SCP

Transportation Planning : Infrastructure Design

Transport Assessment

Proposed Residential Development

Carrs Lane, Cudworth

Barratt Homes and David Wilson Homes

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Prepared by:	T Harrigan
Checked by:	G W Bowman

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Riverside Studio
32 The Calls
Leeds
LS2 7EW

T: 0113 887 3323
F: 0161 832 5111

E: info@scptransport.co.uk
W: www. scptransport.co.uk

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1.0 INTRODUCTION

1.1 This Transport Assessment has been prepared by SCP on behalf of Barratt Homes to consider the traffic and transport implications of a planning application for a residential development at Carrs Lane, Cudworth near Barnsley.

1.2 The proposed development comprises of a residential scheme of some 278 units to be accessed by way of Newland Avenue and Carrs Lane.

1.3 The applicant has engaged with the local Highway Authority, Barnsley Metropolitan Borough Council (BMBC), through the pre-application process and has agreed the scope of this document with officers.

1.4 This Transport Assessment has been prepared to appraise the site in terms of the likely transport implications of the development on the local highway network and the accessibility of the site by sustainable modes including walking, cycling and by public transport.

1.5 It describes the local highway network and its operation and shows that it is operating safely at present. It then estimates the traffic likely to be generated by the development, distributes it to the local highway network and assesses its impact.

1.6 The Transport Assessment concludes that there is no traffic or highways related reason why planning permission should not be granted for this scheme.

1.7 The remainder of the report is structured as follows:

- **Section 2** describes the site and existing local highway network;
- **Section 3** considers access to the site by sustainable modes of transport;
- **Section 4** describes the operation of the existing highway network;
- **Section 5** outlines the development proposals;
- **Section 6** determines the traffic impact of the proposals on the local highway network; and
- **Section 7** provides a summary to the report and sets out the conclusions.

2.0 THE SITE AND THE LOCAL HIGHWAY NETWORK

The Site

2.1 The site is located on the western side of Carrs Lane, Cudworth and lies some 4 miles to the east of Barnsley town centre. It is presently used for agricultural purposes.

2.2 The site is roughly triangular in shape and covers an area of some 11.62 hectares. It is bounded to the east by Carrs Lane, to the south and west by a disused railway line and to the north by a number of dwellings which are served off Newland Avenue, Summerdale Road and Newtown Avenue.

2.3 A location plan of the site is shown at **Appendix 1**.

The Local Highway Network

2.4 A plan of the local highway network is shown at **Appendix 2**.

2.5 Carrs Lane is a single carriageway road which lies to the east of the site and which is subject to a 30mph speed limit. It runs on an approximate north-south alignment from its junction with White Cross Road and Lunn Road at its northern end. It is separated from the site by a line of dwellings along its western side which all have direct access onto Carrs Lane. Similarly, there are dwellings along the eastern side of Carrs Lane which also have direct access on to Carrs Lane. At the southern end of the site, Carrs Lane forms a junction with Sunny Bank Drive which is a cul-de sac serving some residential properties. Carrs Lane then continues in a southerly direction until it terminates at the access to a water treatment plant and South Yorkshire Police stables at its southern end.

2.6 In the vicinity of the site, Carrs Lane in generally 5.6m wide. It is lit and is subject to a 30mph speed limit. The South Yorkshire Residential Design Guide recommends that a residential street with a speed limit of more than 20 mph should have a road width of a minimum of 5.5m and hence Carrs Lane meets this requirement, especially as Carrs Lane is not a bus route. This will allow two private cars to pass in comfort whilst two refuse or commercial vehicles will also be able to pass. Manual for Streets (MfS) also considers that a road of this width is capable of allowing all vehicles to pass each other with an overall tolerance of 0.5m for the largest vehicles but with ample clearance for all other vehicles.

2.7 There is a 2m wide footway along the majority of the eastern side of Carrs Lane which extends northwards from Sunny Bank Drive. There is also a footway on the western side of Carrs Lane along the majority of the site frontage which links into the footway network to the north.

2.8 Towards its northern end, Carrs Lane is joined from the east by two residential roads which link to a road called Low Cudworth which is a cul de sac.

2.9 Further to the north, the eastern footway reduced to a width of 0.3m and the western footway reduces to a width of 0.5m. This narrowing occurs over a relatively short length but clearly footway widths of this order are less than the 2.0 m recommended by the South Yorkshire Residential Guide and are insufficient for two pedestrians to pass.

2.10 At its northern end, Carrs Lane forms a simple priority junction at which northbound vehicles on Carrs Lane must give way. Lunn Road approaches this junction from the north and bends to the east where it runs into White Cross Road.

2.11 White Cross Road is a single carriageway road of some 7.5m in width. At its eastern end it forms the minor arm approach to a priority junction with Snydale Road and Darfield Road. It is lit has 2m wide footways on both sides of the carriageway and is subject to a 30mph speed limit.

2.12 Lunn Road runs from its junction with Carrs Lane and White Cross Road in a northerly direction. Again, the carriageway is approximately 7.5m wide, is lit and has footways of approximately 2m to 3m width on both sides of the carriageway. Lunn Road runs in to St John Road which provides direct access to the centre of Cudworth via Barnsley Road.

2.13 Midway along its length Lunn Road forms a priority junction with Manor Road on its western side. Manor Road links to Barnsley Road at its western end. It has a carriageway width of approximately 7.5m, is lit, has footways generally in excess of 2m width on both sides of the carriageway and is subject to a 30mph speed limit.

2.14 Newland Avenue runs south from Manor Road. It forms a roundabout with Newtown Ave to the south of which is a cul-de-sac which terminates at the site boundary. It is 7.3 wide with footways and wide grass verges to both sides.

2.15 Barnsley Road is the main route leading through the centre of Cudworth. It is a single carriageway road of some 7.3m width, is lit and has wide footways on both sides of the carriageway. It is lit and is subject to a 30mph speed limit.

2.16 Towards its southern end, Barnsley Road is fronted by a number of terraced properties on both sides of the road. At its northern end, Barnsley Road provides access to a number of food and non-food retail outlets, services and facilities typical of a small district centre. A number of side roads emerge on to Barnsley Road. These junctions are typically priority junctions some of which have ghost islands to assist right turning vehicles.

2.17 The A628 Pontefract Road is the Cudworth and West Green By Pass. It runs to the north of Barnsley Road which avoids the need for through traffic to pass through the centre of Cudworth.

3.0 ACCESSIBILITY

Local Facilities

3.1 Many of the local facilities and services in the vicinity of the site are located within the centre of Cudworth which is 10 to 15 minute walk from the centre of the site via Carrs Lane or Newland Avenue. These facilities include:-

- A post office;
- The Cudworth Centre (Community Health Centre);
- Numerous food and non-food retail outlets;
- Legal and financial services;
- Banking; and
- Public houses, restaurants and fast food outlets.

3.2 These are supplemented by other facilities and schools which lie outside of the centre of Cudworth. Table 3.1 provides a list of nearby local facilities and services together with the approximate walk distances from the centre of the site along the existing footways and other pedestrian routes. These are also shown on the plan at **Appendix 3**.

Table 3.1 - Local Facilities

Facility	Walk Distance
Cudworth Town Centre including local facilities	800m – 1200m
Cudworth Churchfield Primary School	1000m
Birkwood Primary School	850m
Dorothy Hyman Stadium	750m
Co-op Supermarket	750m
Post Office (Darfield Road)	1.2km

Walking

3.3 A walking journey of up to 800m (approximately a 10 minute walk) is considered an acceptable for accessing local facilities and accords with the 'walkable neighbourhood' referred to in MfS. A

journey of up to 2km is considered a reasonable distance to walk in order to access education and to commute to places of work.

3.4 The plan at **Appendix 4** shows the public rights of way and in the vicinity of the site. By comparison with the local facilities it is clear that there are numerous pedestrian routes.

3.5 The pedestrian routes in the vicinity are typical of a residential area in that there are footways on both sides of the carriageway which benefit from dropped crossings and routes are lit and generally overlooked.

3.6 Of particular note are the routes towards Darfiled Road from Carrs Lane. Rather than pedestrians being required to take an indirect route to Darfield Road, there is a convenient pedestrian route via Sunny Bank Drive and Lakeland Close where a traffic free route connects to Field Drive from which access to the facilities on Darfield Road south of its junction with White Cross Lane can be gained. This route avoids the longer pedestrian route along Low Cudworth which suffers from steep gradients and no footway provision.

Cycling

3.7 It is recognised that cycling can be part of a longer journey by public transport or can replace shorter car trips of at least 5km.

3.8 A 5km cycle distance from the centre of the site is shown at **Appendix 5** and shows that cyclists access local areas including the centre of Cudworth.

3.9 There are traffic free cycle routes which are accessible from the southern end of Carrs Lane which provide access to the Trans Pennine Trail (NCN 67). From the NCN 67, there are numerous opportunities for cyclists to travel along traffic free and advisory with traffic cycle routes to major employment centres and also Barnsley town centre itself.

3.10 Within the locality of the site, cyclists are able to travel along the existing residential roads which are lightly trafficked and provide convenient routes to local facilities in the area.

3.11 The plan also included at **Appendix 5** also shows the local cycle routes in the vicinity of the site.

Public Transport

3.12 The plan at **Appendix 6** shows the locations of the bus stops within 400m walk distance from the site.

3.13 The nearest bus stops are located on Lunn Road and White Cross Road the north of the site and are both just over a 280m walk from the centre of the site.

3.14 There are numerous other bus stops within the wider area of the site and especially along the Barnsley Road adjacent to its junction with Manor Road. These are some 600m walk distance from the centre of the site and which are served by a wide range of routes and services.

3.15 The bus routes accessible from the stops on Lunn Road, White Cross Road, Barnsley Road and Darfield Road are summarised in Table 3.2.

Table 3.2: Accessible Bus Routes and Frequencies

Route No.	Route Description	Monday to Friday		Saturday		Sunday
		Day	Eve	Day	Eve	
26	**Wombwell - Barnsley** via Wombwell - Cudworth - Shafton – Brierley – Grimethorpe – Darfield -Barnsley Interchange	-	60 mins	-	60 mins	60 mins
27	**Wombwell - Barnsley** via Wombwell - Cudworth - Shafton – Brierley – Grimethorpe – Darfield -Barnsley Interchange	180 mins	-	180 mins	-	-
28 / 28A	**Barnsley - Pontefract** via Barnsley interchange – Lundwood – Cudworth – Shafton – Grimethorpe – South Kirkby – Upton - Pontefract	60 mins	60 mins	60 mins	60 mins	60 mins
29	**Barnsley - Pontefract** via Barnsley interchange – Lundwood – Cudworth – Shafton – Grimethorpe – South Kirkby – Upton - Pontefract	60 mins	-	60 mins	-	-
30 / 30A	**Barnsley - Pontefract** via Barnsley interchange – Lundwood – Cudworth – Shafton – Grimethorpe – South Kirkby – Upton - Pontefract	60 mins	120 mins	120 mins	120 mins	-

31	**Cudworth – Barnsley Interchange** via Barnsley interchange – Monk Bretton – West Green – Cudworth	60 mins	-	120 mins	-	-
32	**Cudworth - Barnsley** via Cudworth - Lundwood – Cundy Cross – Hoyle Mill – Barnsley Interchange	10 mins	60 mins	10 mins	60 mins	60 mins
34	**Shafton – Barnsley (circular)** via Barnsley Interchange – Monk Bretton - Lundwood – Cudworth - Shafton	60 mins	-	60 mins	-	-
35 / 35A	**Barnsley – South Elmsall** via Hemsworth – Brierley – Shafton – Cudworth – west Green – Barnsley Interchange	120 mins	-	120 mins	-	-
36 / 36B	**South Elmsall – Barnsley (circular)** via South Elmsall – South Kirkby – Hemsworth – Brierley – Shafton – Cudworth – West Green	120 mins	-	120 mins	-	-
37	**Barnsley – Hemsworth (circular)** via Barnsley interchange – Cundy Cross – Lundwood – Cudworth – Shafton – Grimethorpe - Hemsworth	60 mins	-	60 mins	-	-
38	**Barnsley – Grimethorpe Circular** via Grimethorpe - Shafton - Cudworth - Lundwood – Hoyle Mill – Barnsley Interchange	60 mins	-	-	-	-

3.16 The above shows that there are frequent bus services throughout the week and on a weekend which are accessible from the site. There are also interchange opportunities in Barnsley town centre which provide access to more local, regional and national destinations by bus or train. Bus travel is therefore a realistic option for commuting and shopping trips and as part of the longer journey by public transport.

Summary

3.17 It is considered that the site is well located in relation to local services, is well served by public transport and has good opportunities for travel on foot and by cycle. It is therefore clear that the site is located in a sustainable location.

4.0 EXISTING OPERATION OF THE LOCAL HIGHWAY NETWORK

Existing Traffic Flows

4.1 The junctions which needed to be assessed were agreed with BMBC. Manual classified traffic surveys were therefore carried out at the following junctions on Tuesday 9th June 2015:-

- Junction 1: Newtown Avenue / Newland Avenue - 3 arm roundabout;
- Junction 2: Carrs Lane / White Cross Road / Lunn Lane – 3 arm priority;
- Junction 3: Barnsley Road / Manor Road priority - 3 arm priority junction;
- Junction 4: Manor Road / Newland Avenue - 3 arm priority junction; and
- Junction 5: St John's Road / Barnsley Road - 3 arm priority junction.

Assessment Periods

4.2 The traffic survey results for the whole network were interrogated to identify the AM and PM network peak hour for assessment. These occurred between 08:00 - 09:00 and 17:00 - 18:00 respectively.

4.3 The existing traffic flows are shown on the diagrams included at **Appendix 7**.

Existing Analysis

4.4 The capacity of the existing junctions has been assessed using the TRL software Junctions 9 with the geometric parameters of the junctions being taken from Ordnance Survey maps.

4.5 The results provide a Ratio to Flow Capacity (RFC) along with an estimate of the likely traffic queues. RFC values below 0.85 are generally accepted as representing stable and satisfactory operating conditions. Values between 0.85 and 1.0 represent variable operation (i.e. possible continuous queues building up at the junction during the period under consideration and increases in vehicular delay). RFC values in excess of 1.0 represents overloaded conditions (i.e. congested conditions when continuous queuing is likely).

4.6 The results also provide details of the mean maximum queues (MMQ). These are measured in passenger carrying units (PCU's) which are given as the number of PCU's queuing on a particular approach to the junction

Junction 1: Newland Avenue / Newtown Avenue

4.7 Table 4.1 provides the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 8**.

Table 4.1: Junction Analysis; Newland Avenue / Newtown Avenue

Movement	2015 Existing			
	AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Newtown Avenue	0.07	0.1	0.10	0.1
Newland Avenue South	0.13	0.1	0.12	0.1
Newland Avenue North	0.13	0.2	0.18	0.2

Junction 2: Carrs Lane / White Cross Road / Lunn Road

4.8 Table 4.2 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 9.**

Table 4.2: Junction Analysis; Carrs Lane / White Cross Road / Lunn Road

Movement	2015 Existing			
	AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Carrs Lane left to Lunn Road	0.08	0.1	0.11	0.1
Carrs Lane right to White Cross Road	0.04	0.0	0.08	0.1
Lunn Road ahead to White Cross Road left to Carrs Lane	0.09	0.1	0.11	0.1

Junction 3: Barnsley Road / Manor Road

4.9 Table 4.3 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 10**.

Table 4.3: Junction Analysis; Barnsley Road / Manor Road

Movement	2015 Existing			
	AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Manor Road left and right turn to Barnsley Road	0.38	0.6	0.27	0.4
Barnsley Road South right turn into Manor Road ahead to Barnsley Road North	0.17	0.2	0.25	0.4

Junction 4: Manor Road / Newland Avenue

4.10 Table 4.4 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 11**.

Table 4.4: Junction Analysis; Manor Road / Newland Avenue

Movement	2015 Existing			
	AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Newland Avenue left turn to Manor Road west	0.12	0.1	0.09	0.1
Newland Avenue right turn to Manor Road east	0.09	0.1	0.10	0.1
Manor Road west ahead and right to Newland Avenue	0.11	0.1	0.18	0.2

Junction 5: Barnsley Road / St John's Road

4.11 Table 4.5 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 12**.

Table 4.5: Junction Analysis; Barnsley Road / St John's Road

Movement	2015 Existing			
	AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)
St John's Road left turn to Barnsley Road west	0.20	0.2	0.10	0.1
St John's Road right turn to Barnsley Road east	0.19	0.2	0.14	0.2
Barnsley Road west ahead and right	0.16	0.2	0.17	0.2

Summary

4.12 It is clear from the analysis that all of the junctions are operating very much within capacity at present. The highest RFC values occur at the Barnsley Road / Manor Road junction but the maximum RFC of 0.38 is well within the recommended value of 0.85. Similarly, no junctions had queues in excess of 1 vehicle. The results of the analysis accord with on- site observations of

the operations of the junction which confirm that traffic flows are generally light and there is no congestion on the network at present. This therefore validates the junction models.

Accidents

4.13 A desktop study of reported injury accidents has been undertaken to establish the safety record of the surrounding highway. A plan showing the location of the accidents referred to is included at **Appendix 13**.

4.14 Data has been obtained for the 5 years between January 2010 and December 2014 from the CrashMap website (www.crashmap.co.uk). This site uses data held by police relating to road traffic accidents where an injury occurred. The data is approved by the National Statistics Authority and is used by the Department for Transport.

4.15 The accident record for the surrounding area is good, with a relatively low incidence of injury accidents. During the assessment period, a total of ten accidents have been recorded on the highway network in the immediate vicinity of the site.

4.16 There is no obvious common cause to these accidents. There is a small cluster of three accidents at the junction of Manor Road and Newland Avenue.

4.17 Of the ten recorded accidents, three have involved cyclists and four involved pedestrians.

4.18 The data shows that there have been no fatal accidents within the last five years. There have been four serious accidents, of which:

- one accident occurred on Newland Avenue;
- two accidents occurred on Lunn Road; and
- one accident occurred White Cross Road.

4.19 All other accidents were slight and are low in frequency given the nature of many surrounding main roads and speed limits.

4.20 No accidents occurred on Carrs Lane or between the southern end of Newlands Avenue and its junction with Newtown Avenue.

4.21 On the basis of this data, it is concluded that there are no existing highway safety issues in the vicinity which the proposed development would make worse.

5.0 THE PROPOSED DEVELOPMENT

5.1 It is proposed to provide a residential scheme of 278 units which are to be built on open farm land to the west of Carrs Lane. The scheme includes for a mix of 2, 3 and 4 bedroomed houses and 2 and 3 bedroomed bungalows.

5.2 A plan showing the proposed site layout is included at **Appendix 14**.

Site Access

5.3 The development will take vehicular access from the local highway network by way of a new priority junction emerging on to Carrs Lane to the east of the site and an extension to Newland Avenue from the north.

5.4 The Carrs Lane access will provide a 5.5m access road with 6m kerb radii and a 2m wide footway to both sides separated from the carriageway by a grass verge. The access road will be located onto the western side of Carrs Lane approximately 300m to the south of its junction with White Cross Road.

5.5 A visibility splay which is in excess of 2.4m x 43m will be provided at the access. This will exceed the requirements of MfS for a 30 mph speed limit.

5.6 The plan at **Appendix 15** shows how a visibility splay in excess of 2.4m x 43m can be achieved from the site access to oncoming traffic in both directions.

5.7 It has previously been shown that Carrs Lane is typically 5.6m wide. This is sufficiently wide to serve a residential scheme such as this and accords with the South Yorkshire Residential Design Guide.

5.8 The second site access will be provided at the north-west corner of the site via Newlands Avenue. The carriageway width will be some 5.5m wide with 2m wide footways on both sides which will be segregated from the carriageway by grass verges. This road will widen out to tie in to the wider carriageway of Newland Avenue. The new access road will simply be a continuation of the existing Newland Avenue into the site and will maintain the existing characteristics of the residential road.

5.9 Again, it is clear that Newland Avenue is a wide residential road and can clearly accommodate the traffic from the development in a safe manner. Its use as an access to the scheme is fully in accordance with South Yorkshire Residential Design Guide and MfS. Indeed, the width of

Newland Avenue is 7.3m which is well in excess of the 5.5m requirement and it also has a straight, relatively flat alignment with good forward visibility.

5.10 In addition to the two vehicular access routes, the development will provide traffic free, pedestrian accesses to tie into the footway of Summerdale Drive on the northern boundary of the site.

Internal Site Layout

5.11 The South Yorkshire Residential Design Guide sets out recommendations the design of residential roads based on the design speed and use. For a 30mph residential road, the minimum carriageway width is 5.5m and for a 20mph road is 4.8m.

5.12 The main access spine road through the site road is proposed to have a 5.5m wide carriageway with 6m kerbed radii. It will be lit and will have 2m wide footways along both sides of the carriageway with verges on some locations

5.13 The internal layout of the site seeks to provide an indirect spine road alignment through the site. This will include for a series of shared spaces and speed tables, along with changes of alignment, colour and materials which will discourage the use of the site as a through route.

Parking Standards

5.14 Car parking for the development has been provided in accordance with the requirements set out in the BMBC guidance publication "Supplementary Planning Document: Parking". Table 5.1 shows the maximum car parking requirements for a use class C3 Residential Development

Table 5.1: BMBC Residential Maximum Permitted Car Parking

USE	BARNSLEY URBAN	BOROUGHWIDE	THRESHOLD ABOVE WHICH STANDARD APPLIES
Housing and flats	1 space for dwellings with 1 or 2 bedrooms 2 spaces for dwellings with 3 or more bedrooms	1 space for dwellings with 1 or 2 bedrooms 2 spaces for dwellings with 3 or more bedrooms	All Development

5.15 Based on the location of the proposed development within the Borough, the maximum permitted parking is some 416 spaces for the development. The proposals will therefore provide car

parking within the driveways and garages of the dwellings in accordance with the maximum car parking standards.

5.16 Cycle parking will be provided within the curtilage of the dwellings themselves.

Swept Paths

5.17 The plan at **Appendix 16** shows the swept path analysis of the site layout and demonstrates that a refuse vehicle can enter the site in forward gear, circulate around the site and leave the site in forward gear.

Highway Mitigation Works

5.18 The analysis which follows in Section 7 of this report demonstrates that there are no issues with the capacity of the highway network and therefore there is no need to increase junction capacity. It has also been demonstrated that the network operates safely and that there is no need to introduce any road safety improvements.

5.19 Following a dialogue with BMBC officers, it is apparent that there are opportunities to provide some small scale highway mitigation works which would improve the highway network and further increase the level of road safety. It is intended to propose the following works and a planning condition covering their delivery would be acceptable to the applicant.

Carrs Lane Footway Widening

5.20 The existing footway on Carrs Lane to the south of its junction with White Cross Lane is narrow. Conversely, the carriageway at this point is wider than the 5.5m width recommended by the South Yorkshire Residential Design Guide. Hence it is proposed that the western footway is widened to provide a continuous route for pedestrians between the site, Lunn Road and hence the centre of Cudworth.

5.21 Initial designs have been discussed with BMBC highway officers. A detailed topographical survey is being undertaken in order that an accurate layout can be provided which will improve the footway provision and the level of road safety whilst maintaining maintain sufficient carriageway width for vehicles. It is intended to carry out a Road Safety Audit of the footway widening works prior to the planning application being considered at Planning Committee.

Low Cudworth Pedestrian Measures

5.22 In order to improve the provisions for pedestrians, it is proposed to:-

- Extend the footway on the south side of Low Cudworth to enable pedestrian to cross more safely;
- Provide a short footway link at the end of the western footway on Low Cudworth Green to the bottom of the steps up to White Cross Road;
- Provide road signs warning of pedestrians within the carriageway on the steep section of Low Cudworth where there is no footway provision as it runs up to White Cross Road;

Carrs Lane / Lunn Road / White Cross Road Junction

5.23 The existing road markings are in poor condition and so will be marked out again so that drivers can clearly see the give way line and centre of carriageway markings as the road bends at the junction. In addition, a 'junction ahead' warning sign will be provided to make drivers approaching from the north aware of the presence of the junction.

5.24 There is some car parking taking place wholly or partly on the western footway of Lunn Road on the approach to the junction which narrows the available footway width for pedestrians. Hence some 'half and half' markings will be provided to ensure that such vehicles park partly on the carriageway and partly on the footway to enable sufficient footway width to be provided.

Manor Road / Barnsley Road

It has been shown that this junction is operating safely operation at present and it is considered that it will continue to do so with development in place. However, it has been noticed that drivers turning right from Barnsley Road onto Manor Road tend to 'cut of the corner' and encroach on to the opposite side of the road. In addition to this BMBC officers have advised that the visibility splay to the right is obscured by parked vehicles. Hence, it is proposed to provide amended lane and give way line markings and measures to restrict the car parking will be considered.

5.25 Further information will be provided on the above works during the course of the consultation period for the planning application.

6.0 TRIP GENERATION

6.1 In order to calculate the trip generation of the proposed development, the TRICS database has been interrogated for surveys of residential development similar to that proposed. The following search criteria for the residential TRICS-based trip rates are as follows:

- Land use – Houses Privately Owned;
- Development size of between 30 and 490 units;
- Greater London and all Ireland excluded;
- Only site located in Suburban and Edge of Town areas;
- Multi model sites; and
- Weekday only surveys.

6.2 The multi-modal TRICS output for the scheme is included in **Appendix 17** and summarised in Table 6.1.

Table 6.1 – Trip Rates per Dwelling by Mode

	Weekday AM Peak Hour		Weekday PM Peak Hour	
Mode	**Arrivals**	**Departures**	**Arrivals**	**Departures**
Pedestrians	0.046	0.155	0.076	0.054
Cyclists	0.004	0.022	0.018	0.010
Public Transport	0.002	0.017	0.016	0.005
Vehicles	0.156	0.404	0.362	0.210

6.3 The number of multi modal trips generated by the proposed development has been calculated and is summarised in Table 6.2.

