



Proposed Residential Development Kingsley Farm Harrogate

Transport Statement

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Acknowledgements:

The TRICS database has been used in this report to calculate traffic generations.

Traffic counts were commissioned from Nationwide Data Collection.

Disclaimer

The methodology adopted and the sources of information used by Sanderson Associates (Consulting Engineers) Ltd in providing its services are outlined within this Report.

Any information provided by third parties and referred to herein has not been checked or verified by Sanderson Associates (Consulting Engineers) Ltd, unless otherwise expressly stated within this report.

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1 Introduction

- 1.1 Sanderson Associates (Consulting Engineers) Ltd have been appointed to advise on traffic and transportation issues relating to a residential development at Kingsley Farm in Harrogate. The location of the development is shown at Figure 1 (Appendix A).
- 1.2 The site is situated on land off Kingsley Road in Harrogate. The existing use on the site is an egg packing and distribution facility. Access to the development is proposed at the existing access location off Kingsley Road via a new junction with improved geometry.
- 1.3 The Chippindale Foods egg packing and distribution facility will move to a new site located off the A59 York Road at Flaxby near Knaresborough. The relocation site has received planning consent and the new facility is currently under construction. The Flaxby site is due to become operational in mid 2013.
- 1.4 The site is part of the site reference H102 (1) - Kingsley Farm, contained within Harrogate District Sites and Policies DPD; volume 1: Harrogate Town (North East) September 2011 as part of the Harrogate District Local Development Framework. The site is identified as a preferred options site for residential development.
- 1.5 Pre-application liaisons relating to the proposed redevelopment of the Kingsley Farm site for residential use have taken place with Harrogate Borough Council (HBC) and North Yorkshire County Council (NYCC) Highways. Preliminary traffic modelling data was submitted to NYCC on 18th July 2012. A further traffic modelling validation assessment was submitted to NYCC on 21 September 2012.
- 1.6 A pre-application meeting was held at HBC offices on 26 September 2012 and was attended by the application team and representatives from HBC and NYCC. At the meeting NYCC Highways confirmed that:-

- Highways did not foresee a problem with the scale of residential development previously assessed (85 units).
- Highways agreed that 85 residential units would not cause a problem at the Kingsley Road / A59 Knaresborough Road Junction.
- A Transport Statement would be required in support of a planning application.

1.7 A draft of this Transport Statement was sent to NYCC Highways on 22 April 2013. Comments relating to the draft report were received from NYCC Highways on 25 April 2013. Agreement has been reached with Highways relating to the content of the report and the Harrogate Borough Council Transport Statement Validation Certificate was endorsed by NYCC dated 10 May 2013.

1.8 The submitted planning application is for 59 new dwellings plus 6 new units in converted properties. The total development of 65 residential units is less than the level previously considered accepted by NYCC Highways at the pre application stage.

1.9 In accordance with Guidance on Transport Assessments, this Transport Statement considers in detail the following aspects:

- the local highway network and its road traffic accident record
- the access arrangements to the proposed development
- the proposed development and its operational characteristics
- the impact of the development on the local highway network in terms of highway safety
- accessibility of the site in relation to sustainable transport and local facilities

2 The Existing Situation

2.1 *The Site and Surrounds*

- 2.1.1 The site, Kingsley Farm, is located approximately 3.2km northeast of Harrogate, North Yorkshire. The location of the site is shown on Figure 1 – Site Location at Appendix A. The site comprises of a variety of buildings of different ages and uses, with an existing gross floor area of approximately 6422m².
- 2.1.2 The site is located on land to the north of Kingsley Road and bounds a large residential area which is made up of a mixture of detached and semi detached houses. All of the dwellings fronting Kingsley Road have off street parking arrangements.
- 2.1.3 Kingsley Road is an adopted public highway which has a straight alignment from its junction with Knaresborough Road for around 635m, running through the residential area up to the site frontage. At this point Kingsley Road continues as Bogs Lane where the width of the road significantly reduces and sharp changes in its alignment occur. Bogs Lane is subject to a Traffic Regulation Order restricting HGV movement and as such all HGV's entering and exiting Kingsley Farm does so via Kingsley Road.
- 2.1.4 Kingsley Road is a single carriageway road with good forward vision and footways to either flank. It is lit by highway street lighting and is subject to a speed limit of 30mph. Carriageway and footway widths vary however approximate carriageway widths range between 5.6m and 6.35m with footways ranging between 1.0m and 2.0m.
- 2.1.5 It was noted while visiting the site that vehicle were parked on street in different locations. This however provided no difficulties for the through movement of vehicles along Kingsley Road.

- 2.1.6 For guidance on the dimensional requirements of carriageways reference is made to “Manual for Streets”. Chapter 7 paragraph 7.2 ‘Street dimensions’ indicate that two HGV’s can pass on a road with a 5.5m minimum carriageway width and still be in free flow conditions. The minimum carriageway width for a car and HGV to pass in free flow movement is 4.8m. As may be noted Kingsley Road exceeds this values even at its narrowest point.
- 2.1.7 The A59 Knaresborough Road to which Kingsley Road connects is a principal road and acts as local distributor route linking Harrogate to Knaresborough. It has an overall carriageway width of 8.8m including a 2.0m right turn lane into Kingsley Road. It provides excellent pedestrian links in the form of very wide footways ranging from 3.0-5.0m and has a pedestrian crossing island located 20.0m east of its junction with Kingsley Road.
- 2.1.8 Kingsley Road is approximately 6.2m wide on its approach to the Knaresborough Road junction. Traffic Regulation Order “double yellow line restrictions” are in place on the minor road approach which assist vehicles to turn in and out of the junction without conflict with any parked vehicles. A “KEEP CLEAR” box is also located at the junction entrance to further assist turning arrangements.
- 2.1.9 Existing visibility splays were measured from Kingsley Road onto Knaresborough Road from an urban set back of 2.4m from the give way line. Visibility from the minor road is extremely good with a driver being able to see tangential in both directions with vision being assisted by the wide footway.
- 2.1.10 Knaresborough Road is a designated public passenger bus route. There are two nearby bus stops both located within 80m of the junction with Kingsley Road. A bus lay-by is provided at the bus stop for eastbound services.
- 2.1.11 Kingsley Farm is currently served by a single vehicular access point situated on the northern limit of Kingsley Road. This access is used by both staff and delivery vehicles to the site.

2.1.12 The site has an existing access width of approximately 5.5m. Traffic calming measures in the form of 'slow' carriageway markings are present on Kingsley Road on the approach to the site entrance.

2.1.13 Existing visibility splays were measured from the site access onto Kingsley Road from an urban setback of 2.4m. Visibility splays within the site boundary and the highway corridor were measured as tangential in both directions:

2.2 *Traffic Surveys*

2.2.1 Automatic traffic surveys were commissioned from Nationwide Data Collection between Monday 28th February and Sunday 6th March 2011 inclusive. The surveys recorded continuous directional flows and vehicle speeds at four points in the vicinity of the site these are detailed below:

- Kingsley Farm site access
- Kingsley Road between Chippindale Foods and Kingsley Drive
- Kingsley Road between A59 High Street and Kingsley Close
- A59 High Street between Stonefall Avenue and Kingsley Avenue

2.2.2 Fully classified peak hour traffic surveys were undertaken on Tuesday 28th June 2011 at the junction of Kingsley Road and Knaresborough Road, the survey was carried out between 0730-0930 in the AM peak and 1600-1800 in the PM peak.

2.2.3 The network AM peak hour is 08.00-09.00 hrs and the PM peak hour is 16.45-17.45 hrs.

2.2.4 Observations of vehicle queuing and delay were undertaken at the Kingsley Road / Knaresborough Road / Wedderburn Avenue junction on Tuesday 18 September 2012.

2.2.5 Details of the traffic count data can be found at Appendix B.

2.3 Personal Injury Accidents

2.3.1 Details of recorded personal injury road traffic accidents have been obtained from NYCC for the five year period 01.01.2006 to 31.05.2011.

2.3.2 The area of interest includes a 2.2km stretch of the A59 Knaresborough Road from the roundabout junction with the A6040 / A661 / A59 to the junction with Bogs Road / Forest Road crossroads. The area also includes the full length of Kingsley Road including its junction with the A59.

2.3.3 The area of interest was selected to provide a comprehensive picture of recorded injury accidents in the locality and the data sheets, accident location and area of interest plans are included in Appendix C.

2.3.4 A total of 96 recorded injury accidents occurred between 1st January 2006 and 31st May 2011. Of these accidents, 75 were slight in severity and 21 were serious in severity. No fatal accidents have occurred within the search area over the five year period.

Kingsley Road / Knaresborough Road / Wedderburn Avenue Staggered Crossroads

2.3.5 9 injury accidents are recorded as having taken place within this area and for ease of reference their severity and type have been summarised in the following table:

	2006		2007		2008		2009		2010		2011		Total
	SL	SE	SL	SE	SL	SE	SL	SE	SL	SE	SL	SE	
Rear Shunt	1		2				1						4
Pedestrian				1	1	1							3
Cyclist	1		1										2
Total	2	0	3	1	1	1	1	0	0	0	0	0	9

-
- 2.3.6 As can be seen from the above table the most frequent accidents are of the rear shunt type.
- 2.3.7 From the information, it is apparent from the contributory factors that each of the rear shunt accidents occurred as a result of vehicles following too close, sudden braking or drivers failing to judge other vehicles speed.
- 2.3.8 Within the search one slight accident has occurred on Kingsley Road.

Accident Summary

- 2.3.9 The majority of accidents which have occurred within the vicinity of the Kingsley Road / Knaresborough Road / Wedderburn Avenue staggered crossroads over the last five years are generally as a result of driver and pedestrian error rather than the geometric layout of the surrounding highway network. Only one slight accident has occurred on Kingsley Road between its junction with the A59 and Kingsley farm access.

3 Proposed Development

3.1 The Development

- 3.1.1 The proposed development comprises of 65 residential units (a mixture of new and converted units). Details of the house types are indicated below. The planning application site layout plan can be found at Appendix D.

59 New Houses

14 x One Bed Houses
6 x Two Bed Houses
30 x Three Bed Houses
8 x Four Bed Hours
1 x Grand Design

6 Units within existing properties

3 Office units to be converted into 3 dwellings
Barn unit to be converted into one dwelling
Existing Farm House
Barn Conversion

- 3.1.2 Access to the development is proposed at the existing access location off Kingsley Road via a new junction with improved geometry. The proposed access arrangement is shown on Sanderson Associates drawing 6127-004 at Appendix E. The proposed access comprises of a 5.5m carriageway with 2m footway to either side.
- 3.1.3 Access Junction visibility of 2.4m x 41.9m is indicated to the south and 2.4m x 39.3m to the north. These visibilities splays are in accordance with Manual for the Street for 85th percentile speeds recorded in the vicinity of the site of 29.5mph for north bound traffic and 28.2mph for south bound traffic.

3.2 *Parking*

3.2.1 Proposed parking will be provided in line with North Yorkshire County Council Maximum parking standards. Details of the parking standards obtained from the North Yorkshire County Council document Transport Issues & Development – A Guide are detailed below.

Residential

- (a) Dwelling 4 or more bedrooms 2 spaces
- (b) Dwelling 3 bedrooms 2 spaces
- (c) Dwelling 2 bedrooms 1 space
- (d) Dwelling 1 bedroom 1 space

1 designated casual visitor parking space per 5 dwellings for shared access roads or estate roads with carriageway width of less than 5.5 metre. These must be contiguous with highway and must not be conveyed to an individual dwelling.

3.2.2 No specific cycle parking provision is detailed within the North Yorkshire County Council standards for residential properties. Cycle parking will be available within the individual properties.

4 Multi Modal Trip Generations

- 4.1 As required by the DfT 'Guidance on Transport Assessment', the person trips to the proposed development have been assessed, using information contained within the TRICS database. The full TRICS outputs are contained at Appendix F.
- 4.2 The TRICS database has been used to assess the Multi Modal and vehicle trips to the development for the proposed residential development. The land use category 03 – Residential: A Houses Privately Owned has been used to determine person trip rates for the site.
- 4.3 To ensure a robust assessment, the output of the TRICS database has been refined to exclude Greater London and Ireland. Weekday survey selection only include all sites with between 52 to 372 dwellings which give a total of 31 surveys.
- 4.4 The following provides details of the multimodal two-way trip rates along with the corresponding modal percentage split and generated trips. For the development the data has been split between weekday AM, PM peaks and 24 hour.

Houses 65			
Weekday	2 Way Trip Rate per Unit	% Modal Split	Generation (people)
AM Peak Hour Modal Split (0800 – 0900)			
Pedestrians	0.209	18.9%	14
Cyclists	0.019	1.7%	1
Public Transport Users	0.029	2.6%	2
Vehicle Occupants	0.848	76.8%	55
Total People Trips	1.105	100.0%	72
PM Peak Hour Modal Split (1700 – 1800)			
Pedestrians	0.111	11.1%	7
Cyclists	0.023	2.3%	2
Public Transport Users	0.019	1.9%	1
Vehicle Occupants	0.848	84.7%	55
Total People Trips	1.001	100.0%	65
24 Hour Modal Split			
Pedestrians	1.295	14.7%	84
Cyclists	0.159	1.8%	10
Public Transport Users	0.172	2.0%	11
Vehicle Occupants	7.178	81.5%	467
Total People Trips	8.805	100.0%	572

- 4.5 As can be seen from the above, the predicted level of pedestrian, cyclist and public transport users are modest and can be readily accommodated within the existing infrastructure.

5 Sustainable Travel

5.1 Introduction

5.1.1 This section of the report considers the accessibility of the development by the following modes of transport.

- Accessibility on foot;
- Accessibility by cycle;
- Accessibility by bus;
- Accessibility by rail;

5.2 Accessibility on Foot

5.2.1 Walking is the most important mode of transport in the local level and can replace short car trips in journeys under 2km, which contribute to congestion and pollution, and the need for car parking. Walking is the most sustainable form of transport and provides one way of reducing pressure on the environment. People walking are also travelling at a pace that gives them a greater connection with their surroundings and can have positive benefits in relation to a community's security through increased surveillance.

5.2.2 Walking stimulates both personal health and the health of communities and local economies. Government health improvement advice states that just 30 minutes brisk walking 5 times a week can bring about significant reductions in the risk of coronary heart disease, high blood pressure and diabetes.

5.2.3 Manual for Streets is the latest national guidance on the design of residential roads and offers the following guidance in Section 4.4 "The walkable neighbourhood":

5.2.4 "4.4.1 Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800m) walking distance of residential

areas which residents may access comfortably on foot. However, this is not an upper limit and PPS13 states that walking offers the greatest potential to replace short car trips, particularly those under 2 km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents”

- 5.2.5 The IHT publication “Providing for Journeys on Foot” identifies suggested acceptable walking distances for commuting, school and sight-seeing as follows with times based on a walking speed of (1.4m/s).

Desirable 500m	6 minutes
Acceptable 1000m	12 minutes
Preferred maximum 2000m	24 minutes

- 5.2.6 Figure 3 (Appendix A) identifies a 2km walking radius from the site. Within 2km walking distance of the site are:-

Within 1km located along High Street / Knaresborough Road

- | | | |
|---------------------------|---------------------|---------------------|
| - Bus Stops | - Car Sales | - Florist |
| - Tesco Express (Inc ATM) | - Subway (Takeaway) | - Video Rental Shop |
| - Hair Studio | - Pizza Takeaway | - Beauty Saloon |
| - Bakers | - Chinese Takeaway | - Health Centre |

Within 2km located along High Street / Knaresborough Road

- | | | |
|----------------------|---------------------|--------------|
| - The Harrow PH | - Halfords | - Barbers |
| - Conveince Shops x2 | - Bus Stops | - Cafe |
| - Hire Shops | - Chinese Takeaways | - Veterinary |

Other facilities surrounding the site include

- Henshaw College 800m
- Harrogate High School 1100m
- Starbeck local shopping centre 1100m
- Starbeck Railway Station 1200m
- Starbeck Primary School 1500m
- Industrial area north west of site 1900m
- Hookstone Primary School 2000m
- Plumpton Park (Retail Area) 1380m

Morrison's Supermarket

Curry's PC World

Homebase

Carpet Right

5.3 The likely routes on foot to and from the site to access local amenities would be along Kingsley Road, Kingsley Drive and local residential footway connections.

5.4 Kingsley Road is a residential route that connects the site to High Street to the south. It is street lit and subject to a 30 mph speed limit. It has footways on both sides of the carriageway. Pedestrian crossing facilities are provided on High Street in the vicinity of the Kingsley Road Junction in the form of dropped crossing, tactile paving and pedestrian island.

5.4.1 In addition to the above the site is also in proximity to bus stops providing regular services between the site and surrounding area. It is therefore considered that journeys on foot are a realistic option for future residents and visitors to the site.

5.5 *Accessibility on Cycle*

5.5.1 Like walking, cycling is an important mode of travel at the local level and offers greatest potential to replace short car journeys under 5km and to form part of a longer journey when combined with public transport. In relation to the application

site; cycling distances from local centres within 5km, along with the corresponding cycle time based on 12 km per hour are as follows. A 5km radius of possible destinations can be found on Figure 4 (Appendix A).

Origin/Destination	Distance	Time
Starbeck Railway Station	1.2km	6 minutes
Harrogate Railway Station	2.7km	13½ minutes
Bilton	3.1km	15½ minutes
Harrogate Town Centre	3.2km	16 minutes
Knaresborough	4km	20 minutes

Approximately 1km to the north of the site the National Cycle Route 67 and 636, routes 67 and 636 provide a route between York and Harrogate. Both routes are provided along a combination of Bridleways, Railway paths and Roads.

5.5.2 Local cycle routes are provided in the vicinity of the site. These include routes along Bogs Lane, sections of Kingsley Road and Kingsley Drive, sections of High Street are also classed as local cycle routes on the Harrogate Cycle Map.

5.5.3 The development site has good cycle accessibility to local facilities and connectivity to public transport.

5.6 Bus Travel

5.6.1 Bus stops are located to the south of the site along High Street and Knaresborough Road. These stops offer frequent and varied services. Details of the facilities provided at each of the stops along with the available services are provided below:-

Location:	Knaresborough Road
Reference:	Wedderburn Swarcliffe Road (E Bound)
Distance to stop:	820m
Direction of travel:	East Bound
Facilities:	Shelter, Seating, Timetable Information & lay-by
Bus services:	1, 1A, 1B, 1C

Location: High Street
Reference: Wedderburn, Stonefall Ave (W Bound)
Distance to stop: 800m
Direction of travel: West Bound
Facilities: Shelter, Seating & Timetable Information
Bus services: 1, 1A, 1B, 1C

Location: Knaresborough Road
Reference: Wedderburn Health Centre (W Bound)
Distance to stop: 950m
Direction of travel: West Bound
Facilities: Shelter, Seating & Timetable Information
Bus services: 1, 1A, 1B, 1C & 104

5.6.2 A summary of the bus services which operate at these stops is provided below.

1 Harrogate to Knaresborough

1A Harrogate to Knaresborough & Aspin

1B Harrogate to Knaresborough & Eastfield

1C Harrogate to Knaresborough & Carmires

Monday –Saturday 7-8 Minutes Service

Sunday 15 Minutes

104 Harrogate Bus Station - Wedderburn

Monday –Saturday 3 Services per day

5.7 Typical bus journey times to Harrogate are between 10-14 minutes with typical journey times to Knaresbrough 11-13 minutes from the above bus stops. A wide variety of facilities including supermarkets, shops, banks, restaurants, local businesses are available in Harrogate and Knaresbrough. It is considered that with a bus frequency of every 7-8 minutes and a journey time of 10-14minutes, that Harrogate and Knaresbrough are accessible from the proposed development site.

- 5.7.1 As can be seen from the above, regular buses are available from existing bus stops along Knaresborough Road and High Street. These stops provide a connection from the site to Harrogate and Knaresborough. Further bus services are available from Harrogate and Knaresborough.

5.8 Rail Travel

- 5.8.1 Starebeck Railway Station is located approximately 1.2km from the centre of the site and Harrogate Railway Station approximately 2.7km from the centre of the site. Facilities for both stations are detailed below:

Harrogate Railway Station

Cycle Storage

117 Space Car Park

Timetable information

Seating Areas

Toilets

Shops

Operated by Northern Rail

Starbeck Railway Station

Cycle Storage

Timetable information

Operated by Northern Rail

- 5.8.2 A summary of the Train services which operate at the above stations provided below

Route	Mon to Sat frequency		Sunday frequency
	Daytime	Late evening	
Leeds - Headingley - Horsforth - Harrogate - Knaresborough	30 mins	60 mins	60 mins
Leeds - Harrogate - Knaresborough - York	60 mins	60 mins	60 min

- 5.8.3 Cycles are permitted on trains and therefore could also be used to travel to the stations and onwards after the rail journey.

5.9 *Accessibility Summary*

- 5.9.1 It is considered that the site has access by both “active transport” to local facilities and to public passenger transport arrangements. As such residents and visitors to the development will have a realistic choice of sustainable travel options.

6 Traffic Generations

6.1 Existing Use

6.1.1 Automatic traffic surveys were commissioned from Nationwide Data Collection between Monday 28th February to Sunday 6th March 2011 inclusive. The surveys recorded continuous directional flows at the existing Chippindale Foods site access off Kingsley Road, Harrogate.

6.1.2 A summary of the Cippindale Food weekday traffic survey data results is as follows:

Inbound Traffic Flows (Total Vehicles)

Time	Monday 28.02.11	Tuesday 01.03.11	Wednesday 02.03.11	Thursday 03.03.11	Friday 04.03.11	Max	Min	Weekday Average
00:00	0	0	0	0	0	0	0	0
01:00	1	1	0	0	1	1	0	1
02:00	0	1	1	2	0	2	0	1
03:00	0	0	1	0	1	1	0	0
04:00	0	1	0	1	2	2	0	1
05:00	2	1	3	0	4	4	0	2
06:00	6	4	7	5	3	7	3	5
07:00	11	8	9	9	14	14	8	10
08:00	9	4	9	9	4	9	4	7
09:00	3	3	3	6	6	6	3	4
10:00	13	1	8	7	12	13	1	8
11:00	7	6	5	5	3	7	3	5
12:00	8	5	7	7	8	8	5	7
13:00	7	8	10	17	11	17	7	11
14:00	9	8	7	10	4	10	4	8
15:00	6	7	8	5	1	8	1	5
16:00	2	1	4	7	6	7	1	4
17:00	4	6	3	2	3	6	2	4
18:00	3	0	0	2	3	3	0	2
19:00	0	1	2	1	2	2	0	1
20:00	1	0	2	2	1	2	0	1
21:00	0	0	1	0	0	1	0	0
22:00	0	1	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0
Total	92	67	90	97	89	97	67	87

Outbound Traffic Flows (Total Vehicles)

Time	Monday 28.02.11	Tuesday 01.03.11	Wednesday 02.03.11	Thursday 03.03.11	Friday 04.03.11	Max	Min	Weekday Average
00:00	0	0	0	0	0	0	0	0
01:00	2	1	0	0	1	2	0	1
02:00	0	2	3	4	0	4	0	2
03:00	0	0	1	0	0	1	0	0
04:00	0	0	0	0	2	0	0	0
05:00	3	3	2	2	4	4	2	3
06:00	5	1	7	2	6	7	1	4
07:00	2	2	4	3	4	4	2	3
08:00	2	1	11	4	6	11	1	5
09:00	0	2	1	4	2	4	0	2
10:00	9	1	4	4	11	11	1	6
11:00	11	3	6	10	9	11	3	8
12:00	14	4	13	9	6	14	4	9
13:00	10	11	6	11	12	12	6	10
14:00	7	5	2	7	3	7	2	5
15:00	2	6	7	9	3	9	2	5
16:00	7	5	6	4	4	7	4	5
17:00	12	8	7	11	9	12	7	9
18:00	4	6	5	2	8	8	2	5
19:00	4	1	2	3	0	4	1	2
20:00	1	0	3	4	2	4	0	2
21:00	0	0	2	1	0	2	0	1
22:00	0	0	0	1	0	0	0	0
23:00	0	0	0	0	0	0	0	0
Total	95	62	92	95	92	95	62	87

Two Way Traffic Flows (Total Vehicles)

Time	Monday 28.02.11	Tuesday 01.03.11	Wednesday 02.03.11	Thursday 03.03.11	Friday 04.03.11	Max	Min	Weekday Average
00:00	0	0	0	0	0	0	0	0
01:00	3	2	0	0	2	3	0	1
02:00	0	3	4	6	0	6	0	3
03:00	0	0	2	0	1	2	0	1
04:00	0	1	0	1	4	4	0	1
05:00	5	4	5	2	8	8	2	5
06:00	11	5	14	7	9	14	5	9
07:00	13	10	13	12	18	18	10	13
08:00	11	5	20	13	10	20	5	12
09:00	3	5	4	10	8	10	3	6
10:00	22	2	12	11	23	23	2	14
11:00	18	9	11	15	12	18	9	13
12:00	22	9	20	16	14	22	9	16
13:00	17	19	16	28	23	28	16	21
14:00	16	13	9	17	7	17	7	12
15:00	8	13	15	14	4	15	8	11
16:00	9	6	10	11	10	11	9	9
17:00	16	14	10	13	12	16	10	13
18:00	7	6	5	4	11	11	4	7
19:00	4	2	4	4	2	4	2	3
20:00	2	0	5	6	3	6	0	3
21:00	0	0	3	1	0	3	0	1
22:00	0	1	0	1	0	1	0	0
23:00	0	0	0	0	0	0	0	0
Total	187	129	182	192	181	192	129	174

6.1.3 The results show that the average weekday traffic flow is 174 vehicles (two way) over 24 hours.

6.1.4 A summary of daily HGV movements at the Chippindale site were recorded as follows:-

Time	Monday 28.02.11	Tuesday 01.03.11	Wednesday 02.03.11	Thursday 03.03.11	Friday 04.03.11	Max	Min	Weekday Average
Daily HGV's (Two Way)	8	10	5	6	5	10	5	7

- 6.1.5 The results show that daily HGV activity at the existing Chippindale Foods site typically vary between 5 and 10 HGV movements per day (two way) with an average of 7 movements

6.2 Proposed Use

- 6.2.1 The TRICS database has been utilised to estimate the likely traffic generated by the development. The land use category 03 – Residential: Houses Privately Owned has been used. The surveys have been taken from multimodal surveys and exclude sites in London and Ireland. The survey selection include all sites with between 52 to 372 dwellings which give a total of 31 surveys.

- 6.2.2 The average trip rates and the resultant traffic generation are tabulated below for the network peaks in the AM and PM periods. The TRICS output is included at Appendix F.

Average Trip Rates	Trip Rate Per 100sqm		Traffic Generations		
	Arrivals	Departure	Arrivals	Departure	Total
0800-0900	0.156	0.439	10	29	39
1700-1800	0.405	0.233	26	15	41
Daily	2.661	2.781	173	181	354

Residential 65 Dwellings

- 6.2.3 As can be seen from the table above approximately 39 two way trips in the AM peak and 41 two way trips in the PM peak could be generated by the residential development.
- 6.2.4 NYCC Highways have requested a peak hour sensitivity trip generation assessment using 85th percentile TRICS data. The 85th percentile trip rates and the resultant traffic generation are tabulated below for the network peaks in the AM and PM periods. The TRICS output is included at Appendix F

85 th %ile Trip Rates	Trip Rate Per 100sqm		Traffic Generations		
	Arrivals	Departure	Arrivals	Departure	Total
0800-0900	0.243	0.543	16	35	51
1700-1800	0.495	0.307	32	20	52

Residential 65 Dwellings

- 6.2.5 The 85th percentile trip rates would result in the following residential peak hour traffic increases above those using average trip rates; 08.00-09.00hrs; arrivals = +6, departures = +6, total = +12 and 17.00-18.00hrs; arrivals = +6, departures +5, totals = +11.

6.3 **Summary**

- 6.3.1 The residential development will replace the current egg packing and distribution facility on the site. From the generation assessment above, the proposed residential development is predicted to result in the following increase in traffic in the peak hours and over a daily period when compared with the average traffic flows from the historic use.

	Increase in Generations		
	Arrivals	Departure	Total
0800-0900	+3 (+9)	+24 (+30)	+27 (+39)
1700-1800	+22 (+28)	+6 (+11)	+28 (+39)
Average Daily	+86	+94	+180

Figures in brackets are increases based on 85th percentile traffic generations

- 6.3.2 As can be seen from the above, the predicted net increase in traffic generated by the development proposal is modest.
- 6.3.3 The residential development will result in the removal of HGVs on Kingsley Road. As detailed in section 6.1 the current use generates between 5 and 10 HGV movements per day (two way) with an average of 7 movements. These movements are currently occurring along Kingsley Road and at the Kingsley Road / Knaresborough Road Junction. The removal of HGV traffic from residential streets is a significant benefit of the redevelopment.

7 Traffic Impact

7.1 *Kingsley Road junction with Knaresborough Road and Wedderburn Avenue.*

7.1.1 The capacity of the Kingsley Road junction with Knaresborough Road and Wedderburn Avenue has been assessed using PICADY.

7.1.2 A validation survey was undertaken on Tuesday 18 September 2012 for the existing network peak hours which are modelled within the PICADY assessment, these being:

AM Peak Hour 08:00 – 09:00

PM Peak Hour 16:45 – 17:45

7.1.3 The weather was sunshine and showers during each session. The validation survey was carried out with no incidents or disruptions to affect the results.

7.1.4 Observations of vehicle queues were recorded on Kingsley Road, A59 Knaresborough Road and Wedderburn Avenue.

7.1.5 Queuing delay was measured on Kingsley Road and Wedderburn Avenue.

7.1.6 General observations and records show that the staggered junction operates within capacity with minimal queuing on the minor roads and at the main road right turn to the minor roads. Given the proximity of the adjacent traffic lights, pedestrian crossings, level crossing and the A59 two way traffic flow, the junction works well with many 'no delay' manoeuvres, many 'reasonable waits' and occasional 'longer delays' resulting from specific temporary causes.

7.1.7 Main road traffic flow is punctuated sufficiently to allow minor road traffic to exit with minimal queues forming.

- 7.1.8 In the PM peak hour on three occasions the A59 eastbound formed queues past the junction. These periods coincided with the level crossing being activated for train crossing. The queuing on the A59 disbursed from past the site within 2 minutes on each occasion.
- 7.1.9 The queuing was observed not to adversely affect traffic at the minor road junctions with major road traffic generally leaving gaps to allow vehicle turning.
- 7.1.10 The two way traffic flow on Kingsley Road and Wedderburn Avenue was recorded during the validation survey and compared with the original Tuesday 28 June 2011 turning count survey. The traffic flows compare favourably and the inbound and outbound flows are generally within 10% of the 2011 survey. Therefore no major changes have occurred to the minor road traffic flows since the 2011 survey.
- 7.1.11 The PICADY model geometric input data was checked with measurements on site and is representative.
- 7.1.12 Within the detail of the validation process, inclusive queuing delay recorded within the PICADY 2011 base model has been compared with observed queuing delay recorded in seconds during the validation survey. A summary of the results is as follows:

Kingsley Road Exit	Observed Average Vehicle Queuing Delay	PICADY 2011 Base Scenario Queuing Delay
08:00 – 09:00	14.7 Seconds	16.2 Seconds
16:45 – 17:45	27.6 Seconds	16.8 Seconds
Wedderburn Avenue Exit		
08:00 – 09:00	12.2 Seconds	22.8 Seconds
16:45 – 17:45	18.5 Seconds	25.2 Seconds

7.1.13 The queuing delay observed is generally less than reported within the PICADY model and the model can therefore be considered robust. The exception is the PM peak hour on Kingsley Road. The additional delay was caused by the observed queuing which occurred on three occasions resulting from the level crossing. However, the resulting queues on the minor roads were minimal.

7.1.14 A comparison of queuing within the PICADY model and observations on site are as follows:

Peak 15 minute Period	Observed Average Queue in Time Period (Vehicles)	PICADY Queue in Time Period (Vehicles)
Kingsley Road		
08:30 – 08:45	0.88	0.68
17:15 – 17:30	1.00	0.46
Wedderburn Avenue		
08:30 – 08:45	0.82	0.24
17:15 – 17:30	0.80	0.36

7.1.15 The peak PICADY results within the assessed period show less than 1 vehicle queuing on Kingsley Road and Wedderburn Avenue. This reflects observed queuing within the validation survey.

7.1.16 The observed right turn queue on the A59 to Kingsley Road did not exceed 2 vehicles at any one time in either assessment period and vehicles were accommodated within the right turn provision without obstructing main road traffic flow. Similarly right turn traffic to Wedderburn Avenue was accommodated within the right turn provision without blocking A59 through flow. This is reflected in the PICADY model with no adverse queuing or delays recorded on the A59.

7.1.17 From the validation survey it is considered that the 2011 base PICADY traffic model output is representative of existing traffic conditions.

