the site and to reduce single occupancy car trips associated with the site. It would address commuter journeys and business journeys. For

example, measures could include an information pack for visitors with bus timetables.

4.4.3 The Travel Plan would include a range of mechanisms, initiatives, targets, indicators and associated monitoring/review procedures to reduce the impact of travel associated with the site on the environment. For example, it would be likely to include targets to encourage the use of local bus services.

5 PROPOSED DEVELOPMENT

5.1 Introduction

5.1.1 This chapter will discuss in detail the proposed development site and the impact of new trips generated by the development.

5.2 Proposed Development

5.2.1 The proposal is to create a Diversification Park to facilitate businesses in Redditch by manufacturing new products for growth sectors or finding alternative markets for their current products. The businesses themselves would not locate on the diversification park; rather they would use the facilities on the park to help develop their new products. The park should be a central facility for manufacturers to access support and services specifically designed to meet their needs. These could include:

- Manufacturing Advisory Service
- Other Business Link Services
- Proto-typing companies
- Solicitors specialising in patent and intellectual property rights
- Incubator units
- Market research companies
- CAD/CAM specialists

5.2.2 The Park would also be a host location for regular events such as:

- International trade events
- Meet the buyer events
- Meet your maker events

5.3 Proposed Parking

5.3.1 Car parking spaces will be provided in accordance with government guidance, and specific local guidance.

5.3.2 Cycle parking spaces will be provided in accordance with government guidance, and specific local guidance.

5.4 Trip Generation

Diversification Park / Business Innovation

5.4.1 In order to derive the potential level of new trips that would be generated by the proposed development, the TRICS 2009 database has been interrogated, however, in the absence of comparable survey sites, Morgan Tucker conducted our own multimodal transport survey at a local site which was considered to be comparable.

5.4.2 Newark Beacon is a state of the art business innovation centre approximately 2000 sqm, completed in 2007 to offer 27 office units, along with 4 light industrial units, additional support facilities, virtual office facilities, conference facilities, and a café. Although smaller then the proposed Diversification Park, the survey results were factored accordingly.

5.4.3 Full results of the survey of Newark Beacon are contained in **Appendix F**.

5.4.4 The resulting trip generations (factored up for a 10,000 sqm development) are in **Table 11** below:

Use	AM Peak Hour (08:00 – 09:00)		PM Peak Hour (17:00 – 18:00)	
	Arrivals	Departures	Arrivals	Departures
Business Innovation Centre - Vehicles	205	20	25	160
Business Innovation Centre - Pedestrians	50	5	0	5
Business Innovation	15	0	5	5

Centre - Cyclists				

Table 11 – Proposed Trip Generations 10,000 sqm Business Innovation Centre

5.4.5 To summarise, the proposed development would generate a worst case of 225 2-way trips in the AM peak hour and 185 2-way trips in the PM peak hour for 10,000 sqm business innovation development.

5.4.6 The resulting trip generations (factored up for a 20,000 sqm development) are in **Table 12** below:

Use	AM Peak Hour (08:00 – 09:00)		PM Peak Hour (17:00 – 18:00)	
	Arrivals	Departures	Arrivals	Departures
Business Innovation Centre - Vehicles	410	40	50	320
Business Innovation Centre - Pedestrians	100	10	0	10
Business Innovation Centre - Cyclists	30	0	10	10

Table 12 – Proposed Trip Generations 20,000 sqm Business Innovation Centre

5.4.7 To summarise, the proposed 20,000 sq.m business innovation development would generate a worst case of 450 two-way trips in the AM peak hour and 370 two-way trips in the PM peak hour.

Business Park

5.4.8 For a further comparison, the TRICS 2009 database has been interrogated for Business Parks to provide a statistically valid estimate of the likely rate of trip generation (full information contained in **Appendix F**). In addition, a

modal split pie chart is contained below to illustrate the division of trips via mode. **Plate 14** refers:

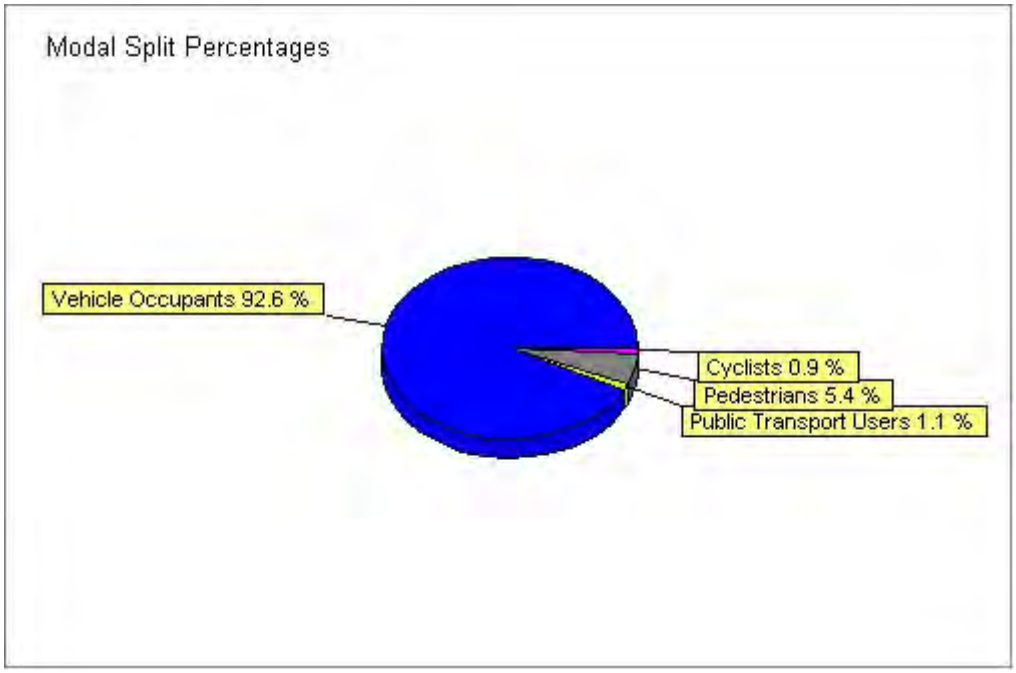

Plate 14 – Business Park

5.4.9 The resulting trip generations are displayed below in **Table 13**:

Use	AM Peak Hour (08:00 – 09:00)		PM Peak Hour (17:00 – 18:00)	
	Arrivals	Departures	Arrivals	Departures
Per 100 sqm	1.364	0.286	0.235	1.186
Business Park – Vehicles	136	29	23	119
Business Park – Pedestrians	10	1	2	8
Business Park – Cyclists	2	0	0	1
Business Park – Public Transport Users	4	0	0	2

Table 13 – Proposed Trip Generations 10,000 sqm Business Park

5.4.10 To summarise, the proposed development would generate a worst case of 165 2-way trips in the AM peak hour and 142 2-way trips in the PM peak hour for 10,000 sqm business park development.

5.4.11 The resulting trip generations are displayed below in **Table 14**:

Use	AM Peak Hour (08:00 – 09:00)		PM Peak Hour (17:00 – 18:00)	
	Arrivals	Departures	Arrivals	Departures
Per 100 sqm	1.364	0.286	0.235	1.186
Business Park – Vehicles	273	57	47	237
Business Park – Pedestrians	21	1	4	17
Business Park – Cyclists	5	0	0	3
Business Park – Public Transport Users	8	0	0	4

Table 14 – Proposed Trip Generations 20,000 sqm Business Park

5.4.12 To summarise, the proposed development would generate a worst case of 330 two-way trips in the AM peak hour and 284 two-way trips in the PM peak hour for 20,000 sqm business park development.

Residential Development

5.4.13 Lastly, in early 2000, the development site was investigated for a 300 house residential development. For accuracy, the TRICS 2009 database has been re-interrogated for Residential Development to provide an up-to-date estimate of the likely rate of trip generation (full information contained in **Appendix F**). In addition, a modal split pie chart is contained below to illustrate the division of trips via mode. **Plate 15** refers:

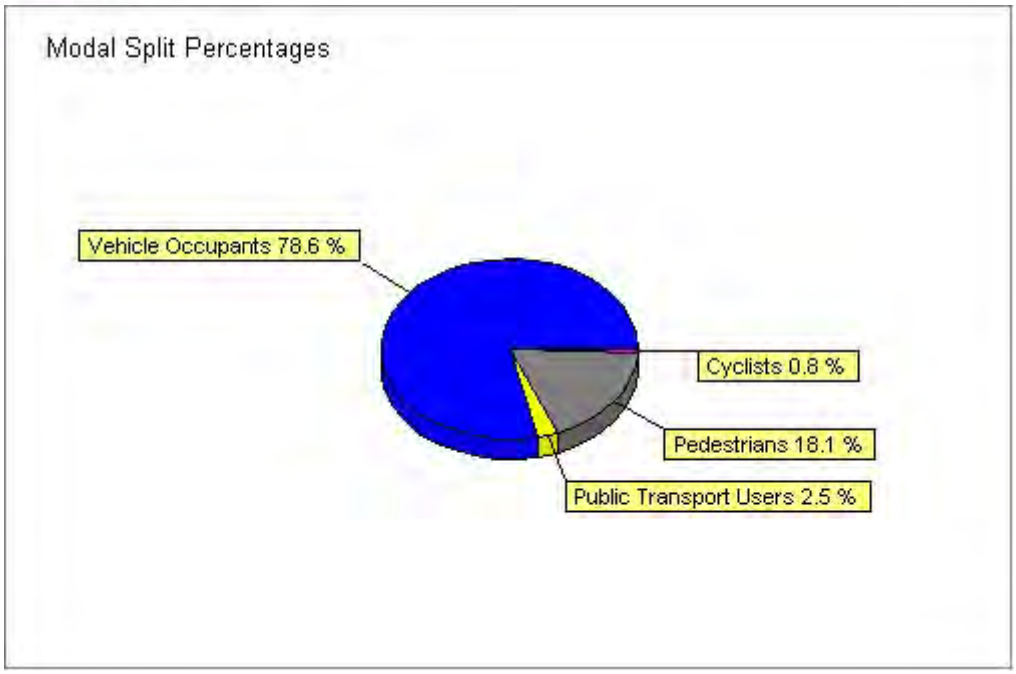

Plate 15 – Residential Development

5.4.14 The resulting trip generations are displayed below in **Table 15**:

Use	AM Peak Hour (08:00 – 09:00)		PM Peak Hour (17:00 – 18:00)	
	Arrivals	Departures	Arrivals	Departures
Per Dwelling	0.223	0.469	0.439	0.309
300 Residential Dwellings – Vehicles	67	141	132	93
300 Residential Dwellings – Pedestrians	15	72	27	19
300 Residential Dwellings – Cyclists	3	2	0	1
300 Residential Dwellings – Public Transport Users	12	13	4	1

Table 15 – Proposed Trip Generations 300 Residential Dwellings

5.4.15 To summarise, the proposed 300 dwelling residential development would generate a worst case of 208 two-way trips in the AM peak hour and 225 two-way trips in the PM peak hour.

Conclusion

5.4.16 As demonstrated above, the worst case for trip generation is a business innovation use with 20,000 sqm generating 450 two-way trips in the AM peak hour and 370 two-way trips in the PM peak hour.

5.5 Census Data

5.5.1 The 2001 Census holds the most up-to-date source of data about the population of Redditch, which can be used to check that the trip generations and modal splits we are proposing for this development site are appropriate. The Redditch map is contained in **Plate 16** below:

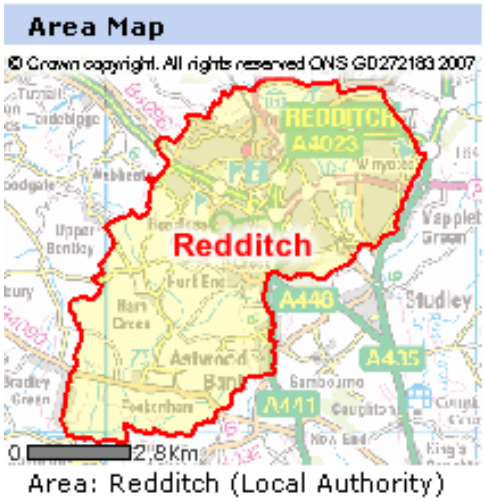

Plate 16 – Census Redditch Area

5.5.2 According to the 2001 Census Data, car ownership in Redditch is higher then in the West Midlands as a whole, with only 21% of households without a car compared to 27% for the West Midlands. 42% of households have 1 car in Redditch compared to 43% in West Midlands, and 37% have 2 or more cars compared to 30% in the West Midlands. **Plates 17** and **18** below illustrate:

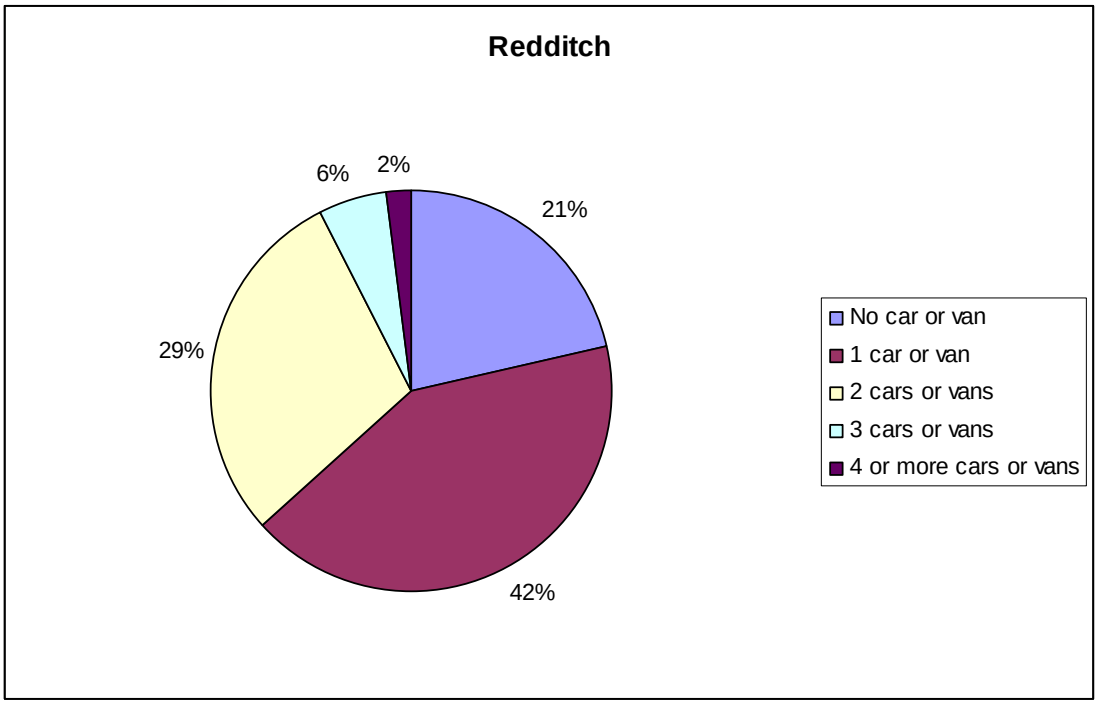

Plate 17 – Car ownership per household in Redditch (2001 Census)

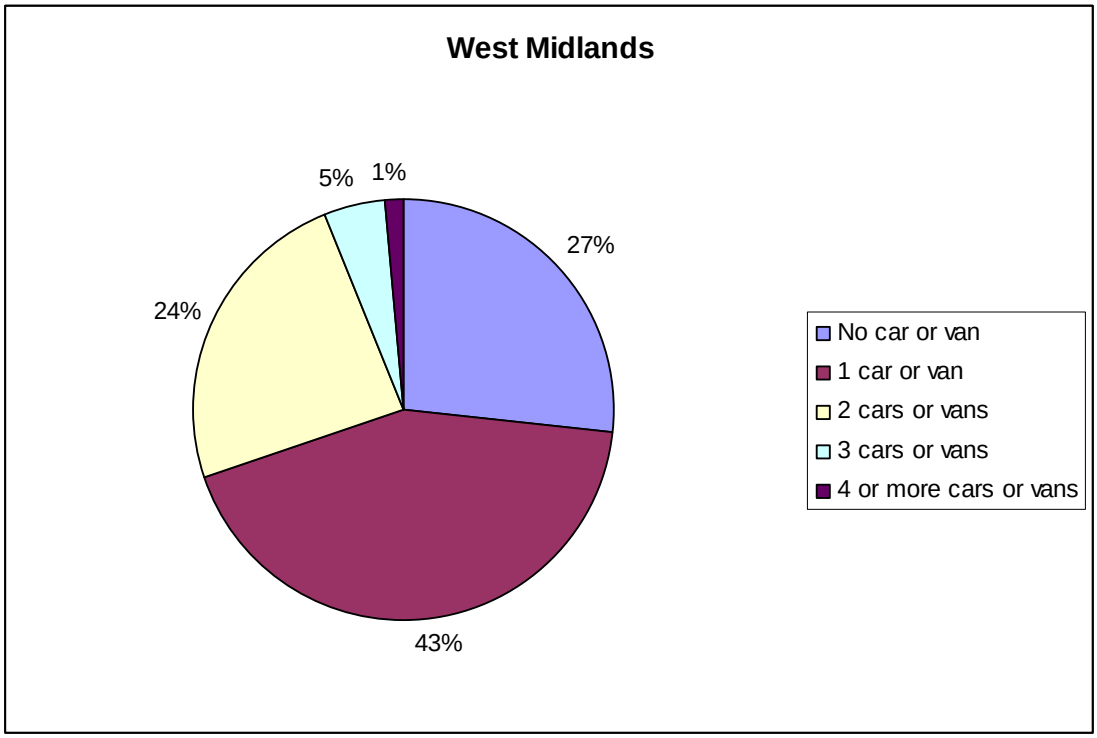

Plate 18 – Car ownership per household in the West Midlands (2001 Census)

5.5.3 The impact of car ownership in Redditch is illustrated in **Plate 19** below where car use is by far the most popular mode of travel, with 70% of journeys to

work made by people driving a car, and a further 8% as a passenger in a car, in employment in the Redditch area. The percentage of people who travel to work via a sustainable mode of transport such as walking, cycling, and public transport is 9%, 2% and 10% respectively, providing a total of 21% of all journeys.

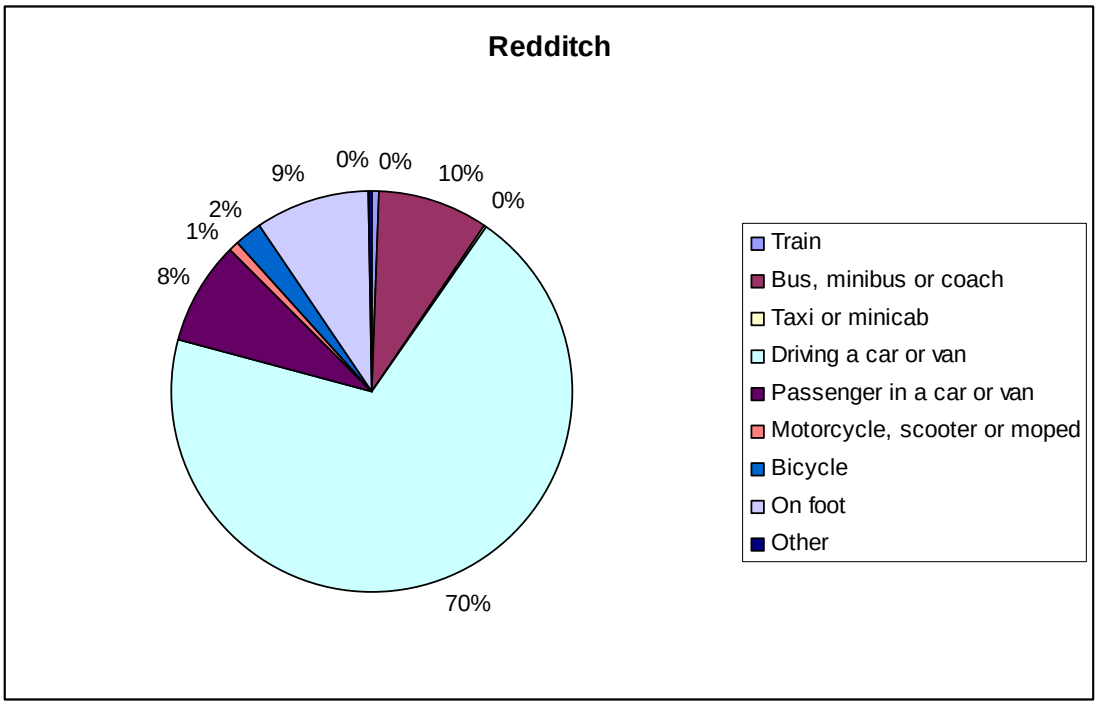

Plate 19 – Travel to Work by Mode in Redditch (2001 Census)

5.5.4 **Plate 20** below demonstrates that the car is slightly less dominant with 67% of people employed in the West Midlands travelling to work made by people driving a car, and a further 8% as a passenger in a car. In turn, the percentage of people who use sustainable travel modes has increased to 24% of the modal split (10% walking, 2% cycling, 12% public transport).

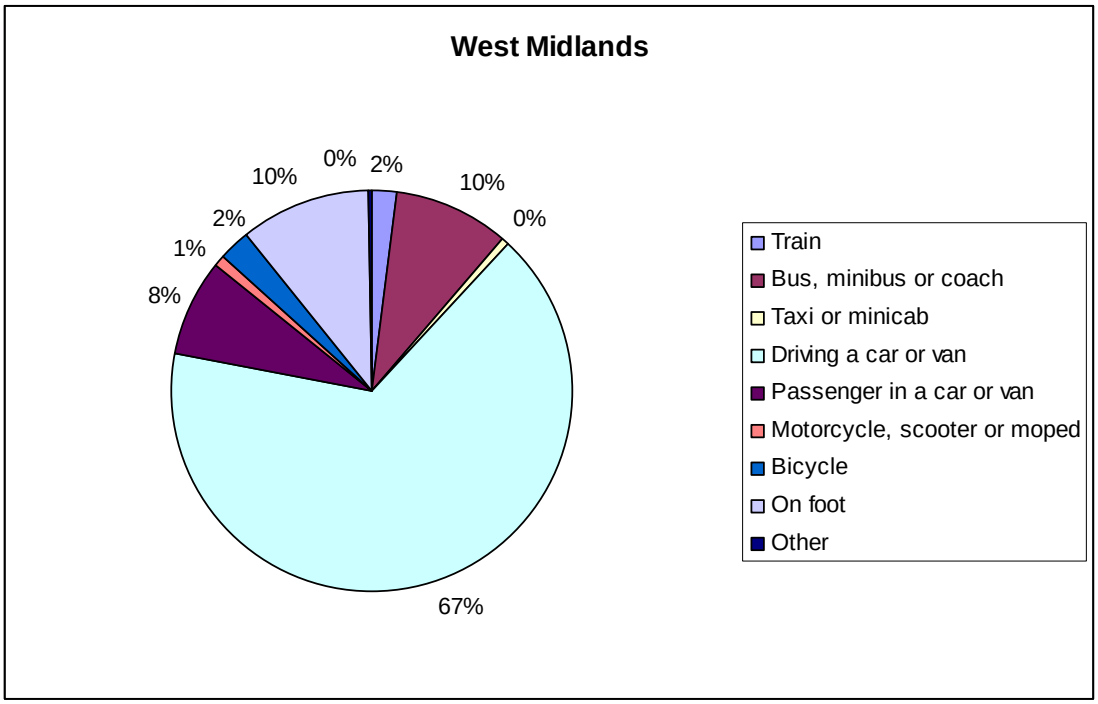

Plate 20 – Travel to Work by Mode in the West Midlands (2001 Census)

5.5.5 **Plate 21** below demonstrates that 28% of journeys to work in Redditch are less than 2 km, a comfortable walking distance, and 33% are between 2 and 5 km, so comfortable cycling or public transport distance.

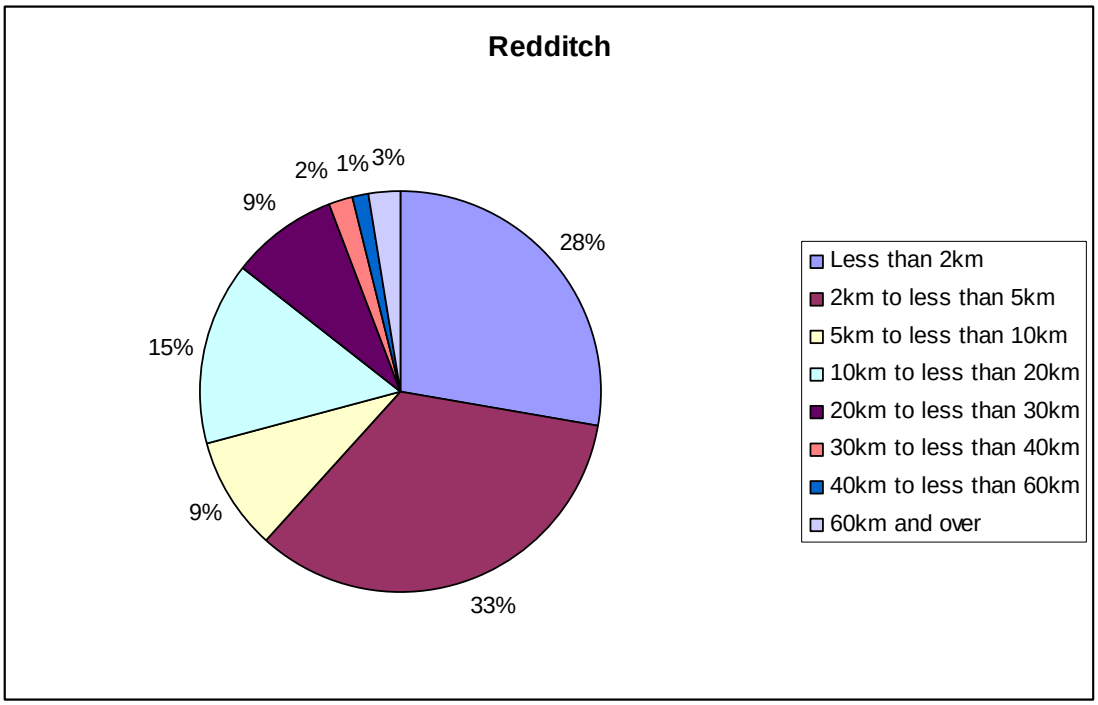

Plate 21 - Distance Travelled to Work in Redditch (2001 Census)

5.5.6 In comparison, **Plate 22** below demonstrates that 23% of journeys to work in the West Midlands are less than 2 km and 26% of journeys are between 2 and 5 km.

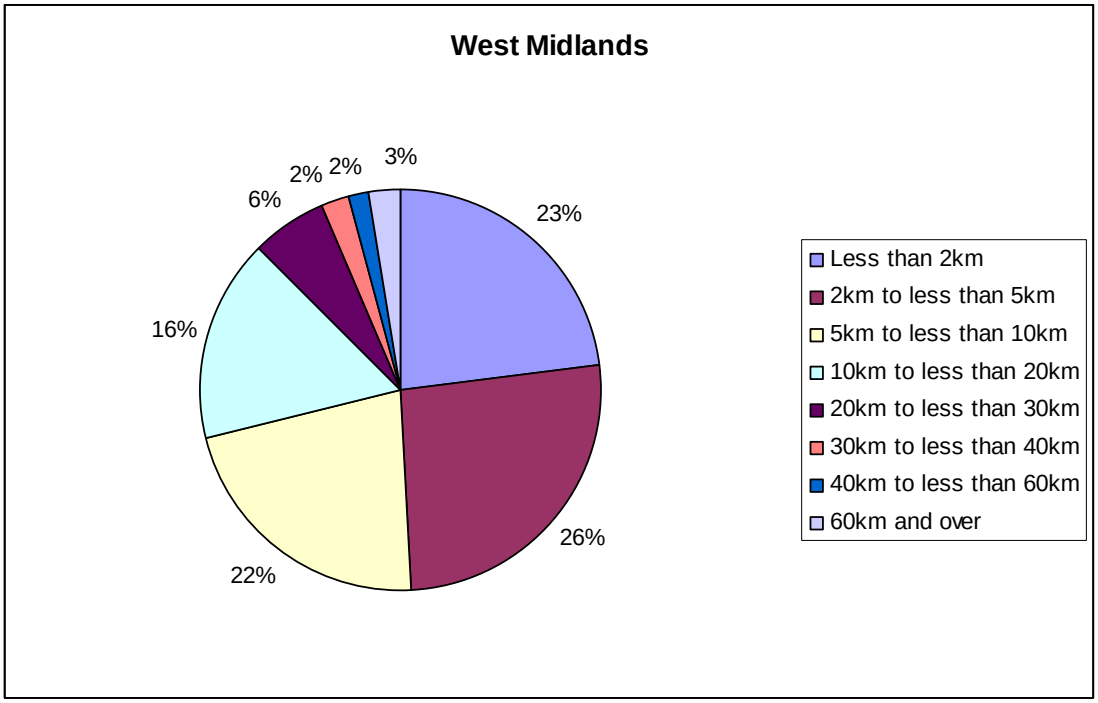

Plate 22 - Distance Travelled to Work in the West Midlands (2001 Census)

Conclusion

5.5.7 From the investigations above into the 2001 Census data for Redditch and the West Midlands, it is likely that approximately 75-78% of trips generated by the proposed development site will be by car with sustainable travel modes comprising the remaining 22-25%. This is a similar level to the results of the TRICS investigations, therefore it is acceptable to use these surveys for estimating the likely trip generations on the local highway network.

5.6 Trip Distribution

5.6.1 Following the investigation into the 2001 Census Data for Redditch, it is still not clear what the likely origin and destinations will be of the trips generated to/from the proposed development. Development trip distribution diagrams

(**JN835-NWK-006** – **JN835-NWK-008**) illustrating the likely assignment of the development traffic are attached at **Appendix F**.

6 IMPACT APPRAISAL

6.1 Introduction

6.1.1 This chapter will discuss in greater detail the likely impact of the proposed development site as measured against the government's five objectives for transport (outlined in A New Deal for Transport and A New Deal for Trunk Roads White Papers), applied through the New Approach to Appraisal (NATA).

6.2 Environment

6.2.1 In 2007 Redditch Borough Council published the 2007 Progress Report which indicated that none of the tested locations would exceed acceptable levels for pollutants. An extended diffusion tube survey took place in 2008 to monitor NO2 levels and a further progress report was due in 2008 but is not on the website.

6.2.2 In terms of environmental impact of the development, the proposal will result in the generation of motorised vehicle trips. However the subsequent improvement of accessibility through the use of an innovative travel plan and other necessary transport improvements to provide new linkages such as improvements to public transport, would mediate the impact.

6.3 Safety

6.3.1 In order to confirm the safety record on the road network within the area of influence of the proposed development site, the personal injury collision statistics for the five year period from January 2004 to August 2009 have been obtained from Warwickshire and Worcestershire County Councils.

6.3.2 Analysis of the collision statistics confirms that since January 2004, there have been a total of 32 collisions within the search area. Inspection of the interpreted listings reveals that the majority of collisions have occurred as a result of driver error for example, failing to look properly, following too closely and poor judgement. In addition, several of these collisions occurred when the road conditions were wet/icy or there were objects in the carriageway.

6.3.3 Based on the information identified in the collision analysis, it is considered likely that the development proposals will not result in a statistically significant increase in the frequency or severity of collisions in this area of Redditch.

6.4 Economy

6.4.1 One of the key roles of the planning system is to ensure that sufficient and attractive land is available for employment related development. The Borough Council has recently prepared a Draft Employment Land Review (October 2008) as part of its Local Development Framework that it is currently progressing. The purpose of the Review is to provide a context for the Local Development Framework by establishing future employment sites. The Review examines existing employment sites in terms of their fitness for future employment use, and identifies new sites for future use.

6.4.2 **Plate 23** below demonstrates that out of the people in Redditch who are of an economically active age; 65% are employed full-time, 17% part-time, 10% are self-employed, 3% are full-time students and 5% unemployed.

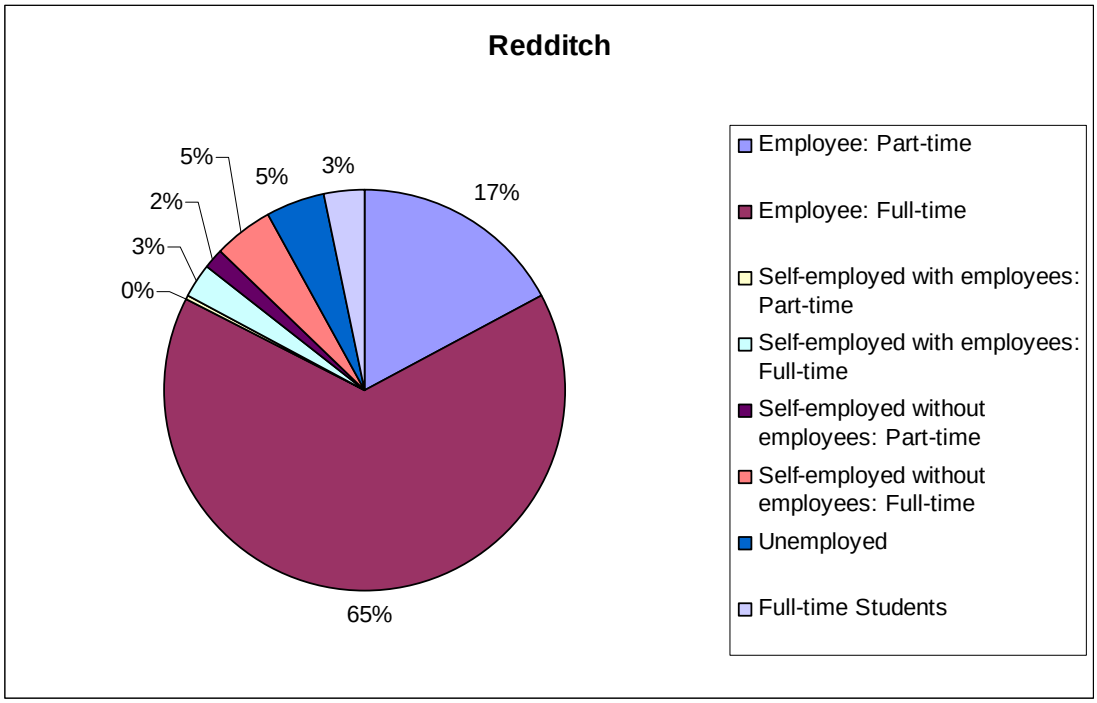

Plate 23 – Economic Activity in Redditch (2001 Census)

6.4.3 **Plate 24** demonstrates that the largest percentage of people (29%) work in manufacturing, followed by wholesale and retail trade / motor vehicles (19%), real estate (12%), health and social work (9%). Please note, there are very small percentages of people working in agriculture, hunting, forestry, fishing, mining and quarrying, electricity, gas, and water supply, which are not reflected on **Plate 24**.

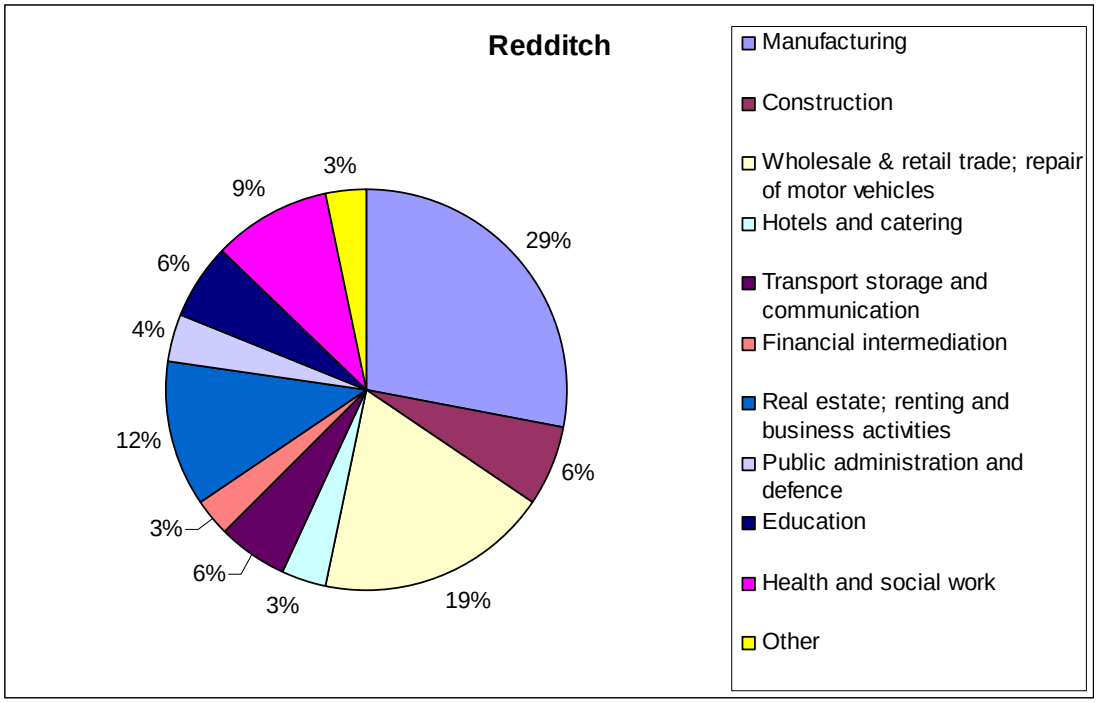

Plate 24 – Employment Industry in Redditch (2001 Census)

6.4.4 The results in **Plate 24** above for manufacturing concur with Redditch Borough Council's desire for a Diversification Park to support manufacturers and individuals, and the manufacturing industry in Redditch.

6.5 Accessibility

6.5.1 Worcestershire's second Local Transport Plan for 2006-11 (LTP2) was published in March 2006. The LTP2 outlines the transport strategy for Worcestershire for a five year period ending March 2011, and provides details of priority projects for the improvement of transport within Worcestershire. The overall vision of the LTP2 strategy is "To deliver a transport system within Worcestershire that is safe to use, and which allows people to easily access

the facilities that they need for their day-to-day life in a sustainable and healthy way."

6.5.2 The Worcestershire LTP2 has the following relevant transport strategies which have been developed following analysis of transport issues within the context of the wider priorities for the County and are underpinned by the four shared Priorities for Transport :

- To ensure that all residents, visitors and workers in Worcestershire can access the facilities they need to carry out day-to-day activities by the safest, most efficient and convenient mode of transport available to them.
- To minimise the impact of all modes of transport upon the local environment, and seek to reduce vehicle emissions arising from transport activity within Worcestershire.
- To ensure that traffic congestion within Worcestershire does not constrain economic activity within the County, reduce the impact of congestion upon local communities, and ensure that the environmental impact of congestion is minimised.
- To create a transport network within Worcestershire that is even safer for people to use.
- To ensure that land use decisions take full account of transport issues and that community facilities are located to minimise the need for travel for their users.

6.5.3 The Worcestershire LTP2 contains the Accessibility Strategy which covers a wide range of transport modes as well as the need to ensure the accessibility of facilities is considered when land use decisions are made. The vision for the accessibility strategy is "To ensure that people have access to key services at reasonable cost, in reasonable time, and with reasonable ease, and in a way that promotes better health for all." It is outlined within the plan that implementing the accessibility strategy will involve improving walking, cycling, passenger transport, and public rights of way facilities across the County and involve partnership working.

6.5.4 Warwickshire County Council developed a second Local Transport Plan, LTP, which sets out how the County Council plans to improve transport in

Warwickshire over the five year plan period. The plan was adopted in March 2006, following a review of the previous LTP 2001-06, and covers the five year period ending 31 March 2011. The plan provides the policy background and planning to how local transport services contribute towards improving peoples and lives and making Warwickshire 'the best place to live and work'.

6.5.5 The Warwickshire LTP2 has specific transport objectives which have been developed within the context of the wider priorities for the County and are underpinned by the four shared Priorities for Transport:

- Accessibility: to improve accessibility to health and educational facilities;
- Road Safety: to maintain a special focus on improving road safety for children, particularly in disadvantaged areas;
- Congestion: to discourage traffic growth during peak periods in urban areas; and
- Air Quality: to tackle the declared Air Quality Management Areas (AQMAs) and prevent any further areas being declared.

6.5.6 It is outlined within the LTP2 Warwickshire County Council's intentions to place the strongest emphasis on addressing issues of accessibility and continuing to make roads safer. It is also acknowledged as pressure on transport networks in the urban areas of Warwickshire increase the issues of air quality and congestion need to be addressed.

6.5.7 The Warwickshire LTP2 contains the Accessibility Strategy. The Accessibility Strategy has close links to national, regional and local policy frameworks. The vision for the accessibility strategy is 'to enable people to reach a range of education, training, employment, healthcare, shopping and leisure opportunities, with a particular focus on improving accessibility for disadvantaged groups and areas.' The Accessibility Strategy ensures that its action plans positively encourage sustainable travel patterns and opportunities available for walking cycling and passenger transport as priorities to maximize the ability to connect people to jobs, key services, and public transport.

6.6 Policy Integration

Planning Policy Statement 1

6.6.1 Planning Policy Statement 1: Delivering Sustainable Development (PPS1) states that 'Planning should facilitate and promote sustainable and inclusive patterns of urban and rural development'. It is thought that this proposal is in support of PPS1 as it supports the following aims:

- the promotion of urban and rural regeneration…and create new opportunities for the people living in those communities.
- bring forward sufficient land of a suitable quality in appropriate locations to meet the expected needs for housing, for industrial development, for retail and commercial development, and for leisure and recreation.
- provides improved access for all to jobs, health, education, shops, leisure and community facilities, open space, sport and recreation.

Planning Policy Guidance Note 13

6.6.2 The development proposal will also fully support the objectives of Planning Policy Guidance Note 13: Transport (PPG13) through the integration of planning land use and transport in order to help reduce the growth in the length and number of motorised journeys and encourage alternative modes of travel to the private motor vehicle. In particular, this will include the use of an innovative travel plan.

Regional Planning Guidance

6.6.3 The West Midlands Regional Spatial Strategy (RSS) Phase 2 Revision (Preferred Option) identifies Redditch as a Settlement of Significant Development. The level of housing growth for the period 2006-2026 is identified as 6,600 dwellings, 3,300 of which need to be accommodated on land within the adjoining authorities of Bromsgrove District Council and Stratford District Council, but adjacent to the boundary of Redditch. A related amount of employment land would also be required.

6.6.4 The Government Office for the West Midlands subsequently commissioned a study to identify further options for growth that could deliver higher housing numbers. This study has been recently published. It does not proposed higher housing growth for Redditch, but does suggest additional housing growth for Bromsgrove, some of which could be accommodated in proximity to Redditch.

6.6.5 Redditch Borough Council, Bromsgrove District Council and Stratford-on-Avon District Council have jointly commissioned two studies associated with the RSS. The first assessed the implications for Redditch of achieving the growth scenarios put forward in the RSS Phase 2 Revision. The second study examined how the proposed growth could best be distributed in Redditch, Bromsgrove and Stratford.

Local Planning Context

6.6.6 The Borough of Redditch Local Plan No 3 was adopted in May 2006 and forms part of the Development Plan for the Area. The Council is progressing its Core Strategy, which once adopted will, in part, replace Local Plan No 3. The consultation period on the Preferred Draft Core Strategy was from 31st October 2008 to 8th May 2009. The Borough Council is gathering evidence for the Core Strategy and has a DRAFT Employment Land Review (October 2008) and Sustainability Appraisal Scoping Report (October 2008).

6.6.7 The development site is in the administrative boundary of Stratford-upon-Avon District Council. Stratford-upon-Avon's District Local Plan Review was adopted in July 2006 and forms part of the Development Plan for the Area. Stratford is also preparing its Core Strategy and has made the following provision in Policy CS.6(a) – 'approximately 11.7 hectares of land at Winyates Green Triangle will be released for employment development to meet the needs of Redditch'.

6.6.8 Redditch Borough Council is currently preparing a Policy for the Diversification Park on this land and Stratford will be requested to incorporate the policy into their Core Strategy document in due course.

6.6.9 The following 'saved' policies (and excerpts from the policies) from the Redditch Local Plan No 3 are relevant to this development proposal:

- C(T).7 Public Transport Infrastructure – 'The Borough Council will support the appropriate expansion and enhancement of the network of Public Transport Routes in the Borough'…
- C(T).12 Parking Standards – 'New development will be expected to comply with the parking standards set out in Appendix H of this Plan [Local Plan No 3]. The Appendix sets out the maximum standards that the Council considers appropriate for any new development. The standards specifically for disabled parking bays and cycle parking are minimum standards and if the development warrants, may be increased. If the development requires parking facilities and these cannot be provided on site, the developer may be asked to contribute to transport related projects in the area'.

6.6.10 For example, for B1 business use class (over 2,500 sqm GFA) would require a maximum of

- 1 car space per 30 sqm GFA
- 1 disabled parking space per 20 car parking spaces
- 1 cycle parking space per 10 car parking spaces
- 1 motorcycle parking space per 20 car parking spaces
- 1 lorry parking space per 2,500 sqm GFA.

6.6.11 The following 'saved' policies (and excerpts from the policies) from the Stratford-upon-Avon's District Local Plan Review are relevant to this development proposal:

- Dev.4 Access – 'New or improved access arrangements to serve development will be treated as an integral part of the overall layout'…
- Dev.5 – Car Parking 'The provision of car parking associated with development proposals will be expected to comply with maximum parking standards of the District Council'…
- Dev.9 Access for People with Disabilities – 'Development to which members of the public would reasonably expect to have access will only be permitted if

provision is made in the design for safe and convenient access by people with disabilities'…

- Com.7 Bus Service Support – 'The District Planning Authority will work with bus operators, developers, the County Council and other interested parties to protect, improve and extend both conventional and non-conventional bus services to assist local people to gain access to work, shopping, health, leisure and other facilities'…
- Com.9 Walking and Cycling – 'The layout and design of development proposals will be expected to incorporate facilities for walking and cycling which are safe, convenient to use and well connected to other parts of the settlement'…
- Imp.5 Infrastructure Provision Transport – 'The District Planning Authority will assess each planning application to gauge the level and form of contribution towards transport-related facilities required as a result of the development'…
- Imp.6 Transport Assessments – 'Development proposals which generate significant traffic movements will be expected to be accompanied by a Transport Assessment'…
- Imp.7 Green Transport Plans – 'A Green Transport Plan will be required to be submitted as part of a planning application, or produced through the terms of a Section 106 Agreement, where a development proposal would…cause significant traffic impacts…generate a significant amount of car travel…be situated in an area where public transport facilities are limited'…

6.7 Highway Impact

6.7.1 In order to assess the impact of the proposed development on the local highway network, a range of opening year capacity assessments have been undertaken for 2012. Assessment of a 2017 future year has also been undertaken.

6.7.2 In order to derive the forecast base peak hour traffic flows for the assessment years confirmed above, the existing traffic movements as recorded in the traffic survey have been factored using 1997 NRTF central growth estimates adjusted by TEMPRO to tailor the forecast to local circumstances. The appropriate NRTF adjusted growth factors based on Redditch area are identified in **Tables 16** and **17** below:

	AM PEAK	PM PEAK
2009 – 2012 Opening Year	1.040	1.047
2009 – 2017 Design Year	1.122	1.132

Table 16 - Adjusted NRTF Growth Factors for Assessment Years – Far Moor Lane, Claybrook Drive and Alders Drive

	AM PEAK	PM PEAK
2009 – 2012 Opening Year	1.014	1.021
2009 – 2017 Design Year	1.055	1.064

Table 17 - Adjusted NRTF Growth Factors for Assessment Years – A4023 Coventry Highway, A4189 Warwick Highway and A435 Birmingham Road

6.7.3 The resulting 2012 and 2017 peak hour base (without development) traffic flows for the local road network are illustrated on the summary distribution diagrams on drawing numbers **JN835-NWK-009** and **JN835-NWK-010** in **Appendix G**.

6.8 Operational Assessment – Far Moor Lane / Alders Drive

6.8.1 Capacity testing of existing junctions considered to be within the influence of the development site has been confined to the junction of Far Moor Lane with Alders Drive. It was not thought necessary to undertake capacity assessments on any other junctions as they were observed (during the traffic survey work) to be operating well within capacity with little evidence of significant levels of congestion/queuing during the peak hours.

6.8.2 PICADY capacity tests for this junction (using the 20,000 sq.m. Business Innovation Centre trip generations) have been carried out for varying base and future years, as detailed below:

- 2009 Base Traffic Flows

- 2017 Without Development
- 2017 With Development

6.8.3 The full printed output information is contained in **Appendix H** at the rear of the report. The key results from the capacity tests are summarised in **Tables 18** to **20** below.

AM PEAK			PM PEAK		
Junction Arm	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**	**Junction Arm**	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**
Alders Lane North	0.109	0.12	Alders Lane North	0.086	0.09
Far Moor Lane	0.429	0.74	Far Moor Lane	0.249	0.33
Alders Lane South	0.214	0.27	Alders Lane South	0.534	1.12
Total Vehicle Demand / Hour – 672.6			Total Vehicle Demand / Hour – 1080		
Total Queuing Delay – 76.6			Total Queuing Delay – 98.5		

Table 18 - 2009 Base Traffic Flows
Far Moor Lane / Alders Drive Junction

6.8.4 The summary results of the PICADY outputs clearly illustrate that the Far Moor Lane / Alders Drive junction is currently operating within capacity in both peaks, with minimal queuing occurring e.g. maximum queue length of 1 vehicle on Alders Lane south in the PM peak. This means that the junction is well within capacity and therefore any congestion and queues formed are dispersed within a couple of minutes.

6.8.5 Site observations concluded that the junction is currently impeded by traffic queuing southbound on Alders Drive on the approach to the Warwick Highway roundabout. Traffic queuing southbound for the roundabout are blocking northbound traffic wishing to turn right into Far Moor Lane. This could be mediated by the introduction of a yellow box junction through the use of a Traffic Regulation Order (TRO).

6.8.6 Please note, PICADY does not have the ability to reflect the exact current situation with the queuing traffic from the nearby roundabout or the introduction of the yellow box junction, as it cannot model these parameters. However, it can safely be assumed that the introduction of a yellow box junction would provide results as on **Tables 19** – **20**.

AM PEAK			PM PEAK		
Junction Arm	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**	**Junction Arm**	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**
Alders Lane North	0.133	0.15	Alders Lane North	0.111	0.12
Far Moor Lane	0.483	0.92	Far Moor Lane	0.292	0.41
Alders Lane South	0.242	0.32	Alders Lane South	0.620	1.59
Total Vehicle Demand / Hour – 754.3			Total Vehicle Demand / Hour – 1223.2		
Total Queuing Delay – 91.8			Total Queuing Delay – 128.3		

Table 19 - 2017 'Without Development' Traffic Flows
Far Moor Lane / Alders Drive Junction

6.8.7 The summary results of the PICADY outputs clearly illustrate that the Far Moor Lane / Alders Drive junction will operate within capacity in both peaks in 2017, with minimal queuing occurring e.g. maximum queue length of 2 vehicles on Alders Lane south in the PM peak. This means that the junction is well within capacity and therefore any congestion and queues formed are dispersed within a couple of minutes.

AM PEAK			PM PEAK		
Junction Arm	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**	**Junction Arm**	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**
Alders Lane North	0.180	0.22	Alders Lane North	0.282	0.38
Far Moor	0.532	1.12	Far Moor	0.618	1.57

Lane			Lane		
Alders Lane South	0.663	1.90	Alders Lane South	0.678	2.02
Total Vehicle Demand / Hour – 960.7			Total Vehicle Demand / Hour – 1392.9		
Total Queuing Delay – 194.5			Total Queuing Delay – 222.6		

Table 20 - 2017 'With Development' Traffic Flows
Far Moor Lane / Alders Drive Junction

6.8.8 The summary results of the PICADY outputs clearly illustrate that the Far Moor Lane / Alders Drive junction will operate within capacity in both peaks in 2017 with a 20,000 sq.m Business Innovation Centre development. There would be minimal queuing e.g. a maximum queue length of 2 vehicles on Alders Lane south in the PM peak. This means that the junction is well within capacity and therefore any congestion and queues formed are dispersed within a couple of minutes.

6.9 Operational Assessment – Far Moor Lane / Development access.

6.9.1 ARCADY and PICADY capacity tests (using the 20,000 sqm Business Innovation Centre trip generations) for two alternative site access junction layouts i.e. a roundabout and a staggered crossroads, have been carried out for the future year scenario as detailed below:

- 2017 With Development

6.9.2 The full printed output information is contained in **Appendix H** at the rear of the report. The key results from the capacity tests are summarised in **Tables 21** to **22** below.

AM PEAK			PM PEAK		
Junction Arm	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**	**Junction Arm**	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**
Development Site – Far Moor Lane	0.037	0.04	Development Site – Far Moor Lane	0.348	0.53

South			South		
Development Site – Far Moor Lane North / Illshaw Close	0.061	0.06	Development Site – Far Moor Lane North / Illshaw Close	0.433	0.75
Illshaw Close – Far Moor Lane North	0.040	0.04	Illshaw Close – Far Moor Lane North	0.018	0.02
Illshaw Close – Development Site / Far Moor Lane South	0.057	0.06	Illshaw Close – Development Site / Far Moor Lane South	0.025	0.03
Far Moor Lane South – Development Site	0.318	0.46	Far Moor Lane South – Development Site	0.038	0.04
Far Moor Lane North – Illshaw Close	0.012	0.01	Far Moor Lane North – Illshaw Close	0.026	0.03
Total Vehicle Demand / Hour – 720.3			Total Vehicle Demand / Hour – 698.3		
Total Queuing Delay – 47.1			Total Queuing Delay – 90.0		

Table 21 - 2017 'With Development' Traffic Flows
Staggered / Right Turn Lane Site Access

6.9.3 The summary results of the PICADY outputs clearly illustrate that the staggered / right turn lane junction would operate well within capacity in both peaks in 2017 with a 20,000 sqm Business Innovation Centre development. This means that congestion and queues formed at the junction are dispersed within a couple of minutes.

AM PEAK			PM PEAK		
Junction Arm	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**	**Junction Arm**	**Maximum RFC Value**	**Maximum Queue (no. vehicles)**

Far Moor Lane North	0.309	0.4	Far Moor Lane North	0.242	0.3
Development Site	0.037	0	Development Site	0.315	0.5
Far Moor Lane South	0.359	0.6	Far Moor Lane South	0.154	0.2
Illshaw Close	0.069	0.1	Illshaw Close	0.027	0
Total Vehicle Demand / Hour – 717.6			Total Vehicle Demand / Hour – 695.7		
Total Queuing Delay – 77.2			Total Queuing Delay – 69.1		

Table 22 - 2017 'With Development' Traffic Flows
Roundabout Site Access

6.9.4 The summary results of the ARCADY outputs clearly illustrate that roundabout junction would operate within capacity in both peaks in 2017 with a 20,000 sqm Business Innovation Centre development. This means that any congestion and queues formed are dispersed within a couple of minutes.

6.10 Preferred Development Site Access Option – Far Moor Lane

6.10.1 The preferred development site access option is for a new roundabout junction on Far Moor Lane, which combines the development site traffic with Far Moor Lane and Illshaw Close flows (drawing number **JN835-NWK-011** in **Appendix H** refers). This site access arrangement is preferred, as it provides ample capacity for the development site in 2017, is relatively cheap to construct, addresses the speeding problem on Far Moor Lane by introducing a speed reduction feature that would alter the inactive frontage on this side of the road and serves to increase pedestrian, cyclist and road user safety.

6.11 Alternative Development Site Access Options

6.11.1 Alternative development site access options evaluated as part of this assessment process include:

- a traffic signal junction on the A435 Birmingham Road including pedestrian and cycle facilities as requested by Warwickshire County Council (drawing number **JN835-NWK-012B** in **Appendix H** refers)

- a roundabout junction on the A4023 Coventry Highway
- a traffic signal junction on the A4023 Coventry Highway (drawing number **JN835-NWK-013** in **Appendix H** refers)

6.12 Operational Assessment – A435 Birmingham Road

6.12.1 LinSig capacity tests (using the 20,000 sqm Business Innovation Centre trip generation rates) have been carried out for the future year scenario as detailed below:

- 2017 With Development

6.12.2 The full printed output information is contained in **Appendix H** at the rear of the report. The key results from the capacity tests are summarised in **Table 23** below.

AM Peak Hour (08:00-09:00)			**PM Peak Hour (17:00-18:00)**		
Link Name	**Degree of Saturation (%)**	**Mean Maximum Queue (PCU)**	**Link Name**	**Degree of Saturation (%)**	**Mean Maximum Queue (PCU)**
A435 Birmingham Road (North) Ahead.	84.4	29.7	A435 Birmingham Road (North) Ahead	103.9	74.2
A435 Birmingham Road (North) Right	97.6	12.8	A435 Birmingham Road (North) Right	21.7	1.0
A435 Birmingham Road (South) Left Ahead	103.9	79.0	A435 Birmingham Road (South) Left Ahead	98.2	48.9
New Development Road	21.5	1.4	New Development Road	87.4	13.4
Cycle Time – 120 Seconds			*Cycle Time – 120 Seconds*		

PRC –15.5%	*PRC – 15.4%*
Total Delay – 59.97 PCU/Hr	*Total Delay – 69.04 PCU/Hr*

Table 23 – 2017 'With Development' Traffic Flows

6.12.3 The summary Linsig results above have demonstrated that the proposed 'T' junction on Birmingham Road / New Development Road will operate over its capacity in both the AM and PM peaks with PRC values of -15.5% and -15.4% respectively. This means that queuing and delay at the junction, particularly on the A435 Birmingham Road approaches, will be significant during both peaks periods leading to unacceptable levels of congestion.

6.13 Operational Assessment - A4023 Coventry Highway

6.13.1 Capacity testing has been confined to the traffic signal junction arrangement. It was not considered necessary to undertake capacity assessments on the roundabout design as it is extremely unlikely to have a capacity issue in the future year of 2017.

6.13.2 LinSig capacity tests (using the 20,000 sqm Business Innovation Centre trip generations) have been carried out for the future year scenario, as detailed below:

- 2017 With Development

6.13.3 The full printed output information is contained in **Appendix H** at the rear of the report. The key results from the capacity tests are summarised in **Table 24** below.

AM Peak Hour (08:00-09:00)			PM Peak Hour (17:00-18:00)		
Link Name	**Degree of Saturation (%)**	**Maximum Queue (PCU)**	**Link Name**	**Degree of Saturation (%)**	**Maximum Queue (PCU)**

A4023 Coventry Highway (West) – Ahead, Right	77.9	28.6	Coventry Highway (West) – Ahead, Right	66.1	22.1
A4023 Coventry Highway (East) – Ahead, Left	78.3	27.4	Coventry Highway (East) – Ahead, Left	66.7	19.8
New Development Road (South)	12.5	0.9	New Development Road (South)	66.7	7.4
Cycle Time – 90 seconds			*Cycle Time – 90 seconds*		
PRC 14.9%			*PRC 34.9%*		
Total Delay 20.77PCU/h			*Total Delay 19.53PCU/h*		

Table 24 - 2017 'With Development' Traffic Flows

6.13.4 The summary LinSig results demonstrate that the proposed 'T' Junction of A4023 Coventry Highway / New Development Road will perform within capacity in both the AM and PM peaks with PRC values of 14.9% and 34.9%. This means that the junction is well within capacity and therefore congestion and queues formed are dispersed with a couple of cycles.

6.13.5 It should be noted that no information has been received for the new development to the north of the A4023 Coventry Highway, and no additional traffic from this development has been included in this set of LinSig results.

6.14 Development Access Solution – Summary Appraisal Table

6.14.1 **Table 25** below provides an overall comparative summary of the key appraisal parameters as they relate to each of the possible alternative access solutions to the proposed Diversification Park development, as assessed earlier. The Table highlights the principal benefits and disbenefits of each

option which underpin the decision to select the Far Moor Lane roundabout option as the preferred access solution to serve the Diversification Park.

	Economy	Efficiency	Safety	Environment	Other factors
Option 1 Preferred Solution Far Moor Lane Roundabout	Relatively cheap to construct. Estimated cost £400,000	Operates well within capacity in 2017 with development traffic. Has minimal impact on neighbouring junctions.	Will help to address the existing speeding problems on Far Moor Lane.	Will introduce some visual and noise impact to adjacent residents, particularly during construction. Access is required across wildlife corridor.	Potential of local opposition from residents on Far Moor Lane. Does not provide access option to other potential development land parcels in the area.
Option 2 Far Moor Lane Staggered Crossroads	Cheapest of all the options to construct. Estimated cost £250,000	Operates well within capacity in 2017 with development capacity. Similar performance and local impact to r'dbt option. May introduce delays to Ilshaw Close	Improves pedestrian / cyclist safety on Far Moor Lane but may encourage inappropriate overtaking.	Requires less land than r'dbt option but will have similar local amenity impacts as roundabout. Access is again required across wildlife corridor.	Likely to be the most acceptable solution on Far Moor Lane to local residents and local authorities. Minimal impact on strategic roads in the area. Only serves Diversification Park.
Option 3 A435 Birmingham Road Traffic Signals	Cheapest access option from A road network. Estimated cost £450-500,000	Over capacity in 2017 with development traffic. Not so convenient for local access as Far Moor Lane options.	Provides a safe means of access to development for vulnerable road users but may increase risk of shunt collisions.	Least intrusive of all the options in terms of impact on neighbouring residential areas. Minimal third party land required for construction.	Most convenient option for strategic access for vehicles from the east and south of Redditch. Unlikely to gain Warwickshire CC support due to inefficient operation.
Option 4 A4023 Coventry Highway Roundabout	Most expensive to construct. Estimated cost £5 million	Will be able to cater for the development traffic and many years of network traffic growth beyond 2017.	Large r'dbt poses significant risk to vulnerable road users and may confuse unfamiliar drivers.	Scale of roundabout will create significant visual and noise impact on adjacent properties. Likely to lead to poorer air quality. Large land take requirements.	Provides access solution to serve potential development land on north side of Coventry highway. May be difficult to construct due to level difference across site.
Option 5 A4023 Coventry Highway Traffic Signals	Cheaper than r'dbt but still significant cost to construct. Estimate - £3 million	Ample capacity for predicted 2017 traffic flows but introduces considerable delay to A4023 Redditch traffic.	Safer option to vulnerable road users than r'dbt on Coventry Highway but complex layout may increase risk of collision.	Although less intrusive than r'dbt option and requiring minimal third party land, delays to traffic will increase noise levels locally and air quality will	Offers similar access benefits as Option 4, but will have the greatest impact of all the options in terms of detriment to the efficiency of the highway network.