Table 6.2 – Estimated Multi-Modal Trips from 150 Dwellings

	Weekday AM Peak Hour		Weekday PM Peak Hour	
Mode	**Arrivals**	**Departures**	**Arrivals**	**Departures**
Pedestrians	13	44	22	15
Cyclists	1	6	5	3
Public Transport	1	5	5	1
Vehicles	**45**	**116**	**104**	**60**

6.4 The proposed development is therefore anticipated to generate 161 two-way vehicular trips on the local highway network in the morning peak and 164 two-way trips in the evening peak. This equates to less than two vehicles every three minutes during the AM and PM peaks. Traffic flows during the day and evenings will be very much less than the peak hour flows.

Distribution

6.5 The development generated traffic has been distributed based on the Office for National Statistics Travel to work data for the output area in which the development lies. This distribution pattern has been used to determine the distribution of the development traffic flows.

6.6 Three routes have been identified based on the destination output areas from the area in which the site is located. These are:

- Barnsley Road (west of the site towards the Cundy Cross roundabout);
- Barnsley Road (north of Cudworth town centre); and
- White Cross Lane (east of the site).

6.7 Table 6.2 summarises the distribution pattern for the development and the full calculation including the route assignments can be seen at **Appendix 18**.

Table 6.2: Trip Distribution

Arrive / Depart	Proportion (%)
Barnsley Road (west)	48
Barnsley Road (north)	32
White Cross Road (east)	20

6.8 The plans at **Appendix 19** show the distributed traffic flows by trip type on the surrounding highway network.

7.0 TRAFFIC IMPACT ASSESSMENT

7.1 This Chapter describes the impact of the additional trips generated by the proposed development on the operation of the local highway network in the future year scenario with and without development traffic.

Future Baseline Traffic Conditions

7.2 The following factors affect the baseline conditions.

Traffic Growth

7.3 To accord with 'Guidance on Transport Assessment', the year of assessment should be five years after the registration of the planning application which is 2020.

7.4 In order to quantify the level of background traffic growth that could occur on the local network, National Traffic Model growth factors, modified by TEMPRO local growth factors, have been used for the Cudworth 'urban' area. The growth factors are summarised in Table 7.1 and a copy of the full calculations can be seen at **Appendix 20**.

Table 7.1 – Traffic Growth Factors

Period	AM Peak	PM Peak
2015 to 2020	1.093	1.095

7.5 The above growth factors have been applied to the surveyed traffic flows to obtain the 2020 growthed traffic flows. The resulting peak hour traffic flows can be seen on the plan at **Appendix 21.**

Committed Developments

7.6 BMBC has advised of committed developments within the local network that would impact on the junctions assessed in this report**.**

7.7 Planning permission for a new discount food store in Cudworth has been granted but the scheme is not yet trading. The development flows associated with the discount food store have been obtained from the relevant Transport Assessment and have been considered as part of the baseline traffic flows.

7.8 The plans at **Appendix 22** show the discount food retail AM and PM peak hour traffic flows on the highway network.

Baseline and Baseline plus Development Traffic Flows Scenarios

7.9 The 2020 baseline traffic flows are simply the committed development traffic flows and traffic growth combined whilst the 2020 baseline plus development flows also include the assigned development traffic flows. The resulting peak hour traffic flows for both scenarios can be seen at **Appendix 23** and **Appendix 24** respectively.

An assessment of the junctions using the 2020 baseline traffic flows and 2020 baseline plus development traffic flows has been undertaken using the Junctions 9 software. The results from the two scenarios at each of the junction are compared in the following tables.

Junction 1: Newland Avenue / Newtown Avenue

7.10 Table 7.2 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 8**.

Table 7.2: Junction Analysis; Base & Base plus Devt; Newland Avenue / Newtown Avenue

Movement	Baseline				Baseline + Development			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Newtown Avenue	0.08	0.1	0.11	0.1	0.08	0.1	0.13	0.1
Newland Avenue South	0.14	0.2	0.13	0.1	0.24	0.3	0.17	0.2
Newland Avenue North	0.14	0.2	0.20	0.2	0.17	0.2	0.26	0.4

7.11 Analysis shows that the even in the future year scenario with the development traffic included the junction will continue to operate well below capacity with the Newland Avenue approach arm having an RFC of 0.26 and less than 1 vehicle queue in the PM peak hour. The remaining arms of the roundabout are predicted to operate with even more spare capacity.

Junction 2: Carrs Lane / White Cross Road / Lunn Road

7.12 Table 7.3 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 9.**

Table 7.3: Junction Analysis; Base & Base plus Devt; Carrs Lane / White Cross Road / Lunn Road

Movement	Baseline				Baseline + Development			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Carrs Lane left to Lunn Road	0.09	0.1	0.12	0.1	0.08	0.1	0.13	0.2
Carrs Lane right to White Cross Road	0.04	0.0	0.09	0.1	0.14	0.2	0.12	0.1
Lunn Road ahead to White Cross Road left to Carrs Lane	0.09	0.1	0.12	0.1	0.10	0.1	0.14	0.2

7.13 The results above show that the junction operates within capacity in both scenarios and in both the AM and PM peak hours. The impact of the development traffic is negligible and results in a slight increase in the RFC of 10% from 0.04 to 0.14 RFC in the AM peak hour period on the Carrs Lane approach and a corresponding increase in the vehicle queue of less than one vehicle. Hence this junction will operate very much within capacity with development in place and with the traffic growth and committed development considered.

Junction 3: Barnsley Road / Manor Road

7.14 Table 7.4 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 10**.

Table 7.4: Junction Analysis Base & Base plus Devt; Barnsley Road / Manor Road

Movement	2020 Baseline				2020 Baseline + Dev			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Manor Road left and right turn to Barnsley Road	0.43	0.7	0.31	0.4	0.53	1.1	0.37	0.6
Barnsley Road South right turn into Manor Road ahead to Barnsley Road North	0.19	0.3	0.28	0.5	0.23	0.3	0.37	0.7

7.15 During both the AM and PM peak hour periods, the RFC's on the approach arms to the junction remain well below 0.85 on all of the approach arms. The highest increase in RFC occurs on Manor Road which rises from 0.43 to 0.53 as a consequence of the development traffic. This is still well below the 0.85 threshold and still well within capacity. Vehicle queues remain low and the junction will operate satisfactorily.

Junction 4: Manor Road / Newland Avenue

7.16 Table 7.5 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 11**.

Table 7.5: Junction Analysis ; Base and Base plus devt ; Manor Road / Newland Avenue

Movement	2020 Baseline				2020 Baseline + Dev			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)
Newland Avenue left turn to Manor Road west	0.14	0.2	0.10	0.1	0.23	0.3	0.15	0.2
Newland Avenue right turn to Manor Road east	0.10	0.1	0.11	0.1	0.15	0.2	0.14	0.2
Manor Road west ahead and right to Newland Avenue	0.12	0.1	0.20	0.3	0.16	0.2	0.29	0.4

7.17 During both the AM and PM peak periods, the RFC's are well below 0.85 on all approaches. The maximum predicted RFC is 0.29 on Manor Road in the PM peak and predicted queues are less than one vehicle, demonstrating the junction will operate efficiently even with the proposed development traffic included.

Junction 5: Barnsley Road / St John's Road

7.18 Table 7.6 shows the summary of the analysis in the AM and PM peak hours. A full copy of the analysis is shown at **Appendix 12**.

Table 7.6: Junction Analysis Base; Barnsley Road / St John's Road

Movement	Baseline		Baseline + Dev	
	AM PEAK	PM PEAK	AM PEAK	PM PEAK

	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)	RFC	MMQ (PCU)
St John's Road left turn to Barnsley Road west	0.22	0.3	0.11	0.1	0.23	0.3	0.12	0.1
St John's Road right turn to Barnsley Road east	0.21	0.3	0.16	0.2	0.31	0.4	0.22	0.3
Barnsley Road west ahead and right	0.18	0.2	0.19	0.3	0.18	0.2	0.19	0.3

7.19 The results show that the junction will continue to operate well within capacity during both the AM and PM peak hours with vehicle queues predicted to be less than one vehicle in length on any of the approaches.

Summary

7.20 The analysis shows that the junction will continue to operate satisfactorily during the AM and PM peak periods in the design year, even with the addition of the development generated traffic with modest increases in the RFC's and associated vehicle queues and the junctions operating well below their theoretical capacities

8.0 SUMMARY AND CONCLUSIONS

8.1 This Transport Assessment has considered the traffic and highway implications of a proposed residential development of some 278 dwellings to the west of Carrs Lane in Cudworth, near Barnsley.

8.2 The development is accessible on foot or by cycle to a range of local destinations. There are also convenient and realistic options for undertaking trips by public transport for journeys further afield. The site is well served by local facilities and services in the centre of Cudworth and therefore it is in a sustainable location.

8.3 It is demonstrated that the highway network in the vicinity of the site is operating safely and well within capacity at present.

8.4 Vehicular and pedestrian access to the development will be by way of a new access approximately midway along Carrs Lane and also by extending the southern end of Newland Avenue into the site.

8.5 The development is predicted to generate some 161 and 164 vehicle trips in the morning and evening peak hours respectively.

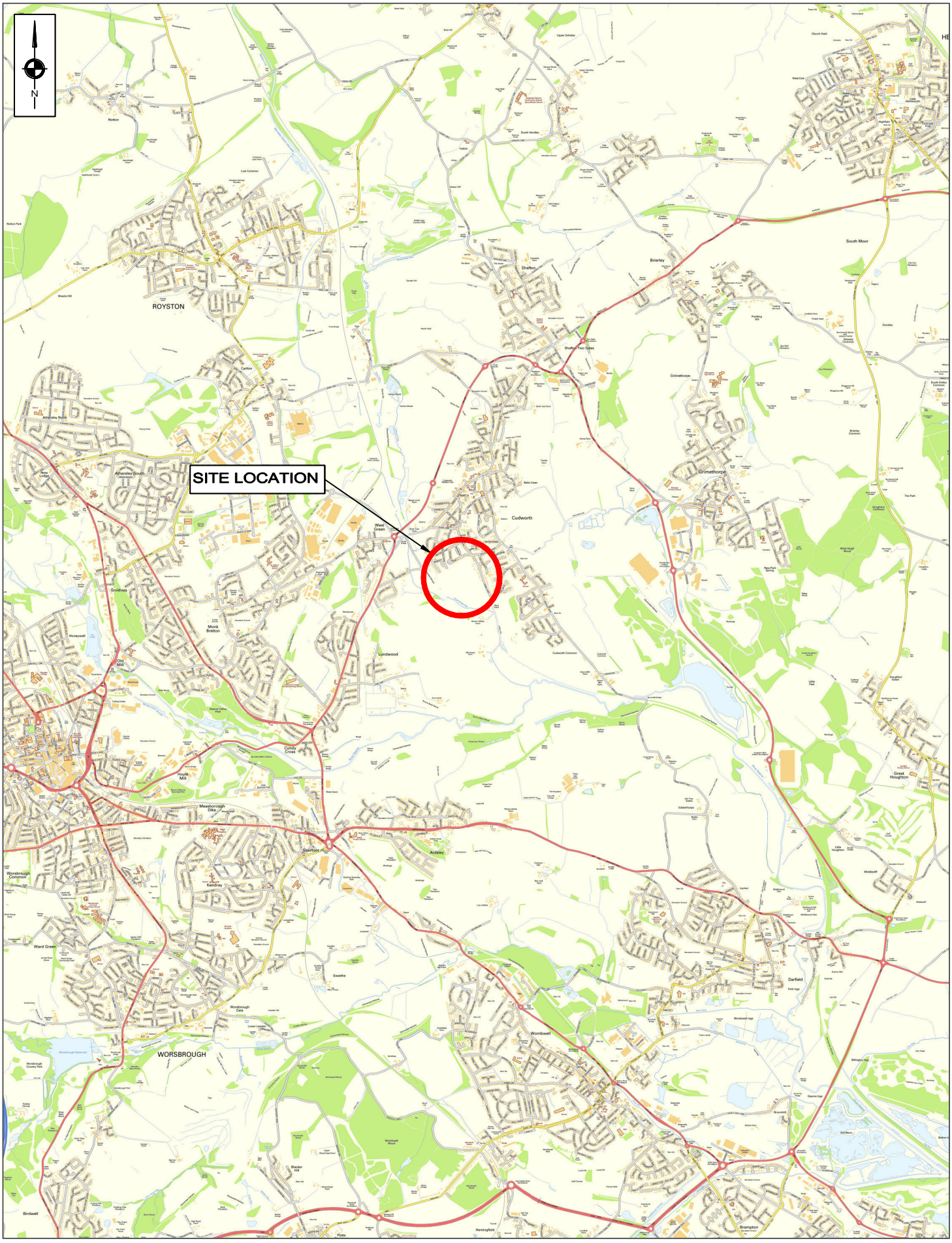
8.6 An assessment of the operation of the local highway network in the vicinity of the site has been undertaken and has shown that, even with the development traffic, the local highway network will continue to operate well within capacity.

8.7 Some footway widening works are proposed on Carrs Lane to remove a ‘pinch point’ where the existing footway is narrow. It is intended that a Road Safety Audit of the footway widening work will be carried out prior to the consideration of the scheme at planning committee. Some other traffic management measures are also proposed as part of the scheme.

8.8 In conclusion, it has been shown that the proposed residential scheme will not have a severe impact and consequently there are no material highways or traffic reasons why planning permission should not be granted.

S|C|P

APPENDIX 1



S C P

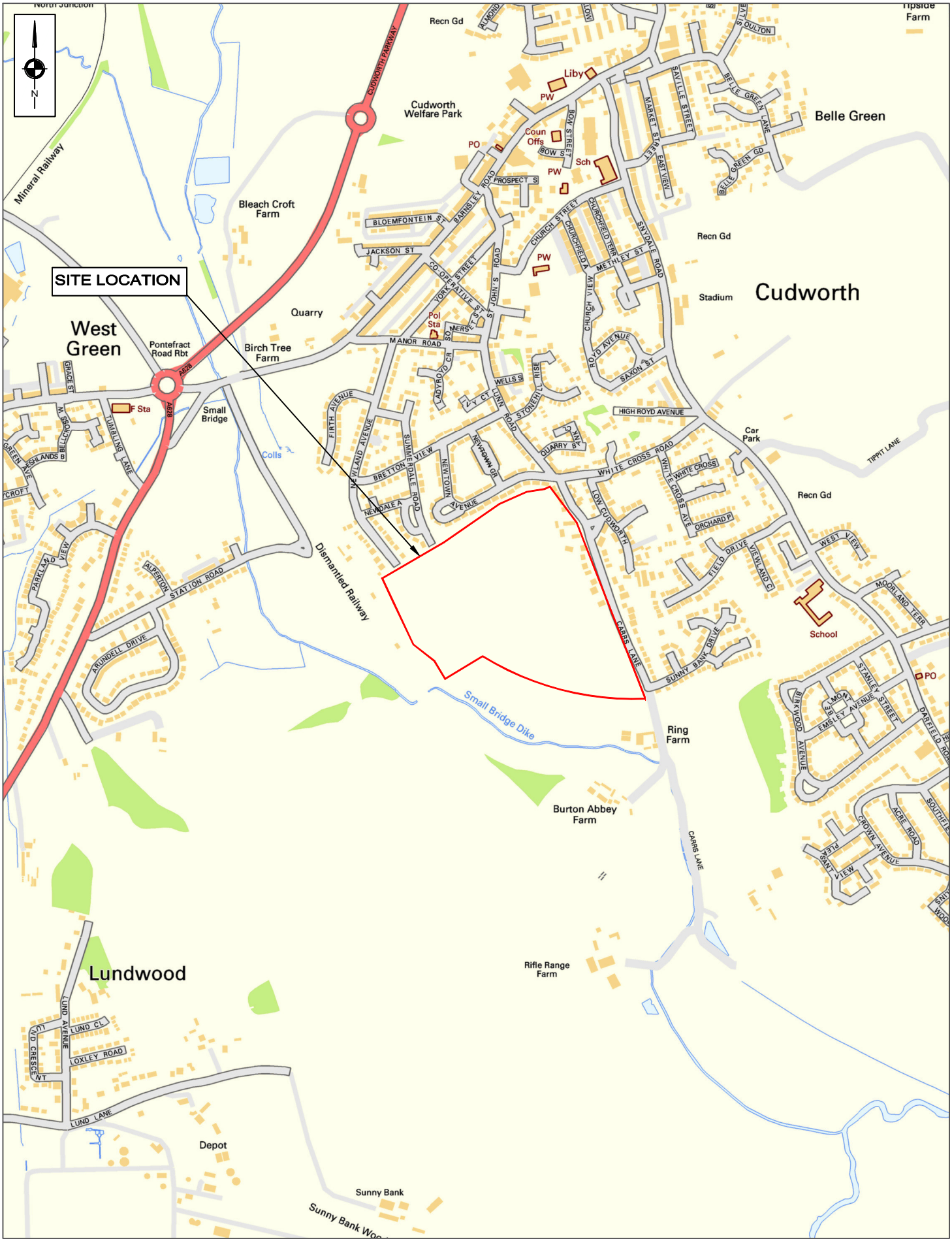
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		Approved/ Unapproved: -	Status: PLANNING	Revision: -

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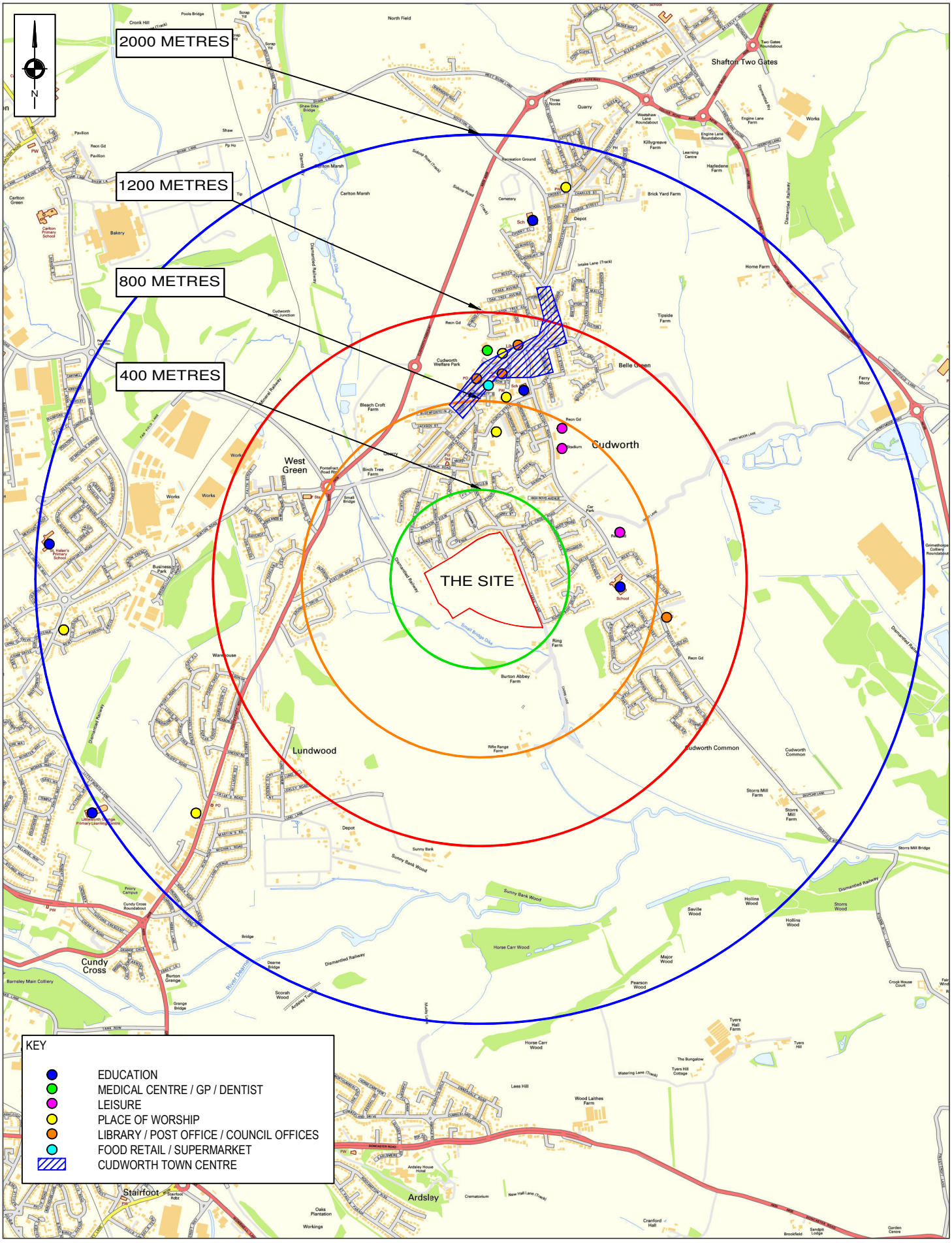
APPENDIX 2



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APPENDIX 3



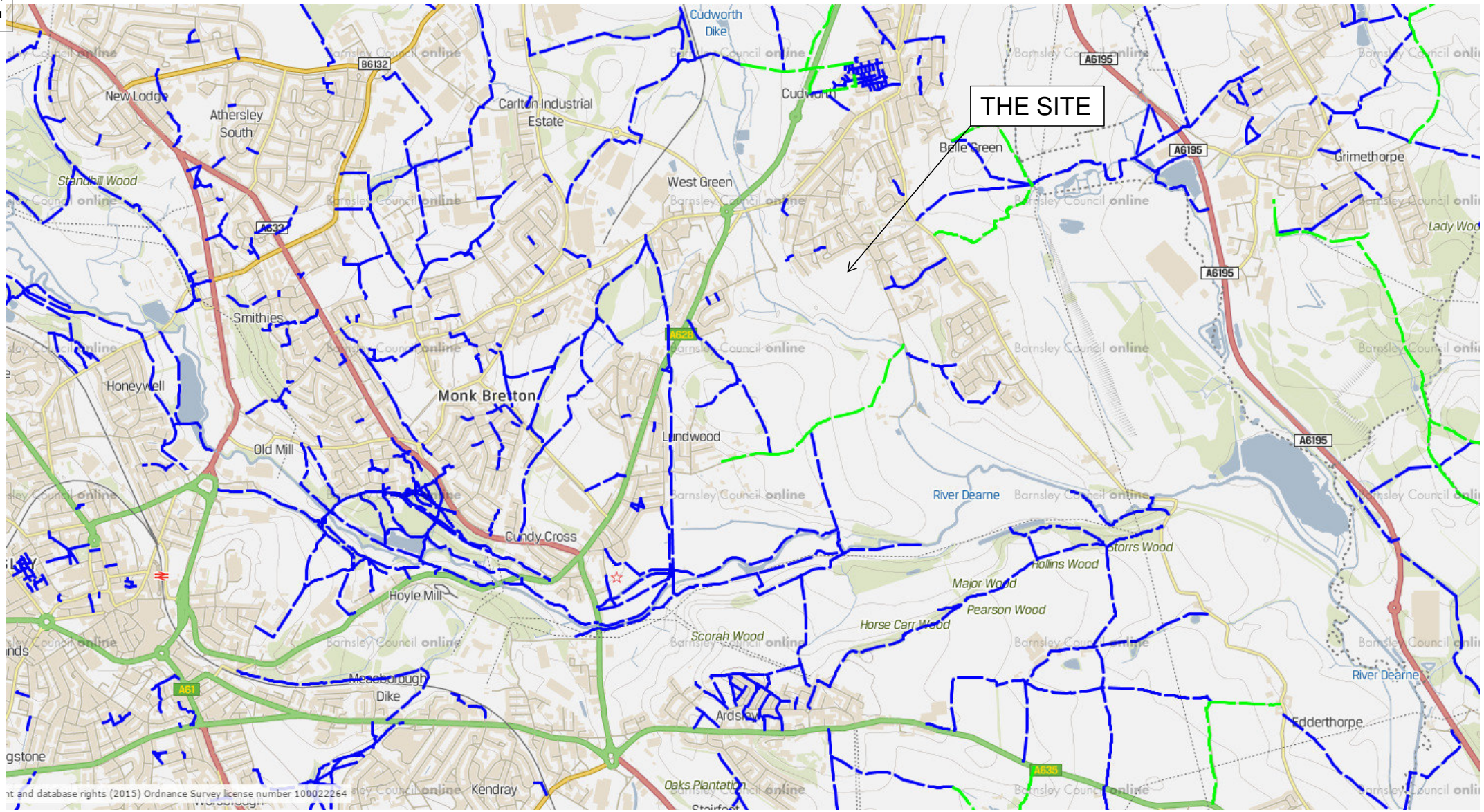
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APPENDIX 4