- 7.1.18 Assessment of the junction has been undertaken at 2013 and with 5 years traffic growth at 2018. Details of the PICADY assessment are contained at Appendix G.
- 7.1.19 To allow for growth in traffic flow from 2001 to 2013 and a future year of 2018, five years from the application date, the computer program TEMPRO 6.2 with Data Set 6.2 has been utilised in conjunction with Data Set AF09 of the National Transport Model. The growth factors for 2013 and 2018 in Harrogate are as follows:-
- 2011-2013 AM (weekday) 1.0040
 - 2011-2013 PM (weekday) 1.0048
 - 2011-2018 AM (weekday) 1.0431
 - 2011-2018 PM (weekday) 1.0449
- 7.1.20 The 2013 and 2018 base traffic generations have been combined with the net increases in traffic flows resulting from the residential redevelopment. The net increases are appropriate since the existing traffic flows from the egg packing and distribution activity currently occurring on the site are included within the 2011 traffic surveys.
- 7.1.21 Development residential traffic flows have been assigned at the junction based on existing turning properties. This is considered appropriate as the existing traffic flows contain residential traffic from Kingsley Road and it is likely that traffic generations from the redevelopment would follow a similar pattern.
- 7.1.22 The weekday peak hour traffic flows are shown on Figure 4 at Appendix A.
- 7.1.23 A summary of the PICADY assessment is as follows:-
- Arm A – A59 Knaresborough Road (eastbound)
 - Arm B – Wedderburn Avenue
 - Arm C – A59 Knaresborough Road (westbound)
 - Arm D – Kingsley Road

	Weekday AM Peak 08:00-09:00		Weekday PM Peak 16:45-17:45	
	RFC	Queue	RFC	Queue
B – C	0.105	0.12	0.170	0.20
B – AC	0.109	0.12	0.138	0.16
A – BCD	0.097	0.11	0.131	0.15
D – ABC	0.410	0.68	0.321	0.46
C – B	0.169	0.20	0.135	0.15

2011 Base Scenario

	Weekday AM Peak 08:00-09:00		Weekday PM Peak 16:45-17:45	
	RFC	Queue	RFC	Queue
B – C	0.105	0.12	0.171	0.20
B – AC	0.109	0.12	0.138	0.16
A – BCD	0.097	0.11	0.132	0.15
D – ABC	0.411	0.68	0.323	0.47
C – B	0.169	0.20	0.135	0.16

2013 Base Scenario

	Weekday AM Peak 08:00-09:00		Weekday PM Peak 16:45-17:45	
	RFC	Queue	RFC	Queue
B – C	0.105	0.12	0.172	0.21
B – AC	0.111	0.12	0.146	0.17
A – BCD	0.101	0.11	0.157	0.19
D – ABC	0.502	0.98	0.358	0.55
C – B	0.170	0.20	0.135	0.16

2013 Base + Development Scenario

	Weekday AM Peak 08:00-09:00		Weekday PM Peak 16:45-17:45	
	RFC	Queue	RFC	Queue
B – C	0.111	0.12	0.181	0.22
B – AC	0.121	0.14	0.155	0.18
A – BCD	0.103	0.11	0.141	0.16
D – ABC	0.446	0.79	0.354	0.54
C – B	0.178	0.22	0.144	0.17

2018 Base Scenario

	Weekday AM Peak 08:00-09:00		Weekday PM Peak 16:45-17:45	
	RFC	Queue	RFC	Queue
B – C	0.112	0.12	0.183	0.22
B – AC	0.123	0.14	0.163	0.19
A – BCD	0.108	0.12	0.167	0.20
D – ABC	0.541	1.14	0.392	0.63
C – B	0.179	0.22	0.144	0.17

2018 Base + Development Scenario

- 7.1.24 From the above tables it can be seen that there are no adverse queuing or capacity problems at the priority junction with the ratio of flow to capacity (RFC) remaining below 0.85 in all scenarios.
- 7.1.25 A junction sensitivity assessment has been undertaken using 85th percentile development traffic generations identified at paragraph 6.2.4. Again the 2013 and 2018 base traffic generations have been combined with the (85thile) net increases in traffic flows resulting from the residential redevelopment.
- 7.1.26 The weekday peak hour 85 percentile traffic flows are shown on Figure 5 at Appendix A
- 7.1.27 A summary of the PICADY sensitivity junction assessment using 85th percentile development traffic flows is as follows:-

	Weekday AM Peak 08:00-09:00		Weekday PM Peak 16:45-17:45	
	RFC	Queue	RFC	Queue
B – C	0.105	0.12	0.172	0.21
B – AC	0.111	0.12	0.152	0.18
A – BCD	0.108	0.12	0.164	0.20
D – ABC	0.525	1.07	0.385	0.61
C – B	0.171	0.20	0.135	0.16

2013 Base + 85th Percentile Development Scenario

	Weekday AM Peak 08:00-09:00		Weekday PM Peak 16:45-17:45	
	RFC	Queue	RFC	Queue
B – C	0.112	0.12	0.184	0.22
B – AC	0.123	0.14	0.170	0.20
A – BCD	0.114	0.13	0.175	0.21
D – ABC	0.565	1.25	0.422	0.71
C – B	0.180	0.22	0.145	0.17

2018 Base + 85th Percentile Development Scenario

7.1.28 From the results of the sensitivity assessment it can be seen that there are no adverse queuing or capacity problems at the priority junction with the ratio of flow to capacity (RFC) remaining below 0.85 in all scenarios.

7.1.29 The assessment of the development impact at the Kingsley Road junction with Knaresborough Road and Wedderburn Avenue is considered robust for the following reasons:

- All development traffic has been assumed to use this junction. This is worst case and therefore robust.
- Both average and 85th percentile development traffic generations have been considered within the assessments undertaken.

7.2 Kingsley Drive

7.2.1 For traffic travelling to/from Harrogate there is the potential for vehicles to use Kingsley Drive as an alternative to Kingsley Road. Kingsley Drive is a residential collector and can be accessed from the A59 via residential streets including Rydal Road, Jesmond Road, Leyland Road, Birstwith Road and Roseville Road. There is little difference in distance between these alternative routes.

7.2.2 The connecting streets to Kingsley Drive are similar in character to Kingsley Road. However, the Kingsley Drive approach to Kingsley Road has a 32m section where the carriageway narrows to approximately 3m wide and effectively limits traffic movements to single directional flow. Junction visibility at the Kingsley Drive / Kingsley Road junction is limited in both directions. A

combination of these factors makes the Kingsley Drive route less attractive for motorists. It is not within the ability of this development to improve the narrow section of Kingsley Drive, or improve junction visibility as this would require land which is not within the applicants control.

- 7.2.3 The likely development impact on the Kingsley Drive route and connecting residential streets is low and assuming 50% of peak hour development traffic chose this alternative route then this would lead to the following net increase in traffic flows:

	Increase in Generations		
	Arrivals	Departure	Total
0800-0900	+0 (+2)	+3 (+3)	+3 (+5)
1700-1800	+5 (+6)	+1 (+2)	+6 (+8)

Figures in brackets are increases based on 85th percentile traffic generations

- 7.2.4 These traffic increases split over the numerous connecting streets would not be perceivable within normal traffic flow. The largest directional increase on Kingsley Drive would be in the PM peak hour with approximately 1 additional vehicle every 10 minutes assuming worst case 85th percentile traffic generations. This would not have a detrimental effect on Kingsley Drive.

7.3 Bogs Lane

- 7.3.1 Bogs Lane provides an alternative route to Kingsley Road for development traffic to the A59 East (Knaresborough). The Bogs Lane junction with the A59 has the benefit of right turning facilities on the A59 and junction visibility is good. Again there is little difference in distance between these alternative routes.

- 7.3.2 Bogs Lane has a 7.5ton vehicle weight restriction and has considerable traffic calming along its entire route including full width vertical deflection speed humps, table top pedestrian zebra crossing, priority one way chicane and one way traffic signals. The traffic calming measures makes the Bogs Lane route less attractive for motorists.

- 7.3.3 The likely development impact on the Bogs Lane route is low and assuming 50% of peak hour development traffic chose this alternative route then this would lead to the following net increase in traffic flows:

	Increase in Generations		
	Arrivals	Departure	Total
0800-0900	+1 (+2)	+7 (+9)	+8 (+11)
1700-1800	+5 (+7)	+1 (+2)	+6 (+9)

Figures in brackets are increases based on 85th percentile traffic generations

- 7.3.4 These traffic increases would not have a detrimental effect on Bogs Lane. The largest directional increase on Bogs Lane would be in the AM peak hour with approximately 1 additional vehicle every 6.7 minutes assuming worst case 85th percentile traffic generations. The traffic calming measures in place would ensure that traffic speeds are low and traffic safety is maintained.

8 Conclusions

- 8.1 This report has considered the impact of the application proposal for a residential development at Kingsley Farm in Harrogate.
- 8.2 The development proposals consist of a development of 65 residential units (a mixture of new and converted units) on land at Kingsley Farm in Harrogate. Kingsley farm is current used as an egg packing and distribution facility.
- 8.3 The site is well located to take advantage of existing pedestrian, cycle and public transport facilities.
- 8.4 The redevelopment of the site for residential use is predicted to generate approximately 27 additional two way trips in the AM peak and 28 additional two way trips in the PM peak. This level of additional traffic generated by the development proposal is modest and unlikely to have an adverse effect on the local highway network.
- 8.5 The residential development proposals will result in the removal of HGVs on Kingsley Road. The current use on site generates between 5 and 10 HGV movements per day (two way) with an average of 7 movements. These movements are currently occurring along Kingsley Road and at the Kingsley Road / Knaresborough Road Junction. The removal of HGV traffic from residential streets is a significant benefit of the redevelopment.
- 8.6 The impact of the development on the local highway network has been assessed. The operation of Kingsley Road / Knaresborough Road / Wedderburn Avenue priority junction has been modelled with predicted peak hour traffic generations from the development. The base capacity model has been validated against existing queuing and delay observations. From the results it can be seen that the junction will not experience any adverse queuing or capacity problems as a result of the development and the junction will remain within capacity.

-
- 8.7 A sensitivity capacity assessment has been undertaken using worst case 85th percentile development traffic generations. From the results of the sensitivity assessment it has been demonstrated that there are still no adverse queuing or capacity problems at the Kingsley Road / Knaresborough Road / Wedderburn Avenue junction.
- 8.7.1 The assessment of the development impact at the Kingsley Road junction with Knaresborough Road and Wedderburn Avenue is considered robust for the following reasons:
- All development traffic has been assumed to use this junction. This is worst case and therefore robust.
 - Both average and 85th percentile development traffic generations have been considered within the assessments undertaken.
- 8.8 A qualitative assessment of the development peak hour traffic impact on Kingsley Drive and Bogs Lane has demonstrated that the development is unlikely to have an adverse material impact on these alternative access routes.
- 8.9 The Transport Statement has demonstrated that the residual cumulative impacts of the development are not severe and therefore this development should not be refused on transport grounds.

APPENDIX A

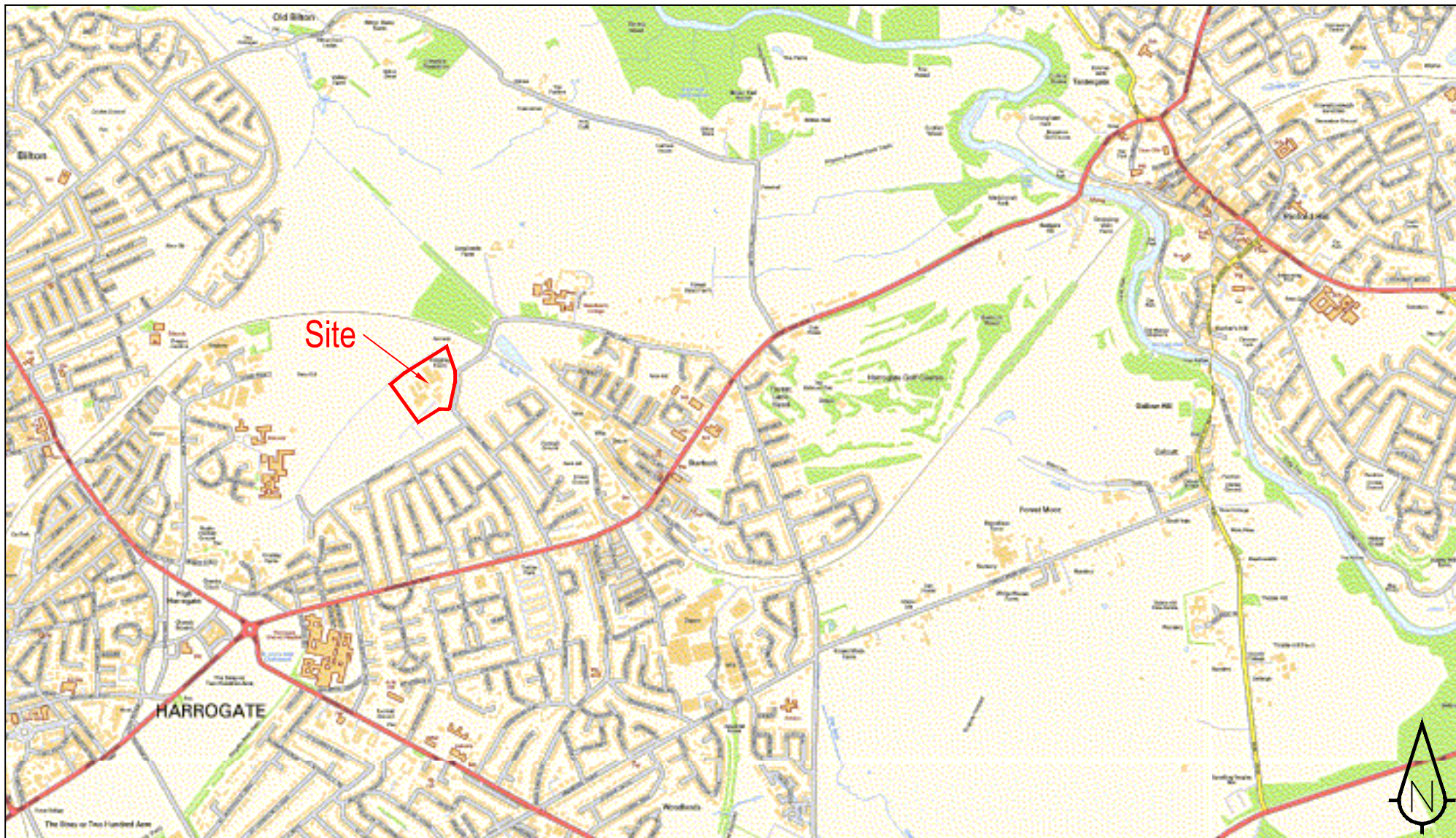
Figure 1 – Site Location Plan

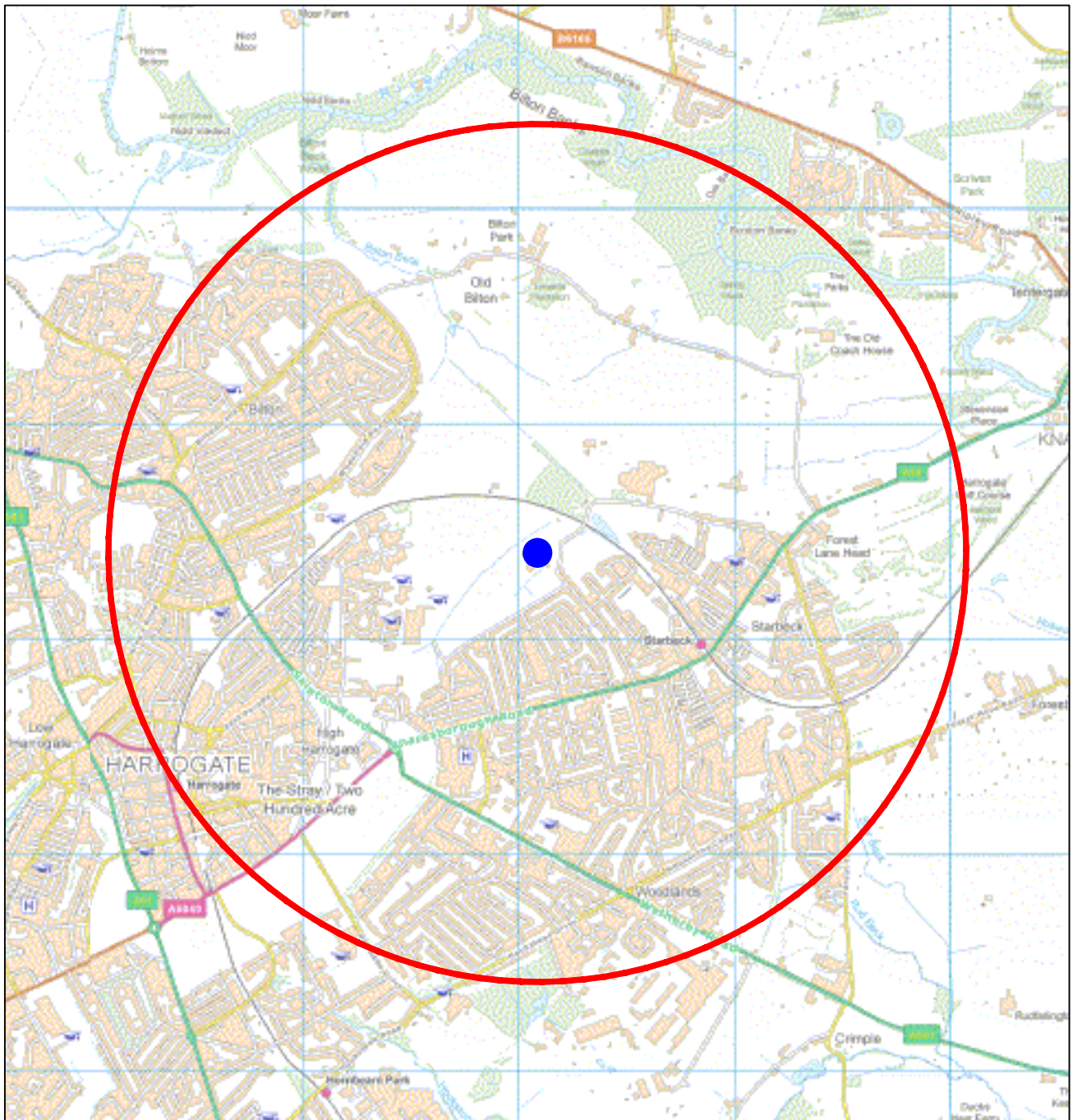
Figure 2 – 2km Walking Radius

Figure 3 – 5km Cycling Radius

Figure 4 – Peak Hour Traffic Flows

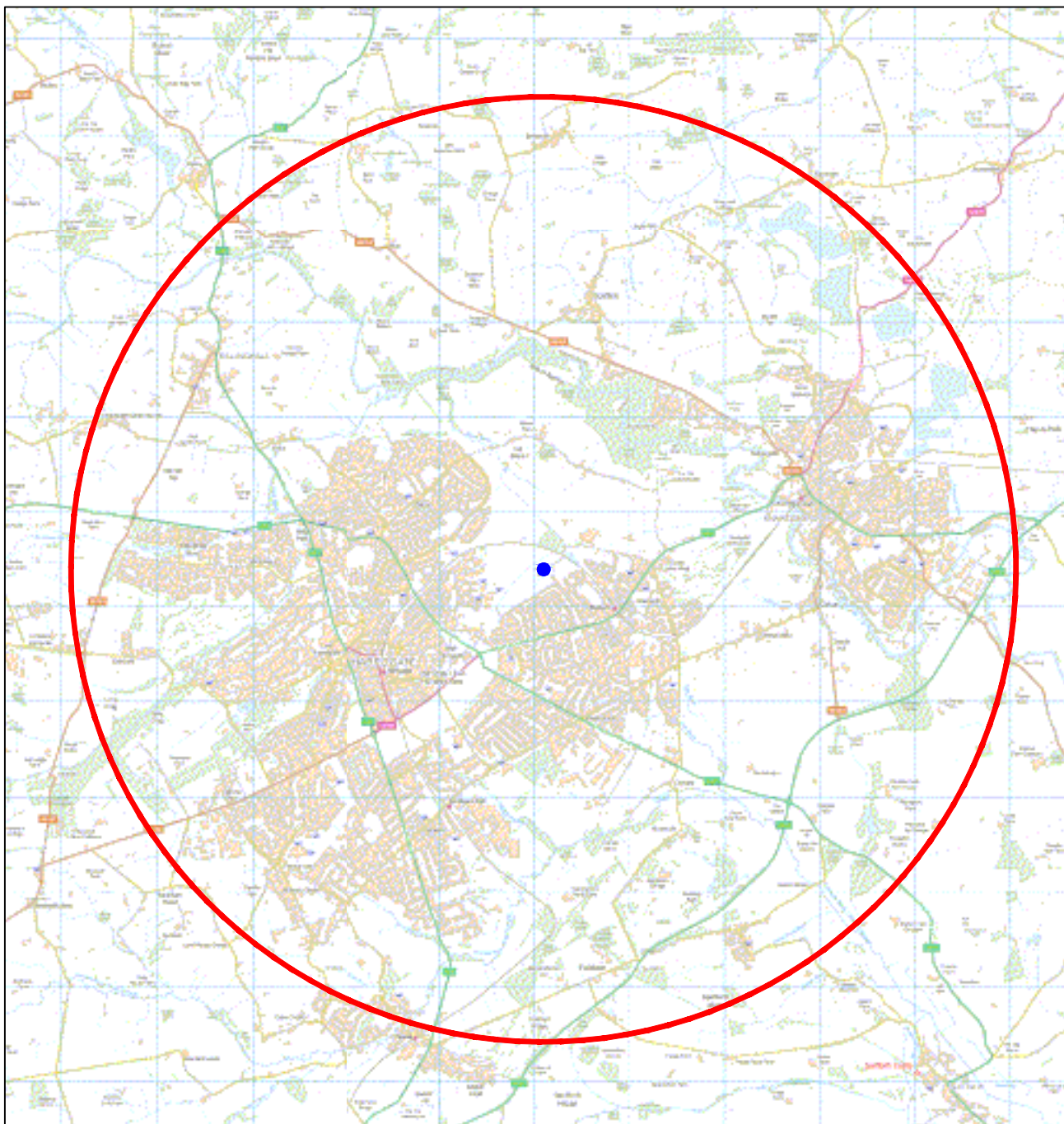
Figure 5 – 85thile Traffic Flows





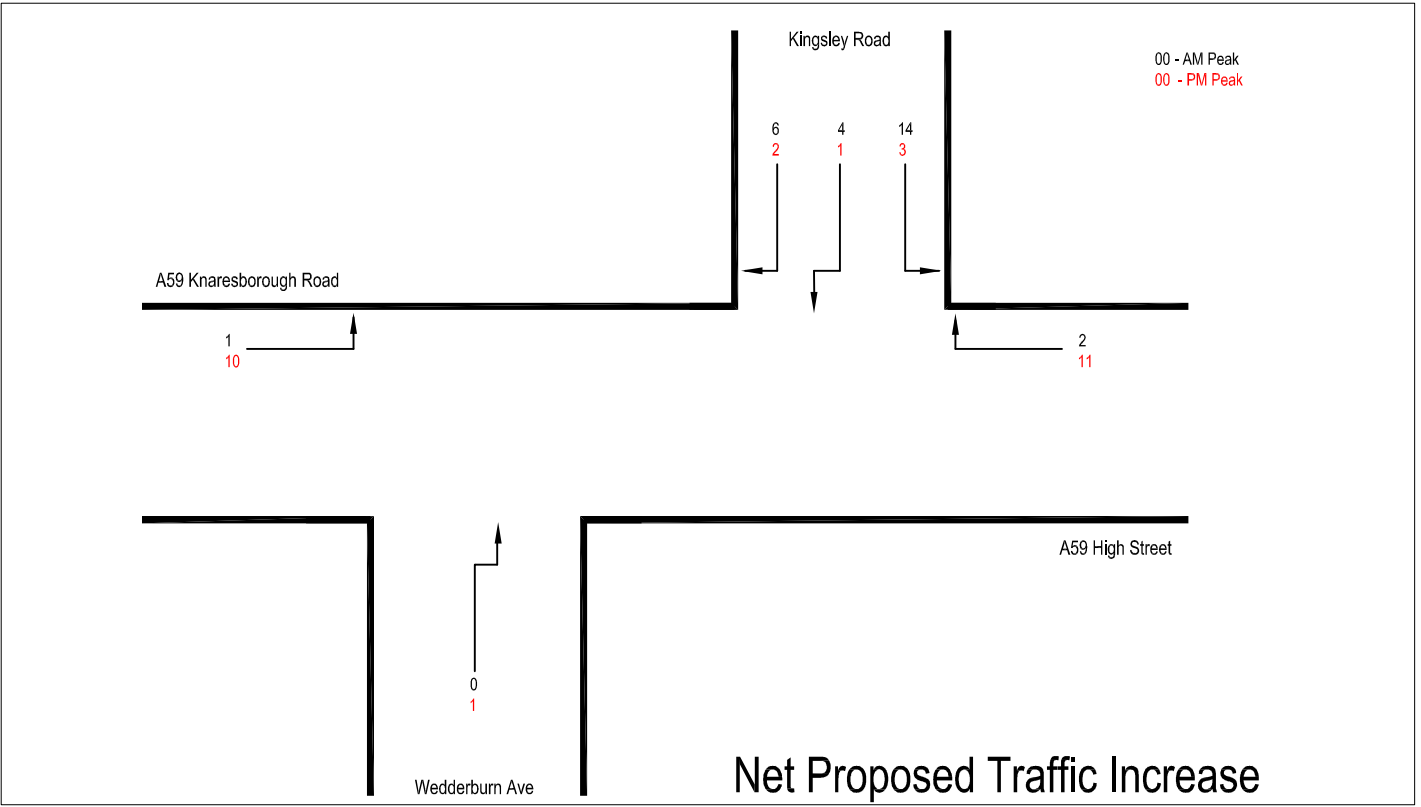
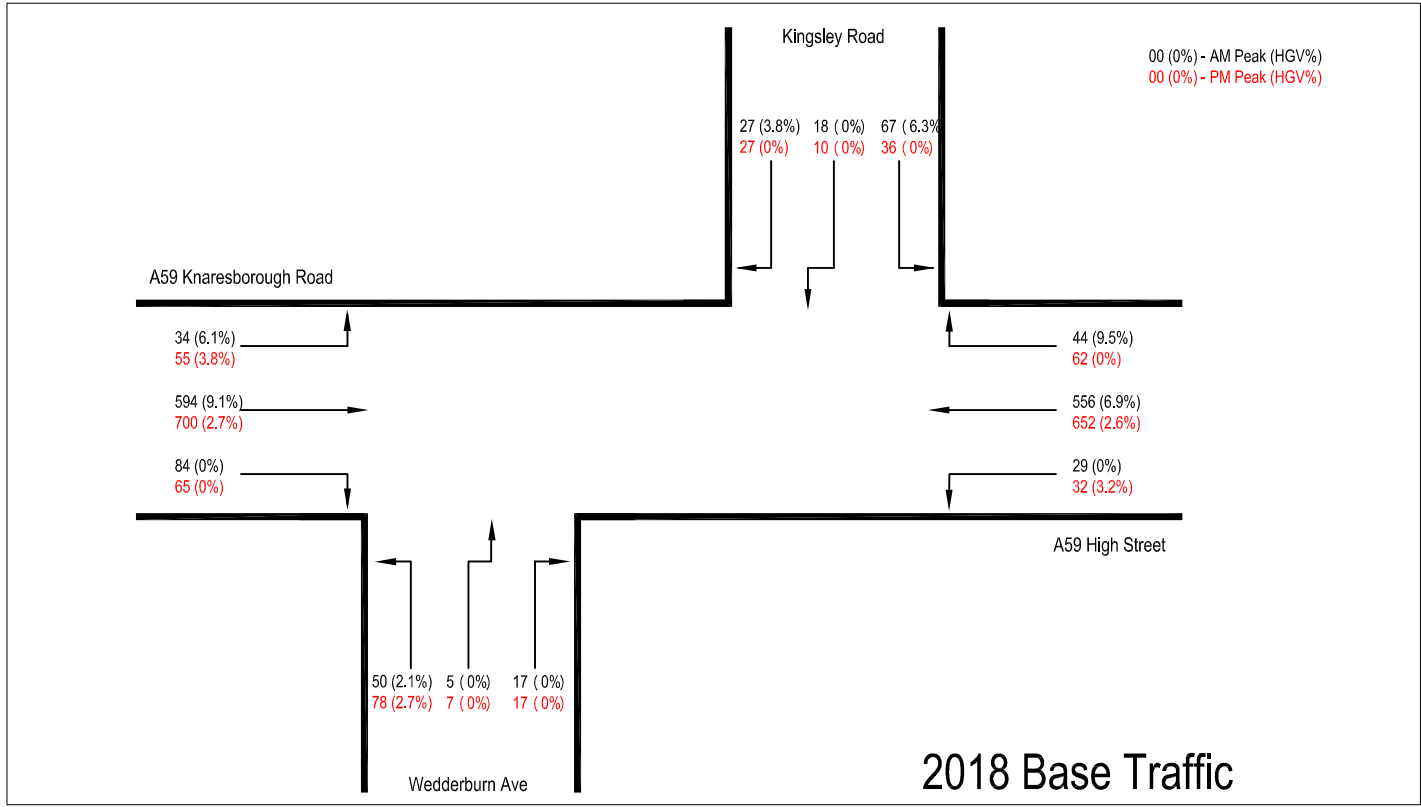
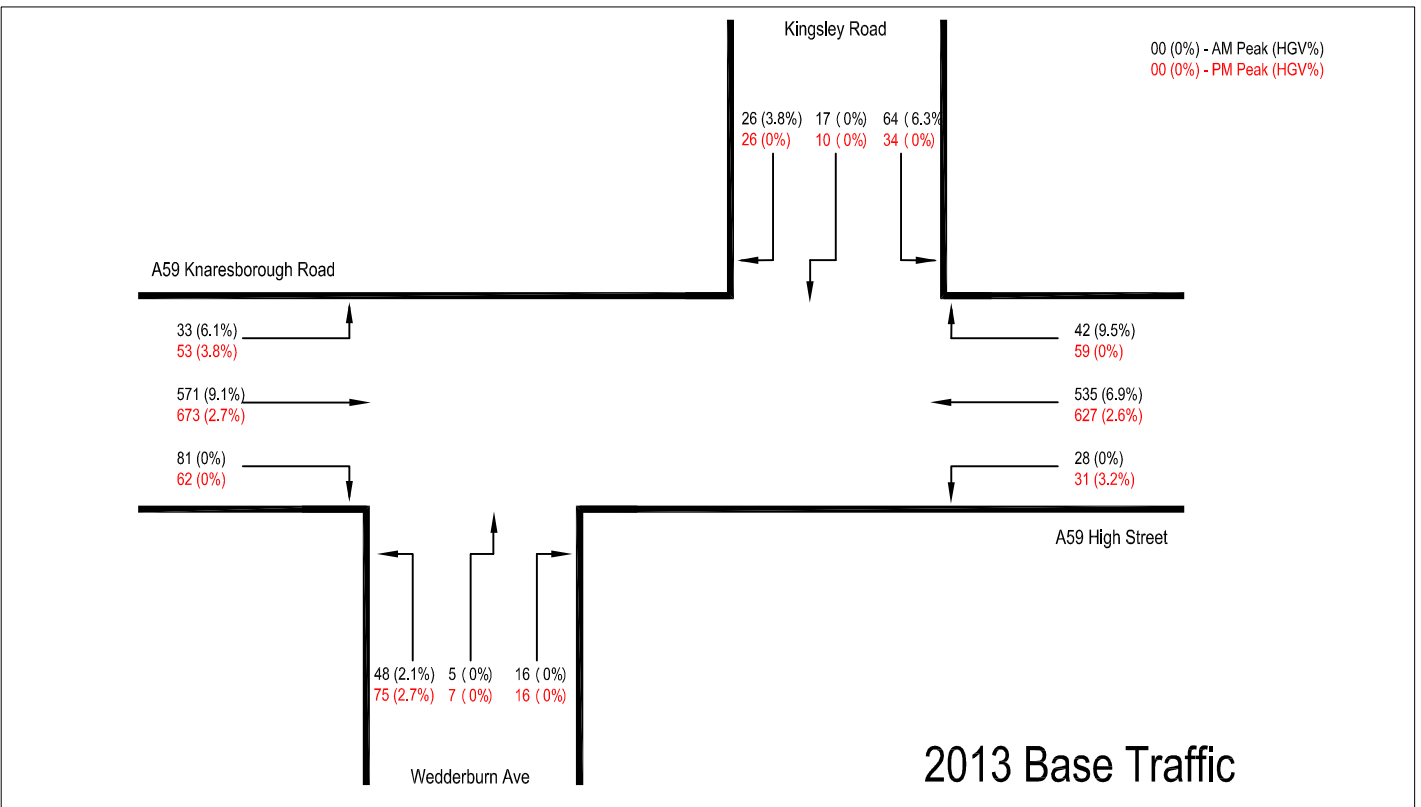
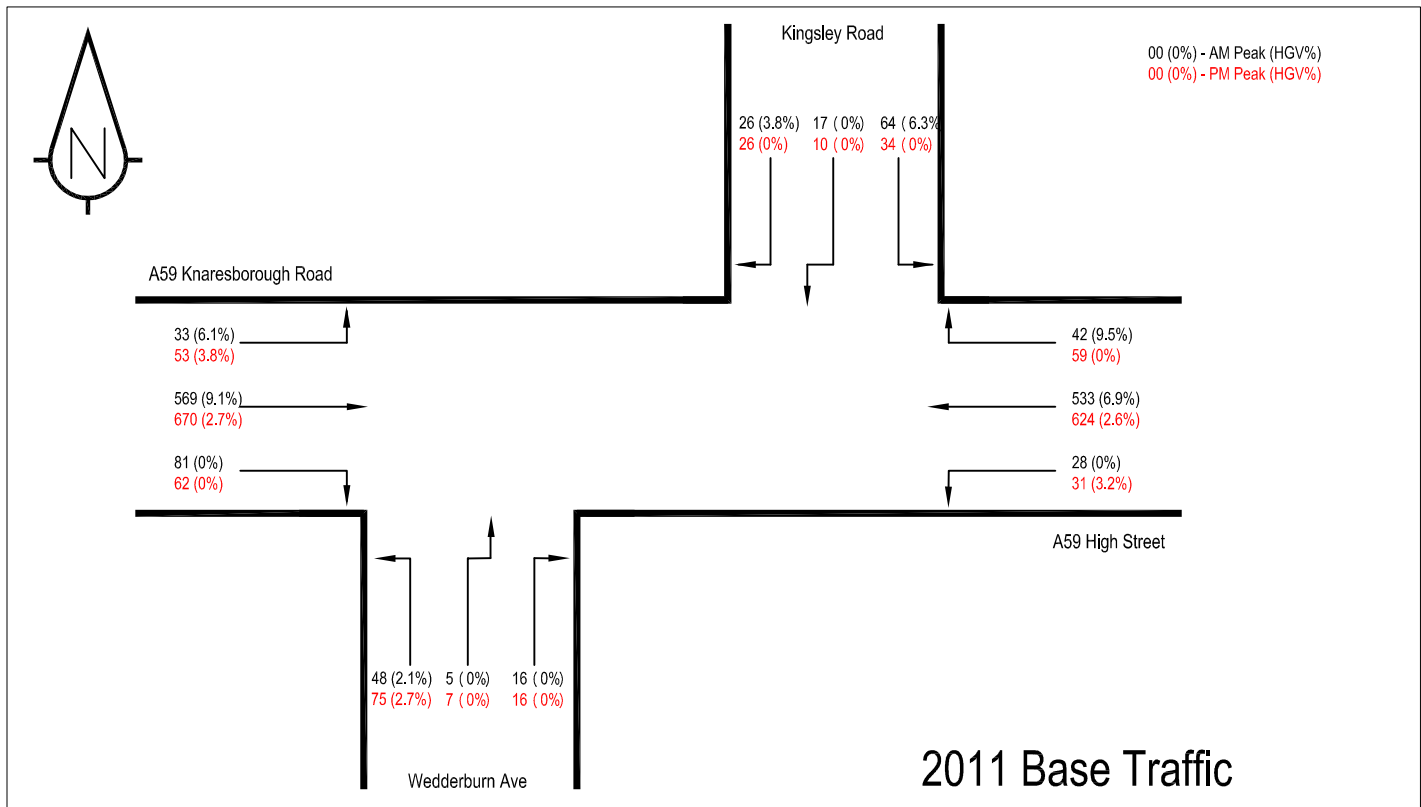
● Site