Table 25 – Access option summary appraisal table.

7 POTENTIAL MITIGATION MEASURES

7.1 Introduction

7.1.1 This chapter discusses various transport measures and initiatives, which could be introduced to mitigate the vehicular impact of the proposed development.

7.2 Bus Service Improvements

7.2.1 Bus service improvements could be made to increase the frequency of services on Far Moor Lane particularly in the peak hours e.g. improving the hourly service to half hourly into Redditch and connecting to the railway station. At a later stage of the development, bus services could divert into the development site if provided with adequate infrastructure.

7.3 Bus Stop Infrastructure

7.3.1 Bus Stop infrastructure in Redditch is currently to a varying standard dependent on the popularity of the stop. This development proposal is likely to increase bus patronage and will thus necessitate improvements to the nearest bus stops on Far Moor Lane e.g. provision of adequate shelters and easy access kerbing at the bus stop.

7.4 Cycle Parking Provision

7.4.1 The provision of good quality cycle parking is very important to complement car parking policies. The development will provide cycle parking provision in accordance with government guidance and local guidance.

7.5 Cycle Infrastructure

7.5.1 Redditch's urban road infrastructure is conducive to cycling, with its network of residential roads and footpath/underpass connections bypassing busier roads. The area would benefit from pedestrian/cycle signage to encourage the use of these sustainable modes of travel.

7.6 Travel Plan

7.6.1 A Travel Plan is a specific package of measures tailored to suit the needs of individual sites aimed at promoting greener, cleaner travel choices and reducing single occupancy car journeys.

7.6.2 The objectives for the Travel Plan would be to enable modal choice for employees of the site and to reduce single occupancy car trips associated with the site. It will address commuter journeys and business journeys. For example, measures could include an information pack for visitors with bus timetables.

7.6.3 The Travel Plan would include a range of mechanisms, initiatives, targets, indicators and associated monitoring/review procedures to reduce the impact of travel associated with the site on the environment. For example, it would be likely to include targets to encourage the use of local bus services.

7.7 Urban Design

7.7.1 Urban design considers the form and function of the urban areas surrounding individual buildings. Good urban design reconciles form and function, and can improve urban viability. Access, siting and design are inseparable.

7.7.2 Essential requirements for good urban design include:

- Permeability – so people can go where they want
- Legibility – so people can understand their surroundings
- Robustness and Richness – the space should be flexible and interesting

7.7.3 Measures for improving permeability and legibility for pedestrians could include more pedestrian crossings, more direct and convenient routes for walking, and decreased speed limits within the development site e.g. 20 mph zones to reduce car speeds and improve pedestrian and cyclist safety.

7.7.4 Measures for improving permeability and legibility for cyclists could include improving cycle safety, provision of parking for bicycles, and cycle priority at junctions or through purpose built cycleways throughout the development.

7.8 Speed Reduction on Far Moor Lane

7.8.1 It is proposed to provide a new roundabout to access the development off Far Moor Lane. This would be an effective speed reduction measure, as it would alter the inactive frontage on this side of the road. In addition, further traffic calming measures such as speed tables/cushions, and the introduction of a 7.5 tonne weight limit on Far Moor Lane would support these mitigation measures.

8 SUMMARY AND CONCLUSIONS

8.1 Morgan Tucker was commissioned by Redditch Borough Council to investigate and advice on the transport and highways issues associated with a proposed diversification park on land sandwiched between the A4023 Coventry Highway and A435 Birmingham Road, and to produce a transport assessment, which meets the requirements of both Worcestershire County Council and Warwickshire County Council.

8.2 The proposed development site is situated on land bounded by Far Moor Lane to the west, the A435 Birmingham Road to the east, and the A4023 Coventry Highway to the north.

8.3 The personal injury collision statistics for the five year period from January 2004 to August 2009 were obtained from Warwickshire and Worcestershire County Councils. Based on the information identified in the collision analysis, it is considered likely that the development proposals will not result in a statistically significant increase in the frequency or severity of collisions in the area surrounding the development site.

8.4 In order to ascertain the speed of traffic travelling along Far Moor Lane, the A4023 Coventry Highway and the A435 Birmingham Road past the proposed development site, a manual speed survey was undertaken on the A4023 Coventry Highway, and ATC data for Far Moor Lane and the A435 Birmingham Road was used to obtain speed survey information for those roads. The speed survey results showed that vehicles are travelling in excess of the 30 mph speed limit along Far Moor Lane and in excess of the 40 mph speed limit along the A435 Birmingham Road.

8.5 Analysis of the pedestrian and cycle infrastructure, and bus and rail services in the vicinity of the site confirms that there are realistic opportunities for future users of the development to adopt sustainable modes of travel to access the wider area.

8.6 Car and cycle parking spaces will be provided in accordance with government guidance, and specific local guidance.

8.7 It is proposed to create a Diversification Park to facilitate businesses in Redditch by manufacturing new products for growth sectors or finding alternative markets for their current products.

8.8 The proposed development would generate a worst case of 225 2-way trips in the AM peak hour and 185 2-way trips in the PM peak hour for 10,000 sqm business innovation development, and 450 2-way trips in the AM peak hour and 370 2-way trips in the PM peak hour for 20,000 sqm business innovation development.

8.9 Capacity testing has been undertaken on the two different potential site access junction arrangements (staggered / right turn lane and roundabout) on Far Moor Lane and the remote junction of Far Moor Lane with Alders Drive. The results demonstrate that the staggered / right turn lane junction and roundabout access solutions would operate within capacity in both peaks in 2017 with a 20,000 sqm Business Innovation Centre development. The Far Moor Lane / Alders Drive junction would also operate within capacity in both peaks in 2017 with a 20,000 sqm Business Innovation Centre development. There would be minimal queuing e.g. maximum queue length of 2 vehicles on Alders Lane south in the PM peak.

8.10 Capacity testing has been undertaken on two different potential site access junction arrangements (traffic signal junction) on the A435 Birmingham Road and the A4023 Coventry Highway. The results demonstrate that a traffic signal junction on the A435 Birmingham Road, designed to the requirements of Warwickshire County Council, would not perform adequately in either the AM or PM peaks in 2017. This means that the junction would become congested leading to long queue lengths and subsequently a long waiting time. Both a traffic signal solution and a roundabout option on the A4023 Coventry Highway would perform within capacity in both the AM and PM peaks. This means that the junction is well within capacity and therefore congestion and queues formed are dispersed with a couple of cycles.

8.11 Combining the results of the capacity testing exercise with an appraisal of economic, safety and environmental impacts as they apply to each access option, it has been concluded that a new roundabout junction on Far Moor

Lane will provide the best overall access solution to serve the Diversification Park.

8.12 Based on the findings of this assessment, it can be concluded that this proposal is a good example of sustainable development in accordance with the ethos of PPS1, PPG13, West Midlands RSS and local policies contained in both Worcestershire and Warwickshire's Local Plan / Development Frameworks.

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APPENDIX A

Scoping Note

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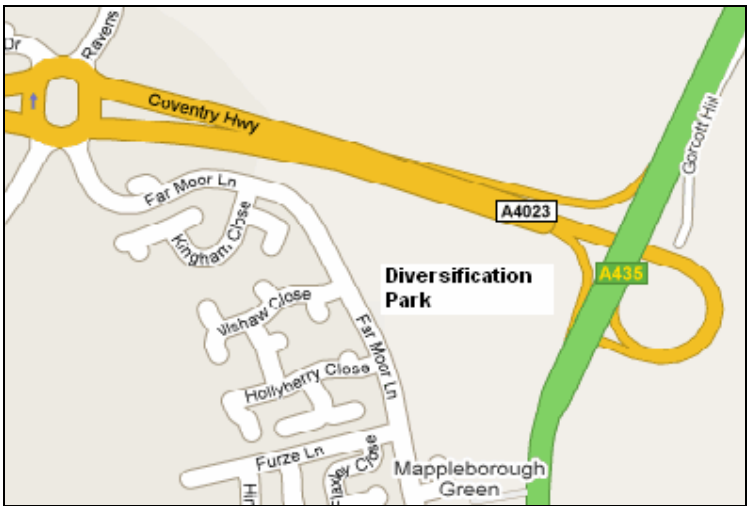
Access to Diversification Park at Winyates Green Triangle

Transport Assessment

Scoping Note

Development Proposal

Morgan Tucker have been appointed by Redditch Borough Council, to investigate and advice on the transport and highways issues associated with a proposed diversification park on land sandwiched between the A4023 Coventry Highway and A435 Birmingham Road, and to produce a transport assessment which meets the requirements of both Worcestershire County Council and Warwickshire County Council.



At this preliminary scoping stage, it is envisaged that access to the development site will be provided from the A4023 Coventry Highway, with two further alternative notional access points - one off Far Moor Lane and one off the A435 Birmingham Road.

The transport assessment will identify a preliminary access solution to serve the development, which takes into account local design standards and safety requirements.

Trip Generation

Subject to agreement with Worcestershire County Council and Warwickshire County Council, it is proposed that average multi-modal person trip rates generated from the development will be calculated using suitable TRICS 2009 (a) data for a business park.

Sustainable Transport

The accessibility of the site for modes of transport other than the car will be evaluated as part of the overall assessment and the scope for providing improvements to encourage trips by more sustainable transport options investigated. This section of the appraisal will look at the nature and condition of the local pedestrian infrastructure including the proposed access arrangements to the site for pedestrians and will advise on measures that could be implemented to make walking a more attractive proposition.

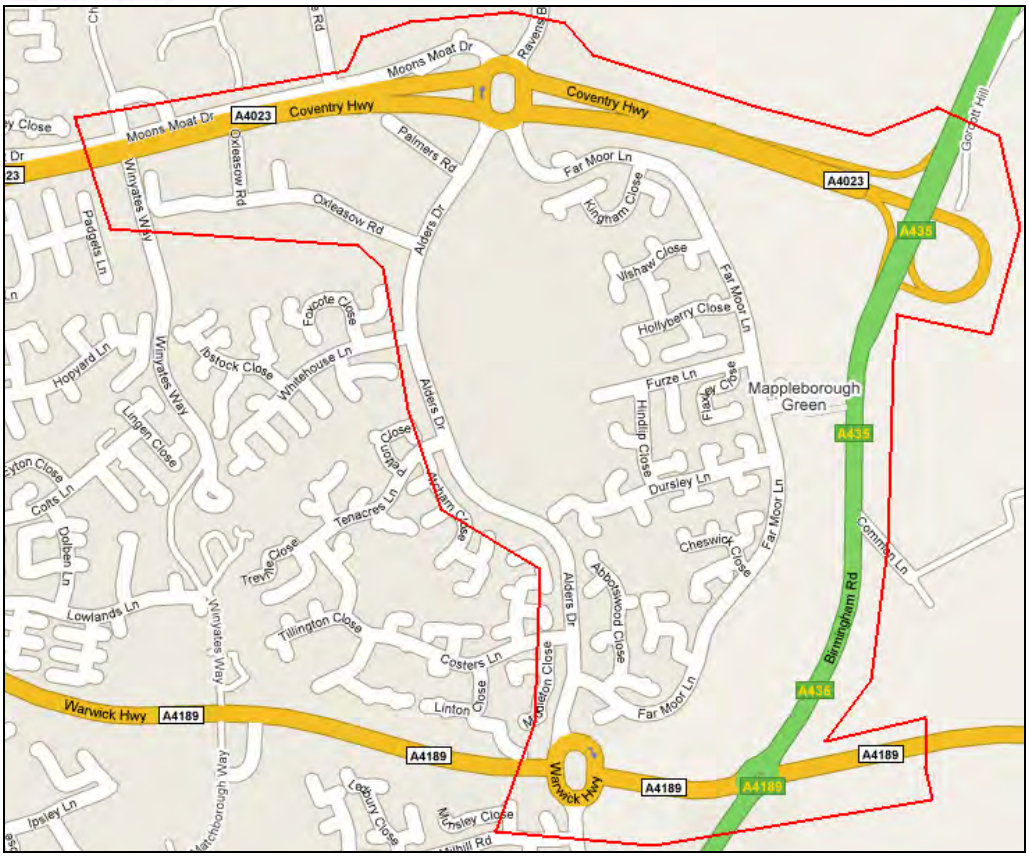
Similarly, the condition and availability of cycle facilities in the immediate vicinity of the site will be explored and discussed, with recommendations made as to how the accessibility of the site for cyclists could be improved.

Finally, this section will confirm the extent of the local public transport provision including the frequency and convenience of bus and rail services in the area. A brief commentary will be provided on how to encourage users of the development to use these services.

Road Safety Analysis

The assessment will also investigate the recent personal injury collision data on the road network within the vicinity of the development. The appraisal will examine the most recently available five-year collision statistics provided by Worcestershire County Council and Warwickshire County Council and analyse the detailed statistics for each of the collisions to confirm trends and patterns.

We suggest the catchment area below (red line) is appropriate, but please advice if you require further analysis.



Trip Distribution

An initial appraisal of the distribution and assignment of the generated trips from the new development will be carried out using information from the 2001 national census for Redditch. Analysis of this data will provide a matrix of movements by mode to and from the development for typical peak hours.

Committed Developments

Please advice of any Committed Development that you wish included in our traffic forecasts.

Traffic Surveys

We will obtain suitable traffic flow data to determine the existing 'base' traffic volumes at the junctions of:

- A4023 Coventry Highway / Far More Lane / Alders Drive
- A435 Birmingham Road / A4189 Warwick Highway
- A4189 Warwick Highway / Alders Drive / Claybrook Drive

We would assume that peak hour surveys of 7-10am, 11-2pm and 4-7pm would be sufficient. Please advice that these hours are adequate.

It is our intention to survey the week commencing the 7th September 2009. Please advice if this is not acceptable.

Please advice whether there are any further junctions, which you would want included.

(We have already contacted both Highways Authorities and unfortunately, neither authority can provide traffic data).

Impact Assessment

The operational assessment will consider the highway impact of the traffic generated from the development on sensitive junctions within the vicinity of the site.

We will assess the:

- A4023 Coventry Highway / Far More Lane / Alders Drive
- A435 Birmingham Road / A4189 Warwick Highway
- A4189 Warwick Highway / Alders Drive / Claybrook Drive

Along with the:

- access off the A4023 Coventry Highway;
- two further alternative access points - one off Far Moor Lane and one off the A435 Birmingham Road.

The operational assessment of the junctions will be carried out using standard industry software (PICADY / ARCADY / LinSig etc) as appropriate.

Base and with development traffic scenarios will be examined for a proposed development-opening year of 2011 and 2016 design year, and the capacity tests will be run for both the AM, lunchtime and PM peak hour periods.

Forecast base traffic demand data for the future year tests will be calculated from traffic survey information for the junctions, growthed using TEMPRO adjusted NRTF traffic growth factors for the area.

Travel Plan

Please advice whether a Business Travel Plan will be required.

Report Format

The transport assessment report will follow the guidelines as set out in the CLG / DfT Guidance on Transport Assessment and will also take account of any advice on content and layout as recommended by Worcestershire County Council and Warwickshire County Council.

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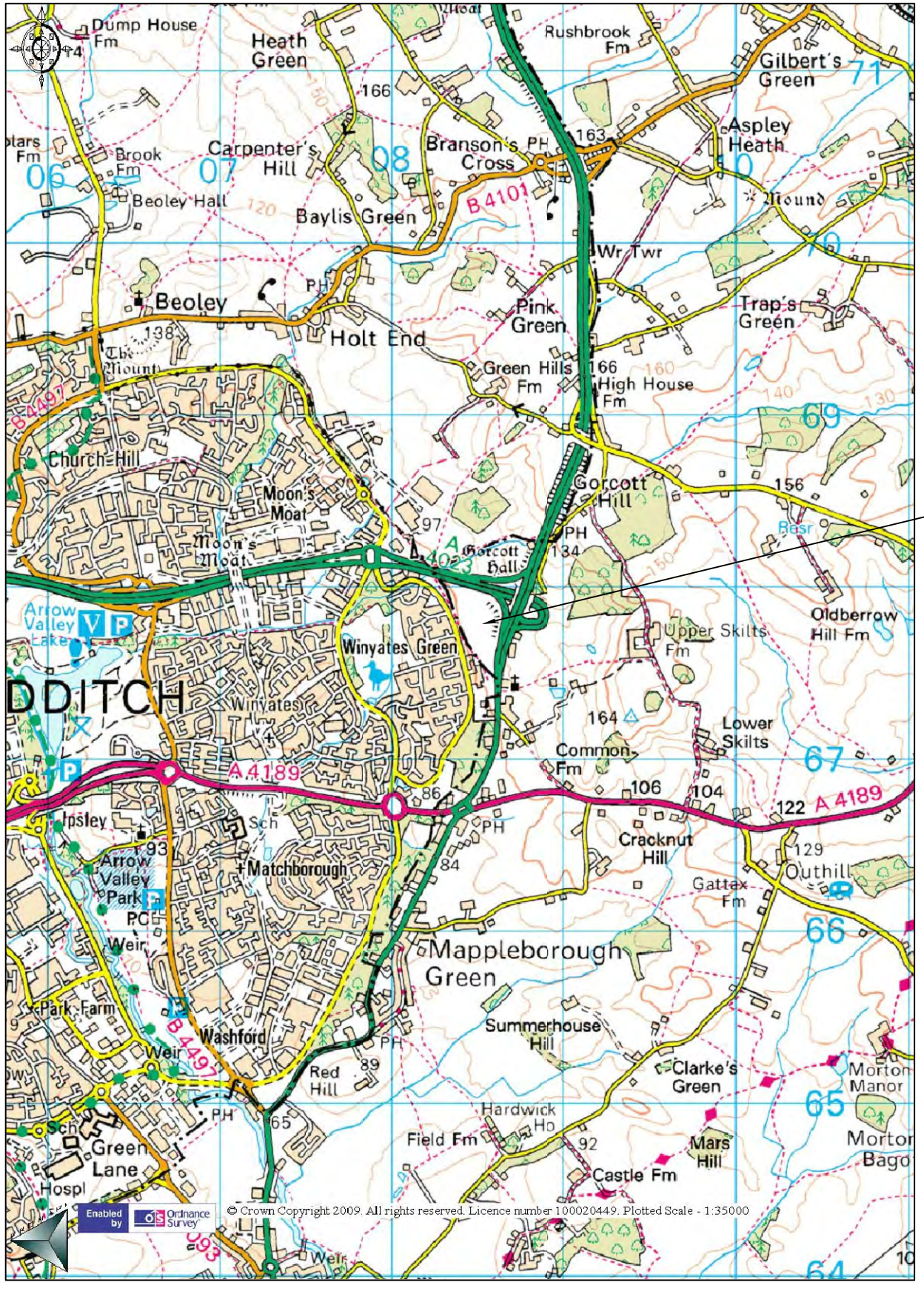
APPENDIX B

Location Plan



Rev	Amendment	Date

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Tel:- 01636 610 766 Fax:- 01636 610 786
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Client
Redditch Borough Council

Project Title
Proposed Diversification Park Development

Drawing Title
Location Plan

Drawn By	Checked By	Approved By
CR	LB	BS

Date	Scale
24/09/09	NTS

Purpose
Information

Drawing Number
JN835 - NWK - 001

Rev

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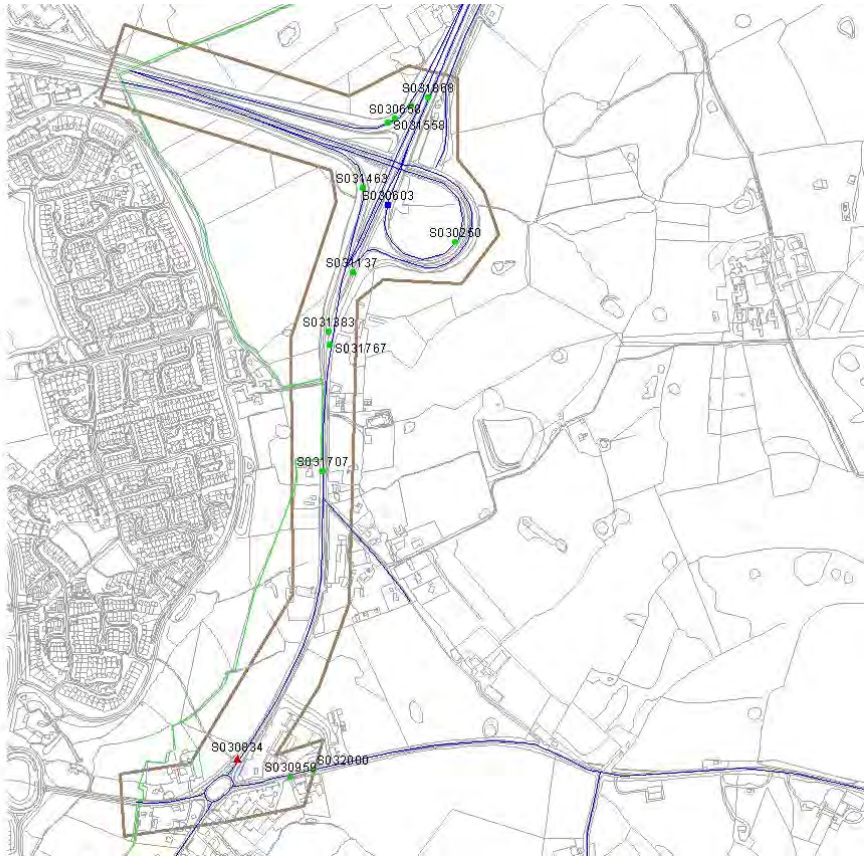
APPENDIX C

Personal Injury Collision Data

Injury Accident Report for Mappleborough Green area



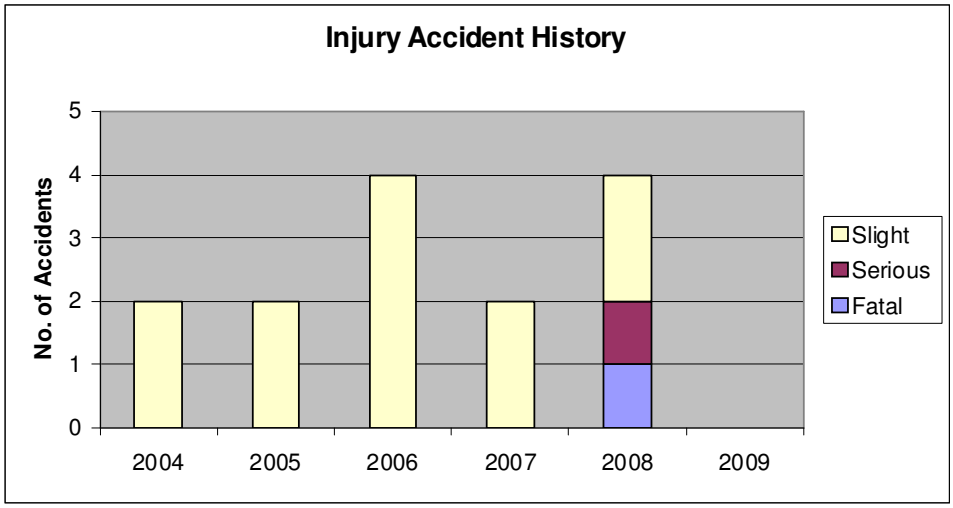
- Fatal
- Serious
- Slight

Injury accident patterns, where discernable:

	Site	County 2008
Peak day	Wed	Tuesday
Peak month	Dec	February
Percentage dark (including dark lit)	35.7%	29.8%
Percentage wet	42.9%	36.8%
Severity Rate	14.3%	17.3%

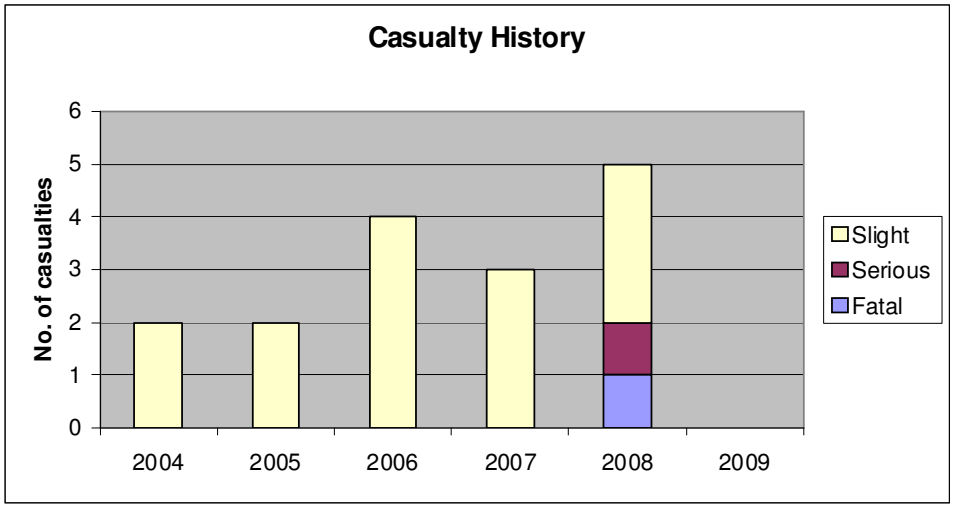
Injury Accidents

	Fatal	Serious	Slight	Total
2004	0	0	2	2
2005	0	0	2	2
2006	0	0	4	4
2007	0	0	2	2
2008	1	1	2	4
2009	0	0	0	0
Total	**1**	**1**	**12**	**14**



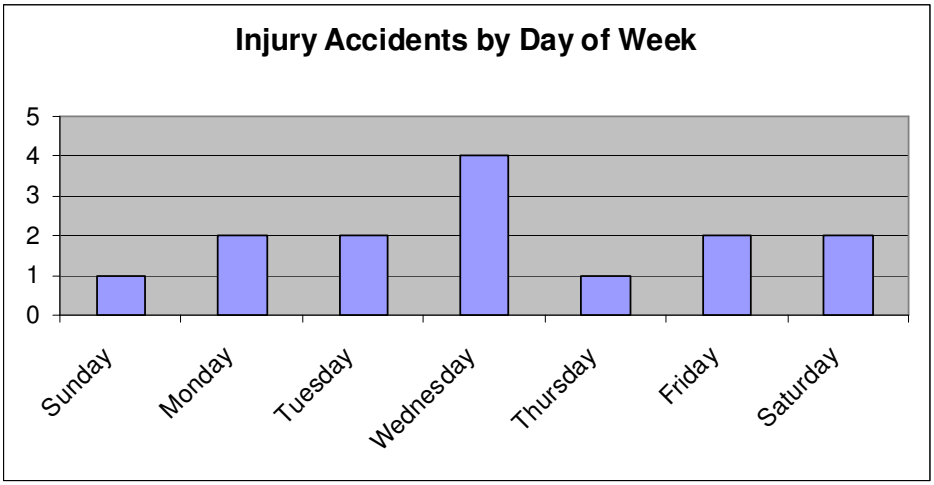
Casualties

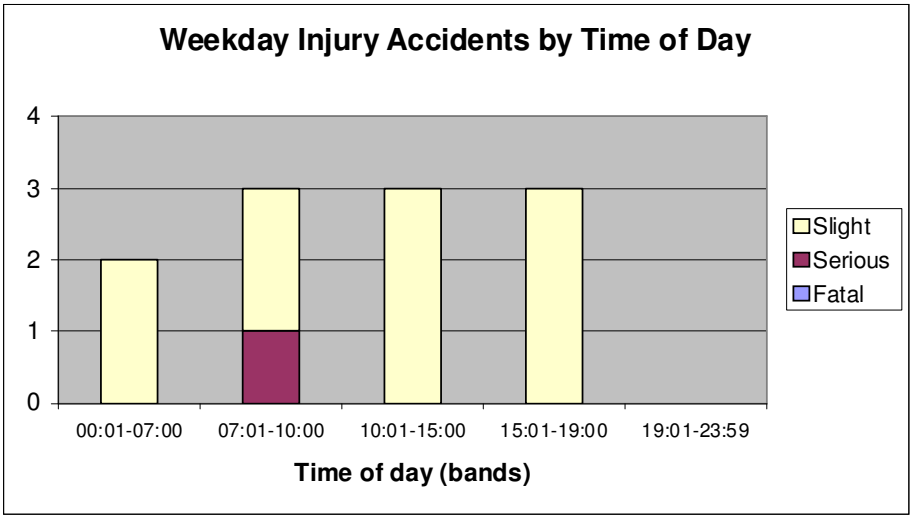
	Fatal	Serious	Slight	Total
2004	0	0	2	2
2005	0	0	2	2
2006	0	0	4	4
2007	0	0	3	3
2008	1	1	3	5
2009	0	0	0	0
Total	**1**	**1**	**14**	**16**

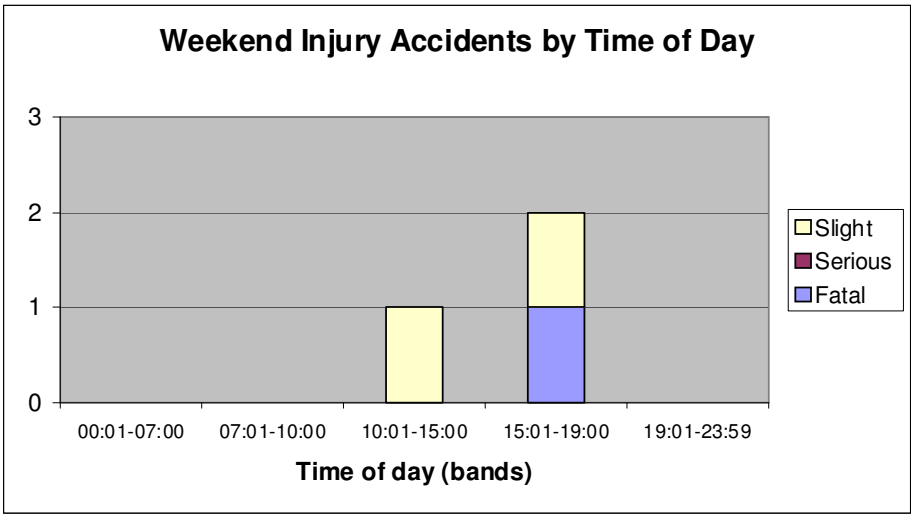


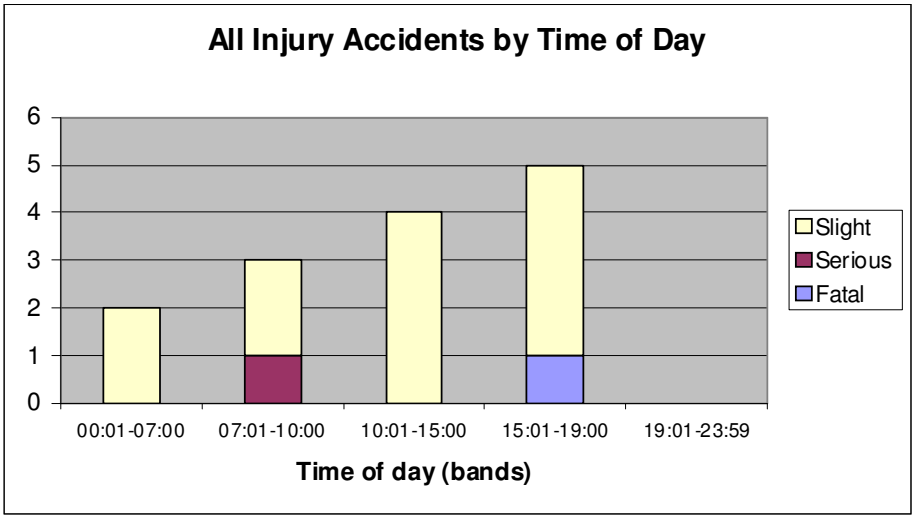
Injury Accidents by Day of Week

	Fatal	Serious	Slight	Total
Sunday	0	0	1	1
Monday	0	0	2	2
Tuesday	0	0	2	2
Wednesday	0	0	4	4
Thursday	0	1	0	1
Friday	0	0	2	2
Saturday	1	0	1	2
Total	1	1	12	14



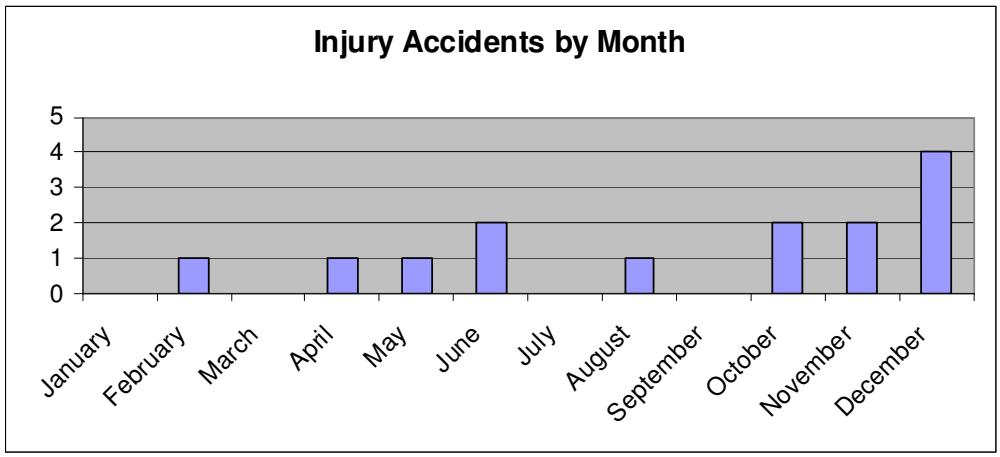

Weekday Injury Accidents by Time of Day
4
3
2
1
0
00:01-07:00
07:01-10:00
10:01-15:00
15:01-19:00
19:01-23:59
Time of day (bands)
Slight
Serious
Fatal


Weekend Injury Accidents by Time of Day
3
2
1
0
00:01-07:00
07:01-10:00
10:01-15:00
15:01-19:00
19:01-23:59
Time of day (bands)
Slight
Serious
Fatal


All Injury Accidents by Time of Day
6
5
4
3
2
1
0
00:01-07:00
07:01-10:00
10:01-15:00
15:01-19:00
19:01-23:59
Time of day (bands)
Slight
Serious
Fatal

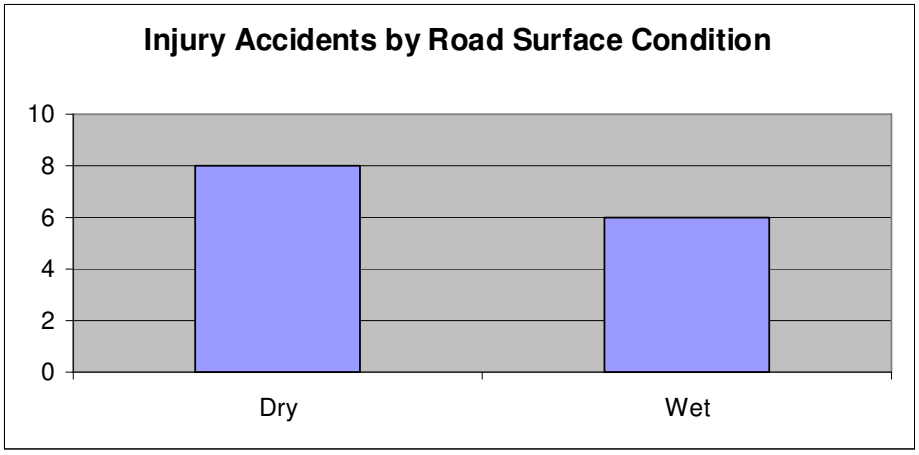
Injury Accidents by Month

	Fatal	Serious	Slight	Total
January	0	0	0	0
February	0	0	1	1
March	0	0	0	0
April	0	1	0	1
May	0	0	1	1
June	1	0	1	2
July	0	0	0	0
August	0	0	1	1
September	0	0	0	0
October	0	0	2	2
November	0	0	2	2
December	0	0	4	4
Total	**1**	**1**	**12**	**14**



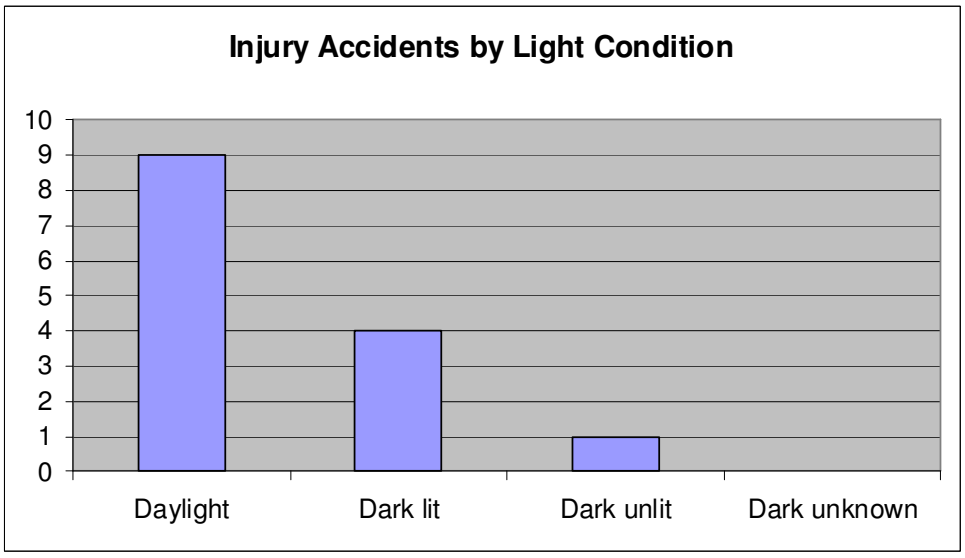
Injury Accidents by Road Surface Condition

	Fatal	Serious	Slight	Total	%age
Dry	1	0	7	8	57.1%
Wet	0	1	5	6	42.9%
Total	**1**	**1**	**12**	**14**	



Injury Accidents by Light Condition

	Fatal	Serious	Slight	Total	%age
Daylight	1	1	7	9	64.3%
Dark lit	0	0	4	4	
Dark unlit	0	0	1	1	**Dark**
Dark unknown	0	0	0	0	35.7%
Total	**1**	**1**	**12**	**14**	



Ref No	Date	Road	Accident Severity	Day of Week
S031868	26/11/04	A0435	Slight	Friday

- A435 Alcester Rd s/b, Studley, approx 100m NE exit slip for A4023
- Coventry Highway

V1 trav SW on A435 s/b swerved to o/s to avoid vehicle reversing from exit slip & hit central barrier.

East	North	Weather	Surface	Light	Time	No of Casualties	1
408809	268049	Fine	Dry	Light	1420	No. of Vehicles	1

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test
1 Car	Male	21	NE to SW	Not reqd
Casualty 1 Slight	Driver	Male	Age 21	

Ref No	Date	Road	Accident Severity	Day of Week
S032000	17/12/04	A4189	Slight	Friday

- A4189 Warwick Road Mappleborough Green, 150yards east of junc with A435
- (Dog Island)

V2 (Agricultural tractor and trailer) stationary on n/s of road having broken down. V1 collides with rear of V2

East	North	Weather	Surface	Light	Time	No of Casualties	1
408588	266759	Rain	Wet	Dark lit	1840	No. of Vehicles	2

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test
1 Car	Male	46	W to E	- ve
Casualty 1 Slight	Driver	Male	Age 46	
2 Other	Male	28	Parked	- ve
WCC factor code	----	Parked vehicle		

Ref No	Date	Road	Accident Severity	Day of Week
S031383	03/10/05	A0435	Slight	Monday

- A435 Alcester Rd, Mappleborough Green, os Woodside Cherry Tree Farm
- V1 & V2 trav N, V3 trav S on A435. V1 attempted U-turn

V2 hit V1, then V3 hit V1.

East	North	Weather	Surface	Light	Time	No of Casualties	1
408618	267600	Fine	Dry	Dark lit	1800	No. of Vehicles	3

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test
1 Car	Male	31	S to S	- ve
2 Car	Male	59	S to N	- ve
Casualty 1 Slight	Driver	Male	Age 59	
3 Car	Female	33	N to S	Not reqd
Factor codes	403 V001 A	Poor turn or manoeuvre		
	406 V001 A	Failed to judge other person's path or speed		

Ref No	Date	Road	Accident Severity	Day of Week
S031767	14/12/05	A0435	Slight	Wednesday

- A435 Birmingham Rd Mappleborough Green o/s Woodside Cherry Farm
- V2 braked suddenly to avoid a dog , V1 collided into rear of V2

East	North	Weather	Surface	Light	Time	No of Casualties	1
408619	267574	Fine	Wet	Light	1135	No. of Vehicles	2

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test	
1 Car	Female	53	S to N	- ve	Skid
2 Car	Male	38	S to N	- ve	
Casualty 1 Slight	Driver	Male	Age 38		
Factor codes	109 V002 A	Animal or object in carriageway			
	308 V001 A	Following too close			
	408 V002 A	Sudden braking			

Ref No	Date	Road	Accident Severity	Day of Week
S030658	15/05/06	A0435	Slight	Monday

- A435 Slip rd Gorcott Hill nb gr 408738/268023
- V1 overtakes slower moving veh on slip road attempts to return to nearside lane loses control slides onto nearside verge slides down embankment

East	North	Weather	Surface	Light	Time	No of Casualties	1
408745	268009	Rain	Wet	Light	0840	No. of Vehicles	1

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test	
1 Car	Male	56	W to N	- ve	Skid & O/Turn
Casualty 1 Slight	Driver	Male	Age 56		
Factor codes	103 V001 A	Slippery road (due to weather)			
	108 V001 B	Road layout (e.g. bend, hill, narrow carriageway)			
	307 V001 A	Travelling too fast for conditions			
	410 V001 A	Loss of control			

Ref No	Date	Road	Accident Severity	Day of Week
S031137	22/08/06	A0435	Slight	Tuesday

- A435 JW A4023 Mappleborough Green
- V2 travel south on A435 when V1 pulls from A4023 slip road into path of V2 causing V2 to loose control and leave carriageway nearside. V1 drives off

East	North	Weather	Surface	Light	Time	No of Casualties	1
408663	267714	Fine	Dry	Light	0800	No. of Vehicles	2

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test	
1 Car	Unknown		E to S	No contact	
2 Car	Female	18	N to S	Not reqd	Skid
Casualty 1 Slight	Driver	Female	Age 18		
Factor codes	302 V001 A	Disobeyed give way or stop sign			
	401 V001 A	Junction overshoot			
	601 V001 A	Aggressive driving			
	501 V001 B	Impaired by alcohol			

Ref No	Date	Road	Accident Severity	Day of Week
S031463	04/10/06	A0435	Slight	Wednesday

- A435 100m south of jw A4023 Mappleborough Green
- V4 trav N stops in queue of traffic with V3 behind. V1 runs into rear of V3 pushing it into rear of V4. V2 runs into rear of V1.

East	North	Weather	Surface	Light	Time	No of Casualties	1
408682	267876	Fine	Dry	Light	0755	No. of Vehicles	4

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test	
1 Car	Female	52	S to NW	- ve	
Casualty 1 Slight	Driver	Female	Age 52		
2 Car	Female	26	S to NW	- ve	
3 Car	Male	26	S to NW	- ve	
4 Car	Male	39	S to NW	- ve	
Factor codes	308 V001 A	Following too close			
	308 V002 A	Following too close			
	706 V001 B	Vision affected by dazzling sun			
	706 V002 B	Vision affected by dazzling sun			

Ref No	Date	Road	Accident Severity	Day of Week
S031707	05/12/06	A0435	Slight	Tuesday

- A435 B Ham Rd Mappleborough Green o/s The Paddocks and 50m north of j/w
- X3400

All vehs trav north. V3 stopped in crown of road waiting to turn rt into The Paddocks private drive. V2 stopped behind. V1 ran into rear of V2 which was pushed into rear of V3

East	North	Weather	Surface	Light	Time	No of Casualties	1
408606	267331	Fine	Dry	Dark unlit	1955	No. of Vehicles	3

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test	
1 Car	Male	28	S to N	- ve	
Casualty 1 Slight	Driver	Male	Age 28		
2 Light Goods	Male	55	S to N	+ ve	
3 Car	Male	48	S to N	- ve	
Factor codes	308 V001 A	Following too close			
	406 V001 B	Failed to judge other person's path or speed			
	408 V003 B	Sudden braking			
	501 V002 A	Impaired by alcohol			

Ref No	Date	Road	Accident Severity	Day of Week
S030250	24/02/07	A4023	Slight	Saturday

- A4023 jw A435 redditch
- V1 leaving A435 on loop slip jnt with A4023 loses control spins and strike o/s barrier

East	North	Weather	Surface	Light	Time	No of Casualties	2
408861	267771	Fine	Wet	Dark lit	1740	No. of Vehicles	1

Vehicle No	and Type	Driver/Rider	Age	Direction	Breath Test	
1	Car	Male	20	E to W	- ve	Skid
Casualty	1 Slight	Driver	Male	Age 20		
Casualty	2 Slight	Passenger	Female	Age 20	Front Seat	

Factor codes			
410	V001	A	Loss of control
103	V001	B	Slippery road (due to weather)

Ref No	Date	Road	Accident Severity	Day of Week
S030959	24/06/07	A4189	Slight	Sunday

- A4189 Henley rd
- V2 turning right from A4189 into school, V1 came up behind V2 filed to see indicators and tried to o/take as V2 started turn causing collision Overtaking on offside

East	North	Weather	Surface	Light	Time	No of Casualties	1
408544	266745	Fine	Dry	Light	1525	No. of Vehicles	2

Vehicle No	and Type	Driver/Rider	Age	Direction	Breath Test	
1	Car	Male		W to E	No contact	
2	Car	Male	28	W to S	No contact	
Casualty	1 Slight	Passenger	Female	Age 08	Rear Seat	

Factor codes			
406	V001	A	Failed to judge other person's path or speed
405	V001	A	Failed to look properly

Ref No	Date	Road	Accident Severity	Day of Week
S030603	24/04/08	A4023	Serious	Thursday

- A435 Slip Rd Coventry Highway
- V1 enters slip road, due to weather conditions fails to judge the bend and lost control

East	North	Weather	Surface	Light	Time	No of Casualties	1
408731	267842	Rain	Wet	Light	0900	No. of Vehicles	1

Vehicle No	and Type	Driver/Rider	Age	Direction	Breath Test	
1	Car	Male	29	N to E	No contact	Skid
Casualty	1 Serious	Driver	Male	Age 29		

Factor codes			
410	V001	A	Loss of control
103	V001	A	Slippery road (due to weather)
603	V001	B	Nervous, uncertain or panic

Ref No	Date	Road	Accident Severity	Day of Week
S030834	28/06/08	A0435	Fatal	Saturday

- A435 Birmingham Rd Studley
- V1 tvl NW on A435 , V1 exits RAB at Mappleborough Green and lost control and hit V2 tvl SW, V3 behind V2 could not stop and hit rear

East	North	Weather	Surface	Light	Time	No of Casualties	2
408442	266781	Fine	Dry	Light	1730	No. of Vehicles	3

Vehicle No	and Type	Driver/Rider	Age	Direction	Breath Test	
1	Car	Male	76	SW to NE		
Casualty	1 Fatal	Driver	Male	Age 76		
2	Car	Male	54	NE to SW	- ve	Skid
3	Car	Male	49	NE to SW	- ve	Skid
Casualty	2 Slight	Driver	Male	Age 49		

Factor codes			
505	V001	A	Physical or mental illness or disability
410	V001	A	Loss of control

Ref No	Date	Road	Accident Severity	Day of Week
S031558	19/11/08	A4023	Slight	Wednesday

- A435 Coventry Highway
- V1 o/taking 2 vehs on slip road, hits gravel and loses control of m/bike

East	North	Weather	Surface	Light	Time	No of Casualties	1
408731	268001	Fine	Dry	Light	1539	No. of Vehicles	1

Overtaking on offside

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test
1 Motorcycle	Male	60	NE to W	- ve
Casualty 1 Slight	Rider	Male	Age 60	

Factor codes: 101 V001 A Poor or defective road surface
410 V001 A Loss of control

Ref No	Date	Road	Accident Severity	Day of Week
S031675	31/12/08	A4023	Slight	Wednesday

- A4023 Coventry Highway, Redditch, slip road to A435 n/b
- V1 trav N on A435 left c/way n/s onto A4023 slip road causing V2 to take evasive action. V2 left slip road n/s down embankment

East	North	Weather	Surface	Light	Time	No of Casualties	1
408775	268033	Fine	Frost/Ice	Dark lit	0715	No. of Vehicles	2

Vehicle No and Type	Driver/Rider	Age	Direction	Breath Test	
1 Car	Male	39	S to N	Not reqd	Skid
Casualty 1 Slight	Driver	Male	Age 39		
2 Car	Female	32	W to N	- ve	

- End -

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

04DF39326 05/08/2004 Time 1730 Vehicles 1 Casualties 1 Serious
E: 408160 N: 266850 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Daylight: no street lighting Raining without high winds

Special Conditions at Site Oil or Diesel
V1 LOSES CONTROL ON DIESEL AND MUD, WHILST NEG BEND,MOUNTED N/S COLL WITH LAMP POST AND OVERTURNING

Occurred on FAR MOOR LN,REDDITCH NR J/W ARDENS CLOSE

Vehicle Reference 1 Goods 7.5 tonnes mgw and over Going ahead right bend
Vehicle movement from NE to NW Articulated On the main road
Skidded and overturned

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:
Breath test Negative Age of Driver 39 Male

Casualty Ref: 1 Vehicle: 1 Age: 39 Male Driver/rider Severity: Serious

04DF39748 23/08/2004 Time 1755 Vehicles 1 Casualties 2 Slight
E: 407840 N: 268080 First Road: U Road Type 1
Speed limit: 40 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Daylight:street lights present Raining without high winds

Special Conditions at Site None
AS DR/V1 LEFT R/ABOUT HE LOST CONTROL OF VEH ON WET/SLIPPERY RD SURFACE, HE ATTEMPTED TO CORRECT BUT VEH LEFT RD TO N/S COLL/W TREE

Occurred on ALDERS DRIVE J/W A4023 COVENTRY HIGHWAY R/ABOUT NR MOONS MOAT IND EST REDDITCH

Vehicle Reference 1 Car Going ahead left bend
Vehicle movement from NE to SW No tow / articulation Leaving the main road
Skidded

Location at impact Cleared junction or waiting/parked First impact Front Hit vehicle:
Breath test Negative Age of Driver 18 Male

Casualty Ref: 1 Vehicle: 1 Age: 15 Female Passenger Severity: Slight

Casualty Ref: 2 Vehicle: 1 Age: 15 Female Passenger Severity: Slight

04DF39915 08/09/2004 Time 1248 Vehicles 1 Casualties 2 Serious
E: 407970 N: 267230 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: Not within 20m of junction Not applicable

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V1 NEG SWEEPING L/H/BEND LOSES CONTROL, SKIDDING OVER TO O /S VERGE COLL/W TREE

Occurred on ALDERS DR APP 218 MT NW J/W COSTERS LANE WINYATES GREEN REDDI TCH

Vehicle Reference 1 Car Going ahead left bend
Vehicle movement from S to NW No tow / articulation On the main road
Skidded

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:
Breath test Not applicable Age of Driver 51 Female

Casualty Ref: 1 Vehicle: 1 Age: 51 Female Driver/rider Severity: Serious

Casualty Ref: 2 Vehicle: 1 Age: 3 Female Passenger Severity: Serious

04DF40432 29/09/2004 Time 1642 Vehicles 2 Casualties 1 Slight
E: 408060 N: 266710 First Road: A 4189 Road Type 1
Speed limit: 30 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V1 PULLED ONTO R/ABOUT & COLL/W V2 (P/CYCLE) WHICH WAS ALR EADY NEG R/ABOUT, KNOCKING RIDER OFF BIKE

Occurred on A4189 WARWICK HIGHWAY R/ABOUT J/W ALDERS DR MATCHBOROUGH REDDI TCH

Vehicle Reference 1 Car Going ahead left bend
Vehicle movement from E to S No tow / articulation On the main road
No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 39 Female

Vehicle Reference 2 Pedal Cycle Going ahead other
Vehicle movement from N to S No tow / articulation On the main road
No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or First impact Back Hit vehicle: 1
Breath test Not applicable Age of Driver 20 Male

Casualty Ref: 1 Vehicle: 2 Age: 20 Male Driver/rider Severity: Slight

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

04DF41651 25/11/2004 Time 1715 Vehicles 2 Casualties 1 Slight
E: 407970 N: 266740 First Road: A 4189 Road Type 1
Speed limit: 40 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None
V2 STAT AT TR/ISLAND,WAITING TO TURN LEFT,V1 ON ITS O/S,SL ITGHTLY YO ITS REAR,DR/V1 SEES RD IS CLEAR TO HER RIGHT,BE GAN TO MOVE OFF,ALSO TURNING LEFT,COLL WITH THE REAREND OF V2 WHICH WAS STILL STAT,IMPACT KNOCKED V2 OVER & RIDER & PILL/PASSENGER WH

Occurred on A4189 WARWICK HIGHWAY J/W ALDERS DRIVE,REDDITCH

Vehicle Reference 1 Car Turning left
Vehicle movement from W to N No tow / articulation Leaving the main road
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 32 Female

Vehicle Reference 2 Motor Cycle over 125 cc and up to 50 Waiting to turn left
Vehicle movement from W to N No tow / articulation On the main road
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Back Hit vehicle: 1
Breath test Negative Age of Driver 42 Male

Casualty Ref: 1 Vehicle: 2 Age: 42 Female Passenger Severity: Slight

04DF42068 19/12/2004 Time 1837 Vehicles 2 Casualties 1 Slight
E: 407730 N: 268240 First Road: A 4023 Road Type Single carriageway
Speed limit: 40 Junction Detail: Other Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None
V1 TURNED RGT ACROSS MAIN RD TO TURN INTO ENT/TO MACDONALD S, FAILING TO SEE ONCOMING V2 ROUNDING R/H/BEND RESULTING IN COLL

Occurred on A4023 MOONS MOAT DR J/W TURNING TO MCDONALDS AT IND EST CHURCH HILL REDDITCH

Vehicle Reference 1 Car Turning right
Vehicle movement from SE to N No tow / articulation Leaving the main road
No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 26 Male

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Vehicle Reference 2 Taxi/Private hire car Going ahead right bend
Vehicle movement from SW to SE No tow / articulation On the main road
No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or First impact Front Hit vehicle: 1
Breath test Not applicable Age of Driver 49 Male

Casualty Ref: 1 Vehicle: 2 Age: 49 Male Driver/rider Severity: Slight

05DF47498 03/10/2005 Time 1335 Vehicles 2 Casualties 1 Slight
E: 408010 N: 267010 First Road: U Road Type Single carriageway
Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V2 SLOWS AND INDICATES TO TURN RT, V1 FOLLOWING FAILS TO REACT IN TIME COLLIDING REAR V2.

Occurred on ALLDERS DRIVE,REDDITCH J/W COSTERS LANE.

Vehicle Reference 1 Car Going ahead other
Vehicle movement from N to S No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 21 Male

Casualty Ref: 1 Vehicle: 1 Age: 21 Male Driver/rider Severity: Slight

Vehicle Reference 2 Car Waiting to turn right
Vehicle movement from N to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Back Hit vehicle: 1
Breath test Negative Age of Driver 34 Female

05DF48187 12/11/2005 Time 1700 Vehicles 1 Casualties 1 Slight
E: 408210 N: 267560 First Road: U Road Type Single carriageway
Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None
V1 REVERSING FAILS TO SEE CAS 1 STEP OFF PAVEMENT TO REAR OF V1.

Occurred on FURZE LANE REDDITCH OP J/W GATELEY CLOSE.

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Vehicle Reference 1 Car Reversing
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or First impact Back Hit vehicle:
Breath test Negative Age of Driver 29 Female

Casualty Ref: 1 Vehicle: 1 Age: 63 Male Pedestrian Severity: Slight

05DF48582 02/12/2005 Time 1227 Vehicles 2 Casualties 2 Slight
E: 407850 N: 268230 First Road: U Road Type 1
Speed limit: 40 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Darkness: street lights present but unlit Fine without high winds

Special Conditions at Site None
V2 WAITING TO PULL ONTO TRAFFIC ISLAND,IS HIT IN THE REAR BY V1

Occurred on MOONS MOAT DR J/W RAVENSBANK DR,REDDITCH

Vehicle Reference 1 Goods 7.5 tonnes mgw and over Stopping
Vehicle movement from W to E No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 28 Male

Vehicle Reference 2 Car Going ahead but held up
Vehicle movement from W to E No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Back Hit vehicle: 1
Breath test Not applicable Age of Driver 23 Male

Casualty Ref: 1 Vehicle: 2 Age: 23 Male Driver/rider Severity: Slight

Casualty Ref: 2 Vehicle: 2 Age: 21 Male Passenger Severity: Slight

05DF49056 21/12/2005 Time 0800 Vehicles 2 Casualties 1 Slight
E: 408010 N: 267010 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: T & Stag Jct Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Darkness: street lights present and lit Raining without high winds

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Special Conditions at Site None
V2 TURNED RT FROM SIDE RD INTO PATH V1 ON MAIN RD.

Occurred on ALDERS DRIVE,REDDITCH J/W COSTERS LANE.

Vehicle Reference 1 Car Going ahead other
Vehicle movement from S to N No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Front Hit vehicle: 2
Breath test Driver not contacted Age of Driver 22 Female

Casualty Ref: 1 Vehicle: 1 Age: 22 Female Driver/rider Severity: Slight

Vehicle Reference 2 Car Turning right
Vehicle movement from W to S No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Entering main road First impact Offside Hit vehicle: 1
Breath test Driver not contacted Age of Driver 17 Male

06DF49456 26/01/2006 Time 1930 Vehicles 2 Casualties 1 Slight
E: 408060 N: 268020 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None
V1 DRIVEN BY FOREIGN NATIONAL. IS TRAVELLING ON WRONG SIDE OF RD V2 TRAVELLING IN OP DIRECTION IS UNABLE TO AVOID COLLIDING V1.

Occurred on FARMOOR LANE,REDDITCH APPROX 50 M NE J/E REGENTS COURT.

Vehicle Reference 1 Car Going ahead right bend
Vehicle movement from SW to E No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 41 Male

Vehicle Reference 2 Car Going ahead left bend
Vehicle movement from E to SW No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 1
Breath test Negative Age of Driver 29 Male

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Casualty Ref: 1 Vehicle: 2 Age: 29 Male Driver/rider Severity: Slight

06DE49886 16/02/2006 Time 1907 Vehicles 1 Casualties 1 Slight
E: 407620 N: 268170 First Road: A 4023 Road Type Dual carriageway
Speed limit: 60 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Dry
Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None
V1 FOR U/K REASON LOSES CONTROL MOUNTING N/S KERB COLL/W RD SIGN

Occurred on A4023 COVENTRY HIGHWAY APP 203 MT WB ALDERS DR ISLAND REDDITCH

Vehicle Reference 1 Car Going ahead other
Vehicle movement from W to E No tow / articulation
Skidded and overturned

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:
Breath test Not applicable Age of Driver 26 Male

Casualty Ref: 1 Vehicle: 1 Age: 26 Male Driver/rider Severity: Slight

06DE50316 08/03/2006 Time 0900 Vehicles 2 Casualties 1 Slight
E: 408070 N: 266720 First Road: A 4189 Road Type Single carriageway
Speed limit: 40 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight: no street lighting Fine without high winds

Special Conditions at Site None
V2 STATIONARY WAITING TO ENTER ISLAND,V1 STATIONARY BEHIND V1 MOVES OFF MISTAKENLY BELIEVING V2 IS MOVING OFF AND A COLLISION OCCURS.

Occurred on A4189 WARWICK HIGHWAY REDDITCH J/W CLAYBROOK/ALDERS DRIVE TRAFFIC ISLAND.

Vehicle Reference 1 Car Starting
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 50 Female

Vehicle Reference 2 Car Going ahead but held up
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Back Hit vehicle: 1
Breath test Driver not contacted Age of Driver 36 Female

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Casualty Ref: 1 Vehicle: 2 Age: 36 Female Driver/rider Severity: Slight

06DE50417 16/03/2006 Time 1745 Vehicles 3 Casualties 1 Slight
E: 407750 N: 267430 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: T & Stag Jct Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Daylight:street lights present Raining without high winds

Special Conditions at Site None
V1 SLOWS TO TURN RT OFF ALDERS DRIVE, V2 REACTS TOO LATE COLLLIDING REAR V1. V1 IS SHUNTED INTO PATH V3 TRAVELLING IN OP DIRECTION.

Occurred on ALDERS DRIVE REDDITCH J/W TEN ACRES LANE.