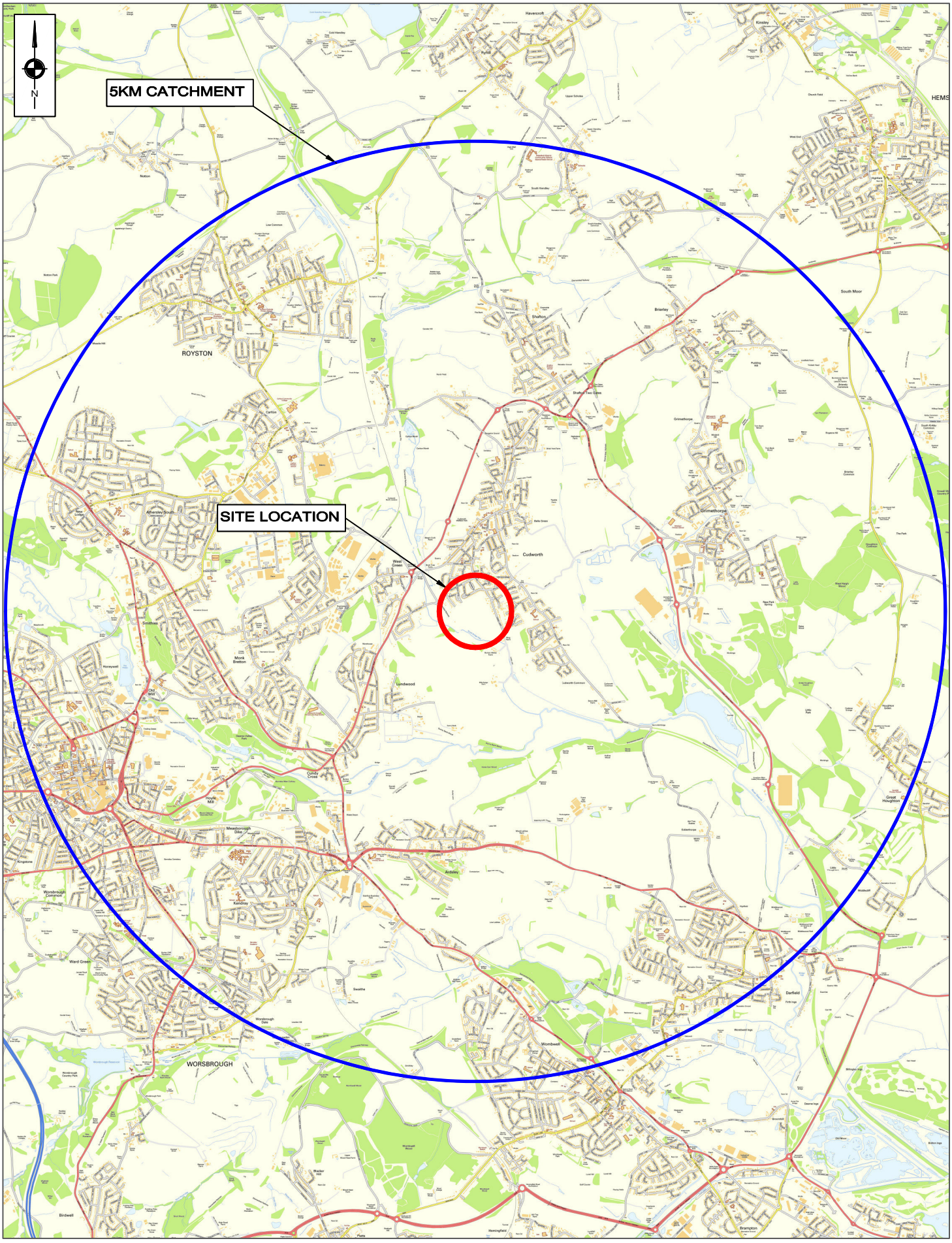
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APPENDIX 5



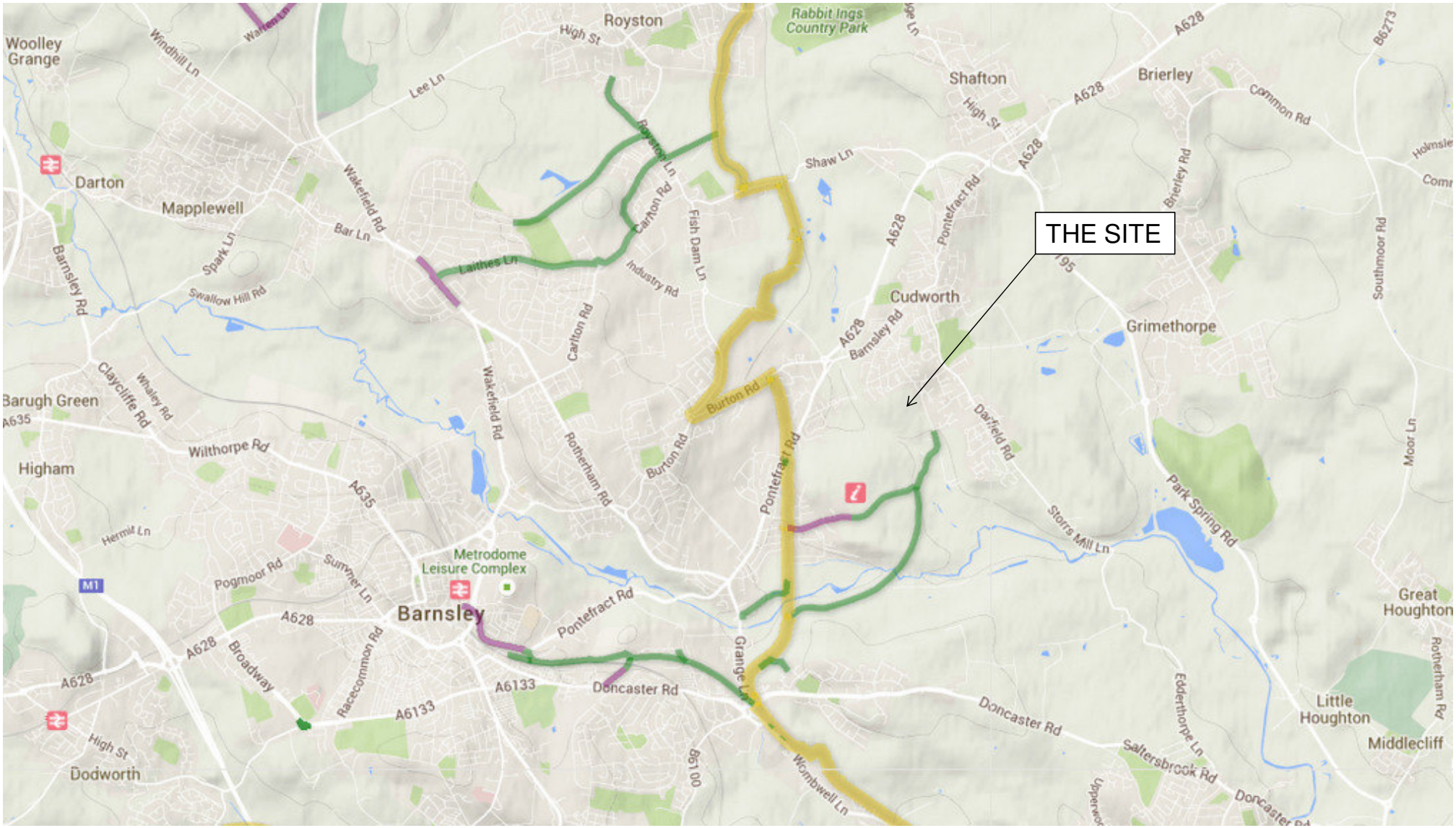
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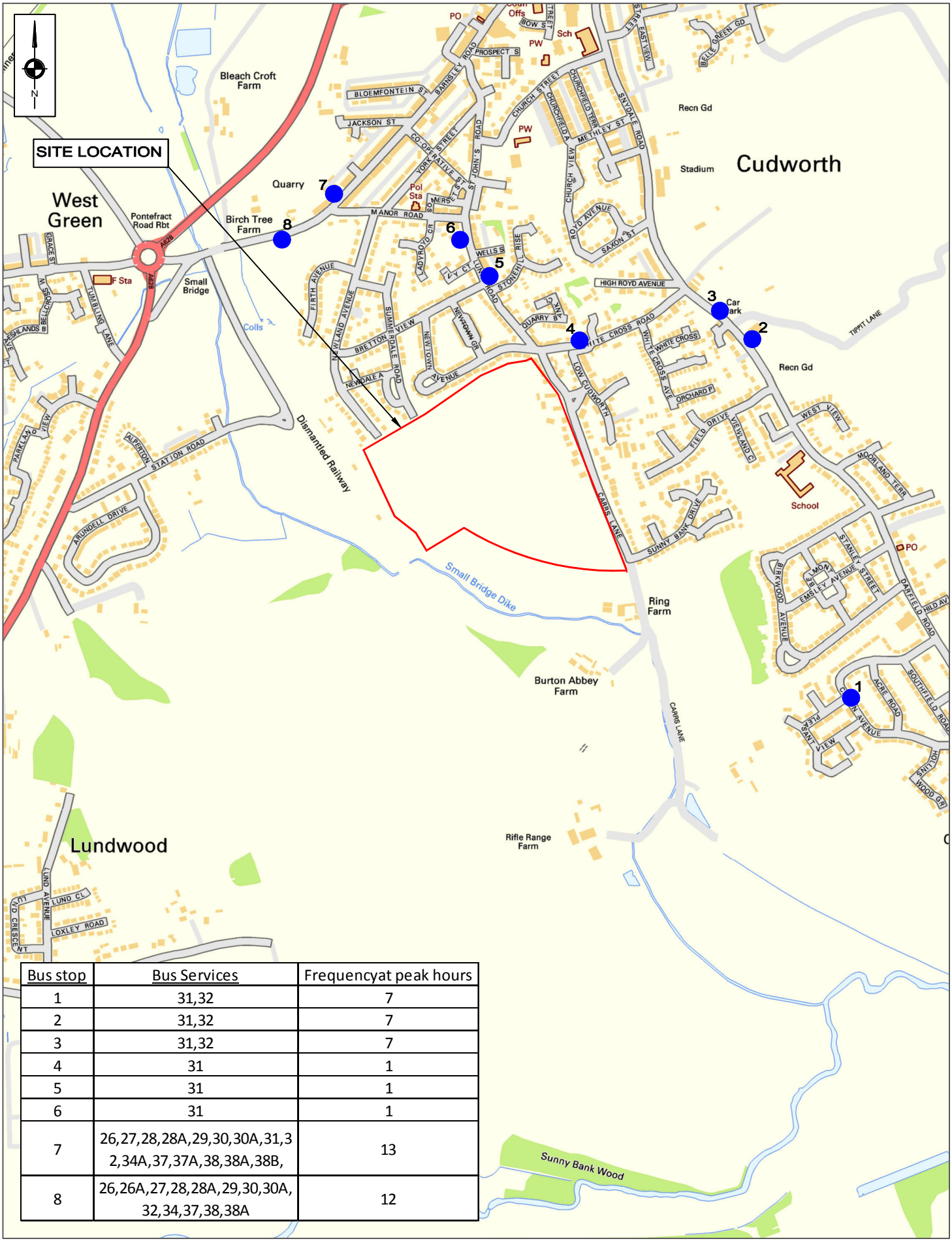
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APPENDIX 6



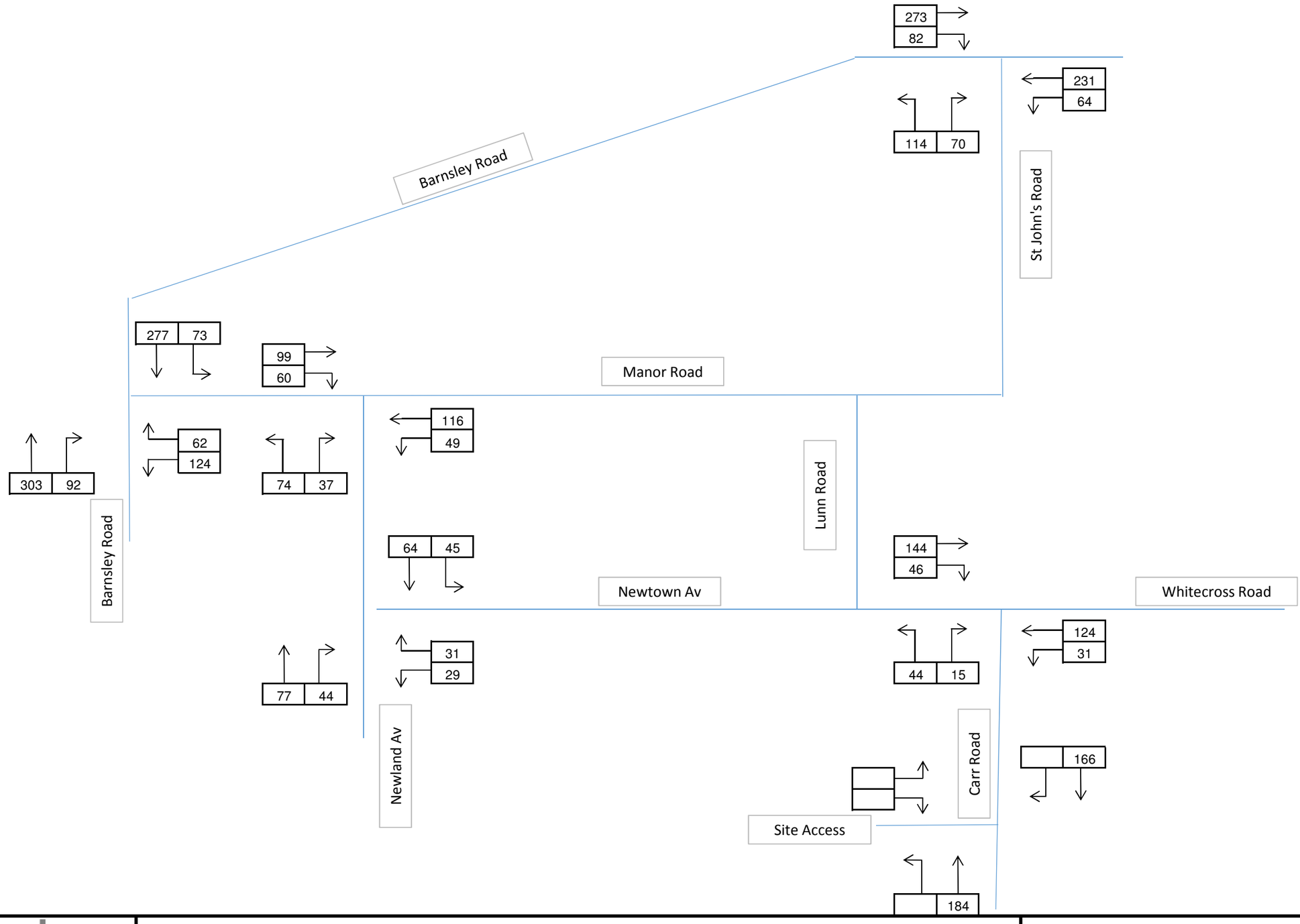
Bus stop	Bus Services	Frequencyat peak hours
1	31,32	7
2	31,32	7
3	31,32	7
4	31	1
5	31	1
6	31	1
7	26,27,28,28A,29,30,30A,31,32,34A,37,37A,38,38A,38B,	13
8	26,26A,27,28,28A,29,30,30A,32,34,37,38,38A	12

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Project Title	Drawing Title	Scale	By	Drawing No.
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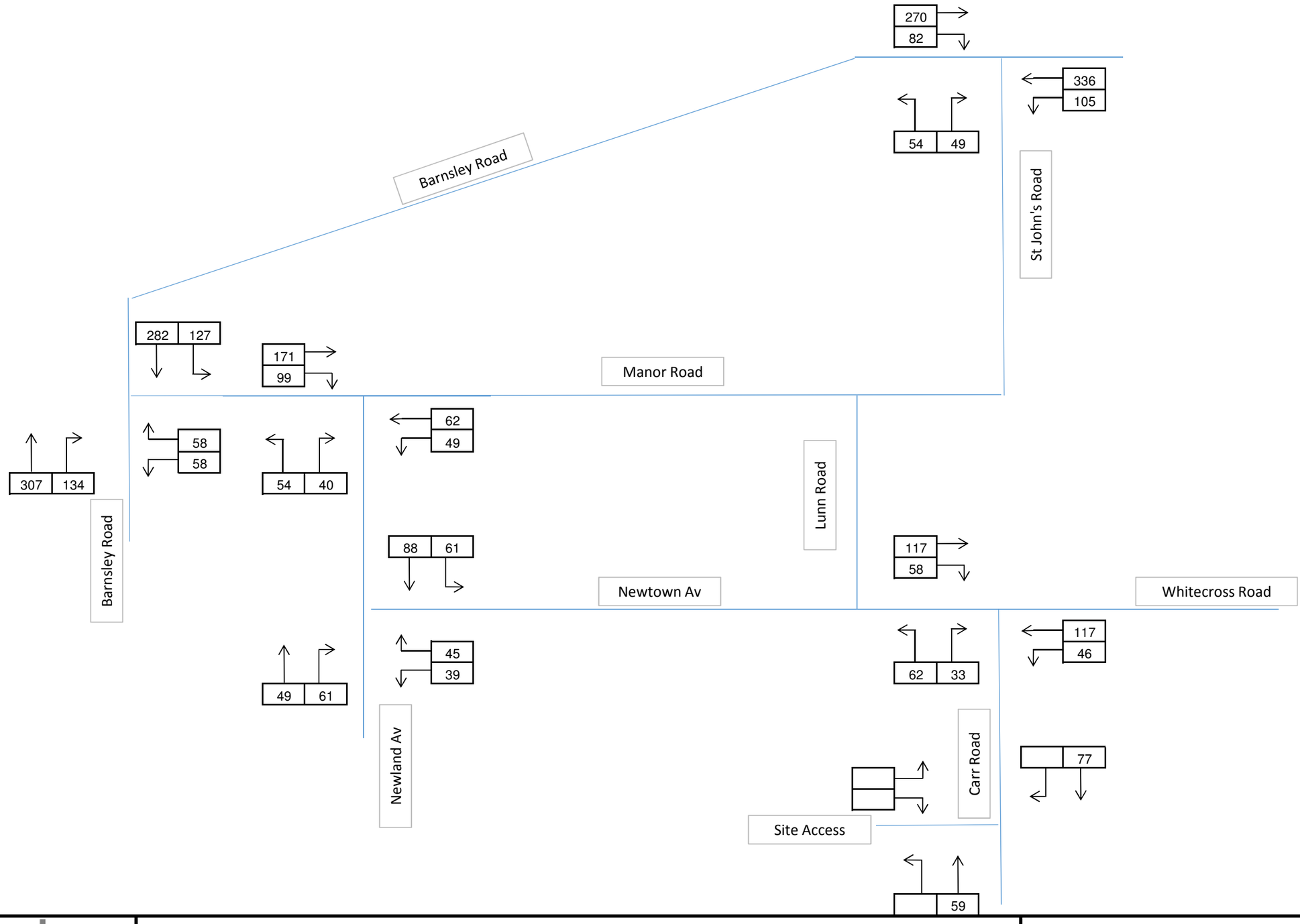
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APPENDIX 7



S C P Transportation Planning : Infrastructure Design	**AM Peak - Surveyed Flows - PCUs**	**09 October 2015**
		Job Number - SCP/14923
	Proposed Residential Development, Cudworth, Barnsley	**Traffic Figure 1**

Z:\Job Library\2014\14923 - Carrs Lane, Cudworth, Barnsley\Traffic Data\20150915 Cudworth flow diagrams.xls



Transportation Planning : Infrastructure Design

PM Peak - Surveyed Flows - PCUs

Proposed Residential Development, Cudworth, Barnsley

09 October 2015

Job Number - SCP/14923

Traffic Figure 2

S|C|P

APPENDIX 8

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.0.4211 []
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Filename: Arcady Newland Av_Newton Av Rbout.j9
Path: Z:\Job Library\2014\14923 - Carrs Lane, Cudworth, Barnsley\Traffic Data\Models\Newland Av_Newton Av Rbout
Report generation date: 05/10/2015 10:29:23

»2015, AM
»2015, PM
»2020 Base, AM
»2020 Base, PM
»2020 Base plus dev, AM
»2020 Base plus dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2015							
Arm 1	0.1	4.26	0.07	A	0.1	4.47	0.10	A
Arm 2	0.1	3.92	0.13	A	0.1	3.90	0.12	A
Arm 3	0.2	4.52	0.13	A	0.2	4.84	0.18	A
	2020 Base							
Arm 1	0.1	4.31	0.08	A	0.1	4.54	0.11	A
Arm 2	0.2	3.98	0.14	A	0.1	3.96	0.13	A
Arm 3	0.2	4.60	0.14	A	0.2	4.97	0.20	A
	2020 Base plus dev							
Arm 1	0.1	4.39	0.08	A	0.1	4.76	0.13	A
Arm 2	0.3	4.72	0.24	A	0.2	4.18	0.17	A
Arm 3	0.2	4.77	0.17	A	0.4	5.40	0.26	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	15/07/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP"Tony Harrigan
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2015	AM	ONE HOUR	08:00	09:30	15
2015	PM	ONE HOUR	17:00	18:30	15
2020 Base	AM	ONE HOUR	08:00	09:30	15
2020 Base	PM	ONE HOUR	17:00	18:30	15
2020 Base plus dev	AM	ONE HOUR	08:00	09:30	15
2020 Base plus dev	PM	ONE HOUR	17:00	18:30	15

2015, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	untitled	
2	untitled	
3	untitled	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.15	3.15	0.0	21.0	22.0	33.0	
2	4.00	4.00	0.0	7.0	22.0	38.0	
3	3.60	3.60	0.0	8.7	22.0	52.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.506	946.737
2	0.496	1068.288
3	0.463	938.247

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2015	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	60.00	100.000
2		✓	121.00	100.000
3		✓	109.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0.000	29.000	31.000
	2	44.000	0.000	77.000
	3	45.000	64.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.07	4.26	0.1	A
2	0.13	3.92	0.1	A
3	0.13	4.52	0.2	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	45.17	47.95	922.49	0.049	44.97	0.1	4.101	A
2	91.10	23.23	1056.76	0.086	90.72	0.1	3.727	A
3	82.06	32.99	922.99	0.089	81.67	0.1	4.277	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	53.94	57.48	917.67	0.059	53.90	0.1	4.167	A
2	108.78	27.85	1054.47	0.103	108.69	0.1	3.805	A
3	97.99	39.53	919.96	0.107	97.90	0.1	4.379	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	66.06	70.39	911.15	0.073	66.00	0.1	4.259	A
2	133.22	34.10	1051.37	0.127	133.10	0.1	3.920	A
3	120.01	48.40	915.86	0.131	119.89	0.1	4.523	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	66.06	70.46	911.11	0.073	66.06	0.1	4.259	A
2	133.22	34.13	1051.35	0.127	133.22	0.1	3.920	A
3	120.01	48.44	915.84	0.131	120.01	0.2	4.523	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	53.94	57.61	917.61	0.059	54.00	0.1	4.168	A
2	108.78	27.90	1054.45	0.103	108.89	0.1	3.809	A
3	97.99	39.60	919.93	0.107	98.11	0.1	4.382	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	45.17	48.23	922.35	0.049	45.22	0.1	4.104	A
2	91.10	23.36	1056.70	0.086	91.18	0.1	3.730	A
3	82.06	33.16	922.91	0.089	82.15	0.1	4.283	A

2015, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.45	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2015	PM	ONE HOUR	17:00	18:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	84.00	100.000
2		✓	110.00	100.000
3		✓	149.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0.000	39.000	45.000
	2	61.000	0.000	49.000
	3	61.000	88.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.10	4.47	0.1	A
2	0.12	3.90	0.1	A
3	0.18	4.84	0.2	A

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	63.24	65.92	913.41	0.069	62.94	0.1	4.232	A
2	82.81	33.72	1051.56	0.079	82.47	0.1	3.715	A
3	112.18	45.74	917.09	0.122	111.62	0.1	4.466	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	75.51	79.03	906.78	0.083	75.45	0.1	4.330	A
2	98.89	40.42	1048.24	0.094	98.81	0.1	3.791	A
3	133.95	54.80	912.90	0.147	133.82	0.2	4.621	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	92.49	96.78	897.81	0.103	92.39	0.1	4.469	A
2	121.11	49.49	1043.73	0.116	121.00	0.1	3.901	A
3	164.05	67.10	907.20	0.181	163.86	0.2	4.841	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	92.49	96.89	897.75	0.103	92.48	0.1	4.470	A
2	121.11	49.55	1043.71	0.116	121.11	0.1	3.901	A
3	164.05	67.16	907.18	0.181	164.05	0.2	4.843	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	75.51	79.22	906.68	0.083	75.61	0.1	4.331	A
2	98.89	40.50	1048.19	0.094	98.99	0.1	3.792	A
3	133.95	54.90	912.85	0.147	134.14	0.2	4.623	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	63.24	66.33	913.20	0.069	63.31	0.1	4.235	A
2	82.81	33.91	1051.46	0.079	82.89	0.1	3.719	A
3	112.18	45.97	916.98	0.122	112.31	0.1	4.475	A

2020 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.28	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2020 Base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	66.00	100.000
2		✓	132.00	100.000
3		✓	119.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0.000	32.000	34.000
	2	48.000	0.000	84.000
	3	49.000	70.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.08	4.31	0.1	A
2	0.14	3.98	0.2	A
3	0.14	4.60	0.2	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	49.69	52.45	920.22	0.054	49.46	0.1	4.133	A
2	99.38	25.48	1055.65	0.094	98.96	0.1	3.760	A
3	89.59	35.99	921.60	0.097	89.16	0.1	4.323	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59.33	62.87	914.95	0.065	59.28	0.1	4.207	A
2	118.67	30.54	1053.14	0.113	118.57	0.1	3.852	A
3	106.98	43.12	918.30	0.117	106.88	0.1	4.436	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	72.67	76.99	907.81	0.080	72.60	0.1	4.310	A
2	145.33	37.40	1049.73	0.138	145.20	0.2	3.980	A
3	131.02	52.80	913.82	0.143	130.88	0.2	4.598	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	72.67	77.07	907.77	0.080	72.67	0.1	4.310	A
2	145.33	37.43	1049.72	0.138	145.33	0.2	3.980	A
3	131.02	52.85	913.80	0.143	131.02	0.2	4.598	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59.33	63.01	914.88	0.065	59.40	0.1	4.208	A
2	118.67	30.60	1053.11	0.113	118.80	0.1	3.853	A
3	106.98	43.20	918.26	0.117	107.12	0.1	4.438	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	49.69	52.76	920.06	0.054	49.74	0.1	4.136	A
2	99.38	25.62	1055.58	0.094	99.47	0.1	3.764	A
3	89.59	36.17	921.51	0.097	89.69	0.1	4.328	A