— 2km Walking Radii

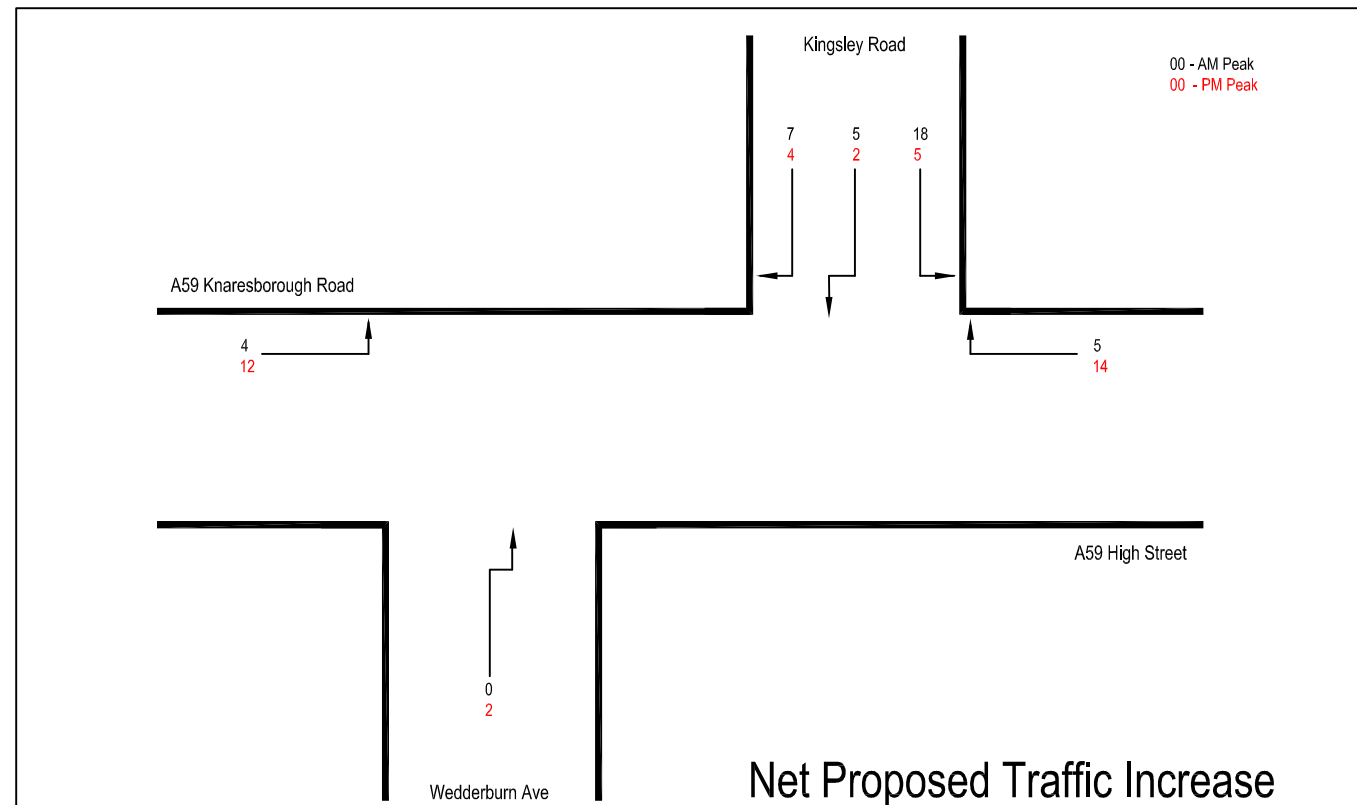
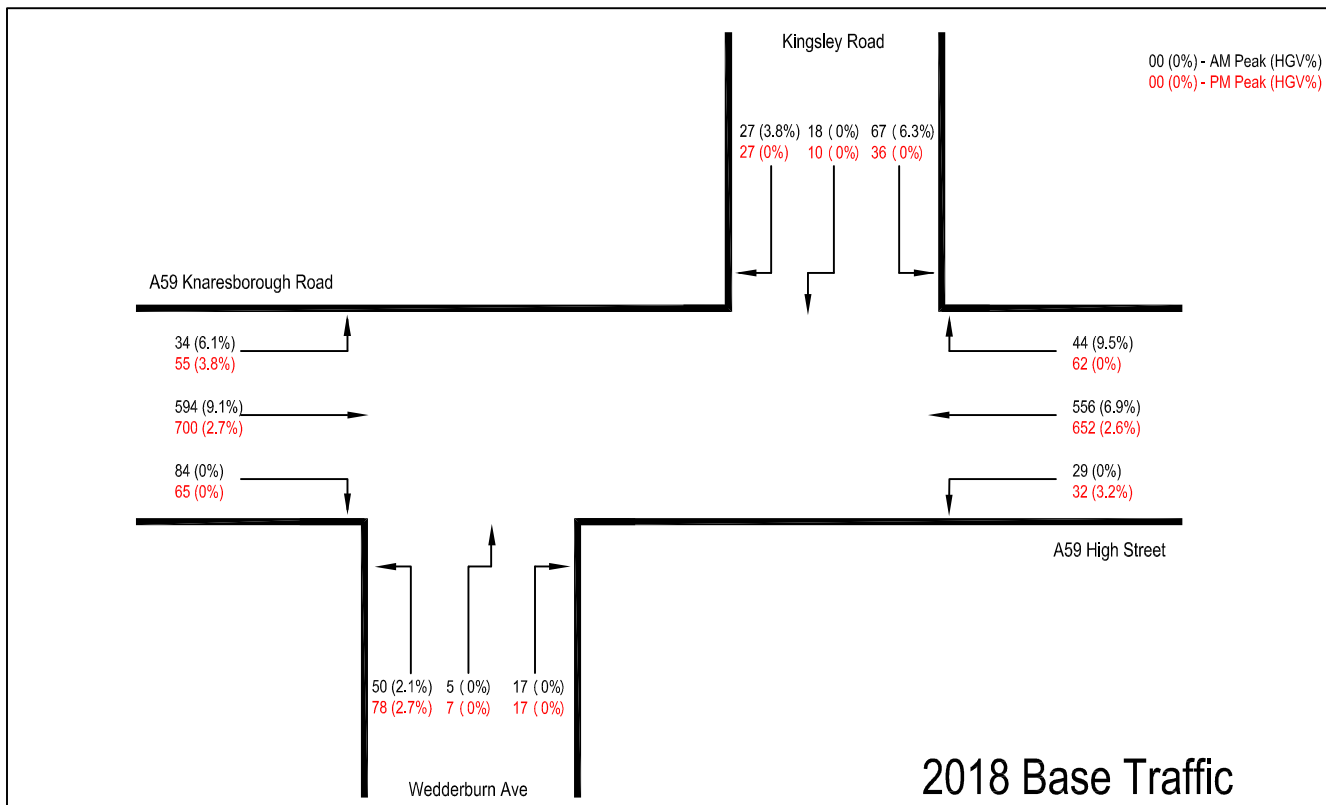
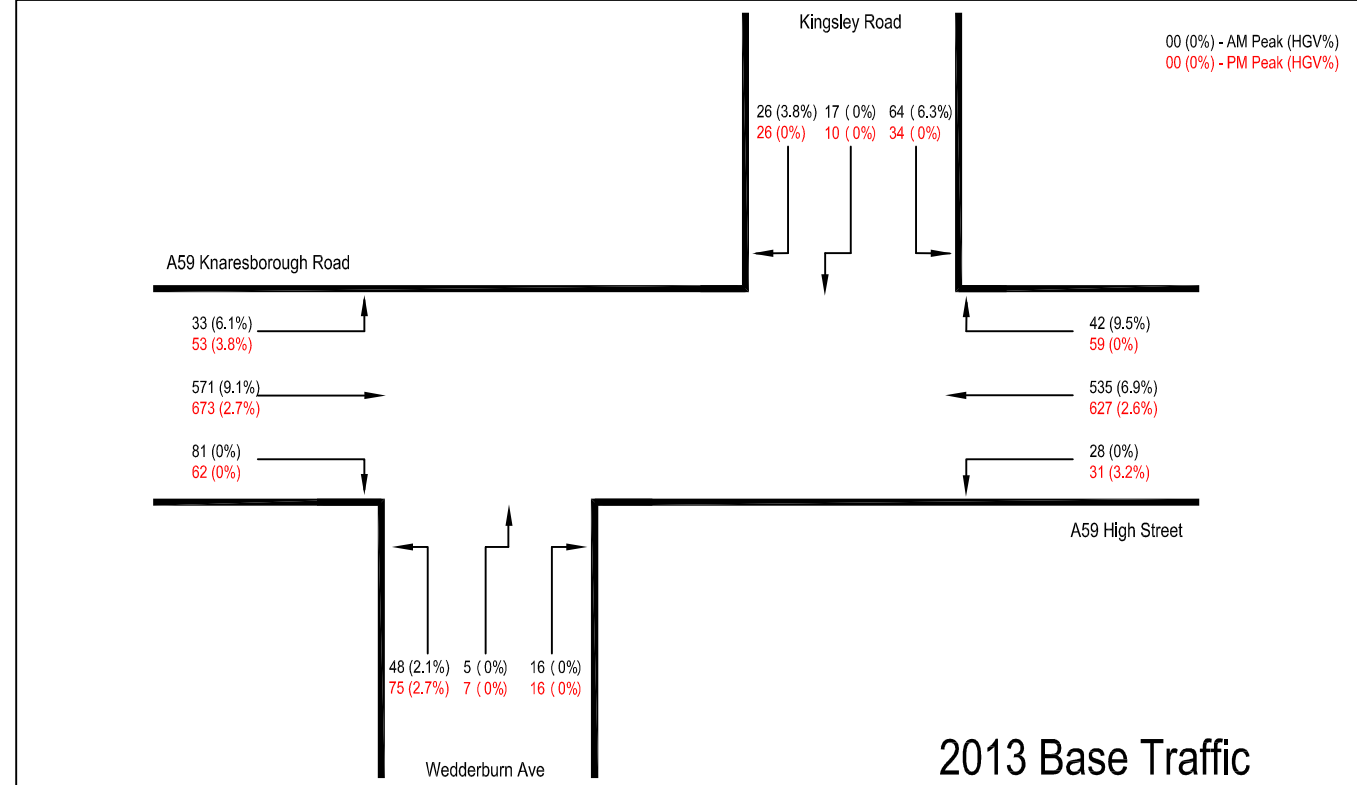
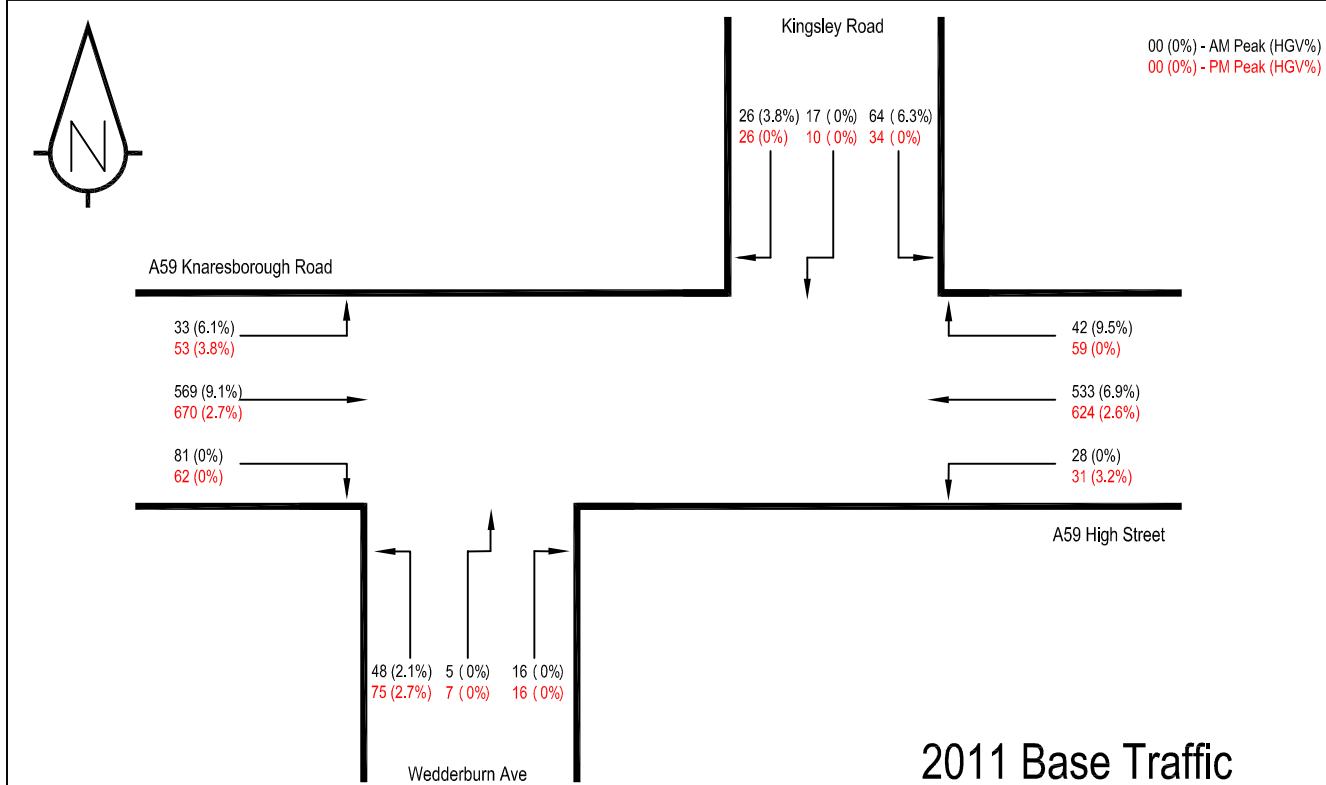


● Site

— 5km Cycling Radii



A	Rev	Net Proposed Flows Amended	SB	May 13	IEL	Scale NTS	Drawn By SB
						Drawing Size A3	Checked By IEL
						Date March 2013	Approved By IEL
						Drawing Number Figure 4	Rev A



APPENDIX B

Traffic Survey



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	A - D						TOT	A - C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	9	2	0	0	0	1	12	0	0	0	0	0	0	0
07:45	16	3	1	0	0	0	20	1	0	0	0	0	0	1
HH/TOT	25	5	1	0	0	1	32	1	0	0	0	0	0	1
08:00	10	3	0	0	0	1	14	1	0	0	0	0	0	1
08:15	12	0	2	0	0	0	14	2	0	0	0	0	0	2
08:30	17	0	1	0	0	0	18	11	0	0	0	0	0	11
08:45	17	0	1	0	0	0	18	3	0	0	0	0	0	3
H/TOT	56	3	4	0	0	1	64	17	0	0	0	0	0	17
09:00	4	3	0	0	1	0	8	4	0	0	0	0	0	4
09:15	13	1	0	0	1	0	15	2	0	0	0	0	0	2
HH/TOT	17	4	0	0	2	0	23	6	0	0	0	0	0	6
P/TOT	98	12	5	0	2	2	119	24	0	0	0	0	0	24

TIME	A - D						TOT	A - C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	6	1	0	0	0	0	7	0	0	0	0	0	0	0
16:15	11	2	0	0	0	0	13	3	1	0	0	0	0	4
16:30	5	0	0	0	0	0	5	4	0	0	0	0	0	4
16:45	8	1	0	0	0	0	9	1	0	0	0	0	0	1
H/TOT	30	4	0	0	0	0	34	8	1	0	0	0	0	9
17:00	6	3	0	0	0	0	9	4	2	0	0	0	0	6
17:15	12	0	0	0	0	0	12	2	1	0	0	0	0	3
17:30	4	0	0	0	0	0	4	0	0	0	0	0	0	0
17:45	9	0	0	0	0	0	9	1	0	0	0	0	0	1
H/TOT	31	3	0	0	0	0	34	7	3	0	0	0	0	10
P/TOT	61	7	0	0	0	0	68	15	4	0	0	0	0	19



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	A - B						TOT	B - A						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	11	2	0	0	1	0	14	1	0	0	0	0	0	1
07:45	6	2	1	0	0	0	9	4	3	0	0	0	0	7
HH/TOT	17	4	1	0	1	0	23	5	3	0	0	0	0	8
08:00	7	1	0	0	0	0	8	12	4	2	0	0	0	18
08:15	6	3	0	0	1	0	10	3	0	0	0	0	0	3
08:30	1	0	1	0	0	0	2	5	0	0	0	0	0	5
08:45	5	1	0	0	0	0	6	7	0	0	0	0	0	7
H/TOT	19	5	1	0	1	0	26	27	4	2	0	0	0	33
09:00	7	1	0	0	0	0	8	8	1	1	0	0	0	10
09:15	4	1	0	0	0	1	6	8	2	0	0	0	0	10
HH/TOT	11	2	0	0	0	1	14	16	3	1	0	0	0	20
P/TOT	47	11	2	0	2	1	63	48	10	3	0	0	0	61

TIME	A - B						TOT	B - A						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	3	1	0	0	0	0	4	6	2	0	0	0	0	8
16:15	3	1	0	0	0	0	4	9	2	1	0	0	0	12
16:30	3	0	1	0	1	0	5	6	1	0	0	0	1	8
16:45	3	2	0	0	0	0	5	9	2	0	0	0	0	11
H/TOT	12	4	1	0	1	0	18	30	7	1	0	0	1	39
17:00	8	1	0	0	0	0	9	12	1	0	0	0	0	13
17:15	7	0	0	0	0	0	7	10	0	1	0	1	0	12
17:30	4	0	0	0	1	0	5	14	2	1	0	0	0	17
17:45	6	1	0	0	0	0	7	20	1	0	0	1	0	22
H/TOT	25	2	0	0	1	0	28	56	4	2	0	2	0	64
P/TOT	37	6	1	0	2	0	46	86	11	3	0	2	1	103



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	B - D						TOT	B - C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	72	14	4	2	2	0	94	6	0	0	0	0	0	6
07:45	99	19	3	2	4	2	129	10	0	0	0	0	0	10
HH/TOT	171	33	7	4	6	2	223	16	0	0	0	0	0	16
08:00	104	29	3	4	0	3	143	19	2	0	0	0	0	21
08:15	95	23	6	4	2	2	132	24	0	0	0	0	0	24
08:30	105	13	8	11	1	1	139	21	0	0	0	0	1	22
08:45	113	25	4	12	1	0	155	13	1	0	0	0	0	14
H/TOT	417	90	21	31	4	6	569	77	3	0	0	0	1	81
09:00	81	13	5	4	2	1	106	8	1	0	0	0	0	9
09:15	108	29	11	2	1	0	151	11	1	1	0	0	0	13
HH/TOT	189	42	16	6	3	1	257	19	2	1	0	0	0	22
P/TOT	777	165	44	41	13	9	1049	112	5	1	0	0	1	119

TIME	B - D						TOT	B - C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	163	14	4	6	1	2	190	8	1	0	0	0	0	9
16:15	142	19	1	3	1	2	168	13	1	0	0	0	0	14
16:30	138	22	4	4	2	1	171	16	2	0	0	1	0	19
16:45	139	15	3	3	1	6	167	14	0	0	0	0	0	14
H/TOT	582	70	12	16	5	11	696	51	4	0	0	1	0	56
17:00	110	12	2	3	1	3	131	8	1	0	0	1	0	10
17:15	182	13	1	3	6	0	205	17	0	0	0	0	0	17
17:30	149	12	1	2	1	2	167	15	5	0	0	0	1	21
17:45	125	7	3	1	3	3	142	9	1	0	0	0	0	10
H/TOT	566	44	7	9	11	8	645	49	7	0	0	1	1	58
P/TOT	1148	114	19	25	16	19	1341	100	11	0	0	2	1	114



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	C - B						TOT	C - A						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	8	2	0	0	0	0	10	1	0	0	0	0	0	1
07:45	14	1	0	0	0	0	15	2	0	0	0	0	0	2
HH/TOT	22	3	0	0	0	0	25	3	0	0	0	0	0	3
08:00	6	0	1	0	0	0	7	0	0	0	0	0	0	0
08:15	13	3	0	0	0	0	16	1	0	0	0	0	1	2
08:30	13	0	0	0	0	0	13	1	1	0	0	0	0	2
08:45	10	2	0	0	0	0	12	1	0	0	0	0	0	1
H/TOT	42	5	1	0	0	0	48	3	1	0	0	0	1	5
09:00	16	0	0	0	0	0	16	0	0	0	0	0	0	0
09:15	6	1	0	0	0	0	7	2	0	0	0	0	0	2
HH/TOT	22	1	0	0	0	0	23	2	0	0	0	0	0	2
P/TOT	86	9	1	0	0	0	96	8	1	0	0	0	1	10

TIME	C - B						TOT	C - A						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	15	1	0	0	0	0	16	1	0	0	0	0	0	1
16:15	13	1	0	0	0	0	14	0	0	0	0	0	0	0
16:30	11	1	0	0	0	0	12	1	1	0	0	0	0	2
16:45	17	2	1	0	0	0	20	2	1	0	0	0	0	3
H/TOT	56	5	1	0	0	0	62	4	2	0	0	0	0	6
17:00	12	1	1	0	0	0	14	0	0	0	0	0	0	0
17:15	17	1	0	0	0	0	18	1	0	0	0	0	0	1
17:30	22	0	0	0	0	1	23	3	0	0	0	0	0	3
17:45	20	1	0	0	0	0	21	2	0	0	0	0	0	2
H/TOT	71	3	1	0	0	1	76	6	0	0	0	0	0	6
P/TOT	127	8	2	0	0	1	138	10	2	0	0	0	0	12



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	C - D						TOT	D - C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	3	1	0	0	1	0	5	3	1	1	0	0	0	5
07:45	1	0	0	0	1	0	2	3	2	0	0	0	0	5
HH/TOT	4	1	0	0	2	0	7	6	3	1	0	0	0	10
08:00	1	1	0	0	0	0	2	7	2	0	0	0	0	9
08:15	2	0	0	0	1	0	3	6	2	0	0	0	0	8
08:30	6	1	0	0	0	0	7	9	0	0	0	0	0	9
08:45	2	2	0	0	0	0	4	2	0	0	0	0	0	2
H/TOT	11	4	0	0	1	0	16	24	4	0	0	0	0	28
09:00	2	1	0	0	1	0	4	4	0	0	0	0	0	4
09:15	2	0	0	0	0	0	2	2	1	0	0	0	0	3
HH/TOT	4	1	0	0	1	0	6	6	1	0	0	0	0	7
P/TOT	19	6	0	0	4	0	29	36	8	1	0	0	0	45

TIME	C - D						TOT	D - C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	3	0	0	0	0	0	3	10	3	0	0	0	0	13
16:15	4	1	0	0	0	0	5	6	0	0	0	0	0	6
16:30	4	0	0	0	0	0	4	6	2	0	0	0	0	8
16:45	2	0	0	0	0	0	2	7	1	0	0	0	0	8
H/TOT	13	1	0	0	0	0	14	29	6	0	0	0	0	35
17:00	7	0	0	0	0	0	7	4	0	0	0	0	0	4
17:15	5	0	0	0	0	0	5	5	2	0	0	0	0	7
17:30	2	0	0	0	0	0	2	9	2	1	0	0	0	12
17:45	2	0	0	0	0	0	2	6	0	0	0	1	0	7
H/TOT	16	0	0	0	0	0	16	24	4	1	0	1	0	30
P/TOT	29	1	0	0	0	0	30	53	10	1	0	1	0	65



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	D - B						TOT	D - A						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	104	14	4	8	1	2	133	5	0	0	0	0	1	6
07:45	116	16	9	12	3	1	157	6	0	0	0	0	0	6
HH/TOT	220	30	13	20	4	3	290	11	0	0	0	0	0	12
08:00	130	28	7	3	0	2	170	8	1	2	0	0	0	11
08:15	78	19	7	3	3	1	111	9	1	1	0	0	0	11
08:30	84	25	6	1	2	2	120	8	0	1	0	0	0	9
08:45	103	16	6	4	0	3	132	9	1	0	0	1	0	11
H/TOT	395	88	26	11	5	8	533	34	3	4	0	1	0	42
09:00	91	15	2	4	0	0	112	6	1	1	0	0	0	8
09:15	148	21	10	2	2	1	184	5	3	2	0	0	0	10
HH/TOT	239	36	12	6	2	1	296	11	4	3	0	0	0	18
P/TOT	854	154	51	37	11	12	1119	56	7	7	0	1	0	72

TIME	D - B						TOT	D - A						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	151	10	3	3	2	2	171	15	3	0	0	2	0	20
16:15	106	12	3	2	1	1	125	7	1	2	0	0	0	10
16:30	141	16	2	0	3	2	164	9	0	2	0	0	0	11
16:45	110	22	4	2	3	4	145	6	2	0	0	0	1	9
H/TOT	508	60	12	7	9	9	605	37	6	4	0	2	1	50
17:00	106	15	1	2	0	3	127	15	1	0	0	0	1	17
17:15	176	17	2	3	2	2	202	12	1	0	0	0	0	13
17:30	133	11	1	1	2	2	150	19	1	0	0	0	0	20
17:45	119	10	2	2	2	1	136	17	1	0	0	0	0	18
H/TOT	534	53	6	8	6	8	615	63	4	0	0	0	1	68
P/TOT	1042	113	18	15	15	17	1220	100	10	4	0	2	2	118



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	CAR	LGV	TO ARM A				TOT	CAR	LGV	FROM ARM A				TOT
			HGV	PSV	MCL	PCL				HGV	PSV	MCL	PCL	
07:30	7	0	0	0	0	1	8	20	4	0	0	1	1	26
07:45	12	3	0	0	0	0	15	23	5	2	0	0	0	30
HH/TOT	19	3	0	0	0	0	22	43	9	2	0	1	1	56
08:00	20	5	4	0	0	0	29	18	4	0	0	0	1	23
08:15	13	1	1	0	0	1	16	20	3	2	0	1	0	26
08:30	14	1	1	0	0	0	16	29	0	2	0	0	0	31
08:45	17	1	0	0	1	0	19	25	1	1	0	0	0	27
H/TOT	64	8	6	0	1	1	80	92	8	5	0	1	1	107
09:00	14	2	2	0	0	0	18	15	4	0	0	1	0	20
09:15	15	5	2	0	0	0	22	19	2	0	0	1	1	23
HH/TOT	29	7	4	0	0	0	40	34	6	0	0	2	1	43
P/TOT	112	18	10	0	1	1	142	169	23	7	0	4	3	206

TIME	CAR	LGV	TO ARM A				TOT	CAR	LGV	FROM ARM A				TOT
			HGV	PSV	MCL	PCL				HGV	PSV	MCL	PCL	
16:00	22	5	0	0	2	0	29	9	2	0	0	0	0	11
16:15	16	3	3	0	0	0	22	17	4	0	0	0	0	21
16:30	16	2	2	0	0	1	21	12	0	1	0	1	0	14
16:45	17	5	0	0	0	1	23	12	3	0	0	0	0	15
H/TOT	71	15	5	0	2	2	95	50	9	1	0	1	0	61
17:00	27	2	0	0	0	1	30	18	6	0	0	0	0	24
17:15	23	1	1	0	1	0	26	21	1	0	0	0	0	22
17:30	36	3	1	0	0	0	40	8	0	0	0	1	0	9
17:45	39	2	0	0	1	0	42	16	1	0	0	0	0	17
H/TOT	125	8	2	0	2	1	138	63	8	0	0	1	0	72
P/TOT	196	23	7	0	4	3	233	113	17	1	0	2	0	133



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	TO ARM B						TOT	FROM ARM B						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	123	18	4	8	2	2	157	79	14	4	2	2	0	101
07:45	136	19	10	12	3	1	181	113	22	3	2	4	2	146
HH/TOT	259	37	14	20	5	3	338	192	36	7	4	6	2	247
08:00	143	29	8	3	0	2	185	135	35	5	4	0	3	182
08:15	97	25	7	3	4	1	137	122	23	6	4	2	2	159
08:30	98	25	7	1	2	2	135	131	13	8	11	1	2	166
08:45	118	19	6	4	0	3	150	133	26	4	12	1	0	176
H/TOT	456	98	28	11	6	8	607	521	97	23	31	4	7	683
09:00	114	16	2	4	0	0	136	97	15	6	4	2	1	125
09:15	158	23	10	2	2	2	197	127	32	12	2	1	0	174
HH/TOT	272	39	12	6	2	2	333	224	47	18	6	3	1	299
P/TOT	987	174	54	37	13	13	1278	937	180	48	41	13	10	1229

TIME	TO ARM B						TOT	FROM ARM B						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	169	12	3	3	2	2	191	177	17	4	6	1	2	207
16:15	122	14	3	2	1	1	143	164	22	2	3	1	2	194
16:30	155	17	3	0	4	2	181	160	25	4	4	3	2	198
16:45	130	26	5	2	3	4	170	162	17	3	3	1	6	192
H/TOT	576	69	14	7	10	9	685	663	81	13	16	6	12	791
17:00	126	17	2	2	0	3	150	130	14	2	3	2	3	154
17:15	200	18	2	3	2	2	227	209	13	2	3	7	0	234
17:30	159	11	1	1	3	3	178	178	19	2	2	1	3	205
17:45	145	12	2	2	2	1	164	154	9	3	1	4	3	174
H/TOT	630	58	7	8	7	9	719	671	55	9	9	14	9	767
P/TOT	1206	127	21	15	17	18	1404	1334	136	22	25	20	21	1558



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	TO ARM C						TOT	FROM ARM C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	9	1	1	0	0	0	11	12	3	0	0	1	0	16
07:45	14	2	0	0	0	0	16	17	1	0	0	1	0	19
HH/TOT	23	3	1	0	0	0	27	29	4	0	0	2	0	35
08:00	27	4	0	0	0	0	31	7	1	1	0	0	0	9
08:15	32	2	0	0	0	0	34	16	3	0	0	1	1	21
08:30	41	0	0	0	0	1	42	20	2	0	0	0	0	22
08:45	18	1	0	0	0	0	19	13	4	0	0	0	0	17
H/TOT	118	7	0	0	0	1	126	56	10	1	0	1	1	69
09:00	16	1	0	0	0	0	17	18	1	0	0	1	0	20
09:15	15	2	1	0	0	0	18	10	1	0	0	0	0	11
HH/TOT	31	3	1	0	0	0	35	28	2	0	0	1	0	31
P/TOT	172	13	2	0	0	1	188	113	16	1	0	4	1	135