Vehicle Reference 1 Car Stopping
Vehicle movement from NW to SE No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Back Hit vehicle: 2
Breath test Negative Age of Driver 55 Female

Casualty Ref: 1 Vehicle: 1 Age: 15 Male Passenger Severity: Slight

Vehicle Reference 2 Car Going ahead other
Vehicle movement from NW to SE No tow / articulation
Skidded

Location at impact Jct Approach First impact Front Hit vehicle: 1
Breath test Negative Age of Driver 18 Male

Vehicle Reference 3 Car Going ahead other
Vehicle movement from SE to NW No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parked First impact Offside Hit vehicle: 1
Breath test Negative Age of Driver 20 Male

06DE51627 21/05/2006 Time 0240 Vehicles 1 Casualties 1 Slight
E: 407900 N: 268210 First Road: A 4023 Road Type 1
Speed limit: 70 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Darkness: street lights present and lit Raining without high winds

Special Conditions at Site None
INTOXICATED DR V1 ON SLIP OFF RD APPROACHING TRAFFIC ISLAND LOSES CONTROL V1. V1 ENTERS

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

ISLAND TRAVELS ACROSS MOUTH OF 2 JCTS COMING TO REST AGAINST BARRIER. DR V1 FLEES FROM SCENE.

Occurred on A4023 COVENTRY HIGHWAY, REDDITCH EB SLIP OFF RD, J/W RAVENS BANK DRIVE, REDDITCH.

Vehicle Reference 1 Car Going ahead other
Vehicle movement from W to NE No tow / articulation
Skidded

Location at impact Leaving roundabout First impact Front Hit vehicle:
Breath test Positive Age of Driver 34 Male

Casualty Ref: 1 Vehicle: 1 Age: 28 Male Passenger Severity: Slight

06DE52415 12/07/2006 Time 2015 Vehicles 2 Casualties 2 Slight
E: 407900 N: 268110 First Road: A 4023 Road Type Dual carriageway
Speed limit: 70 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V2 WAITING TO ENTER TRAFFIC ISLAND IS STRUCK IN REAR BY V1

Occurred on A4023 COVENTRY HIGHWAY REDDITCH WB CW J/W WINYATES ISLAND

Vehicle Reference 1 Car Going ahead other
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Front Hit vehicle: 2
Breath test Driver not contacted Age of Driver 25 Male

Vehicle Reference 2 Car Going ahead but held up
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Back Hit vehicle: 1
Breath test Driver not contacted Age of Driver 58 Female

Casualty Ref: 1 Vehicle: 2 Age: 58 Female Driver/rider Severity: Slight

Casualty Ref: 2 Vehicle: 2 Age: 55 Female Passenger Severity: Slight

06DE85255 21/11/2006 Time 1345 Vehicles 2 Casualties 1 Slight
E: 407820 N: 268200 First Road: A 4023 Road Type 1
Speed limit: 70 Junction Detail: Roundabout Give way or controlled

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V2 AND 1 MOVING OFF FROM STATIONARY ONTO ISLAND, V1 FITTED WITH NEW CLUTCH LURCHES FORWARD COLLIDING REAR V2.

Occurred on A4023 COVENTRY HIGHWAY EB SLIP OFF RD, REDDITCH J/W CHURCHILL ROUNDABOUT.

Vehicle Reference 1 Car Starting
Vehicle movement from W to NE No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Entering main road First impact Back Hit vehicle: 2
Breath test Driver not contacted Age of Driver 44 Female

Casualty Ref: 1 Vehicle: 1 Age: 44 Female Driver/rider Severity: Slight

Vehicle Reference 2 Car Starting
Vehicle movement from W to NE No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Entering main road First impact Front Hit vehicle: 1
Breath test Driver not contacted Age of Driver 25 Male

07DE85669 09/02/2007 Time 1330 Vehicles 2 Casualties 1 Slight
E: 407160 N: 268090 First Road: U Road Type Single carriageway
Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Snow
Darkness: street lights present and lit Snowing without high winds

Special Conditions at Site None
V2 TURNED RGT ONTO MAIN RD CUTTING ACROSS ONCOMING V1'S PATH RESULTING IN COLL

Occurred on MOONS MOAT DR J/W WINYATES WAY REDDITCH

Vehicle Reference 1 Car Going ahead other
Vehicle movement from SW to NE No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or First impact Front Hit vehicle: 2
Breath test Not requested Age of Driver 23 Female

Casualty Ref: 1 Vehicle: 1 Age: 23 Female Driver/rider Severity: Slight

Vehicle Reference 2 Car Turning right
Vehicle movement from NW to SW No tow / articulation
No skidding, jack-knifing or overturning

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Location at impact Entering main road First impact Offside Hit vehicle: 1
Breath test Not requested Age of Driver 39 Male

07DE86161 08/05/2007 Time 2110 Vehicles 2 Casualties 3 Serious
E: 407680 N: 268220 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: T & Stag Jct Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None
V1 ON MAIN RD TURNS RGT INTO JCT CUTTING ACROSS ONCOMING V2S PATH RESULTING IN COLL

Occurred on MOONS MOAT DR J/W BLACK SOILS RD REDDITCH

Vehicle Reference 1 Car Turning right
Vehicle movement from SW to S No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Leaving main road First impact Nearside Hit vehicle: 2
Breath test Negative Age of Driver 18 Male

Casualty Ref: 3 Vehicle: 1 Age: 16 Female Passenger Severity: Serious

Vehicle Reference 2 Car Going ahead other
Vehicle movement from NE to SW No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or First impact Front Hit vehicle: 1
Breath test Negative Age of Driver 17 Male

Casualty Ref: 1 Vehicle: 2 Age: 17 Female Passenger Severity: Slight

Casualty Ref: 2 Vehicle: 2 Age: 17 Female Passenger Severity: Slight

07DE86692 13/07/2007 Time 1056 Vehicles 2 Casualties 1 Slight
E: 408020 N: 266930 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: T & Stag Jct Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Daylight:street lights present Raining without high winds

Special Conditions at Site None
V2 TURNS RT OFF MAIN RD ACROSS PATH V1 WHICH IS UNABLE TO AVOID A COLLISION.

Occurred on ALDERS DRIVE, REDDITCH J/W FARMORE LANE..

Vehicle Reference 1 Car Going ahead other

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Vehicle movement from N to S — No tow / articulation; No skidding, jack-knifing or overturning

Location at impact Jct Approach — First impact Front — Hit vehicle: 2
Breath test Negative — Age of Driver 58 — Male

Vehicle Reference 2 Car — Turning right
Vehicle movement from S to E — No tow / articulation; No skidding, jack-knifing or overturning

Location at impact Leaving main road — First impact Nearside — Hit vehicle: 1
Breath test Negative — Age of Driver 41 — Male

Casualty Ref: 1 Vehicle: 2 Age: 41 Male Driver/rider Severity: Slight

07DE86865 07/09/2007 Time 0907 Vehicles 2 Casualties 1 Slight
E: 408100 N: 268140 First Road: A 4023 Road Type Slip road
Speed limit: 60 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V2 TRAV BEH V1 ON SLIP RD, V1 BRAKES HEAVILY FOR NO APPARANT REASON CAUSING V2 TO TAKE EVASIVE ACTION, LOSES CONTROL COLL/W N/S LAMP POST, V1 FAILED TO STOP

Occurred on A4023 APP 190 MT EB SLIP RD MOONS MOAT ISLAND REDDITCH

Vehicle Reference 1 Car — Stopping
Vehicle movement from W to E — No tow / articulation; No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct — First impact — Did not impact — Hit vehicle:
Breath test Driver not contacted — Age of Driver — Not traced

Vehicle Reference 2 Car — Stopping
Vehicle movement from W to E — No tow / articulation; Skidded

Location at impact Not at, or within 20M of Jct — First impact — Nearside — Hit vehicle:
Breath test Not applicable — Age of Driver 20 — Female

Casualty Ref: 1 Vehicle: 2 Age: 20 Female Driver/rider Severity: Slight

07DE86867 07/09/2007 Time 1805 Vehicles 2 Casualties 1 Slight
E: 408230 N: 267290 First Road: U Road Type Single carriageway

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V1 WAS TURNING INTO PARKING BAY O/S OWN ADDRESS WHEN 10 YR OLD RIDER V2 P/CYCLE RODE INTO V1'S PATH RESULTING IN COLL

Occurred on NEWENT CLOSE O/S NO 28 , REDDITCH

Vehicle Reference 1 Car Stopping
Vehicle movement from E to N No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2
Breath test Negative Age of Driver 35 Male

Vehicle Reference 2 Pedal Cycle Going ahead other
Vehicle movement from NE to SW No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 1
Breath test Not applicable Age of Driver 10 Female

Casualty Ref: 1 Vehicle: 2 Age: 10 Female Driver/rider Severity: Slight

07DE87058 12/10/2007 Time 1700 Vehicles 2 Casualties 1 Slight
E: 407121 N: 268046 First Road: A 4023 Road Type Dual carriageway
Speed limit: 60 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
DR/V2 PULLS OVER AS U/K VEH HAD BROKEN DOWN ON O/S LANE AND IS STRUCK IN REAR BY V1 FOL BEH, V1 FAILS TO STOP

Occurred on A4023 COVENTRY HIGHWAY WB APP 350 MT EB B4491 SLIP OFF RD REDDITCH

Vehicle Reference 1 Car Going ahead other
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2
Breath test Driver not contacted Age of Driver Not traced

Vehicle Reference 2 Car Stopping
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 1
Breath test Driver not contacted Age of Driver 33 Female

Casualty Ref: 1 Vehicle: 2 Age: 33 Female Driver/rider Severity: Slight

08DE88331 04/05/2008 Time 0310 Vehicles 1 Casualties 1 Slight
E: 407950 N: 267250 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Dry
Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None
INTOXICATED DR/V1 LOSES CONTROL OF VEH ON L/H/BEND LEAVING RD TO O/S COLL/W LAMP POST O/TURNING INTO HEDGE, DRIVER LEFT SCENE BUT FOUND BY POL LATER

Occurred on OPP NO.50 ALDERS DR REDDITCH

Vehicle Reference 1 Car Going ahead left bend
Vehicle movement from S to NW No tow / articulation
Skidded and overturned

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:
Breath test Positive Age of Driver 39 Male

Casualty Ref: 1 Vehicle: 1 Age: 39 Male Driver/rider Severity: Slight

08DE88588 05/06/2008 Time 0830 Vehicles 2 Casualties 1 Slight
E: 407818 N: 268197 First Road: A 4023 Road Type Dual carriageway
Speed limit: 70 Junction Detail: Roundabout Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V1 WAITING TO ENTER TRAFFIC ISLAND IS STRUCK IN REAR BY V2 .

Occurred on A4023 COVENTRY HIGHWAY REDDITCH J/W MOONS MOAT ISLAND

Vehicle Reference 1 Car Going ahead but held up
Vehicle movement from W to E No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Back Hit vehicle: 2
Breath test Driver not contacted Age of Driver 36 Female

Casualty Ref: 1 Vehicle: 1 Age: 36 Female Driver/rider Severity: Slight

Vehicle Reference 2 Car Going ahead other

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Vehicle movement from W to E No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Front Hit vehicle: 1
Breath test Negative Age of Driver 27 Female

08DE89194 24/10/2008 Time 2340 Vehicles 3 Casualties 1 Slight
E: 407090 N: 268150 First Road: U Road Type Single carriageway
Speed limit: 40 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Darkness: street lights present and lit Raining without high winds

Special Conditions at Site None
DR/V1 APPARANTLY USING MOBILE WHILE DRIVING COLL/W PARKED V2 AND PARKED V3, V1 THEN DRIVES OFF WITHOUT EXCHANGING DETAILS

Occurred on WINYATES WAY APP 40 MT EB WINYATES WAY REDDITCH

Vehicle Reference 1 Car Overtaking stat vehicle O/S
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2
Breath test Driver not contacted Age of Driver Not traced

Vehicle Reference 2 Car Parked
Vehicle movement from Park to Parked No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 1
Breath test Not requested Age of Driver 49 Male

Casualty Ref: 1 Vehicle: 2 Age: 49 Male Driver/rider Severity: Slight

Vehicle Reference 3 Car Parked
Vehicle movement from Park to Parked No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 1
Breath test Not requested Age of Driver 29 Male

09D900988 04/02/2009 Time 1313 Vehicles 2 Casualties 1 Slight
E: 408150 N: 266713 First Road: A 4189 Road Type Dual carriageway
Speed limit: 70 Junction Detail: Not within 20m of junction Not applicable

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V1 HAS FAILED TO SEE V2 STAT IN LN 1 & HAS ATTEMPTED TO MOVE TO LN 2, WHILE DOING SO HAS COLL/ W REAR OF V2

Occurred on A4189 WARWICK H/WAY,APPROX 85 MT E CLAYBROOK DR REDDITCH

Vehicle Reference 1 Goods over 3.5 tonnes and under 7. Going ahead other
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:
Breath test Negative Age of Driver 27 Male

Vehicle Reference 2 Car Parked
Vehicle movement from Park to Parked No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle:
Breath test Negative Age of Driver 26 Female

Casualty Ref: 1 Vehicle: 2 Age: 26 Female Driver/rider Severity: Slight

09D903514 24/06/2009 Time 2044 Vehicles 1 Casualties 2 Slight
E: 408170 N: 268090 First Road: A 4023 Road Type Dual carriageway
Speed limit: 70 Junction Detail: Not within 20m of junction Not applicable
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
V1 IS A MOTORCYCLE WHICH HAD A RIDER AND PILLION PASSENGER. FOLLOWING THE BEND IN THE ROAD RIDER LOST CONTROL OF V1 CAUSING THE DRIVER AND PILLION PASSENGER TO FALL FROM VEHICLE

Occurred on A4023 COVENTRY HIGHWAY 260 M E MOONS MOAT ISLAND

Vehicle Reference 1 Motorcycle over 500cc Going ahead other
Vehicle movement from E to W No tow / articulation
Skidded

Location at impact Not at, or within 20M of Jct First impact Offside Hit vehicle:
Breath test Negative Age of Driver 26 Male

Casualty Ref: 1 Vehicle: 1 Age: 26 Male Driver/rider Severity: Slight

Casualty Ref: 2 Vehicle: 1 Age: 30 Female Passenger Severity: Slight

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection: **Notes:**
Selected using Pre-defined Query : For Morgan Tucker

09D903977 22/07/2009 Time 1705 Vehicles 2 Casualties 2 Slight
E: 407690 N: 268220 First Road: U Road Type Single carriageway
Speed limit: 30 Junction Detail: Other Give way or controlled
Crossing: Control None Facilities: None within 50m Road surface Dry
Daylight:street lights present Fine without high winds

Special Conditions at Site None
HEAD ON COLLISION ON MOONS MOAT DRIVE CAUSED BY ONE VEHICL E (V2) BEING ON THE WRONG SIDE OF THE ROAD. V1 & V2 COLLID ED HEAD ON.

Occurred on MOONS MOAT DRIVE,REDDITCH,J/W BLACK SOIL DRIVE.,

Vehicle Reference 1 Car Going ahead other
Vehicle movement from E to W No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Jct Approach First impact Front Hit vehicle:
Breath test Negative Age of Driver 44 Female

Casualty Ref: 1 Vehicle: 1 Age: 44 Female Driver/rider Severity: Slight

Vehicle Reference 2 Car Going ahead other
Vehicle movement from W to E No tow / articulation
No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parked First impact Front Hit vehicle:
Breath test Negative Age of Driver 41 Female

Casualty Ref: 2 Vehicle: 2 Age: 41 Female Driver/rider Severity: Slight

Accidents between dates **01/08/2004 and 31/07/2009** (60) months
Selection:
Selected using Pre-defined Query :

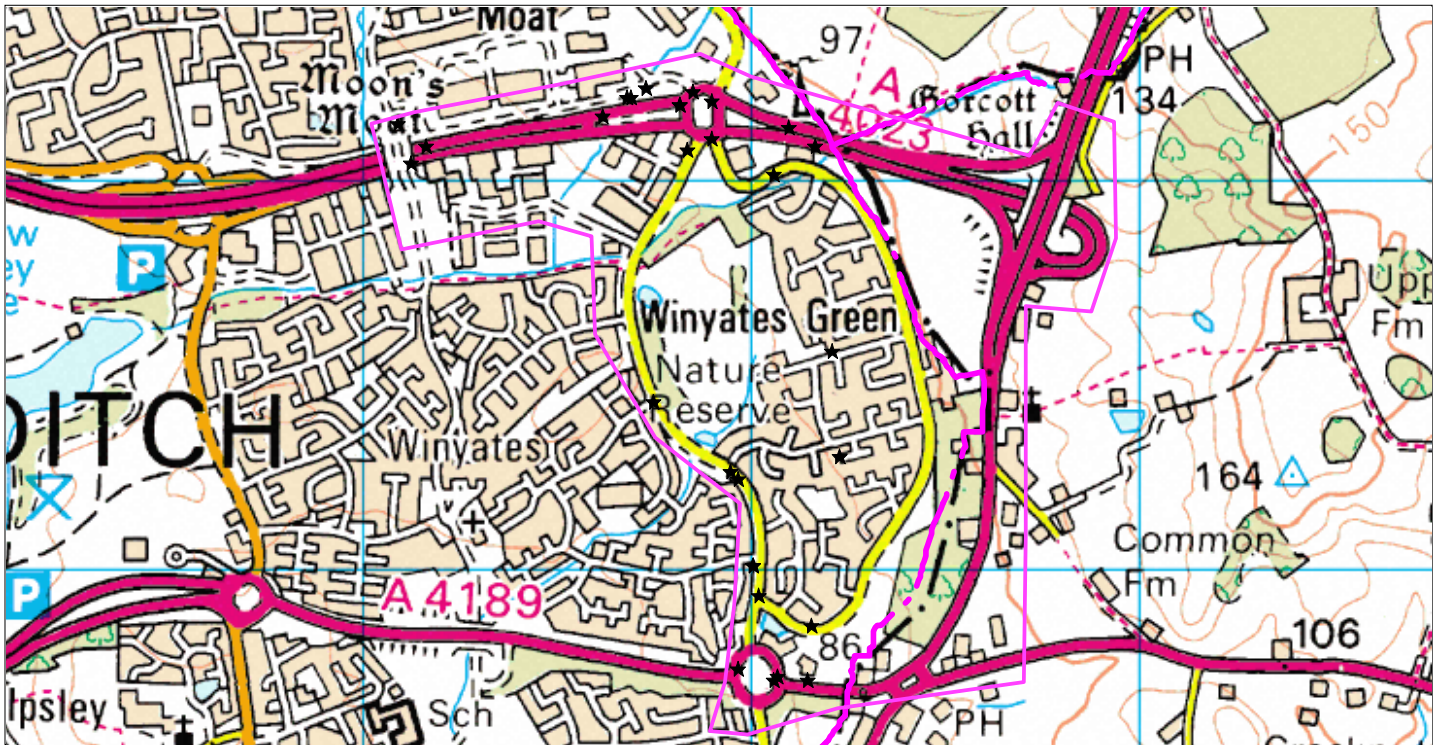
Notes:
For Morgan Tucker

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	3	22	25
2-wheeled motor vehicles	0	0	2	2
Pedal cycles	0	0	2	2
Horses & other	0	0	0	0
Total	0	3	26	29

Casualties:

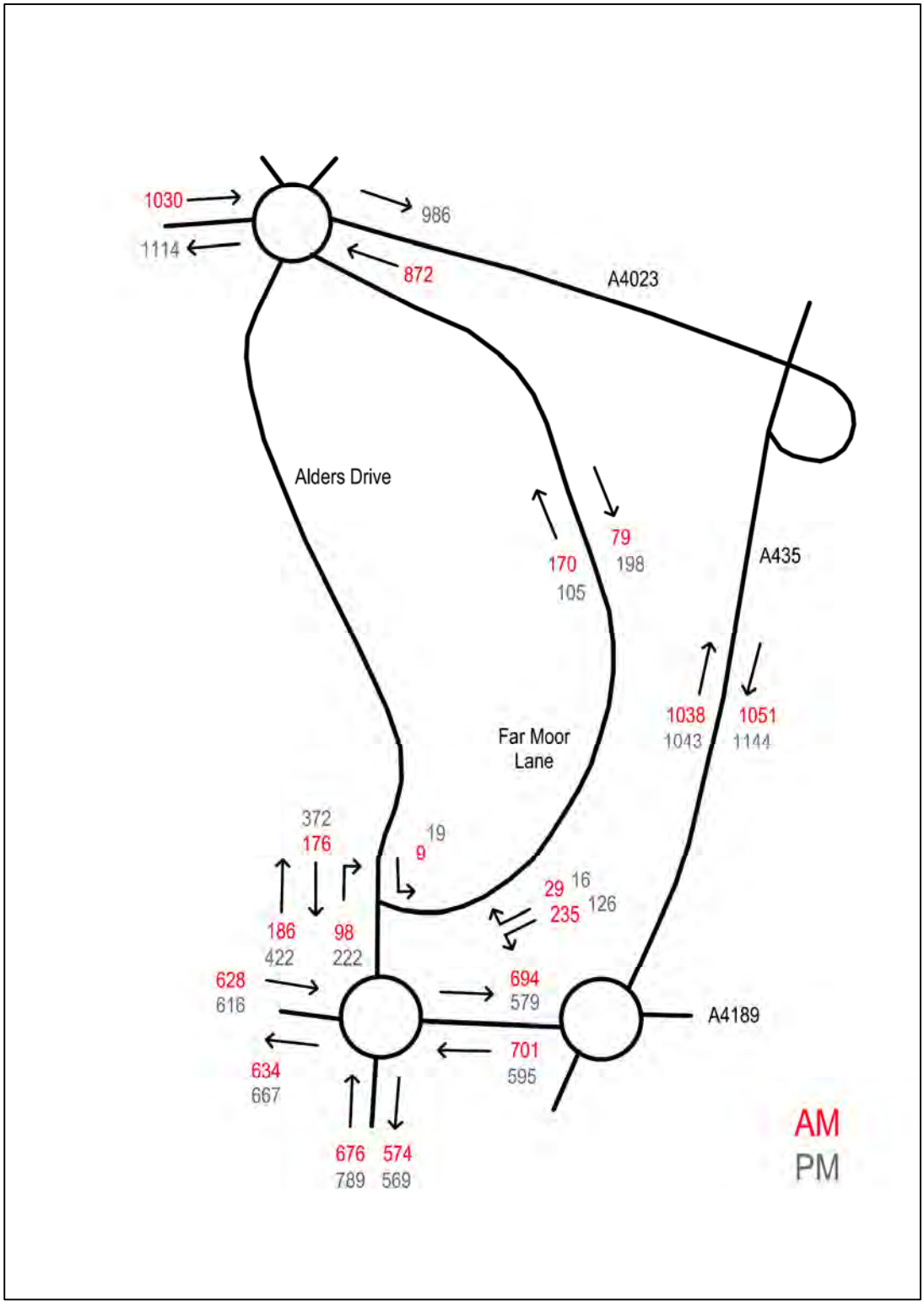
	Fatal	Serious	Slight	Total
Vehicle driver	0	2	19	21
Passenger	0	2	10	12
Motorcycle rider	0	0	1	1
Cyclist	0	0	2	2
Pedestrian	0	0	1	1
Other	0	0	0	0
Total	0	4	33	37



morgan tucker
consulting engineers

APPENDIX D

2009 Base Traffic Flows
Speed Data



DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND REPORT ANY DISCREPANCIES TO MORGAN TUCKER.

Rev	Ammendment	Date

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: 2009 Base Traffic Flow

Drawn By	Checked By	Approved By
TS	LB	BS

Date	Scale
28/09/09	NTS

Purpose: Information

Drawing Number: **JN835 - NWK - 002**

Rev:

morgan tucker consulting engineers

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Tel:- 01636 610 766 Fax:- 01636 610 786
E-Mail:- info@morgantucker.co.uk
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Site No: 00141883

Site Reference: 408615267415

A435 South of Gorcott Hill (SCM + Perm Monitor)
From 01/06/2009 To 30/06/2009

Vehicle Count Summary

All Channels

Time Begin	Mon	Tue	Wed	Thu	Fri	Sat	Sun	5-Day Av	7-Day Av
0:00	115	126	128	154	147	225	243	134	163
1:00	50	58	67	68	75	140	150	64	87
2:00	39	41	51	53	50	81	95	47	59
3:00	43	45	55	53	64	81	82	52	60
4:00	102	100	92	102	97	88	77	99	94
5:00	257	247	249	254	232	139	170	248	221
6:00	661	679	700	674	636	257	303	670	559
7:00	1665	1706	1748	1705	1597	452	390	1684	1323
8:00	2070	2133	2139	2105	2001	712	529	2090	1670
9:00	1405	1499	1499	1476	1446	975	901	1465	1314
10:00	1198	1234	1217	1286	1247	1210	1286	1236	1240
11:00	1227	1213	1247	1298	1370	1383	1523	1271	1323
12:00	1222	1255	1298	1303	1503	1447	1650	1316	1383
13:00	1242	1319	1346	1320	1581	1416	1562	1362	1398
14:00	1289	1337	1365	1389	1598	1359	1438	1396	1396
15:00	1401	1523	1541	1532	1741	1316	1404	1548	1494
16:00	1687	1821	1842	1832	2091	1356	1348	1855	1711
17:00	2106	2232	2199	2239	2161	1230	1235	2187	1915
18:00	1547	1618	1660	1667	1652	1087	1026	1629	1465
19:00	831	945	1009	1009	1042	814	830	967	926
20:00	540	641	630	685	668	564	631	633	623
21:00	403	523	493	520	480	418	459	484	471
22:00	297	390	379	414	382	387	274	372	360
23:00	211	230	237	269	360	368	170	261	264
12H,7-19	18059	18891	19101	19152	19988	13944	14294	19038	17633
16H,6-22	20494	21680	21931	22040	22815	15998	16518	21792	20211
18H,6-24	21003	22300	22546	22723	23557	16753	16961	22426	20835
24H,0-24	21609	22917	23188	23405	24224	17507	17778	23068	21518
Am Peak	8:00 2070	8:00 2134	7:30 2165	8:00 2104	8:00 2002	11:00 1383	11:00 1523	- 2095	- 1912
Pm Peak	17:00 2106	17:00 2232	17:00 2198	17:00 2238	16:30 2216	12:00 1448	12:00 1650	- 2198	- 2013

Includes Local Events, Includes Global Events

Printed at 14:42:06 on 2 Sep 2009

Site No: 00141883

Site Reference: 408615267415

A435 South of Gorcott Hill (SCM + Perm Monitor)
From 01/06/2009 To 30/06/2009

Vehicle Count Summary

Channel: Northbound

Time Begin	Mon	Tue	Wed	Thu	Fri	Sat	Sun	5-Day Av	7-Day Av
0:00	50	54	62	72	67	95	111	61	73
1:00	22	24	25	26	36	64	68	27	38
2:00	18	21	22	25	22	37	39	22	26
3:00	21	21	25	24	26	36	30	23	26
4:00	64	53	49	55	56	49	37	55	52
5:00	161	145	142	148	128	69	50	145	120
6:00	455	436	446	428	390	140	86	431	340
7:00	1001	995	998	984	905	232	143	977	751
8:00	1038	1053	1062	1035	1004	355	238	1038	826
9:00	731	766	773	751	760	492	429	756	672
10:00	574	590	584	631	631	576	578	602	595
11:00	604	592	612	633	622	598	669	613	619
12:00	607	623	635	641	680	628	750	637	652
13:00	598	647	658	637	689	614	755	646	657
14:00	614	630	645	675	728	586	747	658	661
15:00	682	741	749	740	842	603	746	751	729
16:00	800	878	878	903	985	610	758	889	830
17:00	993	1044	1038	1075	1067	602	668	1043	927
18:00	652	659	703	689	751	478	573	691	644
19:00	385	398	431	416	433	357	440	413	409
20:00	251	293	295	299	291	251	339	286	288
21:00	186	241	213	234	201	196	241	215	216
22:00	135	178	172	188	167	176	131	168	164
23:00	91	102	106	121	144	167	74	113	115
12H,7-19	8894	9218	9337	9394	9663	6373	7052	9301	8562
16H,6-22	10171	10585	10722	10771	10977	7317	8160	10645	9815
18H,6-24	10397	10865	11000	11079	11289	7660	8364	10926	10093
24H,0-24	10733	11183	11326	11429	11622	8008	8700	11258	10429
Am Peak	7:30 1118	7:30 1098	7:30 1132	7:30 1094	7:30 1033	10:30 601	11:00 669	- 1095	- 964
Pm Peak	17:00 993	17:00 1044	17:00 1038	17:00 1076	17:00 1068	12:30 632	14:30 758	- 1044	- 944

Includes Local Events, Includes Global Events

Printed at 14:41:57 on 2 Sep 2009

Site No: 00141883

Site Reference: 408615267415

A435 South of Gorcott Hill (SCM + Perm Monitor)
From 01/06/2009 To 30/06/2009

Vehicle Count Summary

Channel: Southbound

Time Begin	Mon	Tue	Wed	Thu	Fri	Sat	Sun	5-Day Av	7-Day Av
0:00	65	72	66	82	78	131	132	73	89
1:00	28	35	41	43	40	76	81	37	49
2:00	21	20	29	27	29	44	56	25	32
3:00	23	24	30	29	39	47	52	29	35
4:00	38	47	43	47	41	38	40	43	42
5:00	96	102	107	106	104	70	120	103	101
6:00	205	243	254	245	247	118	215	239	218
7:00	664	710	750	721	692	220	249	707	572
8:00	1032	1080	1077	1069	997	357	292	1051	843
9:00	675	735	727	725	686	482	472	710	643
10:00	624	644	633	655	616	635	707	634	645
11:00	623	622	634	667	748	785	854	659	705
12:00	615	631	662	662	823	819	899	679	730
13:00	643	673	688	683	893	802	807	716	741
14:00	675	707	720	715	870	774	692	737	736
15:00	719	782	792	792	899	713	658	797	765
16:00	887	943	964	929	1107	746	591	966	881
17:00	1113	1188	1161	1163	1093	628	566	1144	987
18:00	895	959	956	978	902	610	454	938	822
19:00	446	547	577	594	609	458	390	555	517
20:00	289	348	335	386	377	312	293	347	334
21:00	218	283	280	286	280	222	218	269	255
22:00	162	212	207	226	215	211	142	204	196
23:00	121	129	130	149	216	200	96	149	149
12H,7-19	9165	9674	9764	9759	10325	7571	7242	9737	9071
16H,6-22	10323	11094	11209	11269	11838	8681	8358	11146	10396
18H,6-24	10605	11436	11546	11644	12269	9093	8597	11500	10741
24H,0-24	10876	11735	11862	11976	12601	9499	9078	11810	11089
Am Peak	8:00 1032	8:00 1080	8:00 1077	8:00 1069	8:00 997	11:00 785	11:00 854	- 1051	- 985
Pm Peak	17:00 1113	17:00 1188	17:00 1161	17:00 1163	16:30 1154	12:00 820	12:00 899	- 1156	- 1071

Includes Local Events, Includes Global Events

Printed at 14:42:00 on 2 Sep 2009

Site No: 00141883

Site Reference: 408615267415

A435 South of Gorcott Hill (SCM + Perm Monitor)
From 01/06/2009 To 30/06/2009

Speed Summary (All Days)-Limit 40 Mph

All Channels

Time Begin	Total Vol.	85th %ile	Mean Ave.	Std. Dev.	Bin 1 <26Mph	Bin 2 26-<31	Bin 3 31-<36	Bin 4 36-<41	Bin 5 41-<46	Bin 6 46-<51	Bin 7 51-<56	Bin 8 56-<61	Bin 9 61-<66	Bin 10 66-<71	Bin 11 71-<76	Bin 12 76-<81	Bin 13 =>81
0:00	162	50.6	43.3	7.4	0	2	19	51	42	25	13	6	3	2	0	0	0
1:00	86	52.5	44.5	7.8	0	1	8	24	23	15	9	4	2	0	0	0	0
2:00	58	53.0	44.9	8.1	0	0	5	16	14	11	6	3	1	0	0	0	0
3:00	61	54.5	45.9	8.5	0	0	5	14	15	12	8	4	2	1	0	0	0
4:00	94	53.6	45.6	7.7	0	0	5	24	23	21	11	5	2	1	0	0	0
5:00	221	53.8	45.8	7.6	0	1	9	53	62	46	28	12	5	2	0	0	0
6:00	558	50.0	43.5	6.6	0	1	33	187	180	90	42	15	5	2	0	0	0
7:00	1323	44.9	39.8	5.3	6	18	229	615	333	91	24	6	2	0	0	0	0
8:00	1670	43.2	38.0	5.5	31	67	423	764	300	67	15	4	1	0	0	0	0
9:00	1315	43.0	37.8	5.6	33	52	344	603	216	51	12	3	0	0	0	0	0
10:00	1239	42.4	37.7	5.2	17	48	358	580	182	41	10	2	0	0	0	0	0
11:00	1323	42.2	37.4	5.4	31	57	377	612	190	42	10	2	0	0	0	0	0
12:00	1383	42.5	37.6	5.3	24	55	398	637	206	46	11	3	0	0	0	0	0
13:00	1398	42.6	37.8	5.2	18	53	388	660	214	50	12	2	0	0	0	0	0
14:00	1396	42.6	37.9	5.1	15	46	395	663	212	50	12	2	0	0	0	0	0
15:00	1494	42.8	38.0	5.1	19	43	401	720	240	54	12	3	0	0	0	0	0
16:00	1711	42.6	38.0	5.0	13	58	460	837	268	58	14	2	0	0	0	0	0
17:00	1914	43.0	37.9	5.4	38	77	486	898	327	69	15	4	0	0	0	0	0
18:00	1466	44.7	39.5	5.4	10	30	267	693	333	93	29	7	2	0	0	0	0
19:00	926	46.1	40.7	6.1	9	12	130	394	240	93	34	10	2	0	0	0	0
20:00	622	48.2	41.8	6.4	3	6	66	250	170	77	32	12	4	2	0	0	0
21:00	471	48.4	41.8	6.7	1	5	63	184	120	56	28	9	4	2	0	0	0
22:00	361	48.0	41.3	6.8	2	6	58	141	85	39	19	8	2	2	0	0	0
23:00	263	49.2	42.0	7.1	0	4	38	95	64	34	17	7	3	1	0	0	0
12H,7-19	17632	43.2	38.1	5.3	255	604	4525	8282	3021	712	176	40	5	0	0	0	0
16H,6-22	20209	43.9	38.5	5.6	268	628	4817	9297	3731	1028	312	86	20	6	0	0	0
18H,6-24	20833	44.0	38.6	5.6	270	638	4913	9533	3880	1101	348	101	25	9	0	0	0
24H,0-24	21515	44.3	38.8	5.8	270	642	4964	9715	4059	1231	423	135	40	15	0	0	0
Am	8:00	3:00	3:00	3:00	8:30	8:00	8:00	8:00	7:00	6:30	6:00	6:00	5:30	5:30	5:30	5:30	9:00
Peak	1670	54.5	45.9	8.5	37	67	422	764	333	104	42	15	7	3	1	0	0
Pm	17:00	23:00	23:00	23:00	17:00	17:00	16:30	16:30	17:30	18:30	19:30	20:00	20:00	20:30	21:00	20:30	20:30
Peak	1914	49.2	42.0	7.1	38	77	511	900	345	98	35	12	4	1	1	0	0

Includes Local Events, Includes Global Events

Printed at 14:42:58 on 2 Sep 2009

Site No: 00141883 **Site Reference: 408615267415**

A435 South of Gorcott Hill (SCM + Perm Monitor)
From 01/06/2009 To 30/06/2009

Speed Summary (All Days)-Limit 40 Mph

Channel: Northbound

Time Begin	Total Vol.	85th %ile	Mean Ave.	Std. Dev.	Bin 1 <26Mph	Bin 2 26-<31	Bin 3 31-<36	Bin 4 36-<41	Bin 5 41-<46	Bin 6 46-<51	Bin 7 51-<56	Bin 8 56-<61	Bin 9 61-<66	Bin 10 66-<71	Bin 11 71-<76	Bin 12 76-<81	Bin 13 =>81
0:00	73	50.6	43.1	8.0	0	2	10	23	17	12	6	2	1	0	0	0	0
1:00	37	52 0	44.2	7.8	0	0	4	10	9	6	4	2	0	0	0	0	0
2:00	26	51.0	44.2	7.9	0	0	3	6	6	5	2	1	0	0	0	0	0
3:00	26	52.0	44.5	7.8	0	0	3	6	7	5	2	2	1	0	0	0	0
4:00	52	51.3	44.4	7.2	0	0	3	15	15	10	5	2	0	0	0	0	0
5:00	120	53.2	45.7	7.2	0	0	5	27	36	26	15	6	2	1	0	0	0
6:00	340	50.0	43.7	6.2	0	1	18	101	120	61	26	8	3	1	0	0	0
7:00	751	45.4	40.7	5.1	5	6	79	337	242	63	15	3	1	0	0	0	0
8:00	827	44.6	39.7	5.0	7	13	114	410	223	48	10	2	0	0	0	0	0
9:00	672	43.6	38.0	5.9	22	27	150	303	133	29	7	2	0	0	0	0	0
10:00	595	43.0	38.1	5.1	7	19	151	287	103	22	4	2	0	0	0	0	0
11:00	618	43.0	37.9	5.5	15	22	148	296	107	22	6	2	0	0	0	0	0
12:00	652	43.1	38.1	5.2	10	22	164	309	117	24	5	2	0	0	0	0	0
13:00	657	43.2	38.2	5.1	8	19	164	315	117	27	5	2	0	0	0	0	0
14:00	660	43.0	38.1	5.1	9	18	170	318	115	24	5	1	0	0	0	0	0
15:00	729	42.8	38.0	5.1	10	21	192	349	125	25	4	0	0	0	0	0	0
16:00	829	42.9	38.1	4.8	8	25	206	411	147	27	6	0	0	0	0	0	0
17:00	927	43.6	38.6	5.1	12	26	193	456	195	37	7	1	0	0	0	0	0
18:00	643	45.0	39.9	5.6	8	11	95	294	172	47	13	3	0	0	0	0	0
19:00	409	45.7	40.2	6.2	8	7	63	168	108	37	13	2	1	0	0	0	0
20:00	289	46.9	41.2	6.0	1	4	38	117	79	31	12	4	2	0	0	0	0
21:00	216	47.2	41.2	6.4	0	2	34	88	54	22	11	4	2	0	0	0	0
22:00	164	46.7	40.7	6.5	0	3	30	64	38	17	7	2	1	0	0	0	0
23:00	114	48.0	41.2	6.7	0	3	20	42	27	13	6	2	1	0	0	0	0
12H,7-19	8560	43.8	38.6	5.3	121	229	1826	4086	1796	395	87	19	2	0	0	0	0
16H,6-22	9814	44.3	39.0	5.5	130	243	1979	4560	2157	546	149	38	10	1	0	0	0
18H,6-24	10092	44.4	39.0	5.5	130	249	2029	4666	2222	576	162	42	12	1	0	0	0
24H,0-24	10426	44.6	39.2	5.7	130	250	2056	4753	2312	640	196	57	16	2	0	0	0
Am	7:30	5:00	5:00	0:30	9:00	9:00	10:00	8:00	7:30	6:30	6:00	6:00	5:30	5:30	5:30	5:30	9:00
Peak	849	53.2	45.7	8.6	22	27	151	410	249	72	26	8	3	1	1	0	0
Pm	17:00	23:00	20:30	23:00	17:00	16:30	16:30	17:00	17:30	18:00	18:00	20:00	21:00	21:00	21:30	20:30	20:30
Peak	927	48.0	41.4	6.7	12	27	216	456	200	47	13	4	1	1	0	0	0

Includes Local Events, Includes Global Events

Printed at 14:43:10 on 2 Sep 2009

Site No: 00141883

Site Reference: 408615267415

A435 South of Gorcott Hill (SCM + Perm Monitor)
From 01/06/2009 To 30/06/2009

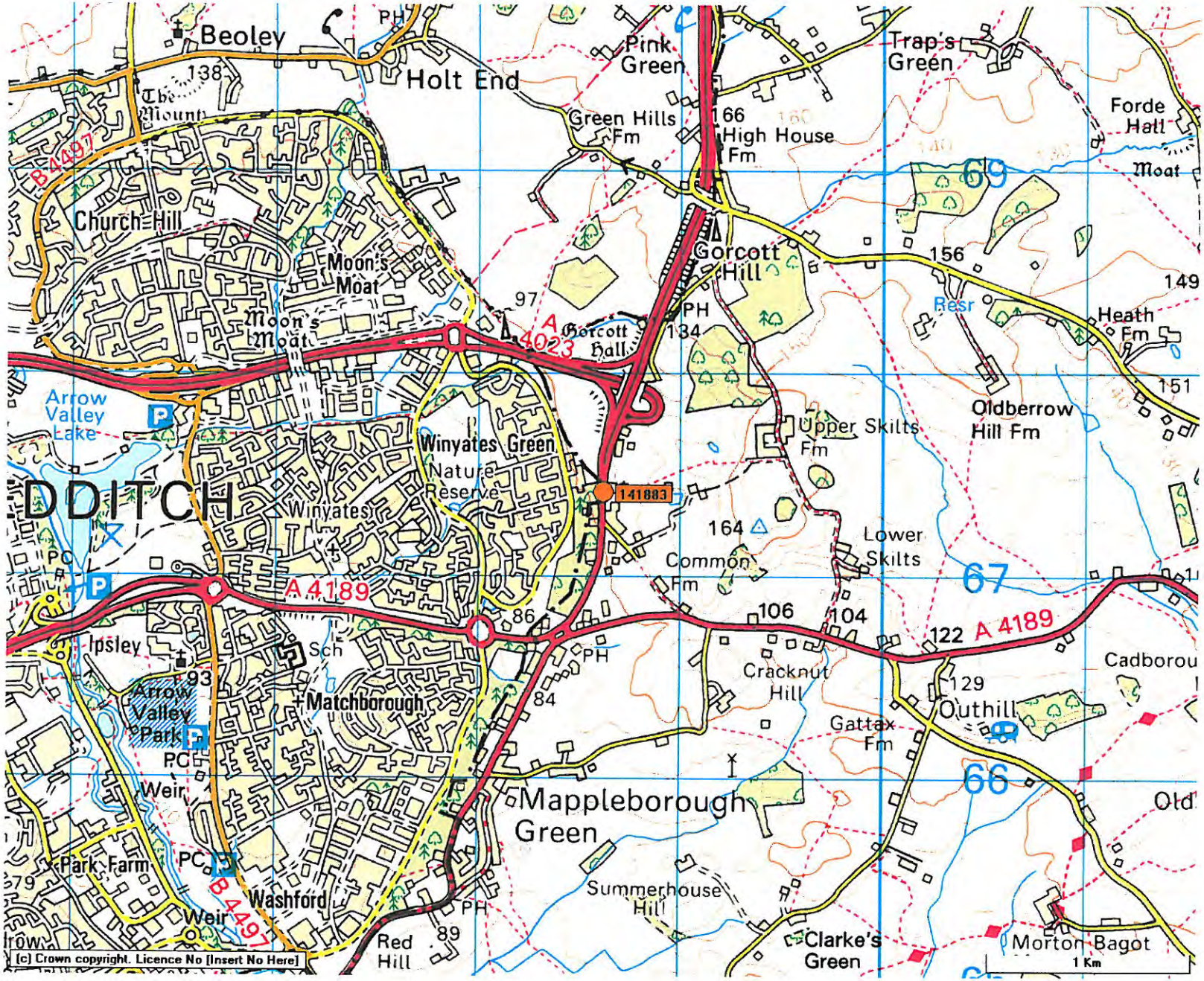
Speed Summary (All Days)-Limit 40 Mph

Channel: Southbound

Time Begin	Total Vol.	85th %ile	Mean Ave.	Std. Dev.	Bin 1 <26Mph	Bin 2 26-<31	Bin 3 31-<36	Bin 4 36-<41	Bin 5 41-<46	Bin 6 46-<51	Bin 7 51-<56	Bin 8 56-<61	Bin 9 61-<66	Bin 10 66-<71	Bin 11 71-<76	Bin 12 76-<81	Bin 13 =>81
0:00	90	50.4	43.5	7.6	0	1	9	29	25	14	6	3	2	0	0	0	0
1:00	49	52.4	44.7	7.0	0	0	3	14	14	8	5	2	1	0	0	0	0
2:00	32	53.5	45.5	7.6	0	0	2	9	8	6	4	2	1	0	0	0	0
3:00	34	55.3	46.9	8.4	0	0	2	8	8	7	4	2	2	0	0	0	0
4:00	42	55.1	47.0	8.4	0	0	2	9	10	10	6	3	2	1	0	0	0
5:00	100	54.2	46.0	7.6	0	0	4	27	26	20	13	6	3	1	0	0	0
6:00	218	50.0	43.1	6.9	0	0	16	86	60	28	15	7	2	1	0	0	0
7:00	572	43.5	38.6	5.2	2	12	149	278	91	28	9	3	0	0	0	0	0
8:00	844	40.6	36.3	5.3	24	55	309	354	77	19	5	2	0	0	0	0	0
9:00	643	42.0	37.5	5.2	10	25	194	300	84	21	6	2	0	0	0	0	0
10:00	645	41.5	37.3	5.1	9	30	208	294	79	19	5	2	0	0	0	0	0
11:00	705	41.2	37.0	5.3	15	35	229	315	84	19	6	2	0	0	0	0	0
12:00	731	41.5	37.2	5.3	15	33	235	328	89	22	7	2	0	0	0	0	0
13:00	742	41.9	37.5	5.2	10	34	223	345	96	23	6	2	0	0	0	0	0
14:00	736	42.1	37.7	5.0	6	29	225	345	97	26	8	2	0	0	0	0	0
15:00	765	42.7	38.0	5.1	8	22	209	371	114	29	7	2	0	0	0	0	0
16:00	881	42.2	37.8	5.0	6	33	255	425	120	31	9	2	0	0	0	0	0
17:00	987	42.0	37.2	5.6	26	52	293	441	131	32	8	2	0	0	0	0	0
18:00	822	44.3	39.2	5.3	3	18	171	400	162	47	16	4	1	0	0	0	0
19:00	518	46.8	41.1	5.9	2	5	66	226	131	56	21	8	2	0	0	0	0
20:00	335	49.0	42.4	6.6	2	2	28	134	90	46	20	8	2	0	0	0	0
21:00	255	49.2	42.3	6.8	1	3	29	96	66	33	17	6	2	0	0	0	0
22:00	197	48.8	41.8	7.1	0	2	28	75	47	24	12	4	2	0	0	0	0
23:00	149	49.8	42.6	7.2	0	1	18	53	38	20	11	5	2	0	0	0	0
12H,7-19	9073	42.2	37.6	5.3	134	378	2700	4196	1224	316	92	27	1	0	0	0	0
16H,6-22	10399	43.3	38.1	5.6	139	387	2839	4738	1571	479	165	56	9	1	0	0	0
18H,6-24	10745	43.5	38.2	5.7	139	390	2885	4866	1656	523	188	65	13	1	0	0	0
24H,0-24	11092	43.9	38.4	5.9	139	391	2907	4962	1747	587	226	83	24	3	0	0	0
Am	8:00	3:30	3:30	3:30	8:00	8:00	8:00	8:00	7:00	6:30	6:00	6:00	5:30	5:30	4:30	5:00	2:00
Peak	843	55.4	47.1	8.7	24	55	309	354	91	32	16	8	3	2	0	0	0
Pm	17:00	23:00	23:00	23:00	17:00	17:00	16:30	16:30	18:00	18:30	19:30	20:00	20:00	20:00	19:30	20:30	22:30
Peak	987	49.8	42.6	7.2	26	51	295	453	162	56	22	8	3	1	0	0	0

Includes Local Events, Includes Global Events

Printed at 14:43:04 on 2 Sep 2009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Holt End
Pink Green
Trap's Green
Forde Hall
Moat
Green Hills Fm
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High House Fm
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Church Hill
Moon's Moat
Gorcott Hill
156
149
Resr
Heath Fm
97
A 4023
Gorcott Hall
PH
134
Arrow Valley Lake
Winyates Green
Nature Reserve
Upper Skilts Fm
Oldberrow Hill Fm
151
DITCH
Winyates
141883
164
Lower Skilts
Common Fm
67
A 4189
106
104
122
Ipsley
Sch
86
PH
Cracknut Hill
Cadborou
93
Arrow Valley Park
Matchborough
84
129
Outhill
Gattax Fm
Weir
Mappleborough Green
66
Old
Park Farm
79
Washford
Summerhouse Hill
Red Hill
89
Clarke's Green
Morton Bagot
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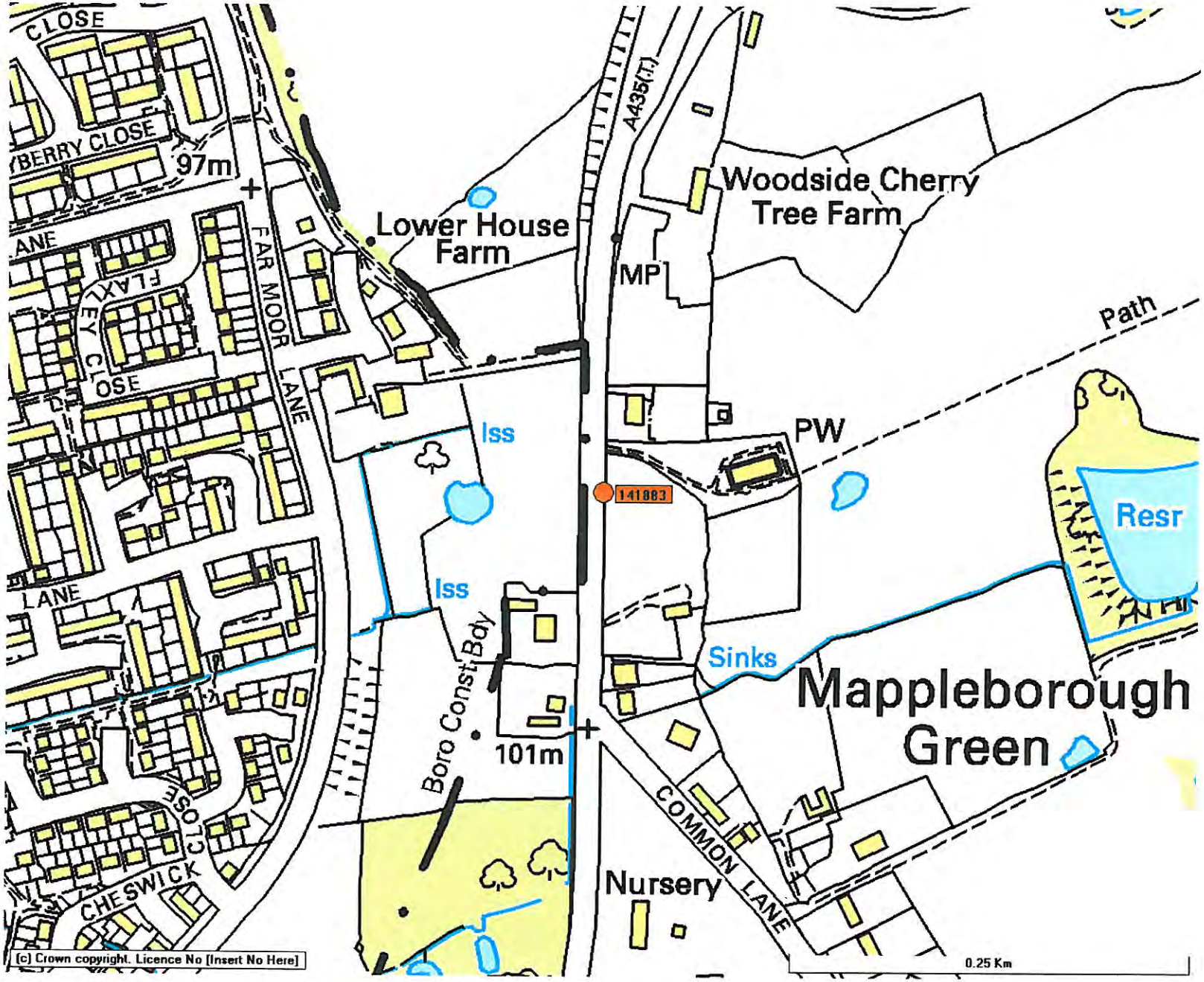
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BERRY CLOSE
97m
ANE
FLAXLEY CLOSE
FAR MOOR LANE
LANE
CHESWICK CLOSE
Lower House Farm
A435(T)
Woodside Cherry Tree Farm
MP
Path
PW
Iss
141883
Iss
Resr
Sinks
Boro Const Bay
101m
Mappleborough Green
COMMON LANE
Nursery
0.25 Km
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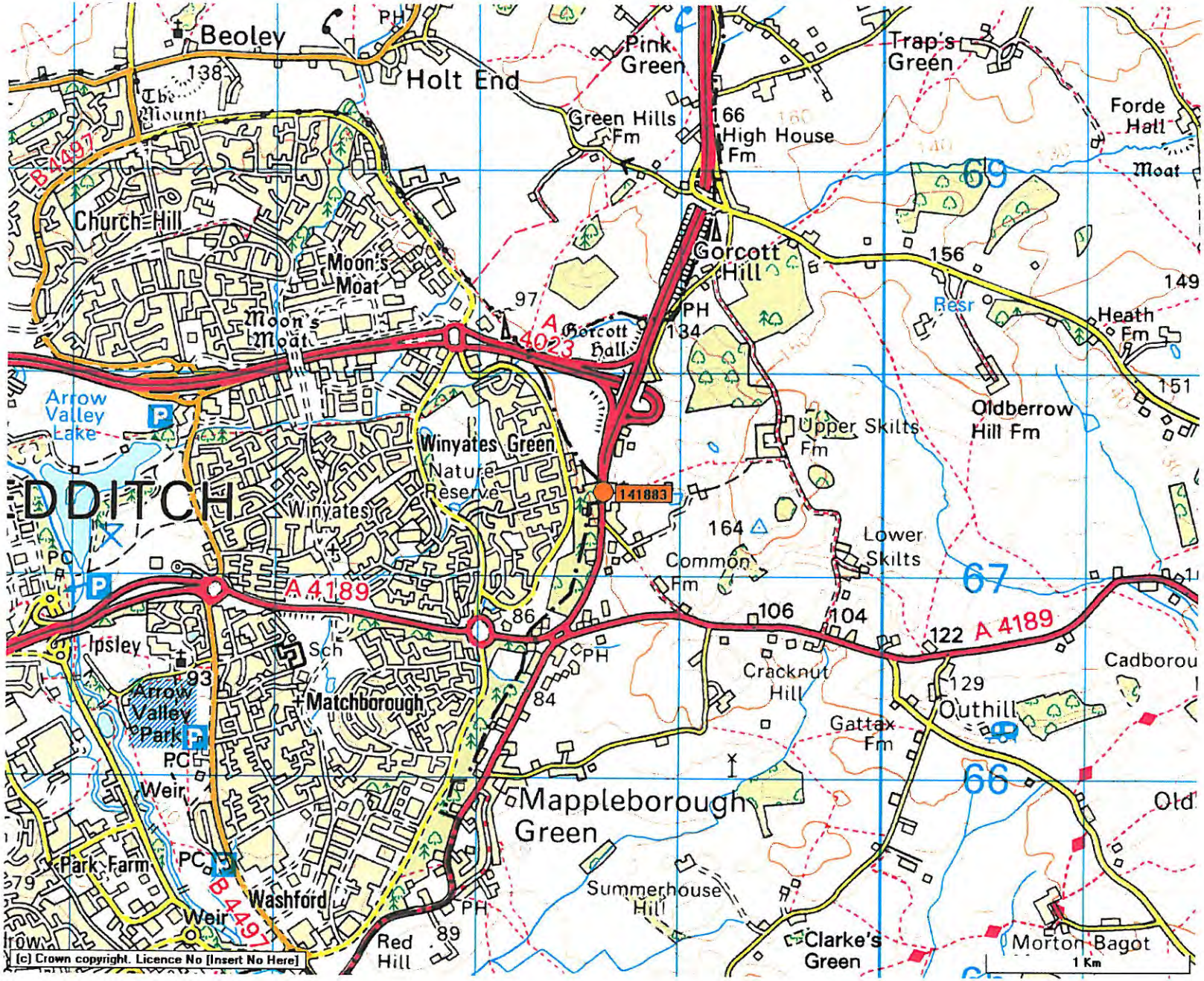
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Holt End
Pink Green
Trap's Green
Forde Hall
Moat
Green Hills Fm
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High House Fm
69
Church Hill
Moon's Moat
Gorcott Hill
156
149
Resr
Heath Fm
97
A 4023
Gorcott Hall
PH
134
Arrow Valley Lake
Winyates Green
Nature Reserve
Upper Skilts Fm
Oldberrow Hill Fm
151
DITCH
Winyates
141883
164
Lower Skilts
Common Fm
67
A 4189
106
104
122
Ipsley
Sch
86
PH
Cracknut Hill
Cadborou
93
Arrow Valley Park
Matchborough
84
129
Outhill
Gattax Fm
Weir
Mappleborough Green
66
Old
Park Farm
79
Washford
Summerhouse Hill
Red Hill
89
Clarke's Green
Morton Bagot
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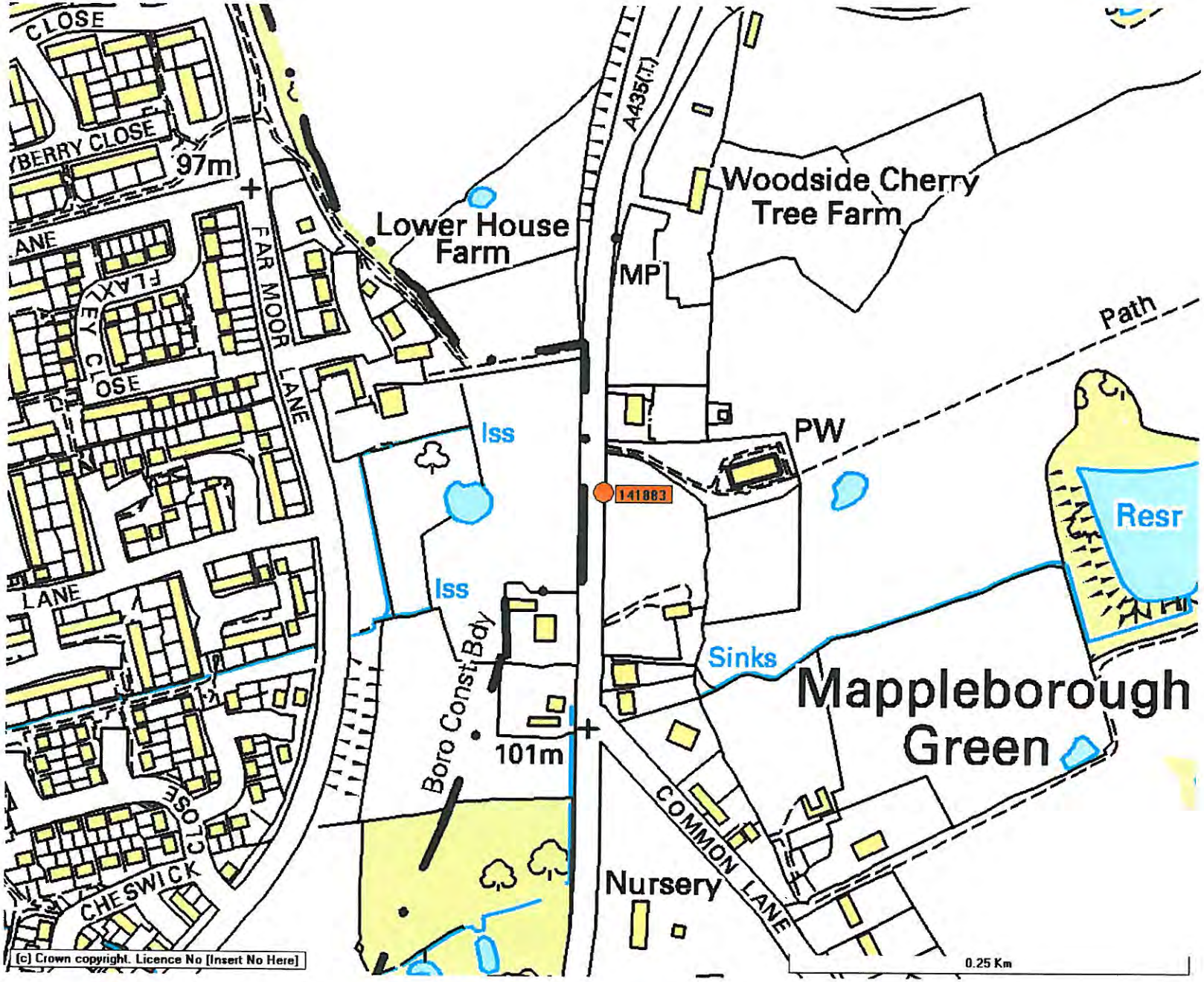
CLOSE
BERRY CLOSE
97m
ANE
FLAXLEY CLOSE
FAR MOOR LANE
LANE
CHESWICK CLOSE
Lower House Farm
A435(T)
Woodside Cherry Tree Farm
MP
Path
PW
Iss
141883
Iss
Resr
Sinks
Boro Const Bay
101m
Mappleborough Green
COMMON LANE
Nursery
0.25 Km
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VDA Pro

Speed	No. Veh		Speed	No. Veh			
10		0	46	8	368	0	16928
11		0	47	5	235	0	11045
12		0	48	7	336	0	16128
13		0	49	2	98	0	4802
14		0	50	3	150	0	7500
15		0	51	7	357	0	18207
16		0	52	4	208	0	10816
17		0	53	4	212	0	11236
18		0	54	6	324	0	17496
19		0	55	4	220	0	12100
20		0	56	2	112	0	6272
21		0	57	6	342	0	19494
22		0	58	3	174	0	10092
23		0	59	5	295	0	17405
24		0	60	8	480	0	28800
25		0	61	2	122	0	7442
26		0	62	4	248	0	15376
27		0	63	1	63	0	3969
28		0	64	1	64	0	4096
29		0	65	1	65	0	4225
30		0	66	1	66	0	4356
31		0	67	1	67	0	4489
32		0	68	2	136	0	9248
33		0	69	3	207	0	14283
34		0	70		0	0	0
35		0	71		0	0	0
36		0	72	2	144	0	10368
37		0	73		0	0	0
38		0	74	1	74	0	5476
39		0	75	1	75	0	5625
40		0	76		0	0	0
41	1	41	77		0	1681	0
42	1	42	78		0	1764	0
43	2	86	79		0	3698	0
44	4	176	80	1	80	7744	6400
45	1	45	81		0	2025	0
	9	390		95	5322	16912	303674

No.Records	SUM SPEEDS	SUM SPEEDS SQR
104	5712	320586

mph or kph?	mph
if mph enter 4.97 for Dual C'way and 2.49 for Single C'way, otherwise 0	4.97
if kph enter 8 for Dual C'way and 4 for Single C'way, otherwise 0	0

ENTER DATA IN YELLOW BOXES ONLY

Mean (m)	=	54.92308
Standard Deviation	=	8.164204
85%ile speed	=	63.08728

85th Percentile Speed

Location of speed survey	A4023 Coventry Highway east of A435
Direction of travel	Westbound
Time	11:55 AM
Weather	Dry & Windy

Number of speed measurements	104	
Mean of traffic speeds	54.92	
Standard Deviation	8.16	
85th percentile speed	**63.09**	**mph**
Wet weather 85th percentile speed	**58.12**	**mph**

Form No: 17
Issue No: 00

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APPENDIX E

Sustainable Transport Information

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND REPORT ANY DISCREPANCIES TO MORGAN TUCKER.