2020 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.54	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2020 Base	PM	ONE HOUR	17:00	18:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	92.00	100.000
2		✓	121.00	100.000
3		✓	163.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0.000	43.000	49.000
	2	67.000	0.000	54.000
	3	67.000	96.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.11	4.54	0.1	A
2	0.13	3.96	0.1	A
3	0.20	4.97	0.2	A

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	69.26	71.91	910.38	0.076	68.93	0.1	4.278	A
2	91.10	36.72	1050.07	0.087	90.72	0.1	3.750	A
3	122.71	50.23	915.01	0.134	122.10	0.2	4.540	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	82.71	86.22	903.15	0.092	82.63	0.1	4.387	A
2	108.78	44.01	1046.45	0.104	108.69	0.1	3.838	A
3	146.53	60.19	910.40	0.161	146.39	0.2	4.710	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	101.29	105.57	893.36	0.113	101.19	0.1	4.544	A
2	133.22	53.89	1041.55	0.128	133.10	0.1	3.963	A
3	179.47	73.70	904.15	0.198	179.25	0.2	4.965	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	101.29	105.70	893.30	0.113	101.29	0.1	4.545	A
2	133.22	53.95	1041.52	0.128	133.22	0.1	3.963	A
3	179.47	73.77	904.12	0.199	179.46	0.2	4.967	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	82.71	86.43	903.04	0.092	82.81	0.1	4.389	A
2	108.78	44.11	1046.41	0.104	108.90	0.1	3.841	A
3	146.53	60.30	910.35	0.161	146.75	0.2	4.715	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	69.26	72.36	910.15	0.076	69.34	0.1	4.281	A
2	91.10	36.93	1049.97	0.087	91.18	0.1	3.757	A
3	122.71	50.49	914.89	0.134	122.86	0.2	4.545	A

2020 Base plus dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.68	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D5	2020 Base plus dev	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	69.00	100.000
2		✓	215.00	100.000
3		✓	140.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0.000	35.000	34.000
	2	57.000	0.000	158.000
	3	49.000	0.000	91.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.08	4.39	0.1	A
2	0.24	4.72	0.3	A
3	0.17	4.77	0.2	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	51.95	68.17	912.27	0.057	51.71	0.1	4.182	A
2	161.86	93.65	1021.82	0.158	161.11	0.2	4.179	A
3	105.40	42.71	918.49	0.115	104.88	0.1	4.422	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	62.03	81.73	905.41	0.069	61.98	0.1	4.268	A
2	193.28	112.27	1012.59	0.191	193.09	0.2	4.391	A
3	125.86	51.19	914.56	0.138	125.74	0.2	4.564	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	75.97	100.08	896.14	0.085	75.89	0.1	4.388	A
2	236.72	137.48	1000.08	0.237	236.43	0.3	4.714	A
3	154.14	62.68	909.25	0.170	153.97	0.2	4.765	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	75.97	100.19	896.08	0.085	75.97	0.1	4.389	A
2	236.72	137.63	1000.01	0.237	236.72	0.3	4.716	A
3	154.14	62.76	909.21	0.170	154.14	0.2	4.767	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	62.03	81.92	905.32	0.069	62.10	0.1	4.271	A
2	193.28	112.52	1012.46	0.191	193.57	0.2	4.399	A
3	125.86	51.32	914.51	0.138	126.03	0.2	4.566	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	51.95	68.59	912.06	0.057	52.00	0.1	4.187	A
2	161.86	94.21	1021.55	0.158	162.06	0.2	4.189	A
3	105.40	42.96	918.37	0.115	105.52	0.1	4.429	A

2020 Base plus dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.85	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D6	2020 Base plus dev	PM	ONE HOUR	17:00	18:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	100.00	100.000
2		✓	164.00	100.000
3		✓	213.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0.000	51.000	49.000
	2	72.000	0.000	92.000
	3	67.000	146.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.13	4.76	0.1	A
2	0.17	4.18	0.2	A
3	0.26	5.40	0.4	A

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	75.29	109.34	891.46	0.084	74.92	0.1	4.407	A
2	123.47	36.71	1050.08	0.118	122.94	0.1	3.881	A
3	160.36	53.97	913.28	0.176	159.51	0.2	4.771	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	89.90	131.10	880.45	0.102	89.81	0.1	4.553	A
2	147.43	44.01	1046.45	0.141	147.31	0.2	4.004	A
3	191.48	64.67	908.33	0.211	191.27	0.3	5.019	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	110.10	160.52	865.58	0.127	109.97	0.1	4.764	A
2	180.57	53.89	1041.55	0.173	180.39	0.2	4.179	A
3	234.52	79.19	901.61	0.260	234.18	0.3	5.391	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	110.10	160.75	865.47	0.127	110.10	0.1	4.765	A
2	180.57	53.95	1041.52	0.173	180.57	0.2	4.181	A
3	234.52	79.27	901.57	0.260	234.51	0.4	5.396	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	89.90	131.47	880.26	0.102	90.02	0.1	4.555	A
2	147.43	44.11	1046.40	0.141	147.61	0.2	4.007	A
3	191.48	64.80	908.27	0.211	191.81	0.3	5.028	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	75.29	110.07	891.09	0.084	75.37	0.1	4.415	A
2	123.47	36.93	1049.97	0.118	123.59	0.1	3.887	A
3	160.36	54.26	913.15	0.176	160.58	0.2	4.784	A

S|C|P

APPENDIX 9

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Picady Carr lane_Whitecross Lane priority.j9
Path: Z:\Job Library\2014\14923 - Carrs Lane, Cudworth, Barnsley\Traffic Data\Models\JUnction Models and PDF outputs
Report generation date: 05/10/2015 10:56:09

»2015, AM
»2015, PM
»2020 Base, AM
»2020 Base, PM
»2020 Base plus Dev, AM
»2020 Base plus dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2015							
Stream B-C	0.1	6.24	0.08	A	0.1	6.55	0.11	A
Stream B-A	0.0	8.50	0.04	A	0.1	8.92	0.08	A
Stream C-AB	0.1	6.50	0.09	A	0.1	6.69	0.11	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 Base							
Stream B-C	0.1	6.34	0.09	A	0.1	6.69	0.12	A
Stream B-A	0.0	8.66	0.04	A	0.1	9.16	0.09	A
Stream C-AB	0.1	6.57	0.09	A	0.1	6.78	0.12	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 Base plus Dev							
Stream B-C	0.1	6.67	0.08	A				
Stream B-A	0.2	8.99	0.14	A				
Stream C-AB	0.1	6.64	0.10	A				
Stream C-A								
Stream A-B								
Stream A-C								
	2020 Base plus dev							
Stream B-C					0.2	6.78	0.13	A
Stream B-A					0.1	9.02	0.12	A
Stream C-AB					0.2	6.95	0.14	A
Stream C-A								
Stream A-B								
Stream A-C								

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Carr lane / Whitecross lane
Location	Cudworth
Site number	
Date	16/07/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	14923
Enumerator	SCP"Tony Harrigan
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2015	AM	ONE HOUR	08:00	09:30	15
2015	PM	ONE HOUR	16:45	18:15	15
2020 Base	AM	ONE HOUR	08:00	09:30	15
2020 Base	PM	ONE HOUR	16:45	18:15	15
2020 Base plus Dev	AM	ONE HOUR	08:00	09:30	15
2020 Base plus dev	PM	ONE HOUR	16:45	18:15	15

2015, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.75	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	untitled		Minor
C	untitled		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.30			99.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	7.70	3.60	3.00	3.00	3.00	✓	1.00	130	17

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	511.859	0.088	0.222	0.140	0.318
1	B-C	667.679	0.097	0.244	-	-
1	C-B	631.295	0.231	0.231	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2015	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	155.00	100.000
B		✓	59.00	100.000
C		✓	190.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	31.000	124.000
	B	15.000	0.000	44.000
	C	144.000	46.000	0.000

Vehicle Mix

Heavy Vehicle proportion

	To			
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.08	6.24	0.1	A
B-A	0.04	8.50	0.0	A
C-AB	0.09	6.50	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	33.13	638.70	0.052	32.91	0.1	5.941	A
B-A	11.29	462.83	0.024	11.19	0.0	7.969	A
C-AB	34.99	610.58	0.057	34.74	0.1	6.248	A
C-A	108.05			108.05			
A-B	23.34			23.34			
A-C	93.35			93.35			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	39.56	632.97	0.062	39.51	0.1	6.065	A
B-A	13.48	453.21	0.030	13.46	0.0	8.186	A
C-AB	41.97	608.08	0.069	41.91	0.1	6.358	A
C-A	128.84			128.84			
A-B	27.87			27.87			
A-C	111.47			111.47			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	48.44	625.04	0.078	48.38	0.1	6.242	A
B-A	16.52	439.96	0.038	16.48	0.0	8.501	A
C-AB	51.81	605.48	0.086	51.73	0.1	6.501	A
C-A	157.39			157.39			
A-B	34.13			34.13			
A-C	136.53			136.53			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	48.44	625.02	0.078	48.44	0.1	6.243	A
B-A	16.52	439.94	0.038	16.51	0.0	8.501	A
C-AB	51.81	605.48	0.086	51.81	0.1	6.503	A
C-A	157.39			157.39			
A-B	34.13			34.13			
A-C	136.53			136.53			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	39.56	632.95	0.062	39.62	0.1	6.069	A
B-A	13.48	453.16	0.030	13.52	0.0	8.190	A
C-AB	41.97	608.08	0.069	42.05	0.1	6.362	A
C-A	128.84			128.84			
A-B	27.87			27.87			
A-C	111.47			111.47			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	33.13	638.66	0.052	33.17	0.1	5.947	A
B-A	11.29	462.74	0.024	11.32	0.0	7.976	A
C-AB	34.99	610.58	0.057	35.04	0.1	6.257	A
C-A	108.05			108.05			
A-B	23.34			23.34			
A-C	93.35			93.35			

2015, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.53	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2015	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	163.00	100.000
B		✓	95.00	100.000
C		✓	175.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	46.000	117.000
	B	33.000	0.000	62.000
	C	117.000	58.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.11	6.55	0.1	A
B-A	0.08	8.92	0.1	A
C-AB	0.11	6.69	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	46.68	634.08	0.074	46.36	0.1	6.123	A
B-A	24.84	462.86	0.054	24.62	0.1	8.210	A
C-AB	44.13	609.36	0.072	43.81	0.1	6.363	A
C-A	87.62			87.62			
A-B	34.63			34.63			
A-C	88.08			88.08			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55.74	627.26	0.089	55.67	0.1	6.298	A
B-A	29.67	453.15	0.065	29.61	0.1	8.498	A
C-AB	52.94	606.66	0.087	52.87	0.1	6.500	A
C-A	104.38			104.38			
A-B	41.35			41.35			
A-C	105.18			105.18			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68.26	617.75	0.111	68.16	0.1	6.548	A
B-A	36.33	439.75	0.083	36.25	0.1	8.919	A
C-AB	65.37	603.83	0.108	65.26	0.1	6.684	A
C-A	127.31			127.31			
A-B	50.65			50.65			
A-C	128.82			128.82			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68.26	617.72	0.111	68.26	0.1	6.551	A
B-A	36.33	439.71	0.083	36.33	0.1	8.924	A
C-AB	65.37	603.83	0.108	65.37	0.1	6.687	A
C-A	127.31			127.31			
A-B	50.65			50.65			
A-C	128.82			128.82			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55.74	627.21	0.089	55.84	0.1	6.301	A
B-A	29.67	453.09	0.065	29.74	0.1	8.504	A
C-AB	52.94	606.66	0.087	53.05	0.1	6.503	A
C-A	104.38			104.38			
A-B	41.35			41.35			
A-C	105.18			105.18			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	46.68	633.98	0.074	46.75	0.1	6.130	A
B-A	24.84	462.73	0.054	24.90	0.1	8.223	A
C-AB	44.13	609.36	0.072	44.20	0.1	6.372	A
C-A	87.62			87.62			
A-B	34.63			34.63			
A-C	88.08			88.08			

2020 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.76	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2020 Base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	170.00	100.000
B		✓	64.00	100.000
C		✓	207.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	34.000	136.000
	B	16.000	0.000	48.000
	C	157.000	50.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.09	6.34	0.1	A
B-A	0.04	8.66	0.0	A
C-AB	0.09	6.57	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	36.14	635.99	0.057	35.90	0.1	5.994	A
B-A	12.05	458.28	0.026	11.94	0.0	8.064	A
C-AB	38.11	609.15	0.063	37.84	0.1	6.298	A
C-A	117.74			117.74			
A-B	25.60			25.60			
A-C	102.39			102.39			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	43.15	629.71	0.069	43.10	0.1	6.136	A
B-A	14.38	447.76	0.032	14.36	0.0	8.306	A
C-AB	45.75	606.67	0.075	45.69	0.1	6.417	A
C-A	140.34			140.34			
A-B	30.57			30.57			
A-C	122.26			122.26			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	52.85	621.02	0.085	52.77	0.1	6.335	A
B-A	17.62	433.27	0.041	17.58	0.0	8.660	A
C-AB	56.57	604.28	0.094	56.47	0.1	6.571	A
C-A	171.35			171.35			
A-B	37.43			37.43			
A-C	149.74			149.74			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	52.85	621.00	0.085	52.85	0.1	6.335	A
B-A	17.62	433.24	0.041	17.62	0.0	8.661	A
C-AB	56.57	604.28	0.094	56.56	0.1	6.572	A
C-A	171.35			171.35			
A-B	37.43			37.43			
A-C	149.74			149.74			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	43.15	629.69	0.069	43.23	0.1	6.138	A
B-A	14.38	447.71	0.032	14.42	0.0	8.310	A
C-AB	45.75	606.67	0.075	45.84	0.1	6.419	A
C-A	140.34			140.34			
A-B	30.57			30.57			
A-C	122.26			122.26			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	36.14	635.94	0.057	36.19	0.1	6.002	A
B-A	12.05	458.18	0.026	12.07	0.0	8.070	A
C-AB	38.11	609.15	0.063	38.17	0.1	6.304	A
C-A	117.74			117.74			
A-B	25.60			25.60			
A-C	102.39			102.39			

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.59	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2020 Base	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	178.00	100.000
B		✓	104.00	100.000
C		✓	192.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	50.000	128.000
	B	36.000	0.000	68.000
	C	128.000	64.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	6.69	0.1	A
B-A	0.09	9.16	0.1	A
C-AB	0.12	6.78	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	51.19	630.88	0.081	50.84	0.1	6.202	A
B-A	27.10	458.10	0.059	26.85	0.1	8.344	A
C-AB	48.80	608.10	0.080	48.45	0.1	6.428	A
C-A	95.74			95.74			
A-B	37.64			37.64			
A-C	96.37			96.37			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	61.13	623.37	0.098	61.05	0.1	6.402	A
B-A	32.36	447.42	0.072	32.30	0.1	8.671	A
C-AB	58.61	605.51	0.097	58.53	0.1	6.581	A
C-A	113.99			113.99			
A-B	44.95			44.95			
A-C	115.07			115.07			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74.87	612.86	0.122	74.75	0.1	6.688	A
B-A	39.64	432.66	0.092	39.55	0.1	9.155	A
C-AB	72.50	603.01	0.120	72.38	0.1	6.782	A
C-A	138.89			138.89			
A-B	55.05			55.05			
A-C	140.93			140.93			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74.87	612.82	0.122	74.87	0.1	6.691	A
B-A	39.64	432.62	0.092	39.63	0.1	9.160	A
C-AB	72.50	603.01	0.120	72.50	0.1	6.785	A
C-A	138.89			138.89			
A-B	55.05			55.05			
A-C	140.93			140.93			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	61.13	623.31	0.098	61.25	0.1	6.405	A
B-A	32.36	447.35	0.072	32.45	0.1	8.679	A
C-AB	58.61	605.51	0.097	58.73	0.1	6.584	A
C-A	113.99			113.99			
A-B	44.95			44.95			
A-C	115.07			115.07			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	51.19	630.76	0.081	51.28	0.1	6.215	A
B-A	27.10	457.96	0.059	27.16	0.1	8.359	A
C-AB	48.80	608.10	0.080	48.89	0.1	6.437	A
C-A	95.74			95.74			
A-B	37.64			37.64			
A-C	96.37			96.37			

2020 Base plus Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.35	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D5	2020 Base plus Dev	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	179.00	100.000
B		✓	97.00	100.000
C		✓	211.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	43.000	136.000
	B	57.000	0.000	40.000
	C	157.000	54.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.08	6.67	0.1	A
B-A	0.14	8.99	0.2	A
C-AB	0.10	6.64	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	30.11	604.69	0.050	29.91	0.1	6.262	A
B-A	42.91	490.89	0.087	42.53	0.1	8.023	A
C-AB	41.20	608.20	0.068	40.90	0.1	6.343	A
C-A	117.66			117.66			
A-B	32.37			32.37			
A-C	102.39			102.39			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	35.96	595.93	0.060	35.91	0.1	6.428	A
B-A	51.24	479.26	0.107	51.15	0.1	8.407	A
C-AB	49.49	605.69	0.082	49.42	0.1	6.471	A
C-A	140.20			140.20			
A-B	38.66			38.66			
A-C	122.26			122.26			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.04	583.78	0.075	43.97	0.1	6.669	A
B-A	62.76	463.20	0.135	62.61	0.2	8.984	A
C-AB	61.24	603.36	0.101	61.13	0.1	6.639	A
C-A	171.08			171.08			
A-B	47.34			47.34			
A-C	149.74			149.74			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.04	583.64	0.075	44.04	0.1	6.670	A
B-A	62.76	463.17	0.136	62.75	0.2	8.990	A
C-AB	61.24	603.36	0.101	61.23	0.1	6.639	A
C-A	171.08			171.08			
A-B	47.34			47.34			
A-C	149.74			149.74			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	35.96	595.68	0.060	36.03	0.1	6.432	A
B-A	51.24	479.22	0.107	51.38	0.1	8.416	A
C-AB	49.49	605.69	0.082	49.58	0.1	6.476	A
C-A	140.20			140.20			
A-B	38.66			38.66			
A-C	122.26			122.26			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	30.11	604.23	0.050	30.16	0.1	6.273	A
B-A	42.91	490.81	0.087	43.01	0.1	8.042	A
C-AB	41.20	608.20	0.068	41.27	0.1	6.350	A
C-A	117.66			117.66			
A-B	32.37			32.37			
A-C	102.39			102.39			

2020 Base plus dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.77	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D6	2020 Base plus dev	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	199.00	100.000
B		✓	121.00	100.000
C		✓	200.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	128.000	71.000
	B	48.000	0.000	73.000
	C	128.000	72.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.13	6.78	0.2	A
B-A	0.12	9.02	0.1	A
C-AB	0.14	6.95	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	54.96	628.52	0.087	54.58	0.1	6.268	A
B-A	36.14	477.33	0.076	35.81	0.1	8.148	A
C-AB	55.00	605.48	0.091	54.60	0.1	6.531	A
C-A	95.57			95.57			
A-B	96.37			96.37			
A-C	53.45			53.45			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	65.63	621.22	0.106	65.54	0.1	6.478	A
B-A	43.15	466.82	0.092	43.07	0.1	8.495	A
C-AB	66.11	602.64	0.110	66.01	0.1	6.709	A
C-A	113.68			113.68			
A-B	115.07			115.07			
A-C	63.83			63.83			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	80.37	610.95	0.132	80.24	0.2	6.781	A
B-A	52.85	452.07	0.117	52.73	0.1	9.011	A
C-AB	81.90	599.97	0.137	81.75	0.2	6.945	A
C-A	138.30			138.30			
A-B	140.93			140.93			
A-C	78.17			78.17			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	80.37	610.89	0.132	80.37	0.2	6.785	A
B-A	52.85	452.07	0.117	52.85	0.1	9.017	A
C-AB	81.90	599.97	0.137	81.90	0.2	6.951	A
C-A	138.30			138.30			
A-B	140.93			140.93			
A-C	78.17			78.17			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	65.63	621.12	0.106	65.75	0.1	6.483	A
B-A	43.15	466.85	0.092	43.27	0.1	8.501	A
C-AB	66.11	602.64	0.110	66.25	0.1	6.715	A
C-A	113.68			113.68			
A-B	115.07			115.07			
A-C	63.83			63.83			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	54.96	628.31	0.087	55.05	0.1	6.282	A
B-A	36.14	477.40	0.076	36.22	0.1	8.161	A
C-AB	55.00	605.48	0.091	55.10	0.1	6.541	A
C-A	95.57			95.57			
A-B	96.37			96.37			
A-C	53.45			53.45			

S|C|P

APPENDIX 10

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Picady Barnsley Rd_Manor Rd priority.j9
Path: Z:\Job Library\2014\14923 - Carrs Lane, Cudworth, Barnsley\Traffic Data\Models\JUnction Models and PDF outputs
Report generation date: 05/10/2015 10:52:37

»2015, AM
»2015, PM
»2020 Base, AM
»2020 Base, PM
»2020 Base plus Dev, AM
»2020 Base plus Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2015							
Stream B-AC	0.6	10.90	0.38	B	0.4	10.34	0.27	B
Stream C-AB	0.2	6.55	0.17	A	0.4	7.14	0.25	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 Base							
Stream B-AC	0.7	12.08	0.43	B	0.4	11.31	0.31	B
Stream C-AB	0.3	6.67	0.19	A	0.5	7.34	0.28	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 Base plus Dev							
Stream B-AC	1.1	14.23	0.53	B	0.6	12.13	0.37	B
Stream C-AB	0.3	6.86	0.23	A	0.7	8.03	0.37	A
Stream C-A								
Stream A-B								
Stream A-C								

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Barnsley Road / Manor Road
Location	Cudworth
Site number	
Date	16/07/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	14932
Enumerator	SCP"Tony Harrigan
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2015	AM	ONE HOUR	08:00	09:30	15
2015	PM	ONE HOUR	16:45	18:15	15
2020 Base	AM	ONE HOUR	08:00	09:30	15
2020 Base	PM	ONE HOUR	16:45	18:15	15
2020 Base plus Dev	AM	ONE HOUR	08:00	09:30	15
2020 Base plus Dev	PM	ONE HOUR	16:45	18:15	15

2015, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.87	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Barnsley Rd (N)		Major
B	Manor Road		Minor
C	Barnsley Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.40			214.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	4.30	40	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	567.151	0.093	0.234	0.147	0.334
1	B-C	721.507	0.099	0.250	-	-
1	C-B	697.893	0.242	0.242	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2015	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	350.00	100.000
B		✓	186.00	100.000
C		✓	395.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	73.000	277.000
	B	62.000	0.000	124.000
	C	303.000	92.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.38	10.90	0.6	B
C-AB	0.17	6.55	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	140.03	576.61	0.243	138.76	0.3	8.198	A
C-AB	71.98	659.00	0.109	71.48	0.1	6.122	A
C-A	225.39			225.39			
A-B	54.96			54.96			
A-C	208.54			208.54			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	167.21	559.36	0.299	166.80	0.4	9.160	A
C-AB	87.53	657.93	0.133	87.39	0.2	6.310	A
C-A	267.57			267.57			
A-B	65.63			65.63			
A-C	249.02			249.02			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	204.79	535.12	0.383	204.04	0.6	10.848	B
C-AB	110.66	660.47	0.168	110.43	0.2	6.544	A
C-A	324.24			324.24			
A-B	80.37			80.37			
A-C	304.98			304.98			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	204.79	535.08	0.383	204.77	0.6	10.896	B
C-AB	110.66	660.47	0.168	110.65	0.2	6.548	A
C-A	324.24			324.24			
A-B	80.37			80.37			
A-C	304.98			304.98			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	167.21	559.30	0.299	167.94	0.4	9.217	A
C-AB	87.53	657.93	0.133	87.75	0.2	6.318	A
C-A	267.57			267.57			
A-B	65.63			65.63			
A-C	249.02			249.02			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	140.03	576.50	0.243	140.46	0.3	8.264	A
C-AB	71.98	659.00	0.109	72.13	0.1	6.135	A
C-A	225.39			225.39			
A-B	54.96			54.96			
A-C	208.54			208.54			

2015, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.33	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2015	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	409.00	100.000
B		✓	116.00	100.000
C		✓	441.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	127.000	282.000
	B	58.000	0.000	58.000
	C	307.000	134.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.27	10.34	0.4	B
C-AB	0.25	7.14	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	87.33	528.33	0.165	86.55	0.2	8.136	A
C-AB	106.94	660.73	0.162	106.13	0.2	6.482	A
C-A	225.07			225.07			
A-B	95.61			95.61			
A-C	212.30			212.30			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	104.28	506.47	0.206	104.04	0.3	8.940	A
C-AB	131.27	663.46	0.198	131.01	0.3	6.761	A
C-A	265.18			265.18			
A-B	114.17			114.17			
A-C	253.51			253.51			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	127.72	475.79	0.268	127.30	0.4	10.317	B
C-AB	168.76	673.53	0.251	168.31	0.4	7.125	A
C-A	316.79			316.79			
A-B	139.83			139.83			
A-C	310.49			310.49			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	127.72	475.69	0.268	127.71	0.4	10.345	B
C-AB	168.76	673.53	0.251	168.74	0.4	7.138	A
C-A	316.79			316.79			
A-B	139.83			139.83			
A-C	310.49			310.49			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	104.28	506.31	0.206	104.69	0.3	8.974	A
C-AB	131.27	663.46	0.198	131.70	0.3	6.779	A
C-A	265.18			265.18			
A-B	114.17			114.17			
A-C	253.51			253.51			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	87.33	528.08	0.165	87.58	0.2	8.178	A
C-AB	106.94	660.73	0.162	107.20	0.2	6.507	A
C-A	225.07			225.07			
A-B	95.61			95.61			
A-C	212.30			212.30			

