WYG Transport

Persimmon Homes Limited

Proposed Residential Development at Land off Lundhill Road, Wombwell, Barnsley

Transport Assessment

Report No. A098689

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1 INTRODUCTION

1.1 WYG Transport Planning has been appointed by Persimmon Homes Limited to produce a Transport Assessment in support of a full planning application for a proposed residential development at land off Lundhill Road in Wombwell, Barnsley.

1.2 The site lies within the jurisdiction of Barnsley Metropolitan Borough Council and is located approximately 1km to the south of Wombwell Town Centre.

1.3 In the emerging Barnsley Metropolitan Borough Council Local Plan, the site is referred to as Site H70 and is allocated for 160 dwellings.

1.4 This Transport Assessment report has been prepared in accordance with the guidance set out in the National Planning Policy Framework which states at Chapter 4, paragraph 32,

> "Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."

1.5 The purpose of this Transport Assessment is to set out the transport issues relating to the development proposals. It will identify measures, where appropriate, to deal with the anticipated transport impact of the scheme and to improve accessibility and safety for all modes of travel, particularly for alternatives to the car.

1.6 The remainder of this report is structured as follows:

- Chapter 2 describes the existing conditions within the vicinity of the site;
- Chapter 3 describes the facilities for Sustainable Travel to the site;
- Chapter 4 describes the operation of the existing highway network;
- Chapter 5 outlines the development proposals;
- Chapter 6 determines the traffic impact of the proposals;
- Chapter 7 considers the safety of the local highway network; and
- Chapter 8 provides a summary and sets out the conclusions.

2 THE EXISTING SITE AND HIGHWAY NETWORK

The Site

2.1 The site is located approximately 1km to the south of Wombwell Town Centre. The development site is agricultural land, located to the east of Lundhill Road. The site is bounded to the north by residential properties off Lundhill Grove and Dove Road, to the west by Lundhill Road, to the south by a farm track off Lundhill Road, and to the east by the disused Elsecar Canal.

2.2 The site is served by two gated accesses from Lundhill Road.

2.3 The location of the site in relation to the strategic highway network is shown on the drawing included at Appendix A.

Adjacent Highway Network

2.4 The highway network in the vicinity of the site considered for this appraisal consists of: -

- Lundhill Road/Beech House Road;
- Park Street;
- Wath Road;
- A633 Valley Way; and
- A6195 Dearne Valley Parkway.

2.5 Lundhill Road lies on a north/south alignment and provides access to the centre of Wombwell via Park Street or the A633. To the north it forms a staggered priority junction with Park Street, Wath Road and Everill Gate Lane. To the south, Lundhill Road passes under the A6195 Dearne Valley Parkway, south of this it becomes Beech House Road which continues on into Hemingfield Village.

2.6 Lundhill Road is a single carriageway road which, to the north of the site, is lit and to the south of the site is unlit. Along the site frontage and to the south of the site there is a footway provided on the western side, to the north of the site there is a footway provided on the eastern side. Approximately 200m north of the site there are footways on both sides of Lundhill Road.

2.7 Lundhill Road is subject to a 30mph speed limit for its entirety.

2.8 Park Street is located approximately 700m north of the site and forms a priority junction with Lundhill Road. It lies on a southeast/northwest alignment from the junction with Lundhill Road to the signalised junction with Mayflower Way and High Street. To the northwest it provides access to the centre of Wombwell and its associated facilities.

2.9 Park Street is a single carriageway road which is lit along its length. Footways are provided along both sides. It is subject to a 30mph speed limit along its entire length.

2.10 To the south of the junction between Park Street and Lundhill Road is Wath Road. Wath Road is a continuation of Park Street to the southeast. It lies on an east west alignment and links Park Street with the A633 Valley Way / Brampton Road roundabout.

2.11 Footways are provided on both sides of Wath Road and they are lit. Wath Road is subject to a 30mph speed limit.

2.12 A633 Valley Way is located to the north east of the site originating at the A633 / B6089 / Wath Road roundabout. It is a single carriageway road that is lit. It runs north west to the A633 / B6096 / Station Road / Mayflower Way roundabout to the north of Wombwell Centre and is subject to ta 50mph speed limit.

2.13 A6195 Dearne Valley Parkway is a dual carriageway road that is subject to the national speed limit. It runs from the Wath Road Roundabout to the east of the site round to the south of Wombwell via the Cortonwood Roundabout and Hemingfield Road Roundabout to the A61. Footways are provided on both sides of the road. It provides a direct link between Wombwell and the M1 motorway at junction 36.