TIME	TO ARM C						TOT	FROM ARM C						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	18	4	0	0	0	0	22	19	1	0	0	0	0	20
16:15	22	2	0	0	0	0	24	17	2	0	0	0	0	19
16:30	26	4	0	0	1	0	31	16	2	0	0	0	0	18
16:45	22	1	0	0	0	0	23	21	3	1	0	0	0	25
H/TOT	88	11	0	0	1	0	100	73	8	1	0	0	0	82
17:00	16	3	0	0	1	0	20	19	1	1	0	0	0	21
17:15	24	3	0	0	0	0	27	23	1	0	0	0	0	24
17:30	24	7	1	0	0	1	33	27	0	0	0	0	1	28
17:45	16	1	0	0	1	0	18	24	1	0	0	0	0	25
H/TOT	80	14	1	0	2	1	98	93	3	1	0	0	1	98
P/TOT	168	25	1	0	3	1	198	166	11	2	0	0	1	180



1436/KNARESBOROUGH ROAD HARROGATE
JUNE 11
MANUAL CLASSIFIED COUNT

SITE: 1 DAY: Tuesday
LOCATION: KNARESBOROUGH ROAD HARROGATE DATE: 28/06/2011

TIME	TO ARM D						TOT	FROM ARM D						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
07:30	84	17	4	2	3	1	111	112	15	5	8	1	3	144
07:45	116	22	4	2	5	2	151	125	18	9	12	3	1	168
HH/TOT	200	39	8	4	8	3	262	237	33	14	20	4	3	311
08:00	115	33	3	4	0	4	159	145	31	9	3	0	2	190
08:15	109	23	8	4	3	2	149	93	22	8	3	3	1	130
08:30	128	14	9	11	1	1	164	101	25	7	1	2	2	138
08:45	132	27	5	12	1	0	177	114	17	6	4	1	3	145
H/TOT	484	97	25	31	5	7	649	453	95	30	11	6	8	603
09:00	87	17	5	4	4	1	118	101	16	3	4	0	0	124
09:15	123	30	11	2	2	0	168	155	25	12	2	2	1	197
HH/TOT	210	47	16	6	6	1	286	256	41	15	6	2	1	321
P/TOT	894	183	49	41	19	11	1197	946	169	59	37	12	12	1235

TIME	TO ARM D						TOT	FROM ARM D						TOT
	CAR	LGV	HGV	PSV	MCL	PCL		CAR	LGV	HGV	PSV	MCL	PCL	
16:00	172	15	4	6	1	2	200	176	16	3	3	4	2	204
16:15	157	22	1	3	1	2	186	119	13	5	2	1	1	141
16:30	147	22	4	4	2	1	180	156	18	4	0	3	2	183
16:45	149	16	3	3	1	6	178	123	25	4	2	3	5	162
H/TOT	625	75	12	16	5	11	744	574	72	16	7	11	10	690
17:00	123	15	2	3	1	3	147	125	16	1	2	0	4	148
17:15	199	13	1	3	6	0	222	193	20	2	3	2	2	222
17:30	155	12	1	2	1	2	173	161	14	2	1	2	2	182
17:45	136	7	3	1	3	3	153	142	11	2	2	3	1	161
H/TOT	613	47	7	9	11	8	695	621	61	7	8	7	9	713
P/TOT	1238	122	19	25	16	19	1439	1195	133	23	15	18	19	1403

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
1	Kinsley Road Harrogate. N54.00097, W1.50943. Between Chippendale Foods and Kingsley Drive	Northbound	30	07 May 2011	13 May 2011	4134	667	591	546	13.2	111	2.7	5	0.1	23.9	29.5
		Southbound	30	07 May 2011	13 May 2011	3209	518	458	266	8.3	48	1.5	0	0.0	22.6	28.2
		Both Directions	30	07 May 2011	13 May 2011	7343	1185	1049	812	11.1	159	2.2	5	0.1	23.3	28.9

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
2	Kingsley Road, Harrogate. N53.99752, W1.50533. Between A59 High Street and Kingsley Close	Northbound	30	07 May 2011	13 May 2011	8423	1259	1203	24	0.3	1	0.0	0	0.0	18.5	21.9
		Southbound	30	07 May 2011	13 May 2011	7649	1131	1093	34	0.4	2	0.0	0	0.0	19.6	23.5
		Both Directions	30	07 May 2011	13 May 2011	16072	2389	2296	58	0.4	3	0.0	0	0.0	19.1	22.8

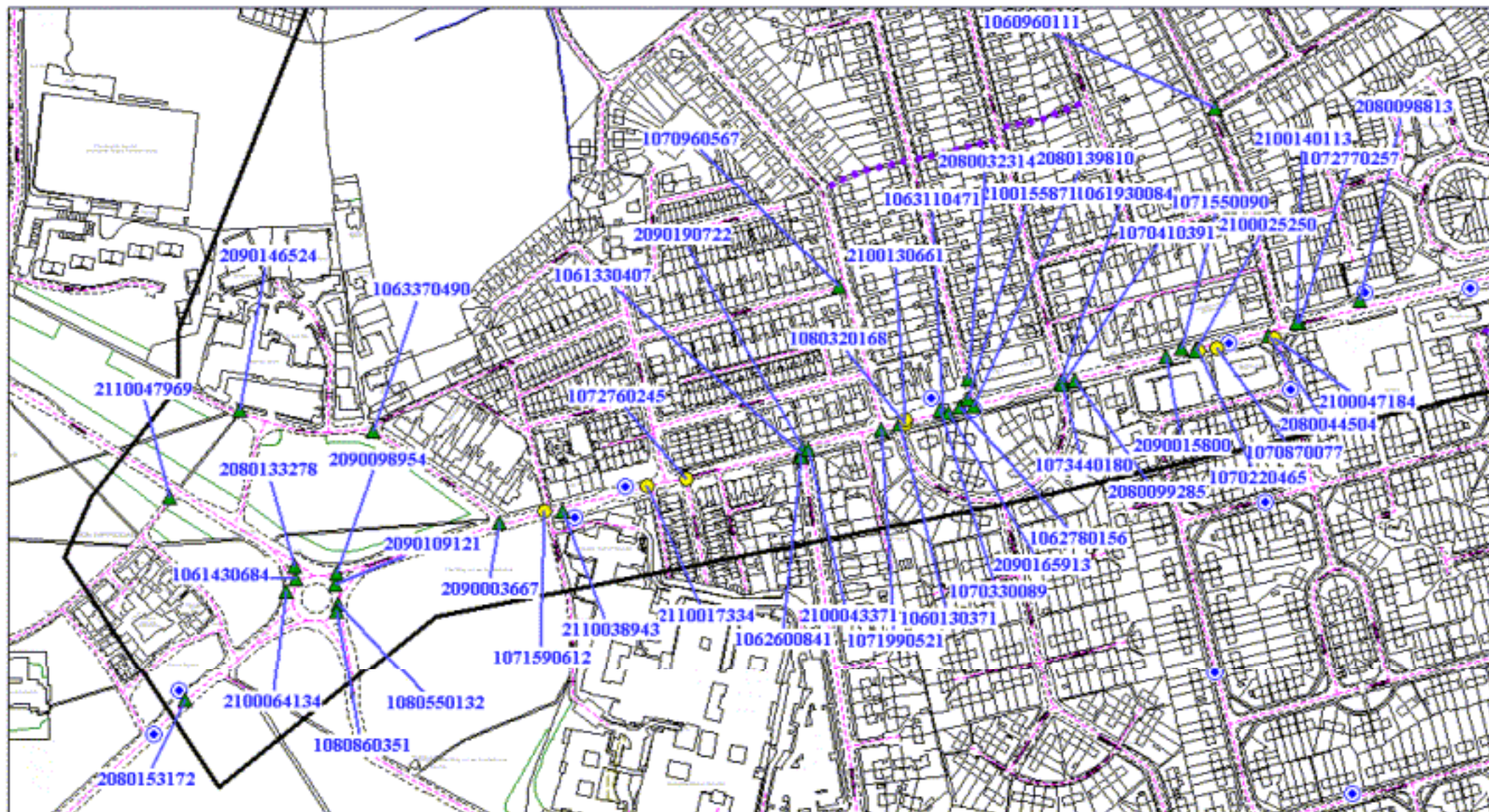
Automatic Tr

Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed
3	A59 High Street, Harrogate. N53.99727, W1.50484. Between Stonefall Avenue and Kingsley Avenue	Eastbound	30	07 May 2011	13 May 2011	64603	9612	9229	12111	18.7	2260	3.5	112	0.2	25.1
		Westbound	30	07 May 2011	13 May 2011	66795	9885	9542	9541	14.3	1980	3.0	113	0.2	23.2
		Both Directions	30	07 May 2011	13 May 2011	131398	19498	18771	21652	16.5	4240	3.2	225	0.2	24.1



Site No.	Location.	Direction.	Speed Limit - PSL (mph)	Start Date.	End Date.	Total Vehicles.	5 Day Ave.	7 Day Ave.	No. > Speed Limit.	% > Speed Limit.	No. > ACPO Limit.	% > ACPO Limit.	No. > DfT Limit.	% > DfT Limit.	Mean Speed	85%ile Speed
3	Chippendale Foods Entry/Exit N54.00193, W1.51082	Northbound	10	25 February 2011	07 March 2011	614	78	63	367	59.8	125	20.4	0	0.0	10.8	13.6
		Southbound	10	25 February 2011	07 March 2011	606	77	59	205	33.8	30	5.0	0	0.0	9.1	11.2
		Both Directions	10	25 February 2011	07 March 2011	1220	155	120	572	46.9	155	12.7	0	0.0	10.0	12.5

APPENDIX C
Personal Injury Accident Data

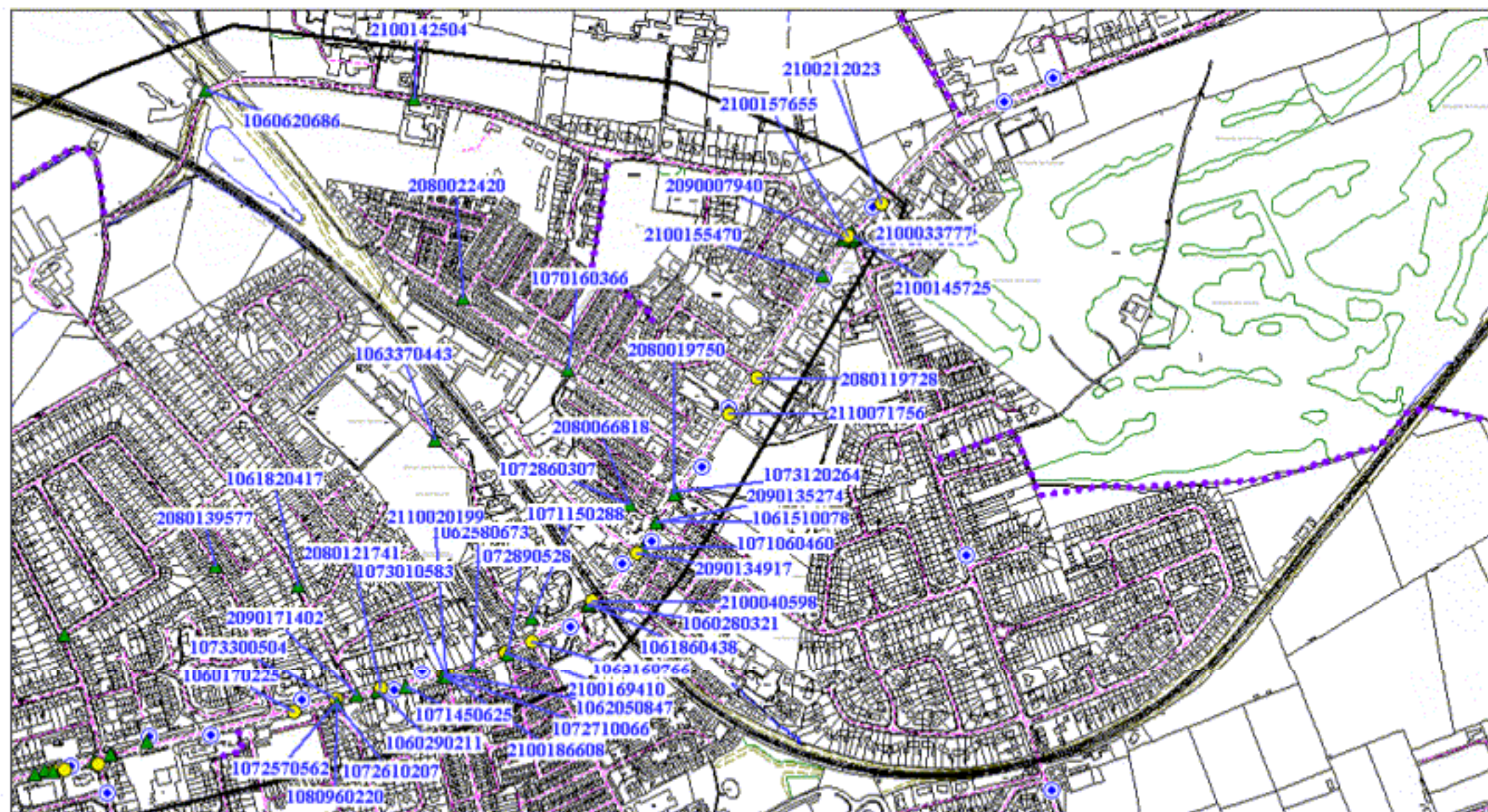


highways
NORTH YORKSHIRE

A59 Knaresborough Rd, Harrogate.
Collision Plan 01/01/2006 to 31/05/2011.
2011 data is provisional.

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SCALE	1 : 4220
DATE	24/06/2011
DRAWING No.	
DRAWN BY	



highways
NORTH YORKSHIRE

A59 Knaresborough Rd, Harrogate. Collision Plan 01/01/2006 to 31/05/2011. 2011 data is provisional.

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North Yorkshire Council
Licence No. 100017945 2011

SCALE	1 : 7300
DATE	24/06/2011
DRAWING No.	
DRAWN BY	

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped				
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types			
1060130371	Slight	13/01/2006	1200	431891	455633	0	0	1	810C1A	5 1 1	Light	Fine without high winds	Dry	9
1060170225	Serious	17/01/2006	1000	432459	455772	0	1	0	602V1A	1 2 3	Light	Fine without high winds	Dry	1
1060280321	Slight	28/01/2006	1415	432863	455923	0	0	1	405V1A 406V1A	0 0 0	Light	Fine without high winds	Wet/Damp	9 9 19
1060290211	Slight	29/01/2006	1030	432574	455801	0	0	1	308V1A 405V1A 406V1A 505V1B 602V1B	0 0 0	Light	Fine without high winds	Dry	9 9 9
1060620686	Slight	03/03/2006	1605	432338	456631	0	0	2	103V1A	0 0 0	Light	Snowing without high winds	Snow	10
1060960111	Slight	06/04/2006	0840	432142	455884	0	0	4	405V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
1061330407	Slight	13/05/2006	1525	431813	455610	0	0	1	308V1A 402V1B 405V1A 407V1B	0 0 0	Light	Fine without high winds	Wet/Damp	9 1
1061430684	Slight	23/05/2006	0945	431411	455510	0	0	1	403V2B	0 0 0	Light	Fine without high winds	Dry	9 9
1061510078	Slight	31/05/2006	1020	432961	456038	0	0	2	405V1A 602V1A	0 0 0	Light	Fine without high winds	Dry	9 9
1061820417	Slight	01/07/2006	1216	432465	455951	0	0	1	405V2A 701V1A 310V2A	0 0 0	Light	Fine without high winds	Dry	9 1
1061860820	Slight	05/07/2006	1800	433220	456429	0	0	1	601V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
1061860438	Slight	05/07/2006	1200	432866	455925	0	0	1	405V1B 410V2B	0 0 0	Light	Fine without high winds	Dry	9 1
1061930084	Slight	12/07/2006	0735	432019	455667	0	0	2	308V1B 410V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
1062050847	Serious	24/07/2006	1708	432670	455823	0	1	0	405V1A	0 0 0	Light	Fine without high winds	Dry	9 5
1062160766	Serious	04/08/2006	1911	432786	455874	0	1	0	403V1A 405V1A 602V1A	0 0 0	Light	Fine without high winds	Dry	9 3
1062580673	Slight	15/09/2006	1530	432705	455836	0	0	1	406V1A 401V1A	0 0 0	Light	Fine without high winds	Dry	2 10
1062600841	Slight	17/09/2006	2335	431813	455607	0	0	1	403V1A 407V1B	10 9 9	Dark	Fine without high winds	Dry	9
1062620136	Slight	19/09/2006	0927	433229	456426	0	0	1	405V1A 602V1B 701V1B	0 0 0	Light	Fine without high winds	Dry	9 19

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped				
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types			
1062780156	Slight	05/10/2006	0800	431939	455646	0	0	1	701V1A 801C1A 802C1B	8 1 1	Light	Fine without high winds	Dry	2
1063110471	Slight	07/11/2006	1210	431926	455643	0	0	1	405V1A 408V1A	0 0 0	Light	Fine without high winds	Dry	9 9
1063370490	Slight	30/11/2006	0850	431473	455628	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 1
1063370443	Slight	03/12/2006	1805	432654	456152	0	0	1	103V1A 999V1A	0 0 0	Dark	Raining with high winds	Wet/Damp	2
1070160366	Slight	16/01/2007	1738	432837	456247	0	0	1	904V1A	0 0 0	Dark	Fine without high winds	Dry	9 1
1070220465	Serious	22/01/2007	1930	432129	455691	0	1	0	405V2A	0 0 0	Dark	Raining without high winds	Wet/Damp	9 9
1070330089	Slight	02/02/2007	0845	431923	455644	0	0	1	802C1A	5 3 1	Light	Fine without high winds	Wet/Damp	9
1070410391	Slight	10/02/2007	1730	432022	455667	0	0	2	402V1A 405V1B 406V1B 602V1B 708V1B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
1070870077	Serious	28/03/2007	0820	432143	455693	0	1	0	406V1A 406V2A 707V1A 707V2A 405V1B 307V2B	0 0 0	Light	Fog or mist	Wet/Damp	9 5
1070960567	Slight	06/04/2007	1920	431843	455742	0	0	1	403V2B 405V2A 710V2A	0 0 0	Dark	Fine without high winds	Dry	9 9
1071060460	Slight	16/04/2007	1825	432938	456001	0	0	1	405V1A 406V1B	0 0 0	Light	Fine without high winds	Dry	9 1
1071150288	Slight	25/04/2007	1345	432786	455907	0	0	4	306V1B 307V1A 408V1B 605V1B	0 0 0	Light	Fine without high winds	Dry	9 9
1071450625	Slight	25/05/2007	2025	432613	455807	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 9
1071550090	Slight	04/06/2007	0829	432115	455693	0	0	1	308V1A 405V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	9 19 9
1071590612	Serious	08/06/2007	1745	431609	455564	0	1	0	405V1A	0 0 0	Light	Fine without high winds	Dry	9 1
1071970106	Slight	16/07/2007	0832	433226	456425	0	0	1	405V1A 302V1B	0 0 0	Light	Fine without high winds	Dry	9 9

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped				
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types			
1071990521	Slight	18/07/2007	1827	431877	455629	0	0	1	406V1B 703V1B 405V1A 403V1A 503V1B	0 0 0	Light	Fine without high winds	Dry	9 5
1072570562	Slight	14/09/2007	2014	432515	455782	0	0	2	405V1A	0 0 0	Dark	Fine without high winds	Dry	9 9 9 9
1072610207	Slight	18/09/2007	1225	432519	455781	0	0	1	203V1A 310V1A	0 0 0	Light	Fine without high winds	Dry	1 9
1072710066	Serious	28/09/2007	0614	432666	455822	0	1	0	802C1B 808C1B	5 3 1	Dark	Fine without high winds	Wet/Damp	9
1072760245	Serious	03/10/2007	1359	431721	455590	0	1	0	304V1A 405V1A 701V1B	0 0 0	Light	Fine without high winds	Dry	9 3 9
1072770257	Slight	04/10/2007	1350	432209	455713	0	0	1	805C1A 803C1B	8 3 1	Light	Fine without high winds	Dry	9
1072860307	Slight	12/10/2007	1430	432919	456063	0	0	1	403V1A 410V1A 603V1B 605V1A	0 0 0	Light	Fine without high winds	Dry	2 9
1072890528	Slight	16/10/2007	2135	432753	455857	0	0	1	405V1A 406V1A 501V1B	0 0 0	Dark	Fine without high winds	Dry	9 9
1073010583	Slight	28/10/2007	1925	432668	455827	0	0	1	801C1A	5 2 5	Dark	Raining with high winds	Wet/Damp	9
1073120264	Slight	08/11/2007	1529	432985	456080	0	0	1	308V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	19 9
1073300504	Serious	26/11/2007	1749	432516	455788	0	1	0	808C1A	5 3 7	Light	Fine without high winds	Dry	9
1073440180	Slight	10/12/2007	1030	432020	455664	0	0	1	509V1B	0 0 0	Light	Fine without high winds	Dry	9 9
1080320168	Serious	01/02/2008	1032	431895	455633	0	1	0	501V1B	0 0 0	Light	Fine without high winds	Dry	9 19
1080550132	Slight	24/02/2008	0407	431445	455490	0	0	3	306V1A 501V1A 602V1A	0 0 0	Dark	Fine without high winds	Dry	9
1080860351	Slight	26/03/2008	1405	431444	455485	0	0	1	308V1A 405V1A	0 0 0	Light	Other	Wet/Damp	9 9
1080960220	Slight	05/04/2008	1022	432518	455783	0	0	2	403V1A 803C1A	9 9 9	Light	Fine without high winds	Dry	9
2080019750	Slight	02/05/2008	0730	432983	456076	0	0	1	405V1A 605V2A 405V2A	0 0 0	Light	Fine without high winds	Dry	9 2

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation		Ped				
						Ftl	Ser	Slt	Factors/ Prob		L M D Surface Types				
2080022420	Slight	04/05/2008	1636	432692	456346	0	0	2	405V2A	403V1B	0 0 0	Light	Fine without high winds	Dry	9 9
2080032314	Slight	23/05/2008	2120	431946	455669	0	0	1	802C1A		5 3 1	Dark	Fine without high winds	Dry	9
2080044504	Slight	12/06/2008	2210	432184	455704	0	0	1	405V1A	410V1A	0 0 0	Dark	Fine without high winds	Dry	9 2
									705V1A	202V2B					
									507V1A	506V2B					
2080066818	Slight	20/07/2008	1200	432921	456062	0	0	1	203V2A	410V2A	0 0 0	Light	Fine without high winds	Dry	9 1
2080095065	Slight	05/09/2008	0900	433228	456437	0	0	2	707V2B		0 0 0	Light	Raining without high winds	Wet/Damp	9 9
2080098813	Slight	11/09/2008	2232	432257	455731	0	0	1	403V1A	405V1A	0 0 0	Dark	Fine without high winds	Dry	9 9 2
2080099285	Slight	12/09/2008	2110	432030	455668	0	0	1	802C1A		5 3 5	Dark	Raining without high winds	Wet/Damp	9
2080119728	Serious	18/10/2008	0858	433096	456237	0	1	1	108V2B	306V1B	0 0 0	Light	Fine without high winds	Dry	5 9
									501V1B	503V1B					
									405V2A	710V2B					
2080121741	Serious	22/10/2008	0710	432578	455804	0	1	0	405V1A	809C1B	6 9 7	Dark	Raining without high winds	Wet/Damp	9
2080133278	Slight	12/11/2008	0640	431410	455520	0	0	1	405V1A		0 0 0	Light	Fine without high winds	Wet/Damp	2 9
2080139810	Slight	22/11/2008	1710	431950	455648	0	0	1	405V1A		0 0 0	Dark	Fine without high winds	Wet/Damp	9 9 2
2080139577	Slight	22/11/2008	1000	432350	455977	0	0	2	701V1A	701V2A	0 0 0	Light	Fine without high winds	Dry	9 9
									706V1A	706V2A					
									405V1B	307V2B					
2080153172	Slight	12/12/2008	1600	431323	455411	0	0	1	802C1A	804C1A	1 1 9	Dark	Fine without high winds	Dry	9
									808C1A						
2090003667	Slight	08/01/2009	0750	431573	455555	0	0	1	503V1A		0 0 0	Dark	Fine without high winds	Dry	9 3
2090007940	Slight	15/01/2009	1810	433217	456426	0	0	1	405V1A	406V1A	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
2090015800	Slight	28/01/2009	1250	432103	455687	0	0	2	406V1A		0 0 0	Light	Fine without high winds	Dry	9 9
2090098954	Slight	12/06/2009	1600	431444	455515	0	0	1	406V2B		0 0 0	Light	Fine without high winds	Dry	9 20

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped					
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types				
2090109121	Slight	28/06/2009	0708	431442	455506	0	0	1	102V1A	0 0 0	Light	Fine without high winds	Wet/Damp	9	
2090135274	Slight	04/08/2009	1304	432959	456037	0	0	1	406V1B 510V1B 810C1B	4 9 9	Light	Fine without high winds	Dry	19	
2090134917	Serious	06/08/2009	1715	432931	455996	0	1	0	308V2A 405V1A 405V2A 602V2B	0 0 0	Light	Fine without high winds	Dry	9 1	
2090146524	Slight	22/08/2009	1100	431366	455644	0	0	1	602V1B 405V1B 405V1B	0 0 0	Light	Fine without high winds	Dry	1 9	
2090165913	Slight	23/09/2009	2000	431930	455642	0	0	1	802C1A 803C1A	4 3 5	Dark	Fine without high winds	Wet/Damp	9	
2090171402	Slight	02/10/2009	1625	432545	455795	0	0	1	406V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9	
2090190722	Slight	02/11/2009	1755	431814	455614	0	0	4	408V1A 308V1A	0 0 0	Dark	Fine without high winds	Dry	9 9 9 9	
2100025250	Slight	16/02/2010	1536	432127	455691	0	0	1	605V1A	0 0 0	Light	Fine without high winds	Dry	21 2 9	
2100033777	Slight	04/03/2010	0900	433223	456432	0	0	2	406V1B 406V2B	0 0 0	Light	Fine without high winds	Dry	9 9	
2100040598	Serious	16/03/2010	0708	432870	455929	0	1	0	203V1A	0 0 0	Light	Fine without high winds	Dry	1	
2100043371	Slight	20/03/2010	1550	431819	455613	0	0	1	308V2B 405V2A 509V2A	0 0 0	Light	Raining without high winds	Wet/Damp	9 9	
2100047184	Serious	27/03/2010	1130	432189	455701	0	1	0	403V3B 308V1A 405V1A	0 0 0	Light	Fine without high winds	Dry	2 9 9	
2100064134	Slight	24/04/2010	1200	431403	455500	0	0	1	801C1A 802C1A	5 2 4	Light	Fine without high winds	Dry	9 19	
2100130661	Serious	03/08/2010	0738	431896	455637	0	1	0	306V1B 802C1A	1 1 4	Light	Fine without high winds	Dry	9	
2100140113	Slight	17/08/2010	1119	432207	455714	0	0	3	406V1A 308V1A	0 0 0	Light	Fine without high winds	Dry	9 17 9 9	
2100142504	Slight	20/08/2010	1415	432625	456620	0	0	1		6 9 0	Light	Fine without high winds	Dry	19	
2100145725	Slight	25/08/2010	1740	433230	456430	0	0	1	402V1A	0 0 0	Light	Fine without high winds	Dry	1 9	
2100155470	Slight	09/09/2010	0855	433187	456376	0	0	2	406V1A 405V1B 602V1B	0 0 0	Light	Fine without high winds	Dry	9 19 9 19	

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped					
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types				
2100155871	Slight	09/09/2010	1840	431946	455653	0	0	1	706V1B	0 0 0	Light	Fine without high winds	Dry	9	1
2100157655	Serious	12/09/2010	1300	433222	456431	0	1	0	802C1A	4 1 5	Light	Fine without high winds	Dry	9	
2100169410	Serious	01/10/2010	1950	432750	455858	0	1	0	801C1B 802C1A 809C1B	4 1 1	Dark	Fine without high winds	Dry	9	
2100186608	Slight	29/10/2010	1355	432665	455821	0	0	1	602V1A	0 0 0	Light	Fine without high winds	Dry	9	19
2100212023	Serious	10/12/2010	2140	433269	456475	0	3	1	602V1A 501V2A 405V1A 410V1A 605V1B	0 0 0	Dark	Fine without high winds	Wet/Damp	9	9 9
2110017334	Serious	01/02/2011	1210	431690	455584	0	1	0	810C1A	10 3 5	Light	Fine without high winds	Wet/Damp	19	
2110020199	Slight	05/02/2011	2200	432669	455820	0	0	1	710V1A 405V1B	5 1 7	Dark	Raining without high winds	Wet/Damp	9	
2110038943	Slight	11/03/2011	0953	431623	455564	0	0	1	405V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	9	9
2110047969	Slight	26/03/2011	1145	431311	455575	0	0	1	701V1B 403V1A 405V1A 405V2A	0 0 0	Light	Fine without high winds	Dry	8	1
2110071756	Serious	03/05/2011	1535	433059	456186	0	1	0	405V1B 701V1A 408V2A 410V2A	0 0 0	Light	Fine without high winds	Dry	9	5

Column Totals
No. of Accidents

Total number of accidents listed: 96

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped				
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types			
1060130371	Slight	13/01/2006	1200	431891	455633	0	0	1	810C1A	5 1 1	Light	Fine without high winds	Dry	9
1060170225	Serious	17/01/2006	1000	432459	455772	0	1	0	602V1A	1 2 3	Light	Fine without high winds	Dry	1
1060280321	Slight	28/01/2006	1415	432863	455923	0	0	1	405V1A 406V1A	0 0 0	Light	Fine without high winds	Wet/Damp	9 9 19
1060290211	Slight	29/01/2006	1030	432574	455801	0	0	1	308V1A 405V1A 406V1A 505V1B 602V1B	0 0 0	Light	Fine without high winds	Dry	9 9 9
1060620686	Slight	03/03/2006	1605	432338	456631	0	0	2	103V1A	0 0 0	Light	Snowing without high winds	Snow	10
1060960111	Slight	06/04/2006	0840	432142	455884	0	0	4	405V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
1061330407	Slight	13/05/2006	1525	431813	455610	0	0	1	308V1A 402V1B 405V1A 407V1B	0 0 0	Light	Fine without high winds	Wet/Damp	9 1
1061430684	Slight	23/05/2006	0945	431411	455510	0	0	1	403V2B	0 0 0	Light	Fine without high winds	Dry	9 9
1061510078	Slight	31/05/2006	1020	432961	456038	0	0	2	405V1A 602V1A	0 0 0	Light	Fine without high winds	Dry	9 9
1061820417	Slight	01/07/2006	1216	432465	455951	0	0	1	405V2A 701V1A 310V2A	0 0 0	Light	Fine without high winds	Dry	9 1
1061860820	Slight	05/07/2006	1800	433220	456429	0	0	1	601V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
1061860438	Slight	05/07/2006	1200	432866	455925	0	0	1	405V1B 410V2B	0 0 0	Light	Fine without high winds	Dry	9 1
1061930084	Slight	12/07/2006	0735	432019	455667	0	0	2	308V1B 410V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
1062050847	Serious	24/07/2006	1708	432670	455823	0	1	0	405V1A	0 0 0	Light	Fine without high winds	Dry	9 5
1062160766	Serious	04/08/2006	1911	432786	455874	0	1	0	403V1A 405V1A 602V1A	0 0 0	Light	Fine without high winds	Dry	9 3
1062580673	Slight	15/09/2006	1530	432705	455836	0	0	1	406V1A 401V1A	0 0 0	Light	Fine without high winds	Dry	2 10
1062600841	Slight	17/09/2006	2335	431813	455607	0	0	1	403V1A 407V1B	10 9 9	Dark	Fine without high winds	Dry	9
1062620136	Slight	19/09/2006	0927	433229	456426	0	0	1	405V1A 602V1B 701V1B	0 0 0	Light	Fine without high winds	Dry	9 19

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped				
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types			
1062780156	Slight	05/10/2006	0800	431939	455646	0	0	1	701V1A 801C1A 802C1B	8 1 1	Light	Fine without high winds	Dry	2
1063110471	Slight	07/11/2006	1210	431926	455643	0	0	1	405V1A 408V1A	0 0 0	Light	Fine without high winds	Dry	9 9
1063370490	Slight	30/11/2006	0850	431473	455628	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 1
1063370443	Slight	03/12/2006	1805	432654	456152	0	0	1	103V1A 999V1A	0 0 0	Dark	Raining with high winds	Wet/Damp	2
1070160366	Slight	16/01/2007	1738	432837	456247	0	0	1	904V1A	0 0 0	Dark	Fine without high winds	Dry	9 1
1070220465	Serious	22/01/2007	1930	432129	455691	0	1	0	405V2A	0 0 0	Dark	Raining without high winds	Wet/Damp	9 9
1070330089	Slight	02/02/2007	0845	431923	455644	0	0	1	802C1A	5 3 1	Light	Fine without high winds	Wet/Damp	9
1070410391	Slight	10/02/2007	1730	432022	455667	0	0	2	402V1A 405V1B 406V1B 602V1B 708V1B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
1070870077	Serious	28/03/2007	0820	432143	455693	0	1	0	406V1A 406V2A 707V1A 707V2A 405V1B 307V2B	0 0 0	Light	Fog or mist	Wet/Damp	9 5
1070960567	Slight	06/04/2007	1920	431843	455742	0	0	1	403V2B 405V2A 710V2A	0 0 0	Dark	Fine without high winds	Dry	9 9
1071060460	Slight	16/04/2007	1825	432938	456001	0	0	1	405V1A 406V1B	0 0 0	Light	Fine without high winds	Dry	9 1
1071150288	Slight	25/04/2007	1345	432786	455907	0	0	4	306V1B 307V1A 408V1B 605V1B	0 0 0	Light	Fine without high winds	Dry	9 9
1071450625	Slight	25/05/2007	2025	432613	455807	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 9
1071550090	Slight	04/06/2007	0829	432115	455693	0	0	1	308V1A 405V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	9 19 9
1071590612	Serious	08/06/2007	1745	431609	455564	0	1	0	405V1A	0 0 0	Light	Fine without high winds	Dry	9 1
1071970106	Slight	16/07/2007	0832	433226	456425	0	0	1	405V1A 302V1B	0 0 0	Light	Fine without high winds	Dry	9 9