2020 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.13	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2020 Base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	383.00	100.000
B		✓	204.00	100.000
C		✓	432.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	80.000	303.000
	B	68.000	0.000	136.000
	C	331.000	101.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.43	12.08	0.7	B
C-AB	0.19	6.67	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	153.58	568.31	0.270	152.12	0.4	8.620	A
C-AB	79.69	658.24	0.121	79.12	0.1	6.212	A
C-A	245.54			245.54			
A-B	60.23			60.23			
A-C	228.11			228.11			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	183.39	549.26	0.334	182.88	0.5	9.812	A
C-AB	97.29	658.48	0.148	97.13	0.2	6.411	A
C-A	291.07			291.07			
A-B	71.92			71.92			
A-C	272.39			272.39			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	224.61	522.42	0.430	223.63	0.7	12.005	B
C-AB	123.90	663.80	0.187	123.63	0.3	6.664	A
C-A	351.74			351.74			
A-B	88.08			88.08			
A-C	333.61			333.61			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	224.61	522.37	0.430	224.58	0.7	12.084	B
C-AB	123.90	663.80	0.187	123.89	0.3	6.669	A
C-A	351.74			351.74			
A-B	88.08			88.08			
A-C	333.61			333.61			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	183.39	549.19	0.334	184.34	0.5	9.894	A
C-AB	97.29	658.48	0.148	97.56	0.2	6.421	A
C-A	291.07			291.07			
A-B	71.92			71.92			
A-C	272.39			272.39			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	153.58	568.18	0.270	154.12	0.4	8.705	A
C-AB	79.69	658.24	0.121	79.86	0.1	6.226	A
C-A	245.54			245.54			
A-B	60.23			60.23			
A-C	228.11			228.11			

2020 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.52	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2020 Base	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	448.00	100.000
B		✓	128.00	100.000
C		✓	483.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	139.000	309.000
	B	64.000	0.000	64.000
	C	336.000	147.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.31	11.31	0.4	B
C-AB	0.28	7.34	0.5	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	96.37	517.70	0.186	95.46	0.2	8.508	A
C-AB	118.83	661.65	0.180	117.90	0.2	6.610	A
C-A	244.80			244.80			
A-B	104.65			104.65			
A-C	232.63			232.63			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	115.07	493.51	0.233	114.77	0.3	9.497	A
C-AB	146.79	666.85	0.220	146.48	0.3	6.918	A
C-A	287.42			287.42			
A-B	124.96			124.96			
A-C	277.78			277.78			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	140.93	459.46	0.307	140.39	0.4	11.263	B
C-AB	190.81	681.95	0.280	190.25	0.4	7.320	A
C-A	340.98			340.98			
A-B	153.04			153.04			
A-C	340.22			340.22			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	140.93	459.34	0.307	140.92	0.4	11.305	B
C-AB	190.81	681.95	0.280	190.80	0.5	7.338	A
C-A	340.98			340.98			
A-B	153.04			153.04			
A-C	340.22			340.22			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	115.07	493.32	0.233	115.59	0.3	9.545	A
C-AB	146.79	666.85	0.220	147.33	0.3	6.942	A
C-A	287.42			287.42			
A-B	124.96			124.96			
A-C	277.78			277.78			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	96.37	517.41	0.186	96.67	0.2	8.562	A
C-AB	118.83	661.65	0.180	119.15	0.2	6.643	A
C-A	244.80			244.80			
A-B	104.65			104.65			
A-C	232.63			232.63			

2020 Base plus Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	4.21	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D5	2020 Base plus Dev	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	383.00	100.000
B		✓	259.00	100.000
C		✓	453.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	80.000	303.000
	B	68.000	0.000	191.000
	C	331.000	122.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.53	14.23	1.1	B
C-AB	0.23	6.86	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	194.99	582.92	0.335	193.01	0.5	9.188	A
C-AB	97.18	664.51	0.146	96.46	0.2	6.329	A
C-A	243.86			243.86			
A-B	60.23			60.23			
A-C	228.11			228.11			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	232.84	564.30	0.413	232.06	0.7	10.809	B
C-AB	119.15	667.62	0.178	118.94	0.2	6.560	A
C-A	288.08			288.08			
A-B	71.92			71.92			
A-C	272.39			272.39			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	285.16	537.97	0.530	283.55	1.1	14.058	B
C-AB	152.85	677.94	0.225	152.48	0.3	6.849	A
C-A	345.91			345.91			
A-B	88.08			88.08			
A-C	333.61			333.61			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	285.16	537.91	0.530	285.10	1.1	14.228	B
C-AB	152.85	677.94	0.225	152.84	0.3	6.861	A
C-A	345.91			345.91			
A-B	88.08			88.08			
A-C	333.61			333.61			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	232.84	564.21	0.413	234.41	0.7	10.968	B
C-AB	119.15	667.62	0.178	119.51	0.2	6.576	A
C-A	288.08			288.08			
A-B	71.92			71.92			
A-C	272.39			272.39			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	194.99	582.78	0.335	195.81	0.5	9.322	A
C-AB	97.18	664.51	0.146	97.40	0.2	6.353	A
C-A	243.86			243.86			
A-B	60.23			60.23			
A-C	228.11			228.11			

2020 Base plus Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.29	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D6	2020 Base plus Dev	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	448.00	100.000
B		✓	156.00	100.000
C		✓	532.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	139.000	309.000
	B	64.000	0.000	92.000
	C	336.000	196.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.37	12.13	0.6	B
C-AB	0.37	8.03	0.7	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	117.44	529.63	0.222	116.32	0.3	8.687	A
C-AB	162.06	676.79	0.239	160.70	0.3	6.960	A
C-A	238.45			238.45			
A-B	104.65			104.65			
A-C	232.63			232.63			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	140.24	504.43	0.278	139.85	0.4	9.863	A
C-AB	202.22	689.01	0.293	201.71	0.5	7.385	A
C-A	276.04			276.04			
A-B	124.96			124.96			
A-C	277.78			277.78			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	171.76	468.62	0.367	171.01	0.6	12.064	B
C-AB	267.29	716.46	0.373	266.29	0.7	7.997	A
C-A	318.45			318.45			
A-B	153.04			153.04			
A-C	340.22			340.22			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	171.76	468.41	0.367	171.74	0.6	12.132	B
C-AB	267.29	716.46	0.373	267.25	0.7	8.031	A
C-A	318.45			318.45			
A-B	153.04			153.04			
A-C	340.22			340.22			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	140.24	504.13	0.278	140.97	0.4	9.932	A
C-AB	202.22	689.01	0.293	203.19	0.5	7.434	A
C-A	276.04			276.04			
A-B	124.96			124.96			
A-C	277.78			277.78			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	117.44	529.23	0.222	117.85	0.3	8.759	A
C-AB	162.06	676.79	0.239	162.60	0.4	7.011	A
C-A	238.45			238.45			
A-B	104.65			104.65			
A-C	232.63			232.63			

S|C|P

APPENDIX 11

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Picady Manor Rd_Newland Av priority.j9
Path: Z:\Job Library\2014\14923 - Carrs Lane, Cudworth, Barnsley\Traffic Data\Models\JUnction Models and PDF outputs
Report generation date: 05/10/2015 10:48:16

»2015, AM
»2015, PM
»2020 Base, AM
»2020 Base, PM
»2020 Base plus Dev, AM
»2020 Base plus Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2015							
Stream B-C	0.1	6.26	0.12	A	0.1	6.02	0.09	A
Stream B-A	0.1	8.93	0.09	A	0.1	9.05	0.10	A
Stream C-AB	0.1	6.69	0.11	A	0.2	6.84	0.18	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 Base							
Stream B-C	0.2	6.40	0.14	A	0.1	6.12	0.10	A
Stream B-A	0.1	9.17	0.10	A	0.1	9.34	0.11	A
Stream C-AB	0.1	6.80	0.12	A	0.3	6.95	0.20	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 Base plus Dev							
Stream B-C	0.3	7.28	0.23	A	0.2	6.47	0.15	A
Stream B-A	0.2	10.08	0.15	B	0.2	10.26	0.14	B
Stream C-AB	0.2	7.07	0.16	A	0.4	7.62	0.29	A
Stream C-A								
Stream A-B								
Stream A-C								

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Manor Rd_Newland Av
Location	Cudworth
Site number	
Date	16/07/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	14923
Enumerator	SCP"Tony Harrigan
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2015	AM	ONE HOUR	08:00	09:30	15
2015	PM	ONE HOUR	16:45	18:15	15
2020 Base	AM	ONE HOUR	08:00	09:30	15
2020 Base	PM	ONE HOUR	16:45	18:15	15
2020 Base plus Dev	AM	ONE HOUR	08:00	09:30	15
2020 Base plus Dev	PM	ONE HOUR	16:45	18:15	15

2015, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	untitled		Minor
C	untitled		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.80			108.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	4.80	3.80	3.80	3.80	✓	1.00	30	29

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	516.627	0.091	0.230	0.144	0.328
1	B-C	712.917	0.105	0.267	-	-
1	C-B	636.507	0.238	0.238	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2015	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	165.00	100.000
B		✓	111.00	100.000
C		✓	159.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	49.000	116.000
	B	37.000	0.000	74.000
	C	99.000	60.000	0.000

Vehicle Mix

Heavy Vehicle proportion

	To			
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	6.26	0.1	A
B-A	0.09	8.93	0.1	A
C-AB	0.11	6.69	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55.71	675.34	0.082	55.35	0.1	5.804	A
B-A	27.86	467.39	0.060	27.60	0.1	8.182	A
C-AB	45.58	612.49	0.074	45.26	0.1	6.344	A
C-A	74.12			74.12			
A-B	36.89			36.89			
A-C	87.33			87.33			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66.52	667.60	0.100	66.44	0.1	5.988	A
B-A	33.26	457.64	0.073	33.20	0.1	8.481	A
C-AB	54.66	609.18	0.090	54.58	0.1	6.491	A
C-A	88.28			88.28			
A-B	44.05			44.05			
A-C	104.28			104.28			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81.48	656.89	0.124	81.35	0.1	6.253	A
B-A	40.74	444.07	0.092	40.65	0.1	8.921	A
C-AB	67.41	605.40	0.111	67.30	0.1	6.690	A
C-A	107.65			107.65			
A-B	53.95			53.95			
A-C	127.72			127.72			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81.48	656.83	0.124	81.47	0.1	6.256	A
B-A	40.74	444.04	0.092	40.74	0.1	8.925	A
C-AB	67.41	605.40	0.111	67.41	0.1	6.690	A
C-A	107.65			107.65			
A-B	53.95			53.95			
A-C	127.72			127.72			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66.52	667.49	0.100	66.64	0.1	5.994	A
B-A	33.26	457.60	0.073	33.35	0.1	8.488	A
C-AB	54.66	609.18	0.090	54.76	0.1	6.496	A
C-A	88.28			88.28			
A-B	44.05			44.05			
A-C	104.28			104.28			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55.71	675.11	0.083	55.79	0.1	5.813	A
B-A	27.86	467.34	0.060	27.92	0.1	8.193	A
C-AB	45.58	612.49	0.074	45.66	0.1	6.351	A
C-A	74.12			74.12			
A-B	36.89			36.89			
A-C	87.33			87.33			

2015, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.93	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2015	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	111.00	100.000
B		✓	94.00	100.000
C		✓	270.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	49.000	62.000
	B	40.000	0.000	54.000
	C	171.000	99.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.09	6.02	0.1	A
B-A	0.10	9.05	0.1	A
C-AB	0.18	6.84	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	40.65	671.54	0.061	40.40	0.1	5.701	A
B-A	30.11	469.29	0.064	29.84	0.1	8.187	A
C-AB	76.41	632.18	0.121	75.85	0.1	6.466	A
C-A	126.86			126.86			
A-B	36.89			36.89			
A-C	46.68			46.68			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	48.54	665.69	0.073	48.49	0.1	5.832	A
B-A	35.96	457.75	0.079	35.89	0.1	8.533	A
C-AB	92.24	635.08	0.145	92.10	0.2	6.628	A
C-A	150.48			150.48			
A-B	44.05			44.05			
A-C	55.74			55.74			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59.46	657.54	0.090	59.37	0.1	6.018	A
B-A	44.04	441.87	0.100	43.94	0.1	9.045	A
C-AB	115.06	641.20	0.179	114.85	0.2	6.838	A
C-A	182.21			182.21			
A-B	53.95			53.95			
A-C	68.26			68.26			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59.46	657.46	0.090	59.45	0.1	6.019	A
B-A	44.04	441.82	0.100	44.04	0.1	9.049	A
C-AB	115.06	641.20	0.179	115.06	0.2	6.842	A
C-A	182.21			182.21			
A-B	53.95			53.95			
A-C	68.26			68.26			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	48.54	665.56	0.073	48.62	0.1	5.835	A
B-A	35.96	457.68	0.079	36.06	0.1	8.541	A
C-AB	92.24	635.08	0.145	92.45	0.2	6.639	A
C-A	150.48			150.48			
A-B	44.05			44.05			
A-C	55.74			55.74			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	40.65	671.27	0.061	40.71	0.1	5.711	A
B-A	30.11	469.15	0.064	30.18	0.1	8.202	A
C-AB	76.41	632.18	0.121	76.56	0.1	6.480	A
C-A	126.86			126.86			
A-B	36.89			36.89			
A-C	46.68			46.68			

2020 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.82	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2020 Base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	181.00	100.000
B		✓	121.00	100.000
C		✓	174.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	54.000	127.000
	B	40.000	0.000	81.000
	C	108.000	66.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.14	6.40	0.2	A
B-A	0.10	9.17	0.1	A
C-AB	0.12	6.80	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	60.98	672.17	0.091	60.58	0.1	5.882	A
B-A	30.11	462.31	0.065	29.84	0.1	8.319	A
C-AB	50.24	610.76	0.082	49.88	0.1	6.414	A
C-A	80.76			80.76			
A-B	40.65			40.65			
A-C	95.61			95.61			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	72.82	663.65	0.110	72.72	0.1	6.092	A
B-A	35.96	451.57	0.080	35.89	0.1	8.659	A
C-AB	60.29	607.41	0.099	60.20	0.1	6.579	A
C-A	96.13			96.13			
A-B	48.54			48.54			
A-C	114.17			114.17			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	89.18	651.80	0.137	89.04	0.2	6.395	A
B-A	44.04	436.62	0.101	43.94	0.1	9.166	A
C-AB	74.48	603.74	0.123	74.35	0.1	6.798	A
C-A	117.10			117.10			
A-B	59.46			59.46			
A-C	139.83			139.83			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	89.18	651.73	0.137	89.18	0.2	6.398	A
B-A	44.04	436.59	0.101	44.04	0.1	9.170	A
C-AB	74.48	603.74	0.123	74.47	0.1	6.801	A
C-A	117.10			117.10			
A-B	59.46			59.46			
A-C	139.83			139.83			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	72.82	663.53	0.110	72.95	0.1	6.098	A
B-A	35.96	451.53	0.080	36.06	0.1	8.668	A
C-AB	60.29	607.41	0.099	60.41	0.1	6.584	A
C-A	96.13			96.13			
A-B	48.54			48.54			
A-C	114.17			114.17			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	60.98	671.92	0.091	61.08	0.1	5.896	A
B-A	30.11	462.24	0.065	30.18	0.1	8.333	A
C-AB	50.24	610.76	0.082	50.32	0.1	6.426	A
C-A	80.76			80.76			
A-B	40.65			40.65			
A-C	95.61			95.61			

2020 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.00	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2020 Base	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	122.00	100.000
B		✓	103.00	100.000
C		✓	295.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	54.000	68.000
	B	44.000	0.000	59.000
	C	187.000	108.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.10	6.12	0.1	A
B-A	0.11	9.34	0.1	A
C-AB	0.20	6.95	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.42	668.45	0.066	44.14	0.1	5.763	A
B-A	33.13	463.97	0.071	32.82	0.1	8.343	A
C-AB	83.77	633.27	0.132	83.15	0.2	6.537	A
C-A	138.32			138.32			
A-B	40.65			40.65			
A-C	51.19			51.19			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53.04	661.93	0.080	52.98	0.1	5.911	A
B-A	39.56	451.32	0.088	39.48	0.1	8.741	A
C-AB	101.34	637.14	0.159	101.18	0.2	6.715	A
C-A	163.86			163.86			
A-B	48.54			48.54			
A-C	61.13			61.13			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64.96	652.76	0.100	64.87	0.1	6.123	A
B-A	48.44	433.91	0.112	48.33	0.1	9.333	A
C-AB	126.88	645.03	0.197	126.62	0.3	6.944	A
C-A	197.92			197.92			
A-B	59.46			59.46			
A-C	74.87			74.87			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64.96	652.67	0.100	64.96	0.1	6.124	A
B-A	48.44	433.85	0.112	48.44	0.1	9.340	A
C-AB	126.88	645.03	0.197	126.87	0.3	6.950	A
C-A	197.92			197.92			
A-B	59.46			59.46			
A-C	74.87			74.87			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53.04	661.78	0.080	53.13	0.1	5.917	A
B-A	39.56	451.24	0.088	39.67	0.1	8.750	A
C-AB	101.34	637.14	0.159	101.58	0.2	6.725	A
C-A	163.86			163.86			
A-B	48.54			48.54			
A-C	61.13			61.13			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.42	668.16	0.066	44.48	0.1	5.772	A
B-A	33.13	463.80	0.071	33.20	0.1	8.363	A
C-AB	83.77	633.27	0.132	83.94	0.2	6.557	A
C-A	138.32			138.32			
A-B	40.65			40.65			
A-C	51.19			51.19			

2020 Base plus Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.88	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D5	2020 Base plus Dev	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	181.00	100.000
B		✓	195.00	100.000
C		✓	195.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	54.000	127.000
	B	59.000	0.000	136.000
	C	108.000	87.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.23	7.28	0.3	A
B-A	0.15	10.08	0.2	B
C-AB	0.16	7.07	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	102.39	669.95	0.153	101.67	0.2	6.327	A
B-A	44.42	452.94	0.098	43.99	0.1	8.794	A
C-AB	66.45	612.89	0.108	65.96	0.1	6.577	A
C-A	80.35			80.35			
A-B	40.65			40.65			
A-C	95.61			95.61			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	122.26	659.52	0.185	122.07	0.2	6.697	A
B-A	53.04	440.30	0.120	52.93	0.1	9.290	A
C-AB	79.87	610.48	0.131	79.75	0.2	6.781	A
C-A	95.43			95.43			
A-B	48.54			48.54			
A-C	114.17			114.17			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	149.74	644.54	0.232	149.44	0.3	7.266	A
B-A	64.96	422.15	0.154	64.78	0.2	10.068	B
C-AB	98.93	608.41	0.163	98.75	0.2	7.062	A
C-A	115.77			115.77			
A-B	59.46			59.46			
A-C	139.83			139.83			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	149.74	644.42	0.232	149.73	0.3	7.276	A
B-A	64.96	422.07	0.154	64.96	0.2	10.080	B
C-AB	98.93	608.41	0.163	98.93	0.2	7.065	A
C-A	115.77			115.77			
A-B	59.46			59.46			
A-C	139.83			139.83			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	122.26	659.33	0.185	122.55	0.2	6.709	A
B-A	53.04	440.20	0.120	53.21	0.1	9.308	A
C-AB	79.87	610.48	0.131	80.05	0.2	6.791	A
C-A	95.43			95.43			
A-B	48.54			48.54			
A-C	114.17			114.17			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	102.39	669.60	0.153	102.58	0.2	6.352	A
B-A	44.42	452.77	0.098	44.53	0.1	8.820	A
C-AB	66.45	612.89	0.108	66.58	0.1	6.590	A
C-A	80.35			80.35			
A-B	40.65			40.65			
A-C	95.61			95.61			

2020 Base plus Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.95	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D6	2020 Base plus Dev	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	122.00	100.000
B		✓	141.00	100.000
C		✓	345.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	54.000	68.000
	B	53.000	0.000	88.000
	C	187.000	158.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.15	6.47	0.2	A
B-A	0.14	10.26	0.2	B
C-AB	0.29	7.62	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66.25	672.62	0.099	65.82	0.1	5.929	A
B-A	39.90	445.77	0.090	39.51	0.1	8.853	A
C-AB	124.22	641.89	0.194	123.23	0.2	6.928	A
C-A	135.51			135.51			
A-B	40.65			40.65			
A-C	51.19			51.19			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	79.11	664.89	0.119	79.01	0.1	6.144	A
B-A	47.65	430.51	0.111	47.54	0.1	9.398	A
C-AB	151.14	649.52	0.233	150.86	0.3	7.216	A
C-A	159.01			159.01			
A-B	48.54			48.54			
A-C	61.13			61.13			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	96.89	653.70	0.148	96.74	0.2	6.462	A
B-A	58.35	409.47	0.143	58.19	0.2	10.244	B
C-AB	191.01	663.78	0.288	190.54	0.4	7.604	A
C-A	188.84			188.84			
A-B	59.46			59.46			
A-C	74.87			74.87			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	96.89	653.57	0.148	96.89	0.2	6.466	A
B-A	58.35	409.34	0.143	58.35	0.2	10.256	B
C-AB	191.01	663.78	0.288	191.00	0.4	7.620	A
C-A	188.84			188.84			
A-B	59.46			59.46			
A-C	74.87			74.87			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	79.11	664.68	0.119	79.26	0.1	6.150	A
B-A	47.65	430.32	0.111	47.80	0.1	9.416	A
C-AB	151.14	649.52	0.233	151.60	0.3	7.238	A
C-A	159.01			159.01			
A-B	48.54			48.54			
A-C	61.13			61.13			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66.25	672.24	0.099	66.36	0.1	5.942	A
B-A	39.90	445.44	0.090	40.01	0.1	8.883	A
C-AB	124.22	641.89	0.194	124.52	0.3	6.965	A
C-A	135.51			135.51			
A-B	40.65			40.65			
A-C	51.19			51.19			

S|C|P

APPENDIX 12

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Picady Barnsley Rd_St Johns Road priority.j9
Path: Z:\Job Library\2014\14923 - Carrs Lane, Cudworth, Barnsley\Traffic Data\Models\JUnction Models and PDF outputs
Report generation date: 05/10/2015 10:53:27

»2015, AM
»2015, PM
»2020 base, AM
»2020 base, PM
»2020 base plus Dev, AM
»2020 base plus Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2015							
Stream B-C	0.2	6.98	0.20	A	0.1	6.60	0.10	A
Stream B-A	0.2	10.87	0.19	B	0.2	10.70	0.14	B
Stream C-AB	0.2	6.93	0.16	A	0.2	7.42	0.17	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 base							
Stream B-C	0.3	7.34	0.22	A	0.1	6.90	0.11	A
Stream B-A	0.3	11.63	0.21	B	0.2	11.63	0.16	B
Stream C-AB	0.2	7.04	0.18	A	0.3	7.61	0.19	A
Stream C-A								
Stream A-B								
Stream A-C								
	2020 base plus Dev							
Stream B-C	0.3	8.03	0.23	A	0.1	7.28	0.12	A
Stream B-A	0.4	13.03	0.31	B	0.3	12.29	0.22	B
Stream C-AB	0.2	7.08	0.18	A	0.3	7.74	0.19	A
Stream C-A								
Stream A-B								
Stream A-C								

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	05/10/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP"tony harrigan
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2015	AM	ONE HOUR	08:00	09:30	15
2015	PM	ONE HOUR	17:00	18:30	15
2020 base	AM	ONE HOUR	08:00	09:30	15
2020 base	PM	ONE HOUR	17:00	18:30	15
2020 base plus Dev	AM	ONE HOUR	08:00	09:30	15
2020 base plus Dev	PM	ONE HOUR	17:00	18:30	15

2015, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	untitled		Minor
C	untitled		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.10			120.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	9.94	5.47	4.08	3.71	3.59	✓	1.00	23	78

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	550.044	0.091	0.230	0.145	0.329
1	B-C	753.431	0.105	0.265	-	-
1	C-B	643.457	0.227	0.227	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2015	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	295.00	100.000
B		✓	184.00	100.000
C		✓	355.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	64.000	231.000
	B	70.000	0.000	114.000
	C	273.000	82.000	0.000

Vehicle Mix

Heavy Vehicle proportion

	To			
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.20	6.98	0.2	A
B-A	0.19	10.87	0.2	B
C-AB	0.16	6.93	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	85.83	680.70	0.126	85.25	0.1	6.041	A
B-A	52.70	454.62	0.116	52.18	0.1	8.933	A
C-AB	63.96	614.54	0.104	63.48	0.1	6.527	A
C-A	203.30			203.30			
A-B	48.18			48.18			
A-C	173.91			173.91			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	102.48	664.72	0.154	102.33	0.2	6.399	A
B-A	62.93	435.43	0.145	62.78	0.2	9.656	A
C-AB	77.63	614.39	0.126	77.51	0.2	6.706	A
C-A	241.50			241.50			
A-B	57.53			57.53			
A-C	207.66			207.66			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	125.52	641.46	0.196	125.28	0.2	6.971	A
B-A	77.07	408.41	0.189	76.82	0.2	10.849	B
C-AB	97.83	617.50	0.158	97.62	0.2	6.923	A
C-A	293.03			293.03			
A-B	70.47			70.47			
A-C	254.34			254.34			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	125.52	641.27	0.196	125.51	0.2	6.979	A
B-A	77.07	408.36	0.189	77.06	0.2	10.866	B
C-AB	97.83	617.50	0.158	97.82	0.2	6.930	A
C-A	293.03			293.03			
A-B	70.47			70.47			
A-C	254.34			254.34			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	102.48	664.42	0.154	102.72	0.2	6.411	A
B-A	62.93	435.37	0.145	63.17	0.2	9.678	A
C-AB	77.63	614.39	0.126	77.83	0.2	6.714	A
C-A	241.50			241.50			
A-B	57.53			57.53			
A-C	207.66			207.66			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	85.83	680.21	0.126	85.98	0.1	6.059	A
B-A	52.70	454.52	0.116	52.85	0.1	8.965	A
C-AB	63.96	614.54	0.104	64.09	0.1	6.543	A
C-A	203.30			203.30			
A-B	48.18			48.18			
A-C	173.91			173.91			