2.14 The location of the site in relation to the local highway network is shown on the drawing included at Appendix B.

3 ACCESSIBILITY

Introduction

3.1 In March 2012 NPPF replaced a number of national policy documents, including Planning Policy Guidance Note 13 (PPG13). Prior to its deletion, PPG13 provided guidance on the length of journeys which could reasonably expect to be undertaken on foot or on a bike; these distances were 2km for walking and 5km for cycling. There is now no government guidance on reasonable walk or cycle distances.

3.2 The IHT in "Providing for Journeys on Foot", suggested a range of walking distances for various journey purposes, however these distances were not supported by evidence or background research. There is no published guidance on cycle distances for various journey purposes.

3.3 WYG have analysed walking and cycling for all purposes as the main mode of travel (from home) by interrogating data collected through the 2010 National Travel Survey (NTS), to calculate the average and 85th percentile distances travelled. The research report is attached at Appendix C.

3.4 Using the NTS data the average distance people walk is 1.2km and the 85th percentile distance is 1.9km. The 85th percentile walk distance is considered the "upper threshold" distance, and is similar to the 2km walk distance in the now withdrawn PPG13.

3.5 The NTS data showed that the average distance people cycle is 4.5km and the 85th percentile distance is 7.2km. The 85th percentile cycle distance is considered the "upper threshold" distance, which is significantly longer than the 5km cycle distance previously in PPG13.

3.6 In this report, we have used the NTS walk and cycle distances to assess the accessibility of the proposed development.

Pedestrian Facilities

3.7 In the general vicinity of the site, the footways are generally 2m in width, are well maintained and are lit.

3.8 There are a number of Public Rights of Ways close to the site, footpath 43 lies to the south of the site forming part of the sites southern boundary. To the east it connects to The Trans Pennine Trail, National Cycle Network number 67 and to the west it connects to footpath number 15. An extract of Barnsley Councils Public Rights of Way plan can be seen at Appendix D.

3.9 The Wath Road / B6089 / A633 Roundabout junction which is to the north east of the site has pedestrian refuge islands with dropped kerbs at all four entries to aid pedestrians crossing the roundabout.

3.10 There is also a controlled crossing facility along Park Street at the signalised junction with Mayflower Way to the north west of the site.

3.11 There are residential developments and local facilities situated within 1.2km walking distance of the site and are therefore within a comfortable walking distance.

3.12 Accessibility on foot from the development site to local facilities and amenities within the 1.2km and 1.9km walk distances has been assessed, and they are identified in Appendix D. The site has the benefit of being within a reasonable walking distance of a variety of local facilities, shops, and school.

3.13 Wombwell High School, Wombwell Park Street Primary School and Kings Oak Primary School all lie to the north of the site. While The Ellis CE Primary School Lies to the south west of the site.

3.14 A plan showing the location of these facilities is included at Appendix D.

Cycling Facilities

3.15 There are a number of advisory cycle, signed cycle and traffic free routes in the vicinity of the site. In addition to this, the residential nature of the highway network around the site provides some level of encouragement for journeys by cycle to local facilities and amenities.

3.16 The Trans Pennine Trail, National Cycle Network number 67 lies to the south of the site running in a roughly southwest/northeast alignment. It can be accessed from Smithy Bridge Lane to the south of the site. It provides traffic free access to the surrounding area and provides links into the wider cycle network.

3.17 Accessibility by bike from the development site to local facilities and amenities within the 4.5km and 7.2km cycle distances has been assessed.

3.18 The plan included at Appendix E shows the 4.5km and 7.2km cycle catchment area around the site.

3.19 This shows that Wombwell, Darfield, Hoyland, Wath-upon-Dearne, Swinton, Bolton-upon-Dearne, Goldthorpe, Thurnscoe and Worsbrough are accessible by cycle.

3.20 It is considered that there is a fairly high provision of cycle facilities around the site which promote access by cycle into the wider community. The site can therefore be said to be sustainable in these terms.

Bus Services

3.21 As part of the research into walking distances using the NTS, the walk distances to a bus stop as the first stage of bus journeys from home were analysed, Appendix C refers.

3.22 The analysis showed that, outside of London, the average distance people walk to a bus stop is 640m (8 mins) and the 85th percentile distance is 970m (12 mins).