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped				
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types			
1071990521	Slight	18/07/2007	1827	431877	455629	0	0	1	406V1B 703V1B 405V1A 403V1A 503V1B	0 0 0	Light	Fine without high winds	Dry	9 5
1072570562	Slight	14/09/2007	2014	432515	455782	0	0	2	405V1A	0 0 0	Dark	Fine without high winds	Dry	9 9 9 9
1072610207	Slight	18/09/2007	1225	432519	455781	0	0	1	203V1A 310V1A	0 0 0	Light	Fine without high winds	Dry	1 9
1072710066	Serious	28/09/2007	0614	432666	455822	0	1	0	802C1B 808C1B	5 3 1	Dark	Fine without high winds	Wet/Damp	9
1072760245	Serious	03/10/2007	1359	431721	455590	0	1	0	304V1A 405V1A 701V1B	0 0 0	Light	Fine without high winds	Dry	9 3 9
1072770257	Slight	04/10/2007	1350	432209	455713	0	0	1	805C1A 803C1B	8 3 1	Light	Fine without high winds	Dry	9
1072860307	Slight	12/10/2007	1430	432919	456063	0	0	1	403V1A 410V1A 603V1B 605V1A	0 0 0	Light	Fine without high winds	Dry	2 9
1072890528	Slight	16/10/2007	2135	432753	455857	0	0	1	405V1A 406V1A 501V1B	0 0 0	Dark	Fine without high winds	Dry	9 9
1073010583	Slight	28/10/2007	1925	432668	455827	0	0	1	801C1A	5 2 5	Dark	Raining with high winds	Wet/Damp	9
1073120264	Slight	08/11/2007	1529	432985	456080	0	0	1	308V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	19 9
1073300504	Serious	26/11/2007	1749	432516	455788	0	1	0	808C1A	5 3 7	Light	Fine without high winds	Dry	9
1073440180	Slight	10/12/2007	1030	432020	455664	0	0	1	509V1B	0 0 0	Light	Fine without high winds	Dry	9 9
1080320168	Serious	01/02/2008	1032	431895	455633	0	1	0	501V1B	0 0 0	Light	Fine without high winds	Dry	9 19
1080550132	Slight	24/02/2008	0407	431445	455490	0	0	3	306V1A 501V1A 602V1A	0 0 0	Dark	Fine without high winds	Dry	9
1080860351	Slight	26/03/2008	1405	431444	455485	0	0	1	308V1A 405V1A	0 0 0	Light	Other	Wet/Damp	9 9
1080960220	Slight	05/04/2008	1022	432518	455783	0	0	2	403V1A 803C1A	9 9 9	Light	Fine without high winds	Dry	9
2080019750	Slight	02/05/2008	0730	432983	456076	0	0	1	405V1A 605V2A 405V2A	0 0 0	Light	Fine without high winds	Dry	9 2

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation		Ped				
						Ftl	Ser	Slt	Factors/ Prob		L M D Surface Types				
2080022420	Slight	04/05/2008	1636	432692	456346	0	0	2	405V2A	403V1B	0 0 0	Light	Fine without high winds	Dry	9 9
2080032314	Slight	23/05/2008	2120	431946	455669	0	0	1	802C1A		5 3 1	Dark	Fine without high winds	Dry	9
2080044504	Slight	12/06/2008	2210	432184	455704	0	0	1	405V1A	410V1A	0 0 0	Dark	Fine without high winds	Dry	9 2
									705V1A	202V2B					
									507V1A	506V2B					
2080066818	Slight	20/07/2008	1200	432921	456062	0	0	1	203V2A	410V2A	0 0 0	Light	Fine without high winds	Dry	9 1
2080095065	Slight	05/09/2008	0900	433228	456437	0	0	2	707V2B		0 0 0	Light	Raining without high winds	Wet/Damp	9 9
2080098813	Slight	11/09/2008	2232	432257	455731	0	0	1	403V1A	405V1A	0 0 0	Dark	Fine without high winds	Dry	9 9 2
2080099285	Slight	12/09/2008	2110	432030	455668	0	0	1	802C1A		5 3 5	Dark	Raining without high winds	Wet/Damp	9
2080119728	Serious	18/10/2008	0858	433096	456237	0	1	1	108V2B	306V1B	0 0 0	Light	Fine without high winds	Dry	5 9
									501V1B	503V1B					
									405V2A	710V2B					
2080121741	Serious	22/10/2008	0710	432578	455804	0	1	0	405V1A	809C1B	6 9 7	Dark	Raining without high winds	Wet/Damp	9
2080133278	Slight	12/11/2008	0640	431410	455520	0	0	1	405V1A		0 0 0	Light	Fine without high winds	Wet/Damp	2 9
2080139810	Slight	22/11/2008	1710	431950	455648	0	0	1	405V1A		0 0 0	Dark	Fine without high winds	Wet/Damp	9 9 2
2080139577	Slight	22/11/2008	1000	432350	455977	0	0	2	701V1A	701V2A	0 0 0	Light	Fine without high winds	Dry	9 9
									706V1A	706V2A					
									405V1B	307V2B					
2080153172	Slight	12/12/2008	1600	431323	455411	0	0	1	802C1A	804C1A	1 1 9	Dark	Fine without high winds	Dry	9
									808C1A						
2090003667	Slight	08/01/2009	0750	431573	455555	0	0	1	503V1A		0 0 0	Dark	Fine without high winds	Dry	9 3
2090007940	Slight	15/01/2009	1810	433217	456426	0	0	1	405V1A	406V1A	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
2090015800	Slight	28/01/2009	1250	432103	455687	0	0	2	406V1A		0 0 0	Light	Fine without high winds	Dry	9 9
2090098954	Slight	12/06/2009	1600	431444	455515	0	0	1	406V2B		0 0 0	Light	Fine without high winds	Dry	9 20

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped					
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types				
2090109121	Slight	28/06/2009	0708	431442	455506	0	0	1	102V1A	0 0 0	Light	Fine without high winds	Wet/Damp	9	
2090135274	Slight	04/08/2009	1304	432959	456037	0	0	1	406V1B 510V1B 810C1B	4 9 9	Light	Fine without high winds	Dry	19	
2090134917	Serious	06/08/2009	1715	432931	455996	0	1	0	308V2A 405V1A 405V2A 602V2B	0 0 0	Light	Fine without high winds	Dry	9 1	
2090146524	Slight	22/08/2009	1100	431366	455644	0	0	1	602V1B 405V1B 405V1B	0 0 0	Light	Fine without high winds	Dry	1 9	
2090165913	Slight	23/09/2009	2000	431930	455642	0	0	1	802C1A 803C1A	4 3 5	Dark	Fine without high winds	Wet/Damp	9	
2090171402	Slight	02/10/2009	1625	432545	455795	0	0	1	406V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9	
2090190722	Slight	02/11/2009	1755	431814	455614	0	0	4	408V1A 308V1A	0 0 0	Dark	Fine without high winds	Dry	9 9 9 9	
2100025250	Slight	16/02/2010	1536	432127	455691	0	0	1	605V1A	0 0 0	Light	Fine without high winds	Dry	21 2 9	
2100033777	Slight	04/03/2010	0900	433223	456432	0	0	2	406V1B 406V2B	0 0 0	Light	Fine without high winds	Dry	9 9	
2100040598	Serious	16/03/2010	0708	432870	455929	0	1	0	203V1A	0 0 0	Light	Fine without high winds	Dry	1	
2100043371	Slight	20/03/2010	1550	431819	455613	0	0	1	308V2B 405V2A 509V2A	0 0 0	Light	Raining without high winds	Wet/Damp	9 9	
2100047184	Serious	27/03/2010	1130	432189	455701	0	1	0	403V3B 308V1A 405V1A	0 0 0	Light	Fine without high winds	Dry	2 9 9	
2100064134	Slight	24/04/2010	1200	431403	455500	0	0	1	801C1A 802C1A	5 2 4	Light	Fine without high winds	Dry	9 19	
2100130661	Serious	03/08/2010	0738	431896	455637	0	1	0	306V1B 802C1A	1 1 4	Light	Fine without high winds	Dry	9	
2100140113	Slight	17/08/2010	1119	432207	455714	0	0	3	406V1A 308V1A	0 0 0	Light	Fine without high winds	Dry	9 17 9 9	
2100142504	Slight	20/08/2010	1415	432625	456620	0	0	1		6 9 0	Light	Fine without high winds	Dry	19	
2100145725	Slight	25/08/2010	1740	433230	456430	0	0	1	402V1A	0 0 0	Light	Fine without high winds	Dry	1 9	
2100155470	Slight	09/09/2010	0855	433187	456376	0	0	2	406V1A 405V1B 602V1B	0 0 0	Light	Fine without high winds	Dry	9 19 9 19	

Accidents between dates 01/01/2006 and 31/05/2011 (65) months
Selection: Notes:
Selected using Manual Selection

Police Ref.	Acc Class Light Vehicle	Date Weather	Time Road	Grid References		Casualties			Causation	Ped				
						Ftl	Ser	Slt		Factors/ Prob	L M D Surface Types			
2100155871	Slight	09/09/2010	1840	431946	455653	0	0	1	706V1B	0 0 0	Light	Fine without high winds	Dry	9 1
2100157655	Serious	12/09/2010	1300	433222	456431	0	1	0	802C1A	4 1 5	Light	Fine without high winds	Dry	9
2100169410	Serious	01/10/2010	1950	432750	455858	0	1	0	801C1B 802C1A 809C1B	4 1 1	Dark	Fine without high winds	Dry	9
2100186608	Slight	29/10/2010	1355	432665	455821	0	0	1	602V1A	0 0 0	Light	Fine without high winds	Dry	9 19
2100212023	Serious	10/12/2010	2140	433269	456475	0	3	1	602V1A 501V2A 405V1A 410V1A 605V1B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9 9
2110017334	Serious	01/02/2011	1210	431690	455584	0	1	0	810C1A	10 3 5	Light	Fine without high winds	Wet/Damp	19
2110020199	Slight	05/02/2011	2200	432669	455820	0	0	1	710V1A 405V1B	5 1 7	Dark	Raining without high winds	Wet/Damp	9
2110038943	Slight	11/03/2011	0953	431623	455564	0	0	1	405V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	9 9
2110047969	Slight	26/03/2011	1145	431311	455575	0	0	1	701V1B 403V1A 405V1A 405V2A	0 0 0	Light	Fine without high winds	Dry	8 1
2110071756	Serious	03/05/2011	1535	433059	456186	0	1	0	405V1B 701V1A 408V2A 410V2A	0 0 0	Light	Fine without high winds	Dry	9 5

Column Totals
No. of Accidents

Total number of accidents listed: 96

APPENDIX D
Architects Layout

NORTH



right of way

Track

93.3m

Sinks

Star Back

KINGSLEY RD

visibility splays

field access

common area

visitor parking

Kingsley Farm

Revisions:

- A (06.02.13) : Private drive and garage position adjusted.
B (06.03.13) : Trees altered to reflect the topo survey.
C (18.04.13) : Access road position moved slightly to south. Trees altered to suit landscape plan.
D (09.05.13) : Red line altered.

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Client

Mr. Chippindale.

Project

Proposed Kingsley Farm
Redevelopment

Drawing title

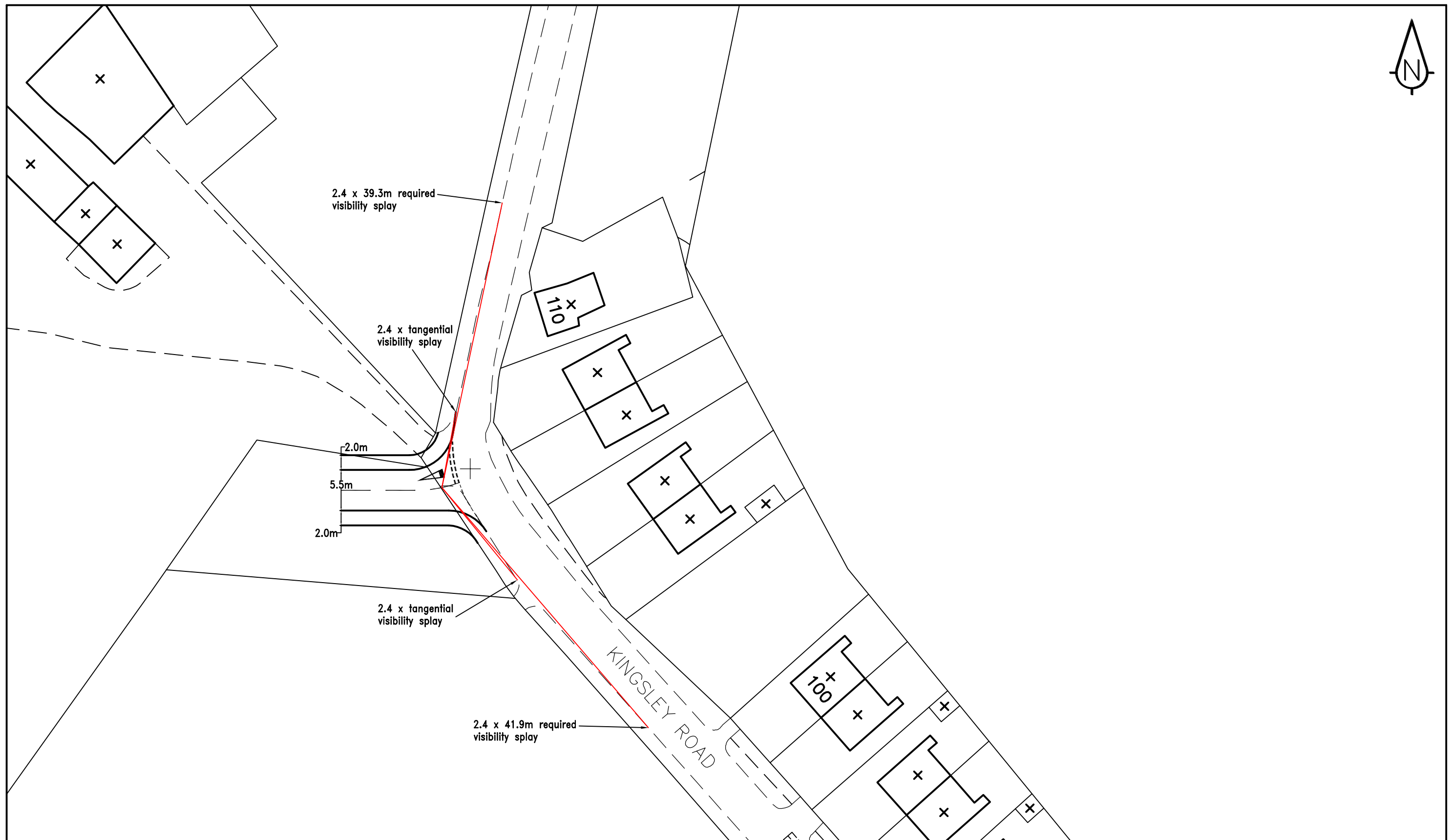
Proposed Site Layout, Option 9.

Drawn By	PJD	Checked By	-
Scale	1:1000 @ A3	Date	15.01.13
Drawing no.	1080.09	Revision	D

0m 10m 20m 30m 40m 50m

KINGSLEY DRIVE

APPENDIX E
Site Access Drawing 6127-004



APPENDIX F
TRICS Data; Residential

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	BD BEDFORDSHIRE	2 days
	EX ESSEX	1 days
	SC SURREY	1 days
03	SOUTH WEST	
	CW CORNWALL	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	SF SUFFOLK	3 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	2 days
	NT NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WM WEST MIDLANDS	2 days
	WO WORCESTERSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	2 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	LC LANCASHIRE	2 days
	MS MERSEYSIDE	1 days
09	NORTH	
	CB CUMBRIA	1 days
	TV TEES VALLEY	1 days
10	WALES	
	CF CARDIFF	1 days
	WR WREXHAM	1 days
11	SCOTLAND	
	FI FIFE	2 days
	HI HIGHLAND	1 days
	SR STIRLING	1 days

Filtering Stage 2 selection:

Parameter: Number of dwellings
Range: 52 to 372 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/03 to 10/02/10

Selected survey days:

Monday	10 days
Tuesday	7 days
Wednesday	3 days
Thursday	7 days
Friday	4 days

Selected survey types:

Manual count	31 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	13
Edge of Town	16
Neighbourhood Centre (PPS6 Local Centre)	2

Selected Location Sub Categories:

Residential Zone	22
Village	1
Out of Town	1
No Sub Category	7

Filtering Stage 3 selection:

Use Class:

C3	31 days
----	---------

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	4 days
10,001 to 15,000	6 days
15,001 to 20,000	10 days
20,001 to 25,000	4 days
25,001 to 50,000	5 days

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	5 days
50,001 to 75,000	2 days
75,001 to 100,000	5 days
100,001 to 125,000	4 days
125,001 to 250,000	12 days
250,001 to 500,000	2 days

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	14 days
1.1 to 1.5	15 days
1.6 to 2.0	1 days

Filtering Stage 3 selection (Cont.):

<u>Travel Plan:</u>	
No	31 days

LIST OF SITES relevant to selection parameters

1	BD-03-A-01	SEMI DETACHED, LUTON NEW BEDFORD ROAD	BEDFORDSHIRE
		LUTON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 131 Survey date: THURSDAY 08/07/04	Survey Type: MANUAL
2	BD-03-A-02	SEMI DETACHED, LUTON RIDDY LANE	BEDFORDSHIRE
		LUTON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 82 Survey date: TUESDAY 06/07/04	Survey Type: MANUAL
3	CB-03-A-04	SEMI DETACHED, WORKINGTON MOORCLOSE ROAD SALTERBACK WORKINGTON Edge of Town No Sub Category Total Number of dwellings: 82 Survey date: FRIDAY 24/04/09	CUMBRIA Survey Type: MANUAL
4	CF-03-A-02	MIXED HOUSES, CARDIFF DROPE ROAD	CARDIFF
		CARDIFF Edge of Town Residential Zone Total Number of dwellings: 196 Survey date: FRIDAY 05/10/07	Survey Type: MANUAL
5	CH-03-A-06	SEMI-DET./BUNGALOWS, CREWE CREWE ROAD	CHESHIRE
		CREWE Suburban Area (PPS6 Out of Centre) No Sub Category Total Number of dwellings: 129 Survey date: TUESDAY 14/10/08	Survey Type: MANUAL
6	CW-03-A-02	SEMI D./DETACHED, TRURO BOSVEAN GARDENS	CORNWALL
		TRURO Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 73 Survey date: TUESDAY 18/09/07	Survey Type: MANUAL
7	EX-03-A-01	SEMI-DET., STANFORD-LE-HOPE MILTON ROAD CORRINGHAM STANFORD-LE-HOPE Edge of Town Residential Zone Total Number of dwellings: 237 Survey date: TUESDAY 13/05/08	ESSEX Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	FI-03-A-02	SEMI DETACHED, GLENROTHES	FIFE
	WAROUT ROAD		
	GLENROTHES		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	58	
	Survey date: MONDAY	16/05/05	Survey Type: MANUAL
9	FI-03-A-03	MIXED HOUSES, DUNFERMLINE	FIFE
	WOODMILL ROAD		
	DUNFERMLINE		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	155	
	Survey date: MONDAY	30/04/07	Survey Type: MANUAL
10	HI-03-A-11	BUNGALOWS, INVERNESS	HIGHLAND
	STEVENSON ROAD		
	INSHES		
	INVERNESS		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	85	
	Survey date: MONDAY	05/06/06	Survey Type: MANUAL
11	LC-03-A-22	BUNGALOWS, BLACKPOOL	LANCASHIRE
	CLIFTON DRIVE NORTH		
	BLACKPOOL		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	98	
	Survey date: TUESDAY	18/10/05	Survey Type: MANUAL
12	LC-03-A-29	DETACHED/SEMI D., BLACKBURN	LANCASHIRE
	REVIDGE ROAD		
	FOUR LANE ENDS		
	BLACKBURN		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	185	
	Survey date: THURSDAY	10/06/04	Survey Type: MANUAL
13	LN-03-A-01	MIXED HOUSES, LINCOLN	LINCOLNSHIRE
	BRANT ROAD		
	BRACEBRIDGE		
	LINCOLN		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	150	
	Survey date: TUESDAY	15/05/07	Survey Type: MANUAL
14	LN-03-A-02	MIXED HOUSES, LINCOLN	LINCOLNSHIRE
	HYKEHAM ROAD		
	LINCOLN		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	186	
	Survey date: MONDAY	14/05/07	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	MS-03-A-01	TERRACED, RUNCORN PALACE FIELDS AVENUE	MERSEYSIDE
		RUNCORN Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total Number of dwellings: 372 Survey date: THURSDAY 06/10/05	Survey Type: MANUAL
16	NT-03-A-03	SEMI DETACHED, KIRKBY-IN-ASHFD B6018 SUTTON ROAD	NOTTINGHAMSHIRE
		KIRKBY-IN-ASHFIELD Edge of Town Residential Zone Total Number of dwellings: 166 Survey date: WEDNESDAY 28/06/06	Survey Type: MANUAL
17	NY-03-A-01	MIXED HOUSES, NORTHALLERTON GRAMMAR SCHOOL LANE	NORTH YORKSHIRE
		NORTHALLERTON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 52 Survey date: TUESDAY 25/09/07	Survey Type: MANUAL
18	NY-03-A-05	HOUSES AND FLATS, RIPON BOROUGHBRIDGE ROAD	NORTH YORKSHIRE
		RIPON Edge of Town No Sub Category Total Number of dwellings: 71 Survey date: MONDAY 22/09/08	Survey Type: MANUAL
19	SC-03-A-04	HOUSES & FLATS, NEAR FRIMLEY DEEPCUT BRIDGE ROAD DEEPCUT NEAR FRIMLEY Neighbourhood Centre (PPS6 Local Centre) Village Total Number of dwellings: 288 Survey date: WEDNESDAY 10/02/10	SURREY
20	SF-03-A-01	SEMI DETACHED, IPSWICH A1156 FELIXSTOWE ROAD RACECOURSE IPSWICH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 77 Survey date: WEDNESDAY 23/05/07	SUFFOLK
21	SF-03-A-02	SEMI DET./TERRACED, IPSWICH STOKE PARK DRIVE MAIDENHALL IPSWICH Edge of Town Residential Zone Total Number of dwellings: 230 Survey date: THURSDAY 24/05/07	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

22	SF-03-A-03	MIXED HOUSES, BURY ST EDMDS	SUFFOLK
	BARTON HILL		
	FORNHAM ST MARTIN		
	BURY ST EDMUNDS		
	Edge of Town		
	Out of Town		
	Total Number of dwellings:	101	
	Survey date: MONDAY	15/05/06	Survey Type: MANUAL
23	SH-03-A-04	TERRACED, SHREWSBURY	SHROPSHIRE
	ST MICHAEL'S STREET		
	SHREWSBURY		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of dwellings:	108	
	Survey date: THURSDAY	11/06/09	Survey Type: MANUAL
24	SR-03-A-01	DETACHED, STIRLING	STIRLING
	BENVIEW		
	STIRLING		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	115	
	Survey date: MONDAY	23/04/07	Survey Type: MANUAL
25	TV-03-A-01	MIXED HOUSES/FLATS, HARTLEPL	TEES VALLEY
	POWLETT ROAD		
	HARTLEPOOL		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of dwellings:	225	
	Survey date: THURSDAY	14/04/05	Survey Type: MANUAL
26	WL-03-A-01	SEMI D./TERRACED W. BASSETT	WILTSHIRE
	MAPLE DRIVE		
	WOOTTON BASSETT		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	99	
	Survey date: MONDAY	02/10/06	Survey Type: MANUAL
27	WM-03-A-01	TERRACED, COVENTRY	WEST MIDLANDS
	FOLESHILL ROAD		
	FOLESHILL		
	COVENTRY		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	79	
	Survey date: FRIDAY	03/02/06	Survey Type: MANUAL
28	WM-03-A-03	MIXED HOUSING, COVENTRY	WEST MIDLANDS
	BASELEY WAY		
	ROWLEYS GREEN		
	COVENTRY		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	84	
	Survey date: MONDAY	24/09/07	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

29	WO-03-A-03	DETACHED, KIDDERMINSTER	WORCESTERSHIRE
	BLAKEBROOK		
	BLAKEBROOK		
	KIDDERMINSTER		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	138	
	Survey date: FRIDAY	05/05/06	Survey Type: MANUAL
30	WO-03-A-06	DET./TERRACED, BROMSGROVE	WORCESTERSHIRE
	ST GODWALDS ROAD		
	ASTON FIELDS		
	BROMSGROVE		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	232	
	Survey date: THURSDAY	30/06/05	Survey Type: MANUAL
31	WR-03-A-01	SEMI DETACHED, WREXHAM	WREXHAM
	MOLD ROAD		
	RHOSDDU		
	WREXHAM		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	82	
	Survey date: MONDAY	05/07/04	Survey Type: MANUAL

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

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.076	31	141	0.289	31	141	0.365
08:00 - 09:00	31	141	0.156	31	141	0.439	31	141	0.595
09:00 - 10:00	31	141	0.178	31	141	0.224	31	141	0.402
10:00 - 11:00	31	141	0.150	31	141	0.189	31	141	0.339
11:00 - 12:00	31	141	0.184	31	141	0.183	31	141	0.367
12:00 - 13:00	31	141	0.199	31	141	0.185	31	141	0.384
13:00 - 14:00	31	141	0.190	31	141	0.187	31	141	0.377
14:00 - 15:00	31	141	0.190	31	141	0.200	31	141	0.390
15:00 - 16:00	31	141	0.297	31	141	0.220	31	141	0.517
16:00 - 17:00	31	141	0.341	31	141	0.204	31	141	0.545
17:00 - 18:00	31	141	0.405	31	141	0.233	31	141	0.638
18:00 - 19:00	31	141	0.295	31	141	0.228	31	141	0.523
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			2.661			2.781			5.442

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
 Survey date range: 01/01/03 - 10/02/10
 Number of weekdays (Monday-Friday): 31
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

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

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.003	31	141	0.003	31	141	0.006
08:00 - 09:00	31	141	0.002	31	141	0.003	31	141	0.005
09:00 - 10:00	31	141	0.005	31	141	0.004	31	141	0.009
10:00 - 11:00	31	141	0.003	31	141	0.004	31	141	0.007
11:00 - 12:00	31	141	0.002	31	141	0.002	31	141	0.004
12:00 - 13:00	31	141	0.005	31	141	0.004	31	141	0.009
13:00 - 14:00	31	141	0.003	31	141	0.004	31	141	0.007
14:00 - 15:00	31	141	0.002	31	141	0.003	31	141	0.005
15:00 - 16:00	31	141	0.001	31	141	0.001	31	141	0.002
16:00 - 17:00	31	141	0.002	31	141	0.001	31	141	0.003
17:00 - 18:00	31	141	0.001	31	141	0.001	31	141	0.002
18:00 - 19:00	31	141	0.000	31	141	0.001	31	141	0.001
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.029			0.031			0.060

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
 Survey date range: 01/01/03 - 10/02/10
 Number of weekdays (Monday-Friday): 31
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

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

MULTI-MODAL PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.000	31	141	0.000	31	141	0.000
08:00 - 09:00	31	141	0.001	31	141	0.001	31	141	0.002
09:00 - 10:00	31	141	0.000	31	141	0.000	31	141	0.000
10:00 - 11:00	31	141	0.000	31	141	0.000	31	141	0.000
11:00 - 12:00	31	141	0.000	31	141	0.000	31	141	0.000
12:00 - 13:00	31	141	0.000	31	141	0.000	31	141	0.000
13:00 - 14:00	31	141	0.000	31	141	0.000	31	141	0.000
14:00 - 15:00	31	141	0.000	31	141	0.000	31	141	0.000
15:00 - 16:00	31	141	0.001	31	141	0.001	31	141	0.002
16:00 - 17:00	31	141	0.000	31	141	0.000	31	141	0.000
17:00 - 18:00	31	141	0.000	31	141	0.000	31	141	0.000
18:00 - 19:00	31	141	0.000	31	141	0.000	31	141	0.000
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.002				0.002	0.004	

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
Survey date range: 01/01/03 - 10/02/10
Number of weekdays (Monday-Friday): 31
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 0

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

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.005	31	141	0.009	31	141	0.014
08:00 - 09:00	31	141	0.005	31	141	0.014	31	141	0.019
09:00 - 10:00	31	141	0.003	31	141	0.004	31	141	0.007
10:00 - 11:00	31	141	0.002	31	141	0.004	31	141	0.006
11:00 - 12:00	31	141	0.004	31	141	0.003	31	141	0.007
12:00 - 13:00	31	141	0.005	31	141	0.004	31	141	0.009
13:00 - 14:00	31	141	0.003	31	141	0.003	31	141	0.006
14:00 - 15:00	31	141	0.003	31	141	0.004	31	141	0.007
15:00 - 16:00	31	141	0.014	31	141	0.008	31	141	0.022
16:00 - 17:00	31	141	0.012	31	141	0.009	31	141	0.021
17:00 - 18:00	31	141	0.013	31	141	0.010	31	141	0.023
18:00 - 19:00	31	141	0.010	31	141	0.008	31	141	0.018
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.079			0.080			0.159

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
 Survey date range: 01/01/03 - 10/02/10
 Number of weekdays (Monday-Friday): 31
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.084	31	141	0.342	31	141	0.426
08:00 - 09:00	31	141	0.192	31	141	0.656	31	141	0.848
09:00 - 10:00	31	141	0.207	31	141	0.286	31	141	0.493
10:00 - 11:00	31	141	0.187	31	141	0.246	31	141	0.433
11:00 - 12:00	31	141	0.228	31	141	0.228	31	141	0.456
12:00 - 13:00	31	141	0.246	31	141	0.235	31	141	0.481
13:00 - 14:00	31	141	0.237	31	141	0.237	31	141	0.474
14:00 - 15:00	31	141	0.238	31	141	0.255	31	141	0.493
15:00 - 16:00	31	141	0.461	31	141	0.297	31	141	0.758
16:00 - 17:00	31	141	0.464	31	141	0.291	31	141	0.755
17:00 - 18:00	31	141	0.533	31	141	0.315	31	141	0.848
18:00 - 19:00	31	141	0.386	31	141	0.327	31	141	0.713
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			3.463			3.715			7.178

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
Survey date range: 01/01/03 - 10/02/10
Number of weekdays (Monday-Friday): 31
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 0

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

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.024	31	141	0.049	31	141	0.073
08:00 - 09:00	31	141	0.039	31	141	0.170	31	141	0.209
09:00 - 10:00	31	141	0.039	31	141	0.051	31	141	0.090
10:00 - 11:00	31	141	0.029	31	141	0.037	31	141	0.066
11:00 - 12:00	31	141	0.039	31	141	0.038	31	141	0.077
12:00 - 13:00	31	141	0.039	31	141	0.030	31	141	0.069
13:00 - 14:00	31	141	0.037	31	141	0.039	31	141	0.076
14:00 - 15:00	31	141	0.035	31	141	0.038	31	141	0.073
15:00 - 16:00	31	141	0.150	31	141	0.064	31	141	0.214
16:00 - 17:00	31	141	0.076	31	141	0.050	31	141	0.126
17:00 - 18:00	31	141	0.063	31	141	0.048	31	141	0.111
18:00 - 19:00	31	141	0.056	31	141	0.055	31	141	0.111
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.626			0.669			1.295

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
Survey date range: 01/01/03 - 10/02/10
Number of weekdays (Monday-Friday): 31
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 0

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.001	31	141	0.011	31	141	0.012
08:00 - 09:00	31	141	0.007	31	141	0.022	31	141	0.029
09:00 - 10:00	31	141	0.004	31	141	0.006	31	141	0.010
10:00 - 11:00	31	141	0.003	31	141	0.006	31	141	0.009
11:00 - 12:00	31	141	0.004	31	141	0.006	31	141	0.010
12:00 - 13:00	31	141	0.005	31	141	0.007	31	141	0.012
13:00 - 14:00	31	141	0.008	31	141	0.004	31	141	0.012
14:00 - 15:00	31	141	0.005	31	141	0.004	31	141	0.009
15:00 - 16:00	31	141	0.014	31	141	0.008	31	141	0.022
16:00 - 17:00	31	141	0.013	31	141	0.004	31	141	0.017
17:00 - 18:00	31	141	0.016	31	141	0.003	31	141	0.019
18:00 - 19:00	31	141	0.008	31	141	0.003	31	141	0.011
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.088			0.084			0.172

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
Survey date range: 01/01/03 - 10/02/10
Number of weekdays (Monday-Friday): 31
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 0