2015, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.71	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2015	PM	ONE HOUR	17:00	18:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	441.00	100.000
B		✓	103.00	100.000
C		✓	352.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	105.000	336.000
	B	49.000	0.000	54.000
	C	270.000	82.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.10	6.60	0.1	A
B-A	0.14	10.70	0.2	B
C-AB	0.17	7.42	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	40.65	648.17	0.063	40.39	0.1	5.920	A
B-A	36.89	445.58	0.083	36.53	0.1	8.794	A
C-AB	64.13	590.33	0.109	63.63	0.1	6.830	A
C-A	200.87			200.87			
A-B	79.05			79.05			
A-C	252.96			252.96			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	48.54	630.10	0.077	48.48	0.1	6.189	A
B-A	44.05	422.47	0.104	43.95	0.1	9.509	A
C-AB	78.02	585.97	0.133	77.88	0.2	7.083	A
C-A	238.42			238.42			
A-B	94.39			94.39			
A-C	302.06			302.06			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59.46	604.62	0.098	59.35	0.1	6.602	A
B-A	53.95	390.51	0.138	53.78	0.2	10.685	B
C-AB	98.80	583.78	0.169	98.56	0.2	7.419	A
C-A	288.76			288.76			
A-B	115.61			115.61			
A-C	369.94			369.94			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59.46	604.48	0.098	59.45	0.1	6.604	A
B-A	53.95	390.47	0.138	53.95	0.2	10.697	B
C-AB	98.80	583.78	0.169	98.79	0.2	7.424	A
C-A	288.76			288.76			
A-B	115.61			115.61			
A-C	369.94			369.94			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	48.54	629.87	0.077	48.64	0.1	6.194	A
B-A	44.05	422.42	0.104	44.22	0.1	9.522	A
C-AB	78.02	585.97	0.133	78.25	0.2	7.096	A
C-A	238.42			238.42			
A-B	94.39			94.39			
A-C	302.06			302.06			

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	40.65	647.80	0.063	40.72	0.1	5.932	A
B-A	36.89	445.49	0.083	37.00	0.1	8.814	A
C-AB	64.13	590.33	0.109	64.28	0.1	6.847	A
C-A	200.87			200.87			
A-B	79.05			79.05			
A-C	252.96			252.96			

2020 base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.73	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2020 base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	322.00	100.000
B		✓	202.00	100.000
C		✓	388.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	70.000	252.000
	B	77.000	0.000	125.000
	C	298.000	90.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.22	7.34	0.3	A
B-A	0.21	11.63	0.3	B
C-AB	0.18	7.04	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	94.11	673.11	0.140	93.46	0.2	6.204	A
B-A	57.97	445.62	0.130	57.38	0.1	9.259	A
C-AB	70.73	614.37	0.115	70.19	0.1	6.610	A
C-A	221.38			221.38			
A-B	52.70			52.70			
A-C	189.72			189.72			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112.37	655.10	0.172	112.20	0.2	6.629	A
B-A	69.22	424.43	0.163	69.04	0.2	10.124	B
C-AB	86.16	615.39	0.140	86.01	0.2	6.798	A
C-A	262.64			262.64			
A-B	62.93			62.93			
A-C	226.54			226.54			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	137.63	628.42	0.219	137.34	0.3	7.325	A
B-A	84.78	394.45	0.215	84.47	0.3	11.601	B
C-AB	109.25	620.88	0.176	109.01	0.2	7.032	A
C-A	317.95			317.95			
A-B	77.07			77.07			
A-C	277.46			277.46			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	137.63	628.16	0.219	137.62	0.3	7.338	A
B-A	84.78	394.38	0.215	84.77	0.3	11.627	B
C-AB	109.25	620.88	0.176	109.24	0.2	7.037	A
C-A	317.95			317.95			
A-B	77.07			77.07			
A-C	277.46			277.46			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112.37	654.73	0.172	112.65	0.2	6.646	A
B-A	69.22	424.35	0.163	69.52	0.2	10.155	B
C-AB	86.16	615.39	0.140	86.39	0.2	6.808	A
C-A	262.64			262.64			
A-B	62.93			62.93			
A-C	226.54			226.54			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	94.11	672.55	0.140	94.29	0.2	6.226	A
B-A	57.97	445.48	0.130	58.15	0.2	9.298	A
C-AB	70.73	614.37	0.115	70.88	0.1	6.625	A
C-A	221.38			221.38			
A-B	52.70			52.70			
A-C	189.72			189.72			

2020 base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.77	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2020 base	PM	ONE HOUR	17:00	18:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	495.00	100.000
B		✓	113.00	100.000
C		✓	397.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	115.000	380.000
	B	54.000	0.000	59.000
	C	307.000	90.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.11	6.90	0.1	A
B-A	0.16	11.63	0.2	B
C-AB	0.19	7.61	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.42	636.63	0.070	44.12	0.1	6.073	A
B-A	40.65	431.09	0.094	40.24	0.1	9.202	A
C-AB	71.15	587.05	0.121	70.58	0.1	6.963	A
C-A	227.73			227.73			
A-B	86.58			86.58			
A-C	286.08			286.08			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53.04	616.04	0.086	52.96	0.1	6.393	A
B-A	48.54	405.05	0.120	48.42	0.1	10.091	B
C-AB	87.04	583.80	0.149	86.87	0.2	7.243	A
C-A	269.85			269.85			
A-B	103.38			103.38			
A-C	341.61			341.61			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64.96	586.70	0.111	64.84	0.1	6.896	A
B-A	59.46	369.03	0.161	59.24	0.2	11.612	B
C-AB	111.37	584.41	0.191	111.07	0.3	7.603	A
C-A	325.74			325.74			
A-B	126.62			126.62			
A-C	418.39			418.39			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64.96	586.51	0.111	64.96	0.1	6.901	A
B-A	59.46	368.98	0.161	59.45	0.2	11.630	B
C-AB	111.37	584.41	0.191	111.36	0.3	7.612	A
C-A	325.74			325.74			
A-B	126.62			126.62			
A-C	418.39			418.39			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53.04	615.75	0.086	53.16	0.1	6.402	A
B-A	48.54	404.99	0.120	48.76	0.1	10.113	B
C-AB	87.04	583.80	0.149	87.33	0.2	7.258	A
C-A	269.85			269.85			
A-B	103.38			103.38			
A-C	341.61			341.61			

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.42	636.19	0.070	44.50	0.1	6.086	A
B-A	40.65	430.97	0.094	40.78	0.1	9.229	A
C-AB	71.15	587.05	0.121	71.33	0.1	6.982	A
C-A	227.73			227.73			
A-B	86.58			86.58			
A-C	286.08			286.08			

2020 base plus Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.29	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D5	2020 base plus Dev	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	336.00	100.000
B		✓	238.00	100.000
C		✓	388.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	84.000	252.000
	B	113.000	0.000	125.000
	C	298.000	90.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.23	8.03	0.3	A
B-A	0.31	13.03	0.4	B
C-AB	0.18	7.08	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	94.11	644.49	0.146	93.43	0.2	6.524	A
B-A	85.07	455.04	0.187	84.16	0.2	9.684	A
C-AB	70.75	612.09	0.116	70.21	0.1	6.639	A
C-A	221.35			221.35			
A-B	63.24			63.24			
A-C	189.72			189.72			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112.37	621.92	0.181	112.18	0.2	7.057	A
B-A	101.58	432.73	0.235	101.28	0.3	10.851	B
C-AB	86.21	612.72	0.141	86.06	0.2	6.833	A
C-A	262.59			262.59			
A-B	75.51			75.51			
A-C	226.54			226.54			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	137.63	586.44	0.235	137.29	0.3	8.009	A
B-A	124.42	400.79	0.310	123.86	0.4	12.974	B
C-AB	109.38	617.75	0.177	109.13	0.2	7.077	A
C-A	317.82			317.82			
A-B	92.49			92.49			
A-C	277.46			277.46			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	137.63	585.92	0.235	137.62	0.3	8.030	A
B-A	124.42	400.70	0.311	124.40	0.4	13.026	B
C-AB	109.38	617.75	0.177	109.37	0.2	7.082	A
C-A	317.82			317.82			
A-B	92.49			92.49			
A-C	277.46			277.46			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112.37	621.24	0.181	112.70	0.2	7.085	A
B-A	101.58	432.64	0.235	102.12	0.3	10.911	B
C-AB	86.21	612.72	0.141	86.45	0.2	6.846	A
C-A	262.59			262.59			
A-B	75.51			75.51			
A-C	226.54			226.54			

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	94.11	643.63	0.146	94.31	0.2	6.557	A
B-A	85.07	454.89	0.187	85.39	0.2	9.750	A
C-AB	70.75	612.09	0.116	70.91	0.1	6.653	A
C-A	221.35			221.35			
A-B	63.24			63.24			
A-C	189.72			189.72			

2020 base plus Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.97	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D6	2020 base plus Dev	PM	ONE HOUR	17:00	18:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	528.00	100.000
B		✓	132.00	100.000
C		✓	397.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	148.000	380.000
	B	73.000	0.000	59.000
	C	307.000	90.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	7.28	0.1	A
B-A	0.22	12.29	0.3	B
C-AB	0.19	7.74	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.42	614.90	0.072	44.11	0.1	6.304	A
B-A	54.96	438.09	0.125	54.39	0.1	9.370	A
C-AB	71.22	581.71	0.122	70.64	0.1	7.037	A
C-A	227.66			227.66			
A-B	111.42			111.42			
A-C	286.08			286.08			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53.04	592.41	0.090	52.96	0.1	6.673	A
B-A	65.63	410.95	0.160	65.44	0.2	10.414	B
C-AB	87.20	577.60	0.151	87.02	0.2	7.337	A
C-A	269.70			269.70			
A-B	133.05			133.05			
A-C	341.61			341.61			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64.96	559.54	0.116	64.83	0.1	7.275	A
B-A	80.37	373.37	0.215	80.05	0.3	12.259	B
C-AB	111.76	577.21	0.194	111.46	0.3	7.728	A
C-A	325.34			325.34			
A-B	162.95			162.95			
A-C	418.39			418.39			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64.96	559.26	0.116	64.96	0.1	7.282	A
B-A	80.37	373.31	0.215	80.37	0.3	12.288	B
C-AB	111.76	577.21	0.194	111.76	0.3	7.739	A
C-A	325.34			325.34			
A-B	162.95			162.95			
A-C	418.39			418.39			

Main results: (18:00-18:15)

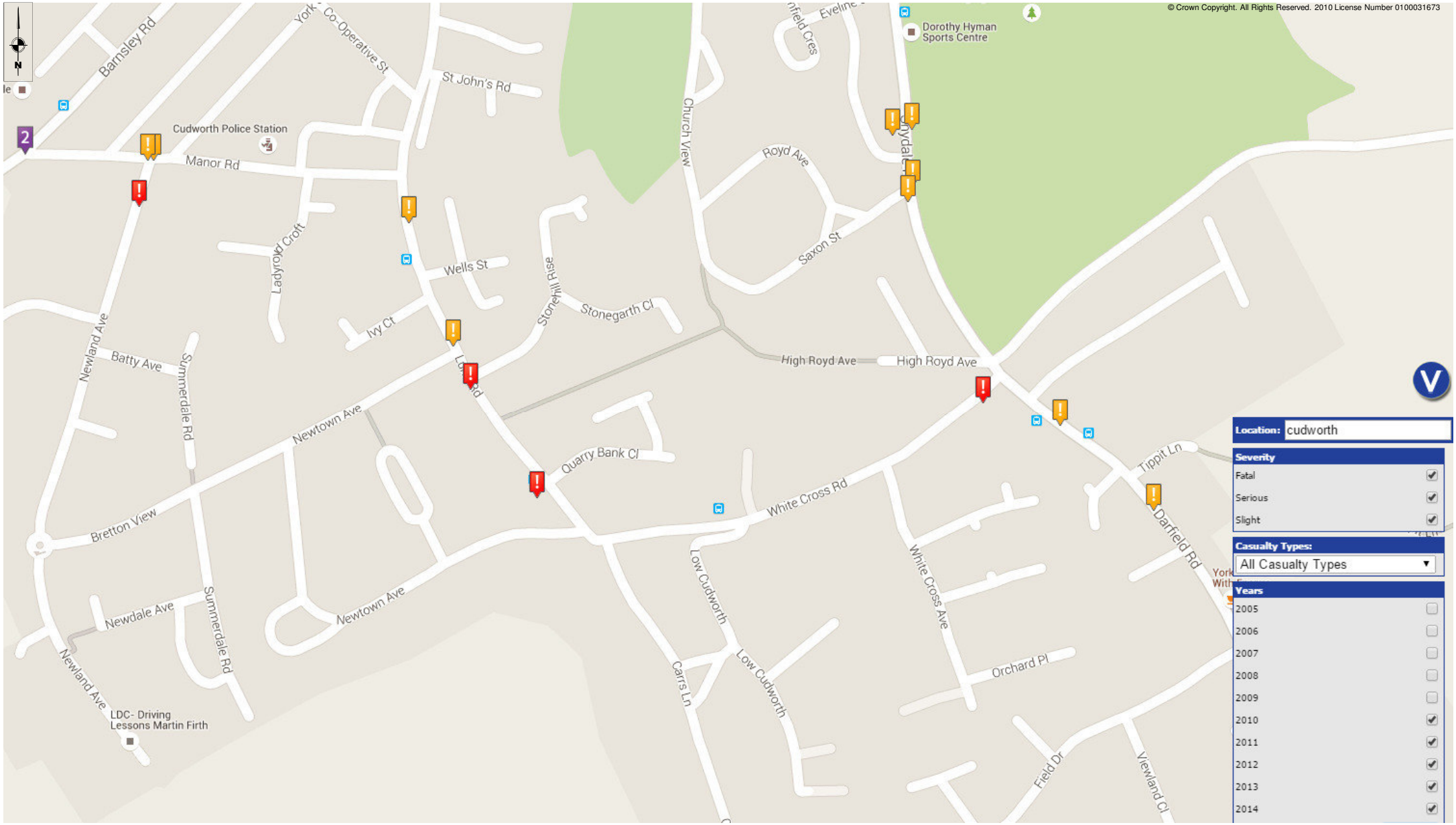
Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53.04	592.01	0.090	53.17	0.1	6.684	A
B-A	65.63	410.89	0.160	65.94	0.2	10.447	B
C-AB	87.20	577.60	0.151	87.50	0.2	7.350	A
C-A	269.70			269.70			
A-B	133.05			133.05			
A-C	341.61			341.61			

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	44.42	614.37	0.072	44.50	0.1	6.317	A
B-A	54.96	437.96	0.125	55.15	0.1	9.408	A
C-AB	71.22	581.71	0.122	71.40	0.1	7.057	A
C-A	227.66			227.66			
A-B	111.42			111.42			
A-C	286.08			286.08			

S|C|P

APPENDIX 13



SCP Transportation Planning : Infrastructure Design www.scptransport.co.uk	Project Title: PROPOSED RESIDENTIAL DEVELOPMENT, CARRS LANE, CUDWORTH	Drawing Title: ACCIDENT LOCATIONS (Jan 2010 – dec2014)	Scale: NTS@ A3	By: TH	Rev	Description	Date	By	
			Date: 15.09.2015	Checked: GWB	-	-	-	-	Revision: A
			Approved/Unapproved	Status: PLANNING	-	-	-	-	

S|C|P

APPENDIX 14

Rev	Description	Date	Drawn	Chk'd
AA	Plots 207-208 moved 500mm closer towards Plot 205.	25.04.17	SJW	
Z	Layout updated to account for Plots 276-279 being handed, Plots 280-281 moved 1m away from the side of Block A, parking court for Plots 267, 268 & 270 and Plot 267 has moved 500mm closer towards 40 Carrs Lane.	20.04.17	SJW	
Y	Layout updated to account for new pole and stays for the overhead wires opposite Plots 33-24.	17.03.17	SJW	
X	Layout updated to account for Detached, Ends and Mid's being added to House type schedule.	22.07.16	BMG	
W	Plots 1-6 reconfigured, Plots 73-81 moved 1m towards Plot 74, Plot 238 moved 1m away from Plot 235 and Plots 229-231 moved towards Plot 225.	20.06.16	SJW	
V	Updated to suit Dikkon comments.	24.05.16	SJW	
U	Updated to suit Dikkon comments.	18.05.16	SJW	
T	Generally updated.	27.04.16	SJW	
S	Layout updated with new Barratt 2016 Range.	07.04.16	SJW	
R	Additional spaces added to Plots 11 & 12. Footpaths and lane added.	21.01.16	PJL	

Urban Design
Barratt House
Forest Business Park
Bardon Hill
Leicestershire
LE67 1UB

01530 276276

Project

Cudworth

Land at Carrs Lane and Newland Avenue

Drawing Title

Proposed Site Layout

Scale
1:500 @ A0

Date
06.07.15

Drawn By
SJW

Drawing Ref
YW-04-03 AA

BARRATT HOMES

Within printing is scale, please ensure that your printer settings are set to Page Scaling = None. Do not allow any fit to page settings as this will alter the scale of the drawing. You can use the scale bar or grid to check the printed drawing.

Disclaimer

Images and site layout are intended for illustrative purposes only and should be treated as general guidance only.

Site layout including parking arrangements, (socials' affordable housing, community buildings, play areas and public open spaces) may change to reflect changes in the planning permission for the development. Please speak to your solicitor to whom full details of any planning consents including layout plans will be available.

Site layouts and landscaping are not intended to form part of any contract or warranty unless specifically incorporated in writing into the contract.

[The name of this development is a marketing name only and may not be the designated postal address, which may be determined by The Post Office].

Schedule of Accommodation

House Type	No.	Sq. Ft.	Total
Private			
Washington - End	15	615	9225
Washington - Mid	1	615	615
Halton	13	1268	16484
Maidstone - End	22	830	18260
Maidstone - Mid	8	830	6640
Folkstone - End	44	830	36520
Folkstone - Mid	5	830	4150
Windermere	19	1074	20406
Ennerdale - Det	15	916	13740
Ennerdale - End	10	916	9160
Chester	9	1032	9288
Kingsley	29	1079	31291
Eskdale - Det	6	1058	6348
Eskdale - End	8	1058	8464
Ripon	12	1120	13440
Radleigh	24	1316	31584
Aldemey	23	1225	28175
Total	**263**		**263790**
Bungalows			
Alford	9	800	7200
Beattie - End	6	594	3564
Total	**15**		**10764**
Combined Total	**278**		**274,554**
Gross Site Area	28.70		Acres
Nett Developable Area	19.60		Acres
Scheme Density	14.18		Dwellings/Acre
Scheme Coverage	14008		SQ FT /Acre

Legend

- Large garage (Ref: GW21)
- Proposed dwelling and house type code
- Denotes door position(s)
- Denotes gable & additional windows to habitable rooms
- Denotes handing of plot
- 1800mm high screen wall
- 1800mm high close board timber fence
- 450mm high Tanner knee-rail fence
- 900mm high metal rail fence
- 1500mm 4 bar timber rail fence
- Boundary treatment E:
- Boundary treatment F:
- Soft landscaping within privately deeded areas
- Soft landscaping areas within POS
- Proposed trees shown indicatively
- Existing landscaping retained

For further information relating to housetype proposals please refer to individual the housetype plans & elevations

For further information relating to proposed boundary treatments please refer to the proposed boundary treatments layout and boundary treatment details sheet

For further details relating to soft landscaping proposals please refer to the proposed landscape layout

Existing features retained shown indicatively and retention subject to survey

Scale Bar

0m 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m 60m 70m 80m 90m 100m

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APPENDIX 15



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NOTES

REVISIONS

REV	DESCRIPTION	DATE	BY
-	-	-	-
	-		

S C P
Transportation Planning : Infrastructure Design
Riverside Studio, 32 The Calls, Leeds, LS2 7EW, Tel 0113 887 3323
www.scptransport.co.uk, Email info@scptransport.co.uk

Client Name:
BARRATT HOMES

Project Title:
PROPOSED RESIDENTIAL DEVELOPMENT
CARRS LANE, CUDWORTH

Drawing Title:
SITE ACCESS VISIBILITY SPLAYS (CARRS LANE)

Drawn By:	Date:
TH	OCT 2015
Checked: GWB	Scale: 1:500 @ A3
Status: PLANNING	Approved/Unapproved: -

Drawing No. SCP/14923/SK013 | Rev. -

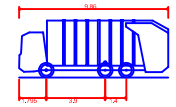
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APPENDIX 16



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NOTES



Large Refuse Vehicle (3 axle)

Overall Length	9.860m
Overall Width	2.450m
Overall Body Height	3.814m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	9.500m

REVISIONS

REV	DESCRIPTION	DATE	BY
-	-	-	-
	-		

S C P

Transportation Planning : Infrastructure Design

Riverside Studio, 32 The Calls, Leeds, LS2 7EW, Tel 0113 887 3323
www.scptransport.co.uk, Email info@scptransport.co.uk

Client Name:

BARRATT HOMES

Project Title:

PROPOSED RESIDENTIAL DEVELOPMENT
CARRS LANE, CUDWORTH

Drawing Title:

SWEPT PATH ASSESSMENT
LARGE REFUSE VEHICLE

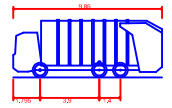
Drawn By: TH	Date: OCT 2015
Checked: GWB	Scale: 1:1000 @ A3
Status: PLANNING	Approved/Unapproved: -

Drawing No.	Rev.
SCP/14923/SK011	C



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NOTES



Large Refuse Vehicle (3 axle)

Overall Length	9.860m
Overall Width	2.450m
Overall Body Height	3.814m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	9.500m

REVISIONS

REV	DESCRIPTION	DATE	BY
-	-	-	-
	-		

S C P

Transportation Planning : Infrastructure Design

Riverside Studio, 32 The Calls, Leeds, LS2 7EW, Tel 0113 887 3323
www.scptransport.co.uk, Email info@scptransport.co.uk

Client Name:

BARRATT HOMES

Project Title:

PROPOSED RESIDENTIAL DEVELOPMENT
CARRS LANE, CUDWORTH

Drawing Title:

SWEPT PATH ASSESSMENT
LARGE REFUSE VEHICLE

Drawn By:	Date:
TH	OCT 2015
Checked:	Scale:
GWB	1:1000 @ A3
Status:	Approved/Unapproved:
PLANNING	-

Drawing No.	Rev.
SCP/14923/SK012	C

S|C|P

APPENDIX 17

Calculation Reference: AUDIT-726002-150727-0702

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

MULTI-MODAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
	EX	ESSEX	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	1 days
03	**SOUTH WEST**		
	CW	CORNWALL	1 days
	DC	DORSET	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	2 days
	SF	SUFFOLK	3 days
05	**EAST MIDLANDS**		
	LN	LINCOLNSHIRE	3 days
06	**WEST MIDLANDS**		
	SH	SHROPSHIRE	4 days
	ST	STAFFORDSHIRE	1 days
	WK	WARWICKSHIRE	2 days
	WM	WEST MIDLANDS	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NE	NORTH EAST LINCOLNSHIRE	1 days
	NY	NORTH YORKSHIRE	5 days
	SY	SOUTH YORKSHIRE	1 days
08	**NORTH WEST**		
	CH	CHESHIRE	3 days
	GM	GREATER MANCHESTER	1 days
	MS	MERSEYSIDE	1 days
09	**NORTH**		
	CB	CUMBRIA	2 days
	TW	TYNE & WEAR	1 days
10	**WALES**		
	CF	CARDIFF	2 days
11	**SCOTLAND**		
	AD	ABERDEEN CITY	1 days
	AG	ANGUS	1 days
	EA	EAST AYRSHIRE	1 days
	FA	FALKIRK	2 days
	FI	FIFE	1 days
	HI	HIGHLAND	2 days
	PK	PERTH & KINROSS	1 days
	SR	STIRLING	1 days

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

Filtering Stage 2 selection:

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

Parameter:	Number of dwellings
Actual Range:	6 to 432 (units:)
Range Selected by User:	6 to 491 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 11/12/14

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

Selected survey days:

Monday	11 days
Tuesday	12 days
Wednesday	7 days
Thursday	11 days
Friday	9 days

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

Selected survey types:

Manual count	50 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	27
Edge of Town	23

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

Selected Location Sub Categories:

Residential Zone	44
No Sub Category	6

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

Filtering Stage 3 selection:

Use Class:

C1	1 days
C3	48 days

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

Filtering Stage 3 selection (Cont.):

Population within 1 mile:

1,001 to 5,000	5 days
5,001 to 10,000	10 days
10,001 to 15,000	8 days
15,001 to 20,000	15 days
20,001 to 25,000	7 days
25,001 to 50,000	5 days

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

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	6 days
50,001 to 75,000	4 days
75,001 to 100,000	14 days
100,001 to 125,000	7 days
125,001 to 250,000	9 days
250,001 to 500,000	7 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	17 days
1.1 to 1.5	33 days

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

Travel Plan:

Yes	2 days
No	48 days

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

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

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	50	75	0.077	50	75	0.276	50	75	0.353
08:00 - 09:00	50	75	0.156	**50**	**75**	**0.404**	50	75	0.560
09:00 - 10:00	50	75	0.155	50	75	0.199	50	75	0.354
10:00 - 11:00	50	75	0.141	50	75	0.169	50	75	0.310
11:00 - 12:00	50	75	0.161	50	75	0.164	50	75	0.325
12:00 - 13:00	50	75	0.183	50	75	0.164	50	75	0.347
13:00 - 14:00	50	75	0.176	50	75	0.173	50	75	0.349
14:00 - 15:00	50	75	0.178	50	75	0.192	50	75	0.370
15:00 - 16:00	50	75	0.274	50	75	0.202	50	75	0.476
16:00 - 17:00	50	75	0.314	50	75	0.188	50	75	0.502
17:00 - 18:00	**50**	**75**	**0.362**	50	75	0.210	**50**	**75**	**0.572**
18:00 - 19:00	50	75	0.252	50	75	0.187	50	75	0.439
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.429			2.528			4.957