Rev	Ammendment	Date

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: 2KM Walking Isochrone

Drawn By	Checked By	Approved By
CR	LB	BS

Date	Scale
24/09/09	NTS

Purpose: Information

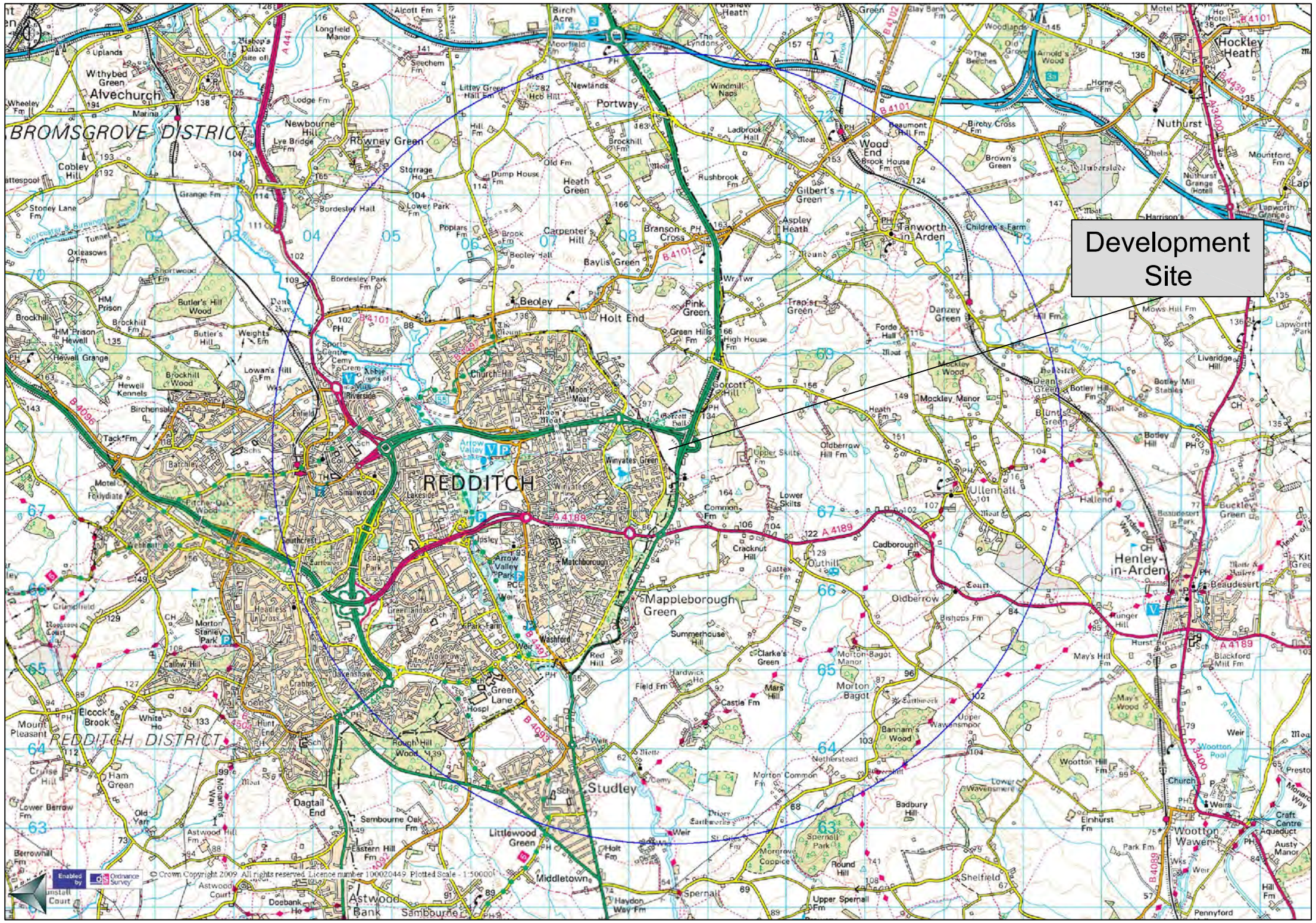
Drawing Number: **JN835 - NWK - 003**

Rev:

morgan tucker consulting engineers
AURA Commerce and Technology Centre, Manners Road
Newark, Nottinghamshire, NG24 1BS
Tel:- 01636 610 766 Fax:- 01636 610 786
E-Mail:- info@morgantucker.co.uk
www.morgantucker.co.uk

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
CHECK ON SITE AND REPORT ALL DISCREPANCIES TO MORGAN TUCKER.

N



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Rev	Amendment	Date

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AURA Commerce and Technology Centre, Manners Road, Newark
Nottinghamshire, NG24 1BS
Tel:- 01636 610 766 Fax:- 01636 610 786
E-Mail:- info@morgantucker.co.uk
www.morgantucker.co.uk

Client
Redditch Borough Council

Project Title
Proposed Diversification Park Development

Drawing Title
5KM Cycling Isochrone

Drawn By	Checked By	Approved By
CR	LB	BS

Date	Scale
24/09/09	NTS

Purpose
Information

Drawing Number
JN835 - NWK - 004

Rev

N

Key

Bus Stop

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND REPORT ANY DISCREPANCIES TO MORGAN TUCKER.

Rev	Ammendment	Date

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: 400m Public Transport Isochrone

Drawn By	Checked By	Approved By
CR	LB	BS

Date	Scale
24/09/09	NTS

Purpose: Information

Drawing Number: **JN835 - NWK - 005**

Rev:

morgan tucker consulting engineers

AURA Commerce and Technology Centre, Manners Road
Newark, Nottinghamshire, NG24 1BS
Tel:- 01636 610 766 Fax:- 01636 610 786
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www.morgantucker.co.uk

APPENDIX F

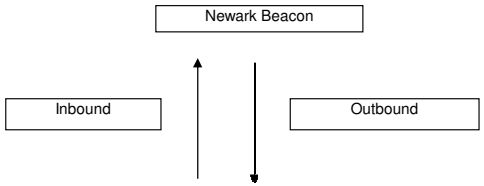
Multimodal Transport Survey

TRICS Outputs

Development Trip Assignment Diagrams

Location: Entrance to the Newark Beacon business innovation centre on Cafferata Way
Date of Survey: 4th September 2009

Time		Inbound								Outbound							
From	To	Pedal	Motor cycle	Cars / Taxi	Bus and Coach	LGV/ Van	HGV	Pedestrian	TOTAL	Pedal	Motor cycle	Cars / Taxi	Bus and Coach	LGV/ Van	HGV	Pedestrian	TOTAL
8:00	8:30	1		12		1		3	17			1					1
8:30	9:00	2		29				7	38			3				1	4
		3	0	41	0	1	0	10	55	0	0	4	0	0	0	1	5
9:00	9:30			13					13			3		4			7
9:30	10:00			8		2		2	12			1					1
		0	0	21	0	2	0	2	25	0	0	4	0	4	0	0	8
10:00	10:30			4		1			5			2					2
10:30	11:00			1		1			2	1		1				1	3
		0	0	5	0	2	0	0	7	1	0	3	0	0	0	1	5
11:00	11:30			2		1		1	4			1		2		2	5
11:30	12:00			9		1			10			1				1	2
		0	0	11	0	2	0	1	14	0	0	2	0	2	0	3	7
12:00	12:30			7					7			7		1		1	9
12:30	13:00			11				4	15			8				2	10
		0	0	18	0	0	0	4	22	0	0	15	0	1	0	3	19
13:00	13:30			3				2	5			6				3	9
13:30	14:00			10				1	11			4				1	5
		0	0	13	0	0	0	3	16	0	0	10	0	0	0	4	14
14:00	14:30			5					5	1		5					6
14:30	15:00								0			1					1
		0	0	5	0	0	0	0	5	1	0	6	0	0	0	0	7
15:00	15:30			1					1			4					4
15:30	16:00			2					2			12		1			13
		0	0	3	0	0	0	0	3	0	0	16	0	1	0	0	17
16:00	16:30			2				1	3			13				1	14
16:30	17:00	1		3					4	1		12					13
		1	0	5	0	0	0	1	7	1	0	25	0	0	0	1	27
17:00	17:30	1		2					3	1		24		1		1	27
17:30	18:00			3					3			8					8
		1	0	5	0	0	0	0	6	1	0	32	0	1	0	1	35
		5	0	127	0	7	0	21	160	4	0	117	0	9	0	14	144



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TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL CYCLISTS

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
Estimated TRIP rate value per 10000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.005	0.499	11	7294	0.001	0.125	11	7294	0.006	0.624
07:30 - 08:00	11	7294	0.004	0.374	11	7294	0.002	0.249	11	7294	0.006	0.623
08:00 - 08:30	11	7294	0.015	1.496	11	7294	0.001	0.125	11	7294	0.016	1.621
08:30 - 09:00	11	7294	0.010	0.997	11	7294	0.000	0.000	11	7294	0.010	0.997
09:00 - 09:30	11	7294	0.009	0.872	11	7294	0.001	0.125	11	7294	0.010	0.997
09:30 - 10:00	11	7294	0.005	0.499	11	7294	0.000	0.000	11	7294	0.005	0.499
10:00 - 10:30	11	7294	0.001	0.125	11	7294	0.001	0.125	11	7294	0.002	0.250
10:30 - 11:00	11	7294	0.002	0.249	11	7294	0.001	0.125	11	7294	0.003	0.374
11:00 - 11:30	11	7294	0.002	0.249	11	7294	0.002	0.249	11	7294	0.004	0.498
11:30 - 12:00	11	7294	0.002	0.249	11	7294	0.001	0.125	11	7294	0.003	0.374
12:00 - 12:30	11	7294	0.001	0.125	11	7294	0.005	0.499	11	7294	0.006	0.624
12:30 - 13:00	11	7294	0.002	0.249	11	7294	0.001	0.125	11	7294	0.003	0.374
13:00 - 13:30	11	7294	0.002	0.249	11	7294	0.004	0.374	11	7294	0.006	0.623
13:30 - 14:00	11	7294	0.002	0.249	11	7294	0.005	0.499	11	7294	0.007	0.748
14:00 - 14:30	11	7294	0.000	0.000	11	7294	0.001	0.125	11	7294	0.001	0.125
14:30 - 15:00	11	7294	0.000	0.000	11	7294	0.004	0.374	11	7294	0.004	0.374
15:00 - 15:30	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
15:30 - 16:00	11	7294	0.000	0.000	11	7294	0.004	0.374	11	7294	0.004	0.374
16:00 - 16:30	11	7294	0.001	0.125	11	7294	0.010	0.997	11	7294	0.011	1.122
16:30 - 17:00	11	7294	0.002	0.249	11	7294	0.005	0.499	11	7294	0.007	0.748
17:00 - 17:30	11	7294	0.000	0.000	11	7294	0.006	0.623	11	7294	0.006	0.623
17:30 - 18:00	11	7294	0.000	0.000	11	7294	0.009	0.872	11	7294	0.009	0.872
18:00 - 18:30	11	7294	0.000	0.000	11	7294	0.002	0.249	11	7294	0.002	0.249
18:30 - 19:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			0.065	6.855			0.066	6.858			0.131	13.713

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL PEDESTRIANS

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
Estimated TRIP rate value per 10000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.004	0.374	11	7294	0.000	0.000	11	7294	0.004	0.374
07:30 - 08:00	11	7294	0.010	0.997	11	7294	0.004	0.374	11	7294	0.014	1.371
08:00 - 08:30	11	7294	0.042	4.238	11	7294	0.005	0.499	11	7294	0.047	4.737
08:30 - 09:00	11	7294	0.062	6.232	11	7294	0.001	0.125	11	7294	0.063	6.357
09:00 - 09:30	11	7294	0.012	1.246	11	7294	0.000	0.000	11	7294	0.012	1.246
09:30 - 10:00	11	7294	0.022	2.243	11	7294	0.012	1.246	11	7294	0.034	3.489
10:00 - 10:30	11	7294	0.022	2.243	11	7294	0.012	1.246	11	7294	0.034	3.489
10:30 - 11:00	11	7294	0.011	1.122	11	7294	0.006	0.623	11	7294	0.017	1.745
11:00 - 11:30	11	7294	0.006	0.623	11	7294	0.001	0.125	11	7294	0.007	0.748
11:30 - 12:00	11	7294	0.012	1.246	11	7294	0.024	2.368	11	7294	0.036	3.614
12:00 - 12:30	11	7294	0.035	3.490	11	7294	0.022	2.243	11	7294	0.057	5.733
12:30 - 13:00	11	7294	0.035	3.490	11	7294	0.035	3.490	11	7294	0.070	6.980
13:00 - 13:30	11	7294	0.040	3.988	11	7294	0.055	5.484	11	7294	0.095	9.472
13:30 - 14:00	11	7294	0.042	4.238	11	7294	0.034	3.365	11	7294	0.076	7.603
14:00 - 14:30	11	7294	0.016	1.620	11	7294	0.014	1.371	11	7294	0.030	2.991
14:30 - 15:00	11	7294	0.017	1.745	11	7294	0.007	0.748	11	7294	0.024	2.493
15:00 - 15:30	11	7294	0.004	0.374	11	7294	0.005	0.499	11	7294	0.009	0.873
15:30 - 16:00	11	7294	0.009	0.872	11	7294	0.010	0.997	11	7294	0.019	1.869
16:00 - 16:30	11	7294	0.004	0.374	11	7294	0.015	1.496	11	7294	0.019	1.870
16:30 - 17:00	11	7294	0.006	0.623	11	7294	0.020	1.994	11	7294	0.026	2.617
17:00 - 17:30	11	7294	0.006	0.623	11	7294	0.050	4.985	11	7294	0.056	5.608
17:30 - 18:00	11	7294	0.012	1.246	11	7294	0.035	3.490	11	7294	0.047	4.736
18:00 - 18:30	11	7294	0.002	0.249	11	7294	0.011	1.122	11	7294	0.013	1.371
18:30 - 19:00	11	7294	0.000	0.000	11	7294	0.004	0.374	11	7294	0.004	0.374
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			0.431	43.496			0.382	38.264			0.813	81.760

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL PUBLIC TRANSPORT USERS

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
Estimated TRIP rate value per 10000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.002	0.249	11	7294	0.000	0.000	11	7294	0.002	0.249
07:30 - 08:00	11	7294	0.014	1.371	11	7294	0.000	0.000	11	7294	0.014	1.371
08:00 - 08:30	11	7294	0.016	1.620	11	7294	0.001	0.125	11	7294	0.017	1.745
08:30 - 09:00	11	7294	0.025	2.493	11	7294	0.001	0.125	11	7294	0.026	2.618
09:00 - 09:30	11	7294	0.007	0.748	11	7294	0.001	0.125	11	7294	0.008	0.873
09:30 - 10:00	11	7294	0.004	0.374	11	7294	0.001	0.125	11	7294	0.005	0.499
10:00 - 10:30	11	7294	0.004	0.374	11	7294	0.002	0.249	11	7294	0.006	0.623
10:30 - 11:00	11	7294	0.006	0.623	11	7294	0.001	0.125	11	7294	0.007	0.748
11:00 - 11:30	11	7294	0.002	0.249	11	7294	0.005	0.499	11	7294	0.007	0.748
11:30 - 12:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
12:00 - 12:30	11	7294	0.001	0.125	11	7294	0.002	0.249	11	7294	0.003	0.374
12:30 - 13:00	11	7294	0.001	0.125	11	7294	0.005	0.499	11	7294	0.006	0.624
13:00 - 13:30	11	7294	0.004	0.374	11	7294	0.001	0.125	11	7294	0.005	0.499
13:30 - 14:00	11	7294	0.001	0.125	11	7294	0.000	0.000	11	7294	0.001	0.125
14:00 - 14:30	11	7294	0.000	0.000	11	7294	0.002	0.249	11	7294	0.002	0.249
14:30 - 15:00	11	7294	0.000	0.000	11	7294	0.001	0.125	11	7294	0.001	0.125
15:00 - 15:30	11	7294	0.001	0.125	11	7294	0.004	0.374	11	7294	0.005	0.499
15:30 - 16:00	11	7294	0.000	0.000	11	7294	0.001	0.125	11	7294	0.001	0.125
16:00 - 16:30	11	7294	0.001	0.125	11	7294	0.002	0.249	11	7294	0.003	0.374
16:30 - 17:00	11	7294	0.000	0.000	11	7294	0.022	2.243	11	7294	0.022	2.243
17:00 - 17:30	11	7294	0.000	0.000	11	7294	0.010	0.997	11	7294	0.010	0.997
17:30 - 18:00	11	7294	0.000	0.000	11	7294	0.011	1.122	11	7294	0.011	1.122
18:00 - 18:30	11	7294	0.002	0.249	11	7294	0.002	0.249	11	7294	0.004	0.498
18:30 - 19:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			0.091	9.349			0.075	7.979			0.166	17.328

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL PUBLIC TRANSPORT USERS

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
Estimated TRIP rate value per 10000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.002	0.249	11	7294	0.000	0.000	11	7294	0.002	0.249
07:30 - 08:00	11	7294	0.014	1.371	11	7294	0.000	0.000	11	7294	0.014	1.371
08:00 - 08:30	11	7294	0.016	1.620	11	7294	0.001	0.125	11	7294	0.017	1.745
08:30 - 09:00	11	7294	0.025	2.493	11	7294	0.001	0.125	11	7294	0.026	2.618
09:00 - 09:30	11	7294	0.007	0.748	11	7294	0.001	0.125	11	7294	0.008	0.873
09:30 - 10:00	11	7294	0.004	0.374	11	7294	0.001	0.125	11	7294	0.005	0.499
10:00 - 10:30	11	7294	0.004	0.374	11	7294	0.002	0.249	11	7294	0.006	0.623
10:30 - 11:00	11	7294	0.006	0.623	11	7294	0.001	0.125	11	7294	0.007	0.748
11:00 - 11:30	11	7294	0.002	0.249	11	7294	0.005	0.499	11	7294	0.007	0.748
11:30 - 12:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
12:00 - 12:30	11	7294	0.001	0.125	11	7294	0.002	0.249	11	7294	0.003	0.374
12:30 - 13:00	11	7294	0.001	0.125	11	7294	0.005	0.499	11	7294	0.006	0.624
13:00 - 13:30	11	7294	0.004	0.374	11	7294	0.001	0.125	11	7294	0.005	0.499
13:30 - 14:00	11	7294	0.001	0.125	11	7294	0.000	0.000	11	7294	0.001	0.125
14:00 - 14:30	11	7294	0.000	0.000	11	7294	0.002	0.249	11	7294	0.002	0.249
14:30 - 15:00	11	7294	0.000	0.000	11	7294	0.001	0.125	11	7294	0.001	0.125
15:00 - 15:30	11	7294	0.001	0.125	11	7294	0.004	0.374	11	7294	0.005	0.499
15:30 - 16:00	11	7294	0.000	0.000	11	7294	0.001	0.125	11	7294	0.001	0.125
16:00 - 16:30	11	7294	0.001	0.125	11	7294	0.002	0.249	11	7294	0.003	0.374
16:30 - 17:00	11	7294	0.000	0.000	11	7294	0.022	2.243	11	7294	0.022	2.243
17:00 - 17:30	11	7294	0.000	0.000	11	7294	0.010	0.997	11	7294	0.010	0.997
17:30 - 18:00	11	7294	0.000	0.000	11	7294	0.011	1.122	11	7294	0.011	1.122
18:00 - 18:30	11	7294	0.002	0.249	11	7294	0.002	0.249	11	7294	0.004	0.498
18:30 - 19:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			0.091	9.349			0.075	7.979			0.166	17.328

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL VEHICLES
Calculation factor: 100 sqm
Estimated TRIP rate value per 10000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.122	12.214	11	7294	0.042	4.238	11	7294	0.164	16.452
07:30 - 08:00	11	7294	0.312	31.159	11	7294	0.066	6.606	11	7294	0.378	37.765
08:00 - 08:30	11	7294	0.546	54.591	11	7294	0.145	14.458	11	7294	0.691	69.049
08:30 - 09:00	11	7294	0.818	81.762	11	7294	0.141	14.084	11	7294	0.959	95.846
09:00 - 09:30	11	7294	0.532	53.220	11	7294	0.173	17.325	11	7294	0.705	70.545
09:30 - 10:00	11	7294	0.290	29.040	11	7294	0.155	15.455	11	7294	0.445	44.495
10:00 - 10:30	11	7294	0.213	21.313	11	7294	0.173	17.325	11	7294	0.386	38.638
10:30 - 11:00	11	7294	0.156	15.580	11	7294	0.158	15.829	11	7294	0.314	31.409
11:00 - 11:30	11	7294	0.165	16.452	11	7294	0.206	20.565	11	7294	0.371	37.017
11:30 - 12:00	11	7294	0.163	16.327	11	7294	0.199	19.942	11	7294	0.362	36.269
12:00 - 12:30	11	7294	0.182	18.197	11	7294	0.375	37.516	11	7294	0.557	55.713
12:30 - 13:00	11	7294	0.228	22.809	11	7294	0.277	27.669	11	7294	0.505	50.478
13:00 - 13:30	11	7294	0.350	35.023	11	7294	0.315	31.533	11	7294	0.665	66.556
13:30 - 14:00	11	7294	0.328	32.780	11	7294	0.238	23.806	11	7294	0.566	56.586
14:00 - 14:30	11	7294	0.184	18.446	11	7294	0.138	13.835	11	7294	0.322	32.281
14:30 - 15:00	11	7294	0.183	18.322	11	7294	0.213	21.313	11	7294	0.396	39.635
15:00 - 15:30	11	7294	0.181	18.072	11	7294	0.259	25.924	11	7294	0.440	43.996
15:30 - 16:00	11	7294	0.177	17.698	11	7294	0.242	24.180	11	7294	0.419	41.878
16:00 - 16:30	11	7294	0.152	15.206	11	7294	0.304	30.411	11	7294	0.456	45.617
16:30 - 17:00	11	7294	0.116	11.591	11	7294	0.401	40.133	11	7294	0.517	51.724
17:00 - 17:30	11	7294	0.156	15.580	11	7294	0.653	65.310	11	7294	0.809	80.890
17:30 - 18:00	11	7294	0.079	7.852	11	7294	0.533	53.345	11	7294	0.612	61.197
18:00 - 18:30	11	7294	0.042	4.238	11	7294	0.231	23.058	11	7294	0.273	27.296
18:30 - 19:00	11	7294	0.021	2.119	11	7294	0.103	10.345	11	7294	0.124	12.464
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			5.696	569.591			5.740	574.205			11.436	1143.796

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL CYCLISTS

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
Estimated TRIP rate value per 20000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.005	0.997	11	7294	0.001	0.249	11	7294	0.006	1.246
07:30 - 08:00	11	7294	0.004	0.748	11	7294	0.002	0.499	11	7294	0.006	1.247
08:00 - 08:30	11	7294	0.015	2.991	11	7294	0.001	0.249	11	7294	0.016	3.240
08:30 - 09:00	11	7294	0.010	1.994	11	7294	0.000	0.000	11	7294	0.010	1.994
09:00 - 09:30	11	7294	0.009	1.745	11	7294	0.001	0.249	11	7294	0.010	1.994
09:30 - 10:00	11	7294	0.005	0.997	11	7294	0.000	0.000	11	7294	0.005	0.997
10:00 - 10:30	11	7294	0.001	0.249	11	7294	0.001	0.249	11	7294	0.002	0.498
10:30 - 11:00	11	7294	0.002	0.499	11	7294	0.001	0.249	11	7294	0.003	0.748
11:00 - 11:30	11	7294	0.002	0.499	11	7294	0.002	0.499	11	7294	0.004	0.998
11:30 - 12:00	11	7294	0.002	0.499	11	7294	0.001	0.249	11	7294	0.003	0.748
12:00 - 12:30	11	7294	0.001	0.249	11	7294	0.005	0.997	11	7294	0.006	1.246
12:30 - 13:00	11	7294	0.002	0.499	11	7294	0.001	0.249	11	7294	0.003	0.748
13:00 - 13:30	11	7294	0.002	0.499	11	7294	0.004	0.748	11	7294	0.006	1.247
13:30 - 14:00	11	7294	0.002	0.499	11	7294	0.005	0.997	11	7294	0.007	1.496
14:00 - 14:30	11	7294	0.000	0.000	11	7294	0.001	0.249	11	7294	0.001	0.249
14:30 - 15:00	11	7294	0.000	0.000	11	7294	0.004	0.748	11	7294	0.004	0.748
15:00 - 15:30	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
15:30 - 16:00	11	7294	0.000	0.000	11	7294	0.004	0.748	11	7294	0.004	0.748
16:00 - 16:30	11	7294	0.001	0.249	11	7294	0.010	1.994	11	7294	0.011	2.243
16:30 - 17:00	11	7294	0.002	0.499	11	7294	0.005	0.997	11	7294	0.007	1.496
17:00 - 17:30	11	7294	0.000	0.000	11	7294	0.006	1.246	11	7294	0.006	1.246
17:30 - 18:00	11	7294	0.000	0.000	11	7294	0.009	1.745	11	7294	0.009	1.745
18:00 - 18:30	11	7294	0.000	0.000	11	7294	0.002	0.499	11	7294	0.002	0.499
18:30 - 19:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			0.065	13.712			0.066	13.709			0.131	27.421

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL PEDESTRIANS

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
Estimated TRIP rate value per 20000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.004	0.748	11	7294	0.000	0.000	11	7294	0.004	0.748
07:30 - 08:00	11	7294	0.010	1.994	11	7294	0.004	0.748	11	7294	0.014	2.742
08:00 - 08:30	11	7294	0.042	8.475	11	7294	0.005	0.997	11	7294	0.047	9.472
08:30 - 09:00	11	7294	0.062	12.464	11	7294	0.001	0.249	11	7294	0.063	12.713
09:00 - 09:30	11	7294	0.012	2.493	11	7294	0.000	0.000	11	7294	0.012	2.493
09:30 - 10:00	11	7294	0.022	4.487	11	7294	0.012	2.493	11	7294	0.034	6.980
10:00 - 10:30	11	7294	0.022	4.487	11	7294	0.012	2.493	11	7294	0.034	6.980
10:30 - 11:00	11	7294	0.011	2.243	11	7294	0.006	1.246	11	7294	0.017	3.489
11:00 - 11:30	11	7294	0.006	1.246	11	7294	0.001	0.249	11	7294	0.007	1.495
11:30 - 12:00	11	7294	0.012	2.493	11	7294	0.024	4.736	11	7294	0.036	7.229
12:00 - 12:30	11	7294	0.035	6.980	11	7294	0.022	4.487	11	7294	0.057	11.467
12:30 - 13:00	11	7294	0.035	6.980	11	7294	0.035	6.980	11	7294	0.070	13.960
13:00 - 13:30	11	7294	0.040	7.977	11	7294	0.055	10.968	11	7294	0.095	18.945
13:30 - 14:00	11	7294	0.042	8.475	11	7294	0.034	6.730	11	7294	0.076	15.205
14:00 - 14:30	11	7294	0.016	3.241	11	7294	0.014	2.742	11	7294	0.030	5.983
14:30 - 15:00	11	7294	0.017	3.490	11	7294	0.007	1.496	11	7294	0.024	4.986
15:00 - 15:30	11	7294	0.004	0.748	11	7294	0.005	0.997	11	7294	0.009	1.745
15:30 - 16:00	11	7294	0.009	1.745	11	7294	0.010	1.994	11	7294	0.019	3.739
16:00 - 16:30	11	7294	0.004	0.748	11	7294	0.015	2.991	11	7294	0.019	3.739
16:30 - 17:00	11	7294	0.006	1.246	11	7294	0.020	3.988	11	7294	0.026	5.234
17:00 - 17:30	11	7294	0.006	1.246	11	7294	0.050	9.971	11	7294	0.056	11.217
17:30 - 18:00	11	7294	0.012	2.493	11	7294	0.035	6.980	11	7294	0.047	9.473
18:00 - 18:30	11	7294	0.002	0.499	11	7294	0.011	2.243	11	7294	0.013	2.742
18:30 - 19:00	11	7294	0.000	0.000	11	7294	0.004	0.748	11	7294	0.004	0.748
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			0.431	86.998			0.382	76.526			0.813	163.524

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL PUBLIC TRANSPORT USERS

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
Estimated TRIP rate value per 20000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.002	0.499	11	7294	0.000	0.000	11	7294	0.002	0.499
07:30 - 08:00	11	7294	0.014	2.742	11	7294	0.000	0.000	11	7294	0.014	2.742
08:00 - 08:30	11	7294	0.016	3.241	11	7294	0.001	0.249	11	7294	0.017	3.490
08:30 - 09:00	11	7294	0.025	4.985	11	7294	0.001	0.249	11	7294	0.026	5.234
09:00 - 09:30	11	7294	0.007	1.496	11	7294	0.001	0.249	11	7294	0.008	1.745
09:30 - 10:00	11	7294	0.004	0.748	11	7294	0.001	0.249	11	7294	0.005	0.997
10:00 - 10:30	11	7294	0.004	0.748	11	7294	0.002	0.499	11	7294	0.006	1.247
10:30 - 11:00	11	7294	0.006	1.246	11	7294	0.001	0.249	11	7294	0.007	1.495
11:00 - 11:30	11	7294	0.002	0.499	11	7294	0.005	0.997	11	7294	0.007	1.496
11:30 - 12:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
12:00 - 12:30	11	7294	0.001	0.249	11	7294	0.002	0.499	11	7294	0.003	0.748
12:30 - 13:00	11	7294	0.001	0.249	11	7294	0.005	0.997	11	7294	0.006	1.246
13:00 - 13:30	11	7294	0.004	0.748	11	7294	0.001	0.249	11	7294	0.005	0.997
13:30 - 14:00	11	7294	0.001	0.249	11	7294	0.000	0.000	11	7294	0.001	0.249
14:00 - 14:30	11	7294	0.000	0.000	11	7294	0.002	0.499	11	7294	0.002	0.499
14:30 - 15:00	11	7294	0.000	0.000	11	7294	0.001	0.249	11	7294	0.001	0.249
15:00 - 15:30	11	7294	0.001	0.249	11	7294	0.004	0.748	11	7294	0.005	0.997
15:30 - 16:00	11	7294	0.000	0.000	11	7294	0.001	0.249	11	7294	0.001	0.249
16:00 - 16:30	11	7294	0.001	0.249	11	7294	0.002	0.499	11	7294	0.003	0.748
16:30 - 17:00	11	7294	0.000	0.000	11	7294	0.022	4.487	11	7294	0.022	4.487
17:00 - 17:30	11	7294	0.000	0.000	11	7294	0.010	1.994	11	7294	0.010	1.994
17:30 - 18:00	11	7294	0.000	0.000	11	7294	0.011	2.243	11	7294	0.011	2.243
18:00 - 18:30	11	7294	0.002	0.499	11	7294	0.002	0.499	11	7294	0.004	0.998
18:30 - 19:00	11	7294	0.000	0.000	11	7294	0.000	0.000	11	7294	0.000	0.000
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			0.091	18.696			0.075	15.953			0.166	34.649

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NO	NORTH LINCOLNSHIRE	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 975 to 27142 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 10/10/08

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	5 days
Friday	1 days

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

Selected Location Sub Categories:

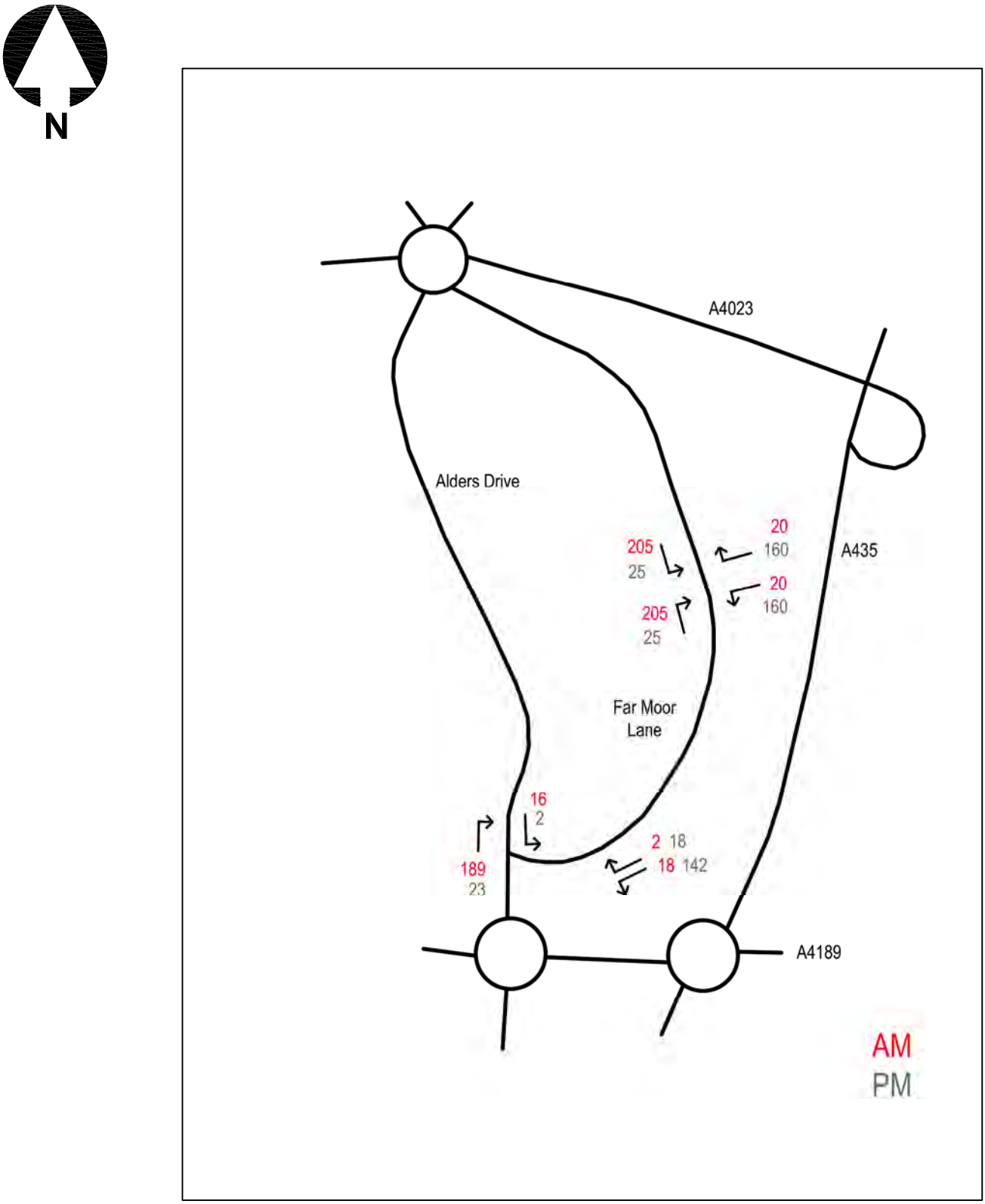
Industrial Zone	5
Commercial Zone	1
Residential Zone	2
Built-Up Zone	1
No Sub Category	2

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
MULTI-MODAL VEHICLES
Calculation factor: 100 sqm
Estimated TRIP rate value per 20000 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
00:30 - 01:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:00 - 01:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
01:30 - 02:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:00 - 02:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
02:30 - 03:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:00 - 03:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
03:30 - 04:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:00 - 04:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
04:30 - 05:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:00 - 05:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
05:30 - 06:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:00 - 06:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
06:30 - 07:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
07:00 - 07:30	11	7294	0.122	24.429	11	7294	0.042	8.475	11	7294	0.164	32.904
07:30 - 08:00	11	7294	0.312	62.318	11	7294	0.066	13.212	11	7294	0.378	75.530
08:00 - 08:30	11	7294	0.546	109.182	11	7294	0.145	28.916	11	7294	0.691	138.098
08:30 - 09:00	11	7294	0.818	163.524	11	7294	0.141	28.168	11	7294	0.959	191.692
09:00 - 09:30	11	7294	0.532	106.440	11	7294	0.173	34.649	11	7294	0.705	141.089
09:30 - 10:00	11	7294	0.290	58.081	11	7294	0.155	30.910	11	7294	0.445	88.991
10:00 - 10:30	11	7294	0.213	42.626	11	7294	0.173	34.649	11	7294	0.386	77.275
10:30 - 11:00	11	7294	0.156	31.159	11	7294	0.158	31.658	11	7294	0.314	62.817
11:00 - 11:30	11	7294	0.165	32.904	11	7294	0.206	41.130	11	7294	0.371	74.034
11:30 - 12:00	11	7294	0.163	32.655	11	7294	0.199	39.884	11	7294	0.362	72.539
12:00 - 12:30	11	7294	0.182	36.394	11	7294	0.375	75.031	11	7294	0.557	111.425
12:30 - 13:00	11	7294	0.228	45.617	11	7294	0.277	55.339	11	7294	0.505	100.956
13:00 - 13:30	11	7294	0.350	70.046	11	7294	0.315	63.066	11	7294	0.665	133.112
13:30 - 14:00	11	7294	0.328	65.559	11	7294	0.238	47.611	11	7294	0.566	113.170
14:00 - 14:30	11	7294	0.184	36.893	11	7294	0.138	27.669	11	7294	0.322	64.562
14:30 - 15:00	11	7294	0.183	36.643	11	7294	0.213	42.626	11	7294	0.396	79.269
15:00 - 15:30	11	7294	0.181	36.145	11	7294	0.259	51.849	11	7294	0.440	87.994
15:30 - 16:00	11	7294	0.177	35.397	11	7294	0.242	48.359	11	7294	0.419	83.756
16:00 - 16:30	11	7294	0.152	30.411	11	7294	0.304	60.823	11	7294	0.456	91.234
16:30 - 17:00	11	7294	0.116	23.182	11	7294	0.401	80.266	11	7294	0.517	103.448
17:00 - 17:30	11	7294	0.156	31.159	11	7294	0.653	130.620	11	7294	0.809	161.779
17:30 - 18:00	11	7294	0.079	15.704	11	7294	0.533	106.689	11	7294	0.612	122.393
18:00 - 18:30	11	7294	0.042	8.475	11	7294	0.231	46.116	11	7294	0.273	54.591
18:30 - 19:00	11	7294	0.021	4.238	11	7294	0.103	20.690	11	7294	0.124	24.928
19:00 - 19:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
19:30 - 20:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:00 - 20:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
20:30 - 21:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:00 - 21:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
21:30 - 22:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:00 - 22:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
22:30 - 23:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:00 - 23:30	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
23:30 - 24:00	0	0	0.000	0.000	0	0	0.000	0.000	0	0	0.000	0.000
Total Rates:			5.696	1139.181			5.740	1148.405			11.436	2287.586

Parameter summary

Trip rate parameter range selected:	975 - 27142 (units: sqm)
Survey date date range:	01/01/00 - 10/10/08
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0



DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND REPORT ANY DISCREPANCIES TO MORGAN TUCKER.

Rev	Ammendment	Date

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: Development Trip Assignment
Business Innovation Centre 20000sqm

Drawn By	Checked By	Approved By
TS	LB	BS

Date	Scale
28/09/09	NTS

Purpose: Information

Drawing Number: **JN835 - NWK - 006**

Rev:

morgan tucker consulting engineers
AURA Commerce and Technology Centre, Manners Road
Newark, Nottinghamshire, NG24 1BS
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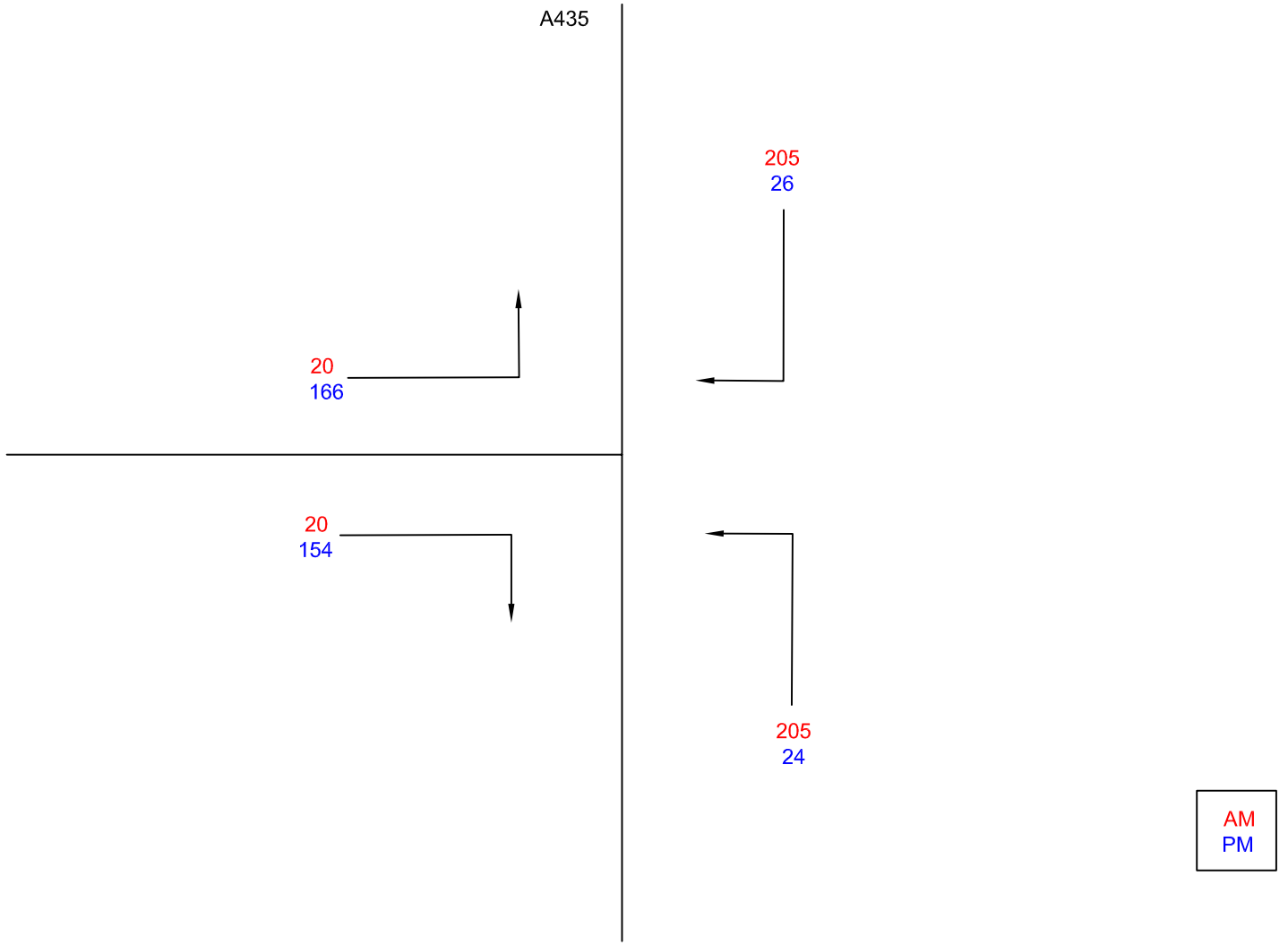
E-Mail:- info@morgantucker.co.uk
www.morgantucker.co.uk



DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND REPORT ALL DISCREPANCIES TO MORGAN TUCKER.

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: Development Trip Assignment
Business Innovation Centre 20000sqm

Drawn By: CR | Checked By: VRG | Approved By: BS

Date: 08/10/09 | Scale: NTS

Purpose: Information

Drawing Number: **JN835 - NWK - 007**

Licence number:

morgan tucker consulting engineers

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Newark, Nottinghamshire, NG24 1BS
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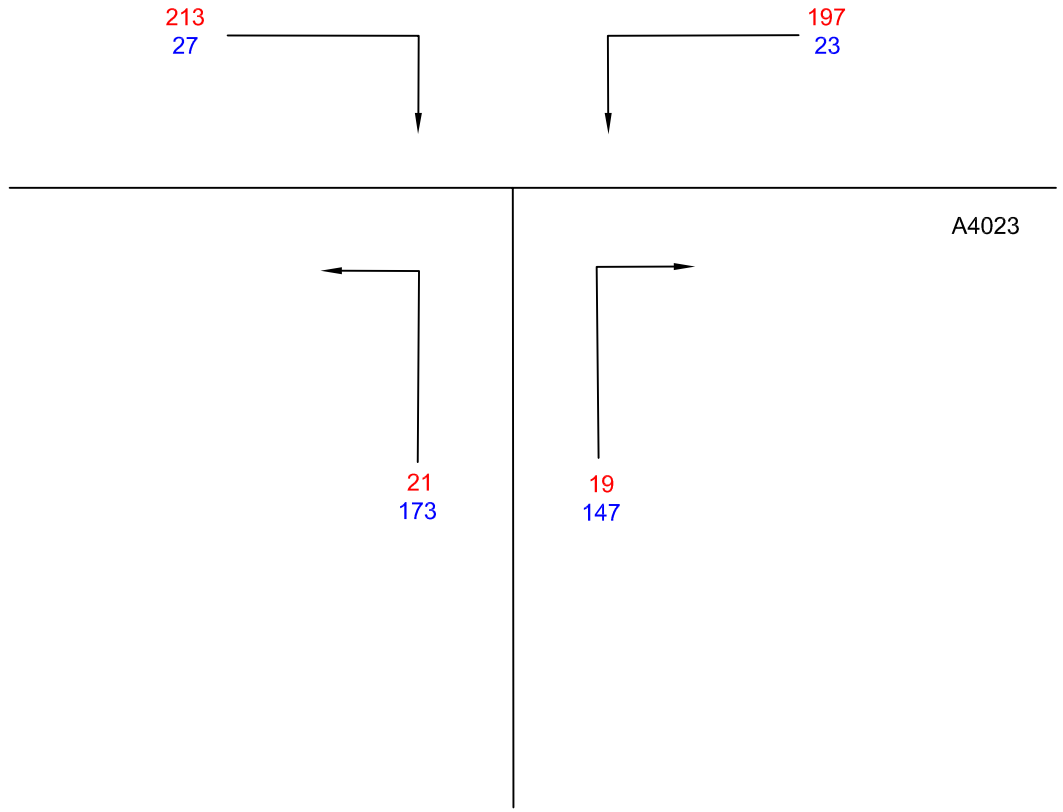
E-Mail :- info@morgantucker.co.uk
www.morgantucker.co.uk



AM
PM

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND REPORT ALL DISCREPANCIES TO MORGAN TUCKER.

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: Development Trip Assignment
Business Innovation Centre 20000sqm

Drawn By: CR | Checked By: VRG | Approved By: BS

Date: 08/10/09 | Scale: NTS

Purpose: Information

Drawing Number: **JN835 - NWK - 008**

Licence number:

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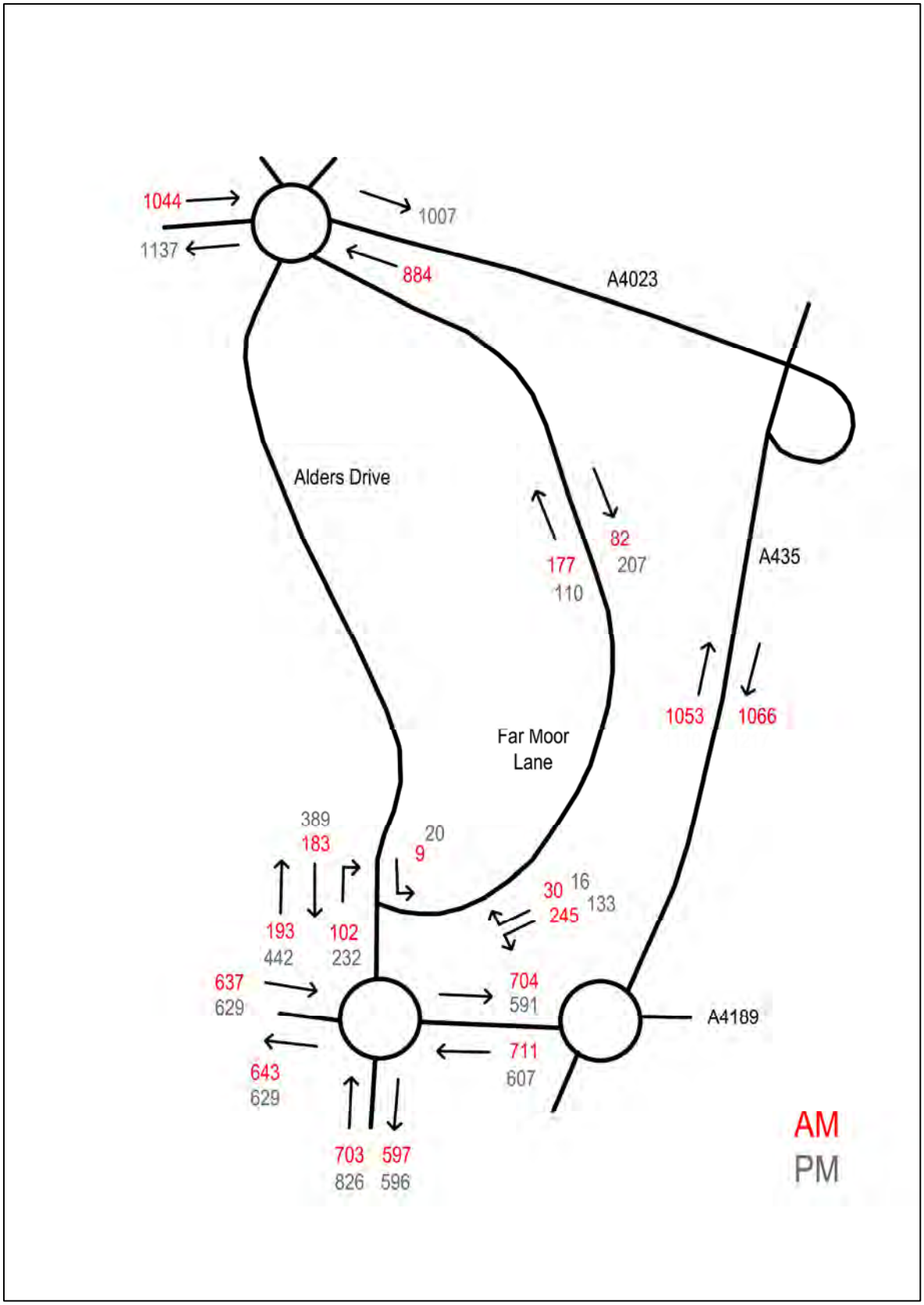
APPENDIX G

Traffic Distribution Diagrams



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Rev	Ammendment	Date

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: 2012 Without Development Traffic Flow Distribution

Drawn By	Checked By	Approved By
TS	LB	BS

Date	Scale
28/09/09	NTS

Purpose: Information

Drawing Number: **JN835 - NWK - 009**

Rev:

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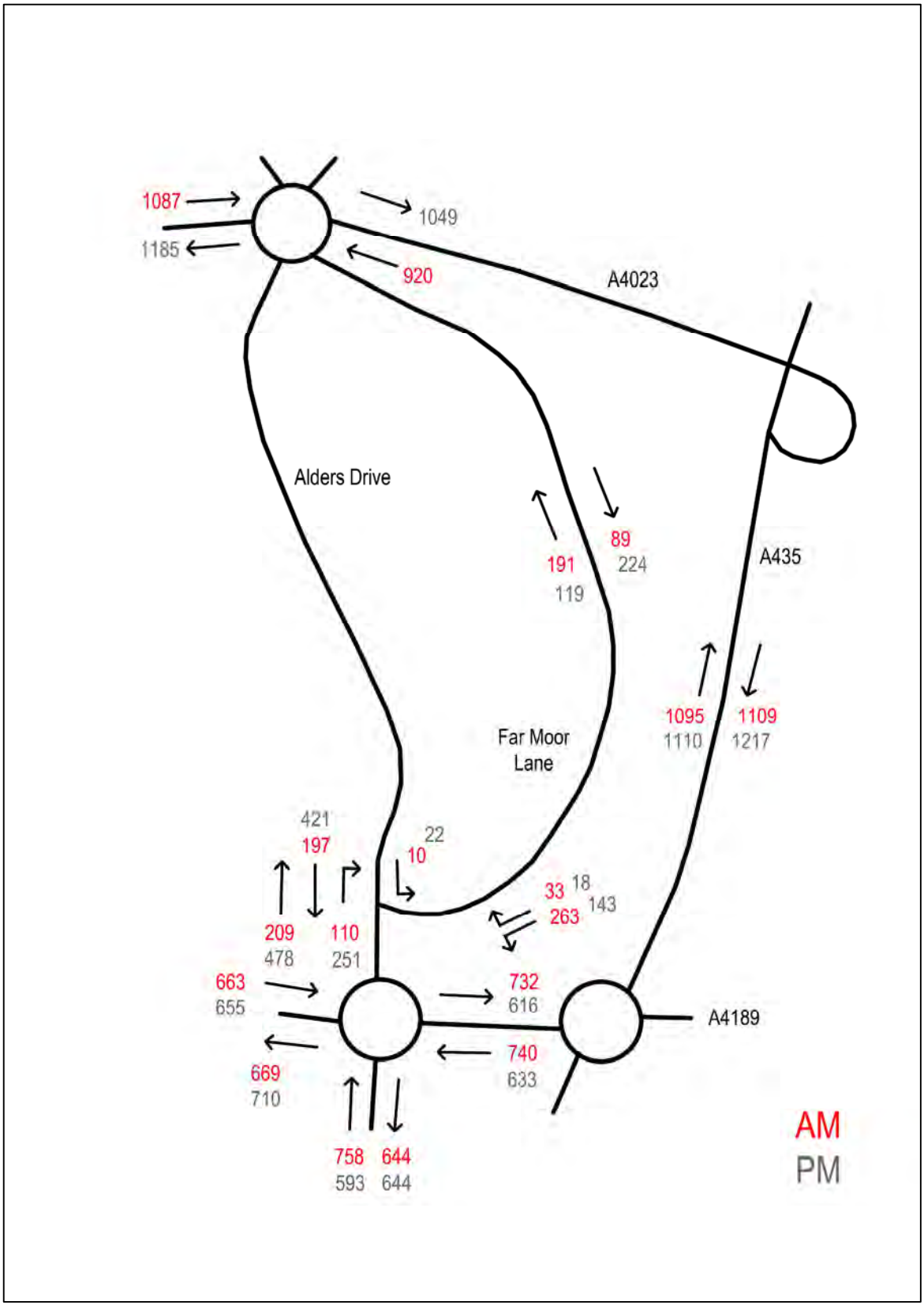

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND REPORT ANY DISCREPANCIES TO MORGAN TUCKER.