3.23 The IHT publication Guidelines on Planning for Public Transport in New Developments advises that new development should be within 400m (5min) walk of a bus stop, and cites a reference to DoE Circular 82/73 which is understood to have been withdrawn for some considerable time.

3.24 There are a number of bus service routes that pass by or near to the site. Services 22x, 203, 220, 222, 226, 649, 662, 680 and X20 all pass along Park Street. Details of the bus services are set out in Table 3.1.

Table 3.1: Bus Service Frequencies

Service No.	Route	Frequency (0800 – 1800)	
		Mon – Sat Daytime	Sun and Evenings
22x	Rotherham – Rawmarsh – Swinton – Wath upon Dearne – West Melton – Wombwell – Stairfoot – Barnsley	15 mins	60mins
203	Barnsley – Hunningley – Wombwell – Broomhill – Middlecliffe – Billingley – Goldthorpe – Highgate – Clayton – Brodsworth – Scawthorpe – Doncaster	60 mins	N/A
220	Mexborough – Swinton – Wath upon Dearne – West Melton – Wombwell – Stairfoot – Barnsley	30 mins	60 mins
222	Barnsley – Hunningley – Wombwell – Brampton – West Melton – Rotherham – Wath upon Dearne – Dearne Valley – Swinton – Mexborough	30 mins	60 mins
226	Thurnscoe – Goldthorpe – Bolton-upon-Dearne – Manvers – Wath upon Dearne – West Melton – Wombwell – Stairfoot - Barnsley	30 mins	60 mins
649	Wath Comprehensive School – West Melton – Brampton – Wombwell	1 service (school service)	N/A
662	Wath upon Dearne – Brampton – Wombwell – Hemingfield – Hoyland – Elsecar	1 service (school service)	N/A
680	Moorgate – Parkgate – Rawmarsh – Swinton – Wath upon Dearne – West Melton – Brampton – Wombwell – Darfield – Highgate – Goldthorpe – Bolton-upon-Dearne – Manvers – Mexborough – Conisbrough	2 services daily (school service)	N/A
X20	Barnsley – Wombwell – Old Moor – Manvers – Mexborough – Denaby Main – Conisbrough – Warmsworth – Balby – Doncaster	60 mins	N/A

3.25 Table 3.1 shows that the site is served by nine bus services with a minimum overall frequency of 12 buses per hour during the day from Monday to Saturday and the routes extend from Mexborough, Rotherham, Swinton, Doncaster, Wath upon Dearne and Bolton-upon-Dearne.

3.26 There are bus stops located on Park Street to the north of the site on both sides of the carriageway. The nearest bus stop is a walk distance of 800m from the centre of the site.

3.27 This level of frequency of buses that operate within the vicinity of the site means that the site is well located for travel by bus and there are sufficient services within walking distance of the site.

3.28 The drawing at Appendix D shows the location of bus stops in the vicinity of the site.

3.29 Table 3.2 describes the facilities available at the bus stops which the above bus routes serve and are located along Park Street.

Table 3.2: Bus Stop Facilities

Bus Stop Ref	Description / Facilities	Walk Distance From the centre of the Site
37050000	South side of Park Street. It has a bus shelter with flag and timetable information.	800m
37050001	North side of Park Street. It has a bus shelter with flag and timetable information.	850m

Rail Services

3.30 The site is approximately 2.7km from Wombwell railway station. This is not within the normally accepted walking distance of the site for commuter journeys but it is readily accessible to other sustainable modes i.e. cycle, bus and taxi.

3.31 There are sheltered storage spaces for up to 12 bicycles at Wombwell Station including CCTV of the storage areas for security.

3.32 Wombwell railway station is on the Hallam Line and the Penistone Line. Both lines offer direct and convenient routes to many regional and national destinations.

3.33 The details of the services provided on both lines Huddersfield Line are shown in Table 3.3.

Table 3.3: Train Service Frequencies on from Wombwell Railway Station

Route	Mon - Sat		Sun
	Daytime	Late Evening	
Sheffield – Meadowhall – Elsecar – Wombwell – Barnsley – Darton – Wakefield Kirkgate – Castleford – Leeds	60 mins	60 mins	120 mins
Huddersfield – Lockwood – Brockholes – Stocksmoor – Shepley – Penistone – Dodworth – Barnsley – Wombwell – Meadowhall – Sheffield	30 mins	60 mins	60 mins
Sheffield – Meadowhall – Wombwell – Barnsley – Penistone – Shepley – Brockholes – Lockwood – Huddersfield	60 mins	60 mins	120 mins

3.34 There is therefore a good level of service provision at Wombwell Station with good linkages to Leeds, Wakefield, Barnsley, Sheffield and Huddersfield.