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

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

Parameter summary

Trip rate parameter range selected:	6 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	50
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

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

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

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	50	75	0.005	50	75	0.016	50	75	0.021
08:00 - 09:00	50	75	0.004	**50**	**75**	**0.022**	50	75	0.026
09:00 - 10:00	50	75	0.003	50	75	0.005	50	75	0.008
10:00 - 11:00	50	75	0.003	50	75	0.007	50	75	0.010
11:00 - 12:00	50	75	0.004	50	75	0.003	50	75	0.007
12:00 - 13:00	50	75	0.005	50	75	0.006	50	75	0.011
13:00 - 14:00	50	75	0.005	50	75	0.003	50	75	0.008
14:00 - 15:00	50	75	0.005	50	75	0.004	50	75	0.009
15:00 - 16:00	**50**	**75**	**0.018**	50	75	0.009	50	75	0.027
16:00 - 17:00	50	75	0.017	50	75	0.012	**50**	**75**	**0.029**
17:00 - 18:00	50	75	0.018	50	75	0.010	50	75	0.028
18:00 - 19:00	50	75	0.011	50	75	0.005	50	75	0.016
19:00 - 20:00	1	7	0.000	1	7	0.000	1	7	0.000
20:00 - 21:00	1	7	0.000	1	7	0.000	1	7	0.000
21:00 - 22:00	1	7	0.000	1	7	0.000	1	7	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.098			0.102			0.200

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

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

Parameter summary

Trip rate parameter range selected:	6 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	50
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

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

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

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	50	75	0.089	50	75	0.337	50	75	0.426
08:00 - 09:00	50	75	0.194	**50**	**75**	**0.603**	**50**	**75**	**0.797**
09:00 - 10:00	50	75	0.187	50	75	0.261	50	75	0.448
10:00 - 11:00	50	75	0.176	50	75	0.219	50	75	0.395
11:00 - 12:00	50	75	0.202	50	75	0.208	50	75	0.410
12:00 - 13:00	50	75	0.236	50	75	0.211	50	75	0.447
13:00 - 14:00	50	75	0.224	50	75	0.226	50	75	0.450
14:00 - 15:00	50	75	0.229	50	75	0.249	50	75	0.478
15:00 - 16:00	50	75	0.428	50	75	0.276	50	75	0.704
16:00 - 17:00	50	75	0.440	50	75	0.268	50	75	0.708
17:00 - 18:00	**50**	**75**	**0.479**	50	75	0.284	50	75	0.763
18:00 - 19:00	50	75	0.334	50	75	0.266	50	75	0.600
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.218			3.408			6.626

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

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

Parameter summary

Trip rate parameter range selected:	6 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	50
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

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

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

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	50	75	0.029	50	75	0.060	50	75	0.089
08:00 - 09:00	50	75	0.046	**50**	**75**	**0.155**	50	75	0.201
09:00 - 10:00	50	75	0.048	50	75	0.058	50	75	0.106
10:00 - 11:00	50	75	0.043	50	75	0.052	50	75	0.095
11:00 - 12:00	50	75	0.037	50	75	0.037	50	75	0.074
12:00 - 13:00	50	75	0.037	50	75	0.032	50	75	0.069
13:00 - 14:00	50	75	0.032	50	75	0.039	50	75	0.071
14:00 - 15:00	50	75	0.050	50	75	0.051	50	75	0.101
15:00 - 16:00	**50**	**75**	**0.150**	50	75	0.074	**50**	**75**	**0.224**
16:00 - 17:00	50	75	0.092	50	75	0.058	50	75	0.150
17:00 - 18:00	50	75	0.076	50	75	0.054	50	75	0.130
18:00 - 19:00	50	75	0.068	50	75	0.051	50	75	0.119
19:00 - 20:00	1	29	0.069	1	29	0.034	1	29	0.103
20:00 - 21:00	1	29	0.034	1	29	0.000	1	29	0.034
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.811			0.755			1.566

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

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

Parameter summary

Trip rate parameter range selected:	6 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	50
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

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

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

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	50	75	0.001	50	75	0.010	50	75	0.011
08:00 - 09:00	50	75	0.002	**50**	**75**	**0.017**	50	75	0.019
09:00 - 10:00	50	75	0.002	50	75	0.009	50	75	0.011
10:00 - 11:00	50	75	0.003	50	75	0.006	50	75	0.009
11:00 - 12:00	50	75	0.005	50	75	0.006	50	75	0.011
12:00 - 13:00	50	75	0.006	50	75	0.009	50	75	0.015
13:00 - 14:00	50	75	0.006	50	75	0.003	50	75	0.009
14:00 - 15:00	50	75	0.006	50	75	0.004	50	75	0.010
15:00 - 16:00	50	75	0.008	50	75	0.006	50	75	0.014
16:00 - 17:00	50	75	0.012	50	75	0.004	50	75	0.016
17:00 - 18:00	**50**	**75**	**0.016**	50	75	0.005	**50**	**75**	**0.021**
18:00 - 19:00	50	75	0.007	50	75	0.000	50	75	0.007
19:00 - 20:00	1	73	0.000	1	73	0.000	1	73	0.000
20:00 - 21:00	1	73	0.000	1	73	0.000	1	73	0.000
21:00 - 22:00	1	73	0.000	1	73	0.000	1	73	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.074			0.079			0.153

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

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

Parameter summary

Trip rate parameter range selected:	6 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	50
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

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

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

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	50	75	0.124	50	75	0.423	50	75	0.547
08:00 - 09:00	50	75	0.246	**50**	**75**	**0.796**	**50**	**75**	**1.042**
09:00 - 10:00	50	75	0.241	50	75	0.332	50	75	0.573
10:00 - 11:00	50	75	0.224	50	75	0.284	50	75	0.508
11:00 - 12:00	50	75	0.249	50	75	0.255	50	75	0.504
12:00 - 13:00	50	75	0.285	50	75	0.258	50	75	0.543
13:00 - 14:00	50	75	0.267	50	75	0.272	50	75	0.539
14:00 - 15:00	50	75	0.291	50	75	0.308	50	75	0.599
15:00 - 16:00	**50**	**75**	**0.604**	50	75	0.365	50	75	0.969
16:00 - 17:00	50	75	0.561	50	75	0.342	50	75	0.903
17:00 - 18:00	50	75	0.590	50	75	0.353	50	75	0.943
18:00 - 19:00	50	75	0.420	50	75	0.322	50	75	0.742
19:00 - 20:00	3	36	0.018	3	36	0.009	3	36	0.027
20:00 - 21:00	3	36	0.009	3	36	0.000	3	36	0.009
21:00 - 22:00	2	40	0.000	2	40	0.000	2	40	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.129			4.319			8.448

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

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Parameter summary

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Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	50
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

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

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APPENDIX 18

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

ONS Crown Copyright Reserved [from Nomis on 27 July 2015]

population All usual residents aged 16 and over in employment the week before the census
units Persons
date 2011
method of travel to w Driving a car or van

Route
1 Barnsley Road South
2 Barnsley Road North
3 Whitecross Road East

	usual residence		Route		
place of work : 2011 super output	Barnsley 008 Cudworth		1	2	3
			47%	31%	20%
Barnsley 013	144		144		
Barnsley 012	88		88		
Barnsley 008	82			82	
Barnsley 002	79		79		
Barnsley 015	70				70
Barnsley 010	53		53		
Barnsley 006	52			52	
Barnsley 011	47		47		
Barnsley 007	45		45		
Rotherham 002	45				45
Barnsley 003	30			30	
Barnsley 028	28		28		
Wakefield 017	27			27	
Barnsley 005	26		26		
Leeds 112	25			25	
Wakefield 044	24			24	
Barnsley 019	22		22		
Barnsley 023	21				21
Barnsley 026	20				20
Rotherham 001	20				20
Doncaster 022	19				19
Sheffield 018	17		17		
Barnsley 017	16		16		
Barnsley 022	15				15
Wakefield 013	15			15	
Leeds 111	14			14	
Wakefield 014	14			14	
Sheffield 004	13		13		
Barnsley 009	12		12		
Barnsley 016	12		12		
Barnsley 030	12		12		
Wakefield 028	12			12	
Wakefield 042	11			11	
Barnsley 021	10				
Wakefield 019	10			10	
Wakefield 035	10			10	
Wakefield 043	10			10	
Barnsley 001	9			9	
Barnsley 014	9				9
Doncaster 028	9				9
Sheffield 022	9		9		
Wakefield 030	9			9	
Barnsley 018	8		8		
Barnsley 020	8				8
Rotherham 017	8				8
Wakefield 037	8			8	
Shropshire 034	8		8		
Barnsley 024	7				7
Wakefield 015	7			7	
Barnsley 004	6		6		
Sheffield 073	6		6		
Wakefield 005	6			3	
Wakefield 022	6			3	
Leeds 071	5			5	
Wakefield 004	5			5	
Wakefield 009	5			5	
Wakefield 016	5			5	
Wakefield 027	5			5	
Selby 004	4			4	
Selby 010	4			4	
Barnsley 029	4		4		
Doncaster 031	4				4
Kirklees 029	4		4		
Kirklees 043	4		4		
Kirklees 057	4		4		
Wakefield 010	4			4	
Wakefield 036	4			4	
Wakefield 039	4			4	
Cotswold 005	4		4		
North Lincolnshire 00	3			3	
Doncaster 004	3				3
Doncaster 018	3				3
Rotherham 008	3				3
Rotherham 018	3				3
Rotherham 023	3				3
Sheffield 026	3		3		
Sheffield 074	3		3		
Kirklees 014	3		3		
Kirklees 025	3		3		
Leeds 055	3			3	
Leeds 090	3			3	
Wakefield 024	3			3	
Wakefield 025	3			3	
Wakefield 032	3			3	
Wakefield 033	3			3	
Wakefield 034	3			3	
North Lincolnshire 00	2				
Harrogate 003	2			2	
Harrogate 012	2			2	
Selby 008	2			2	
Selby 009	2			2	
Barnsley 025	2				2
Barnsley 027	2		2		
Doncaster 002	2				2
Doncaster 008	2				2
Doncaster 015	2				2
Doncaster 020	2				2
Doncaster 036	2				2
Rotherham 003	2				2
Rotherham 005	2				2
Rotherham 006	2				2
TOTAL Column			685	452	288

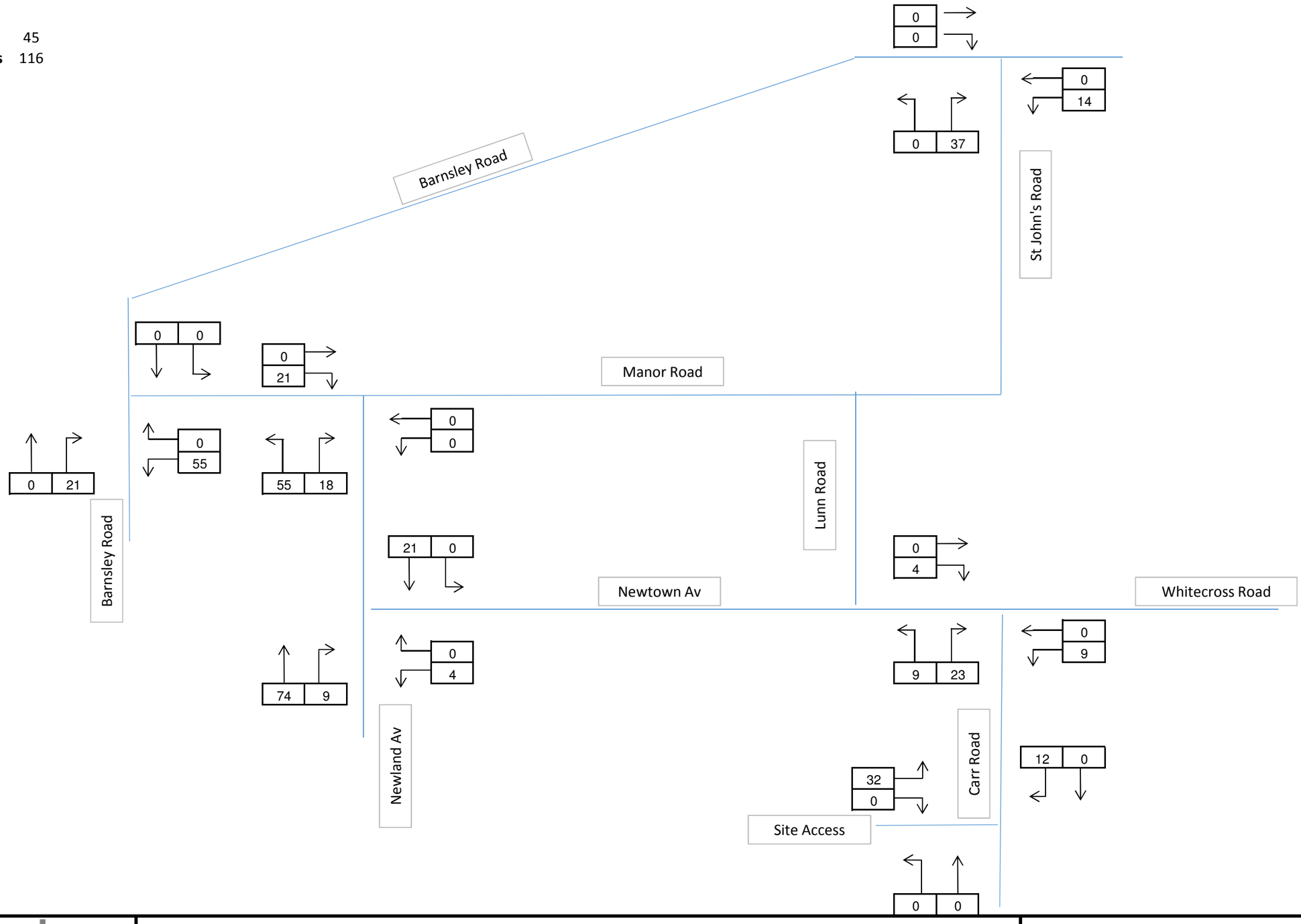
See notes in file percentages have been rounded up.

TOTAL 1,331 not including local trips
TOTAL 1,443 including Local Trips
Total 112 Local Trips 7.8% percent

S|C|P

APPENDIX 19

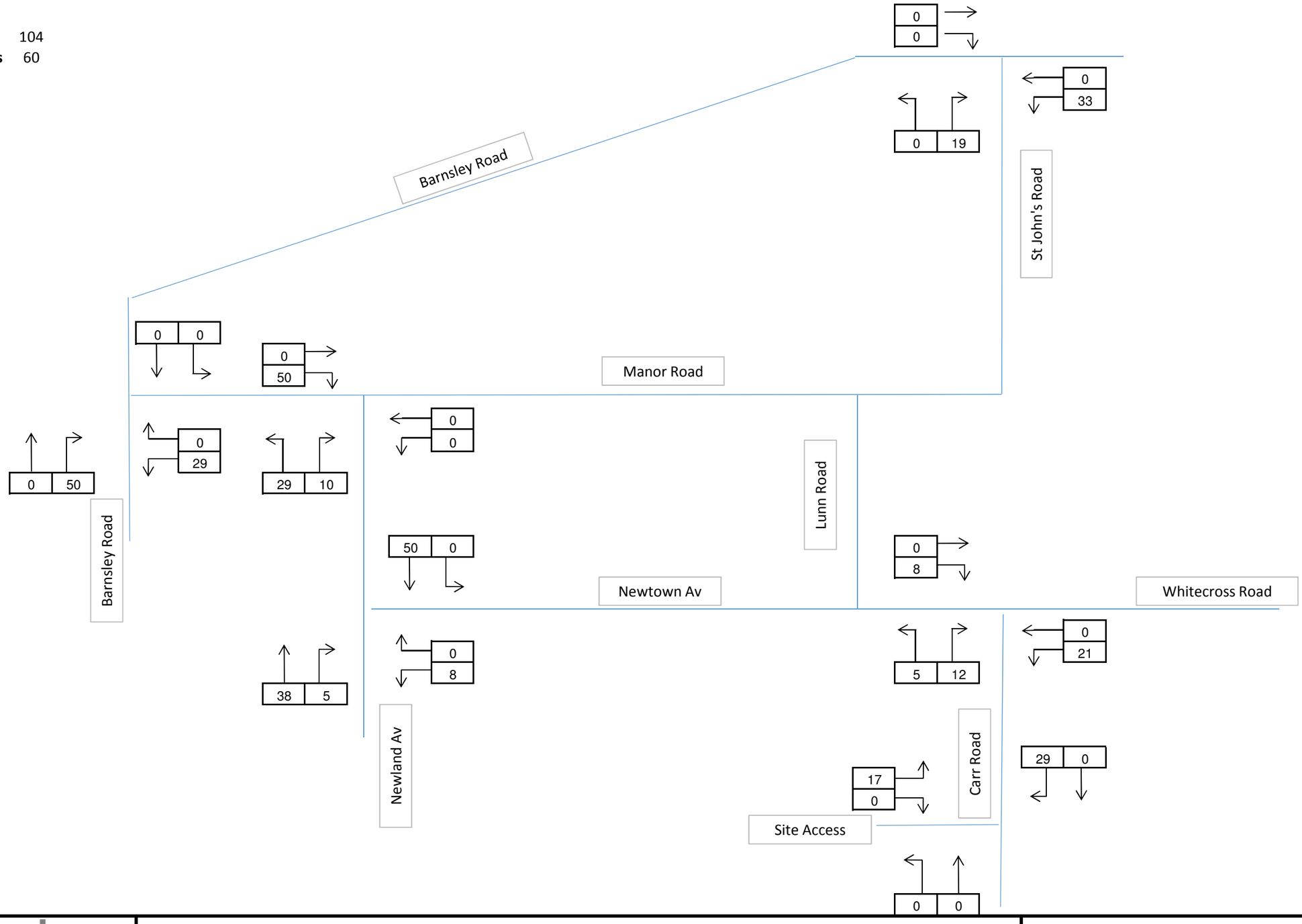
Arrivals 45
Departures 116



Transportation Planning : Infrastructure Design	**AM Peak - Proposed Development - PCUs**	**09 October 2015**
		Job Number - SCP/14923
	Proposed Residential Development, Cudworth, Barnsley	**Traffic Figure 12**

Z:\Job Library\2014\14923 - Carrs Lane, Cudworth, Barnsley\Traffic Data\20150915 Cudworth flow diagrams.xls

Arrivals 104
Departures 60



Transportation Planning : Infrastructure Design	**PM Peak - Proposed Development - PCUs**	**09 October 2015**
		Job Number - SCP/14923
	Proposed Residential Development, Cudworth, Barnsley	**Traffic Figure 16**

S|C|P

APPENDIX 20

TRAFFIC GROWTH FACTOR CALCULATIONS - 2015 TO 2020

NTM Table 3 (AF09)

East Midlands	Urban Roads				All Urban Roads	Rural Roads				All Rural Roads	All Urban Roads and Areas
	Mway	Trunk	Principal	Minor		Mway	Trunk	Principal	Minor		
2003	-	0.7	4.1	6.9	11.7	6.5	6.5	8.8	6.1	27.9	39.5
2004		0.71	4.13	6.96	11.80	6.54	6.55	8.88	6.16	28.13	39.83
2005		0.71	4.17	7.03	11.90	6.59	6.61	8.96	6.21	28.37	40.16
2006		0.72	4.20	7.09	11.99	6.63	6.66	9.04	6.27	28.60	40.49
2007		0.72	4.24	7.15	12.09	6.67	6.72	9.12	6.32	28.83	40.82
2008		0.73	4.27	7.22	12.19	6.72	6.77	9.20	6.38	29.06	41.15
2009		0.73	4.31	7.28	12.29	6.76	6.83	9.28	6.44	29.30	41.48
2010		0.74	4.34	7.34	12.38	6.80	6.88	9.36	6.49	29.53	41.80
2011		0.74	4.37	7.41	12.48	6.85	6.93	9.45	6.55	29.76	42.13
2012		0.75	4.41	7.47	12.58	6.89	6.99	9.53	6.60	29.99	42.46
2013		0.75	4.44	7.53	12.68	6.93	7.04	9.61	6.66	30.23	42.79
2014		0.76	4.48	7.60	12.77	6.98	7.10	9.69	6.72	30.46	43.12
2015		0.76	4.51	7.66	12.87	7.02	7.15	9.77	6.77	30.69	43.45
2016		0.77	4.58	7.78	13.08	7.16	7.29	9.94	6.89	31.28	44.24
2017		0.79	4.66	7.91	13.29	7.31	7.44	10.12	7.02	31.86	45.03
2018		0.80	4.73	8.03	13.50	7.45	7.58	10.30	7.14	32.45	45.82
2019		0.81	4.81	8.16	13.71	7.59	7.72	10.47	7.26	33.03	46.61
2020		0.82	4.88	8.28	13.92	7.74	7.86	10.65	7.38	33.62	47.40
2021		0.83	4.95	8.40	14.13	7.88	8.01	10.82	7.50	34.21	48.19
2022		0.85	5.03	8.53	14.34	8.02	8.15	11.00	7.63	34.79	48.98
2023		0.86	5.10	8.65	14.55	8.16	8.29	11.18	7.75	35.38	49.77
2024		0.87	5.17	8.78	14.77	8.31	8.44	11.35	7.87	35.96	50.56
2025		0.88	5.25	8.90	14.98	8.45	8.58	11.53	7.99	36.55	51.35
2026		0.89	5.31	9.02	15.17	8.57	8.70	11.68	8.11	37.05	52.06
2027		0.91	5.37	9.14	15.37	8.70	8.81	11.83	8.22	37.55	52.77
2028		0.92	5.43	9.25	15.57	8.82	8.93	11.98	8.34	38.06	53.48
2029		0.93	5.49	9.37	15.77	8.94	9.05	12.13	8.45	38.56	54.19
2030		0.94	5.56	9.49	15.97	9.07	9.17	12.28	8.57	39.06	54.91
2031		0.95	5.62	9.60	16.17	9.19	9.28	12.43	8.69	39.56	55.62
2032		0.97	5.68	9.72	16.37	9.31	9.40	12.58	8.80	40.06	56.33
2033		0.98	5.74	9.84	16.57	9.44	9.52	12.72	8.92	40.57	57.04
2034		0.99	5.80	9.96	16.77	9.56	9.63	12.87	9.03	41.07	57.75
2035		1.00	5.86	10.07	16.97	9.69	9.75	13.02	9.15	41.57	58.46

Factors for different time periods

NTM Table 3 Rates:

Road Type: Urban: Principal

Base Year 2015 = 7.66

Future Year 2020 = 8.28

Factor from 2015 to 2020 = 1.081

TEMPRO 'Car Driver' Trip Growth Factors

AM Local Factor 2015 to 2020 = 1.050

PM Local Factor 2015 to 2020 = 1.053

'Average day' GB Factor 2015 to 2020 = 1.039

Tempro Values Adjusted with NTM Table 3 Rates

AM Factor from 2015 to 2020 = **1.093**

PM Factor from 2015 to 2020 = **1.095**

Drawing No.
FIGURE 12

Drawing
TRAFFIC GROWTH FACTORS 2015 - 2020

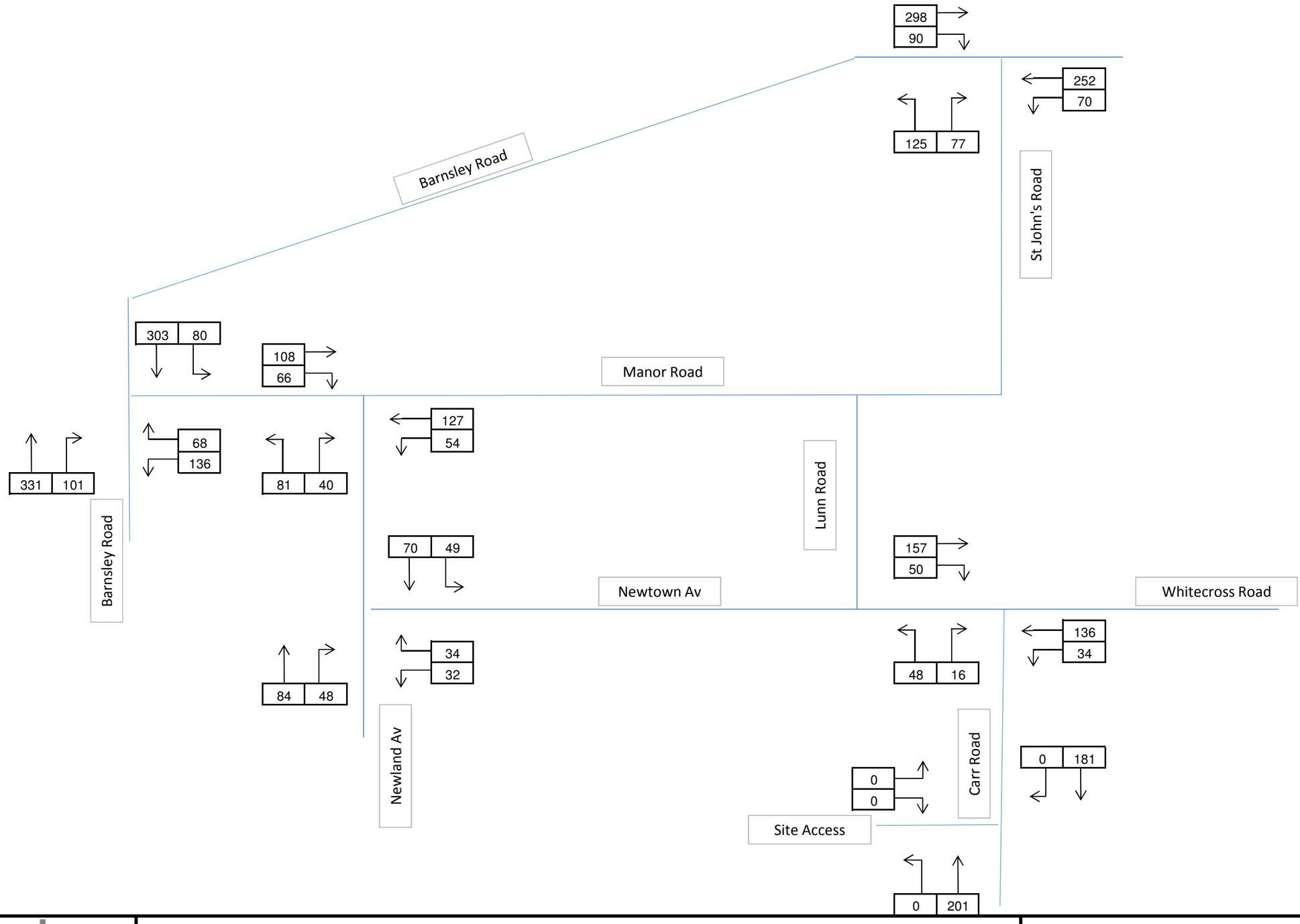
Date
JULY 2015

Project
PROPOSED RESIDENTIAL DEVELOPMENT, CUDWORTH, BARNSLEY

S|C|P
Transportation Planning : Infrastructure Design

S|C|P

APPENDIX 21



Transportation Planning : Infrastructure Design

AM Peak - Growthed 2020- PCUs

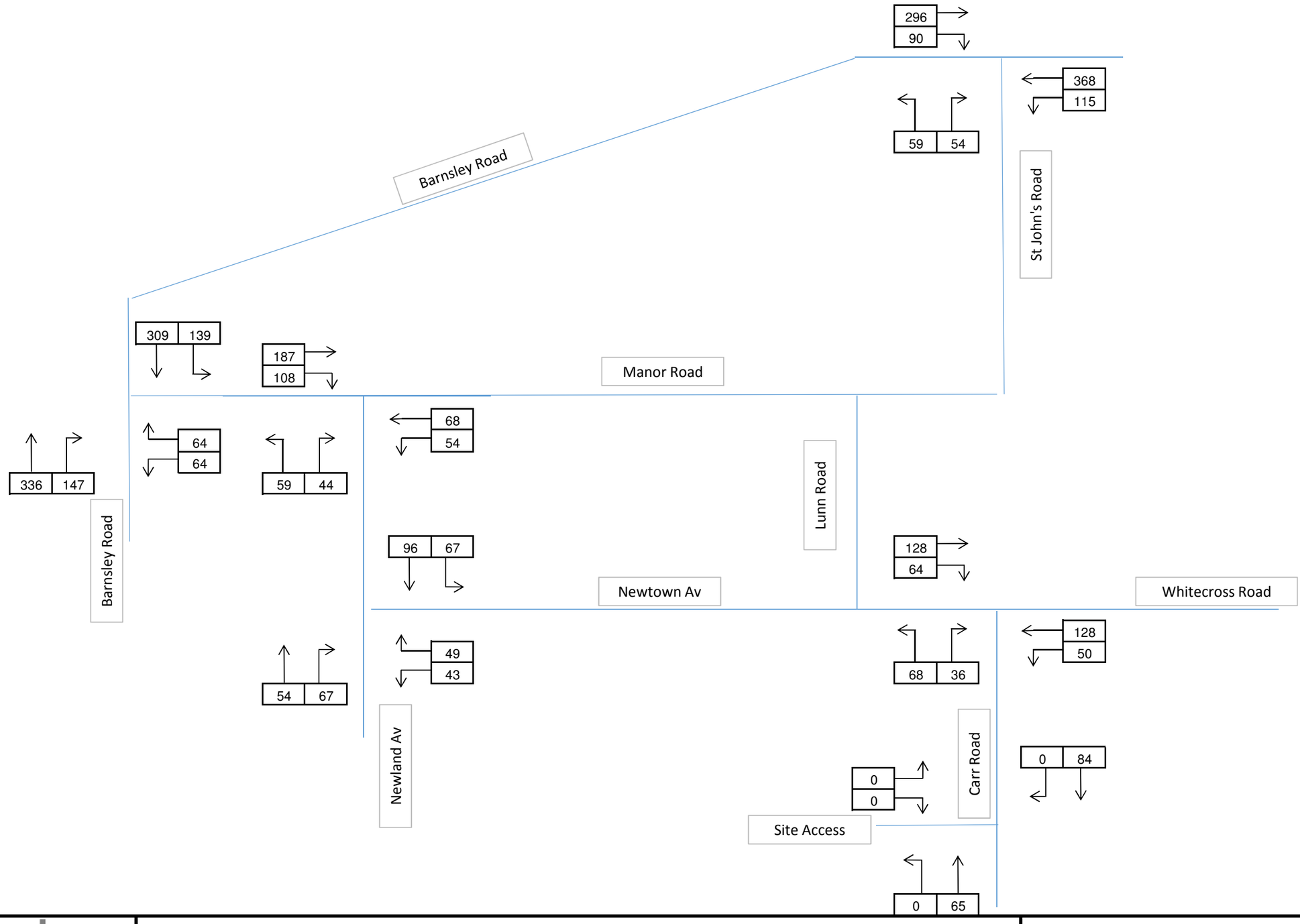
Proposed Residential Development, Cudworth, Barnsley

09 October 2015

Job Number - SCP/14923

Traffic Figure 3

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Transportation Planning : Infrastructure Design

PM Peak - Growthed 2020 - PCUs

Proposed Residential Development, Cudworth, Barnsley

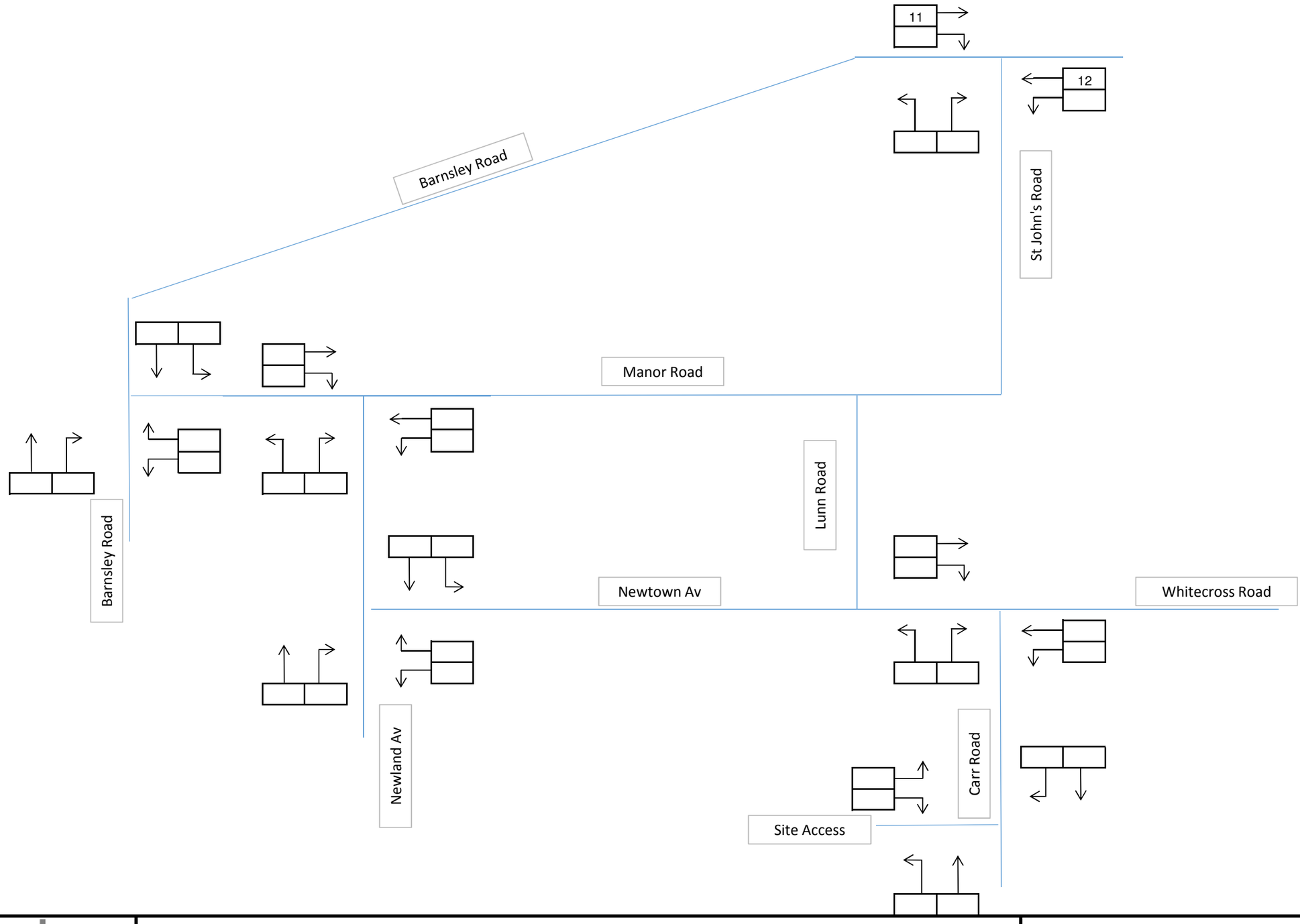
09 October 2015

Job Number - SCP/14923

Traffic Figure 4

S|C|P

APPENDIX 22



Transportation Planning : Infrastructure Design

PM Committed Development Flows PCUs

Proposed Residential Developmentt, Cudworth, Barnsley

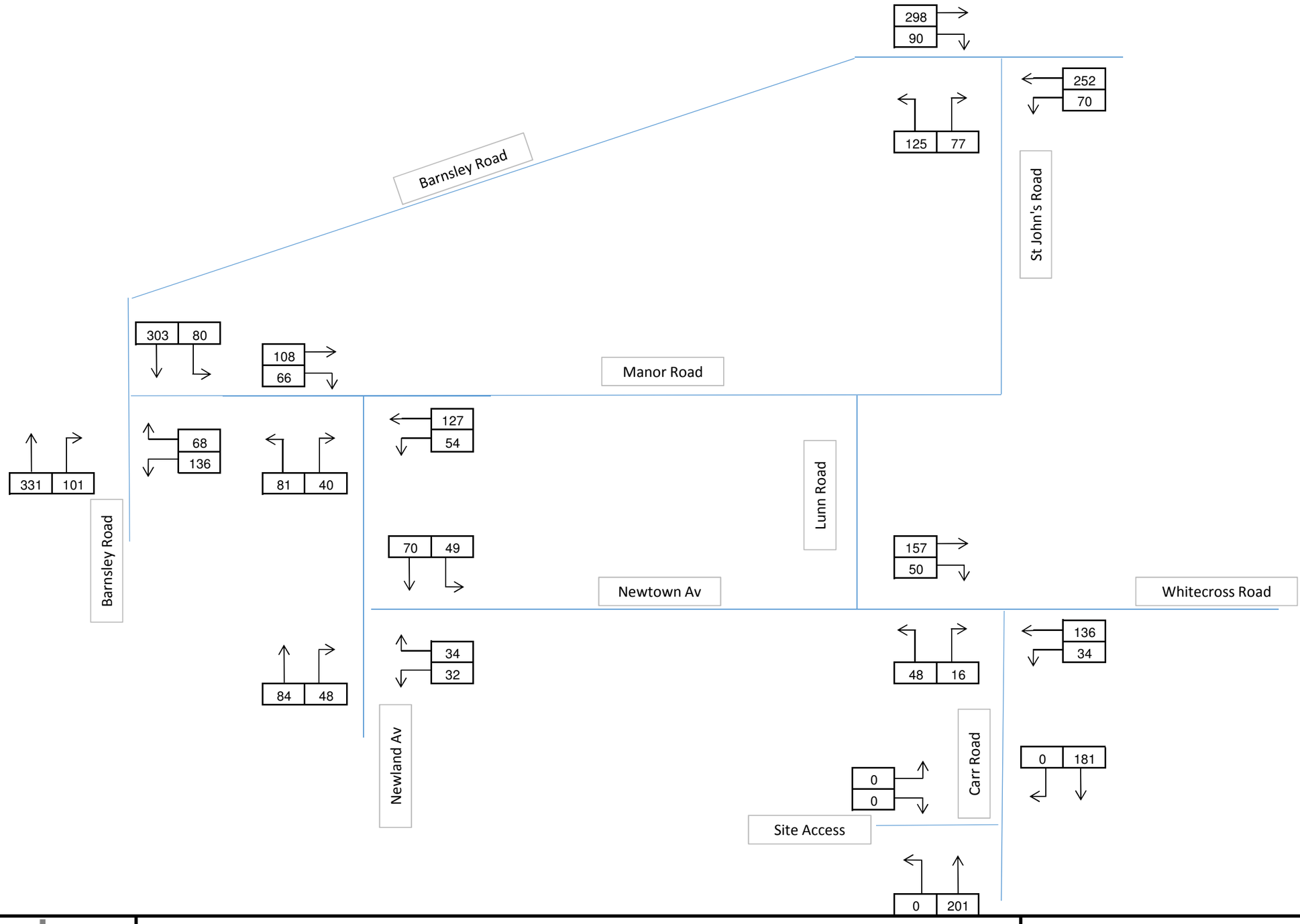
09 October 2015

Job Number - SCP/14923

Traffic Figure 6

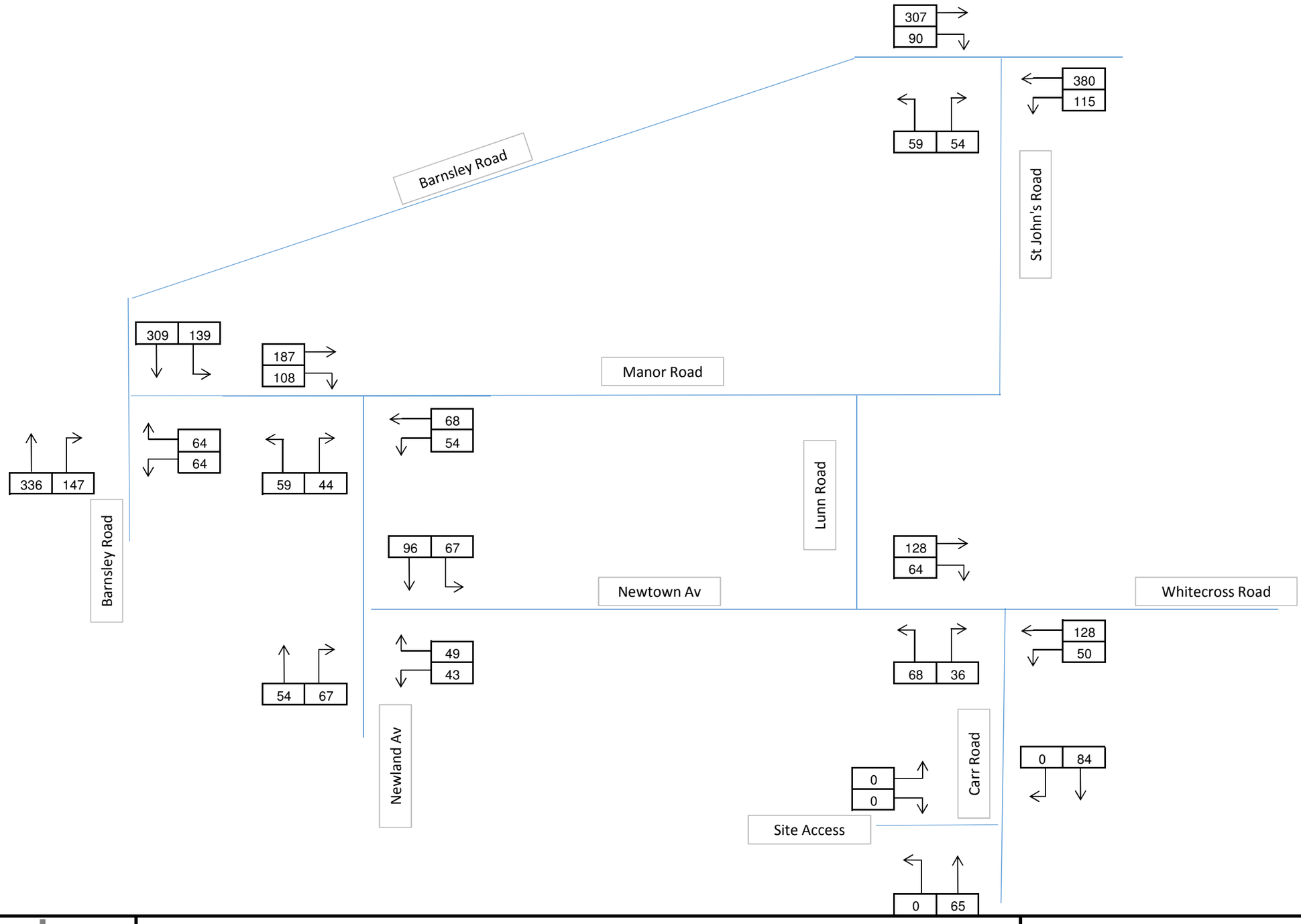
S|C|P

APPENDIX 23



S C P Transportation Planning : Infrastructure Design	**AM Peak - Base 2020 - PCUs**	**09 October 2015**
		Job Number - SCP/14923
	Proposed Residential Development, Cudworth, Barnsley	**Traffic Figure 7**

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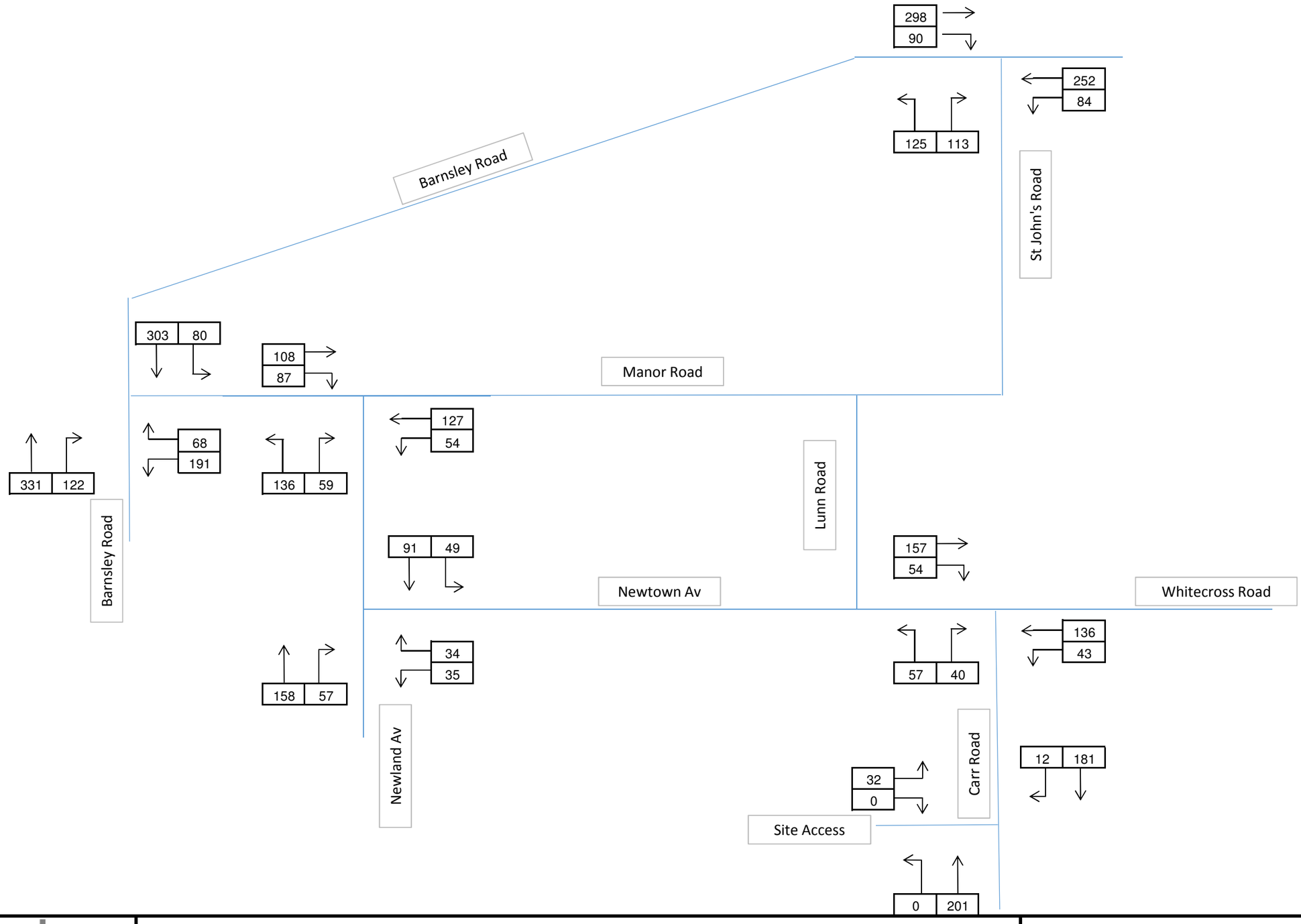


S C P Transportation Planning : Infrastructure Design	**PM Peak - Base 2020 - PCUs**	**09 October 2015**
		Job Number - SCP/14923
	Proposed Residential Development, Cudworth, Barnsley	**Traffic Figure 8**

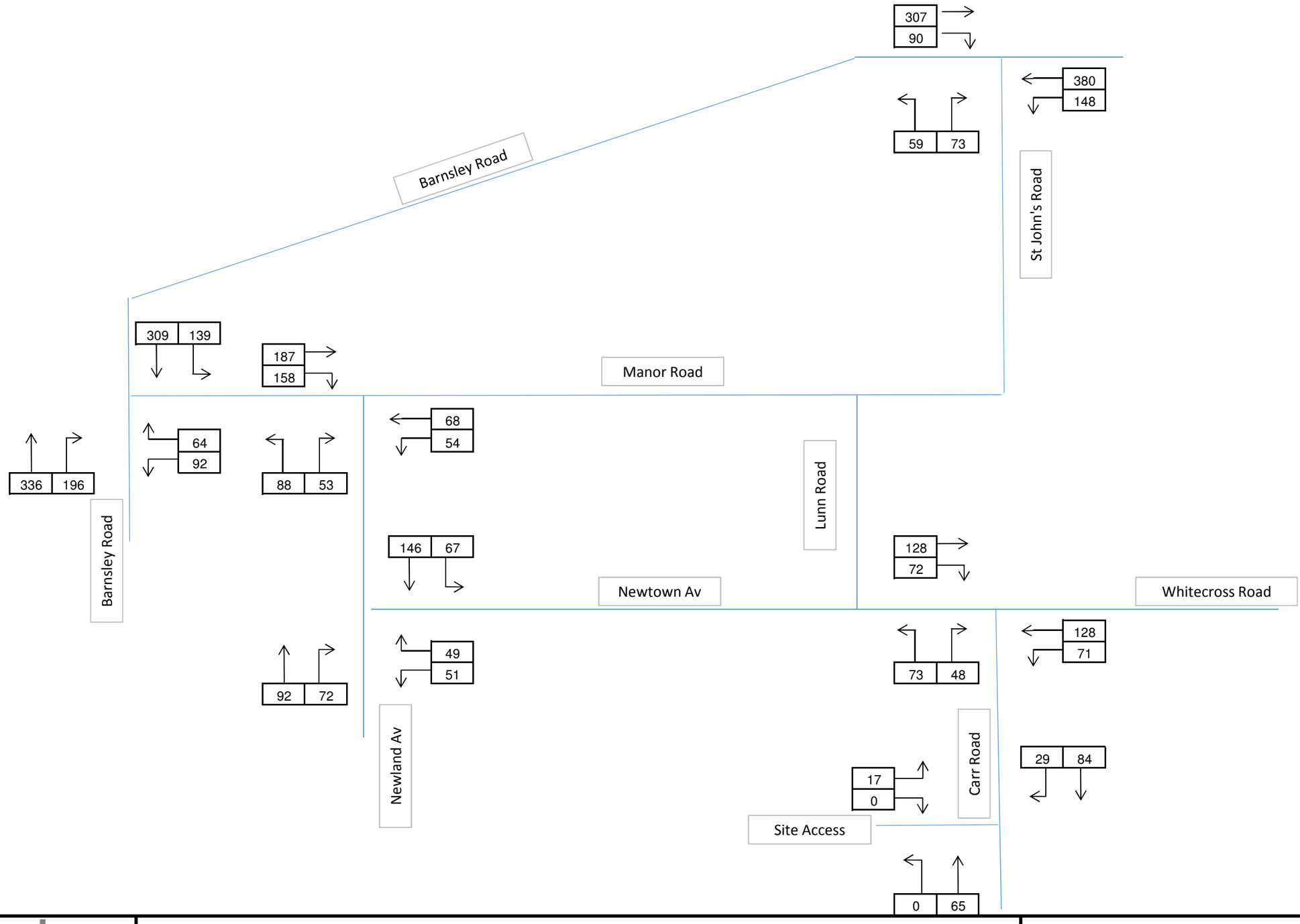
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S|C|P

APPENDIX 24



S C P Transportation Planning : Infrastructure Design	**AM Peak - 2020 Base plus Development - PCUs**	**09 October 2015**
		Job Number - SCP/14923
	Proposed Residential Development, Cudworth, Barnsley	**Traffic Figure 17**



S C P Transportation Planning : Infrastructure Design	**PM Peak - 2020 Base plus Development - PCUs**	**09 October 2015**
		Job Number - SCP/14923
	Proposed Residential Development, Cudworth, Barnsley	**Traffic Figure 18**