Rev	Ammendment	Date

Client: Redditch Borough Council

Project Title: Proposed Diversification Park Development

Drawing Title: 2017 Without Development Traffic Flow Distribution

Drawn By	Checked By	Approved By
TS	LB	BS

Date	Scale
28/09/09	NTS

Purpose: Information

Drawing Number: **JN835 - NWK - 010**

Rev:

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APPENDIX H

ARCADY and PICADY Outputs
Development Site Access Options
LinSig Outputs

PICADY

GUI Version: 5.00 AC
Analysis Program Release: 3.0 INTERIM (MAR 2006)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Alders Drive T junction\2009 AM Peak.vpi
Date Run	23 September 2009
Time Run	12:25:39
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Alders Drive North	100
Arm B	Far Moor Lane	100
Arm C	Alders Drive South	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	2009 Far Moor Lane_ Alders Drive
Location	Redditch
Date	23 September 2009
Enumerator	lbates [HP24852250691]
Job Number	835
Status	Preliminary
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

Parameter	Minor Arm B
Major Road Carriageway Width (m)	8.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	10.00
Minor Road Width 5m Back from Junction (m)	6.50
Minor Road Width 10m Back from Junction (m)	5.25
Minor Road Width 15m Back from Junction (m)	4.50
Minor Road Width 20m Back from Junction (m)	4.00
Minor Road Flare Length (veh)	1
Minor Road Visibility To Right (m)	27
Minor Road Visibility To Left (m)	27
Major Road Right Turn Visibility (m)	50
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	459.592	0.075	0.190	0.120	0.272
B-C	589.599	0.081	0.206	-	-
C-B	602.919	0.210	0.210	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram

Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:45-09:15	90	15

ODTAB Turning Counts

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	9.0	176.0
Arm B	29.0	0.0	235.0
Arm C	186.0	98.0	0.0

ODTAB Synthesised Flows

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:00	2.313	08:00	3.469	08:30	2.313
Arm B	08:00	3.300	08:00	4.950	08:30	3.300
Arm C	08:00	3.550	08:00	5.325	08:30	3.550

Heavy Vehicles Percentages

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

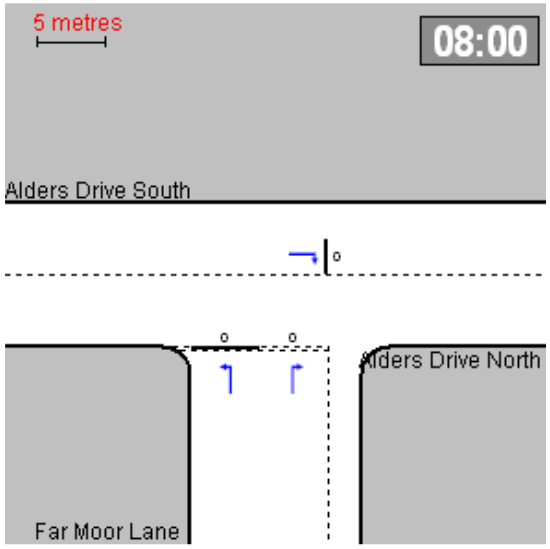
From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

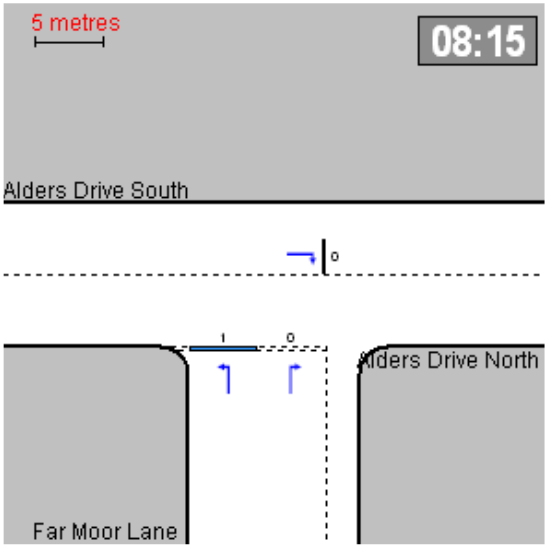
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15
View Extent: 40m

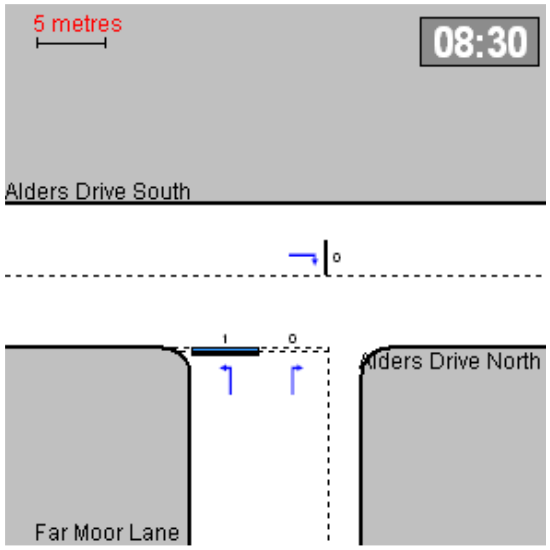
Queue Interval 1: 07:45-08:00



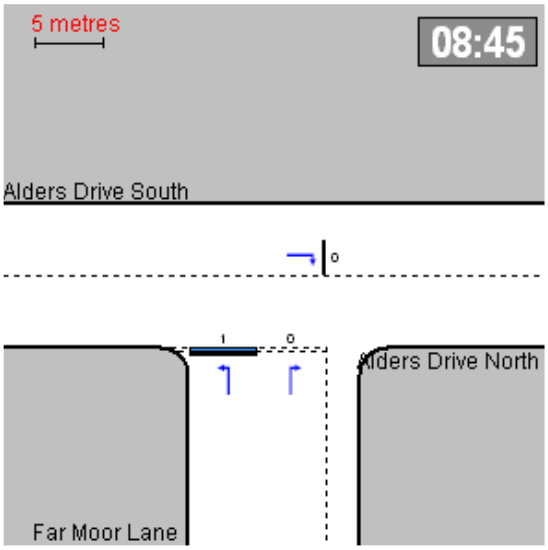
Queue Interval 2: 08:00-08:15



Queue Interval 3: 08:15-08:30



Queue Interval 4: 08:30-08:45

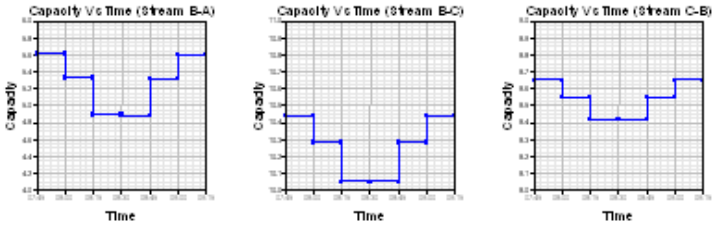


Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15

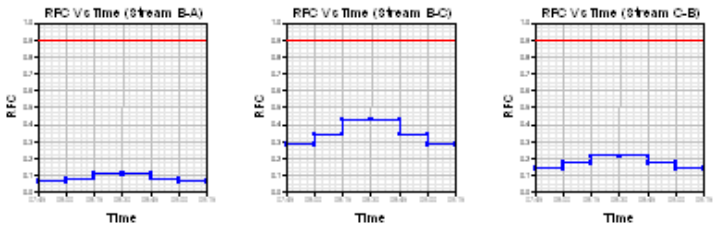
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



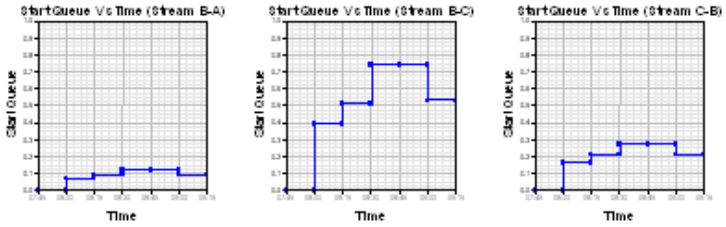
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



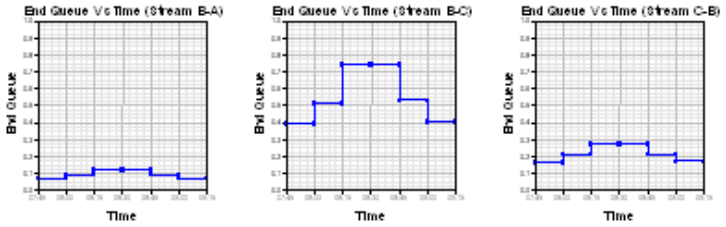
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



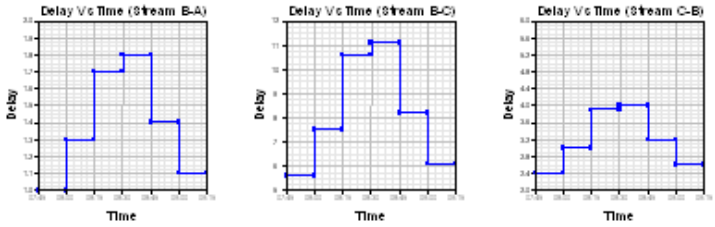
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	0.36	5.61	0.065	-	0.00	0.07	-	1.0	0.19
	B-C	2.95	10.44	0.282	-	0.00	0.39	-	5.6	0.13
	C-A	2.33	-	-	-	-	-	-	-	-
	C-B	1.23	8.65	0.142	-	0.00	0.16	-	2.4	0.13
	A-B	0.11	-	-	-	-	-	-	-	-
	A-C	2.21	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.43	5.33	0.082	-	0.07	0.09	-	1.3	0.20
	B-C	3.52	10.28	0.342	-	0.39	0.51	-	7.5	0.15
	C-A	2.79	-	-	-	-	-	-	-	-
	C-B	1.47	8.55	0.172	-	0.16	0.21	-	3.0	0.14
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	2.64	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.53	4.89	0.109	-	0.09	0.12	-	1.7	0.23
	B-C	4.31	10.05	0.429	-	0.51	0.74	-	10.6	0.17
	C-A	3.41	-	-	-	-	-	-	-	-
	C-B	1.80	8.42	0.214	-	0.21	0.27	-	3.9	0.15
	A-B	0.17	-	-	-	-	-	-	-	-
	A-C	3.23	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.53	4.88	0.109	-	0.12	0.12	-	1.8	0.23
	B-C	4.31	10.05	0.429	-	0.74	0.74	-	11.1	0.17
	C-A	3.41	-	-	-	-	-	-	-	-
	C-B	1.80	8.42	0.214	-	0.27	0.27	-	4.0	0.15
	A-B	0.17	-	-	-	-	-	-	-	-
	A-C	3.23	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.43	5.32	0.082	-	0.12	0.09	-	1.4	0.20
	B-C	3.52	10.28	0.343	-	0.74	0.53	-	8.2	0.15
	C-A	2.79	-	-	-	-	-	-	-	-
	C-B	1.47	8.55	0.172	-	0.27	0.21	-	3.2	0.14
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	2.64	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-A	0.36	5.60	0.065	-	0.09	0.07	-	1.1	0.19
	B-C	2.95	10.44	0.282	-	0.53	0.40	-	6.1	0.13
	C-A	2.33	-	-	-	-	-	-	-	-
	C-B	1.23	8.65	0.142	-	0.21	0.17	-	2.6	0.13
	A-B	0.11	-	-	-	-	-	-	-	-
	A-C	2.21	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	39.9	26.6	8.3	0.2	8.3	0.2
B-C	323.5	215.6	49.2	0.2	49.2	0.2
C-A	256.0	170.7	-	-	-	-
C-B	134.9	89.9	19.1	0.1	19.1	0.1
A-B	12.4	8.3	-	-	-	-
A-C	242.3	161.5	-	-	-	-
All	**1008.9**	**672.6**	**76.6**	**0.1**	**76.6**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

PICADY

GUI Version: 5.00 AC
Analysis Program Release: 3.0 INTERIM (MAR 2006)

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E-mail: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Alders Drive T junction\2009 PM Peak.vpi
Date Run	23 September 2009
Time Run	12:27:49
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Alders Drive North	100
Arm B	Far Moor Lane	100
Arm C	Alders Drive South	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	2009 Far Moor Lane_ Alders Drive PM Peak
Location	Redditch
Date	23 September 2009
Enumerator	lbates [HP24852250691]
Job Number	835
Status	Preliminary
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

Parameter	Minor Arm B
Major Road Carriageway Width (m)	8.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	10.00
Minor Road Width 5m Back from Junction (m)	6.50
Minor Road Width 10m Back from Junction (m)	5.25
Minor Road Width 15m Back from Junction (m)	4.50
Minor Road Width 20m Back from Junction (m)	4.00
Minor Road Flare Length (veh)	1
Minor Road Visibility To Right (m)	27
Minor Road Visibility To Left (m)	27
Major Road Right Turn Visibility (m)	50
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	459.592	0.075	0.190	0.120	0.272
B-C	589.599	0.081	0.206	-	-
C-B	602.919	0.210	0.210	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram

Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	19.0	372.0
Arm B	16.0	0.0	126.0
Arm C	422.0	222.0	0.0

ODTAB Synthesised Flows

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	17:00	4.887	17:00	7.331	17:30	4.887
Arm B	17:00	1.775	17:00	2.662	17:30	1.775
Arm C	17:00	8.050	17:00	12.075	17:30	8.050

Heavy Vehicles Percentages

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

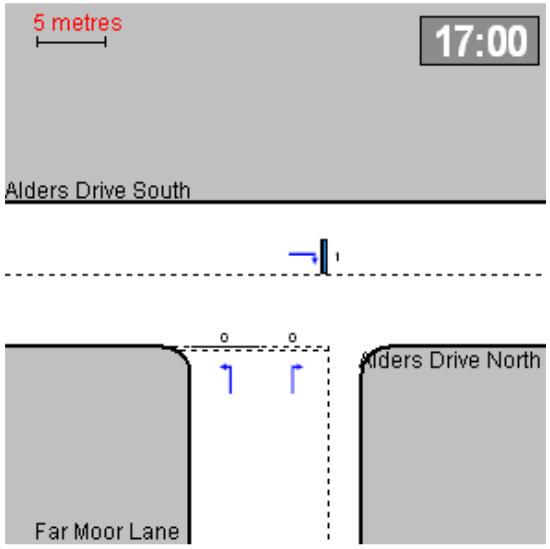
From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

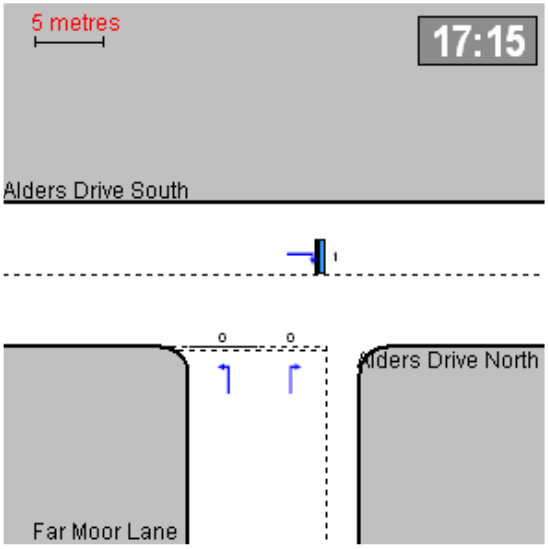
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15
View Extent: 40m

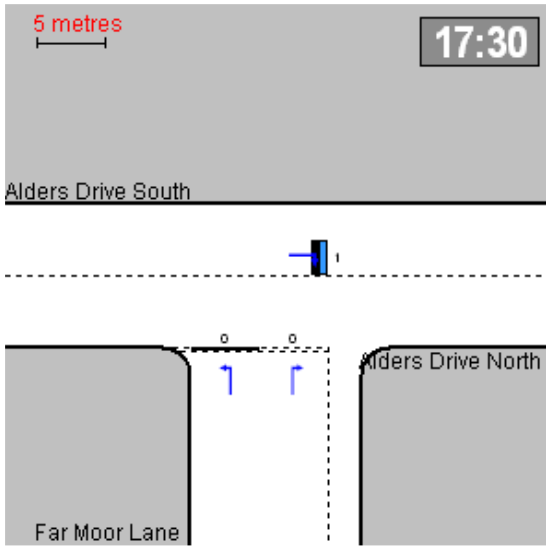
Queue Interval 1: 16:45-17:00



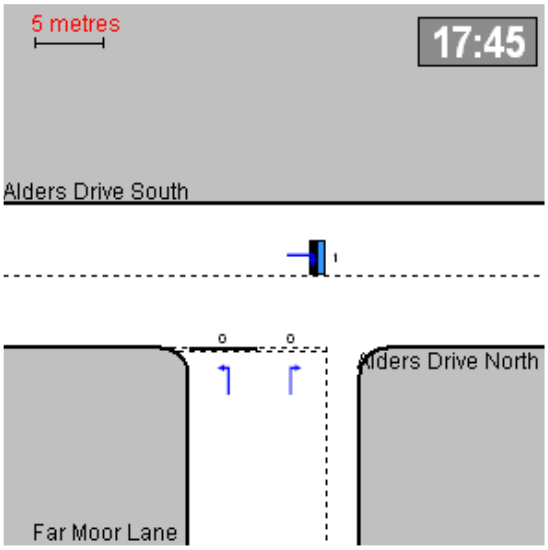
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

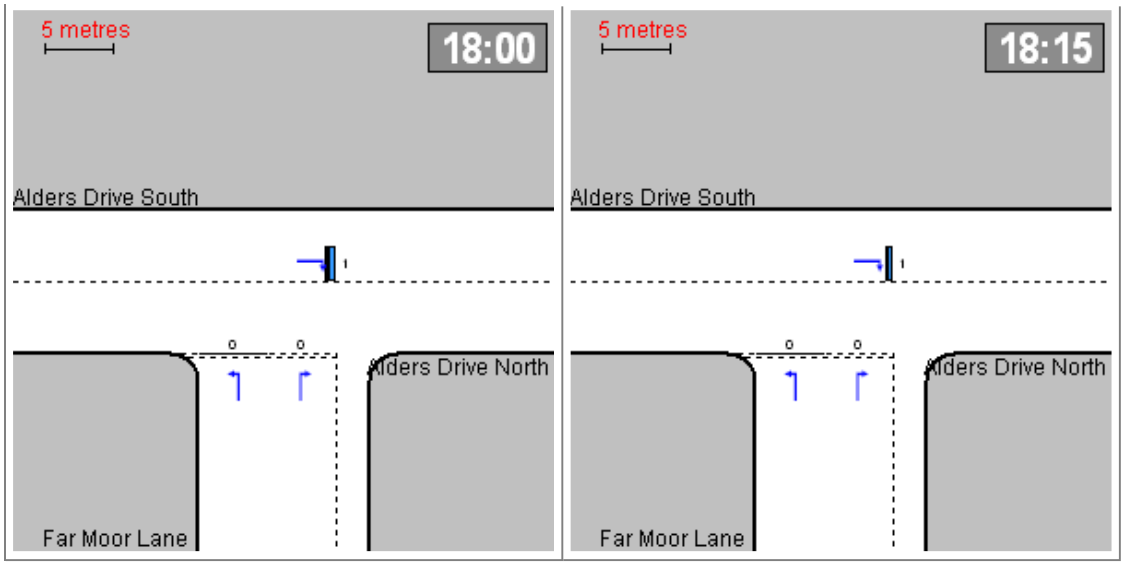


Queue Interval 4: 17:30-17:45



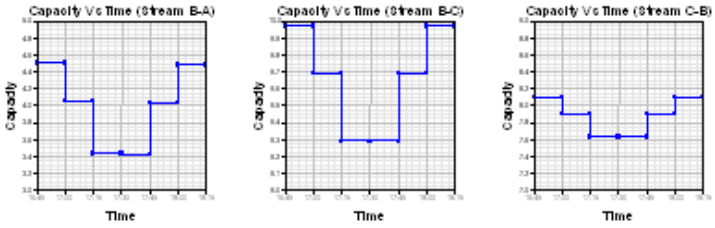
Queue Interval 5: 17:45-18:00

Queue Interval 6: 18:00-18:15



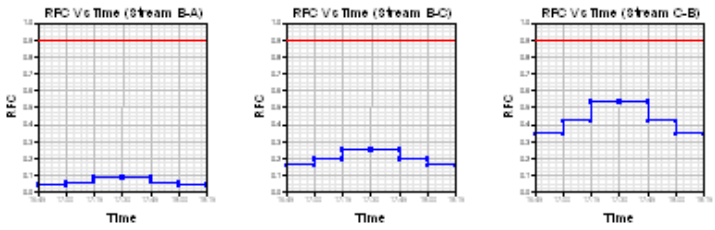
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



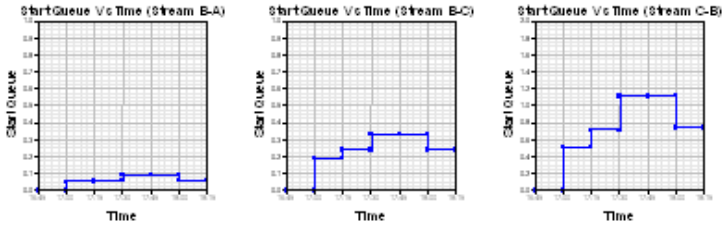
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



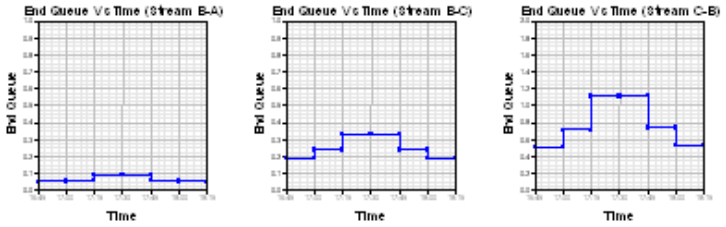
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



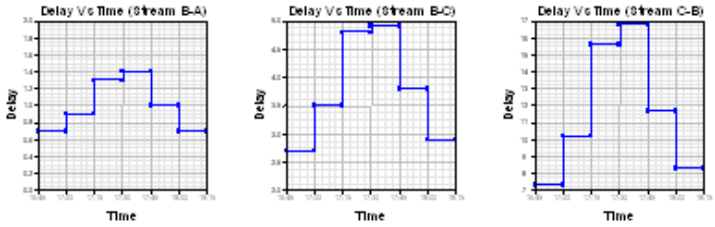
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-A	0.20	4.50	0.045	-	0.00	0.05	-	0.7	0.23
	B-C	1.58	9.97	0.159	-	0.00	0.19	-	2.7	0.12
	C-A	5.30	-	-	-	-	-	-	-	-
	C-B	2.79	8.10	0.344	-	0.00	0.51	-	7.3	0.19
	A-B	0.24	-	-	-	-	-	-	-	-
	A-C	4.67	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-A	0.24	4.05	0.059	-	0.05	0.06	-	0.9	0.26
	B-C	1.89	9.69	0.195	-	0.19	0.24	-	3.5	0.13
	C-A	6.32	-	-	-	-	-	-	-	-
	C-B	3.33	7.90	0.421	-	0.51	0.71	-	10.2	0.22
	A-B	0.28	-	-	-	-	-	-	-	-
	A-C	5.57	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-A	0.29	3.43	0.086	-	0.06	0.09	-	1.3	0.32
	B-C	2.31	9.29	0.249	-	0.24	0.33	-	4.8	0.14
	C-A	7.74	-	-	-	-	-	-	-	-
	C-B	4.07	7.63	0.534	-	0.71	1.11	-	15.6	0.28
	A-B	0.35	-	-	-	-	-	-	-	-
	A-C	6.83	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-A	0.29	3.42	0.086	-	0.09	0.09	-	1.4	0.32
	B-C	2.31	9.29	0.249	-	0.33	0.33	-	4.9	0.14
	C-A	7.74	-	-	-	-	-	-	-	-
	C-B	4.07	7.63	0.534	-	1.11	1.12	-	16.8	0.28
	A-B	0.35	-	-	-	-	-	-	-	-
	A-C	6.83	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-A	0.24	4.03	0.059	-	0.09	0.06	-	1.0	0.26
	B-C	1.89	9.69	0.195	-	0.33	0.24	-	3.8	0.13
	C-A	6.32	-	-	-	-	-	-	-	-
	C-B	3.33	7.90	0.421	-	1.12	0.74	-	11.7	0.22
	A-B	0.28	-	-	-	-	-	-	-	-
	A-C	5.57	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-A	0.20	4.48	0.045	-	0.06	0.05	-	0.7	0.23
	B-C	1.58	9.97	0.159	-	0.24	0.19	-	2.9	0.12
	C-A	5.30	-	-	-	-	-	-	-	-
	C-B	2.79	8.10	0.344	-	0.74	0.53	-	8.3	0.19
	A-B	0.24	-	-	-	-	-	-	-	-
	A-C	4.67	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	22.0	14.7	6.0	0.3	6.0	0.3
B-C	173.4	115.6	22.6	0.1	22.6	0.1
C-A	580.9	387.2	-	-	-	-
C-B	305.6	203.7	69.9	0.2	69.9	0.2
A-B	26.2	17.4	-	-	-	-
A-C	512.0	341.4	-	-	-	-
All	**1620.1**	**1080.0**	**98.5**	**0.1**	**98.5**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

PICADY
GUI Version: 5.00 AC Analysis Program Release: 3.0 INTERIM (MAR 2006)
For sales and distribution information, program advice and maintenance, contact:
TRL Limited Crowthorne House Nine Mile Ride Wokingham, Berks. RG40 3GA, UK Tel: +44 (0)1344 770758 Fax:+44 (0)1344 770864 E-mail: softwarebureau@trl.co.uk Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Alders Drive T junction\2017 AM Peak.vpi
Date Run	23 September 2009
Time Run	15:45:22
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Alders Drive North	100
Arm B	Far Moor Lane	100
Arm C	Alders Drive South	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	2017 Far Moor Lane_ Alders Drive AM Peak
Location	Redditch
Date	23 September 2009
Enumerator	Ibates [HP24852250691]
Job Number	835
Status	Preliminary
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

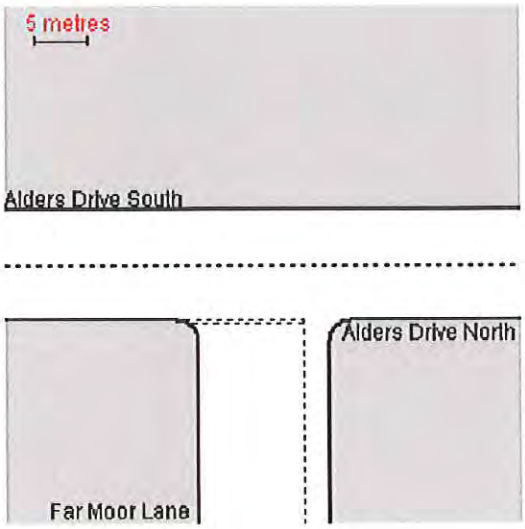
Parameter	Minor Arm B
Major Road Carriageway Width (m)	8.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	10.00
Minor Road Width 5m Back from Junction (m)	6.50
Minor Road Width 10m Back from Junction (m)	5.25
Minor Road Width 15m Back from Junction (m)	4.50
Minor Road Width 20m Back from Junction (m)	4.00
Minor Road Flare Length (veh)	1
Minor Road Visibility To Right (m)	27
Minor Road Visibility To Left (m)	27
Major Road Right Turn Visibility (m)	50
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	459.592	0.075	0.190	0.120	0.272
B-C	589.599	0.081	0.206	-	-
C-B	602.919	0.210	0.210	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:45-09:15	90	15

ODTAB Turning Counts

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	10.0	197.0
Arm B	33.0	0.0	263.0
Arm C	209.0	110.0	0.0

ODTAB Synthesised Flows

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:00	2.588	08:00	3.881	08:30	2.588
Arm B	08:00	3.700	08:00	5.550	08:30	3.700
Arm C	08:00	3.987	08:00	5.981	08:30	3.987

Heavy Vehicles Percentages

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

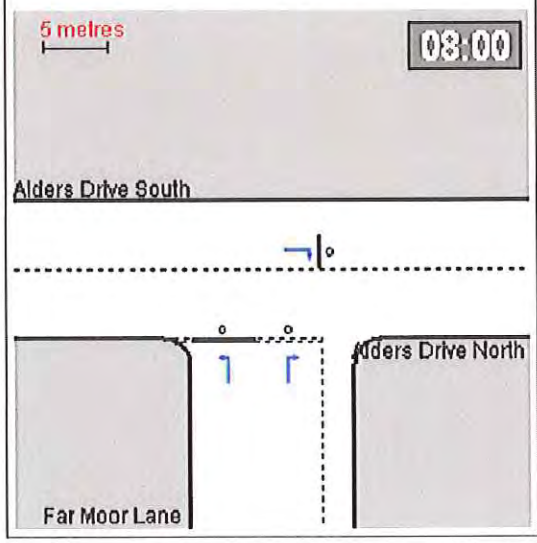
From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

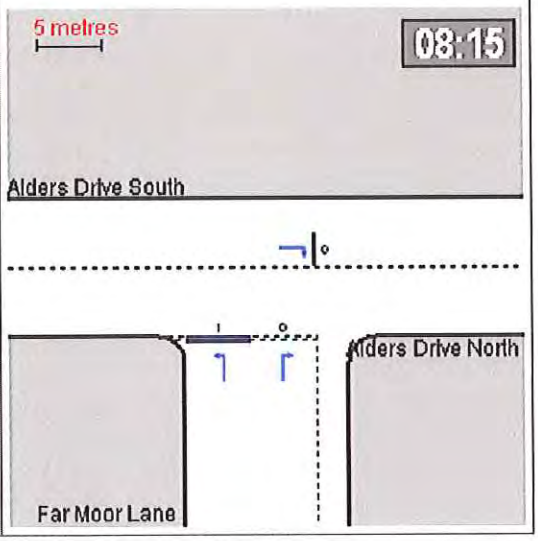
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15
View Extent: 40m

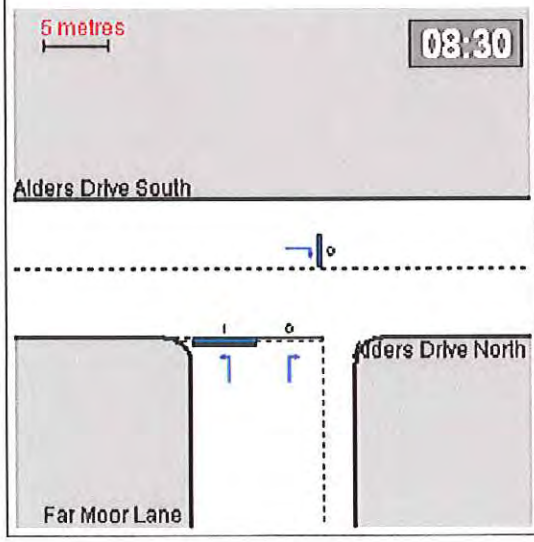
Queue Interval 1: 07:45-08:00



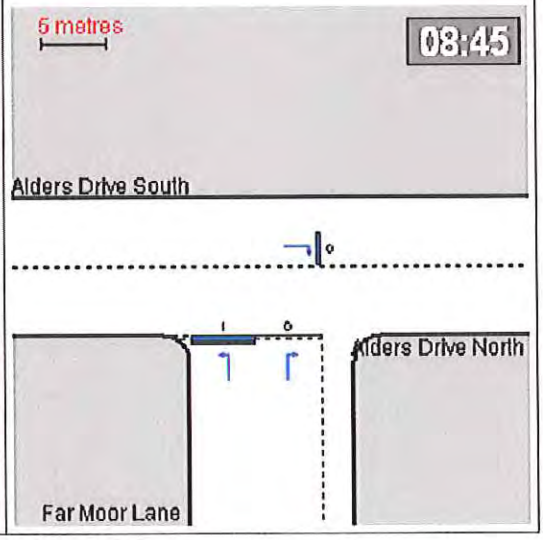
Queue Interval 2: 08:00-08:15



Queue Interval 3: 08:15-08:30

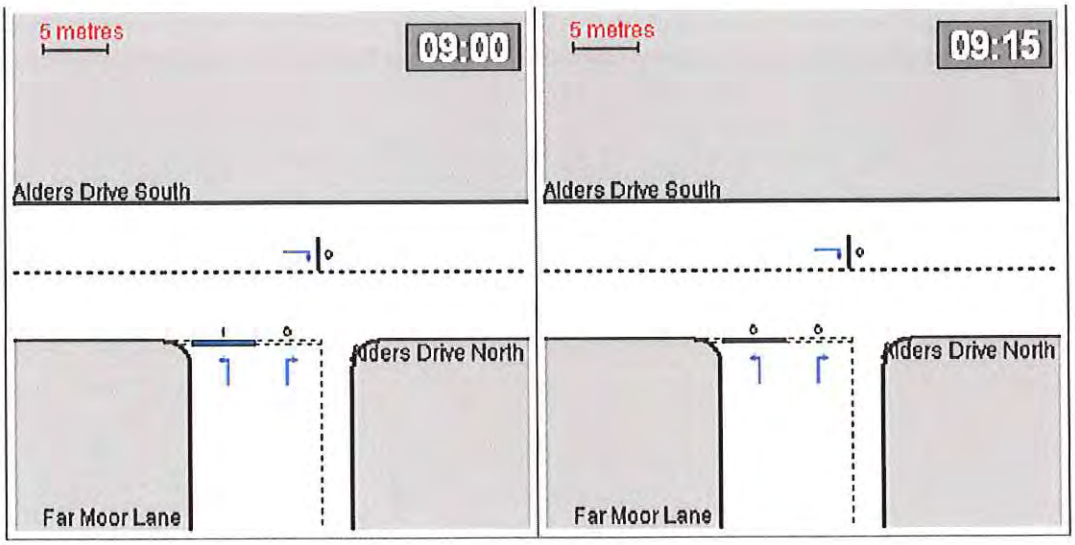


Queue Interval 4: 08:30-08:45



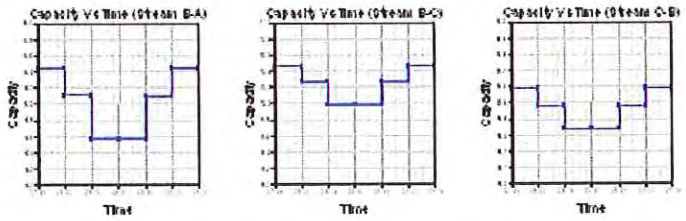
Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15



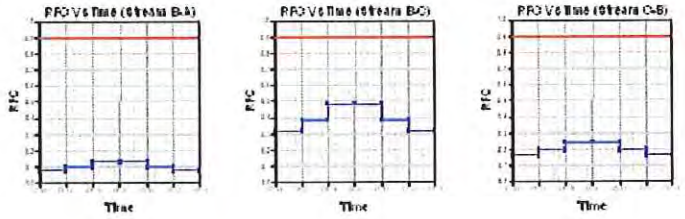
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



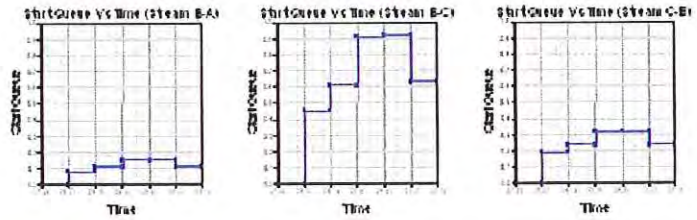
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



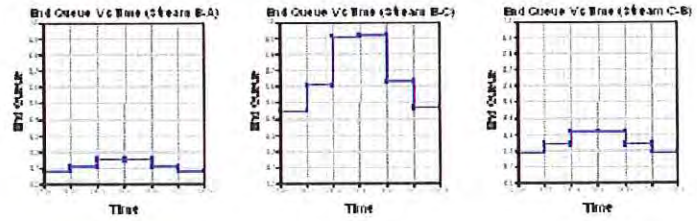
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



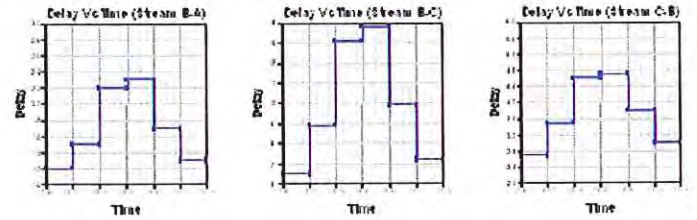
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	0.41	5.45	0.076	-	0.00	0.08	-	1.2	0.20
	B-C	3.30	10.46	0.315	-	0.00	0.45	-	6.5	0.14
	C-A	2.62	-	-	-	-	-	-	-	-
	C-B	1.38	8.59	0.161	-	0.00	0.19	-	2.7	0.14
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	2.47	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.49	5.11	0.097	-	0.08	0.11	-	1.5	0.22
	B-C	3.94	10.27	0.384	-	0.45	0.61	-	8.9	0.16
	C-A	3.13	-	-	-	-	-	-	-	-
	C-B	1.65	8.48	0.194	-	0.19	0.24	-	3.5	0.15
	A-B	0.15	-	-	-	-	-	-	-	-
	A-C	2.95	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.61	4.57	0.132	-	0.11	0.15	-	2.2	0.25
	B-C	4.83	9.99	0.483	-	0.61	0.91	-	13.1	0.19
	C-A	3.84	-	-	-	-	-	-	-	-
	C-B	2.02	8.34	0.242	-	0.24	0.32	-	4.6	0.16
	A-B	0.18	-	-	-	-	-	-	-	-
	A-C	3.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.61	4.57	0.133	-	0.15	0.15	-	2.3	0.25
	B-C	4.83	9.99	0.483	-	0.91	0.92	-	13.8	0.19
	C-A	3.84	-	-	-	-	-	-	-	-
	C-B	2.02	8.34	0.242	-	0.32	0.32	-	4.7	0.16
	A-B	0.18	-	-	-	-	-	-	-	-
	A-C	3.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.49	5.10	0.097	-	0.15	0.11	-	1.7	0.22
	B-C	3.94	10.27	0.384	-	0.92	0.63	-	9.9	0.16
	C-A	3.13	-	-	-	-	-	-	-	-
	C-B	1.65	8.48	0.194	-	0.32	0.24	-	3.8	0.15
	A-B	0.15	-	-	-	-	-	-	-	-
	A-C	2.95	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-A	0.41	5.44	0.076	-	0.11	0.08	-	1.3	0.20
	B-C	3.30	10.46	0.316	-	0.63	0.47	-	7.2	0.14
	C-A	2.62	-	-	-	-	-	-	-	-
	C-B	1.38	8.59	0.161	-	0.24	0.19	-	3.0	0.14
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	2.47	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	45.4	30.3	10.1	0.2	10.1	0.2
B-C	362.0	241.3	59.4	0.2	59.4	0.2
C-A	287.7	191.8	-	-	-	-
C-B	151.4	100.9	22.3	0.1	22.3	0.1
A-B	13.8	9.2	-	-	-	-
A-C	271.2	180.8	-	-	-	-
All	**1131.4**	**754.3**	**91.8**	**0.1**	**91.8**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

PICADY

GUI Version: 5.00 AC
Analysis Program Release: 3.0 INTERIM (MAR 2006)

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Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Alders Drive T junction\2017 PM Peak.vpi
Date Run	23 September 2009
Time Run	15:46:45
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Alders Drive North	100
Arm B	Far Moor Lane	100
Arm C	Alders Drive South	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	2017 Far Moor Lane_ Alders Drive PM Peak
Location	Redditch
Date	23 September 2009
Enumerator	Ibates [HP24852250691]
Job Number	835
Status	Preliminary
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

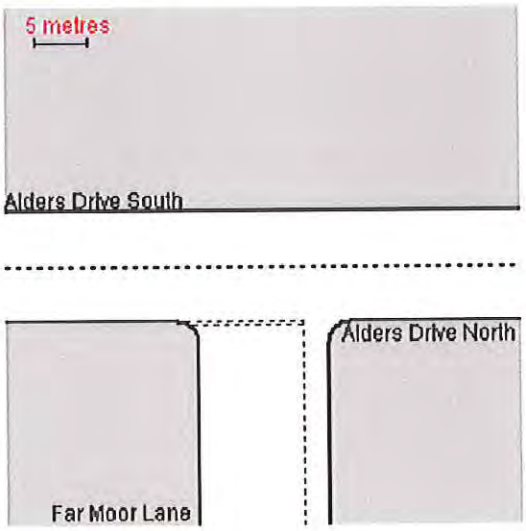
Parameter	Minor Arm B
Major Road Carriageway Width (m)	8.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	10.00
Minor Road Width 5m Back from Junction (m)	6.50
Minor Road Width 10m Back from Junction (m)	5.25
Minor Road Width 15m Back from Junction (m)	4.50
Minor Road Width 20m Back from Junction (m)	4.00
Minor Road Flare Length (veh)	1
Minor Road Visibility To Right (m)	27
Minor Road Visibility To Left (m)	27
Major Road Right Turn Visibility (m)	50
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	459.592	0.075	0.190	0.120	0.272
B-C	589.599	0.081	0.206	-	-
C-B	602.919	0.210	0.210	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	22.0	421.0
Arm B	18.0	0.0	143.0
Arm C	478.0	251.0	0.0

ODTAB Synthesised Flows

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	17:00	5.537	17:00	8.306	17:30	5.537
Arm B	17:00	2.013	17:00	3.019	17:30	2.013
Arm C	17:00	9.113	17:00	13.669	17:30	9.113

Heavy Vehicles Percentages

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

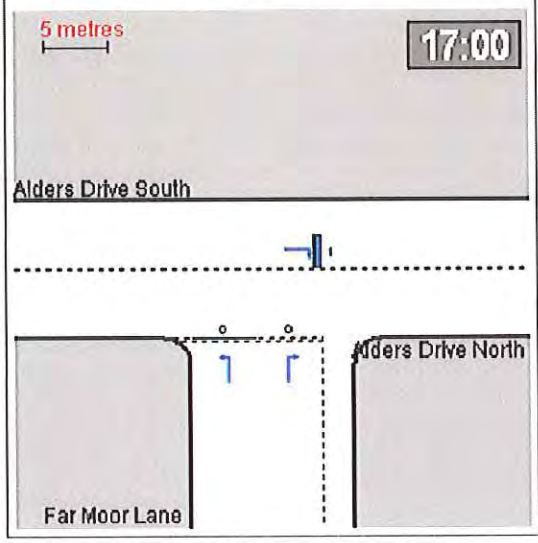
From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

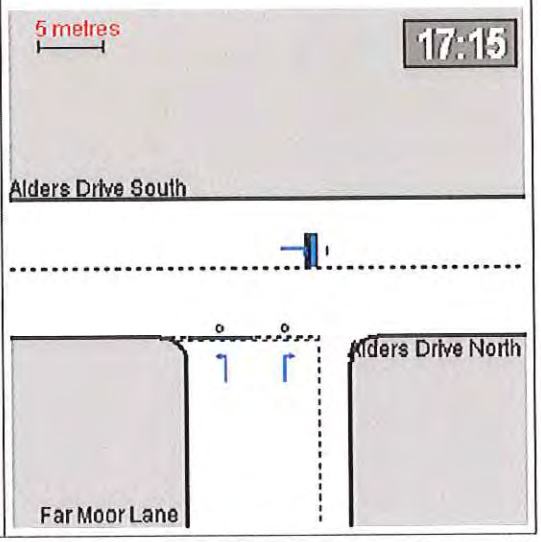
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15
View Extent: 40m

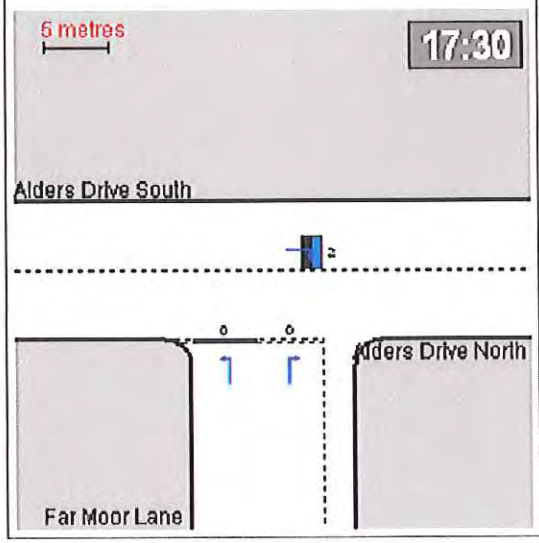
Queue Interval 1: 16:45-17:00



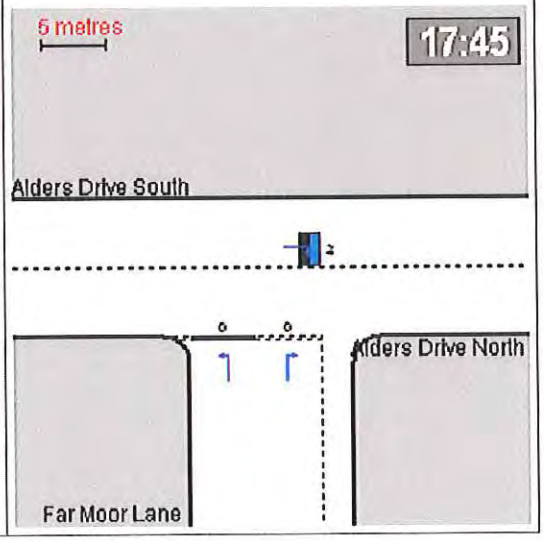
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

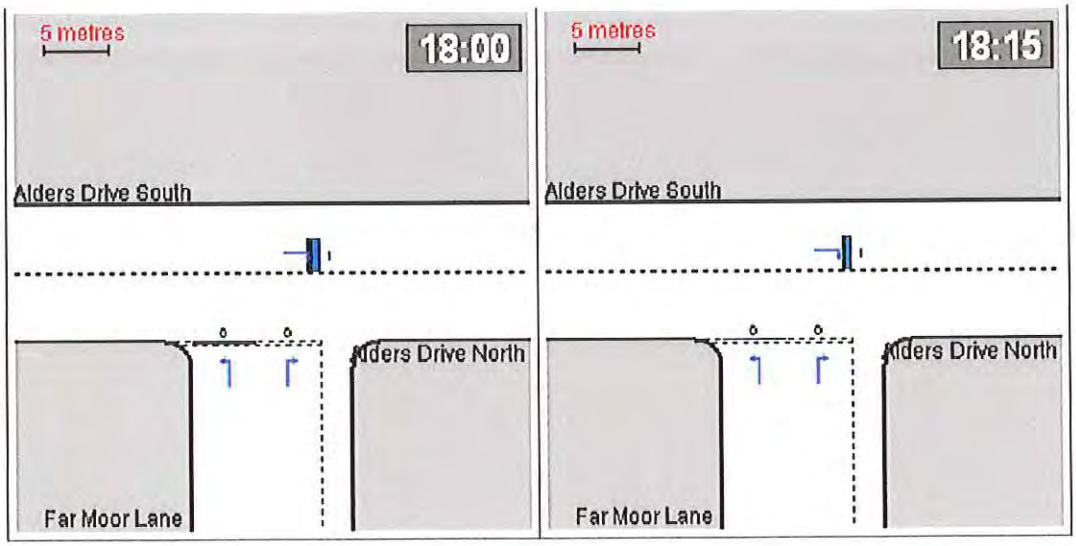


Queue Interval 4: 17:30-17:45



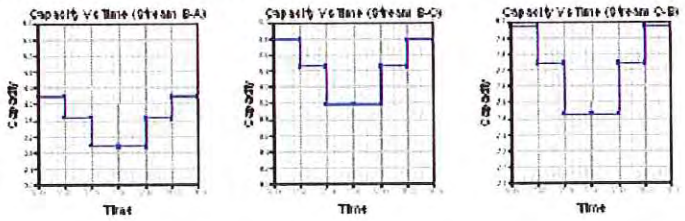
Queue Interval 5: 17:45-18:00

Queue Interval 6: 18:00-18:15



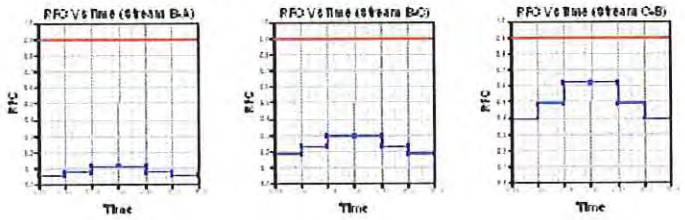
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



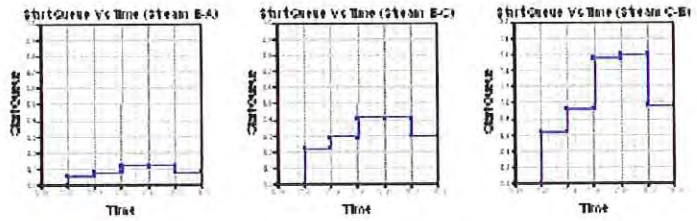
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



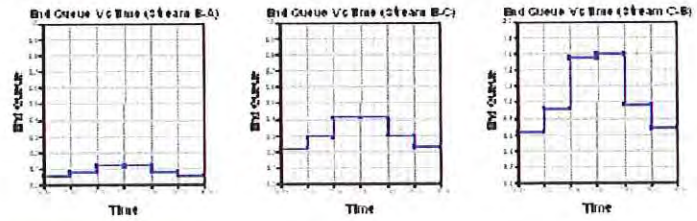
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



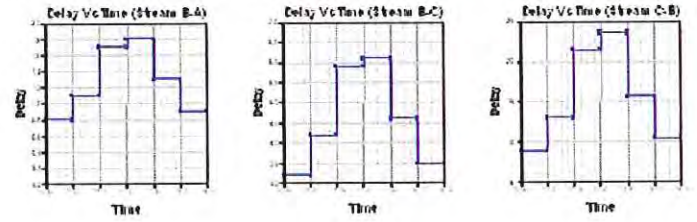
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-A	0.23	4.20	0.054	-	0.00	0.06	-	0.8	0.25
	B-C	1.79	9.79	0.183	-	0.00	0.22	-	3.2	0.12
	C-A	6.00	-	-	-	-	-	-	-	-
	C-B	3.15	7.97	0.395	-	0.00	0.64	-	9.0	0.20
	A-B	0.28	-	-	-	-	-	-	-	-
	A-C	5.28	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-A	0.27	3.68	0.073	-	0.06	0.08	-	1.1	0.29
	B-C	2.14	9.46	0.226	-	0.22	0.29	-	4.2	0.14
	C-A	7.16	-	-	-	-	-	-	-	-
	C-B	3.76	7.74	0.486	-	0.64	0.92	-	13.1	0.25
	A-B	0.33	-	-	-	-	-	-	-	-
	A-C	6.31	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-A	0.33	2.97	0.111	-	0.08	0.12	-	1.7	0.38
	B-C	2.62	8.99	0.292	-	0.29	0.41	-	5.9	0.16
	C-A	8.77	-	-	-	-	-	-	-	-
	C-B	4.61	7.43	0.620	-	0.92	1.55	-	21.4	0.34
	A-B	0.40	-	-	-	-	-	-	-	-
	A-C	7.73	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-A	0.33	2.96	0.111	-	0.12	0.12	-	1.8	0.38
	B-C	2.62	8.99	0.292	-	0.41	0.41	-	6.1	0.16
	C-A	8.77	-	-	-	-	-	-	-	-
	C-B	4.61	7.43	0.620	-	1.55	1.59	-	23.5	0.35
	A-B	0.40	-	-	-	-	-	-	-	-
	A-C	7.73	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-A	0.27	3.66	0.074	-	0.12	0.08	-	1.3	0.30
	B-C	2.14	9.46	0.227	-	0.41	0.30	-	4.6	0.14
	C-A	7.16	-	-	-	-	-	-	-	-
	C-B	3.76	7.74	0.486	-	1.59	0.97	-	15.6	0.26
	A-B	0.33	-	-	-	-	-	-	-	-
	A-C	6.31	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-A	0.23	4.18	0.054	-	0.08	0.06	-	0.9	0.25
	B-C	1.79	9.78	0.183	-	0.30	0.23	-	3.5	0.13
	C-A	6.00	-	-	-	-	-	-	-	-
	C-B	3.15	7.97	0.395	-	0.97	0.67	-	10.5	0.21
	A-B	0.28	-	-	-	-	-	-	-	-
	A-C	5.28	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	24.8	16.5	7.7	0.3	7.7	0.3
B-C	196.8	131.2	27.5	0.1	27.5	0.1
C-A	657.9	438.6	-	-	-	-
C-B	345.5	230.3	93.1	0.3	93.1	0.3
A-B	30.3	20.2	-	-	-	-
A-C	579.5	386.3	-	-	-	-
All	**1834.8**	**1223.2**	**128.3**	**0.1**	**128.3**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

PICADY

GUI Version: 5.00 AC
Analysis Program Release: 3.0 INTERIM (MAR 2006)

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Fax:+44 (0)1344 770864
E-mail: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Alders Drive T junction\20000 BIC 2017 AM Peak.vpi
Date Run	23 September 2009
Time Run	14:35:29
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Alders Drive North	100
Arm B	Far Moor Lane	100
Arm C	Alders Drive South	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	20000 BIC 2017 Far Moor Lane_ Alders Drive AM Peak
Location	Redditch
Date	23 September 2009
Enumerator	Ibates [HP24852250691]
Job Number	835
Status	Preliminary
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

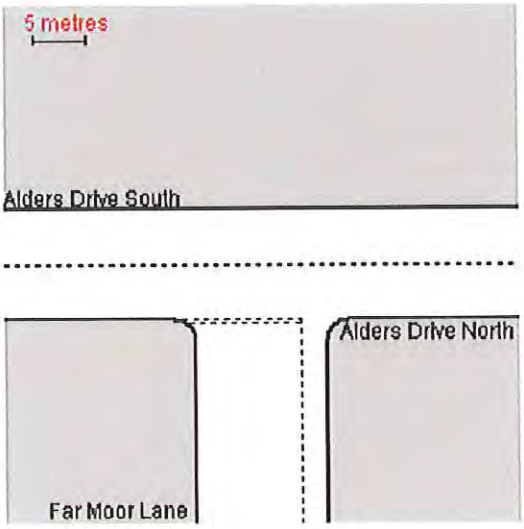
Parameter	Minor Arm B
Major Road Carriageway Width (m)	8.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	10.00
Minor Road Width 5m Back from Junction (m)	6.50
Minor Road Width 10m Back from Junction (m)	5.25
Minor Road Width 15m Back from Junction (m)	4.50
Minor Road Width 20m Back from Junction (m)	4.00
Minor Road Flare Length (veh)	1
Minor Road Visibility To Right (m)	27
Minor Road Visibility To Left (m)	27
Major Road Right Turn Visibility (m)	50
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	459.592	0.075	0.190	0.120	0.272
B-C	589.599	0.081	0.206	-	-
C-B	602.919	0.210	0.210	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:45-09:15	90	15

ODTAB Turning Counts

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	26.0	197.0
Arm B	35.0	0.0	281.0
Arm C	209.0	299.0	0.0

ODTAB Synthesised Flows

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:00	2.787	08:00	4.181	08:30	2.787
Arm B	08:00	3.950	08:00	5.925	08:30	3.950
Arm C	08:00	6.350	08:00	9.525	08:30	6.350

Heavy Vehicles Percentages

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 07:45-09:15

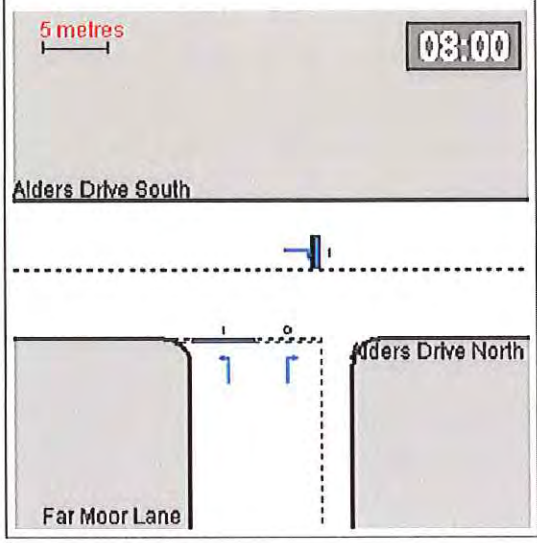
From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

Queue Diagrams

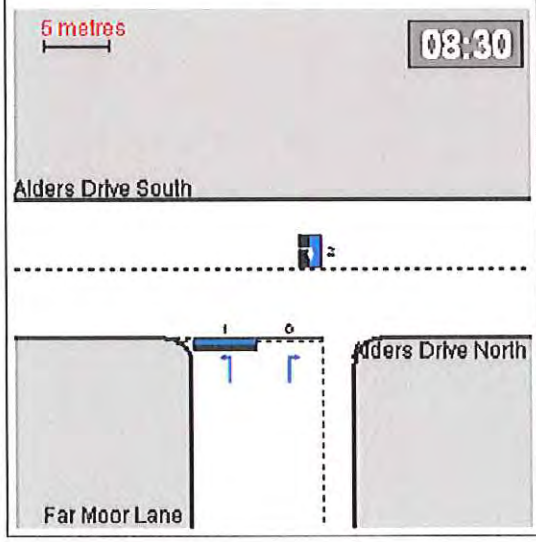
Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15
View Extent: 40m

Queue Interval 1: 07:45-08:00

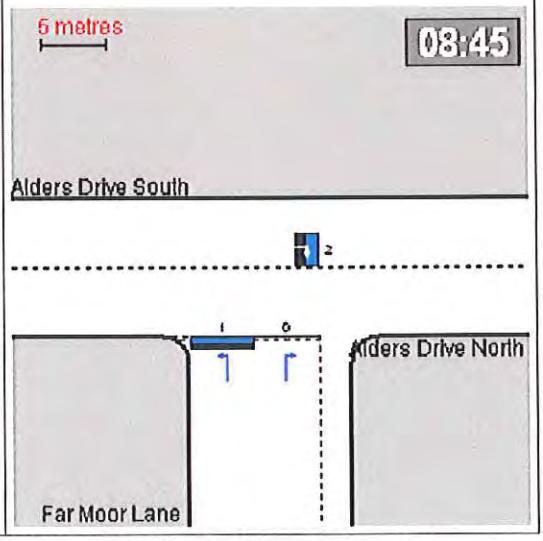


Queue Interval 2: 08:00-08:15

Queue Interval 3: 08:15-08:30

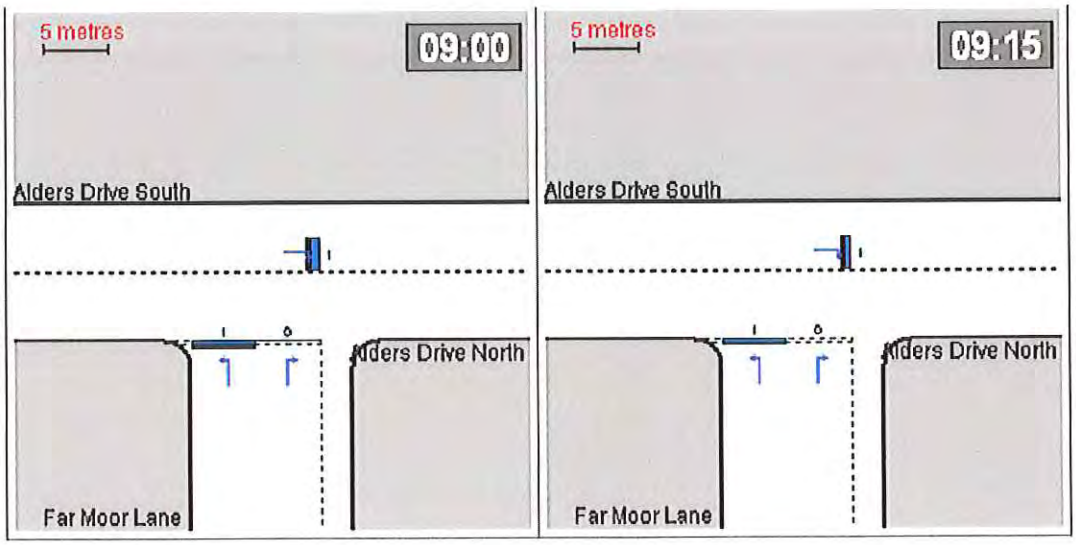


Queue Interval 4: 08:30-08:45



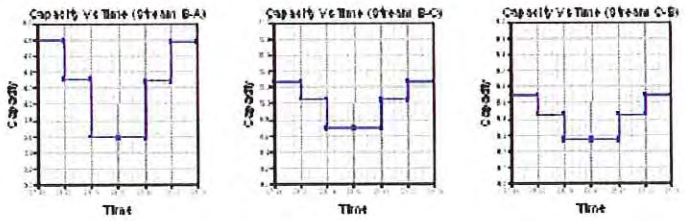
Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15



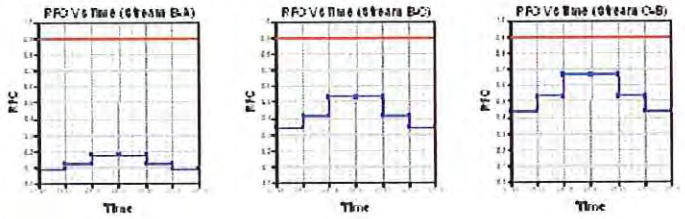
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



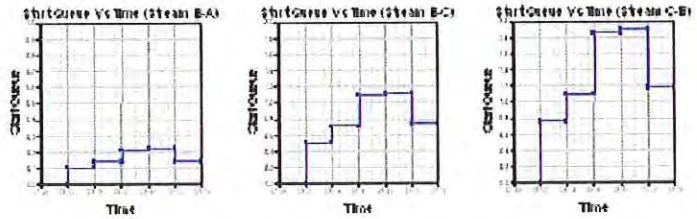
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



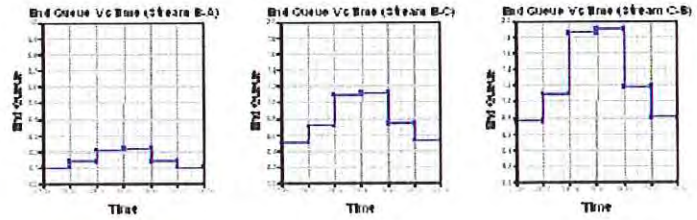
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



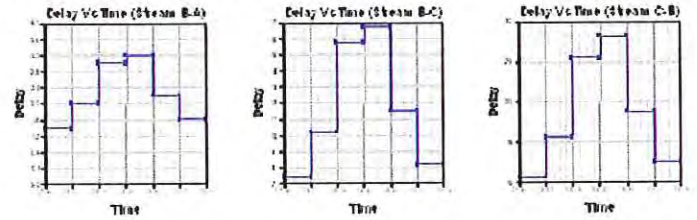
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	0.44	4.79	0.092	-	0.00	0.10	-	1.4	0.23
	B-C	3.53	10.27	0.343	-	0.00	0.51	-	7.4	0.15
	C-A	2.62	-	-	-	-	-	-	-	-
	C-B	3.75	8.55	0.439	-	0.00	0.76	-	10.7	0.20
	A-B	0.33	-	-	-	-	-	-	-	-
	A-C	2.47	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.52	4.31	0.122	-	0.10	0.14	-	2.0	0.26
	B-C	4.21	10.05	0.419	-	0.51	0.71	-	10.2	0.17
	C-A	3.13	-	-	-	-	-	-	-	-
	C-B	4.48	8.43	0.531	-	0.76	1.10	-	15.6	0.25
	A-B	0.39	-	-	-	-	-	-	-	-
	A-C	2.95	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.64	3.60	0.179	-	0.14	0.21	-	3.0	0.34
	B-C	5.16	9.70	0.531	-	0.71	1.10	-	15.7	0.22
	C-A	3.84	-	-	-	-	-	-	-	-
	C-B	5.49	8.27	0.663	-	1.10	1.85	-	25.5	0.35
	A-B	0.48	-	-	-	-	-	-	-	-
	A-C	3.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.64	3.58	0.180	-	0.21	0.22	-	3.2	0.34
	B-C	5.16	9.70	0.532	-	1.10	1.12	-	16.7	0.22
	C-A	3.84	-	-	-	-	-	-	-	-
	C-B	5.49	8.27	0.663	-	1.85	1.90	-	28.2	0.36
	A-B	0.48	-	-	-	-	-	-	-	-
	A-C	3.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.52	4.28	0.122	-	0.22	0.14	-	2.2	0.27
	B-C	4.21	10.04	0.419	-	1.12	0.74	-	11.5	0.17
	C-A	3.13	-	-	-	-	-	-	-	-
	C-B	4.48	8.43	0.531	-	1.90	1.17	-	18.8	0.26
	A-B	0.39	-	-	-	-	-	-	-	-
	A-C	2.95	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-A	0.44	4.76	0.092	-	0.14	0.10	-	1.6	0.23
	B-C	3.53	10.27	0.343	-	0.74	0.53	-	8.2	0.15
	C-A	2.62	-	-	-	-	-	-	-	-
	C-B	3.75	8.55	0.439	-	1.17	0.80	-	12.6	0.21
	A-B	0.33	-	-	-	-	-	-	-	-
	A-C	2.47	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	48.2	32.1	13.4	0.3	13.4	0.3
B-C	386.8	257.9	69.7	0.2	69.7	0.2
C-A	287.7	191.8	-	-	-	-
C-B	411.6	274.4	111.4	0.3	111.4	0.3
A-B	35.8	23.9	-	-	-	-
A-C	271.2	180.8	-	-	-	-
All	**1441.1**	**960.7**	**194.5**	**0.1**	**194.6**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

PICADY
GUI Version: 5.00 AC Analysis Program Release: 3.0 INTERIM (MAR 2006)
For sales and distribution information, program advice and maintenance, contact:
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Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Alders Drive T junction\20000 BIC 2017 PM Peak.vpi
Date Run	23 September 2009
Time Run	14:33:35
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Alders Drive North	100
Arm B	Far Moor Lane	100
Arm C	Alders Drive South	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	20000 BIC 2017 Far Moor Lane_ Alders Drive PM Peak
Location	Redditch
Date	23 September 2009
Enumerator	Ibates [HP24852250691]
Job Number	835
Status	Preliminary
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

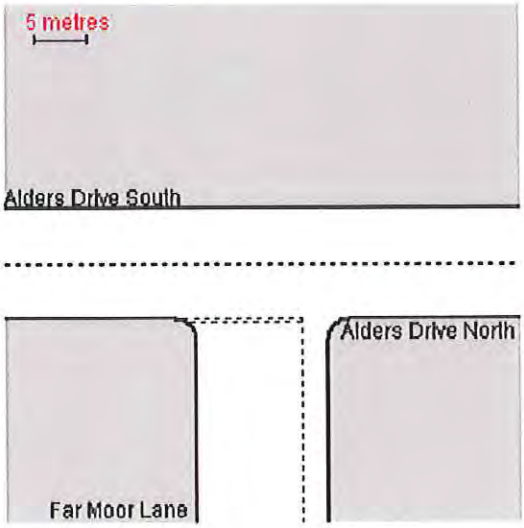
Parameter	Minor Arm B
Major Road Carriageway Width (m)	8.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	10.00
Minor Road Width 5m Back from Junction (m)	6.50
Minor Road Width 10m Back from Junction (m)	5.25
Minor Road Width 15m Back from Junction (m)	4.50
Minor Road Width 20m Back from Junction (m)	4.00
Minor Road Flare Length (veh)	1
Minor Road Visibility To Right (m)	27
Minor Road Visibility To Left (m)	27
Major Road Right Turn Visibility (m)	50
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	459.592	0.075	0.190	0.120	0.272
B-C	589.599	0.081	0.206	-	-
C-B	602.919	0.210	0.210	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	24.0	421.0
Arm B	36.0	0.0	285.0
Arm C	478.0	274.0	0.0