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	141	0.115	31	141	0.411	31	141	0.526
08:00 - 09:00	31	141	0.243	31	141	0.862	31	141	1.105
09:00 - 10:00	31	141	0.254	31	141	0.346	31	141	0.600
10:00 - 11:00	31	141	0.222	31	141	0.293	31	141	0.515
11:00 - 12:00	31	141	0.274	31	141	0.275	31	141	0.549
12:00 - 13:00	31	141	0.295	31	141	0.276	31	141	0.571
13:00 - 14:00	31	141	0.285	31	141	0.283	31	141	0.568
14:00 - 15:00	31	141	0.281	31	141	0.301	31	141	0.582
15:00 - 16:00	31	141	0.639	31	141	0.377	31	141	1.016
16:00 - 17:00	31	141	0.565	31	141	0.354	31	141	0.919
17:00 - 18:00	31	141	0.625	31	141	0.376	31	141	1.001
18:00 - 19:00	31	141	0.460	31	141	0.393	31	141	0.853
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			4.258			4.547			8.805

Parameter summary

Trip rate parameter range selected: 52 - 372 (units:)
Survey date range: 01/01/03 - 10/02/10
Number of weekdays (Monday-Friday): 31
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 0

Sanderson Associates (CE) Ltd Jubilee Way, Grange Moor Huddersfield

Licence No: 311901

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES

Ranking Type: ARRIVALS

Time Range: 08:00-09:00

15th Percentile = No. 26

85th Percentile = No. 5

Median Values

Arrivals: 0.158

Departures: 0.329

Totals: 0.486

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Arrivals)			Travel Plan
								Arrivals	Departures	Totals	
1	WM-03-A-03	MIXED HOUSING	COVENTRY	WEST MIDLANDS	84	Mon	24/09/07	0.321	0.405	0.726	
2	BD-03-A-02	SEMI DETACHED	LUTON	BEDFORDSHIRE	82	Tue	06/07/04	0.317	0.537	0.854	
3	SH-03-A-04	TERRACED	SHREWSBURY	SHROPSHIRE	108	Thu	11/06/09	0.287	0.454	0.741	
4	FI-03-A-02	SEMI DETACHED	GLENROTHES	FIFE	58	Mon	16/05/05	0.276	0.569	0.845	
5	SF-03-A-02	SEMI DET./TERR	IPSWICH	SUFFOLK	230	Thu	24/05/07	0.243	0.491	0.734	
6	WO-03-A-03	DETACHED	KIDDERMINSTER	WORCESTERSHIRE	138	Fri	05/05/06	0.203	0.543	0.746	
7	LN-03-A-01	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	150	Tue	15/05/07	0.187	0.440	0.627	
8	CB-03-A-04	SEMI DETACHED	WORKINGTON	CUMBRIA	82	Fri	24/04/09	0.183	0.366	0.549	
9	LN-03-A-02	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	186	Mon	14/05/07	0.183	0.425	0.608	
10	EX-03-A-01	SEMI-DET.	STANFORD-LE-HOPE	ESSEX	237	Tue	13/05/08	0.177	0.523	0.700	
11	FI-03-A-03	MIXED HOUSES	DUNFERMLINE	FIFE	155	Mon	30/04/07	0.174	0.548	0.722	
12	LC-03-A-22	BUNGALOWS	BLACKPOOL	LANCASHIRE	98	Tue	18/10/05	0.173	0.337	0.510	
13	NY-03-A-01	MIXED HOUSES	NORTHALLERTON	NORTH YORKSHIRE	52	Tue	25/09/07	0.173	0.173	0.346	
14	SR-03-A-01	DETACHED	STIRLING	STIRLING	115	Mon	23/04/07	0.165	0.678	0.843	
15	CH-03-A-06	SEMI-DET./BUNG	CREWE	CHESHIRE	129	Tue	14/10/08	0.163	0.240	0.403	
16	WM-03-A-01	TERRACED	COVENTRY	WEST MIDLANDS	79	Fri	03/02/06	0.152	0.418	0.570	
17	BD-03-A-01	SEMI DETACHED	LUTON	BEDFORDSHIRE	131	Thu	08/07/04	0.145	0.420	0.565	
18	TV-03-A-01	HOUSES & FLATS	HARTLEPOOL	TEES VALLEY	225	Thu	14/04/05	0.138	0.458	0.596	
19	LC-03-A-29	DETACHED/SEMI	BLACKBURN	LANCASHIRE	185	Thu	10/06/04	0.130	0.524	0.654	
20	HI-03-A-11	BUNGALOWS	INVERNESS	HIGHLAND	85	Mon	05/06/06	0.129	0.424	0.553	
21	NY-03-A-05	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Mon	22/09/08	0.113	0.465	0.578	
22	SF-03-A-03	MIXED HOUSES	BURY ST EDMUNDS	SUFFOLK	101	Mon	15/05/06	0.109	0.554	0.663	
23	NT-03-A-03	SEMI DETACHED	KIRKBY-IN-ASHFIELD	NOTTINGHAMSHIRE	166	Wed	28/06/06	0.108	0.313	0.421	
24	CF-03-A-02	MIXED HOUSES	CARDIFF	CARDIFF	196	Fri	05/10/07	0.107	0.413	0.520	
25	SF-03-A-01	SEMI DETACHED	IPSWICH	SUFFOLK	77	Wed	23/05/07	0.104	0.416	0.520	
26	WO-03-A-06	DET./TERRACED	BROMSGROVE	WORCESTERSHIRE	232	Thu	30/06/05	0.099	0.448	0.547	
27	CW-03-A-02	SEMI D./DETATC	TRURO	CORNWALL	73	Tue	18/09/07	0.096	0.329	0.425	
28	MS-03-A-01	TERRACED	RUNCORN	MERSEYSIDE	372	Thu	06/10/05	0.091	0.269	0.360	
29	WR-03-A-01	SEMI DETACHED	WREXHAM	WREXHAM	82	Mon	05/07/04	0.085	0.366	0.451	
30	WL-03-A-01	SEMI D./TERRAC	WOOTTON BASSETT	WILTSHIRE	99	Mon	02/10/06	0.071	0.333	0.404	

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

Sanderson Associates (CE) Ltd Jubilee Way, Grange Moor Huddersfield

Licence No: 311901

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES

Ranking Type: DEPARTURES

Time Range: 08:00-09:00

15th Percentile = No. 26

85th Percentile = No. 5

Median Values

Arrivals: 0.156

Departures: 0.424

Totals: 0.581

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Departures)			Travel Plan
								Arrivals	Departures	Totals	
1	SR-03-A-01	DETACHED	STIRLING	STIRLING	115	Mon	23/04/07	0.165	0.678	0.843	
2	FI-03-A-02	SEMI DETACHED	GLENROTHES	FIFE	58	Mon	16/05/05	0.276	0.569	0.845	
3	SF-03-A-03	MIXED HOUSES	BURY ST EDMUNDS	SUFFOLK	101	Mon	15/05/06	0.109	0.554	0.663	
4	FI-03-A-03	MIXED HOUSES	DUNFERMLINE	FIFE	155	Mon	30/04/07	0.174	0.548	0.722	
5	WO-03-A-03	DETACHED	KIDDERMINSTER	WORCESTERSHIRE	138	Fri	05/05/06	0.203	0.543	0.746	
6	BD-03-A-02	SEMI DETACHED	LUTON	BEDFORDSHIRE	82	Tue	06/07/04	0.317	0.537	0.854	
7	LC-03-A-29	DETACHED/SEMI	BLACKBURN	LANCASHIRE	185	Thu	10/06/04	0.130	0.524	0.654	
8	EX-03-A-01	SEMI-DET.	STANFORD-LE-HOPE	ESSEX	237	Tue	13/05/08	0.177	0.523	0.700	
9	SF-03-A-02	SEMI DET./TERR	IPSWICH	SUFFOLK	230	Thu	24/05/07	0.243	0.491	0.734	
10	NY-03-A-05	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Mon	22/09/08	0.113	0.465	0.578	
11	TV-03-A-01	HOUSES & FLATS	HARTLEPOOL	TEES VALLEY	225	Thu	14/04/05	0.138	0.458	0.596	
12	SH-03-A-04	TERRACED	SHREWSBURY	SHROPSHIRE	108	Thu	11/06/09	0.287	0.454	0.741	
13	WO-03-A-06	DET./TERRACED	BROMSGROVE	WORCESTERSHIRE	232	Thu	30/06/05	0.099	0.448	0.547	
14	LN-03-A-01	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	150	Tue	15/05/07	0.187	0.440	0.627	
15	LN-03-A-02	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	186	Mon	14/05/07	0.183	0.425	0.608	
16	HI-03-A-11	BUNGALOWS	INVERNESS	HIGHLAND	85	Mon	05/06/06	0.129	0.424	0.553	
17	BD-03-A-01	SEMI DETACHED	LUTON	BEDFORDSHIRE	131	Thu	08/07/04	0.145	0.420	0.565	
18	WM-03-A-01	TERRACED	COVENTRY	WEST MIDLANDS	79	Fri	03/02/06	0.152	0.418	0.570	
19	SF-03-A-01	SEMI DETACHED	IPSWICH	SUFFOLK	77	Wed	23/05/07	0.104	0.416	0.520	
20	CF-03-A-02	MIXED HOUSES	CARDIFF	CARDIFF	196	Fri	05/10/07	0.107	0.413	0.520	
21	WM-03-A-03	MIXED HOUSING	COVENTRY	WEST MIDLANDS	84	Mon	24/09/07	0.321	0.405	0.726	
22	CB-03-A-04	SEMI DETACHED	WORKINGTON	CUMBRIA	82	Fri	24/04/09	0.183	0.366	0.549	
23	WR-03-A-01	SEMI DETACHED	WREXHAM	WREXHAM	82	Mon	05/07/04	0.085	0.366	0.451	
24	LC-03-A-22	BUNGALOWS	BLACKPOOL	LANCASHIRE	98	Tue	18/10/05	0.173	0.337	0.510	
25	WL-03-A-01	SEMI D./TERRAC	WOOTTON BASSETT	WILTSHIRE	99	Mon	02/10/06	0.071	0.333	0.404	
26	CW-03-A-02	SEMI D./DETATC	TRURO	CORNWALL	73	Tue	18/09/07	0.096	0.329	0.425	
27	NT-03-A-03	SEMI DETACHED	KIRKBY-IN-ASHFIELD	NOTTINGHAMSHIRE	166	Wed	28/06/06	0.108	0.313	0.421	
28	MS-03-A-01	TERRACED	RUNCORN	MERSEYSIDE	372	Thu	06/10/05	0.091	0.269	0.360	
29	CH-03-A-06	SEMI-DET./BUNG	CREWE	CHESHIRE	129	Tue	14/10/08	0.163	0.240	0.403	
30	NY-03-A-01	MIXED HOUSES	NORTHALLERTON	NORTH YORKSHIRE	52	Tue	25/09/07	0.173	0.173	0.346	

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

Sanderson Associates (CE) Ltd Jubilee Way, Grange Moor Huddersfield

Licence No: 311901

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES

Ranking Type: ARRIVALS

Time Range: 17:00-18:00

15th Percentile = No. 26

85th Percentile = No. 5

Median Values

Arrivals: 0.407

Departures: 0.289

Totals: 0.696

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Arrivals)			Travel Plan
								Arrivals	Departures	Totals	
1	SR-03-A-01	DETACHED	STIRLING	STIRLING	115	Mon	23/04/07	0.583	0.304	0.887	
2	WO-03-A-03	DETACHED	KIDDERMINSTER	WORCESTERSHIRE	138	Fri	05/05/06	0.558	0.319	0.877	
3	LC-03-A-29	DETACHED/SEMI	BLACKBURN	LANCASHIRE	185	Thu	10/06/04	0.551	0.346	0.897	
4	SF-03-A-03	MIXED HOUSES	BURY ST EDMUNDS	SUFFOLK	101	Mon	15/05/06	0.525	0.228	0.753	
5	LN-03-A-02	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	186	Mon	14/05/07	0.495	0.355	0.850	
6	FI-03-A-02	SEMI DETACHED	GLENROTHES	FIFE	58	Mon	16/05/05	0.483	0.224	0.707	
7	SF-03-A-02	SEMI DET./TERR	IPSWICH	SUFFOLK	230	Thu	24/05/07	0.478	0.248	0.726	
8	SH-03-A-04	TERRACED	SHREWSBURY	SHROPSHIRE	108	Thu	11/06/09	0.463	0.296	0.759	
9	EX-03-A-01	SEMI-DET.	STANFORD-LE-HOPE	ESSEX	237	Tue	13/05/08	0.439	0.274	0.713	
10	NY-03-A-05	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Mon	22/09/08	0.437	0.169	0.606	
11	CW-03-A-02	SEMI D./DETATC	TRURO	CORNWALL	73	Tue	18/09/07	0.425	0.219	0.644	
12	FI-03-A-03	MIXED HOUSES	DUNFERMLINE	FIFE	155	Mon	30/04/07	0.419	0.245	0.664	
13	WO-03-A-06	DET./TERRACED	BROMSGROVE	WORCESTERSHIRE	232	Thu	30/06/05	0.414	0.185	0.599	
14	LN-03-A-01	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	150	Tue	15/05/07	0.413	0.213	0.626	
15	TV-03-A-01	HOUSES & FLATS	HARTLEPOOL	TEES VALLEY	225	Thu	14/04/05	0.409	0.209	0.618	
16	WM-03-A-03	MIXED HOUSING	COVENTRY	WEST MIDLANDS	84	Mon	24/09/07	0.405	0.369	0.774	
17	CF-03-A-02	MIXED HOUSES	CARDIFF	CARDIFF	196	Fri	05/10/07	0.398	0.214	0.612	
18	NT-03-A-03	SEMI DETACHED	KIRKBY-IN-ASHFIELD	NOTTINGHAMSHIRE	166	Wed	28/06/06	0.398	0.307	0.705	
19	HI-03-A-11	BUNGALOWS	INVERNESS	HIGHLAND	85	Mon	05/06/06	0.376	0.141	0.517	
20	WL-03-A-01	SEMI D./TERRAC	WOOTTON BASSETT	WILTSHIRE	99	Mon	02/10/06	0.374	0.141	0.515	
21	CB-03-A-04	SEMI DETACHED	WORKINGTON	CUMBRIA	82	Fri	24/04/09	0.354	0.207	0.561	
22	BD-03-A-01	SEMI DETACHED	LUTON	BEDFORDSHIRE	131	Thu	08/07/04	0.351	0.183	0.534	
23	LC-03-A-22	BUNGALOWS	BLACKPOOL	LANCASHIRE	98	Tue	18/10/05	0.347	0.173	0.520	
24	WM-03-A-01	TERRACED	COVENTRY	WEST MIDLANDS	79	Fri	03/02/06	0.342	0.203	0.545	
25	MS-03-A-01	TERRACED	RUNCORN	MERSEYSIDE	372	Thu	06/10/05	0.325	0.194	0.519	
26	WR-03-A-01	SEMI DETACHED	WREXHAM	WREXHAM	82	Mon	05/07/04	0.305	0.098	0.403	
27	SF-03-A-01	SEMI DETACHED	IPSWICH	SUFFOLK	77	Wed	23/05/07	0.247	0.169	0.416	
28	BD-03-A-02	SEMI DETACHED	LUTON	BEDFORDSHIRE	82	Tue	06/07/04	0.232	0.268	0.500	
29	NY-03-A-01	MIXED HOUSES	NORTHALLERTON	NORTH YORKSHIRE	52	Tue	25/09/07	0.154	0.231	0.385	
30	CH-03-A-06	SEMI-DET./BUNG	CREWE	CHESHIRE	129	Tue	14/10/08	0.132	0.140	0.272	

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

Sanderson Associates (CE) Ltd Jubilee Way, Grange Moor Huddersfield

Licence No: 311901

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES

Ranking Type: DEPARTURES

Time Range: 17:00-18:00

15th Percentile = No. 26

85th Percentile = No. 5

Median Values

Arrivals: 0.411

Departures: 0.216

Totals: 0.628

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Departures)			Travel Plan
								Arrivals	Departures	Totals	
1	WM-03-A-03	MIXED HOUSING	COVENTRY	WEST MIDLANDS	84	Mon	24/09/07	0.405	0.369	0.774	
2	LN-03-A-02	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	186	Mon	14/05/07	0.495	0.355	0.850	
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4	WO-03-A-03	DETACHED	KIDDERMINSTER	WORCESTERSHIRE	138	Fri	05/05/06	0.558	0.319	0.877	
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6	SR-03-A-01	DETACHED	STIRLING	STIRLING	115	Mon	23/04/07	0.583	0.304	0.887	
7	SH-03-A-04	TERRACED	SHREWSBURY	SHROPSHIRE	108	Thu	11/06/09	0.463	0.296	0.759	
8	EX-03-A-01	SEMI-DET.	STANFORD-LE-HOPE	ESSEX	237	Tue	13/05/08	0.439	0.274	0.713	
9	BD-03-A-02	SEMI DETACHED	LUTON	BEDFORDSHIRE	82	Tue	06/07/04	0.232	0.268	0.500	
10	SF-03-A-02	SEMI DET./TERR	IPSWICH	SUFFOLK	230	Thu	24/05/07	0.478	0.248	0.726	
11	FI-03-A-03	MIXED HOUSES	DUNFERMLINE	FIFE	155	Mon	30/04/07	0.419	0.245	0.664	
12	NY-03-A-01	MIXED HOUSES	NORTHALLERTON	NORTH YORKSHIRE	52	Tue	25/09/07	0.154	0.231	0.385	
13	SF-03-A-03	MIXED HOUSES	BURY ST EDMUNDS	SUFFOLK	101	Mon	15/05/06	0.525	0.228	0.753	
14	FI-03-A-02	SEMI DETACHED	GLENROTHES	FIFE	58	Mon	16/05/05	0.483	0.224	0.707	
15	CW-03-A-02	SEMI D./DETATC	TRURO	CORNWALL	73	Tue	18/09/07	0.425	0.219	0.644	
16	CF-03-A-02	MIXED HOUSES	CARDIFF	CARDIFF	196	Fri	05/10/07	0.398	0.214	0.612	
17	LN-03-A-01	MIXED HOUSES	LINCOLN	LINCOLNSHIRE	150	Tue	15/05/07	0.413	0.213	0.626	
18	TV-03-A-01	HOUSES & FLATS	HARTLEPOOL	TEES VALLEY	225	Thu	14/04/05	0.409	0.209	0.618	
19	CB-03-A-04	SEMI DETACHED	WORKINGTON	CUMBRIA	82	Fri	24/04/09	0.354	0.207	0.561	
20	WM-03-A-01	TERRACED	COVENTRY	WEST MIDLANDS	79	Fri	03/02/06	0.342	0.203	0.545	
21	MS-03-A-01	TERRACED	RUNCORN	MERSEYSIDE	372	Thu	06/10/05	0.325	0.194	0.519	
22	WO-03-A-06	DET./TERRACED	BROMSGROVE	WORCESTERSHIRE	232	Thu	30/06/05	0.414	0.185	0.599	
23	BD-03-A-01	SEMI DETACHED	LUTON	BEDFORDSHIRE	131	Thu	08/07/04	0.351	0.183	0.534	
24	LC-03-A-22	BUNGALOWS	BLACKPOOL	LANCASHIRE	98	Tue	18/10/05	0.347	0.173	0.520	
25	NY-03-A-05	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Mon	22/09/08	0.437	0.169	0.606	
26	SF-03-A-01	SEMI DETACHED	IPSWICH	SUFFOLK	77	Wed	23/05/07	0.247	0.169	0.416	
27	WL-03-A-01	SEMI D./TERRAC	WOOTTON BASSETT	WILTSHIRE	99	Mon	02/10/06	0.374	0.141	0.515	
28	HI-03-A-11	BUNGALOWS	INVERNESS	HIGHLAND	85	Mon	05/06/06	0.376	0.141	0.517	
29	CH-03-A-06	SEMI-DET./BUNG	CREWE	CHESHIRE	129	Tue	14/10/08	0.132	0.140	0.272	
30	WR-03-A-01	SEMI DETACHED	WREXHAM	WREXHAM	82	Mon	05/07/04	0.305	0.098	0.403	

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

APPENDIX G

***PICADY Assessment; Kingsley Road / Knaresborough Road / Wedderburn
Avenue***

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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

Run with file:-

"J:\6000\6100\6127_ChippendaleFoo\Engineering\Traffic\Picady\2013 and 2018 Picady Assessment\
A59 Knaresborough Road- Wedderburn Avenue- Kingsley Road.vpi"
(drive-on-the-left) at 13:49:43 on Thursday, 28 March 2013

RUN INFORMATION

RUN TITLE : Knaresborough Road- Kingsley Road - Wedderburn Av
LOCATION :
DATE : 08/07/11
CLIENT :
ENUMERATOR : ashley.armitage [PC104]
JOB NUMBER : 6127
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

```

                                MINOR ROAD (ARM D)
                                I
                                I
                                I
                                I
                                I
                                I
                                I
                                I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
                                I
                                I
                                I
                                I
                                I
                                I
                                I
                                MINOR ROAD (ARM B)
```

ARM A IS A59 Knaresborough Road (eastbound)
ARM B IS Wedderburn Aveune
ARM C IS A59 Knaresborough Road (westbound)
ARM D IS Kingsley Road

STREAM LABELLING CONVENTION

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

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.30 M.	I	(WA-D) 2.40 M.	I
I	- VISIBILITY	I	(VC-B) 250.00 M.	I	(VA-D) 250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	YES (3)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 16.0 M.	I	(VD-A) 11.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 9.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 2.50 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.30 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.90 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.60 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	598.09	0.23	0.23	0.09	0.09	I

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	461.38	0.21	0.21	0.08	0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D		I
I	0.13	0.13	0.30		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2011 AM Base

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 7.54 I 11.31 I 7.54	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.86 I 1.29 I 0.86	I
I ARM C	I 15.00 I 45.00 I 75.00	I 8.54 I 12.81 I 8.54	I
I ARM D	I 15.00 I 45.00 I 75.00	I 1.34 I 2.01 I 1.34	I

Demand set: 2011 AM Base

I TIME	I FROM/TO	I ARM	I A	I ARM	I B	I ARM	I C	I ARM	I D	I
I 07.45 - 09.15	I ARM A	I 0.000	I 0.046	I 0.884	I 0.070	I				I
		I 0.0	I 28.0	I 533.0	I 42.0	I				I
		I (0.0)	I (0.0)	I (6.9)	I (9.5)	I				I
		I	I	I	I	I				I
	I ARM B	I 0.232	I 0.000	I 0.696	I 0.072	I				I
		I 16.0	I 0.0	I 48.0	I 5.0	I				I
		I (0.0)	I (0.0)	I (2.1)	I (0.0)	I				I
		I	I	I	I	I				I
	I ARM C	I 0.833	I 0.119	I 0.000	I 0.048	I				I
		I 569.0	I 81.0	I 0.0	I 33.0	I				I
		I (9.1)	I (0.0)	I (0.0)	I (6.1)	I				I
		I	I	I	I	I				I
	I ARM D	I 0.598	I 0.159	I 0.243	I 0.000	I				I
		I 64.0	I 17.0	I 26.0	I 0.0	I				I
		I (6.3)	I (0.0)	I (3.8)	I (0.0)	I				I
		I	I	I	I	I				I

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

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	08.45-09.00										I
I	B-C	0.72	9.06	0.079		0.12	0.09	1.3		0.12	I
I	B-AD	0.31	4.44	0.071		0.12	0.08	1.2		0.24	I
I	A-BCD	0.63	8.54	0.074		0.11	0.08	1.2		0.13	I
I	D-ABC	1.60	5.54	0.289		0.68	0.42	6.6		0.26	I
I	C-D	0.49									I
I	C-A	8.53									I
I	C-B	1.21	9.40	0.129		0.20	0.15	2.3		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	09.00-09.15										I
I	B-C	0.60	9.51	0.063		0.09	0.07	1.0		0.11	I
I	B-AD	0.26	5.09	0.052		0.08	0.06	0.9		0.21	I
I	A-BCD	0.53	8.97	0.059		0.08	0.06	0.9		0.12	I
I	D-ABC	1.34	6.06	0.221		0.42	0.29	4.5		0.21	I
I	C-D	0.41									I
I	C-A	7.14									I
I	C-B	1.02	9.84	0.103		0.15	0.12	1.8		0.11	I
I											I

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

QUEUE FOR STREAM		B-C
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		B-AD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		A-BCD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		D-ABC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.3	
08.15	0.4	
08.30	0.7	*
08.45	0.7	*
09.00	0.4	
09.15	0.3	

QUEUE FOR STREAM C-B	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.1
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	66.1	I 44.0	I	8.0	I 0.12	I	8.0	I 0.12	I
I	B-AD	I	28.9	I 19.3	I	7.4	I 0.26	I	7.4	I 0.26	I
I	A-BCD	I	57.8	I 38.5	I	7.5	I 0.13	I	7.5	I 0.13	I
I	D-ABC	I	147.3	I 98.2	I	40.3	I 0.27	I	40.3	I 0.27	I
I	C-D	I	45.4	I 30.3	I		I	I		I	I
I	C-A	I	783.2	I 522.1	I		I	I		I	I
I	C-B	I	111.5	I 74.3	I	13.9	I 0.12	I	13.9	I 0.12	I
I	ALL	I	2012.3	I 1341.6	I	77.1	I 0.04	I	77.1	I 0.04	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM C-A	STREAM C-B	STREAM C-D	
I	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	598.09		0.23		0.23		0.09		0.09		0.09	I

D-BC Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	STREAM	I
I	461.38		0.21		0.21		0.08		0.08		0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM A-C	STREAM A-B	STREAM A-D	

I	0.13	0.13	0.30	I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2011 PM Base

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 8.93 I 13.39 I 8.93	I
I ARM B	I 15.00 I 45.00 I 75.00	I 1.23 I 1.84 I 1.23	I
I ARM C	I 15.00 I 45.00 I 75.00	I 9.81 I 14.72 I 9.81	I
I ARM D	I 15.00 I 45.00 I 75.00	I 0.88 I 1.31 I 0.88	I

Demand set: 2011 PM Base

I TIME	I FROM/TO	I ARM	I A	I ARM	I B	I ARM	I C	I ARM	I D	I
I 16.30 - 18.00	I	I	I	I	I	I	I	I	I	I
I	I ARM A	I 0.000	I 0.043	I 0.874	I 0.083	I	I	I	I	I
I	I	I 0.0	I 31.0	I 624.0	I 59.0	I	I	I	I	I
I	I	I (0.0)	I (3.2)	I (2.6)	I (0.0)	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I ARM B	I 0.163	I 0.000	I 0.765	I 0.071	I	I	I	I	I
I	I	I 16.0	I 0.0	I 75.0	I 7.0	I	I	I	I	I
I	I	I (0.0)	I (0.0)	I (2.7)	I (0.0)	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I ARM C	I 0.854	I 0.079	I 0.000	I 0.068	I	I	I	I	I
I	I	I 670.0	I 62.0	I 0.0	I 53.0	I	I	I	I	I
I	I	I (2.7)	I (0.0)	I (0.0)	I (3.8)	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I ARM D	I 0.486	I 0.143	I 0.371	I 0.000	I	I	I	I	I
I	I	I 34.0	I 10.0	I 26.0	I 0.0	I	I	I	I	I
I	I	I (0.0)	I (0.0)	I (0.0)	I (0.0)	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I

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

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	1.12	8.84	0.127		0.20	0.15	2.3		0.13	I
I	B-AD	0.34	4.03	0.086		0.16	0.10	1.5		0.27	I
I	A-BCD	0.88	8.97	0.099		0.15	0.11	1.7		0.12	I
I	D-ABC	1.05	4.94	0.212		0.46	0.28	4.3		0.26	I
I	C-D	0.79									I
I	C-A	10.04									I
I	C-B	0.93	9.12	0.102		0.15	0.11	1.8		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.94	9.36	0.101		0.15	0.11	1.7		0.12	I
I	B-AD	0.29	4.72	0.061		0.10	0.07	1.0		0.23	I
I	A-BCD	0.74	9.50	0.078		0.11	0.09	1.3		0.11	I
I	D-ABC	0.88	5.59	0.157		0.28	0.19	3.0		0.21	I
I	C-D	0.67									I
I	C-A	8.41									I
I	C-B	0.78	9.61	0.081		0.11	0.09	1.4		0.11	I
I											I

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

QUEUE FOR STREAM		B-C
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		B-AD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		A-BCD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		D-ABC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.2	
17.00	0.3	
17.15	0.5	
17.30	0.5	
17.45	0.3	
18.00	0.2	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	103.2	I 68.8	I	13.7	I 0.13	I	13.7	I 0.13	I
I	B-AD	I	31.7	I 21.1	I	9.3	I 0.29	I	9.3	I 0.29	I
I	A-BCD	I	81.2	I 54.1	I	10.3	I 0.13	I	10.3	I 0.13	I
I	D-ABC	I	96.3	I 64.2	I	27.1	I 0.28	I	27.1	I 0.28	I
I	C-D	I	73.0	I 48.6	I		I	I		I	I
I	C-A	I	922.2	I 614.8	I		I	I		I	I
I	C-B	I	85.3	I 56.9	I	10.6	I 0.12	I	10.6	I 0.12	I
I	ALL	I	2294.5	I 1529.7	I	71.1	I 0.03	I	71.1	I 0.03	I

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

*****END OF RUN*****

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

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
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Run with file:-
"J:\6000\6100\6127_ChippendaleFoo\Engineering\Traffic\Picady\2013 and 2018 Picady Assessment\
A59 Knaresborough Road- Wedderburn Avenue- Kingsley Road.vpi"
(drive-on-the-left) at 13:48:57 on Thursday, 28 March 2013

RUN INFORMATION

RUN TITLE : Knaresborough Road- Kingsley Road - Wedderburn Av
LOCATION :
DATE : 08/07/11
CLIENT :
ENUMERATOR : ashley.armitage [PC104]
JOB NUMBER : 6127
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS A59 Knaresborough Road (eastbound)
ARM B IS Wedderburn Aveune
ARM C IS A59 Knaresborough Road (westbound)
ARM D IS Kingsley Road

STREAM LABELLING CONVENTION

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

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.30 M.	I	(WA-D) 2.40 M.	I
I	- VISIBILITY	I	(VC-B) 250.00 M.	I	(VA-D) 250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	YES (3)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 16.0 M.	I	(VD-A) 11.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 9.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 2.50 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.30 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.90 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.60 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	598.09	0.23	0.23	0.09	0.09	I

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	461.38	0.21	0.21	0.08	0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D		I
I	0.13	0.13	0.30		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2013 AM Base

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I I TO RISE I IS REACHED I FALLING I	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK I
I ARM A	I 15.00 I 45.00 I 75.00	I 7.56 I 11.34 I 7.56
I ARM B	I 15.00 I 45.00 I 75.00	I 0.86 I 1.29 I 0.86
I ARM C	I 15.00 I 45.00 I 75.00	I 8.56 I 12.84 I 8.56
I ARM D	I 15.00 I 45.00 I 75.00	I 1.34 I 2.01 I 1.34

Demand set: 2013 AM Base

I TIME	I FROM/TO	I ARM	I A	I ARM	I B	I ARM	I C	I ARM	I D
I 07.45 - 09.15	I ARM A	I 0.000	I 0.046	I 0.884	I 0.069	I	I	I	I
		I 0.0	I 28.0	I 535.0	I 42.0	I	I	I	I
		I (0.0)	I (0.0)	I (6.9)	I (9.5)	I	I	I	I
		I	I	I	I	I	I	I	I
	I ARM B	I 0.232	I 0.000	I 0.696	I 0.072	I	I	I	I
		I 16.0	I 0.0	I 48.0	I 5.0	I	I	I	I
		I (0.0)	I (0.0)	I (2.1)	I (0.0)	I	I	I	I
		I	I	I	I	I	I	I	I
	I ARM C	I 0.834	I 0.118	I 0.000	I 0.048	I	I	I	I
		I 571.0	I 81.0	I 0.0	I 33.0	I	I	I	I
		I (9.1)	I (0.0)	I (0.0)	I (6.1)	I	I	I	I
		I	I	I	I	I	I	I	I
	I ARM D	I 0.598	I 0.159	I 0.243	I 0.000	I	I	I	I
		I 64.0	I 17.0	I 26.0	I 0.0	I	I	I	I
		I (6.3)	I (0.0)	I (3.8)	I (0.0)	I	I	I	I
		I	I	I	I	I	I	I	I

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

[illegible][illegible][illegible]

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	08.45-09.00										I
I	B-C	0.72	9.05	0.079		0.12	0.09	1.3		0.12	I
I	B-AD	0.31	4.43	0.071		0.12	0.08	1.2		0.24	I
I	A-BCD	0.63	8.53	0.074		0.11	0.08	1.2		0.13	I
I	D-ABC	1.60	5.53	0.290		0.68	0.42	6.6		0.26	I
I	C-D	0.49									I
I	C-A	8.56									I
I	C-B	1.21	9.39	0.129		0.20	0.15	2.3		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	09.00-09.15										I
I	B-C	0.60	9.51	0.063		0.09	0.07	1.0		0.11	I
I	B-AD	0.26	5.08	0.052		0.08	0.06	0.9		0.21	I
I	A-BCD	0.53	8.96	0.059		0.08	0.06	0.9		0.12	I
I	D-ABC	1.34	6.05	0.222		0.42	0.29	4.5		0.21	I
I	C-D	0.41									I
I	C-A	7.16									I
I	C-B	1.02	9.83	0.103		0.15	0.12	1.8		0.11	I
I											I