3.35 The location of Wombwell railway station in relation to the site can be seen on the plan at Appendix D.

Conclusion

3.36 The development site is accessible on foot or by bike to a range of useful local destinations, and there are public transport options available for journeys further afield for commuter trips.

4 OPERATION OF THE EXISTING HIGHWAY NETWORK

Existing Traffic Flows

4.1 Manual Classified Turning Count surveys were carried out on Tuesday 28th June 2016 at the Wath Road / Lundhill Road junction, the A633 / B6089 / Wath Road roundabout junction and the Hemingfield Road / A6195 roundabout junction.

4.2 The survey data is provided at Appendix F.

Assessment Periods

4.3 By reference to the results of the traffic survey, the weekday AM and weekday PM peaks have been identified. The AM peak has been identified as 07:30 - 08:30 and the PM peak as 17:00 – 18:00.

4.4 The 2016 surveyed flows are shown in Appendix G for the weekday AM and PM peaks. These show the existing levels of traffic, converted into passenger car units (PCUs).

Capacity Analysis

4.5 The Wath Road / Lundhill Road junction, the A633 / B6089 / Wath Road roundabout junction and the Hemingfield Road / A6195 roundabout junctions have been analysed using the Junctions 9 software programme.

4.6 The junction models have been validated by reference to the queue lengths observed at the junctions during the surveyed periods.

4.7 The geometric parameters used in the analyses have been taken from Ordnance Survey maps.

Wath Road / Lundhill Road Junction / Park Street Junction

4.8 The results of the existing traffic analysis for the Wath Road / Lundhill Road priority junction are summarised in Table 4.1.

Table 4.1: 2016 Surveyed Flows Results Summary

Stream	AM		PM	
	RFC	Q	RFC	Q
Lundhill Rd to Wath Rd/Park St	0.29	0.4	0.28	0.4
Park St to Wath Rd/Lundhill Rd	0.09	0.2	0.17	03

4.9 The analysis shows that the junction is currently operating well below capacity on all arms with a maximum RFC of 0.29 in the AM peak and 0.28 in the PM peak, both on Lundhill Road.

4.10 The base model is therefore considered representative of existing conditions at the junction during the AM and PM peak.

4.11 The junction assessment output files are included at Appendix H.

A633 / B6089 / Wath Road Roundabout

The results of the existing traffic analysis for the A633 / B6089 / Wath Road roundabout junction are summarised in Table 4.2.

Table 4.2: 2016 Surveyed Flows Results Summary

Entry Arm	AM		PM	
	RFC	Q	RFC	Q
A633 (E)	0.39	0.6	0.57	1.3
B6089 Brampton Rd	0.26	0.4	0.27	0.4
Wath Rd	0.27	0.4	0.27	0.4
A633 Valley Way	0.54	1.2	0.55	1.2

4.12 The analysis shows that the junction is currently operating below capacity on all approaches with a maximum RFC of 0.54 in the AM peak on the A633 Valley Way approach and 0.57 in the PM peak on the A633 (E) approach.

4.13 The base model is therefore considered representative of existing conditions at the junction during the AM and PM peak.

4.14 The junction assessment output files are included at Appendix H.

Hemingfield Road / A6195 Roundabout

The results of the existing traffic analysis for the Hemingfield Road / A6195 roundabout are summarised in Table 4.3.

Table 4.3: 2016 Surveyed Flows Results Summary

Entry Arm	AM		PM	
	RFC	Q	RFC	Q
A6195 Dearne Valley Parkway (E)	0.44	0.8	0.59	1.4
Hemingfield Road (S)	0.15	0.2	0.16	0.2
A6195 Dearne Valley Parkway (W)	0.38	0.6	0.39	0.6
Hemingfield Road (N)	0.18	0.2	0.27	0.4

4.15 The analysis shows that the junction is currently operating below capacity on all approaches with a maximum RFC of 0.44 in the AM peak and 0.59 in the PM peak both on the A6195 Dearne Valley Parkway (E) approach.

4.16 The base model is therefore considered representative of existing conditions at the junction during the AM and PM peak.