ODTAB Synthesised Flows

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	17:00	5.563	17:00	8.344	17:30	5.563
Arm B	17:00	4.012	17:00	6.019	17:30	4.012
Arm C	17:00	9.400	17:00	14.100	17:30	9.400

Heavy Vehicles Percentages

Demand Set: 2009 Far Moor Lane_ Alders Drive
Modelling Period: 16:45-18:15

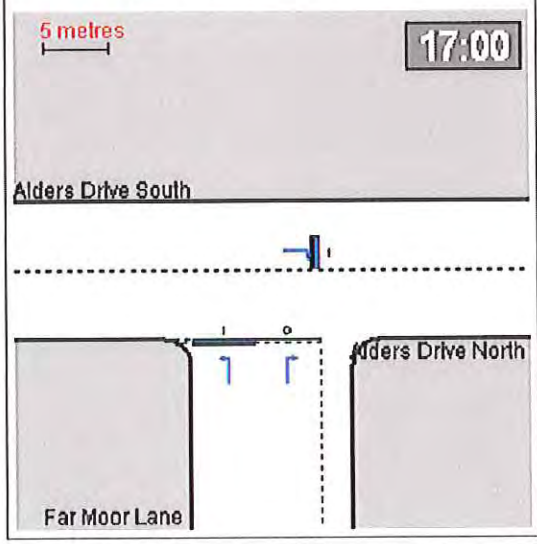
From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

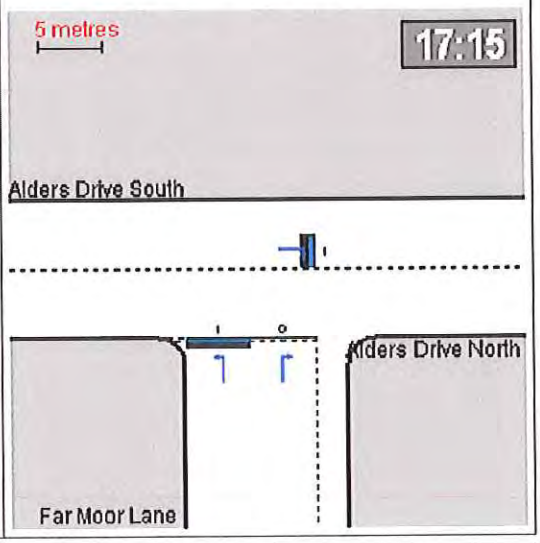
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15
View Extent: 40m

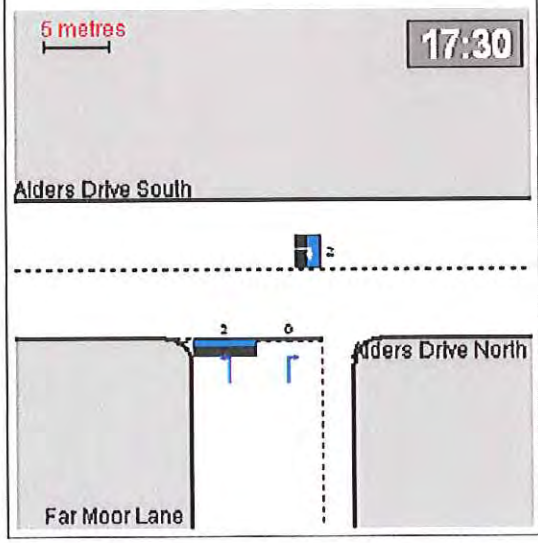
Queue Interval 1: 16:45-17:00



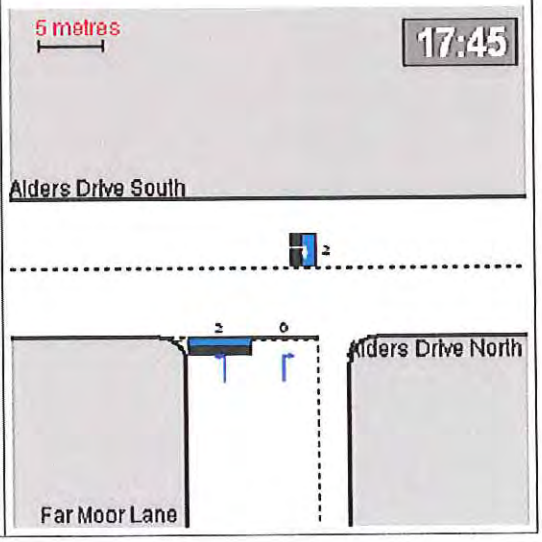
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

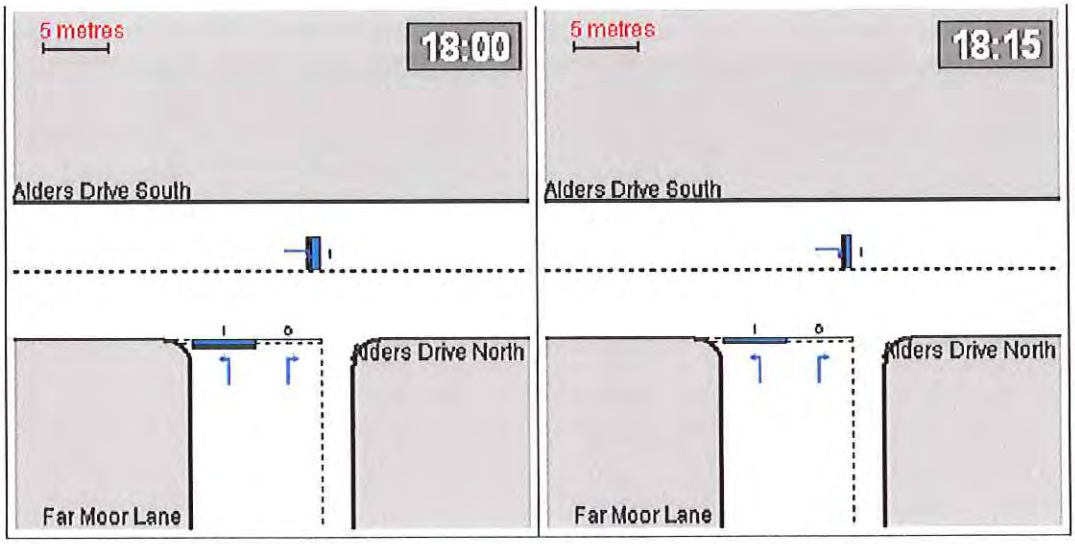


Queue Interval 4: 17:30-17:45



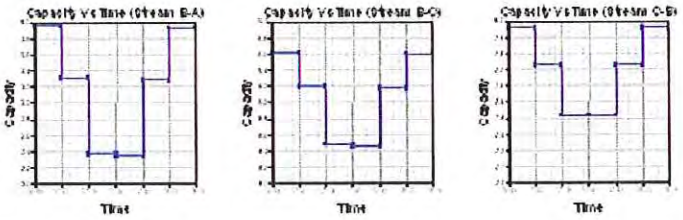
Queue Interval 5: 17:45-18:00

Queue Interval 6: 18:00-18:15



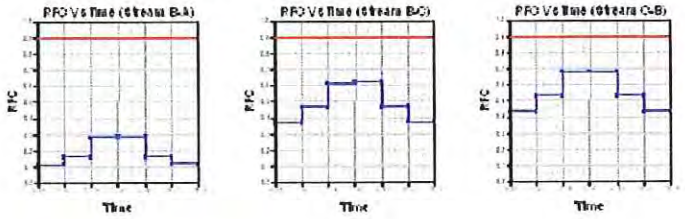
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



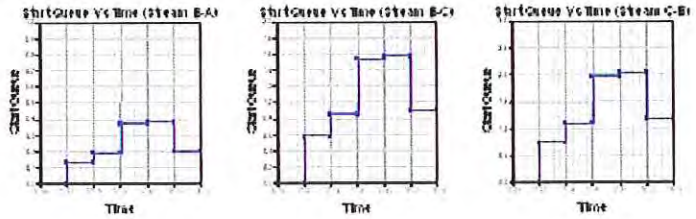
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



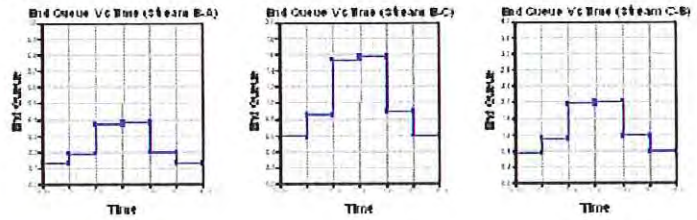
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



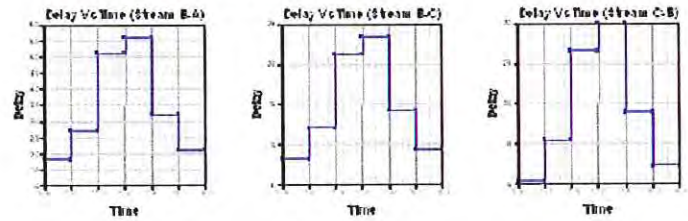
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-A	0.45	3.96	0.114	-	0.00	0.13	-	1.8	0.28
	B-C	3.58	9.61	0.372	-	0.00	0.58	-	8.3	0.16
	C-A	6.00	-	-	-	-	-	-	-	-
	C-B	3.44	7.96	0.432	-	0.00	0.74	-	10.4	0.22
	A-B	0.30	-	-	-	-	-	-	-	-
	A-C	5.28	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-A	0.54	3.31	0.163	-	0.13	0.19	-	2.7	0.36
	B-C	4.27	9.20	0.464	-	0.58	0.85	-	12.1	0.20
	C-A	7.16	-	-	-	-	-	-	-	-
	C-B	4.11	7.73	0.531	-	0.74	1.09	-	15.5	0.27
	A-B	0.36	-	-	-	-	-	-	-	-
	A-C	6.31	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-A	0.66	2.37	0.279	-	0.19	0.37	-	5.1	0.58
	B-C	5.23	8.49	0.616	-	0.85	1.53	-	21.2	0.30
	C-A	8.77	-	-	-	-	-	-	-	-
	C-B	5.03	7.42	0.678	-	1.09	1.95	-	26.6	0.40
	A-B	0.44	-	-	-	-	-	-	-	-
	A-C	7.73	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-A	0.66	2.34	0.282	-	0.37	0.38	-	5.6	0.59
	B-C	5.23	8.46	0.618	-	1.53	1.57	-	23.4	0.31
	C-A	8.77	-	-	-	-	-	-	-	-
	C-B	5.03	7.42	0.678	-	1.95	2.02	-	29.9	0.42
	A-B	0.44	-	-	-	-	-	-	-	-
	A-C	7.73	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-A	0.54	3.28	0.164	-	0.38	0.20	-	3.2	0.37
	B-C	4.27	9.17	0.465	-	1.57	0.89	-	14.2	0.21
	C-A	7.16	-	-	-	-	-	-	-	-
	C-B	4.11	7.73	0.531	-	2.02	1.17	-	18.9	0.28
	A-B	0.36	-	-	-	-	-	-	-	-
	A-C	6.31	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-A	0.45	3.93	0.115	-	0.20	0.13	-	2.1	0.29
	B-C	3.58	9.60	0.373	-	0.89	0.60	-	9.4	0.17
	C-A	6.00	-	-	-	-	-	-	-	-
	C-B	3.44	7.96	0.432	-	1.17	0.78	-	12.3	0.22
	A-B	0.30	-	-	-	-	-	-	-	-
	A-C	5.28	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	49.6	33.0	20.5	0.4	20.5	0.4
B-C	392.3	261.5	88.6	0.2	88.6	0.2
C-A	657.9	438.6	-	-	-	-
C-B	377.1	251.4	113.5	0.3	113.6	0.3
A-B	33.0	22.0	-	-	-	-
A-C	579.5	386.3	-	-	-	-
All	**2089.4**	**1392.9**	**222.6**	**0.1**	**222.7**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

ARCADY 6

GUI Version: 6.00 AD
Analysis Program: Release 4.0 (FEBRUARY 2006)

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Email: softwarebureau@ trl.co.uk
Web:www.trlsoftware.co.uk

Run Information

Run with file:- **g:\MTA\13 - Job Files\13.1 Job Files\JN 835 - Redditch Borough Council\Design\PICADY\Far Moor Lane Illshaw Close Roundabout\20000 BIC 2017 AM Peak.vai**
At: **15:41:12 on Wednesday, September 23, 2009**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	Far Moor Lane North
Arm B	RBC Land
Arm C	Far Moor Lane South
Arm D	Illshaw Close

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100
Arm D	100

File Properties

Run Title	20000 BIC 2017 AM Peak
Location	Redditch
Date	23/09/2009
Client	Redditch Borough Council
Enumerator	lbates [HP24852250691]
Job Number	835
Status	
Description	

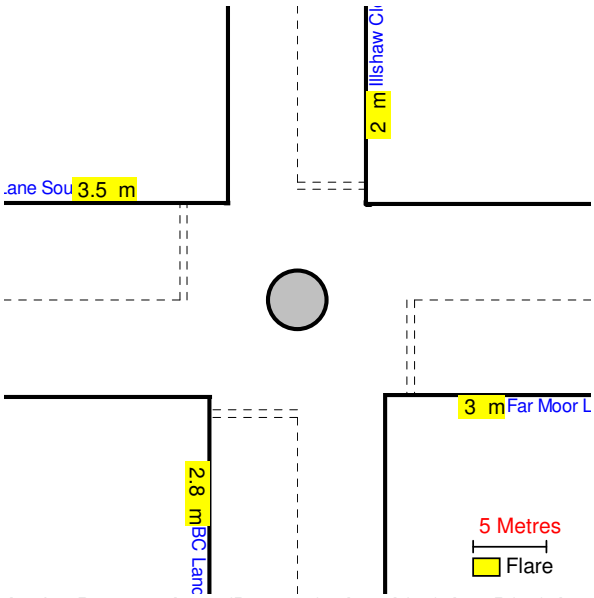
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C	Arm D
Approach Road Half-Width (m)	3.60	4.00	3.60	2.80
Entry Width (m)	6.50	6.00	6.60	4.70
Flare Length (m)	3.00	2.80	3.50	2.00
Entry Radius (m)	17.00	17.30	16.50	14.00
Inscribed Circle Diameter (m)	16.80	16.80	16.80	16.80
Entry Angle (degrees)	20.00	25.50	19.00	24.00
Slope	0.599	0.608	0.606	0.519
Intercept (PCU/Min)	22.325	23.460	22.846	16.513

Junction Diagram: (View Extent = 40m)



Angles Between Arms (Degrees): Arm A(90) Arm B(90) Arm C(90) Arm D(90)

Demand Data

Demand Profiles are Synthesised using **ODTAB** Data
Period of interest (for Queue and Delay calculations): **07:45 to 09:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Total Traffic Demand (Vehicles/Hour) for Demand Set: 20000 BIC 2017 AM Peak

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	205.0	89.0	7.0
Arm B	20.0	0.0	20.0	0.0
Arm C	191.0	205.0	0.0	6.0
Arm D	21.0	0.0	21.0	0.0

Entry Flow Data for Demand Set: 20000 BIC 2017 AM Peak

Arms	Number of Minutes From Start When			Rate of flow (Veh/Min)		
	Flow Starts To Rise	Top of Peak is Reached	Flow Stops Falling	Before Peak	At Top of Peak	After Peak
Arm A	15.00	45.00	75.00	3.76	5.64	3.76
Arm B	15.00	45.00	75.00	0.50	0.75	0.50
Arm C	15.00	45.00	75.00	5.03	7.54	5.03
Arm D	15.00	45.00	75.00	0.52	0.79	0.52

Turning Proportions

ODTAB Demand Data type is used, no turning proportions available.

Heavy Vehicle Percentages for Demand Set: 20000 BIC 2017 AM Peak

Default vehicle percentages

Time Period	From/To	Arm A	Arm B	Arm C	Arm D
07:45 to 09:15	Arm A	10.0	10.0	10.0	10.0
	Arm B	10.0	10.0	10.0	10.0
	Arm C	10.0	10.0	10.0	10.0

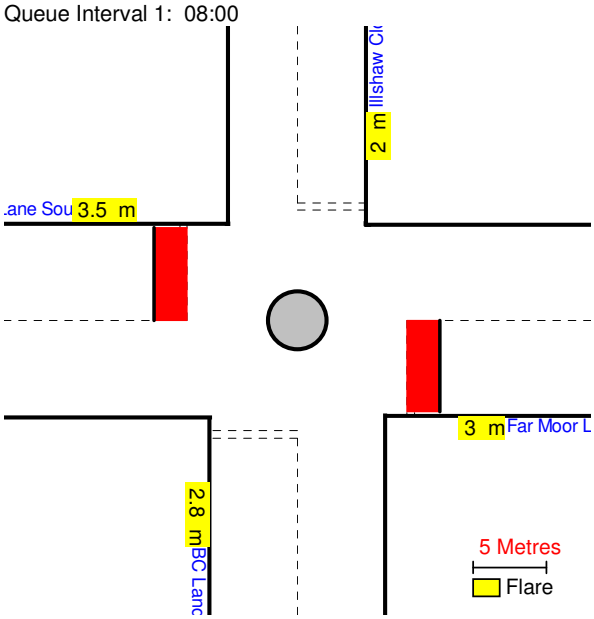
Time Period	From/To	Arm A	Arm B	Arm C	Arm D
	Arm D	10.0	10.0	10.0	10.0

Queue Diagrams: (View Extent = 40m)

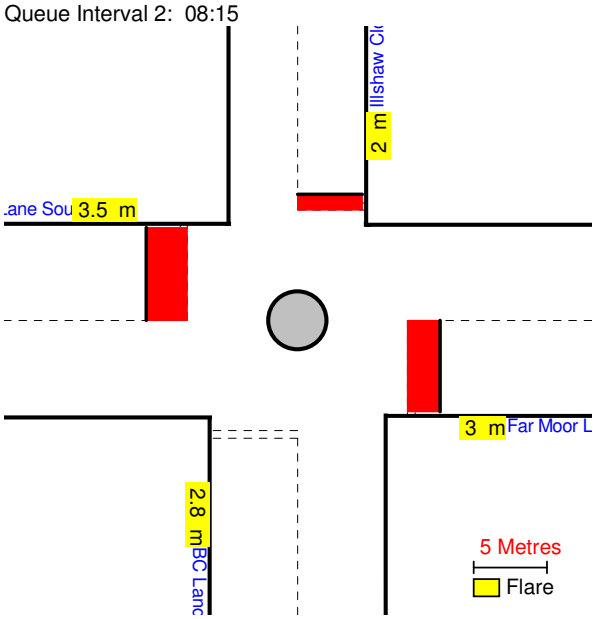
Queue Length	Colour
Mean Queue	
5 th % ile	
90 th % ile	
95 th % ile	

Start Time: 07:45---> End Time: 09:15

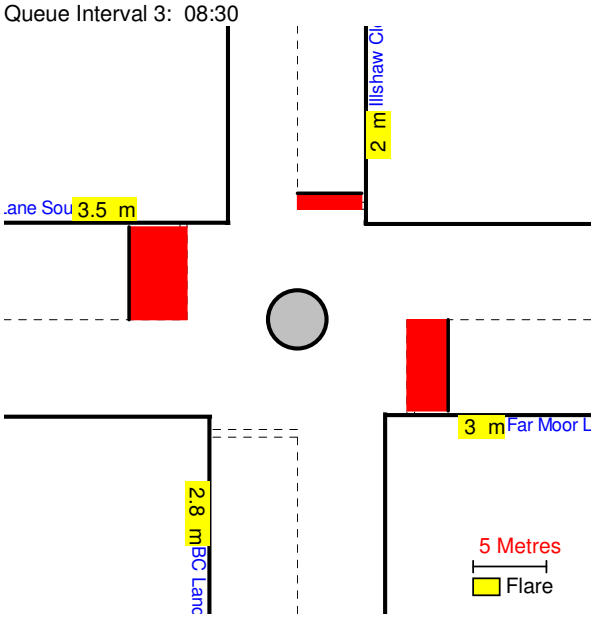
Queue Interval 1: 08:00



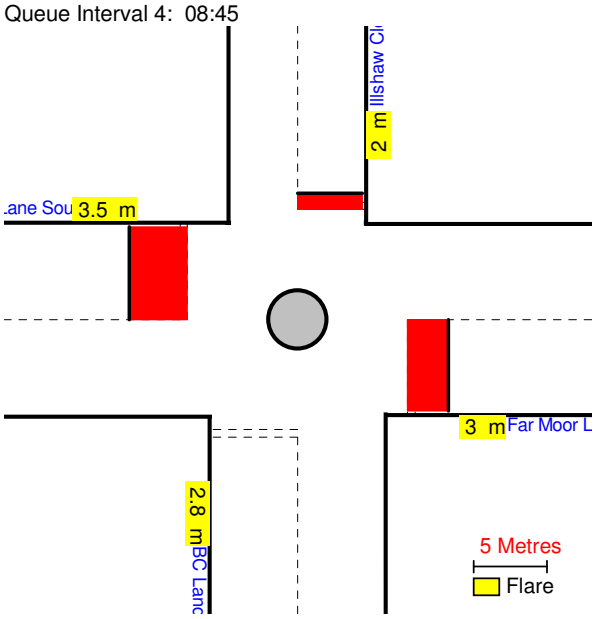
Queue Interval 2: 08:15



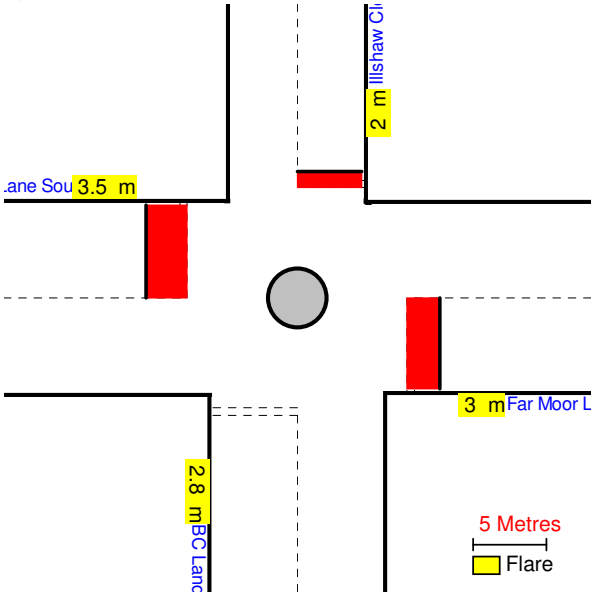
Queue Interval 3: 08:30



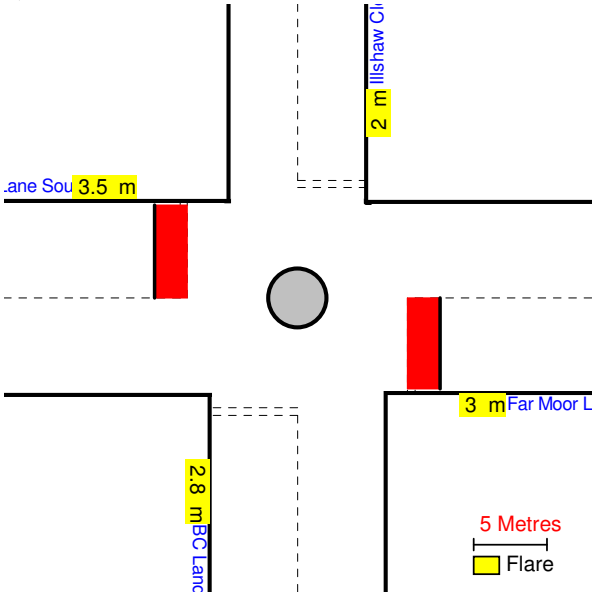
Queue Interval 4: 08:45



Queue Interval 5: 09:00



Queue Interval 6: 09:15

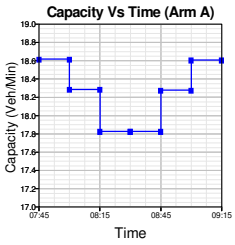


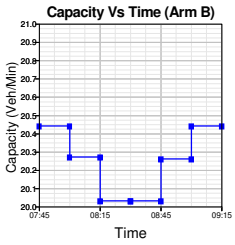
Demand Data Graphs

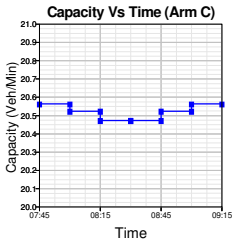
No graph available

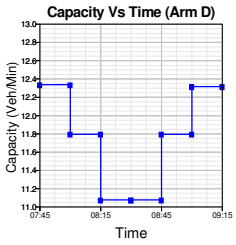
Capacity (against Time) Graphs, for each 15min Interval (07:45 - 09:15)

(QUEUEING DELAY INFORMATION OVER WHOLE PERIOD)



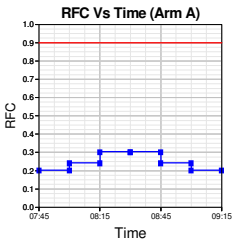


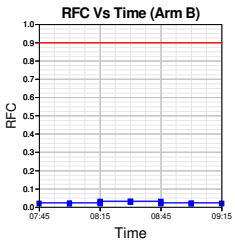


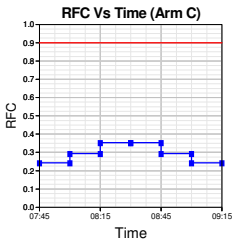


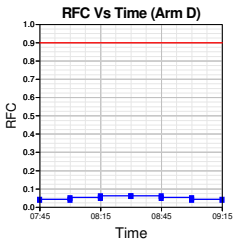
RFC (against Time) Graphs, for each 15min Interval (07:45 - 09:15)

(QUEUEING DELAY INFORMATION OVER WHOLE PERIOD)



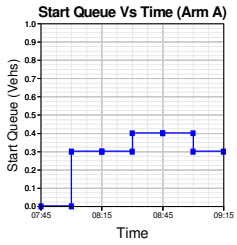


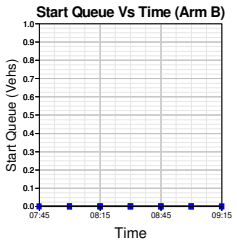


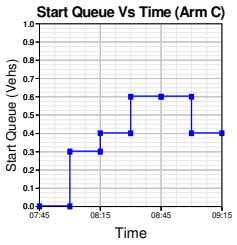


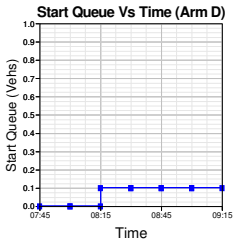
Start Queue (against Time) Graphs, for each 15min Interval (07:45 - 09:15)

(QUEUEING DELAY INFORMATION OVER WHOLE PERIOD)



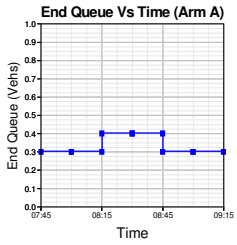


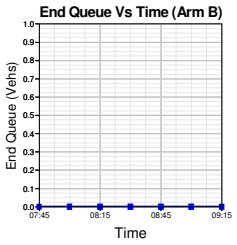


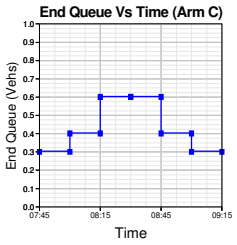


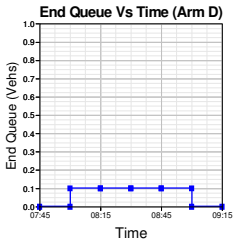
End Queue (against Time) Graphs, for each 15min Interval (07:45 - 09:15)

(QUEUEING DELAY INFORMATION OVER WHOLE PERIOD)







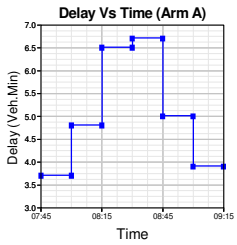


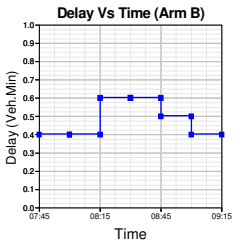
Geometric Delay Graph

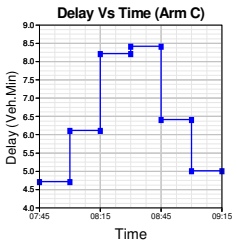
No Data. Please select 'Geometric Delay' in 'Principal Options' and try again.

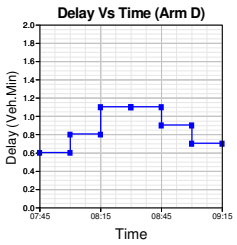
Delay (against Time) Graphs, for each 15min Interval (07:45 - 09:15)

(QUEUEING DELAY INFORMATION OVER WHOLE PERIOD)









Queues and Delay:

Segment	Arm	Demand (Veh/ Min)	Capacity (Veh/ Min)	Demand/ Capacity (RFC)	Ped Flow (Ped/ Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min/ Time Segment)	Geometric Delay (Veh.Min/ Time Segment)	Arrival Delay (Min/ Veh)
Segment : 1 - 07:45 to 08:00	Arm A	3.76	18.61	0.202	-	0.0	0.3	3.7	-	0.07
	Arm B	0.50	20.44	0.024	-	0.0	0.0	0.4	-	0.05
	Arm C	5.03	20.56	0.244	-	0.0	0.3	4.7	-	0.06
	Arm D	0.52	12.33	0.043	-	0.0	0.0	0.6	-	0.08
Segment : 2 - 08:00 to 08:15	Arm A	4.49	18.28	0.246	-	0.3	0.3	4.8	-	0.07
	Arm B	0.60	20.27	0.029	-	0.0	0.0	0.4	-	0.05
	Arm C	6.00	20.52	0.292	-	0.3	0.4	6.1	-	0.07
	Arm D	0.63	11.79	0.053	-	0.0	0.1	0.8	-	0.09
Segment : 3 - 08:15 to 08:30	Arm A	5.50	17.82	0.309	-	0.3	0.4	6.5	-	0.08
	Arm B	0.73	20.03	0.037	-	0.0	0.0	0.6	-	0.05
	Arm C	7.35	20.47	0.359	-	0.4	0.6	8.2	-	0.08
	Arm D	0.77	11.07	0.069	-	0.1	0.1	1.1	-	0.10
Segment : 4 - 08:30 to 08:45	Arm A	5.50	17.82	0.309	-	0.4	0.4	6.7	-	0.08
	Arm B	0.73	20.03	0.037	-	0.0	0.0	0.6	-	0.05
	Arm C	7.35	20.47	0.359	-	0.6	0.6	8.4	-	0.08
	Arm D	0.77	11.07	0.069	-	0.1	0.1	1.1	-	0.10
Segment : 5 - 08:45 to 09:00	Arm A	4.49	18.27	0.246	-	0.4	0.3	5.0	-	0.07
	Arm B	0.60	20.26	0.029	-	0.0	0.0	0.5	-	0.05
	Arm C	6.00	20.52	0.292	-	0.6	0.4	6.4	-	0.07
	Arm D	0.63	11.79	0.053	-	0.1	0.1	0.9	-	0.09
Segment : 6 - 09:00 to 09:15	Arm A	3.76	18.60	0.202	-	0.3	0.3	3.9	-	0.07
	Arm B	0.50	20.44	0.024	-	0.0	0.0	0.4	-	0.05
	Arm C	5.03	20.56	0.244	-	0.4	0.3	5.0	-	0.06
	Arm D	0.52	12.31	0.043	-	0.1	0.0	0.7	-	0.08

Queuing Delay Information Over Whole Period

Arm	Total Demand		Queueing Delay		Inclusive Queueing Delay	
	(Veh)	(Veh/Hr)	(Min)	(Min/Veh)	(Min)	(Min/Veh)
A	412.7	275.2	30.6	0.07	30.6	0.07
B	54.8	36.6	2.8	0.05	2.8	0.05
C	551.2	367.5	38.6	0.07	38.6	0.07
D	57.6	38.4	5.2	0.09	5.2	0.09
ALL	1076.4	717.6	77.2	0.07	77.2	0.07

Delay is that occuring only within the time period.
Inclusive delay includes delay suffered by vehicles that 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.

Accident Data

No Data, please select the 'Accident Analysis' option in 'Principal Options' and try again.

Accident Results

No Data, please select the 'Accident Analysis' option in 'Principal Options' and try again.

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

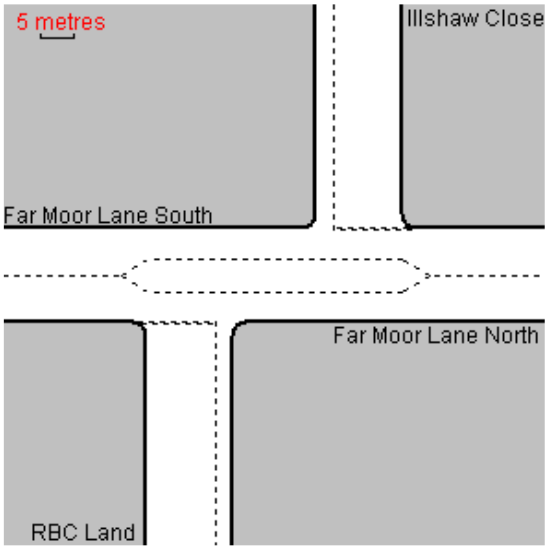
Parameter	Minor Arm B	Minor Arm D
Major Road Carriageway Width (m)	8.60	9.00
Major Road Kerbed Central Reserve Width (m)	0.00	0.00
Major Road Right Turning Lane Width (m)	5.00	3.50
Minor Road Width 0m Back from Junction (m)	10.00	10.00
Minor Road Width 5m Back from Junction (m)	10.00	4.75
Minor Road Width 10m Back from Junction (m)	6.50	2.50
Minor Road Width 15m Back from Junction (m)	4.50	2.50
Minor Road Width 20m Back from Junction (m)	3.50	2.50
Minor Road Flare Length (veh)	1	1
Minor Road Visibility To Right (m)	65	56
Minor Road Visibility To Left (m)	52	43
Major Road Right Turn Visibility (m)	200	200
Major Road Right Turn Blocks Traffic	No	No

Slope and Intercept Values

Stream	Intercept for Stream B-C	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
B-C	611.605	0.078	0.198	-	-	-	-	-	-	0.078	0.198
B-AD	484.467	0.083	0.210	-	-	-	0.124	0.283	0.124	0.083	0.210
D-A	606.393	0.081	-	-	-	-	0.204	-	-	0.081	0.204
D-BC	484.467	0.120	0.120	0.273	0.191	0.076	0.191	-	0.076	-	-
C-B	899.987	0.309	0.309	-	-	-	-	-	-	0.309	0.309
A-D	899.987	-	-	-	0.265	0.265	0.265	-	0.265	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	25.0	224.0	15.0
Arm B	160.0	0.0	160.0	0.0
Arm C	119.0	25.0	0.0	15.0
Arm D	9.0	0.0	9.0	0.0

ODTAB Synthesised Flows

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	17:00	3.300	17:00	4.950	17:30	3.300
Arm B	17:00	4.000	17:00	6.000	17:30	4.000
Arm C	17:00	1.987	17:00	2.981	17:30	1.987
Arm D	17:00	0.225	17:00	0.337	17:30	0.225

Heavy Vehicles Percentages

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

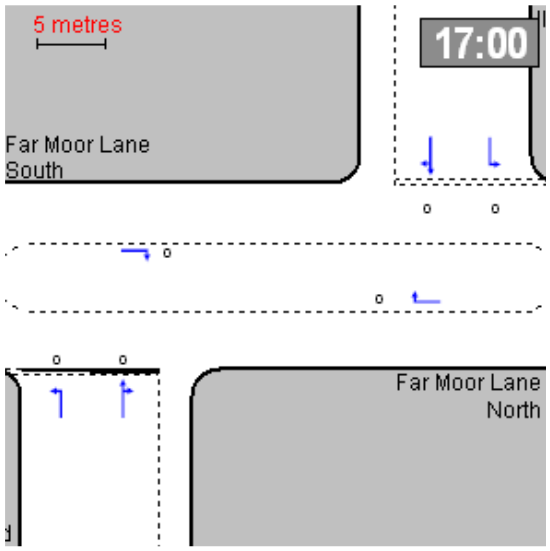
From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	10.0	10.0	10.0
Arm B	10.0	-	10.0	10.0
Arm C	10.0	10.0	-	10.0
Arm D	10.0	10.0	10.0	-

Default proportions of heavy vehicles are used

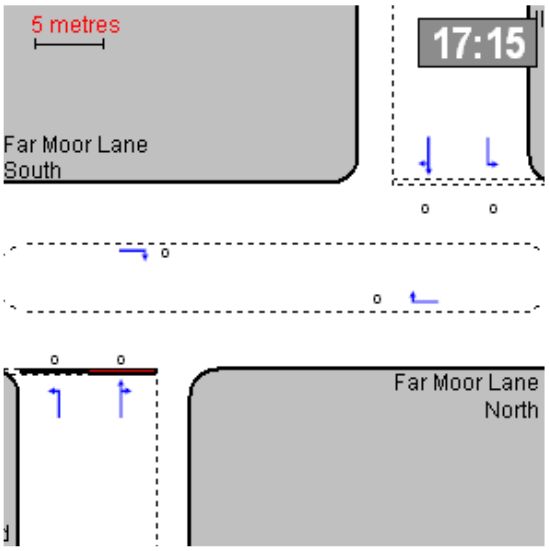
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15
View Extent: 40m

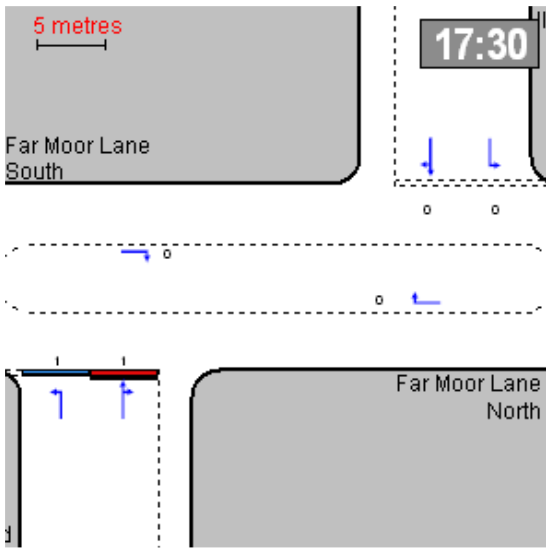
Queue Interval 1: 16:45-17:00



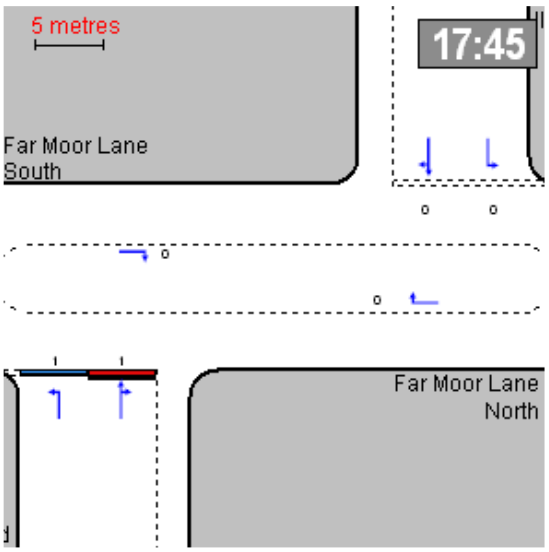
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

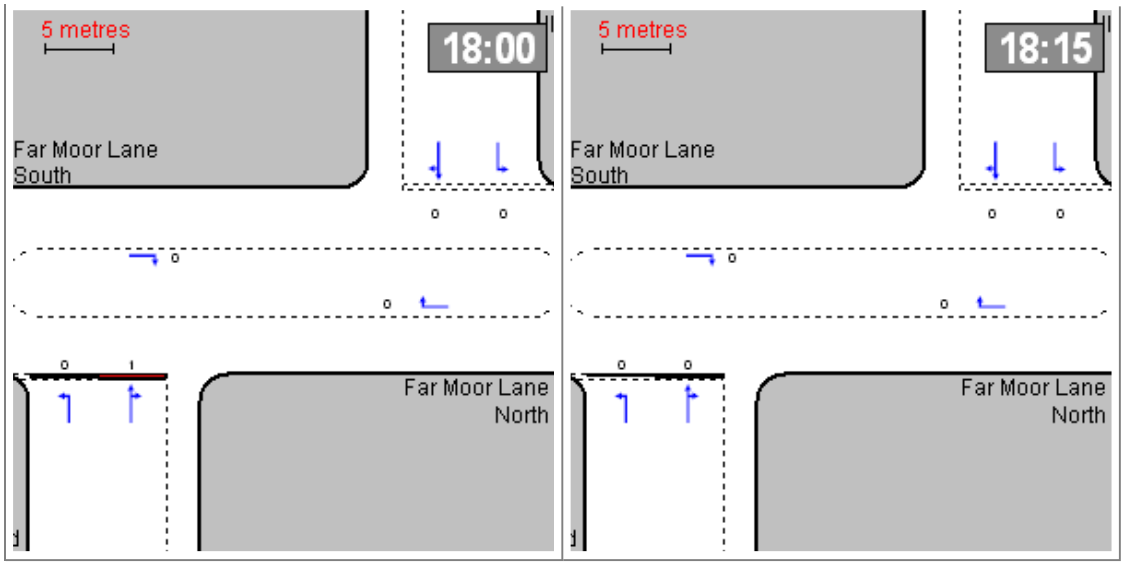


Queue Interval 4: 17:30-17:45



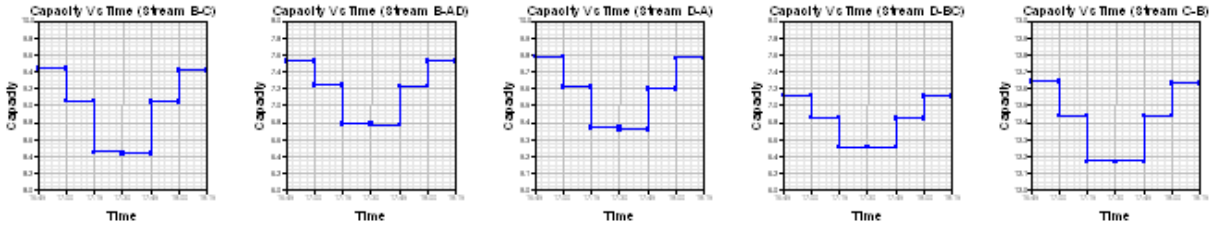
Queue Interval 5: 17:45-18:00

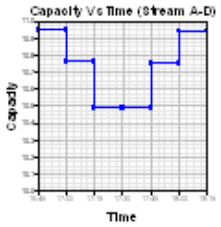
Queue Interval 6: 18:00-18:15



Capacity Graph

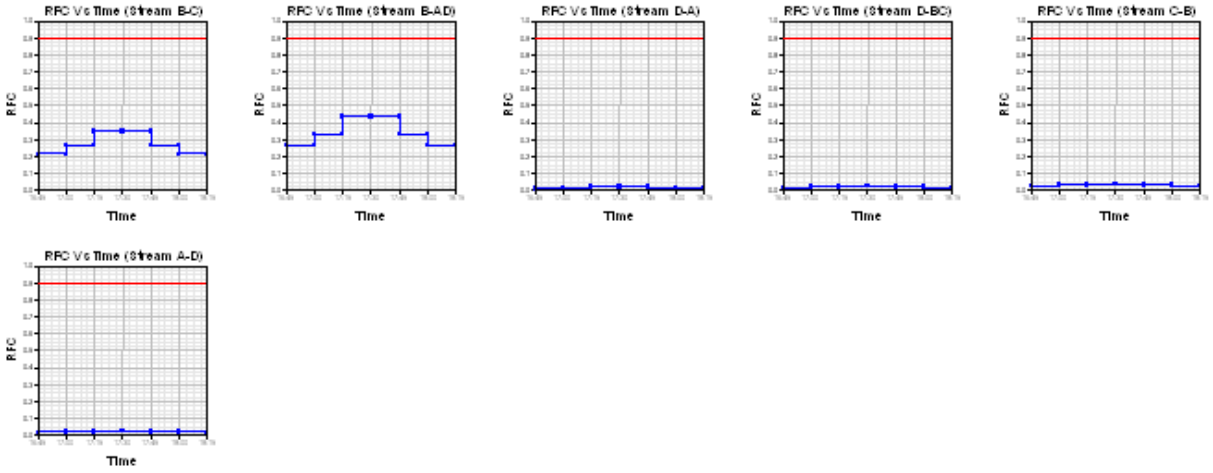
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15





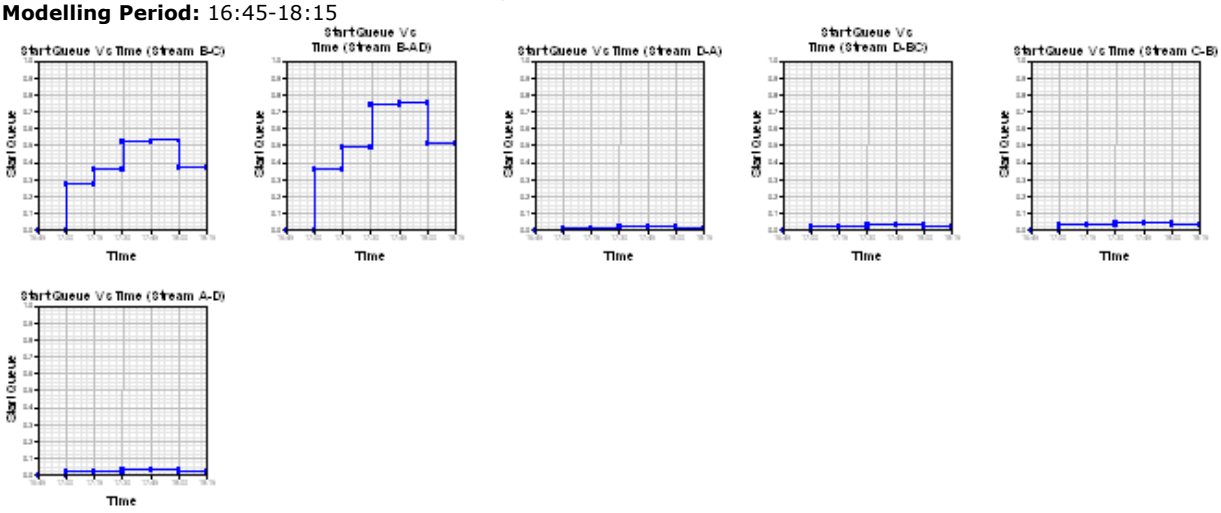
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



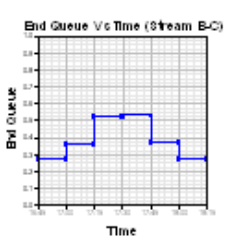
Start Queue Graph

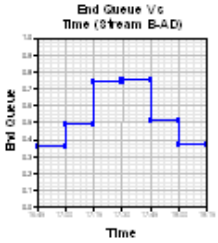
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

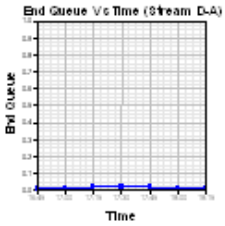


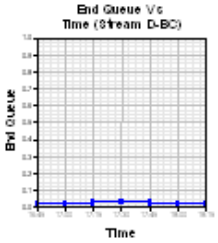
End Queue Graph

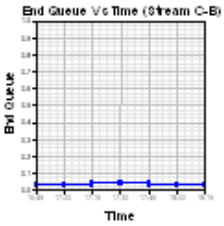
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

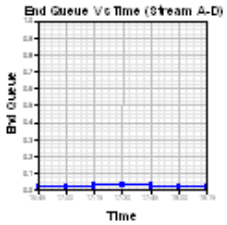






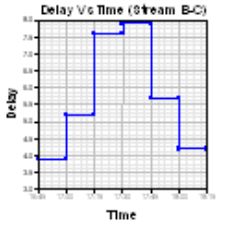


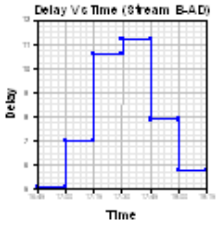


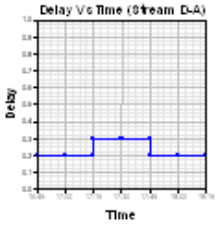


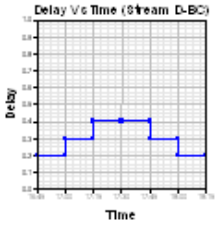
Delay Graph

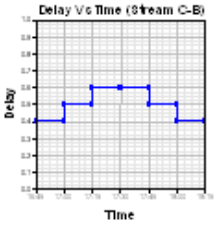
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

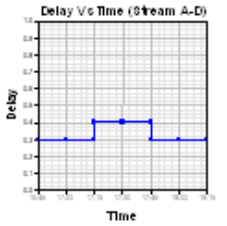












Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-C	2.01	9.44	0.213	-	0.00	0.27	-	3.9	0.13
	B-AD	2.01	7.52	0.267	-	0.00	0.36	-	5.1	0.18
	D-A	0.11	9.79	0.012	-	0.00	0.01	-	0.2	0.10
	D-BC	0.11	7.12	0.016	-	0.00	0.02	-	0.2	0.14
	C-A	1.49	-	-	-	-	-	-	-	-
	C-B	0.31	12.64	0.025	-	0.00	0.03	-	0.4	0.08
	C-D	0.19	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	2.81	-	-	-	-	-	-	-	-
	A-D	0.19	10.95	0.017	-	0.00	0.02	-	0.3	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-C	2.40	9.05	0.265	-	0.27	0.36	-	5.2	0.15
	B-AD	2.40	7.24	0.331	-	0.36	0.49	-	7.0	0.21
	D-A	0.13	9.61	0.014	-	0.01	0.01	-	0.2	0.11
	D-BC	0.13	6.86	0.020	-	0.02	0.02	-	0.3	0.15
	C-A	1.78	-	-	-	-	-	-	-	-
	C-B	0.37	12.44	0.030	-	0.03	0.03	-	0.5	0.08
	C-D	0.22	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	3.36	-	-	-	-	-	-	-	-
	A-D	0.22	10.76	0.021	-	0.02	0.02	-	0.3	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-C	2.94	8.45	0.348	-	0.36	0.52	-	7.6	0.18
	B-AD	2.94	6.78	0.433	-	0.49	0.74	-	10.6	0.26
	D-A	0.17	9.37	0.018	-	0.01	0.02	-	0.3	0.11
	D-BC	0.17	6.51	0.025	-	0.02	0.03	-	0.4	0.16
	C-A	2.18	-	-	-	-	-	-	-	-
	C-B	0.46	12.17	0.038	-	0.03	0.04	-	0.6	0.09
	C-D	0.28	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	4.11	-	-	-	-	-	-	-	-
	A-D	0.28	10.49	0.026	-	0.02	0.03	-	0.4	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-C	2.94	8.43	0.348	-	0.52	0.53	-	7.9	0.18
	B-AD	2.94	6.77	0.433	-	0.74	0.75	-	11.2	0.26
	D-A	0.17	9.36	0.018	-	0.02	0.02	-	0.3	0.11
	D-BC	0.17	6.51	0.025	-	0.03	0.03	-	0.4	0.16
	C-A	2.18	-	-	-	-	-	-	-	-
	C-B	0.46	12.17	0.038	-	0.04	0.04	-	0.6	0.09

	C-D	0.28	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	4.11	-	-	-	-	-	-	-	-
	A-D	0.28	10.49	0.026	-	0.03	0.03	-	0.4	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-C	2.40	9.04	0.265	-	0.53	0.37	-	5.7	0.15
	B-AD	2.40	7.23	0.331	-	0.75	0.51	-	7.9	0.21
	D-A	0.13	9.60	0.014	-	0.02	0.01	-	0.2	0.11
	D-BC	0.13	6.85	0.020	-	0.03	0.02	-	0.3	0.15
	C-A	1.78	-	-	-	-	-	-	-	-
	C-B	0.37	12.44	0.030	-	0.04	0.03	-	0.5	0.08
	C-D	0.22	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	3.36	-	-	-	-	-	-	-	-
	A-D	0.22	10.75	0.021	-	0.03	0.02	-	0.3	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-C	2.01	9.42	0.213	-	0.37	0.27	-	4.2	0.14
	B-AD	2.01	7.52	0.267	-	0.51	0.37	-	5.8	0.18
	D-A	0.11	9.78	0.012	-	0.01	0.01	-	0.2	0.10
	D-BC	0.11	7.11	0.016	-	0.02	0.02	-	0.2	0.14
	C-A	1.49	-	-	-	-	-	-	-	-
	C-B	0.31	12.63	0.025	-	0.03	0.03	-	0.4	0.08
	C-D	0.19	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	2.81	-	-	-	-	-	-	-	-
	A-D	0.19	10.94	0.017	-	0.02	0.02	-	0.3	0.09

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-C	220.2	146.8	34.4	0.2	34.4	0.2
B-AD	220.2	146.8	47.6	0.2	47.6	0.2
D-A	12.4	8.3	1.3	0.1	1.3	0.1
D-BC	12.4	8.3	1.8	0.1	1.8	0.1
C-A	163.8	109.2	-	-	-	-
C-B	34.4	22.9	2.9	0.1	2.9	0.1
C-D	20.6	13.8	-	-	-	-
A-B	34.4	22.9	-	-	-	-
A-C	308.3	205.5	-	-	-	-
A-D	20.6	13.8	2.0	0.1	2.0	0.1
All	**1047.5**	**698.3**	**90.0**	**0.1**	**90.0**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

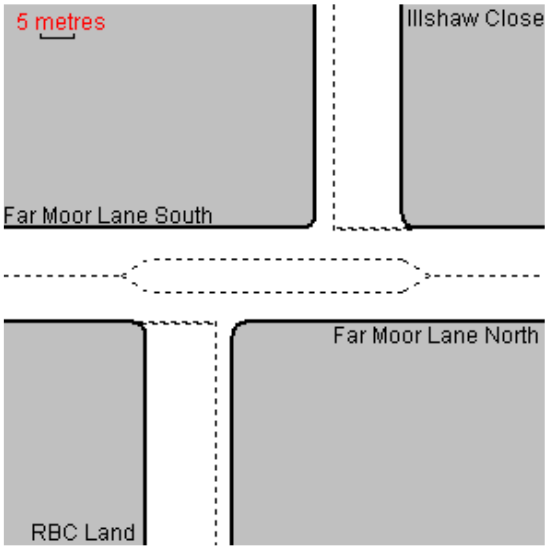
Parameter	Minor Arm B	Minor Arm D
Major Road Carriageway Width (m)	8.60	9.00
Major Road Kerbed Central Reserve Width (m)	0.00	0.00
Major Road Right Turning Lane Width (m)	5.00	3.50
Minor Road Width 0m Back from Junction (m)	10.00	10.00
Minor Road Width 5m Back from Junction (m)	10.00	4.75
Minor Road Width 10m Back from Junction (m)	6.50	2.50
Minor Road Width 15m Back from Junction (m)	4.50	2.50
Minor Road Width 20m Back from Junction (m)	3.50	2.50
Minor Road Flare Length (veh)	1	1
Minor Road Visibility To Right (m)	65	56
Minor Road Visibility To Left (m)	52	43
Major Road Right Turn Visibility (m)	200	200
Major Road Right Turn Blocks Traffic	No	No

Slope and Intercept Values

Stream	Intercept for Stream B-C	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
B-C	611.605	0.078	0.198	-	-	-	-	-	-	0.078	0.198
B-AD	484.467	0.083	0.210	-	-	-	0.124	0.283	0.124	0.083	0.210
D-A	606.393	0.081	-	-	-	-	0.204	-	-	0.081	0.204
D-BC	484.467	0.120	0.120	0.273	0.191	0.076	0.191	-	0.076	-	-
C-B	899.987	0.309	0.309	-	-	-	-	-	-	0.309	0.309
A-D	899.987	-	-	-	0.265	0.265	0.265	-	0.265	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	25.0	224.0	15.0
Arm B	160.0	0.0	160.0	0.0
Arm C	119.0	25.0	0.0	15.0
Arm D	9.0	0.0	9.0	0.0

ODTAB Synthesised Flows

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	17:00	3.300	17:00	4.950	17:30	3.300
Arm B	17:00	4.000	17:00	6.000	17:30	4.000
Arm C	17:00	1.987	17:00	2.981	17:30	1.987
Arm D	17:00	0.225	17:00	0.337	17:30	0.225

Heavy Vehicles Percentages

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

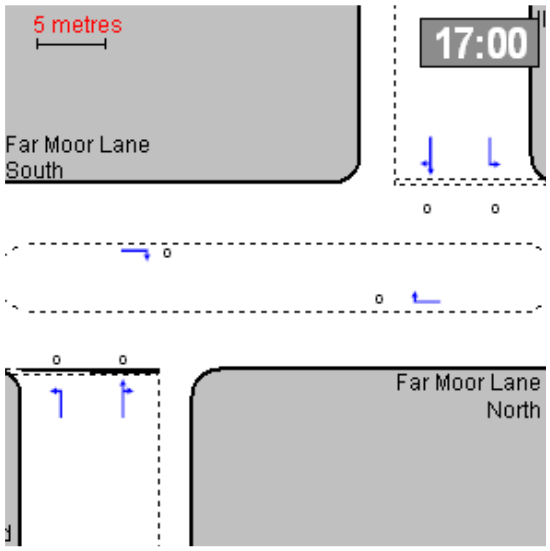
From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	10.0	10.0	10.0
Arm B	10.0	-	10.0	10.0
Arm C	10.0	10.0	-	10.0
Arm D	10.0	10.0	10.0	-

Default proportions of heavy vehicles are used

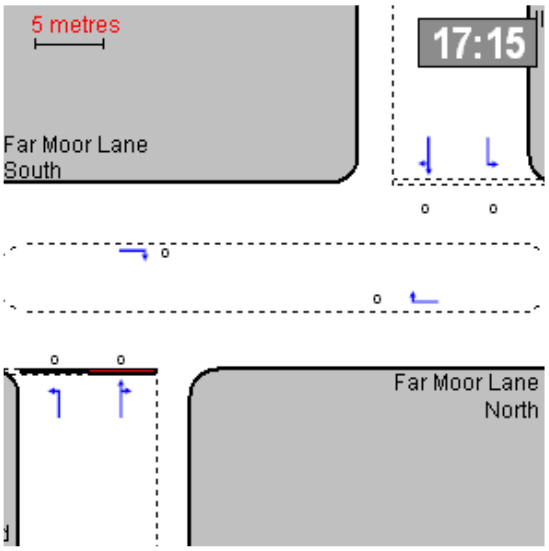
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15
View Extent: 40m

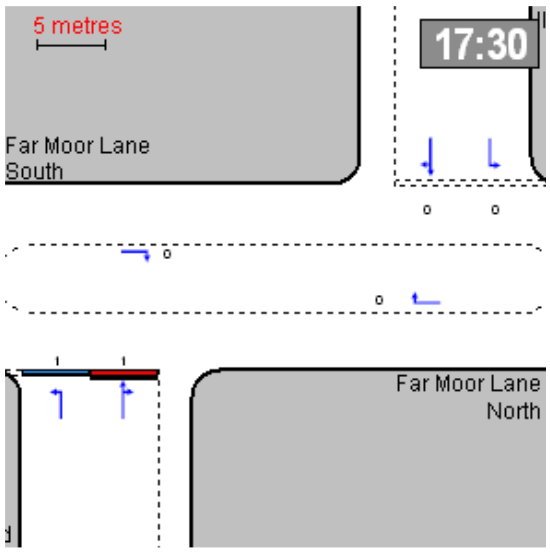
Queue Interval 1: 16:45-17:00



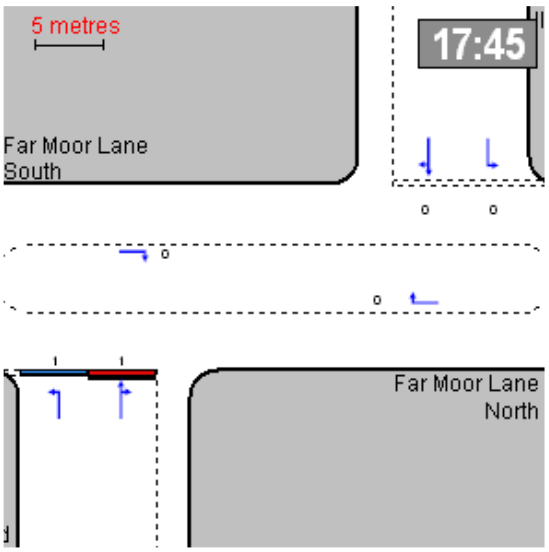
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