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

QUEUE FOR STREAM B-C

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

QUEUE FOR STREAM B-AD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.3	
08.15	0.4	
08.30	0.7	*
08.45	0.7	*
09.00	0.4	
09.15	0.3	

QUEUE FOR STREAM C-B	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.1
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	66.1	I 44.0	I	8.0	I 0.12	I	8.0	I 0.12	I
I	B-AD	I	28.9	I 19.3	I	7.5	I 0.26	I	7.5	I 0.26	I
I	A-BCD	I	57.8	I 38.5	I	7.5	I 0.13	I	7.5	I 0.13	I
I	D-ABC	I	147.3	I 98.2	I	40.5	I 0.27	I	40.5	I 0.27	I
I	C-D	I	45.4	I 30.3	I		I	I		I	I
I	C-A	I	785.9	I 524.0	I		I	I		I	I
I	C-B	I	111.5	I 74.3	I	13.9	I 0.12	I	13.9	I 0.12	I
I	ALL	I	2017.8	I 1345.2	I	77.3	I 0.04	I	77.3	I 0.04	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B		I
I		0.00		0.00		0.00		0.00		0.00		I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B		I
I		0.00		0.00		0.00		0.00		0.00		I

* Due to the presence of a flare, data is not available

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I		STREAM	C-A	STREAM	C-B	STREAM	C-D				I
I			0.00		0.00		0.00				I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B		I
I		598.09		0.23		0.23		0.09		0.09		I

D-BC Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D		I
I		461.38		0.21		0.21		0.08		0.08		I

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I		STREAM	A-C	STREAM	A-B	STREAM	A-D				I
I			0.13		0.13		0.30				I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2013 PM Base

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 8.96 I 13.44 I 8.96	I
I ARM B	I 15.00 I 45.00 I 75.00	I 1.23 I 1.84 I 1.23	I
I ARM C	I 15.00 I 45.00 I 75.00	I 9.85 I 14.78 I 9.85	I
I ARM D	I 15.00 I 45.00 I 75.00	I 0.88 I 1.31 I 0.88	I

Demand set: 2013 PM Base

I	I TURNING PROPORTIONS	I
I	I TURNING COUNTS	I
I	I (PERCENTAGE OF H.V.S)	I
I	I	I
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D	I
I 16.30 - 18.00	I I I I I I	I
I	I ARM A I 0.000 I 0.043 I 0.874 I 0.082 I	I
I	I I 0.0 I 31.0 I 627.0 I 59.0 I	I
I	I (0.0)I (3.2)I (2.6)I (0.0)I	I
I	I I I I I I	I
I	I ARM B I 0.163 I 0.000 I 0.765 I 0.071 I	I
I	I I 16.0 I 0.0 I 75.0 I 7.0 I	I
I	I (0.0)I (0.0)I (2.7)I (0.0)I	I
I	I I I I I I	I
I	I ARM C I 0.854 I 0.079 I 0.000 I 0.067 I	I
I	I I 673.0 I 62.0 I 0.0 I 53.0 I	I
I	I (2.7)I (0.0)I (0.0)I (3.8)I	I
I	I I I I I I	I
I	I ARM D I 0.486 I 0.143 I 0.371 I 0.000 I	I
I	I I 34.0 I 10.0 I 26.0 I 0.0 I	I
I	I (0.0)I (0.0)I (0.0)I (0.0)I	I
I	I I I I I I	I

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

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	1.12	8.83	0.127		0.20	0.15	2.3		0.13	I
I	B-AD	0.34	4.01	0.086		0.16	0.10	1.5		0.27	I
I	A-BCD	0.88	8.96	0.099		0.15	0.11	1.7		0.12	I
I	D-ABC	1.05	4.92	0.213		0.47	0.28	4.4		0.26	I
I	C-D	0.79									I
I	C-A	10.08									I
I	C-B	0.93	9.10	0.102		0.16	0.11	1.8		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.94	9.34	0.101		0.15	0.11	1.7		0.12	I
I	B-AD	0.29	4.71	0.061		0.10	0.07	1.0		0.23	I
I	A-BCD	0.74	9.49	0.078		0.11	0.09	1.3		0.11	I
I	D-ABC	0.88	5.57	0.158		0.28	0.19	3.0		0.21	I
I	C-D	0.67									I
I	C-A	8.44									I
I	C-B	0.78	9.59	0.081		0.11	0.09	1.4		0.11	I
I											I

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

QUEUE FOR STREAM		B-C
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		B-AD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		A-BCD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		D-ABC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.2	
17.00	0.3	
17.15	0.5	
17.30	0.5	
17.45	0.3	
18.00	0.2	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	103.2	I 68.8	I	13.7	I 0.13	I	13.7	I 0.13	I
I	B-AD	I	31.7	I 21.1	I	9.4	I 0.30	I	9.4	I 0.30	I
I	A-BCD	I	81.2	I 54.1	I	10.4	I 0.13	I	10.4	I 0.13	I
I	D-ABC	I	96.3	I 64.2	I	27.2	I 0.28	I	27.2	I 0.28	I
I	C-D	I	73.0	I 48.6	I		I	I		I	I
I	C-A	I	926.3	I 617.6	I		I	I		I	I
I	C-B	I	85.3	I 56.9	I	10.6	I 0.12	I	10.6	I 0.12	I
I	ALL	I	2302.8	I 1535.2	I	71.3	I 0.03	I	71.3	I 0.03	I

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

*****END OF RUN*****

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

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-

"J:\6000\6100\6127_ChippendaleFoo\Engineering\Traffic\Picady\2013 and 2018 Picady Assessment\
A59 Knaresborough Road- Wedderburn Avenue- Kingsley Road.vpi"
(drive-on-the-left) at 13:49:19 on Thursday, 28 March 2013

RUN INFORMATION

RUN TITLE : Knaresborough Road- Kingsley Road - Wedderburn Av
LOCATION :
DATE : 08/07/11
CLIENT :
ENUMERATOR : ashley.armitage [PC104]
JOB NUMBER : 6127
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

```

                                MINOR ROAD (ARM D)
                                I
                                I
                                I
                                I
                                I
                                I
                                I
                                I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
                                I
                                I
                                I
                                I
                                I
                                I
                                I
                                MINOR ROAD (ARM B)
```

ARM A IS A59 Knaresborough Road (eastbound)
ARM B IS Wedderburn Aveune
ARM C IS A59 Knaresborough Road (westbound)
ARM D IS Kingsley Road

STREAM LABELLING CONVENTION

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

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.30 M.	I	(WA-D) 2.40 M.	I
I	- VISIBILITY	I	(VC-B) 250.00 M.	I	(VA-D) 250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	YES (3)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 16.0 M.	I	(VD-A) 11.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 9.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 2.50 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.30 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.90 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.60 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	598.09	0.23	0.23	0.09	0.09	I

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	461.38	0.21	0.21	0.08	0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D		I
I	0.13	0.13	0.30		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2013 AM Base

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 7.56 I 11.34 I 7.56	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.86 I 1.29 I 0.86	I
I ARM C	I 15.00 I 45.00 I 75.00	I 8.56 I 12.84 I 8.56	I
I ARM D	I 15.00 I 45.00 I 75.00	I 1.34 I 2.01 I 1.34	I

Demand set: AM Proposed

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 0.03 I 0.04 I 0.03	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.00 I 0.00 I 0.00	I
I ARM C	I 15.00 I 45.00 I 75.00	I 0.01 I 0.02 I 0.01	I
I ARM D	I 15.00 I 45.00 I 75.00	I 0.30 I 0.45 I 0.30	I

Demand set: 2013 AM Base

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
07.45 - 09.15	ARM A	I	0.000	I	0.046	I	0.884	I	0.069	I
		I	0.0	I	28.0	I	535.0	I	42.0	I
		I	(0.0)	I	(0.0)	I	(6.9)	I	(9.5)	I
	ARM B	I	0.232	I	0.000	I	0.696	I	0.072	I
		I	16.0	I	0.0	I	48.0	I	5.0	I
		I	(0.0)	I	(0.0)	I	(2.1)	I	(0.0)	I
	ARM C	I	0.834	I	0.118	I	0.000	I	0.048	I
		I	571.0	I	81.0	I	0.0	I	33.0	I
		I	(9.1)	I	(0.0)	I	(0.0)	I	(6.1)	I
	ARM D	I	0.598	I	0.159	I	0.243	I	0.000	I
		I	64.0	I	17.0	I	26.0	I	0.0	I
		I	(6.3)	I	(0.0)	I	(3.8)	I	(0.0)	I

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

Demand set: AM Proposed

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
07.45 - 09.15	ARM A	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	2.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM B	I	0.000	I	0.000	I	0.000	I	0.000	I
		I	0.0	I	0.0	I	0.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM C	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM D	I	0.583	I	0.167	I	0.250	I	0.000	I
		I	14.0	I	4.0	I	6.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I

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

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
 AND FOR TIME PERIOD

1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-C	0.60	9.49	0.063		0.00	0.07	1.0		0.11
B-AD	0.26	5.06	0.052		0.00	0.05	0.8		0.21
A-BCD	0.55	9.00	0.061		0.00	0.06	1.0		0.12
D-ABC	1.64	6.09	0.270		0.00	0.36	5.1		0.22
C-D	0.43								
C-A	7.16								
C-B	1.02	9.80	0.104		0.00	0.11	1.7		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	0.72	9.03	0.080		0.07	0.09	1.3		0.12
B-AD	0.31	4.40	0.071		0.05	0.08	1.1		0.24
A-BCD	0.66	8.56	0.077		0.06	0.08	1.2		0.13
D-ABC	1.96	5.56	0.353		0.36	0.53	7.6		0.28
C-D	0.51								
C-A	8.56								
C-B	1.21	9.35	0.130		0.11	0.15	2.2		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	0.88	8.38	0.105		0.09	0.12	1.7		0.13
B-AD	0.39	3.49	0.110		0.08	0.12	1.7		0.32
A-BCD	0.81	7.97	0.101		0.08	0.11	1.7		0.14
D-ABC	2.40	4.79	0.501		0.53	0.96	13.2		0.41
C-D	0.62								
C-A	10.48								
C-B	1.49	8.73	0.170		0.15	0.20	3.0		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	0.88	8.37	0.105		0.12	0.12	1.8		0.13
B-AD	0.39	3.49	0.111		0.12	0.12	1.8		0.32
A-BCD	0.81	7.96	0.101		0.11	0.11	1.7		0.14
D-ABC	2.40	4.79	0.502		0.96	0.98	14.6		0.42
C-D	0.62								
C-A	10.48								
C-B	1.49	8.72	0.170		0.20	0.20	3.1		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.72	9.02	0.080		0.12	0.09	1.3		0.12
B-AD	0.31	4.40	0.072		0.12	0.08	1.2		0.25
A-BCD	0.66	8.56	0.077		0.11	0.08	1.3		0.13
D-ABC	1.96	5.56	0.353		0.98	0.56	9.0		0.28
C-D	0.51								
C-A	8.56								
C-B	1.21	9.34	0.130		0.20	0.15	2.3		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	0.60	9.48	0.064		0.09	0.07	1.0		0.11
B-AD	0.26	5.05	0.052		0.08	0.06	0.9		0.21
A-BCD	0.55	8.99	0.061		0.08	0.07	1.0		0.12
D-ABC	1.64	6.08	0.270		0.56	0.38	5.9		0.23
C-D	0.43								
C-A	7.16								
C-B	1.02	9.80	0.104		0.15	0.12	1.8		0.11

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

QUEUE FOR STREAM B-C	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM B-AD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM A-BCD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM D-ABC	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.4
08.15	0.5
08.30	1.0
08.45	1.0
09.00	0.6
09.15	0.4

QUEUE FOR STREAM C-B	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I	
I		I			I	* DELAY *		I	* DELAY *		I	
I		I			I			I			I	
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I	
I	B-C	I	66.1	I	44.0	I	8.1	I	8.1	I	0.12	I
I	B-AD	I	28.9	I	19.3	I	7.5	I	7.5	I	0.26	I
I	A-BCD	I	60.6	I	40.4	I	7.8	I	7.8	I	0.13	I
I	D-ABC	I	180.3	I	120.2	I	55.4	I	55.4	I	0.31	I
I	C-D	I	46.8	I	31.2	I		I		I		I
I	C-A	I	785.9	I	524.0	I		I		I		I
I	C-B	I	111.5	I	74.3	I	14.0	I	14.0	I	0.13	I
I	ALL	I	2055.0	I	1370.0	I	92.8	I	92.8	I	0.05	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM C-A	STREAM C-B	STREAM C-D	
I	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	598.09		0.23		0.23		0.09		0.09		0.09	I

D-BC Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I	
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	I
I	461.38		0.21		0.21		0.08		0.08	I	

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM A-C	STREAM A-B	STREAM A-D	

I	0.13	0.13	0.30	I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2013 PM Base

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I							
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I		
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I		
I		I		I		I		I	I	I		I		I		

I	ARM	A	I		15.00	I	45.00	I	75.00	I	8.96	I	13.44	I	8.96	I
I	ARM	B	I		15.00	I	45.00	I	75.00	I	1.23	I	1.84	I	1.23	I
I	ARM	C	I		15.00	I	45.00	I	75.00	I	9.85	I	14.78	I	9.85	I
I	ARM	D	I		15.00	I	45.00	I	75.00	I	0.88	I	1.31	I	0.88	I

Demand set: PM Proposed

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I							
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I		
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I		
I		I		I		I		I		I		I		I		
I	ARM	A	I		15.00	I	45.00	I	75.00	I	0.14	I	0.21	I	0.14	I
I	ARM	B	I		15.00	I	45.00	I	75.00	I	0.01	I	0.02	I	0.01	I
I	ARM	C	I		15.00	I	45.00	I	75.00	I	0.13	I	0.19	I	0.13	I
I	ARM	D	I		15.00	I	45.00	I	75.00	I	0.08	I	0.11	I	0.08	I

Demand set: 2013 PM Base

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
16.30 - 18.00	ARM A	I	0.000	I	0.043	I	0.874	I	0.082	I
		I	0.0	I	31.0	I	627.0	I	59.0	I
		I	(0.0)	I	(3.2)	I	(2.6)	I	(0.0)	I
	ARM B	I	0.163	I	0.000	I	0.765	I	0.071	I
		I	16.0	I	0.0	I	75.0	I	7.0	I
		I	(0.0)	I	(0.0)	I	(2.7)	I	(0.0)	I
	ARM C	I	0.854	I	0.079	I	0.000	I	0.067	I
		I	673.0	I	62.0	I	0.0	I	53.0	I
		I	(2.7)	I	(0.0)	I	(0.0)	I	(3.8)	I
	ARM D	I	0.486	I	0.143	I	0.371	I	0.000	I
		I	34.0	I	10.0	I	26.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
		I		I		I		I		I

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

Demand set: PM Proposed

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
16.30 - 18.00	ARM A	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	11.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM B	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM C	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	10.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM D	I	0.500	I	0.167	I	0.333	I	0.000	I
		I	3.0	I	1.0	I	2.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
		I		I		I		I		I

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

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
 AND FOR TIME PERIOD

2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	0.94	9.32	0.101		0.00	0.11	1.6		0.12
B-AD	0.30	4.69	0.064		0.00	0.07	1.0		0.23
A-BCD	0.88	9.45	0.093		0.00	0.10	1.5		0.12
D-ABC	0.95	5.53	0.172		0.00	0.20	2.9		0.22
C-D	0.79								
C-A	8.44								
C-B	0.78	9.59	0.081		0.00	0.09	1.3		0.11

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	16.45-17.00										I
I	B-C	1.12	8.80	0.128		0.11	0.15	2.1		0.13	I
I	B-AD	0.36	3.99	0.090		0.07	0.10	1.4		0.28	I
I	A-BCD	1.05	8.91	0.118		0.10	0.13	2.0		0.13	I
I	D-ABC	1.14	4.87	0.234		0.20	0.30	4.3		0.27	I
I	C-D	0.94									I
I	C-A	10.08									I
I	C-B	0.93	9.09	0.102		0.09	0.11	1.7		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.00-17.15										I
I	B-C	1.38	8.03	0.171		0.15	0.20	3.0		0.15	I
I	B-AD	0.44	3.02	0.146		0.10	0.17	2.4		0.39	I
I	A-BCD	1.28	8.16	0.157		0.13	0.19	2.8		0.15	I
I	D-ABC	1.39	3.90	0.358		0.30	0.54	7.5		0.39	I
I	C-D	1.16									I
I	C-A	12.35									I
I	C-B	1.14	8.42	0.135		0.11	0.15	2.3		0.14	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.15-17.30										I
I	B-C	1.38	8.02	0.172		0.20	0.21	3.1		0.15	I
I	B-AD	0.44	3.02	0.146		0.17	0.17	2.5		0.39	I
I	A-BCD	1.28	8.16	0.157		0.19	0.19	2.8		0.15	I
I	D-ABC	1.39	3.90	0.358		0.54	0.55	8.1		0.40	I
I	C-D	1.16									I
I	C-A	12.35									I
I	C-B	1.14	8.41	0.135		0.15	0.16	2.3		0.14	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	1.12	8.79	0.128		0.21	0.15	2.3		0.13	I
I	B-AD	0.36	3.99	0.090		0.17	0.10	1.6		0.28	I
I	A-BCD	1.05	8.91	0.118		0.19	0.13	2.0		0.13	I
I	D-ABC	1.14	4.87	0.234		0.55	0.31	5.0		0.27	I
I	C-D	0.94									I
I	C-A	10.08									I
I	C-B	0.93	9.09	0.102		0.16	0.11	1.8		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.94	9.31	0.101		0.15	0.11	1.7		0.12	I
I	B-AD	0.30	4.69	0.064		0.10	0.07	1.1		0.23	I
I	A-BCD	0.88	9.45	0.093		0.13	0.10	1.6		0.12	I
I	D-ABC	0.95	5.53	0.172		0.31	0.21	3.3		0.22	I
I	C-D	0.79									I
I	C-A	8.44									I
I	C-B	0.78	9.58	0.081		0.11	0.09	1.4		0.11	I
I											I

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

QUEUE FOR STREAM B-C	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM B-AD	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM A-BCD	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-ABC	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.2
17.00	0.3
17.15	0.5 *
17.30	0.5 *
17.45	0.3
18.00	0.2

QUEUE FOR STREAM C-B	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	103.2	I 68.8	I	13.8	I 0.13	I	13.8	I 0.13	I
I	B-AD	I	33.0	I 22.0	I	9.9	I 0.30	I	9.9	I 0.30	I
I	A-BCD	I	96.3	I 64.2	I	12.7	I 0.13	I	12.7	I 0.13	I
I	D-ABC	I	104.6	I 69.7	I	31.1	I 0.30	I	31.1	I 0.30	I
I	C-D	I	86.7	I 57.8	I		I	I		I	I
I	C-A	I	926.3	I 617.6	I		I	I		I	I
I	C-B	I	85.3	I 56.9	I	10.6	I 0.12	I	10.6	I 0.12	I
I	ALL	I	2341.3	I 1560.9	I	78.1	I 0.03	I	78.1	I 0.03	I

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

*****END OF RUN*****

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

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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-

"J:\6000\6100\6127_ChippendaleFoo\Engineering\Traffic\Picady\2013 and 2018 Picady Assessment\
A59 Knaresborough Road- Wedderburn Avenue- Kingsley Road.vpi"
(drive-on-the-left) at 13:48:24 on Thursday, 28 March 2013

RUN INFORMATION

RUN TITLE : Knaresborough Road- Kingsley Road - Wedderburn Av
LOCATION :
DATE : 08/07/11
CLIENT :
ENUMERATOR : ashley.armitage [PC104]
JOB NUMBER : 6127
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS A59 Knaresborough Road (eastbound)
ARM B IS Wedderburn Aveune
ARM C IS A59 Knaresborough Road (westbound)
ARM D IS Kingsley Road

STREAM LABELLING CONVENTION

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

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.30 M.	I	(WA-D) 2.40 M.	I
I	- VISIBILITY	I	(VC-B) 250.00 M.	I	(VA-D) 250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	YES (3)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 16.0 M.	I	(VD-A) 11.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 9.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 2.50 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.30 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.90 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.60 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	598.09	0.23	0.23	0.09	0.09	I

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	461.38	0.21	0.21	0.08	0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D		I
I	0.13	0.13	0.30		I

C-B Stream

I Intercept	For Slope	For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM C-B	STREAM A-C	STREAM A-B	STREAM D-C	STREAM D-B	I
I	726.56	0.28	0.28	0.28	0.28

A-D Stream

I Intercept	For Slope	For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
I STREAM A-D	STREAM C-A	STREAM C-D	STREAM B-A	STREAM B-D	I	
I	726.56	0.28	0.28	0.28	0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2018 AM Base

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I							
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I	
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I	
I		I		I		I		I		I		I		I	

I	ARM	A	I	15.00	I	45.00	I	75.00	I	7.86	I	11.79	I	7.86	I
I	ARM	B	I	15.00	I	45.00	I	75.00	I	0.90	I	1.35	I	0.90	I
I	ARM	C	I	15.00	I	45.00	I	75.00	I	8.90	I	13.35	I	8.90	I
I	ARM	D	I	15.00	I	45.00	I	75.00	I	1.40	I	2.10	I	1.40	I

Demand set: 2018 AM Base

[illegible]

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

[illegible][illegible][illegible]

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	08.45-09.00										I
I	B-C	0.75	8.94	0.084		0.12	0.09	1.4		0.12	I
I	B-AD	0.33	4.27	0.077		0.14	0.09	1.3		0.25	I
I	A-BCD	0.66	8.43	0.078		0.11	0.09	1.3		0.13	I
I	D-ABC	1.68	5.40	0.311		0.79	0.46	7.3		0.27	I
I	C-D	0.51									I
I	C-A	8.90									I
I	C-B	1.26	9.28	0.136		0.22	0.16	2.4		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	09.00-09.15										I
I	B-C	0.63	9.41	0.067		0.09	0.07	1.1		0.11	I
I	B-AD	0.28	4.95	0.056		0.09	0.06	0.9		0.21	I
I	A-BCD	0.55	8.87	0.062		0.09	0.07	1.0		0.12	I
I	D-ABC	1.41	5.95	0.236		0.46	0.32	4.9		0.22	I
I	C-D	0.43									I
I	C-A	7.45									I
I	C-B	1.05	9.74	0.108		0.16	0.12	1.9		0.12	I
I											I

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

QUEUE FOR STREAM		B-C
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		B-AD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		A-BCD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		D-ABC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.3	
08.15	0.4	
08.30	0.8	*
08.45	0.8	*
09.00	0.5	
09.15	0.3	

QUEUE FOR STREAM C-B	

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.2
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I	68.8	I 45.9	I 8.5	I 0.12	I 8.6	I 0.12
I	B-AD	I	30.3	I 20.2	I 8.2	I 0.27	I 8.2	I 0.27
I	A-BCD	I	60.6	I 40.4	I 8.0	I 0.13	I 8.0	I 0.13
I	D-ABC	I	154.2	I 102.8	I 45.3	I 0.29	I 45.3	I 0.29
I	C-D	I	46.8	I 31.2	I	I	I	I
I	C-A	I	817.6	I 545.1	I	I	I	I
I	C-B	I	115.6	I 77.1	I 14.7	I 0.13	I 14.7	I 0.13
I	ALL	I	2099.1	I 1399.4	I 84.8	I 0.04	I 84.8	I 0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM C-A	STREAM C-B	STREAM C-D	
I	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	598.09		0.23		0.23		0.09		0.09		0.09	I

D-BC Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	STREAM	I
I	461.38		0.21		0.21		0.08		0.08		0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM A-C	STREAM A-B	STREAM A-D	

I	0.13	0.13	0.30	I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2018 PM Base

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 9.32 I 13.99 I 9.32	I
I ARM B	I 15.00 I 45.00 I 75.00	I 1.27 I 1.91 I 1.27	I
I ARM C	I 15.00 I 45.00 I 75.00	I 10.25 I 15.38 I 10.25	I
I ARM D	I 15.00 I 45.00 I 75.00	I 0.91 I 1.37 I 0.91	I

Demand set: 2018 PM Base

I	I TURNING PROPORTIONS	I
I	I TURNING COUNTS	I
I	I (PERCENTAGE OF H.V.S)	I
I	I	I
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D	I
I 16.30 - 18.00	I I I I I I	I
I	I ARM A I 0.000 I 0.043 I 0.874 I 0.083	I
I	I I 0.0 I 32.0 I 652.0 I 62.0	I
I	I (0.0)I (3.2)I (2.6)I (0.0)	I
I	I I I I I	I
I	I ARM B I 0.167 I 0.000 I 0.765 I 0.069	I
I	I I 17.0 I 0.0 I 78.0 I 7.0	I
I	I (0.0)I (0.0)I (2.7)I (0.0)	I
I	I I I I I	I
I	I ARM C I 0.854 I 0.079 I 0.000 I 0.067	I
I	I I 700.0 I 65.0 I 0.0 I 55.0	I
I	I (2.7)I (0.0)I (0.0)I (3.8)	I
I	I I I I I	I
I	I ARM D I 0.493 I 0.137 I 0.370 I 0.000	I
I	I I 36.0 I 10.0 I 27.0 I 0.0	I
I	I (0.0)I (0.0)I (0.0)I (0.0)	I
I	I I I I I	I

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

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	1.17	8.69	0.134		0.22	0.16	2.4		0.13	I
I	B-AD	0.36	3.84	0.094		0.18	0.11	1.7		0.29	I
I	A-BCD	0.93	8.83	0.105		0.16	0.12	1.8		0.13	I
I	D-ABC	1.09	4.78	0.229		0.54	0.30	4.8		0.27	I
I	C-D	0.82									I
I	C-A	10.49									I
I	C-B	0.97	8.99	0.108		0.17	0.12	1.9		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.98	9.24	0.106		0.16	0.12	1.8		0.12	I
I	B-AD	0.30	4.56	0.066		0.11	0.07	1.1		0.24	I
I	A-BCD	0.78	9.38	0.083		0.12	0.09	1.4		0.12	I
I	D-ABC	0.92	5.46	0.168		0.30	0.20	3.2		0.22	I
I	C-D	0.69									I
I	C-A	8.78									I
I	C-B	0.82	9.50	0.086		0.12	0.09	1.5		0.12	I
I											I

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

QUEUE FOR STREAM		B-C
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.2	
17.15	0.2	
17.30	0.2	
17.45	0.2	
18.00	0.1	

QUEUE FOR STREAM		B-AD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		A-BCD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.1	
18.00	0.1	

QUEUE FOR STREAM		D-ABC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
16.45	0.2	
17.00	0.3	
17.15	0.5	*
17.30	0.5	*
17.45	0.3	
18.00	0.2	

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	
I	B-C	I	107.4	I	71.6	I	14.7	I	0.14
I	B-AD	I	33.0	I	22.0	I	10.4	I	0.32
I	A-BCD	I	85.3	I	56.9	I	11.2	I	0.13
I	D-ABC	I	100.5	I	67.0	I	30.4	I	0.30
I	C-D	I	75.7	I	50.5	I		I	
I	C-A	I	963.5	I	642.3	I		I	
I	C-B	I	89.5	I	59.6	I	11.4	I	0.13
I	ALL	I	2396.4	I	1597.6	I	78.0	I	0.03

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

*****END OF RUN*****

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

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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-

"J:\6000\6100\6127_ChippendaleFoo\Engineering\Traffic\Picady\2013 and 2018 Picady Assessment\
A59 Knaresborough Road- Wedderburn Avenue- Kingsley Road.vpi"
(drive-on-the-left) at 13:47:36 on Thursday, 28 March 2013

RUN INFORMATION

RUN TITLE : Knaresborough Road- Kingsley Road - Wedderburn Av
LOCATION :
DATE : 08/07/11
CLIENT :
ENUMERATOR : ashley.armitage [PC104]
JOB NUMBER : 6127
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

```

                                MINOR ROAD (ARM D)
                                I
                                I
                                I
                                I
                                I
                                I
                                I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
                                I
                                I
                                I
                                I
                                I
                                I
                                MINOR ROAD (ARM B)
```

ARM A IS A59 Knaresborough Road (eastbound)
ARM B IS Wedderburn Aveune
ARM C IS A59 Knaresborough Road (westbound)
ARM D IS Kingsley Road

STREAM LABELLING CONVENTION

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

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.30 M.	I	(WA-D) 2.40 M.	I
I	- VISIBILITY	I	(VC-B) 250.00 M.	I	(VA-D) 250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	YES (3)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 16.0 M.	I	(VD-A) 11.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 9.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 2.50 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.30 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.90 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.60 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	598.09	0.23	0.23	0.09	0.09	I

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	461.38	0.21	0.21	0.08	0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D		I
I	0.13	0.13	0.30		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2018 AM Base

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 7.86 I 11.79 I 7.86	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.90 I 1.35 I 0.90	I
I ARM C	I 15.00 I 45.00 I 75.00	I 8.90 I 13.35 I 8.90	I
I ARM D	I 15.00 I 45.00 I 75.00	I 1.40 I 2.10 I 1.40	I

Demand set: AM Proposed

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 0.03 I 0.04 I 0.03	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.00 I 0.00 I 0.00	I
I ARM C	I 15.00 I 45.00 I 75.00	I 0.01 I 0.02 I 0.01	I
I ARM D	I 15.00 I 45.00 I 75.00	I 0.30 I 0.45 I 0.30	I

Demand set: 2018 AM Base

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
07.45 - 09.15	ARM A	I	0.000	I	0.046	I	0.884	I	0.070	I
		I	0.0	I	29.0	I	556.0	I	44.0	I
		I	(0.0)	I	(0.0)	I	(6.9)	I	(9.5)	I
	ARM B	I	0.236	I	0.000	I	0.694	I	0.069	I
		I	17.0	I	0.0	I	50.0	I	5.0	I
		I	(0.0)	I	(0.0)	I	(2.1)	I	(0.0)	I
	ARM C	I	0.834	I	0.118	I	0.000	I	0.048	I
		I	594.0	I	84.0	I	0.0	I	34.0	I
		I	(9.1)	I	(0.0)	I	(0.0)	I	(6.1)	I
	ARM D	I	0.598	I	0.161	I	0.241	I	0.000	I
		I	67.0	I	18.0	I	27.0	I	0.0	I
		I	(6.3)	I	(0.0)	I	(3.8)	I	(0.0)	I

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

Demand set: AM Proposed

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
07.45 - 09.15	ARM A	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	2.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM B	I	0.000	I	0.000	I	0.000	I	0.000	I
		I	0.0	I	0.0	I	0.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM C	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM D	I	0.583	I	0.167	I	0.250	I	0.000	I
		I	14.0	I	4.0	I	6.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I

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

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
 AND FOR TIME PERIOD

1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-C	0.63	9.39	0.067		0.00	0.07	1.0		0.11
B-AD	0.28	4.93	0.056		0.00	0.06	0.8		0.21
A-BCD	0.58	8.91	0.065		0.00	0.07	1.0		0.12
D-ABC	1.71	5.98	0.286		0.00	0.39	5.5		0.23
C-D	0.44								
C-A	7.45								
C-B	1.05	9.71	0.109		0.00	0.12	1.8		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	0.75	8.91	0.084		0.07	0.09	1.3		0.12
B-AD	0.33	4.24	0.078		0.06	0.08	1.2		0.26
A-BCD	0.69	8.46	0.082		0.07	0.09	1.3		0.13
D-ABC	2.04	5.42	0.376		0.39	0.58	8.3		0.29
C-D	0.52								
C-A	8.90								
C-B	1.26	9.24	0.136		0.12	0.16	2.3		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	0.92	8.23	0.112		0.09	0.12	1.8		0.14
B-AD	0.40	3.30	0.122		0.08	0.14	1.9		0.34
A-BCD	0.84	7.83	0.108		0.09	0.12	1.8		0.14
D-ABC	2.50	4.62	0.540		0.58	1.11	15.1		0.46
C-D	0.64								
C-A	10.90								
C-B	1.54	8.60	0.179		0.16	0.22	3.2		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	0.92	8.22	0.112		0.12	0.12	1.9		0.14
B-AD	0.40	3.29	0.123		0.14	0.14	2.1		0.35
A-BCD	0.84	7.83	0.108		0.12	0.12	1.8		0.14
D-ABC	2.50	4.62	0.541		1.11	1.14	16.9		0.47
C-D	0.64								
C-A	10.90								
C-B	1.54	8.59	0.179		0.22	0.22	3.3		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.75	8.90	0.084		0.12	0.09	1.4		0.12
B-AD	0.33	4.24	0.078		0.14	0.09	1.3		0.26
A-BCD	0.69	8.45	0.082		0.12	0.09	1.3		0.13
D-ABC	2.04	5.42	0.376		1.14	0.62	10.0		0.30
C-D	0.52								
C-A	8.90								
C-B	1.26	9.24	0.136		0.22	0.16	2.5		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	0.63	9.39	0.067		0.09	0.07	1.1		0.11
B-AD	0.28	4.92	0.056		0.09	0.06	0.9		0.22
A-BCD	0.58	8.90	0.065		0.09	0.07	1.0		0.12
D-ABC	1.71	5.97	0.286		0.62	0.41	6.4		0.24
C-D	0.44								
C-A	7.45								
C-B	1.05	9.70	0.109		0.16	0.12	1.9		0.12

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

QUEUE FOR STREAM B-C	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM B-AD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM A-BCD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM D-ABC	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.4
08.15	0.6
08.30	1.1
08.45	1.1
09.00	0.6
09.15	0.4