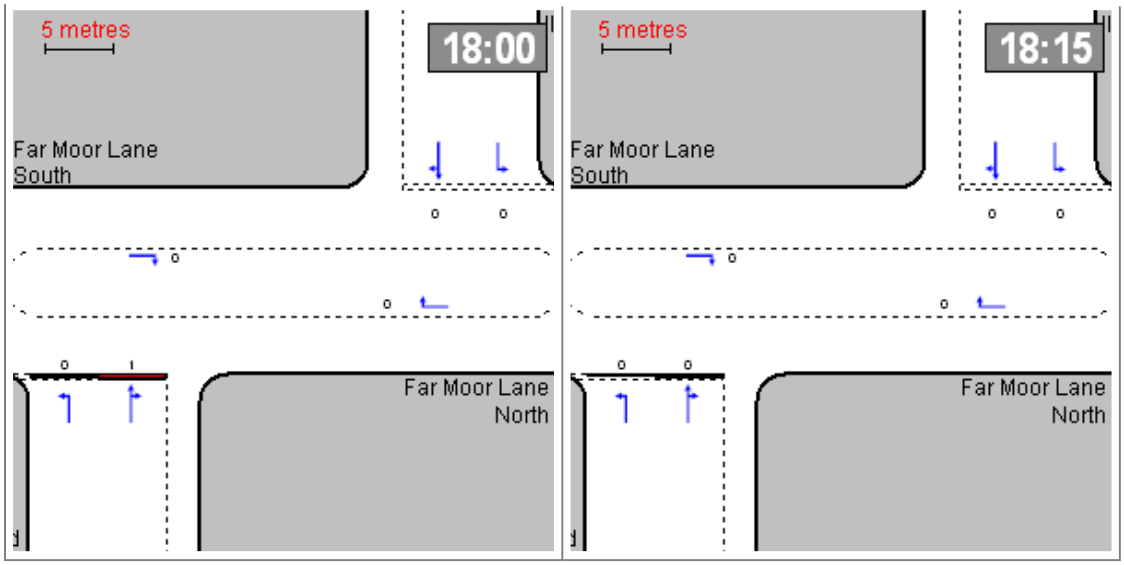


Queue Interval 4: 17:30-17:45



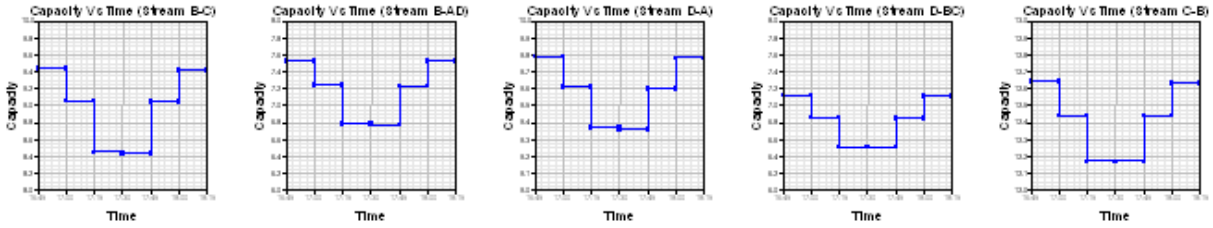
Queue Interval 5: 17:45-18:00

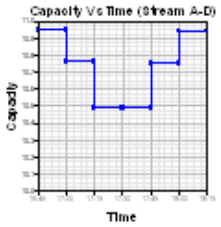
Queue Interval 6: 18:00-18:15



Capacity Graph

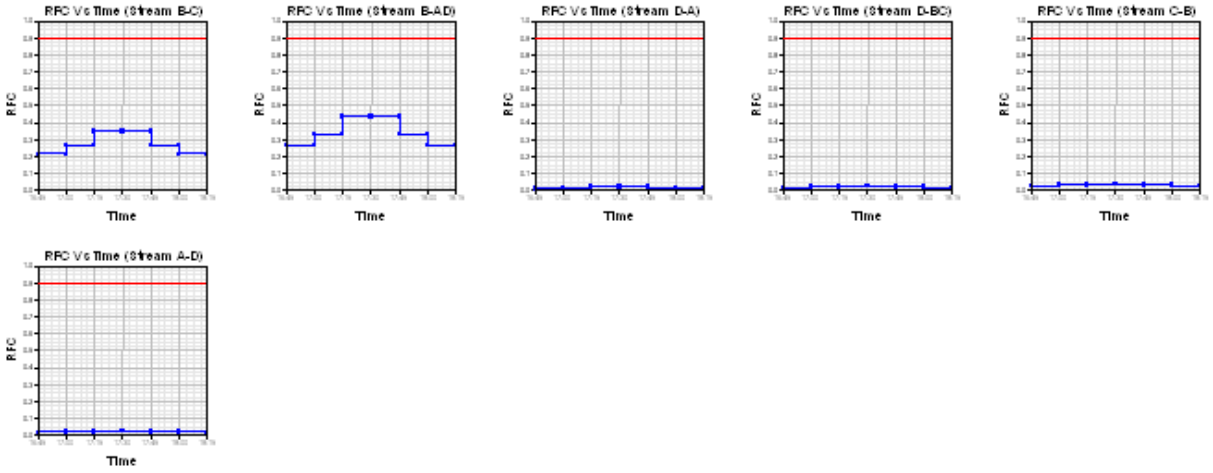
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15





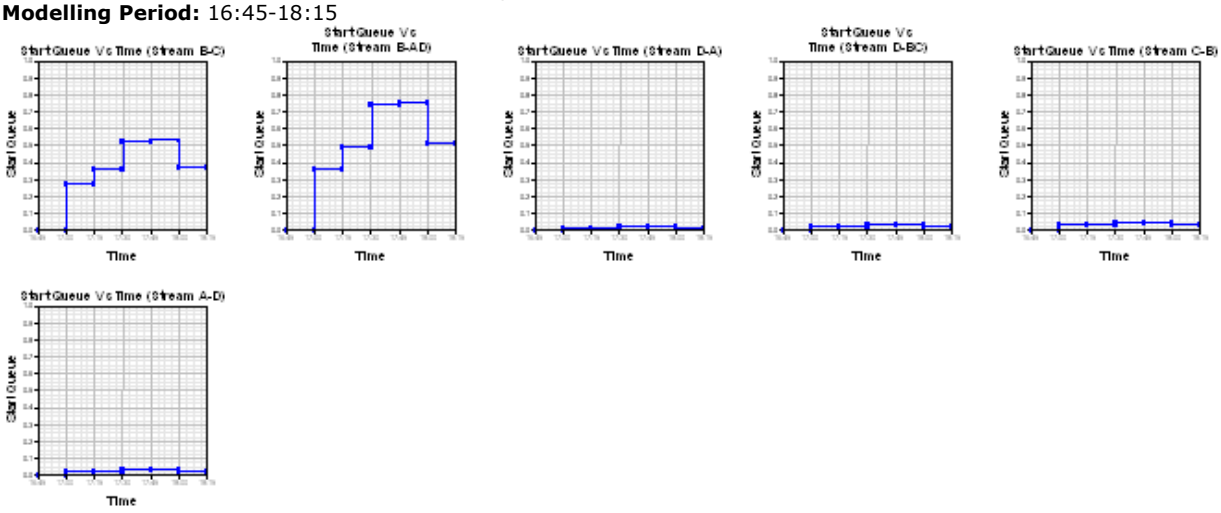
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



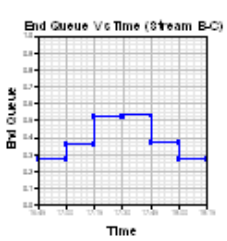
Start Queue Graph

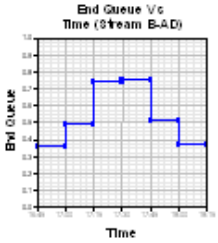
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

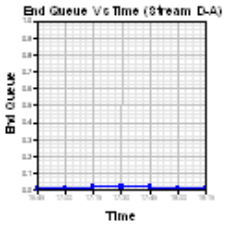


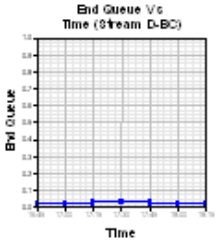
End Queue Graph

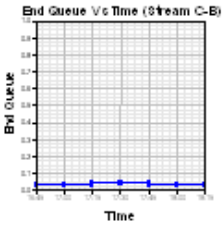
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

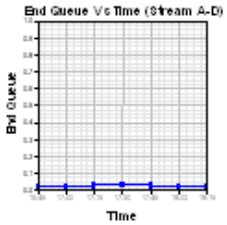






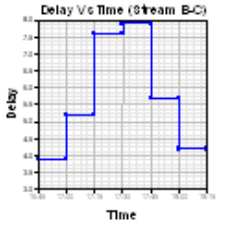


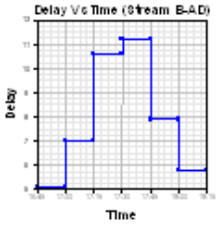


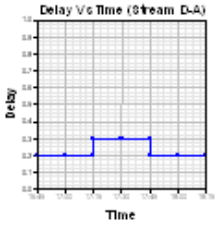


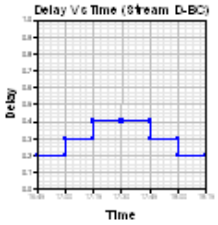
Delay Graph

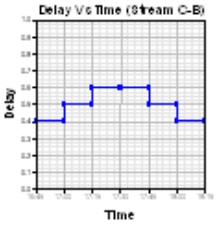
Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

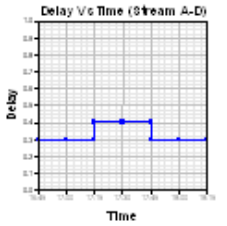












Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-C	2.01	9.44	0.213	-	0.00	0.27	-	3.9	0.13
	B-AD	2.01	7.52	0.267	-	0.00	0.36	-	5.1	0.18
	D-A	0.11	9.79	0.012	-	0.00	0.01	-	0.2	0.10
	D-BC	0.11	7.12	0.016	-	0.00	0.02	-	0.2	0.14
	C-A	1.49	-	-	-	-	-	-	-	-
	C-B	0.31	12.64	0.025	-	0.00	0.03	-	0.4	0.08
	C-D	0.19	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	2.81	-	-	-	-	-	-	-	-
	A-D	0.19	10.95	0.017	-	0.00	0.02	-	0.3	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-C	2.40	9.05	0.265	-	0.27	0.36	-	5.2	0.15
	B-AD	2.40	7.24	0.331	-	0.36	0.49	-	7.0	0.21
	D-A	0.13	9.61	0.014	-	0.01	0.01	-	0.2	0.11
	D-BC	0.13	6.86	0.020	-	0.02	0.02	-	0.3	0.15
	C-A	1.78	-	-	-	-	-	-	-	-
	C-B	0.37	12.44	0.030	-	0.03	0.03	-	0.5	0.08
	C-D	0.22	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	3.36	-	-	-	-	-	-	-	-
	A-D	0.22	10.76	0.021	-	0.02	0.02	-	0.3	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-C	2.94	8.45	0.348	-	0.36	0.52	-	7.6	0.18
	B-AD	2.94	6.78	0.433	-	0.49	0.74	-	10.6	0.26
	D-A	0.17	9.37	0.018	-	0.01	0.02	-	0.3	0.11
	D-BC	0.17	6.51	0.025	-	0.02	0.03	-	0.4	0.16
	C-A	2.18	-	-	-	-	-	-	-	-
	C-B	0.46	12.17	0.038	-	0.03	0.04	-	0.6	0.09
	C-D	0.28	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	4.11	-	-	-	-	-	-	-	-
	A-D	0.28	10.49	0.026	-	0.02	0.03	-	0.4	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-C	2.94	8.43	0.348	-	0.52	0.53	-	7.9	0.18
	B-AD	2.94	6.77	0.433	-	0.74	0.75	-	11.2	0.26
	D-A	0.17	9.36	0.018	-	0.02	0.02	-	0.3	0.11
	D-BC	0.17	6.51	0.025	-	0.03	0.03	-	0.4	0.16
	C-A	2.18	-	-	-	-	-	-	-	-
	C-B	0.46	12.17	0.038	-	0.04	0.04	-	0.6	0.09

	C-D	0.28	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	4.11	-	-	-	-	-	-	-	-
	A-D	0.28	10.49	0.026	-	0.03	0.03	-	0.4	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-C	2.40	9.04	0.265	-	0.53	0.37	-	5.7	0.15
	B-AD	2.40	7.23	0.331	-	0.75	0.51	-	7.9	0.21
	D-A	0.13	9.60	0.014	-	0.02	0.01	-	0.2	0.11
	D-BC	0.13	6.85	0.020	-	0.03	0.02	-	0.3	0.15
	C-A	1.78	-	-	-	-	-	-	-	-
	C-B	0.37	12.44	0.030	-	0.04	0.03	-	0.5	0.08
	C-D	0.22	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	3.36	-	-	-	-	-	-	-	-
	A-D	0.22	10.75	0.021	-	0.03	0.02	-	0.3	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-C	2.01	9.42	0.213	-	0.37	0.27	-	4.2	0.14
	B-AD	2.01	7.52	0.267	-	0.51	0.37	-	5.8	0.18
	D-A	0.11	9.78	0.012	-	0.01	0.01	-	0.2	0.10
	D-BC	0.11	7.11	0.016	-	0.02	0.02	-	0.2	0.14
	C-A	1.49	-	-	-	-	-	-	-	-
	C-B	0.31	12.63	0.025	-	0.03	0.03	-	0.4	0.08
	C-D	0.19	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	2.81	-	-	-	-	-	-	-	-
	A-D	0.19	10.94	0.017	-	0.02	0.02	-	0.3	0.09

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-C	220.2	146.8	34.4	0.2	34.4	0.2
B-AD	220.2	146.8	47.6	0.2	47.6	0.2
D-A	12.4	8.3	1.3	0.1	1.3	0.1
D-BC	12.4	8.3	1.8	0.1	1.8	0.1
C-A	163.8	109.2	-	-	-	-
C-B	34.4	22.9	2.9	0.1	2.9	0.1
C-D	20.6	13.8	-	-	-	-
A-B	34.4	22.9	-	-	-	-
A-C	308.3	205.5	-	-	-	-
A-D	20.6	13.8	2.0	0.1	2.0	0.1
All	**1047.5**	**698.3**	**90.0**	**0.1**	**90.0**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

PICADY
GUI Version: 5.00 AC Analysis Program Release: 3.0 INTERIM (MAR 2006)
For sales and distribution information, program advice and maintenance, contact:
TRL Limited Crowthorne House Nine Mile Ride Wokingham, Berks. RG40 3GA, UK Tel: +44 (0)1344 770758 Fax:+44 (0)1344 770864 E-mail: softwarebureau@trl.co.uk Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Illshaw Close Staggered Crossroads\20000 BIC 2017 AM Peak.vpi
Date Run	23 September 2009
Time Run	16:05:27
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Far Moor Lane North	100
Arm B	RBC Land	100
Arm C	Far Moor Lane South	100
Arm D	Illshaw Close	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	20000 BIC 2017 AM Peak
Location	Redditch
Date	23 September 2009
Enumerator	Ibates [HP24852250691]
Job Number	835
Status	-
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

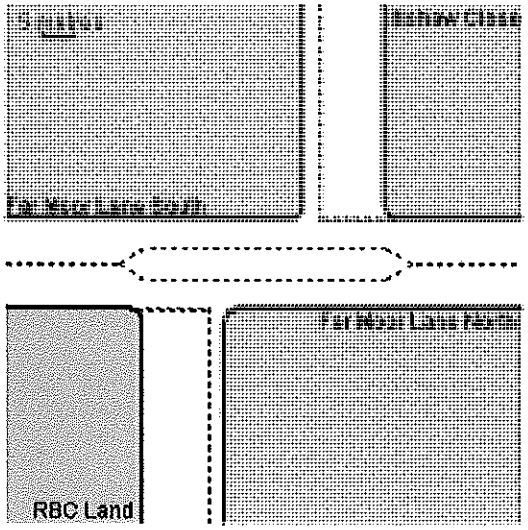
Parameter	Minor Arm B	Minor Arm D
Major Road Carriageway Width (m)	8.60	9.00
Major Road Kerbed Central Reserve Width (m)	0.00	0.00
Major Road Right Turning Lane Width (m)	5.00	3.50
Minor Road Width 0m Back from Junction (m)	10.00	10.00
Minor Road Width 5m Back from Junction (m)	10.00	4.75
Minor Road Width 10m Back from Junction (m)	6.50	2.50
Minor Road Width 15m Back from Junction (m)	4.50	2.50
Minor Road Width 20m Back from Junction (m)	3.50	2.50
Minor Road Flare Length (veh)	1	1
Minor Road Visibility To Right (m)	65	56
Minor Road Visibility To Left (m)	52	43
Major Road Right Turn Visibility (m)	200	200
Major Road Right Turn Blocks Traffic	No	No

Slope and Intercept Values

Stream	Intercept for Stream B-C	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
B-C	611.605	0.078	0.198	-	-	-	-	-	-	0.078	0.198
B-AD	484.467	0.083	0.210	-	-	-	0.124	0.283	0.124	0.083	0.210
D-A	606.393	0.081	-	-	-	-	0.204	-	-	0.081	0.204
D-BC	484.467	0.120	0.120	0.273	0.191	0.076	0.191	-	0.076	-	-
C-B	899.987	0.309	0.309	-	-	-	-	-	-	0.309	0.309
A-D	899.987	-	-	-	0.265	0.265	0.265	-	0.265	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:45-09:15	90	15

ODTAB Turning Counts

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 07:45-09:15

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	205.0	89.0	7.0
Arm B	20.0	0.0	20.0	0.0
Arm C	191.0	205.0	0.0	6.0
Arm D	21.0	0.0	21.0	0.0

ODTAB Synthesised Flows

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 07:45-09:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:00	3.763	08:00	5.644	08:30	3.763
Arm B	08:00	0.500	08:00	0.750	08:30	0.500
Arm C	08:00	5.025	08:00	7.538	08:30	5.025
Arm D	08:00	0.525	08:00	0.787	08:30	0.525

Heavy Vehicles Percentages

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 07:45-09:15

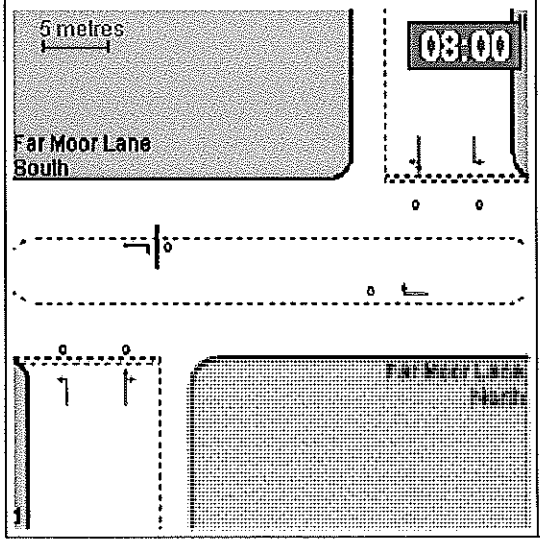
From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	10.0	10.0	10.0
Arm B	10.0	-	10.0	10.0
Arm C	10.0	10.0	-	10.0
Arm D	10.0	10.0	10.0	-

Default proportions of heavy vehicles are used

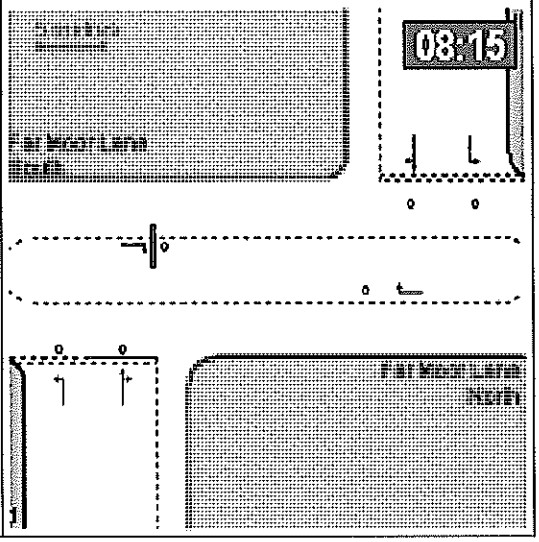
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15
View Extent: 40m

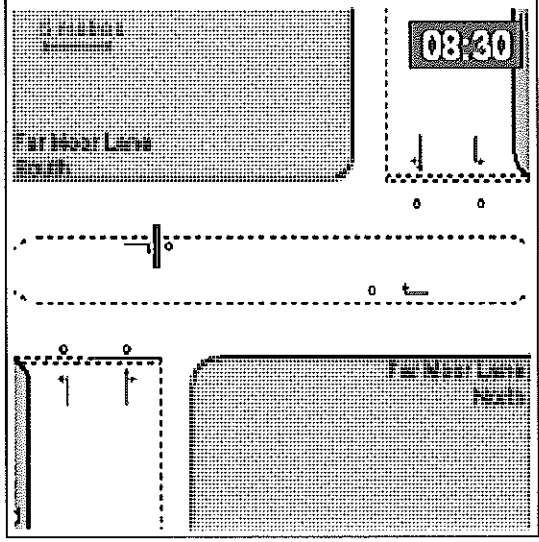
Queue Interval 1: 07:45-08:00



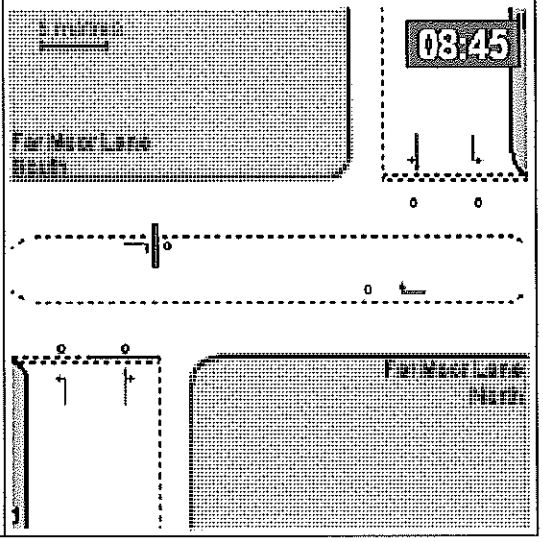
Queue Interval 2: 08:00-08:15



Queue Interval 3: 08:15-08:30

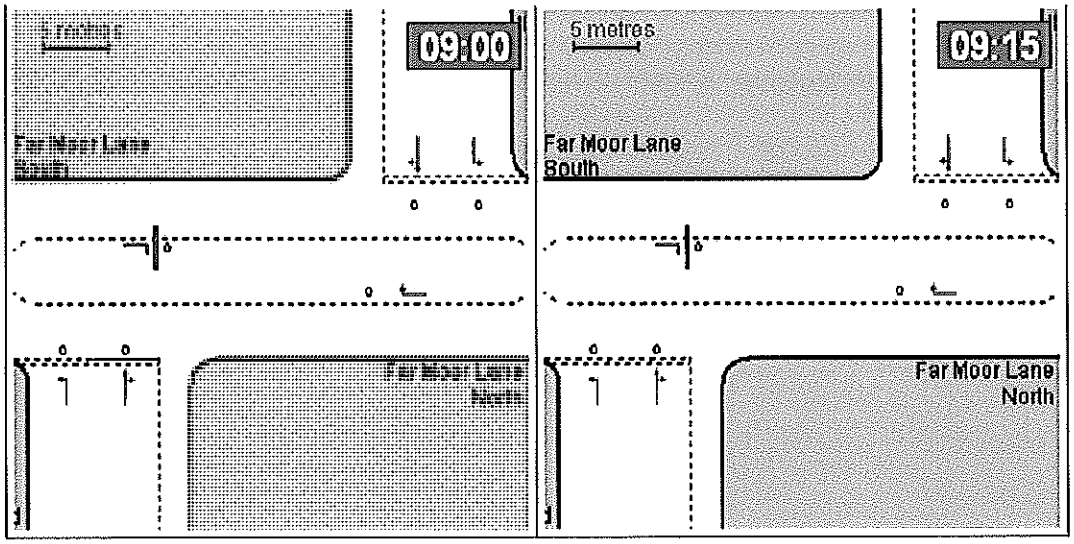


Queue Interval 4: 08:30-08:45



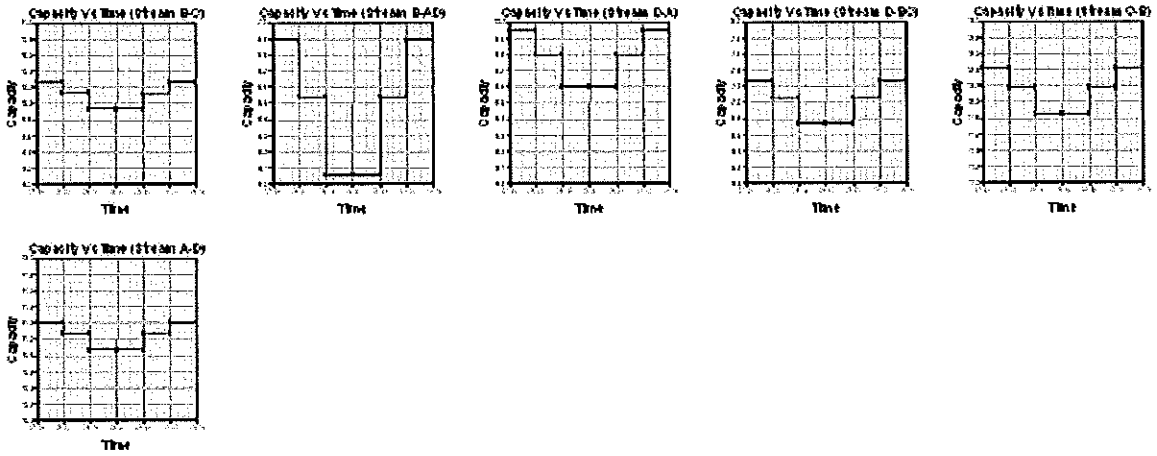
Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15



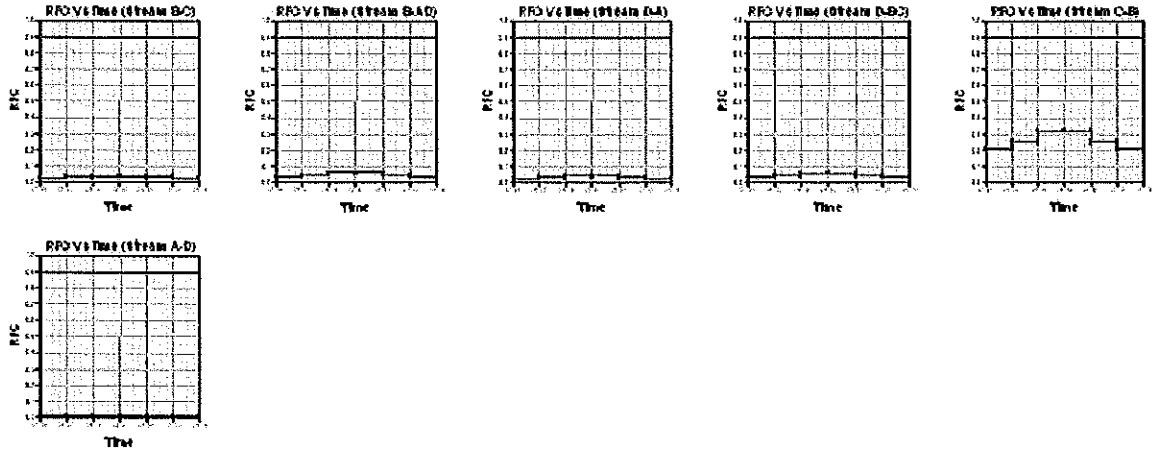
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



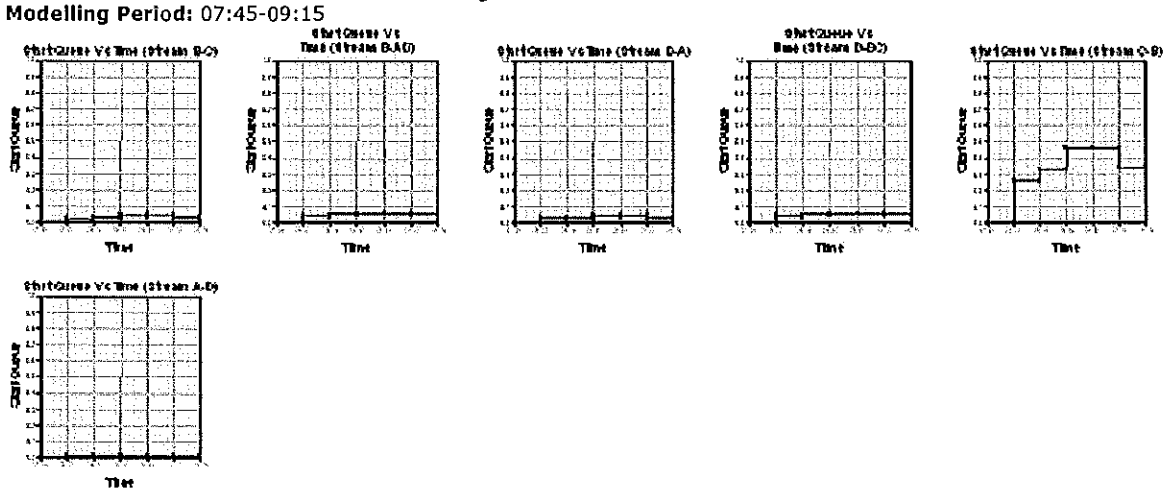
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



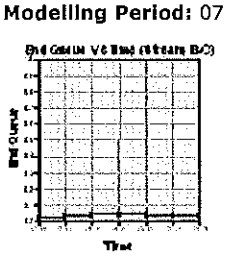
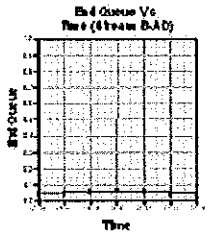
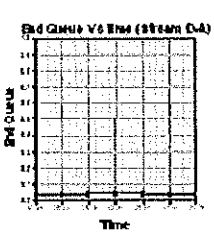
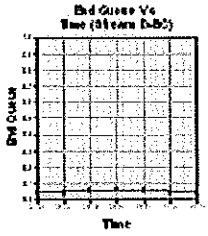
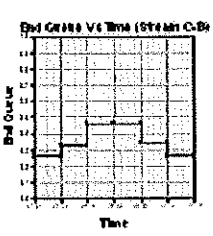
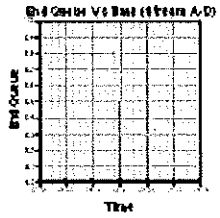
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



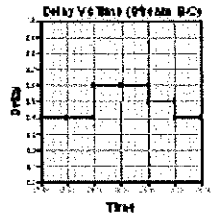
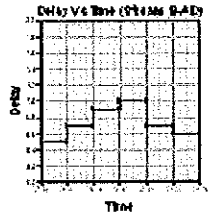
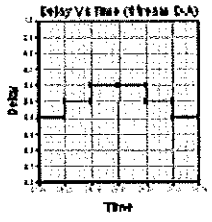
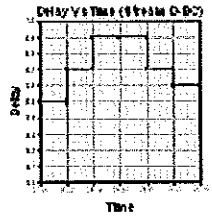
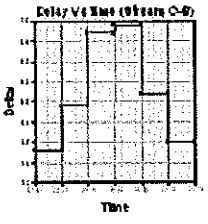
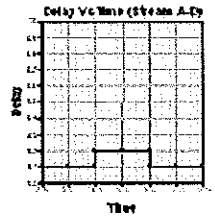
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-C	0.25	10.27	0.024	-	0.00	0.02	-	0.4	0.10
	B-AD	0.25	6.89	0.036	-	0.00	0.04	-	0.5	0.15
	D-A	0.26	9.95	0.026	-	0.00	0.03	-	0.4	0.10
	D-BC	0.26	7.27	0.036	-	0.00	0.04	-	0.5	0.14
	C-A	2.40	-	-	-	-	-	-	-	-
	C-B	2.57	12.41	0.207	-	0.00	0.26	-	3.8	0.10
	C-D	0.08	-	-	-	-	-	-	-	-
	A-B	2.57	-	-	-	-	-	-	-	-
	A-C	1.12	-	-	-	-	-	-	-	-
	A-D	0.09	11.21	0.008	-	0.00	0.01	-	0.1	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-C	0.30	10.13	0.030	-	0.02	0.03	-	0.4	0.10
	B-AD	0.30	6.54	0.046	-	0.04	0.05	-	0.7	0.16
	D-A	0.31	9.80	0.032	-	0.03	0.03	-	0.5	0.11
	D-BC	0.31	7.05	0.045	-	0.04	0.05	-	0.7	0.15
	C-A	2.86	-	-	-	-	-	-	-	-
	C-B	3.07	12.18	0.252	-	0.26	0.33	-	4.9	0.11
	C-D	0.09	-	-	-	-	-	-	-	-
	A-B	3.07	-	-	-	-	-	-	-	-
	A-C	1.33	-	-	-	-	-	-	-	-
	A-D	0.10	11.07	0.009	-	0.01	0.01	-	0.1	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-C	0.37	9.93	0.037	-	0.03	0.04	-	0.6	0.10
	B-AD	0.37	6.06	0.061	-	0.05	0.06	-	0.9	0.18
	D-A	0.39	9.60	0.040	-	0.03	0.04	-	0.6	0.11
	D-BC	0.39	6.74	0.057	-	0.05	0.06	-	0.9	0.16
	C-A	3.50	-	-	-	-	-	-	-	-
	C-B	3.76	11.85	0.318	-	0.33	0.46	-	6.7	0.12
	C-D	0.11	-	-	-	-	-	-	-	-
	A-B	3.76	-	-	-	-	-	-	-	-
	A-C	1.63	-	-	-	-	-	-	-	-
	A-D	0.13	10.87	0.012	-	0.01	0.01	-	0.2	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-C	0.37	9.93	0.037	-	0.04	0.04	-	0.6	0.10
	B-AD	0.37	6.06	0.061	-	0.06	0.06	-	1.0	0.18
	D-A	0.39	9.60	0.040	-	0.04	0.04	-	0.6	0.11
	D-BC	0.39	6.74	0.057	-	0.06	0.06	-	0.9	0.16
	C-A	3.50	-	-	-	-	-	-	-	-
	C-B	3.76	11.85	0.318	-	0.46	0.46	-	6.9	0.12

	C-D	0.11	-	-	-	-	-	-	-	-
	A-B	3.76	-	-	-	-	-	-	-	-
	A-C	1.63	-	-	-	-	-	-	-	-
	A-D	0.13	10.87	0.012	-	0.01	0.01	-	0.2	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-C	0.30	10.12	0.030	-	0.04	0.03	-	0.5	0.10
	B-AD	0.30	6.54	0.046	-	0.06	0.05	-	0.7	0.16
	D-A	0.31	9.80	0.032	-	0.04	0.03	-	0.5	0.11
	D-BC	0.31	7.05	0.045	-	0.06	0.05	-	0.7	0.15
	C-A	2.86	-	-	-	-	-	-	-	-
	C-B	3.07	12.18	0.252	-	0.46	0.34	-	5.2	0.11
	C-D	0.09	-	-	-	-	-	-	-	-
	A-B	3.07	-	-	-	-	-	-	-	-
	A-C	1.33	-	-	-	-	-	-	-	-
	A-D	0.10	11.07	0.009	-	0.01	0.01	-	0.1	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-C	0.25	10.26	0.024	-	0.03	0.03	-	0.4	0.10
	B-AD	0.25	6.89	0.036	-	0.05	0.04	-	0.6	0.15
	D-A	0.26	9.95	0.026	-	0.03	0.03	-	0.4	0.10
	D-BC	0.26	7.27	0.036	-	0.05	0.04	-	0.6	0.14
	C-A	2.40	-	-	-	-	-	-	-	-
	C-B	2.57	12.41	0.207	-	0.34	0.26	-	4.0	0.10
	C-D	0.08	-	-	-	-	-	-	-	-
	A-B	2.57	-	-	-	-	-	-	-	-
	A-C	1.12	-	-	-	-	-	-	-	-
	A-D	0.09	11.21	0.008	-	0.01	0.01	-	0.1	0.09

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-C	27.5	18.4	2.8	0.1	2.8	0.1
B-AD	27.5	18.4	4.5	0.2	4.5	0.2
D-A	28.9	19.3	3.0	0.1	3.0	0.1
D-BC	28.9	19.3	4.3	0.1	4.3	0.1
C-A	262.9	175.3	-	-	-	-
C-B	282.2	188.1	31.6	0.1	31.6	0.1
C-D	8.3	5.5	-	-	-	-
A-B	282.2	188.1	-	-	-	-
A-C	122.5	81.7	-	-	-	-
A-D	9.6	6.4	0.9	0.1	0.9	0.1
All	**1080.5**	**720.3**	**47.1**	**0.0**	**47.1**	**0.0**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

PICADY 5 Run Successful

PICADY

GUI Version: 5.00 AC
Analysis Program Release: 3.0 INTERIM (MAR 2006)

For sales and distribution information, program advice and maintenance, contact:

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Crowthorne House
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Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	G:\..\Far Moor Lane Illshaw Close Staggered Crossroads\20000 BIC 2017 PM Peak.vpi
Date Run	23 September 2009
Time Run	16:07:25
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Far Moor Lane North	100
Arm B	RBC Land	100
Arm C	Far Moor Lane South	100
Arm D	Illshaw Close	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	20000 BIC 2017 PM Peak
Location	Redditch
Date	23 September 2009
Enumerator	Ibates [HP24852250691]
Job Number	835
Status	-
Client	Redditch Borough Council
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

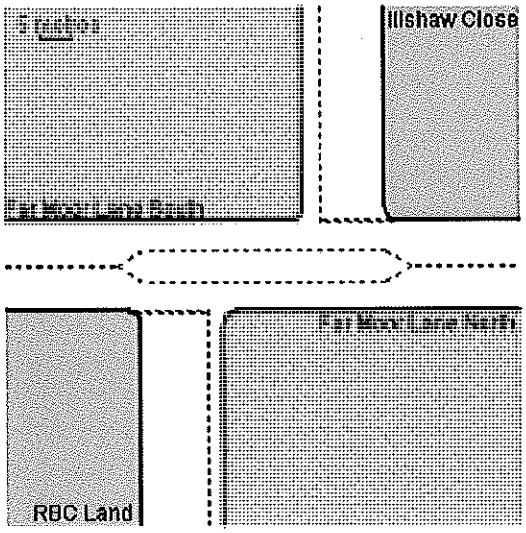
Parameter	Minor Arm B	Minor Arm D
Major Road Carriageway Width (m)	8.60	9.00
Major Road Kerbed Central Reserve Width (m)	0.00	0.00
Major Road Right Turning Lane Width (m)	5.00	3.50
Minor Road Width 0m Back from Junction (m)	10.00	10.00
Minor Road Width 5m Back from Junction (m)	10.00	4.75
Minor Road Width 10m Back from Junction (m)	6.50	2.50
Minor Road Width 15m Back from Junction (m)	4.50	2.50
Minor Road Width 20m Back from Junction (m)	3.50	2.50
Minor Road Flare Length (veh)	1	1
Minor Road Visibility To Right (m)	65	56
Minor Road Visibility To Left (m)	52	43
Major Road Right Turn Visibility (m)	200	200
Major Road Right Turn Blocks Traffic	No	No

Slope and Intercept Values

Stream	Intercept for Stream B-C	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
B-C	611.605	0.078	0.198	-	-	-	-	-	-	0.078	0.198
B-AD	484.467	0.083	0.210	-	-	-	0.124	0.283	0.124	0.083	0.210
D-A	606.393	0.081	-	-	-	-	0.204	-	-	0.081	0.204
D-BC	484.467	0.120	0.120	0.273	0.191	0.076	0.191	-	0.076	-	-
C-B	899.987	0.309	0.309	-	-	-	-	-	-	0.309	0.309
A-D	899.987	-	-	-	0.265	0.265	0.265	-	0.265	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	25.0	224.0	15.0
Arm B	160.0	0.0	160.0	0.0
Arm C	119.0	25.0	0.0	15.0
Arm D	9.0	0.0	9.0	0.0

ODTAB Synthesised Flows

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	17:00	3.300	17:00	4.950	17:30	3.300
Arm B	17:00	4.000	17:00	6.000	17:30	4.000
Arm C	17:00	1.987	17:00	2.981	17:30	1.987
Arm D	17:00	0.225	17:00	0.337	17:30	0.225

Heavy Vehicles Percentages

Demand Set: 20000 BIC 2017 AM Peak
Modelling Period: 16:45-18:15

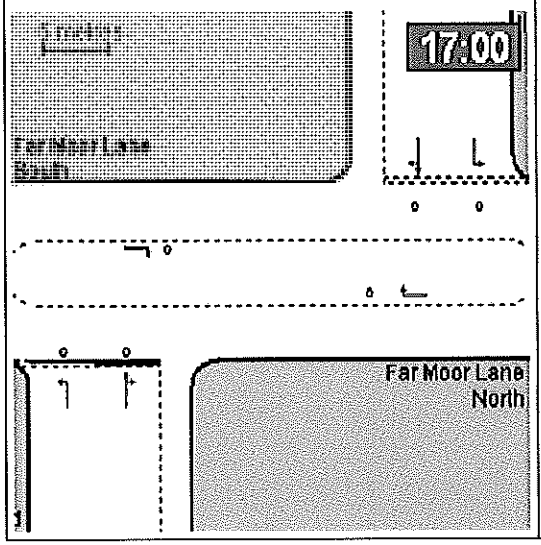
From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	10.0	10.0	10.0
Arm B	10.0	-	10.0	10.0
Arm C	10.0	10.0	-	10.0
Arm D	10.0	10.0	10.0	-

Default proportions of heavy vehicles are used

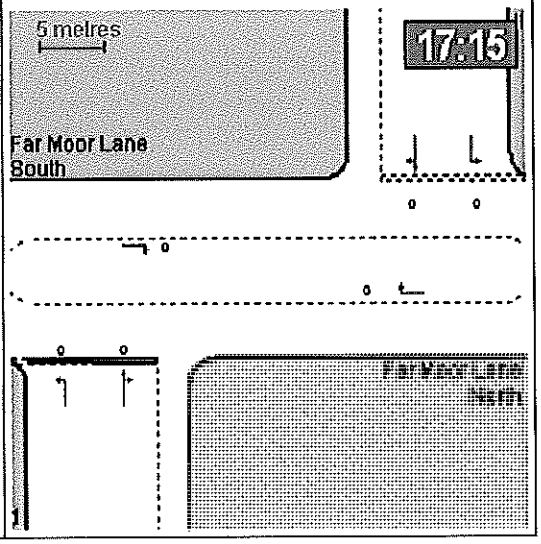
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15
View Extent: 40m

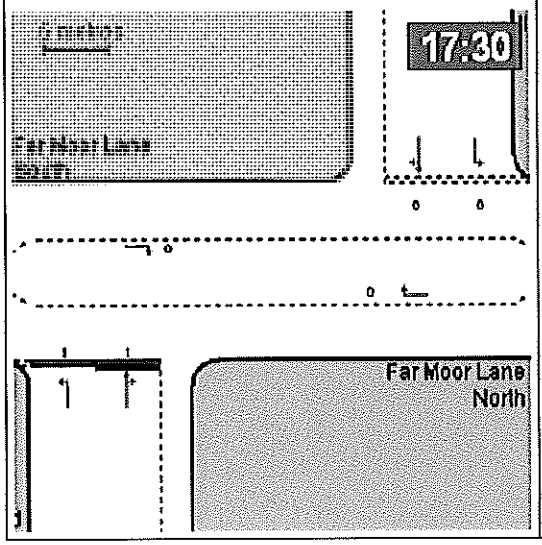
Queue Interval 1: 16:45-17:00



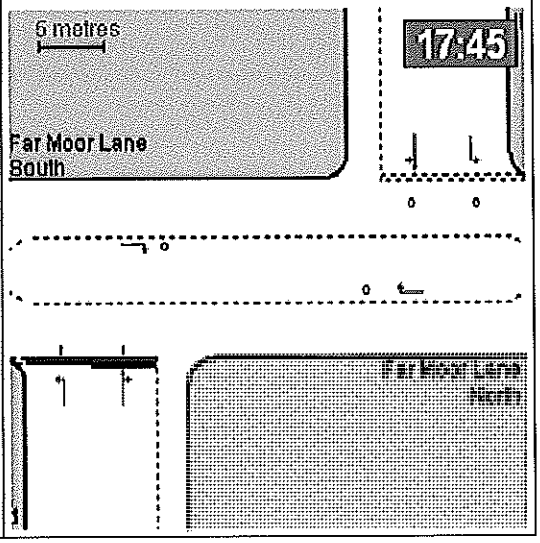
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

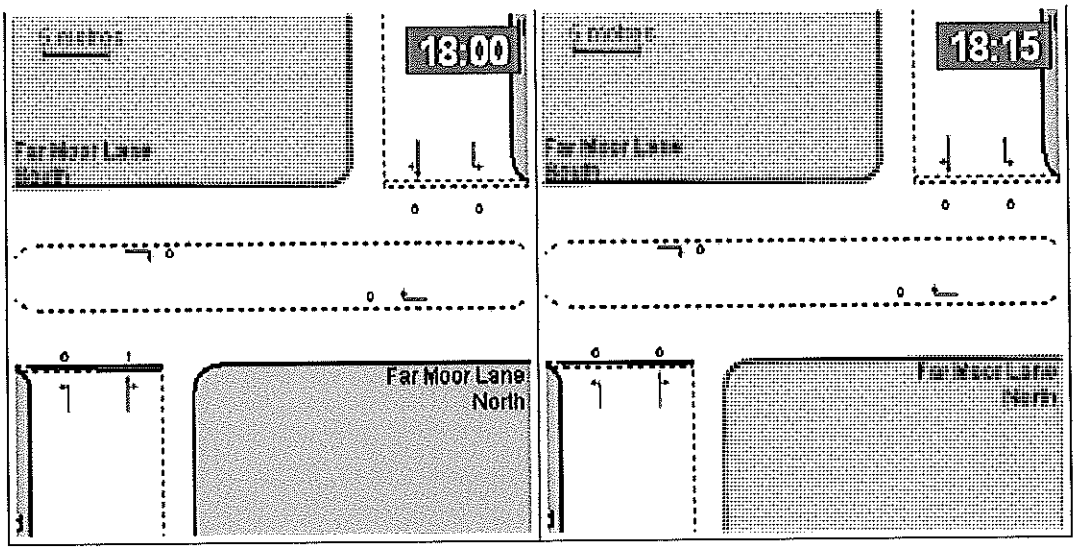


Queue Interval 4: 17:30-17:45



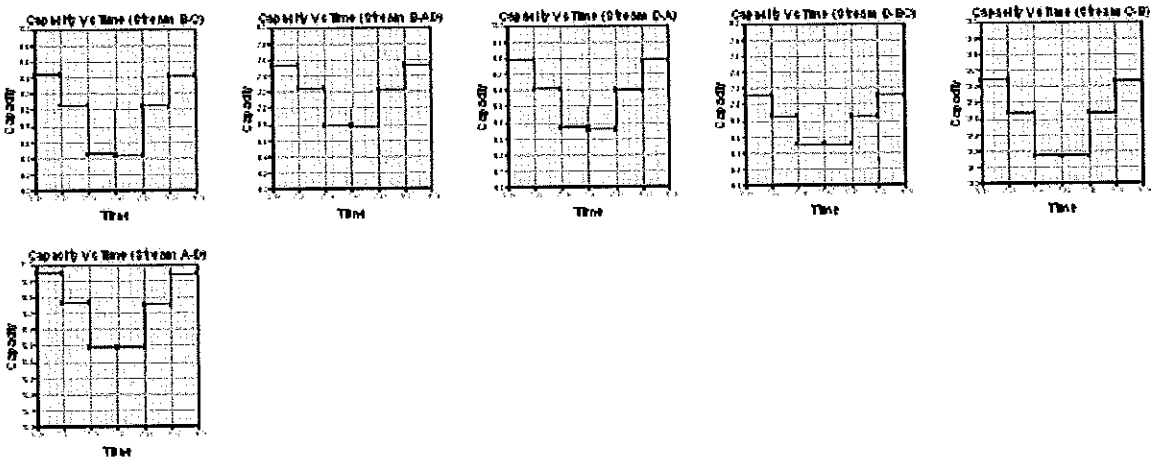
Queue Interval 5: 17:45-18:00

Queue Interval 6: 18:00-18:15



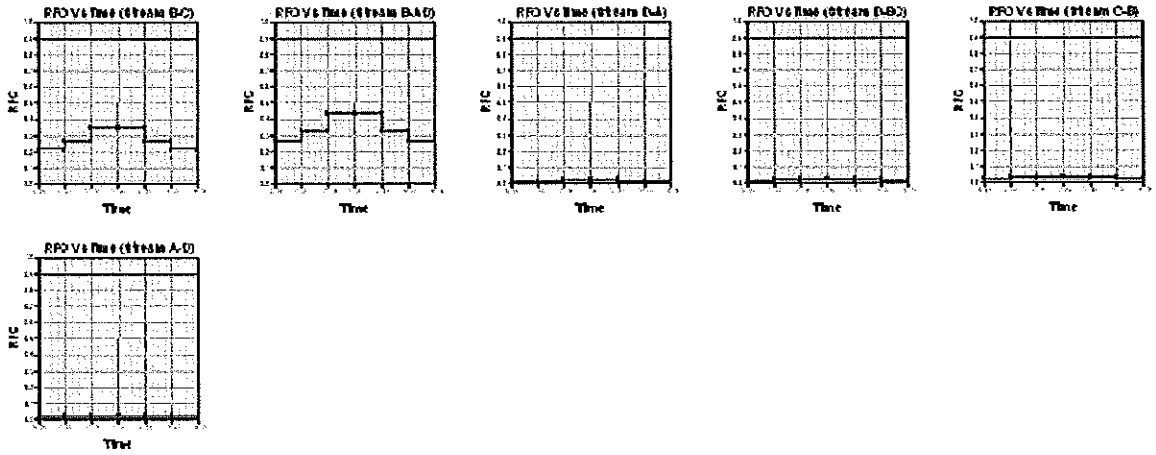
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



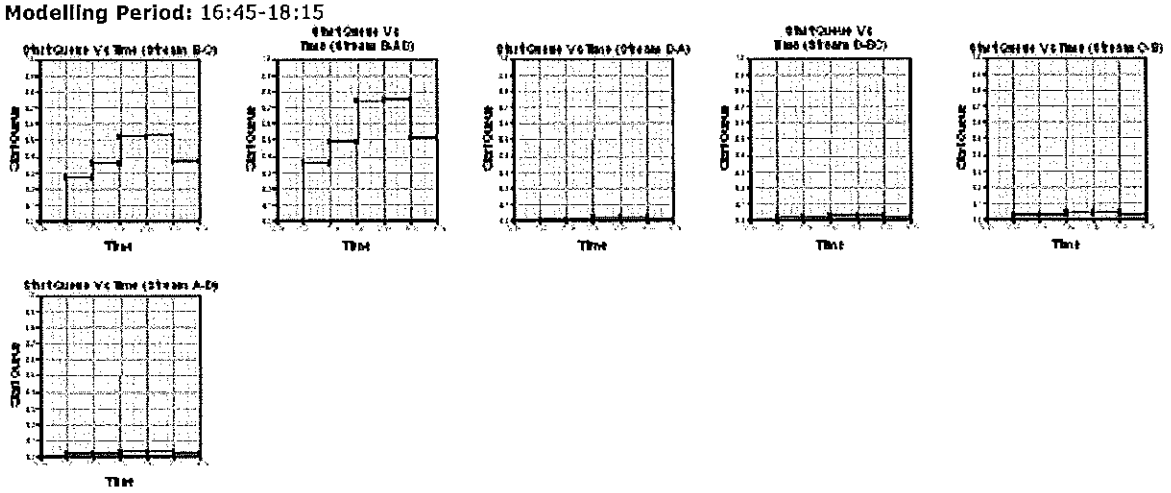
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



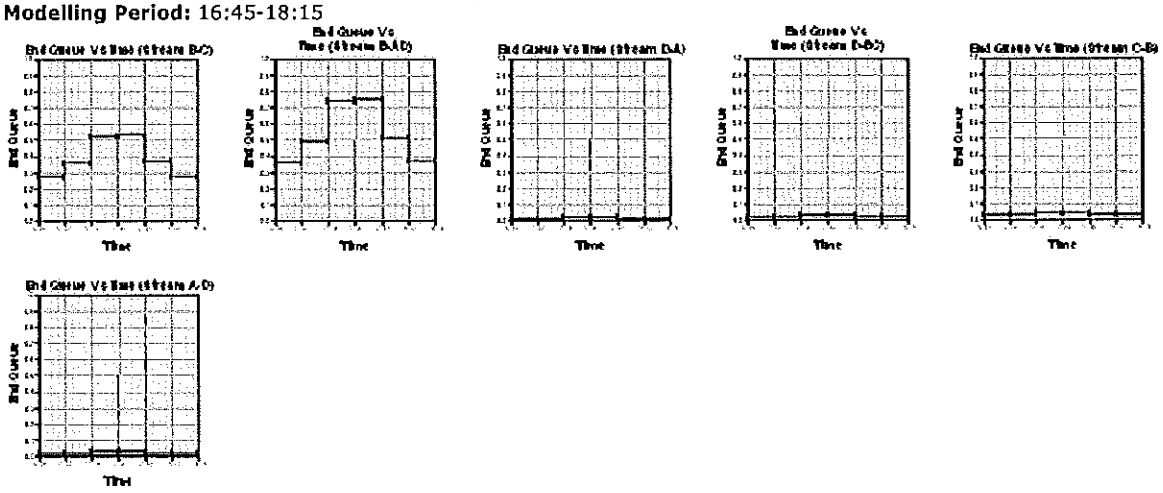
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



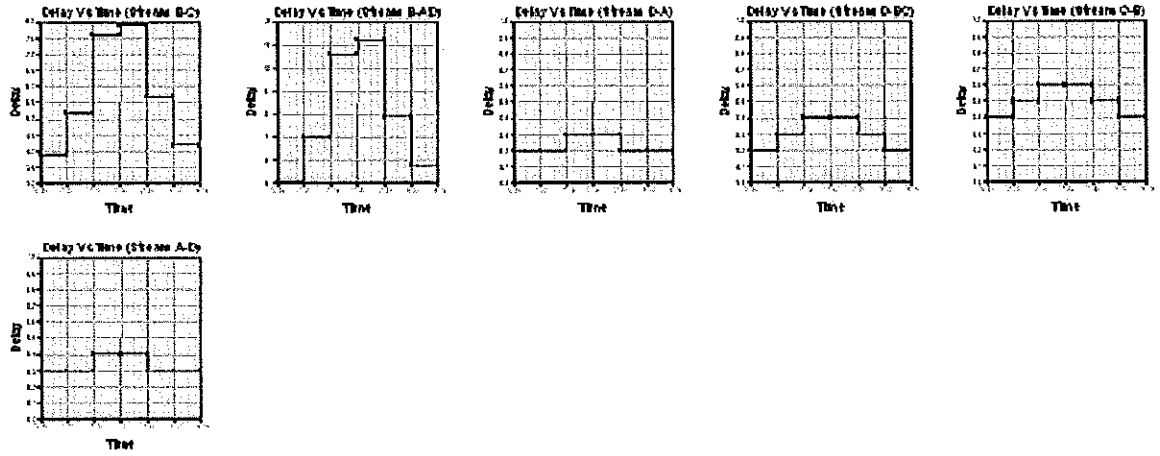
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-C	2.01	9.44	0.213	-	0.00	0.27	-	3.9	0.13
	B-AD	2.01	7.52	0.267	-	0.00	0.36	-	5.1	0.18
	D-A	0.11	9.79	0.012	-	0.00	0.01	-	0.2	0.10
	D-BC	0.11	7.12	0.016	-	0.00	0.02	-	0.2	0.14
	C-A	1.49	-	-	-	-	-	-	-	-
	C-B	0.31	12.64	0.025	-	0.00	0.03	-	0.4	0.08
	C-D	0.19	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	2.81	-	-	-	-	-	-	-	-
	A-D	0.19	10.95	0.017	-	0.00	0.02	-	0.3	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-C	2.40	9.05	0.265	-	0.27	0.36	-	5.2	0.15
	B-AD	2.40	7.24	0.331	-	0.36	0.49	-	7.0	0.21
	D-A	0.13	9.61	0.014	-	0.01	0.01	-	0.2	0.11
	D-BC	0.13	6.86	0.020	-	0.02	0.02	-	0.3	0.15
	C-A	1.78	-	-	-	-	-	-	-	-
	C-B	0.37	12.44	0.030	-	0.03	0.03	-	0.5	0.08
	C-D	0.22	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	3.36	-	-	-	-	-	-	-	-
	A-D	0.22	10.76	0.021	-	0.02	0.02	-	0.3	0.09

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-C	2.94	8.45	0.348	-	0.36	0.52	-	7.6	0.18
	B-AD	2.94	6.78	0.433	-	0.49	0.74	-	10.6	0.26
	D-A	0.17	9.37	0.018	-	0.01	0.02	-	0.3	0.11
	D-BC	0.17	6.51	0.025	-	0.02	0.03	-	0.4	0.16
	C-A	2.18	-	-	-	-	-	-	-	-
	C-B	0.46	12.17	0.038	-	0.03	0.04	-	0.6	0.09
	C-D	0.28	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	4.11	-	-	-	-	-	-	-	-
	A-D	0.28	10.49	0.026	-	0.02	0.03	-	0.4	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-C	2.94	8.43	0.348	-	0.52	0.53	-	7.9	0.18
	B-AD	2.94	6.77	0.433	-	0.74	0.75	-	11.2	0.26
	D-A	0.17	9.36	0.018	-	0.02	0.02	-	0.3	0.11
	D-BC	0.17	6.51	0.025	-	0.03	0.03	-	0.4	0.16
	C-A	2.18	-	-	-	-	-	-	-	-
	C-B	0.46	12.17	0.038	-	0.04	0.04	-	0.6	0.09

	C-D	0.28	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	4.11	-	-	-	-	-	-	-	-
	A-D	0.28	10.49	0.026	-	0.03	0.03	-	0.4	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-C	2.40	9.04	0.265	-	0.53	0.37	-	5.7	0.15
	B-AD	2.40	7.23	0.331	-	0.75	0.51	-	7.9	0.21
	D-A	0.13	9.60	0.014	-	0.02	0.01	-	0.2	0.11
	D-BC	0.13	6.85	0.020	-	0.03	0.02	-	0.3	0.15
	C-A	1.78	-	-	-	-	-	-	-	-
	C-B	0.37	12.44	0.030	-	0.04	0.03	-	0.5	0.08
	C-D	0.22	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	3.36	-	-	-	-	-	-	-	-
	A-D	0.22	10.75	0.021	-	0.03	0.02	-	0.3	0.10

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-C	2.01	9.42	0.213	-	0.37	0.27	-	4.2	0.14
	B-AD	2.01	7.52	0.267	-	0.51	0.37	-	5.8	0.18
	D-A	0.11	9.78	0.012	-	0.01	0.01	-	0.2	0.10
	D-BC	0.11	7.11	0.016	-	0.02	0.02	-	0.2	0.14
	C-A	1.49	-	-	-	-	-	-	-	-
	C-B	0.31	12.63	0.025	-	0.03	0.03	-	0.4	0.08
	C-D	0.19	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	2.81	-	-	-	-	-	-	-	-
	A-D	0.19	10.94	0.017	-	0.02	0.02	-	0.3	0.09

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 16:45 - 18:15
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-C	220.2	146.8	34.4	0.2	34.4	0.2
B-AD	220.2	146.8	47.6	0.2	47.6	0.2
D-A	12.4	8.3	1.3	0.1	1.3	0.1
D-BC	12.4	8.3	1.8	0.1	1.8	0.1
C-A	163.8	109.2	-	-	-	-
C-B	34.4	22.9	2.9	0.1	2.9	0.1
C-D	20.6	13.8	-	-	-	-
A-B	34.4	22.9	-	-	-	-
A-C	308.3	205.5	-	-	-	-
A-D	20.6	13.8	2.0	0.1	2.0	0.1
All	**1047.5**	**698.3**	**90.0**	**0.1**	**90.0**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing 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.