QUEUE FOR STREAM C-B	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.2
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I	68.8	I 45.9	I 8.6	I 0.12	I 8.6	I 0.12
I	B-AD	I	30.3	I 20.2	I 8.3	I 0.27	I 8.3	I 0.27
I	A-BCD	I	63.3	I 42.2	I 8.3	I 0.13	I 8.3	I 0.13
I	D-ABC	I	187.2	I 124.8	I 62.2	I 0.33	I 62.2	I 0.33
I	C-D	I	48.2	I 32.1	I	I	I	I
I	C-A	I	817.6	I 545.1	I	I	I	I
I	C-B	I	115.6	I 77.1	I 14.8	I 0.13	I 14.8	I 0.13
I	ALL	I	2136.2	I 1424.1	I 102.3	I 0.05	I 102.3	I 0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM C-A	STREAM C-B	STREAM C-D	
I	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	598.09		0.23		0.23		0.09		0.09		0.09	I

D-BC Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I	
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	I
I	461.38		0.21		0.21		0.08		0.08	I	

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM A-C	STREAM A-B	STREAM A-D	

I	0.13	0.13	0.30	I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2018 PM Base

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I ARM A	I 15.00	I 45.00	I 75.00	I 9.32	I 13.99	I 9.32	I			
I ARM B	I 15.00	I 45.00	I 75.00	I 1.27	I 1.91	I 1.27	I			
I ARM C	I 15.00	I 45.00	I 75.00	I 10.25	I 15.38	I 10.25	I			
I ARM D	I 15.00	I 45.00	I 75.00	I 0.91	I 1.37	I 0.91	I			

Demand set: PM Proposed

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I ARM A	I 15.00	I 45.00	I 75.00	I 0.14	I 0.21	I 0.14	I			
I ARM B	I 15.00	I 45.00	I 75.00	I 0.01	I 0.02	I 0.01	I			
I ARM C	I 15.00	I 45.00	I 75.00	I 0.13	I 0.19	I 0.13	I			
I ARM D	I 15.00	I 45.00	I 75.00	I 0.08	I 0.11	I 0.08	I			

Demand set: 2018 PM Base

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
16.30 - 18.00	ARM A	I	0.000	I	0.043	I	0.874	I	0.083	I
		I	0.0	I	32.0	I	652.0	I	62.0	I
		I	(0.0)	I	(3.2)	I	(2.6)	I	(0.0)	I
	ARM B	I	0.167	I	0.000	I	0.765	I	0.069	I
		I	17.0	I	0.0	I	78.0	I	7.0	I
		I	(0.0)	I	(0.0)	I	(2.7)	I	(0.0)	I
	ARM C	I	0.854	I	0.079	I	0.000	I	0.067	I
		I	700.0	I	65.0	I	0.0	I	55.0	I
		I	(2.7)	I	(0.0)	I	(0.0)	I	(3.8)	I
	ARM D	I	0.493	I	0.137	I	0.370	I	0.000	I
		I	36.0	I	10.0	I	27.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
		I		I		I		I		I

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

Demand set: PM Proposed

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
16.30 - 18.00	ARM A	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	11.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM B	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM C	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	10.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM D	I	0.500	I	0.167	I	0.333	I	0.000	I
		I	3.0	I	1.0	I	2.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
		I		I		I		I		I

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

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
 AND FOR TIME PERIOD

2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	0.98	9.21	0.106		0.00	0.12	1.7		0.12
B-AD	0.31	4.55	0.069		0.00	0.07	1.0		0.24
A-BCD	0.92	9.34	0.098		0.00	0.11	1.6		0.12
D-ABC	0.99	5.42	0.183		0.00	0.22	3.1		0.22
C-D	0.82								
C-A	8.78								
C-B	0.82	9.49	0.086		0.00	0.09	1.4		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	1.17	8.67	0.135		0.12	0.15	2.3		0.13
B-AD	0.37	3.82	0.098		0.07	0.11	1.5		0.29
A-BCD	1.09	8.78	0.125		0.11	0.14	2.1		0.13
D-ABC	1.18	4.72	0.251		0.22	0.33	4.7		0.28
C-D	0.97								
C-A	10.49								
C-B	0.97	8.98	0.108		0.09	0.12	1.8		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	1.43	7.85	0.182		0.15	0.22	3.2		0.16
B-AD	0.46	2.81	0.163		0.11	0.19	2.7		0.42
A-BCD	1.34	8.00	0.167		0.14	0.20	3.0		0.15
D-ABC	1.45	3.70	0.392		0.33	0.62	8.5		0.44
C-D	1.19								
C-A	12.85								
C-B	1.19	8.27	0.144		0.12	0.17	2.4		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	1.43	7.84	0.183		0.22	0.22	3.3		0.16
B-AD	0.46	2.81	0.163		0.19	0.19	2.9		0.43
A-BCD	1.34	8.00	0.167		0.20	0.20	3.0		0.15
D-ABC	1.45	3.70	0.392		0.62	0.63	9.4		0.44
C-D	1.19								
C-A	12.85								
C-B	1.19	8.27	0.144		0.17	0.17	2.5		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	1.17	8.66	0.135		0.22	0.16	2.4		0.13
B-AD	0.37	3.81	0.098		0.19	0.11	1.8		0.29
A-BCD	1.09	8.78	0.125		0.20	0.14	2.2		0.13
D-ABC	1.18	4.72	0.251		0.63	0.34	5.5		0.29
C-D	0.97								
C-A	10.49								
C-B	0.97	8.97	0.109		0.17	0.12	1.9		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	0.98	9.21	0.106		0.16	0.12	1.8		0.12
B-AD	0.31	4.55	0.069		0.11	0.08	1.2		0.24
A-BCD	0.92	9.34	0.098		0.14	0.11	1.6		0.12
D-ABC	0.99	5.42	0.183		0.34	0.23	3.6		0.23
C-D	0.82								
C-A	8.78								
C-B	0.82	9.49	0.086		0.12	0.09	1.5		0.12

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

QUEUE FOR STREAM B-C	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.2
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.1

QUEUE FOR STREAM B-AD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM A-BCD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-ABC	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.2
17.00	0.3
17.15	0.6 *
17.30	0.6 *
17.45	0.3
18.00	0.2

QUEUE FOR STREAM C-B	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	107.4	I 71.6	I	14.8	I 0.14	I	14.8	I 0.14	I
I	B-AD	I	34.4	I 22.9	I	11.0	I 0.32	I	11.0	I 0.32	I
I	A-BCD	I	100.5	I 67.0	I	13.6	I 0.14	I	13.6	I 0.14	I
I	D-ABC	I	108.7	I 72.5	I	34.7	I 0.32	I	34.7	I 0.32	I
I	C-D	I	89.5	I 59.6	I		I	I		I	I
I	C-A	I	963.5	I 642.3	I		I	I		I	I
I	C-B	I	89.5	I 59.6	I	11.4	I 0.13	I	11.4	I 0.13	I
I	ALL	I	2434.9	I 1623.3	I	85.5	I 0.04	I	85.5	I 0.04	I

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

*****END OF RUN*****

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

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-

"J:\6000\6100\6127_ChippendaleFoo\Engineering\Traffic\Picady\2013 and 2018 Picady Assessment\
A59 Knaresborough Road- Wedderburn Avenue- Kingsley Road.vpi"
(drive-on-the-left) at 15:01:12 on Friday, 17 May 2013

RUN INFORMATION

RUN TITLE : Knaresborough Road- Kingsley Road - Wedderburn Av
LOCATION :
DATE : 08/07/11
CLIENT :
ENUMERATOR : ashley.armitage [PC104]
JOB NUMBER : 6127
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS A59 Knaresborough Road (eastbound)
ARM B IS Wedderburn Aveune
ARM C IS A59 Knaresborough Road (westbound)
ARM D IS Kingsley Road

STREAM LABELLING CONVENTION

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

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.30 M.	I	(WA-D) 2.40 M.	I
I	- VISIBILITY	I	(VC-B) 250.00 M.	I	(VA-D) 250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	YES (3)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 16.0 M.	I	(VD-A) 11.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 9.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 2.50 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.30 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.90 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.60 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	598.09	0.23	0.23	0.09	0.09	I

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	461.38	0.21	0.21	0.08	0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D		I
I	0.13	0.13	0.30		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2013 AM Base

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 7.56 I 11.34 I 7.56	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.86 I 1.29 I 0.86	I
I ARM C	I 15.00 I 45.00 I 75.00	I 8.56 I 12.84 I 8.56	I
I ARM D	I 15.00 I 45.00 I 75.00	I 1.34 I 2.01 I 1.34	I

Demand set: AM Proposed 85th %ile

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 0.06 I 0.09 I 0.06	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.00 I 0.00 I 0.00	I
I ARM C	I 15.00 I 45.00 I 75.00	I 0.05 I 0.08 I 0.05	I
I ARM D	I 15.00 I 45.00 I 75.00	I 0.38 I 0.56 I 0.38	I

Demand set: 2013 AM Base

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
07.45 - 09.15	ARM A	I	0.000	I	0.046	I	0.884	I	0.069	I
		I	0.0	I	28.0	I	535.0	I	42.0	I
		I	(0.0)	I	(0.0)	I	(6.9)	I	(9.5)	I
	ARM B	I	0.232	I	0.000	I	0.696	I	0.072	I
		I	16.0	I	0.0	I	48.0	I	5.0	I
		I	(0.0)	I	(0.0)	I	(2.1)	I	(0.0)	I
	ARM C	I	0.834	I	0.118	I	0.000	I	0.048	I
		I	571.0	I	81.0	I	0.0	I	33.0	I
		I	(9.1)	I	(0.0)	I	(0.0)	I	(6.1)	I
	ARM D	I	0.598	I	0.159	I	0.243	I	0.000	I
		I	64.0	I	17.0	I	26.0	I	0.0	I
		I	(6.3)	I	(0.0)	I	(3.8)	I	(0.0)	I

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

Demand set: AM Proposed 85th %ile

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
07.45 - 09.15	ARM A	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	5.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM B	I	0.000	I	0.000	I	0.000	I	0.000	I
		I	0.0	I	0.0	I	0.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM C	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	4.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM D	I	0.600	I	0.167	I	0.233	I	0.000	I
		I	18.0	I	5.0	I	7.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I

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

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
 AND FOR TIME PERIOD

1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-C	0.60	9.48	0.064		0.00	0.07	1.0		0.11
B-AD	0.26	5.05	0.052		0.00	0.05	0.8		0.21
A-BCD	0.59	9.03	0.065		0.00	0.07	1.0		0.12
D-ABC	1.72	6.09	0.282		0.00	0.38	5.4		0.23
C-D	0.46								
C-A	7.16								
C-B	1.02	9.79	0.104		0.00	0.11	1.7		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	0.72	9.02	0.080		0.07	0.09	1.3		0.12
B-AD	0.31	4.39	0.072		0.05	0.08	1.1		0.25
A-BCD	0.70	8.60	0.082		0.07	0.09	1.3		0.13
D-ABC	2.05	5.56	0.369		0.38	0.57	8.1		0.28
C-D	0.55								
C-A	8.56								
C-B	1.21	9.34	0.130		0.11	0.15	2.2		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	0.88	8.37	0.105		0.09	0.12	1.7		0.13
B-AD	0.39	3.47	0.111		0.08	0.12	1.7		0.32
A-BCD	0.86	7.99	0.108		0.09	0.12	1.8		0.14
D-ABC	2.51	4.79	0.525		0.57	1.04	14.4		0.43
C-D	0.68								
C-A	10.48								
C-B	1.49	8.72	0.171		0.15	0.20	3.0		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	0.88	8.36	0.105		0.12	0.12	1.8		0.13
B-AD	0.39	3.47	0.111		0.12	0.12	1.8		0.32
A-BCD	0.86	7.99	0.108		0.12	0.12	1.8		0.14
D-ABC	2.51	4.79	0.525		1.04	1.07	15.9		0.44
C-D	0.68								
C-A	10.48								
C-B	1.49	8.71	0.171		0.20	0.20	3.1		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.72	9.01	0.080		0.12	0.09	1.3		0.12
B-AD	0.31	4.38	0.072		0.12	0.08	1.2		0.25
A-BCD	0.70	8.60	0.082		0.12	0.09	1.4		0.13
D-ABC	2.05	5.56	0.369		1.07	0.60	9.6		0.29
C-D	0.55								
C-A	8.56								
C-B	1.21	9.33	0.130		0.20	0.15	2.3		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	0.60	9.48	0.064		0.09	0.07	1.0		0.11
B-AD	0.26	5.04	0.052		0.08	0.06	0.9		0.21
A-BCD	0.59	9.03	0.065		0.09	0.07	1.1		0.12
D-ABC	1.72	6.09	0.282		0.60	0.40	6.3		0.23
C-D	0.46								
C-A	7.16								
C-B	1.02	9.79	0.104		0.15	0.12	1.8		0.11

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

QUEUE FOR STREAM B-C	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM B-AD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM A-BCD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUE FOR STREAM D-ABC	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.4
08.15	0.6
08.30	1.0
08.45	1.1
09.00	0.6
09.15	0.4

QUEUE FOR STREAM C-B	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	66.1	I	44.0	I	8.1	I	8.1	I	0.12
I	B-AD	I	28.9	I	19.3	I	7.6	I	7.6	I	0.26
I	A-BCD	I	64.7	I	43.1	I	8.4	I	8.4	I	0.13
I	D-ABC	I	188.6	I	125.7	I	59.8	I	59.8	I	0.32
I	C-D	I	50.9	I	34.0	I		I		I	
I	C-A	I	785.9	I	524.0	I		I		I	
I	C-B	I	111.5	I	74.3	I	14.0	I	14.0	I	0.13
I	ALL	I	2071.5	I	1381.0	I	97.8	I	97.8	I	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	C-A	STREAM	C-B	STREAM	C-D	STREAM	D-B	STREAM	D-B	I
I		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I	
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	I
I	598.09		0.23		0.23		0.09		0.09	I	

D-BC Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I	
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	I
I	461.38		0.21		0.21		0.08		0.08	I	

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	A-C	STREAM	A-B	STREAM	A-D	STREAM	D-B	STREAM	D-B	I
I		0.13		0.13		0.30		0.13		0.13	I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2013 PM Base

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I ARM A	I 15.00	I 45.00	I 75.00	I 8.96	I 13.44	I 8.96	I			
I ARM B	I 15.00	I 45.00	I 75.00	I 1.23	I 1.84	I 1.23	I			
I ARM C	I 15.00	I 45.00	I 75.00	I 9.85	I 14.78	I 9.85	I			
I ARM D	I 15.00	I 45.00	I 75.00	I 0.88	I 1.31	I 0.88	I			

Demand set: PM Proposed 85th %ile

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I ARM A	I 15.00	I 45.00	I 75.00	I 0.17	I 0.26	I 0.17	I			
I ARM B	I 15.00	I 45.00	I 75.00	I 0.03	I 0.04	I 0.03	I			
I ARM C	I 15.00	I 45.00	I 75.00	I 0.15	I 0.23	I 0.15	I			
I ARM D	I 15.00	I 45.00	I 75.00	I 0.14	I 0.21	I 0.14	I			

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	1.12	8.76	0.128		0.11	0.15	2.1		0.13
B-AD	0.37	3.99	0.094		0.07	0.10	1.5		0.28
A-BCD	1.09	8.90	0.123		0.11	0.14	2.1		0.13
D-ABC	1.21	4.84	0.251		0.22	0.33	4.7		0.27
C-D	0.97								
C-A	10.08								
C-B	0.93	9.08	0.102		0.09	0.11	1.7		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	1.38	7.99	0.172		0.15	0.21	3.0		0.15
B-AD	0.46	3.01	0.152		0.10	0.17	2.5		0.39
A-BCD	1.34	8.15	0.164		0.14	0.20	2.9		0.15
D-ABC	1.49	3.86	0.385		0.33	0.60	8.4		0.41
C-D	1.19								
C-A	12.35								
C-B	1.14	8.40	0.135		0.11	0.16	2.3		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	1.38	7.98	0.172		0.21	0.21	3.1		0.15
B-AD	0.46	3.01	0.152		0.17	0.18	2.6		0.39
A-BCD	1.34	8.15	0.164		0.20	0.20	3.0		0.15
D-ABC	1.49	3.86	0.385		0.60	0.61	9.1		0.42
C-D	1.19								
C-A	12.35								
C-B	1.14	8.40	0.135		0.16	0.16	2.3		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	1.12	8.75	0.128		0.21	0.15	2.3		0.13
B-AD	0.37	3.98	0.094		0.18	0.11	1.7		0.28
A-BCD	1.09	8.90	0.123		0.20	0.14	2.1		0.13
D-ABC	1.21	4.83	0.251		0.61	0.34	5.5		0.28
C-D	0.97								
C-A	10.08								
C-B	0.93	9.08	0.102		0.16	0.12	1.8		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	0.94	9.28	0.101		0.15	0.11	1.7		0.12
B-AD	0.31	4.69	0.067		0.11	0.07	1.1		0.23
A-BCD	0.92	9.44	0.097		0.14	0.11	1.6		0.12
D-ABC	1.02	5.50	0.185		0.34	0.23	3.6		0.22
C-D	0.82								
C-A	8.44								
C-B	0.78	9.57	0.081		0.12	0.09	1.4		0.11

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

QUEUE FOR STREAM B-C	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM B-AD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM A-BCD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-ABC	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.2
17.00	0.3
17.15	0.6 *
17.30	0.6 *
17.45	0.3
18.00	0.2

QUEUE FOR STREAM C-B	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	103.2	I 68.8	I	13.9	I 0.13	I	13.9	I 0.13	I
I	B-AD	I	34.4	I 22.9	I	10.4	I 0.30	I	10.4	I 0.30	I
I	A-BCD	I	100.5	I 67.0	I	13.3	I 0.13	I	13.3	I 0.13	I
I	D-ABC	I	111.5	I 74.3	I	34.4	I 0.31	I	34.4	I 0.31	I
I	C-D	I	89.5	I 59.6	I		I	I		I	I
I	C-A	I	926.3	I 617.6	I		I	I		I	I
I	C-B	I	85.3	I 56.9	I	10.7	I 0.13	I	10.7	I 0.13	I
I	ALL	I	2356.4	I 1571.0	I	82.7	I 0.04	I	82.7	I 0.04	I

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

*****END OF RUN*****

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

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-
"J:\6000\6100\6127_ChippendaleFoo\Engineering\Traffic\Picady\2013 and 2018 Picady Assessment\
A59 Knaresborough Road- Wedderburn Avenue- Kingsley Road.vpi"
(drive-on-the-left) at 15:01:38 on Friday, 17 May 2013

RUN INFORMATION

RUN TITLE : Knaresborough Road- Kingsley Road - Wedderburn Av
LOCATION :
DATE : 08/07/11
CLIENT :
ENUMERATOR : ashley.armitage [PC104]
JOB NUMBER : 6127
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS A59 Knaresborough Road (eastbound)
ARM B IS Wedderburn Aveune
ARM C IS A59 Knaresborough Road (westbound)
ARM D IS Kingsley Road

STREAM LABELLING CONVENTION

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

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.30 M.	I	(WA-D) 2.40 M.	I
I	- VISIBILITY	I	(VC-B) 250.00 M.	I	(VA-D) 250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	YES (3)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 16.0 M.	I	(VD-A) 11.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 17.0 M.	I	(VD-C) 9.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) 2.50 M.	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) 0.00 M.	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	-	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.30 M.	I	-	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.20 M.	I	-	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.90 M.	I	-	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.60 M.	I	-	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	-	I

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D		I
I	0.00	0.00	0.00		I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	598.09	0.23	0.23	0.09	0.09	I

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	461.38	0.21	0.21	0.08	0.08	I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D		I
I	0.13	0.13	0.30		I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2018 AM Base

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 7.86 I 11.79 I 7.86	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.90 I 1.35 I 0.90	I
I ARM C	I 15.00 I 45.00 I 75.00	I 8.90 I 13.35 I 8.90	I
I ARM D	I 15.00 I 45.00 I 75.00	I 1.40 I 2.10 I 1.40	I

Demand set: AM Proposed 85th %ile

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 0.06 I 0.09 I 0.06	I
I ARM B	I 15.00 I 45.00 I 75.00	I 0.00 I 0.00 I 0.00	I
I ARM C	I 15.00 I 45.00 I 75.00	I 0.05 I 0.08 I 0.05	I
I ARM D	I 15.00 I 45.00 I 75.00	I 0.38 I 0.56 I 0.38	I

Demand set: 2018 AM Base

TIME	TURNING PROPORTIONS											
	TURNING COUNTS											
	(PERCENTAGE OF H.V.S)											
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D			
07.45 - 09.15	ARM A	I	0.000	I	0.046	I	0.884	I	0.070	I	I	I
		I	0.0	I	29.0	I	556.0	I	44.0	I	I	I
		I	(0.0)	I	(0.0)	I	(6.9)	I	(9.5)	I	I	I
	ARM B	I	0.236	I	0.000	I	0.694	I	0.069	I	I	I
		I	17.0	I	0.0	I	50.0	I	5.0	I	I	I
		I	(0.0)	I	(0.0)	I	(2.1)	I	(0.0)	I	I	I
	ARM C	I	0.834	I	0.118	I	0.000	I	0.048	I	I	I
		I	594.0	I	84.0	I	0.0	I	34.0	I	I	I
		I	(9.1)	I	(0.0)	I	(0.0)	I	(6.1)	I	I	I
	ARM D	I	0.598	I	0.161	I	0.241	I	0.000	I	I	I
		I	67.0	I	18.0	I	27.0	I	0.0	I	I	I
		I	(6.3)	I	(0.0)	I	(3.8)	I	(0.0)	I	I	I

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

Demand set: AM Proposed 85th %ile

TIME	TURNING PROPORTIONS											
	TURNING COUNTS											
	(PERCENTAGE OF H.V.S)											
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D			
07.45 - 09.15	ARM A	I	0.000	I	0.000	I	0.000	I	1.000	I	I	I
		I	0.0	I	0.0	I	0.0	I	5.0	I	I	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	I	I
	ARM B	I	0.000	I	0.000	I	0.000	I	0.000	I	I	I
		I	0.0	I	0.0	I	0.0	I	0.0	I	I	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	I	I
	ARM C	I	0.000	I	0.000	I	0.000	I	1.000	I	I	I
		I	0.0	I	0.0	I	0.0	I	4.0	I	I	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	I	I
	ARM D	I	0.600	I	0.167	I	0.233	I	0.000	I	I	I
		I	18.0	I	5.0	I	7.0	I	0.0	I	I	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	I	I

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

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD

1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-C	0.63	9.39	0.067		0.00	0.07	1.0		0.11
B-AD	0.28	4.92	0.056		0.00	0.06	0.8		0.21
A-BCD	0.61	8.94	0.069		0.00	0.07	1.1		0.12
D-ABC	1.78	5.98	0.298		0.00	0.41	5.8		0.24
C-D	0.48								
C-A	7.45								
C-B	1.05	9.70	0.109		0.00	0.12	1.8		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	0.75	8.90	0.084		0.07	0.09	1.3		0.12
B-AD	0.33	4.23	0.078		0.06	0.08	1.2		0.26
A-BCD	0.73	8.49	0.087		0.07	0.09	1.4		0.13
D-ABC	2.13	5.43	0.392		0.41	0.63	8.9		0.30
C-D	0.57								
C-A	8.90								
C-B	1.26	9.23	0.136		0.12	0.16	2.3		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	0.92	8.22	0.112		0.09	0.12	1.8		0.14
B-AD	0.40	3.28	0.123		0.08	0.14	1.9		0.35
A-BCD	0.90	7.86	0.114		0.09	0.13	1.9		0.14
D-ABC	2.61	4.62	0.565		0.63	1.21	16.5		0.48
C-D	0.70								
C-A	10.90								
C-B	1.54	8.58	0.180		0.16	0.22	3.2		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	0.92	8.21	0.112		0.12	0.13	1.9		0.14
B-AD	0.40	3.28	0.123		0.14	0.14	2.1		0.35
A-BCD	0.90	7.86	0.114		0.13	0.13	1.9		0.14
D-ABC	2.61	4.61	0.565		1.21	1.25	18.5		0.50
C-D	0.70								
C-A	10.90								
C-B	1.54	8.58	0.180		0.22	0.22	3.3		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.75	8.90	0.084		0.13	0.09	1.4		0.12
B-AD	0.33	4.23	0.078		0.14	0.09	1.4		0.26
A-BCD	0.73	8.49	0.087		0.13	0.10	1.4		0.13
D-ABC	2.13	5.43	0.392		1.25	0.67	10.7		0.31
C-D	0.57								
C-A	8.90								
C-B	1.26	9.23	0.136		0.22	0.16	2.5		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	0.63	9.38	0.067		0.09	0.07	1.1		0.11
B-AD	0.28	4.91	0.056		0.09	0.06	0.9		0.22
A-BCD	0.61	8.94	0.069		0.10	0.07	1.1		0.12
D-ABC	1.78	5.98	0.298		0.67	0.43	6.8		0.24
C-D	0.48								
C-A	7.45								
C-B	1.05	9.70	0.109		0.16	0.12	1.9		0.12

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

QUEUE FOR STREAM		B-C
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		B-AD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		A-BCD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	

QUEUE FOR STREAM		D-ABC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.4	
08.15	0.6	*
08.30	1.2	*
08.45	1.3	*
09.00	0.7	*
09.15	0.4	

QUEUE FOR STREAM		C-B
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.1	
08.15	0.2	
08.30	0.2	
08.45	0.2	
09.00	0.2	
09.15	0.1	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I	68.8	I 45.9	I 8.6	I 0.12	I 8.6	I 0.12
I	B-AD	I	30.3	I 20.2	I 8.3	I 0.28	I 8.3	I 0.28
I	A-BCD	I	67.4	I 45.0	I 8.9	I 0.13	I 8.9	I 0.13
I	D-ABC	I	195.5	I 130.3	I 67.3	I 0.34	I 67.3	I 0.34
I	C-D	I	52.3	I 34.9	I	I	I	I
I	C-A	I	817.6	I 545.1	I	I	I	I
I	C-B	I	115.6	I 77.1	I 14.8	I 0.13	I 14.8	I 0.13
I	ALL	I	2152.7	I 1435.2	I 107.9	I 0.05	I 108.0	I 0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

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

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	I	
I	0.00		0.00		0.00		0.00		0.00		I	

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM C-A	STREAM C-B	STREAM C-D	
I	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	598.09		0.23		0.23		0.09		0.09		0.09	I

D-BC Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I	
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	I
I	461.38		0.21		0.21		0.08		0.08	I	

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM A-C	STREAM A-B	STREAM A-D	
I	0.13	0.13	0.30	I

C-B Stream

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM D-C	Slope For Opposing STREAM D-B	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

A-D Stream

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM B-A	Slope For Opposing STREAM B-D	I
I 726.56	I 0.28	I 0.28	I 0.28	I 0.28	I

TRAFFIC DEMAND DATA

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

Demand set: 2018 PM Base

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I ARM A	I 15.00	I 45.00	I 75.00	I 9.32	I 13.99	I 9.32	I			
I ARM B	I 15.00	I 45.00	I 75.00	I 1.27	I 1.91	I 1.27	I			
I ARM C	I 15.00	I 45.00	I 75.00	I 10.25	I 15.38	I 10.25	I			
I ARM D	I 15.00	I 45.00	I 75.00	I 0.91	I 1.37	I 0.91	I			

Demand set: PM Proposed 85th %ile

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I	I	I	I
I ARM A	I 15.00	I 45.00	I 75.00	I 0.17	I 0.26	I 0.17	I			
I ARM B	I 15.00	I 45.00	I 75.00	I 0.03	I 0.04	I 0.03	I			
I ARM C	I 15.00	I 45.00	I 75.00	I 0.15	I 0.23	I 0.15	I			
I ARM D	I 15.00	I 45.00	I 75.00	I 0.14	I 0.21	I 0.14	I			

Demand set: 2018 PM Base

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
16.30 - 18.00	ARM A	I	0.000	I	0.043	I	0.874	I	0.083	I
		I	0.0	I	32.0	I	652.0	I	62.0	I
		I	(0.0)	I	(3.2)	I	(2.6)	I	(0.0)	I
	ARM B	I	0.167	I	0.000	I	0.765	I	0.069	I
		I	17.0	I	0.0	I	78.0	I	7.0	I
		I	(0.0)	I	(0.0)	I	(2.7)	I	(0.0)	I
	ARM C	I	0.854	I	0.079	I	0.000	I	0.067	I
		I	700.0	I	65.0	I	0.0	I	55.0	I
		I	(2.7)	I	(0.0)	I	(0.0)	I	(3.8)	I
	ARM D	I	0.493	I	0.137	I	0.370	I	0.000	I
		I	36.0	I	10.0	I	27.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
		I		I		I		I		I

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

Demand set: PM Proposed 85th %ile

TIME	TURNING PROPORTIONS									
	TURNING COUNTS									
	(PERCENTAGE OF H.V.S)									
	FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D	
16.30 - 18.00	ARM A	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	14.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM B	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	2.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM C	I	0.000	I	0.000	I	0.000	I	1.000	I
		I	0.0	I	0.0	I	0.0	I	12.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
	ARM D	I	0.455	I	0.182	I	0.364	I	0.000	I
		I	5.0	I	2.0	I	4.0	I	0.0	I
		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
		I		I		I		I		I

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

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
 AND FOR TIME PERIOD

2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	0.98	9.18	0.107		0.00	0.12	1.7		0.12
B-AD	0.33	4.55	0.072		0.00	0.08	1.1		0.24
A-BCD	0.95	9.33	0.102		0.00	0.11	1.7		0.12
D-ABC	1.05	5.39	0.196		0.00	0.24	3.4		0.23
C-D	0.84								
C-A	8.78								
C-B	0.82	9.48	0.086		0.00	0.09	1.4		0.12

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	16.45-17.00										I
I	B-C	1.17	8.63	0.135		0.12	0.16	2.3		0.13	I
I	B-AD	0.39	3.81	0.102		0.08	0.11	1.6		0.29	I
I	A-BCD	1.14	8.77	0.130		0.11	0.15	2.2		0.13	I
I	D-ABC	1.26	4.69	0.268		0.24	0.36	5.1		0.29	I
I	C-D	1.00									I
I	C-A	10.49									I
I	C-B	0.97	8.96	0.109		0.09	0.12	1.8		0.13	I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.00-17.15										I
I	B-C	1.43	7.81	0.183		0.16	0.22	3.2		0.16	I
I	B-AD	0.48	2.80	0.170		0.11	0.20	2.8		0.43	I
I	A-BCD	1.39	7.99	0.175		0.15	0.21	3.2		0.15	I
I	D-ABC	1.54	3.66	0.421		0.36	0.69	9.6		0.46	I
I	C-D	1.23									I
I	C-A	12.85									I
I	C-B	1.19	8.26	0.144		0.12	0.17	2.4		0.14	I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.15-17.30										I
I	B-C	1.43	7.80	0.184		0.22	0.22	3.3		0.16	I
I	B-AD	0.48	2.80	0.170		0.20	0.20	3.0		0.43	I
I	A-BCD	1.39	7.99	0.175		0.21	0.21	3.2		0.15	I
I	D-ABC	1.54	3.66	0.422		0.69	0.71	10.5		0.47	I
I	C-D	1.23									I
I	C-A	12.85									I
I	C-B	1.19	8.25	0.145		0.17	0.17	2.5		0.14	I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	1.17	8.62	0.136		0.22	0.16	2.4		0.13	I
I	B-AD	0.39	3.81	0.102		0.20	0.12	1.8		0.29	I
I	A-BCD	1.14	8.77	0.130		0.21	0.15	2.3		0.13	I
I	D-ABC	1.26	4.69	0.269		0.71	0.38	6.0		0.30	I
I	C-D	1.00									I
I	C-A	10.49									I
I	C-B	0.97	8.96	0.109		0.17	0.12	1.9		0.13	I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.98	9.18	0.107		0.16	0.12	1.8		0.12	I
I	B-AD	0.33	4.54	0.072		0.12	0.08	1.2		0.24	I
I	A-BCD	0.95	9.33	0.102		0.15	0.11	1.7		0.12	I
I	D-ABC	1.05	5.39	0.196		0.38	0.25	3.9		0.23	I
I	C-D	0.84									I
I	C-A	8.78									I
I	C-B	0.82	9.47	0.086		0.12	0.09	1.5		0.12	I

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

QUEUE FOR STREAM B-C	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.2
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.1

QUEUE FOR STREAM B-AD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM A-BCD	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.1

QUEUE FOR STREAM D-ABC	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.2
17.00	0.4
17.15	0.7 *
17.30	0.7 *
17.45	0.4
18.00	0.2

QUEUE FOR STREAM C-B	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	107.4	I 71.6	I	14.8	I 0.14	I	14.8	I 0.14	I
I	B-AD	I	35.8	I 23.9	I	11.6	I 0.32	I	11.6	I 0.32	I
I	A-BCD	I	104.6	I 69.7	I	14.3	I 0.14	I	14.3	I 0.14	I
I	D-ABC	I	115.6	I 77.1	I	38.5	I 0.33	I	38.5	I 0.33	I
I	C-D	I	92.2	I 61.5	I		I	I		I	I
I	C-A	I	963.5	I 642.3	I		I	I		I	I
I	C-B	I	89.5	I 59.6	I	11.4	I 0.13	I	11.4	I 0.13	I
I	ALL	I	2450.0	I 1633.4	I	90.6	I 0.04	I	90.6	I 0.04	I

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

*****END OF RUN*****

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

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