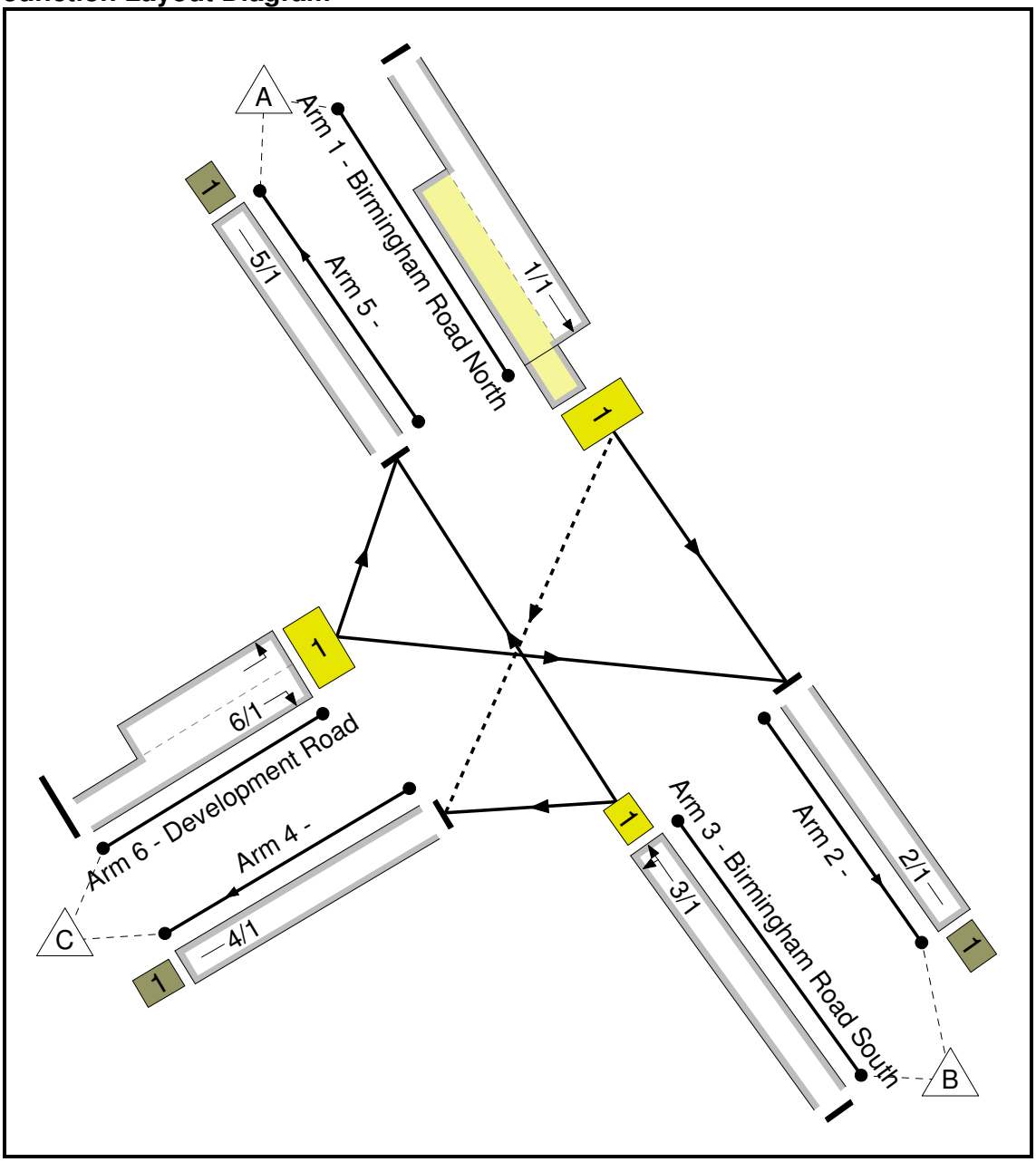
PICADY 5 Run Successful

Full Input Data And Results

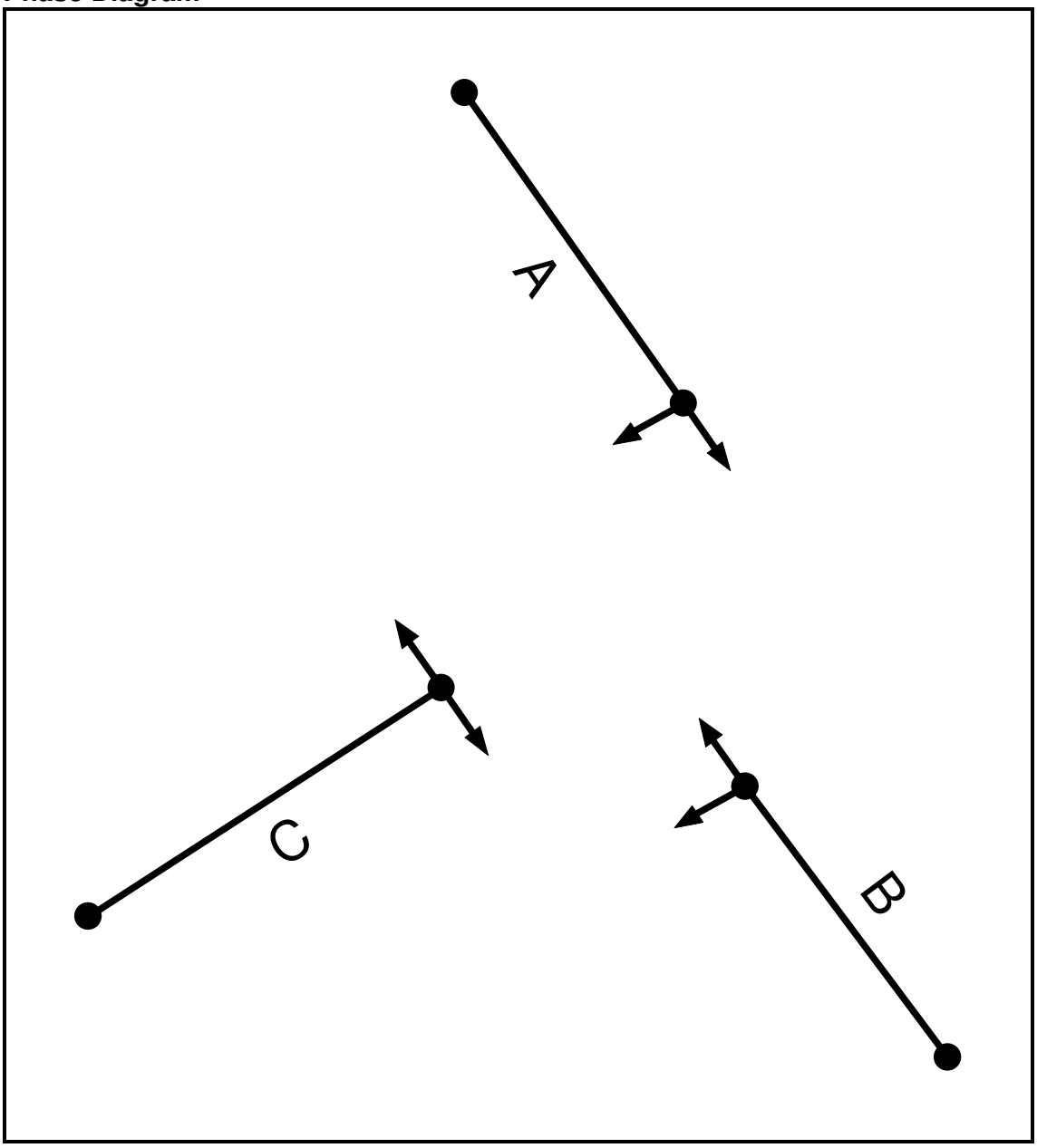
User and Project Details

Project:	**Transport Assessment**
Title:	**Redditch Borough Council**
Location:	A435 Birmingham Road
File name:	A435 Birmingham Road.lsgx
Author:	Adam Gibbs
Company:	Morgan Tucker
Address:	Aura Commerce and Technology Centre, Manners Road, Newark, Nottinghamshire, NG24 1BS
Controller:	Generic
SCN:	
Notes:	

Junction Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase type	Assoc Phase	Street Min	Cont Min
A	Traffic		7	6
B	Traffic		7	7
C	Traffic		7	7

Full Input Data And Results

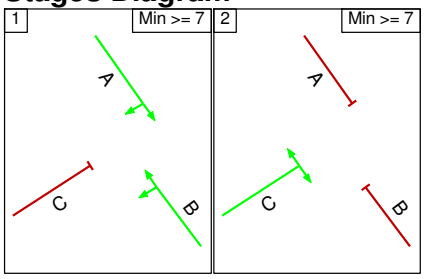
Phase Intergreens Matrix

		Starting Phase		
		A	B	C
Terminating Phase	A		-	5
	B	-		6
	C	5	5	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C

Stages Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	1	1

Prohibited Stage Changes

		To Stage	
		1	2
From Stage	1		6
	2	5	

Link Input Data

Arm/ Link	Link Name	Link Type	Num Lanes	Phases	Start Disp.	End Disp.
1/1	Birmingham Road North Ahead Right	O	1	A	2	3
2/1		U	1		2	3
3/1	Birmingham Road South Left Ahead	U	1	B	2	3
4/1		U	1		2	3
5/1		U	1		2	3
6/1	Development Road Right Left	U	2	C	2	3

Give-Way Link Input Data

Arm/ Link	Link Name	Movement	Max Flow when Giving Way (PCU/Hr)	Opposing Link	Opp. Link Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up time (s)	Max Turns in Intergreen (PCU)
1/1	Birmingham Road North Ahead Right	1/1 to 4/1	1440	3/1	1.09	3/1	2.00	10.00	0.50	2	2.00

Lane Input Data

Arm/ Lane	Link Num	Physical Length (PCU)	Expected Usage (PCU)	Sat Flow Type	User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turni Radii (m)
1/1 (Birmingham Road North Lane 1)	Link 1 (Birmingham Road North Ahead Right)	Inf	Inf	User	1900	3.25	0.00	Y	Arm 2 Ahead	Inf
2/1	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
3/1 (Birmingham Road South Lane 1)	Link 1 (Birmingham Road South Left Ahead)	Inf	Inf	User	1800	3.25	0.00	Y	Arm 4 Left Arm 5 Ahead	Inf Inf
4/1	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
5/1	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
6/1 (Development Road Lane 1)	Link 1 (Development Road Right Left)	5.0	7.0	User	1800	3.25	0.00	Y	Arm 5 Left	Inf
6/2 (Development Road Lane 2)	Link 1 (Development Road Right Left)	Inf	Inf	User	1800	3.25	0.00	Y	Arm 2 Right	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Am Peak 2017 '	08:00	09:00	01:00	
2: 'Pm Peak 2017'	17:00	18:00	01:00	

Flow Group 1: 'Am Peak 2017 '

Traffic Flow Matrix

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1109	205	1314
	B	1095	0	205	1300
	C	20	20	0	40
	Tot.	1115	1129	410	2654

Link Traffic Flows

Arm/Link	Flow Group 1: Am Peak 2017
1/1	1314
2/1	1129
3/1	1300
4/1	410
5/1	1115
6/1	40

Lane Saturation Flows

Arm/ Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Birmingham Road North Lane 1)	This lane uses a directly entered Saturation Flow						1900
2/1	Infinite Saturation Flow (on Exit Link)						Inf
3/1 (Birmingham Road South Lane 1)	This lane uses a directly entered Saturation Flow						1800
4/1	Infinite Saturation Flow (on Exit Link)						Inf
5/1	Infinite Saturation Flow (on Exit Link)						Inf
6/1 (Development Road Lane 1)	This lane uses a directly entered Saturation Flow						1800
6/2 (Development Road Lane 2)	This lane uses a directly entered Saturation Flow						1800

Flow Group 2: 'Pm Peak 2017'

Traffic Flow Matrix

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1217	26	1243
	B	1110	0	24	1134
	C	166	154	0	320
	Tot.	1276	1371	50	2697

Link Traffic Flows

Arm/Link	Flow Group 2: Pm Peak 2017
1/1	1243
2/1	1371
3/1	1134
4/1	50
5/1	1276
6/1	320

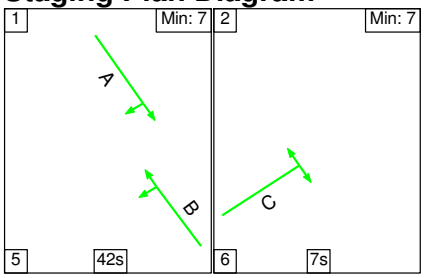
Lane Saturation Flows

Arm/ Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Birmingham Road North Lane 1)	This lane uses a directly entered Saturation Flow						1900
2/1	Infinite Saturation Flow (on Exit Link)						Inf
3/1 (Birmingham Road South Lane 1)	This lane uses a directly entered Saturation Flow						1800
4/1	Infinite Saturation Flow (on Exit Link)						Inf
5/1	Infinite Saturation Flow (on Exit Link)						Inf
6/1 (Development Road Lane 1)	This lane uses a directly entered Saturation Flow						1800
6/2 (Development Road Lane 2)	This lane uses a directly entered Saturation Flow						1800

Scenario 1: 'Scenario 1'

Staging Plan 1: 'Staging Plan No. 1'
Flow Group 1: 'Am Peak 2017 '

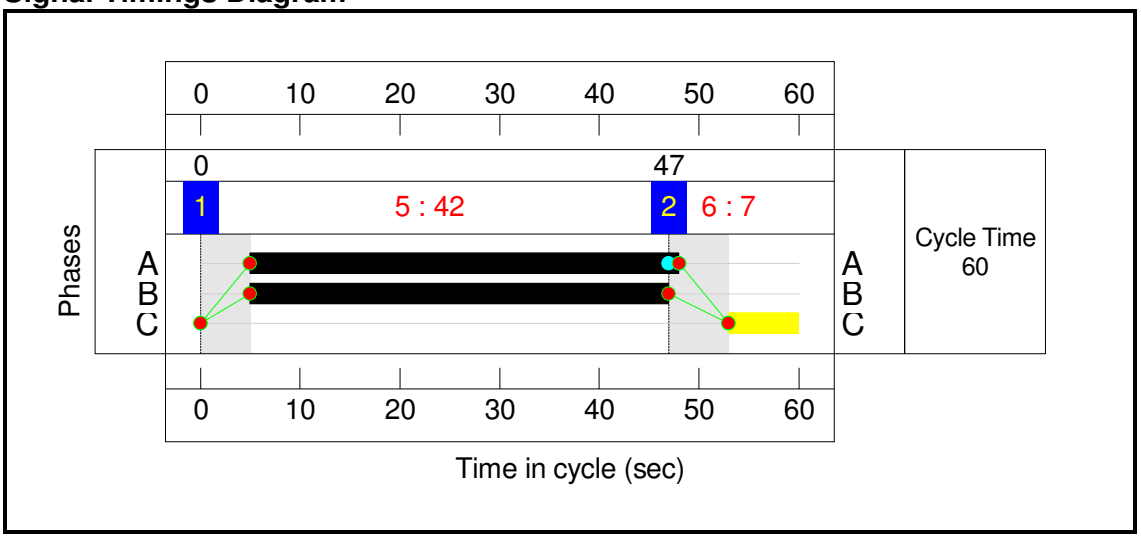
Staging Plan Diagram



Stage Timings

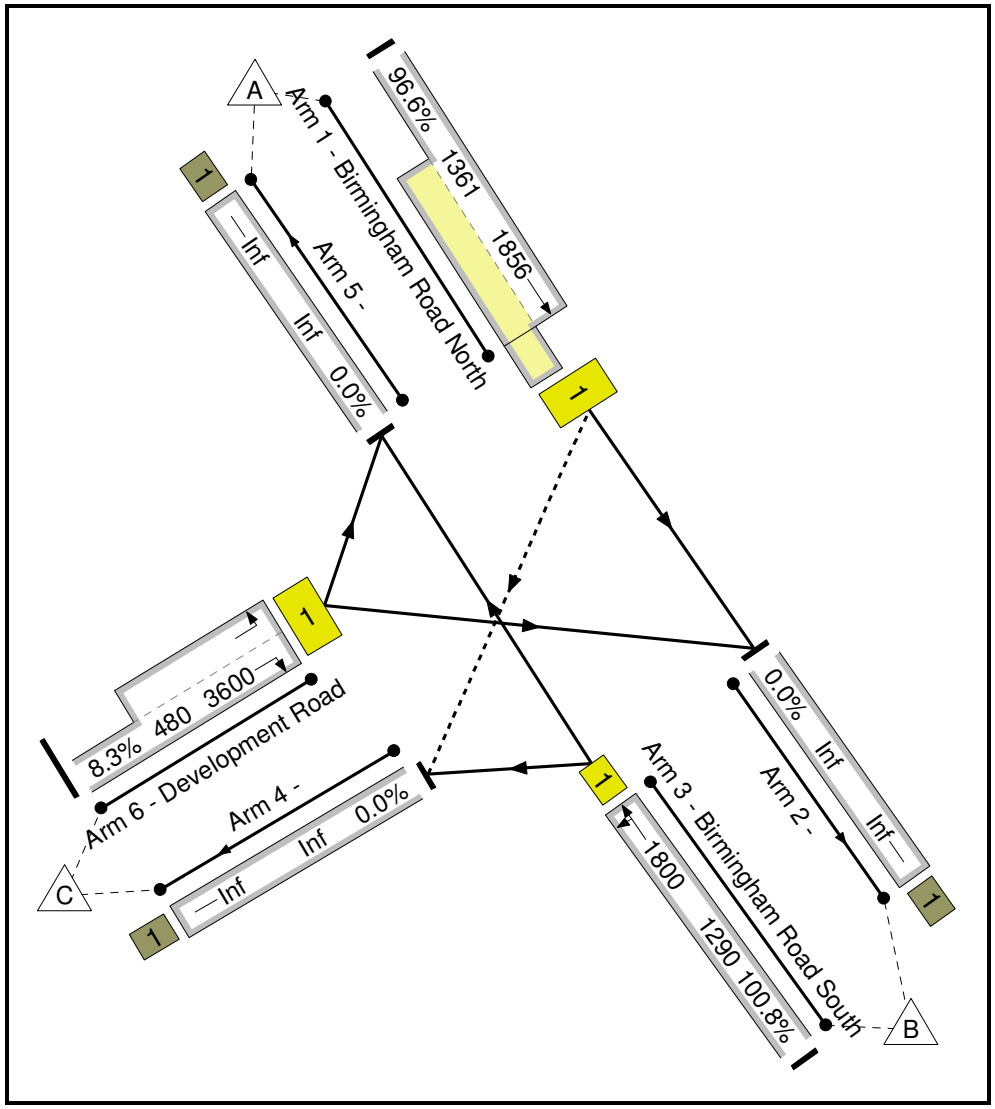
Stage	1	2
Duration	42	7
Change Point	0	47

Signal Timings Diagram



Junction Layout Diagram

Full Input Data And Results



Full Input Data And Results

Link Results

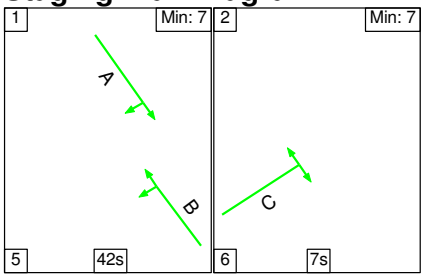
Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Birmingham Road North Ahead Right	O	N/A	N/A	A		1	43	-	1314	1900	1856	1361	96.6
2/1		U	N/A	N/A	-		-	-	-	1129	Inf	Inf	Inf	0.0
3/1	Birmingham Road South Left Ahead	U	N/A	N/A	B		1	42	-	1300	1800	1800	1290	100.8
4/1		U	N/A	N/A	-		-	-	-	410	Inf	Inf	Inf	0.0
5/1		U	N/A	N/A	-		-	-	-	1115	Inf	Inf	Inf	0.0
6/1	Development Road Right Left	U	N/A	N/A	C		1	7	-	40	3600	3600	480	8.3

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	1314	1229	0	0	120	4.0	9.9	1.4	15.3	42.0	23.6	9.9	33.5	
2/1	1129	1129	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	1300	1290	-	-	-	3.3	20.7	-	24.0	66.5	21.8	20.7	42.5	
4/1	323	323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	1107	1107	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	40	40	-	-	-	0.3	0.0	-	0.3	27.1	0.6	0.0	0.6	

PRC for Signalled Links (%): -12.0 Total Delay for Signalled Links (pcuHr): 39.66
PRC Over All Links (%): -12.0 Total Delay Over All Links(pcuHr): 39.66 Cycle Time (s): 60

Scenario 2: 'New Scenario'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 2: 'Pm Peak 2017'

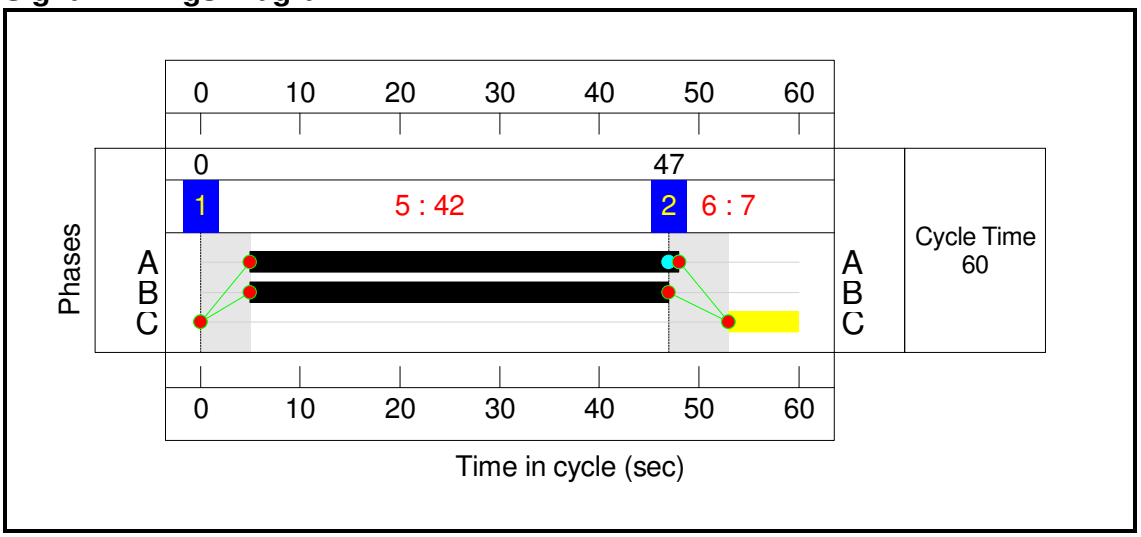
Staging Plan Diagram



Stage Timings

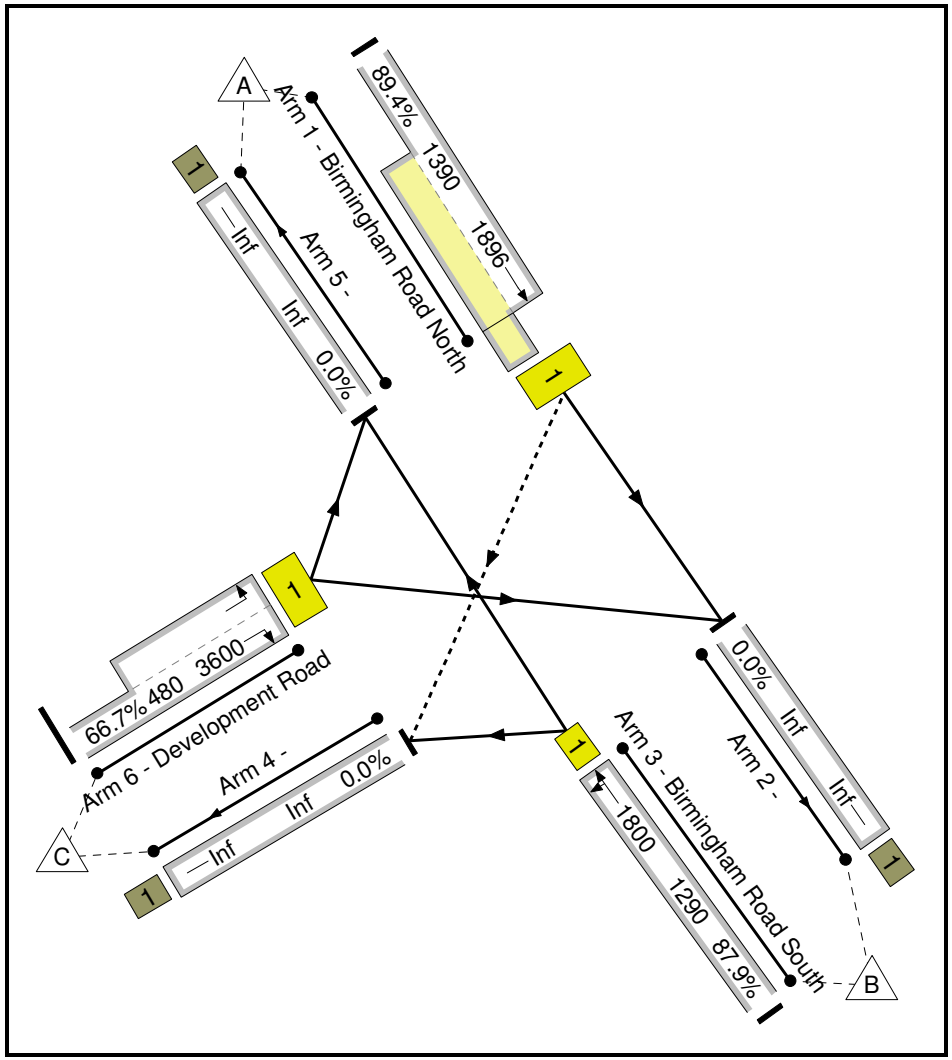
Stage	1	2
Duration	42	7
Change Point	0	47

Signal Timings Diagram



Full Input Data And Results

Junction Layout Diagram



Link Results

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Birmingham Road North Ahead Right	O	N/A	N/A	A		1	43	-	1243	1900	1896	1390	89.4
2/1		U	N/A	N/A	-		-	-	-	1371	Inf	Inf	Inf	0.0
3/1	Birmingham Road South Left Ahead	U	N/A	N/A	B		1	42	-	1134	1800	1800	1290	87.9
4/1		U	N/A	N/A	-		-	-	-	50	Inf	Inf	Inf	0.0
5/1		U	N/A	N/A	-		-	-	-	1276	Inf	Inf	Inf	0.0
6/1	Development Road Right Left	U	N/A	N/A	C		1	7	-	320	3600	3600	480	66.7

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	1243	1243	26	0	0	2.1	4.0	0.1	6.2	18.0	15.9	4.0	19.9	
2/1	1371	1371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	1134	1134	-	-	-	2.1	3.5	-	5.5	17.6	14.2	3.5	17.7	
4/1	50	50	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	1276	1276	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	320	320	-	-	-	2.2	1.0	-	3.2	35.9	5.1	1.0	6.1	

PRC for Signalled Links (%): 0.7 Total Delay for Signalled Links (pcuHr): 14.93

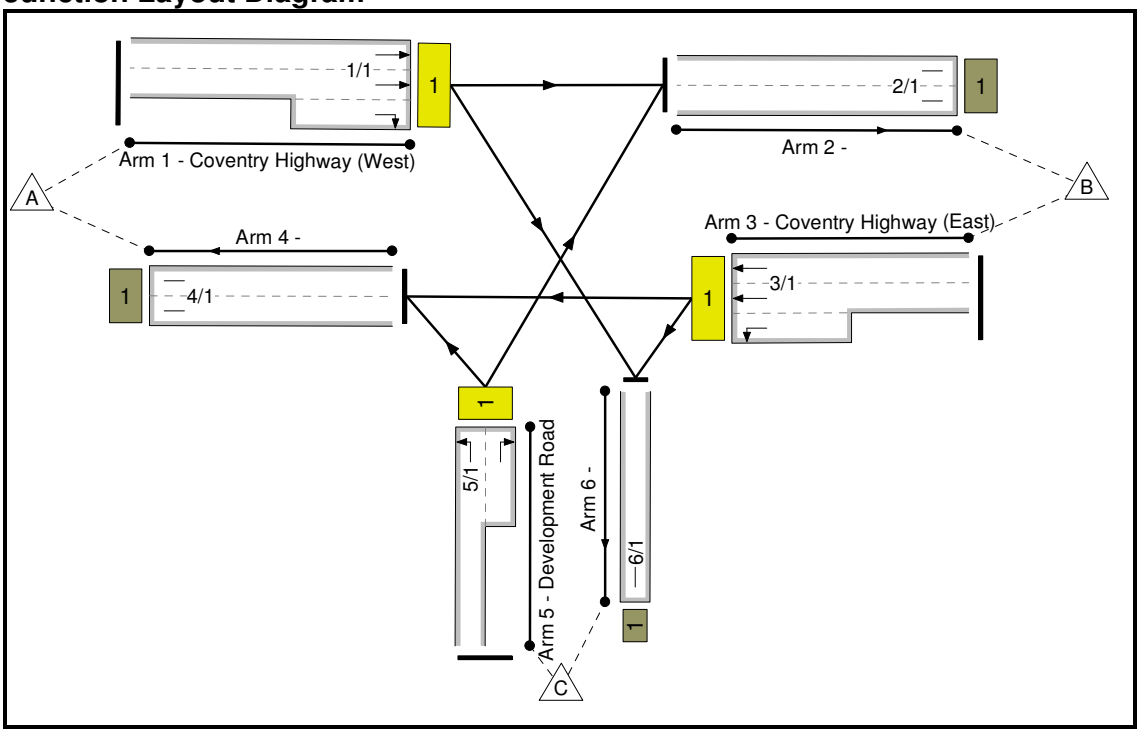
PRC Over All Links (%): 0.7 Total Delay Over All Links(pcuHr): 14.93 Cycle Time (s): 60

Full Input Data And Results

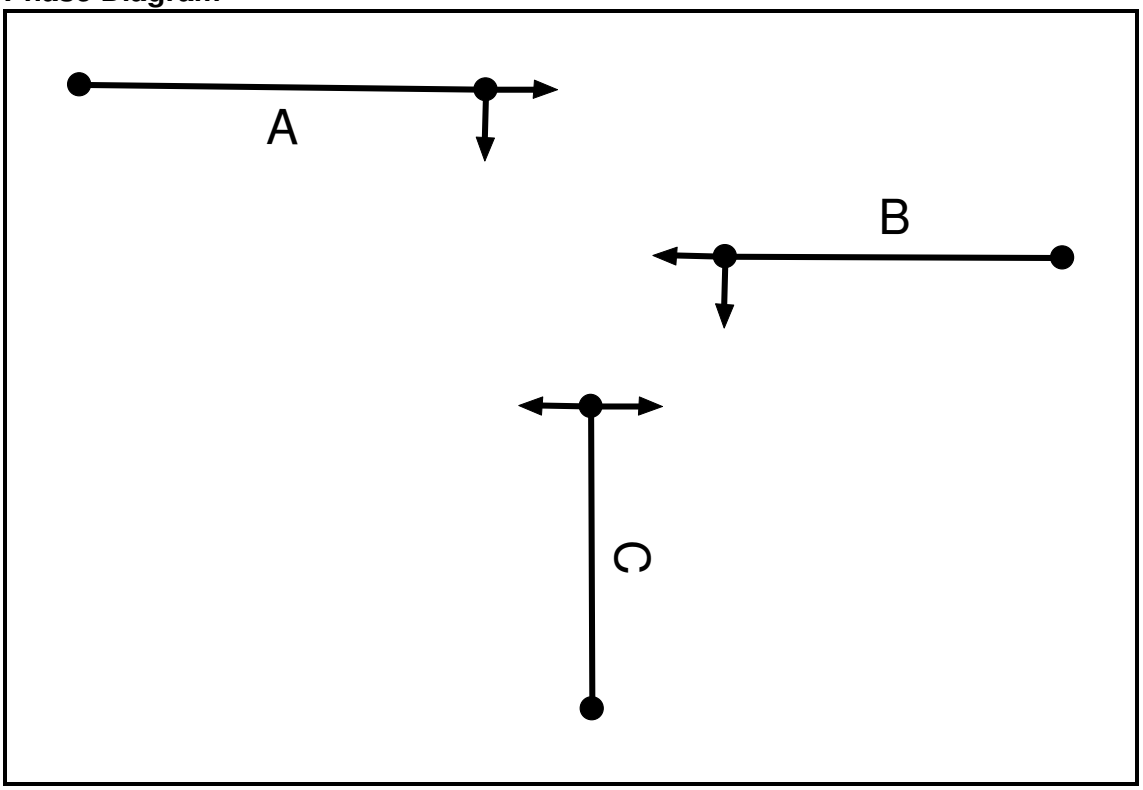
User and Project Details

Project:	**Transport Assessment**
Title:	**Redditch Borough Council**
Location:	Coventry Highway
File name:	Coventry Highway.
Author:	Adam Gibbs
Company:	Morgan Tucker
Address:	Aura Commerce and Technology Centre, Manners Road, Newark, Nottinghamshire, NG24 1BS
Controller:	Generic
SCN:	
Notes:	

Junction Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase type	Assoc Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7

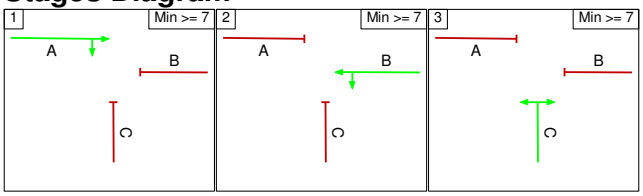
Phase Intergreens Matrix

		Starting Phase		
		A	B	C
Terminating Phase	A		5	5
	B	5		5
	C	6	5	

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B
3	C

Stages Diagram



Phase Delays

There are no phase delays defined in this stage stream

Prohibited Stage Changes

From Stage \ To Stage	1	2	3
1		5	5
2	5		5
3	6	5	

Link Input Data

Arm/ Link	Link Name	Link Type	Num Lanes	Phases	Start Disp.	End Disp.
1/1	Coventry Highway (West) Ahead Right	U	3	A	2	3
2/1		U	2		2	3
3/1	Coventry Highway (East) Ahead Left	U	3	B	2	3
4/1		U	2		2	3
5/1	Development Road Right Left	U	2	C	2	3
6/1		U	1		2	3

Give-Way Link Input Data

Lane Input Data

Arm/ Lane	Link Num	Physical Length (PCU)	Expected Usage (PCU)	Sat Flow Type	User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turni Radii (m)
1/1 (Coventry Highway (West) Lane 1)	Link 1 (Coventry Highway (West) Ahead Right)	Inf	Inf	User	1900	3.25	0.00	Y	Arm 2 Ahead	Inf
1/2 (Coventry Highway (West) Lane 2)	Link 1 (Coventry Highway (West) Ahead Right)	Inf	Inf	User	1900	3.25	0.00	Y	Arm 2 Ahead	Inf
1/3 (Coventry Highway (West) Lane 3)	Link 1 (Coventry Highway (West) Ahead Right)	5.0	6.0	User	1800	3.25	0.00	Y	Arm 6 Right	Inf
2/1	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
2/2	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
3/1 (Coventry Highway (East) Lane 1)	Link 1 (Coventry Highway (East) Ahead Left)	5.0	6.0	User	1800	3.25	0.00	Y	Arm 6 Left	Inf
3/2 (Coventry Highway (East) Lane 2)	Link 1 (Coventry Highway (East) Ahead Left)	Inf	Inf	User	1900	3.25	0.00	Y	Arm 4 Ahead	Inf
3/3 (Coventry Highway (East) Lane 3)	Link 1 (Coventry Highway (East) Ahead Left)	Inf	Inf	User	1900	3.25	0.00	Y	Arm 4 Ahead	Inf
4/1	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
4/2	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
5/1 (Development Road Lane 1)	Link 1 (Development Road Right Left)	Inf	Inf	User	1800	3.25	0.00	Y	Arm 4 Left	Inf
5/2 (Development Road Lane 2)	Link 1 (Development Road Right Left)	5.0	5.0	User	1800	3.25	0.00	Y	Arm 2 Right	Inf
6/1	Link 1	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Am Peak 2017'	08:00	09:00	01:00	
2: 'Pm Peak 2017'	17:00	18:00	01:00	

Flow Group 1: 'Am Peak 2017'
Traffic Flow Matrix
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1158	213	1371
	B	1082	0	197	1279
	C	21	19	0	40
	Tot.	1103	1177	410	2690

Link Traffic Flows

Arm/Link	Flow Group 1: Am Peak 2017
1/1	1371
2/1	1177
3/1	1279
4/1	1103
5/1	40
6/1	410

Lane Saturation Flows

Arm/ Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Coventry Highway (West) Lane 1)	This lane uses a directly entered Saturation Flow						1900
1/2 (Coventry Highway (West) Lane 2)	This lane uses a directly entered Saturation Flow						1900
1/3 (Coventry Highway (West) Lane 3)	This lane uses a directly entered Saturation Flow						1800
2/1	Infinite Saturation Flow (on Exit Link)						Inf
2/2	Infinite Saturation Flow (on Exit Link)						Inf
3/1 (Coventry Highway (East) Lane 1)	This lane uses a directly entered Saturation Flow						1800
3/2 (Coventry Highway (East) Lane 2)	This lane uses a directly entered Saturation Flow						1900
3/3 (Coventry Highway (East) Lane 3)	This lane uses a directly entered Saturation Flow						1900
4/1	Infinite Saturation Flow (on Exit Link)						Inf
4/2	Infinite Saturation Flow (on Exit Link)						Inf
5/1 (Development Road Lane 1)	This lane uses a directly entered Saturation Flow						1800
5/2 (Development Road Lane 2)	This lane uses a directly entered Saturation Flow						1800
6/1	Infinite Saturation Flow (on Exit Link)						Inf

Flow Group 2: 'Pm Peak 2017'

Traffic Flow Matrix

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1108	27	1135
	B	926	0	23	949
	C	173	147	0	320
	Tot.	1099	1255	50	2404

Link Traffic Flows

Arm/Link	Flow Group 2: Pm Peak 2017
1/1	1135
2/1	1255
3/1	949
4/1	1099
5/1	320
6/1	50

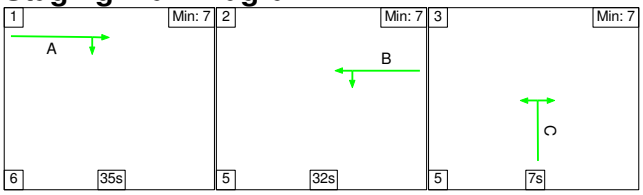
Lane Saturation Flows

Arm/ Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Coventry Highway (West) Lane 1)	This lane uses a directly entered Saturation Flow						1900
1/2 (Coventry Highway (West) Lane 2)	This lane uses a directly entered Saturation Flow						1900
1/3 (Coventry Highway (West) Lane 3)	This lane uses a directly entered Saturation Flow						1800
2/1	Infinite Saturation Flow (on Exit Link)						Inf
2/2	Infinite Saturation Flow (on Exit Link)						Inf
3/1 (Coventry Highway (East) Lane 1)	This lane uses a directly entered Saturation Flow						1800
3/2 (Coventry Highway (East) Lane 2)	This lane uses a directly entered Saturation Flow						1900
3/3 (Coventry Highway (East) Lane 3)	This lane uses a directly entered Saturation Flow						1900
4/1	Infinite Saturation Flow (on Exit Link)						Inf
4/2	Infinite Saturation Flow (on Exit Link)						Inf
5/1 (Development Road Lane 1)	This lane uses a directly entered Saturation Flow						1800
5/2 (Development Road Lane 2)	This lane uses a directly entered Saturation Flow						1800
6/1	Infinite Saturation Flow (on Exit Link)						Inf

Full Input Data And Results

Scenario 1: 'Scenario 1'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 1: 'Am Peak 2017'

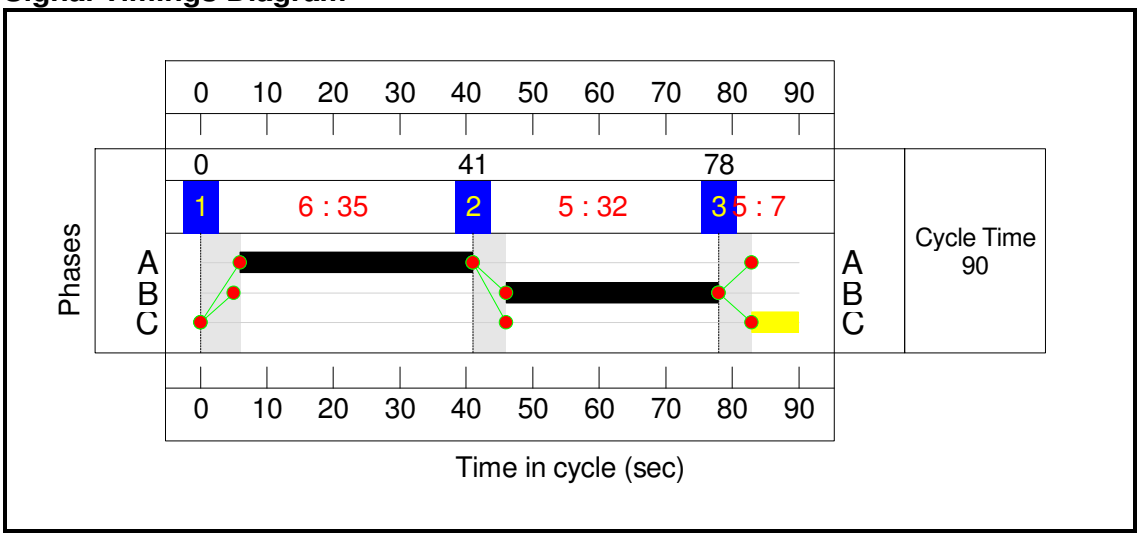
Staging Plan Diagram



Stage Timings

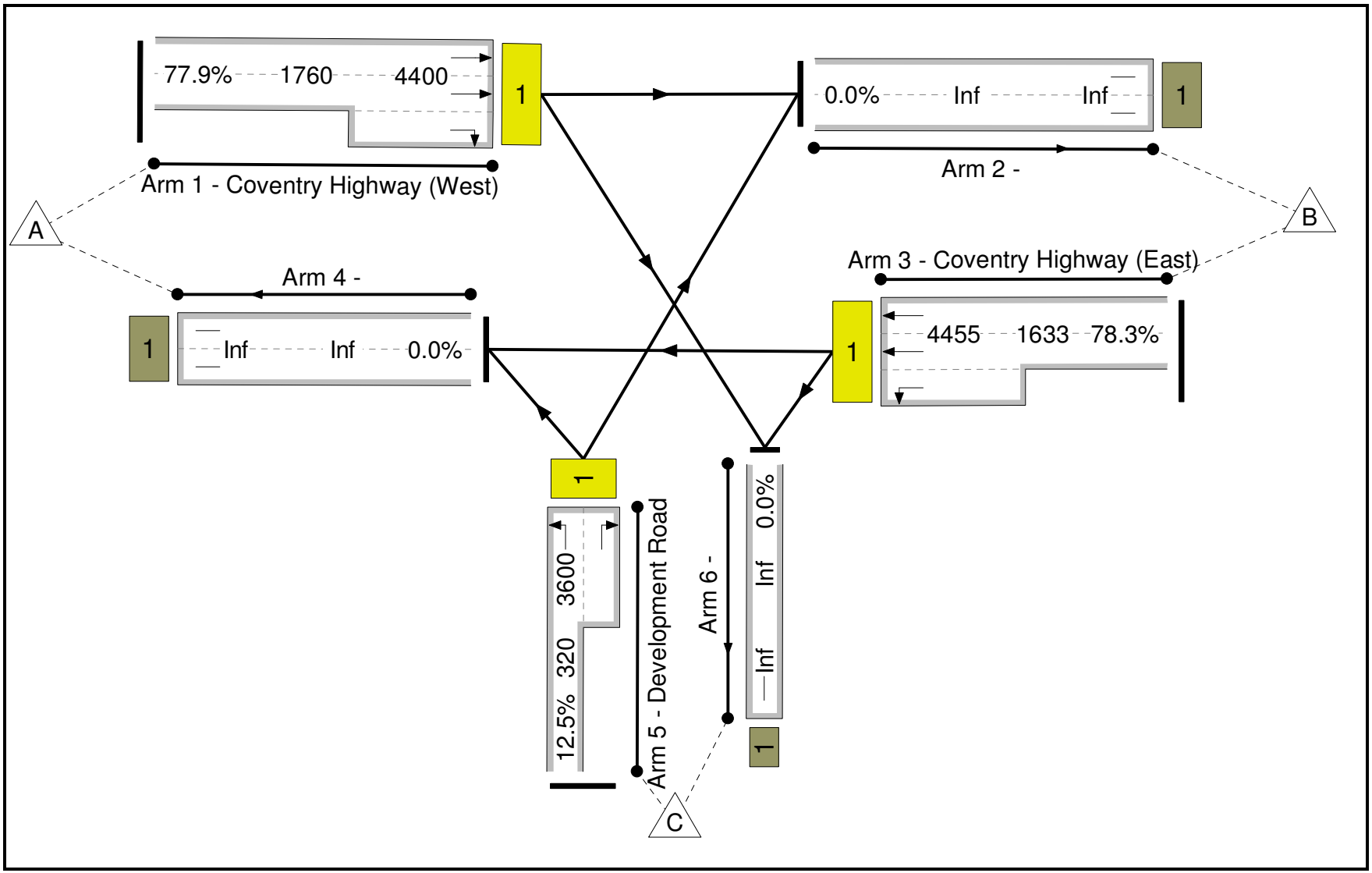
Stage	1	2	3
Duration	35	32	7
Change Point	0	41	78

Signal Timings Diagram



Junction Layout Diagram

Full Input Data And Results



Link Results

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Coventry Highway (West) Ahead Right	U	N/A	N/A	A		1	35	-	1371	5600	4400	1760	77.9
2/1		U	N/A	N/A	-		-	-	-	1177	Inf	Inf	Inf	0.0
3/1	Coventry Highway (East) Ahead Left	U	N/A	N/A	B		1	32	-	1279	5600	4455	1633	78.3
4/1		U	N/A	N/A	-		-	-	-	1103	Inf	Inf	Inf	0.0
5/1	Development Road Right Left	U	N/A	N/A	C		1	7	-	40	3600	3600	320	12.5
6/1		U	N/A	N/A	-		-	-	-	410	Inf	Inf	Inf	0.0

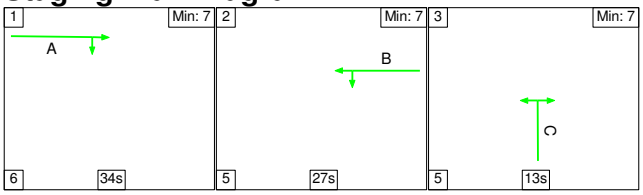
Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	1371	1371	-	-	-	8.3	1.7	-	10.1	26.4	28.6	1.7	30.3	
2/1	1177	1177	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	1279	1279	-	-	-	8.4	1.8	-	10.2	28.7	27.4	1.8	29.1	
4/1	1103	1103	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	40	40	-	-	-	0.4	0.1	-	0.5	44.2	0.9	0.1	1.0	
6/1	410	410	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

PRC for Signalled Links (%): 14.9 Total Delay for Signalled Links (pcuHr): 20.77

PRC Over All Links (%): 14.9 Total Delay Over All Links(pcuHr): 20.77 Cycle Time (s): 90

Scenario 2: 'New Scenario'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 2: 'Pm Peak 2017'

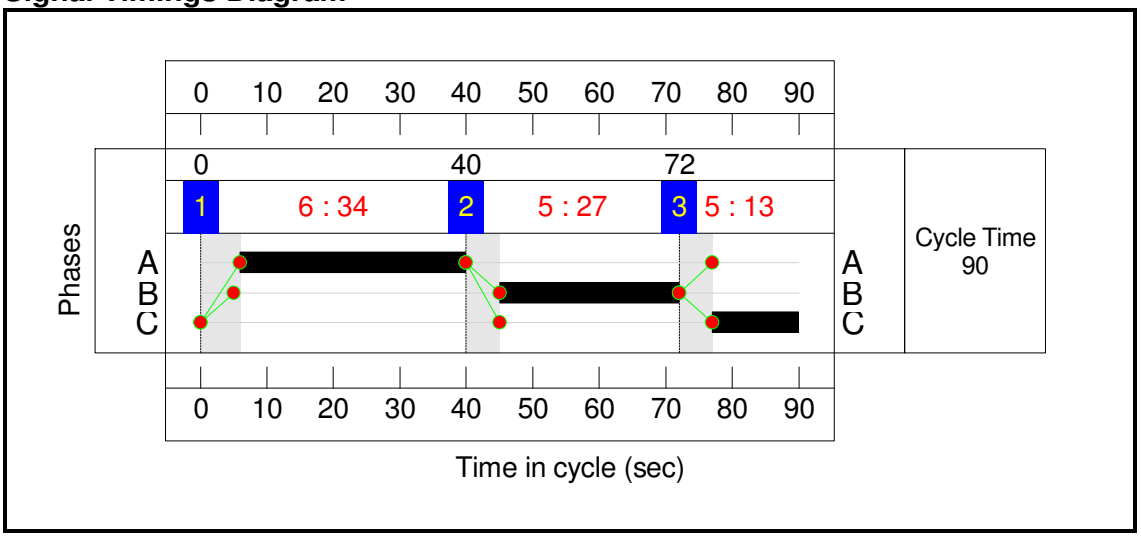
Staging Plan Diagram



Stage Timings

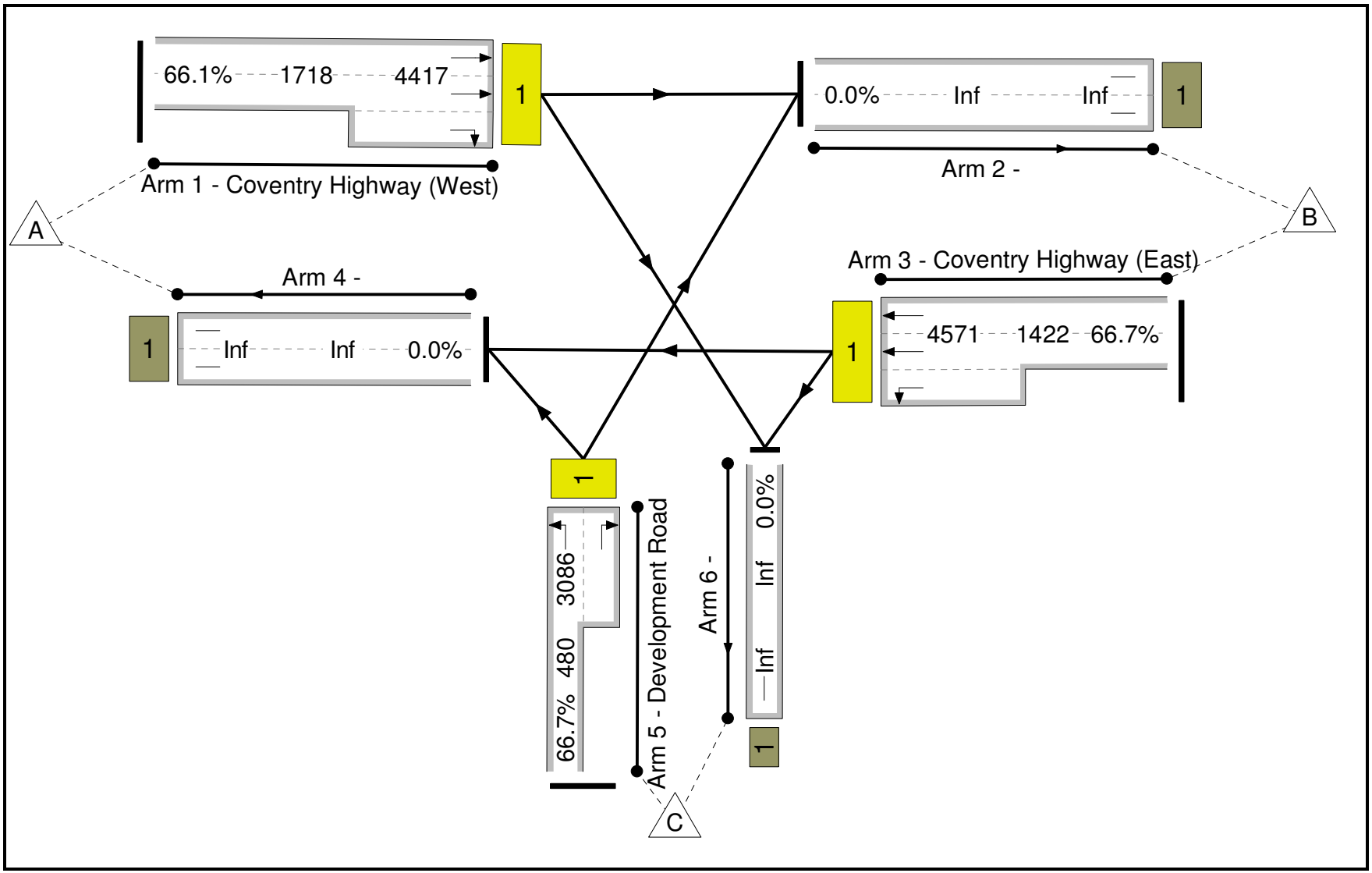
Stage	1	2	3
Duration	34	27	13
Change Point	0	40	72

Signal Timings Diagram



Junction Layout Diagram

Full Input Data And Results



Link Results

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Coventry Highway (West) Ahead Right	U	N/A	N/A	A		1	34	-	1135	5600	4417	1718	66.1
2/1		U	N/A	N/A	-		-	-	-	1255	Inf	Inf	Inf	0.0
3/1	Coventry Highway (East) Ahead Left	U	N/A	N/A	B		1	27	-	949	5600	4571	1422	66.7
4/1		U	N/A	N/A	-		-	-	-	1099	Inf	Inf	Inf	0.0
5/1	Development Road Right Left	U	N/A	N/A	C		1	13	-	320	3600	3086	480	66.7
6/1		U	N/A	N/A	-		-	-	-	50	Inf	Inf	Inf	0.0

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	1135	1135	-	-	-	6.7	1.0	-	7.6	24.2	22.1	1.0	23.0	
2/1	1255	1255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	949	949	-	-	-	6.8	1.0	-	7.8	29.5	19.8	1.0	20.8	
4/1	1099	1099	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	320	320	-	-	-	3.1	1.0	-	4.1	46.3	7.4	1.0	8.4	
6/1	50	50	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

PRC for Signalled Links (%): 34.9 Total Delay for Signalled Links (pcuHr): 19.53

PRC Over All Links (%): 34.9 Total Delay Over All Links(pcuHr): 19.53 Cycle Time (s): 90

Rev	Amendment	Date

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Client
Redditch Borough Council

Project Title
Proposed Diversification Park Development

Drawing Title
Proposed Access Arrangements

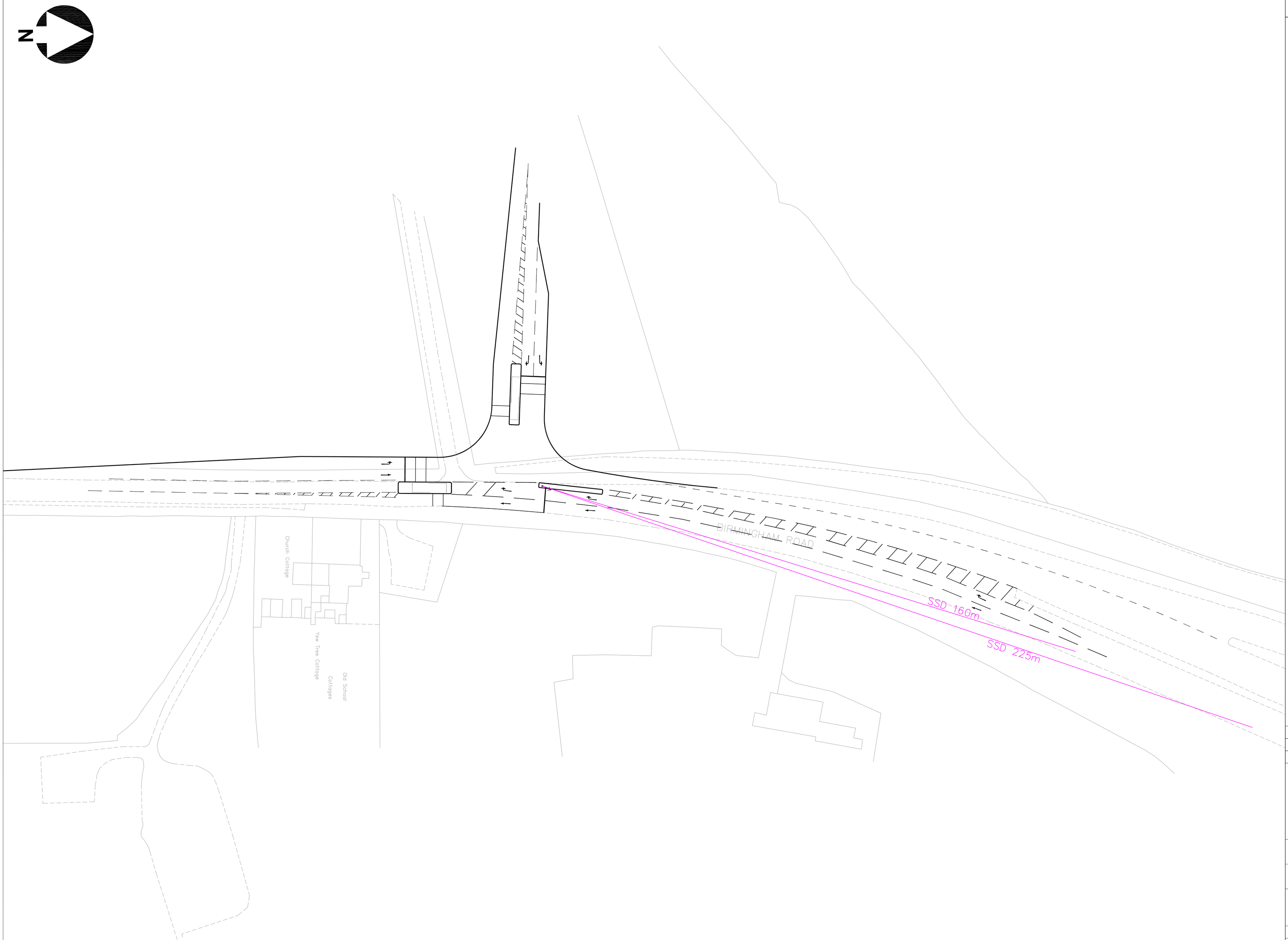
Drawn By	Checked By	Approved By
SH	VRG	BS

Date	Scale
28/09/09	NTS

Purpose
Information

Drawing Number
JN835 - NWK - 011

Rev



Notes:

Drawing is based on Ordnance Survey mapping and has been produced for discussion and comparison purposes only.

Forward visibility of the junction for south bound traffic is restricted by the bend in Birmingham Road. Stopping Sight Distance is shown for 60mph and 50mph. It is assumed that both cross over highway verge although the 215m SSD may be restricted by trees. It is recommended that a topographical survey is undertaken to ascertain the extents of the highway and any restrictions to forward visibility.

Detailed Design should be undertaken using the actual 85%ile speed of traffic

Rev	Amendment	Date
B	Layout amended to include pedestrian crossing phase and improved Forward visibility.	24/11/09
A	North bound approach left turn lane added	6/11/09

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Client: Redditch Borough Council

Project Title: Winyates Green Triangle

Drawing Title: Proposed Junction Birmingham Road

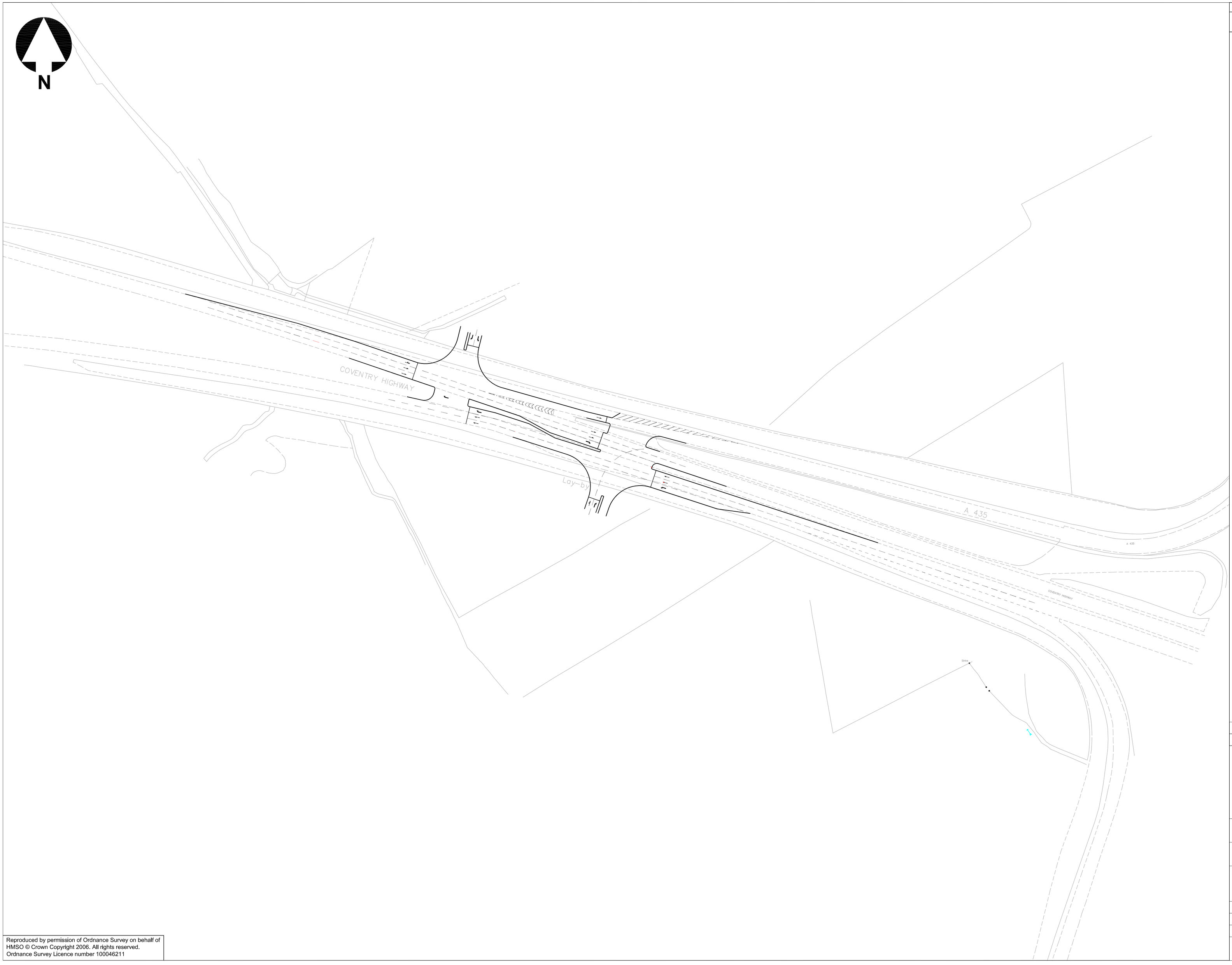
Drawn By	Checked By	Approved By
SJH	MC	SJH

Date	Scale
27 September 2009	1/500

Purpose: Feasibility

Drawing Number: **JN835/NWK/012**

Rev: **A**



Rev	Amendment	Date

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Client
Redditch Borough Council

Project Title
Winyates Green Triangle

Drawing Title
Coventry Highway
Proposed Junction

Drawn By	Checked By	Approved By
SJH	MC	SJH

Date	Scale
27 September 2009	1/1000

Purpose
Feasibility

Drawing Number
JN835/NWK/013

Rev