4.17 The junction assessment output files are included at Appendix H.

5 THE PROPOSED DEVELOPMENT

5.1 The proposed development will provide up to 152 residential units, consisting of two, three and four bedroom houses.

5.2 The layout of the proposed development is shown on the plan at Appendix I.

Access

5.3 There will be a single point of access onto Lundhill Road at the western end of the site.

5.4 A spot speed survey was carried out on Tuesday 12th September 2017 along Lundhill Road within the vicinity of the proposed junction to determine the appropriate visibility splays.

5.5 The 85th percentile wet weather speed for vehicle travelling northbound and southbound along Lundhill Road was approximately 60kph (38mph). In this case as the speeds are in excess of 37mph, it is appropriate to use Design Manual for Roads and Bridges (DMRB) to determine the adequate visibility splays rather than Manual for Street.

5.6 The site access will be onto Lundhill Road and provides minimum a visibility splay of 2.4m by 90m in both directions in accordance with DMRB. The achievable visibility to the right is 2.4mx 127m and to the left is 2.4m x 163m

5.7 The carriageway width for the site access will be 5.5m wide with 2m wide footways on either side of the carriageway.

5.8 A swept path of the internal layout has been carried out using a Phoenix 2 High Capacity Twin Pack 20 with 6x4 chassis, which shows that the internal road network can accommodate a refuse vehicle.

5.9 The proposed junction layout and swept path assessment can be seen at Appendix I.

Proposed Parking

5.10 A total of 283 car parking spaces are provided in the form of private drives: 29 spaces for the 25 two bed dwellings and 254 spaces for the 127, three/four bed dwellings. There will be 10 spaces available on street for visitors.

5.11 This closely matches the recommended provisions laid out in the Barnsley LDF Supplementary Planning Document adopted March 2012 as described in Table 5.1.

Table 5.1: SPD Car Parking Standards C3 Residential Use

House Type	No Beds	No Units	Maximum Parking Requirement	
			UDP Requirements	No Spaces Required
Brampton	2	9	1 spaces for dwellings with 1 or 2 bedrooms	9
Willow		4		4
Alnwick		12		12
Bickleigh	3	10	2 spaces for dwellings with 3 or more bedrooms	20
Hanbury		22		44
Rufford Semi		8		16
Souter		7		14
Rufford Det		16		32
Hatfield		15		30
Clayton		8		16
Roseberry	4	15		30
Kendal		7		14
Chedworth		7		14
Lumley		3		6
Winster		9		18
Total		**152**	**-**	**279**

6 THE TRAFFIC IMPACT OF THE DEVELOPMENT

6.1 Barnsley Metropolitan Borough Council emerging Local Plan shows that site H70 is allocated for 160 dwellings (the proposals are currently for 152 dwellings). However, the capacity assessment has been based on 160 dwellings to provide a robust assessment.

Generated Traffic

6.2 The Trip Rate Information Computer System (TRICS) database has been used to derive suitable multi-modal trip generation rates for the development site of up to 160 homes.

6.3 The following criteria were applied to the TRICS category "Houses Privately Owned":

- Sites in London, Republic of Ireland, Northern Ireland were excluded;
- Suburban and Edge of Town sites were included;
- Only surveys on a Weekday were included; and
- Sites of less than 50 and more than 250 dwellings were excluded.

6.4 A total of 15 sites remained in the dataset, and person trip rates determined. Vehicle trip rates for the AM and PM peak hours extracted from that sample are shown at Table 6.1 below, used to predict the traffic generated by up to 160 homes on site. TRICS output files are in Appendix J.

Table 6.1: Average Trip Rates and Travel Volumes by Mode for 160 Homes

Time Period	Arrivals		Departures	
	TRICS Rate	Trips	TRICS Rate	Trips
Car Driver Trips				
Weekday AM Peak Hour 07:30 to 08:30	0.142	23	0.370	59
Weekday PM Peak Hour 17:00 to 18:00	0.331	53	0.184	29
Car Passenger Trips				
Weekday AM Peak Hour 07:30 to 08:30	0.180	29	0.534	85
Weekday PM Peak Hour 17:00 to 18:00	0.430	69	0.238	38
Pedestrian Trips				
Weekday AM Peak Hour 07:30 to 08:30	0.050	8	0.166	27
Weekday PM Peak Hour 17:00 to 18:00	0.157	25	0.076	12
Cycle Trips				
Weekday AM Peak Hour 07:30 to 08:30	0.002	0	0.018	3
Weekday PM Peak Hour 17:00 to 18:00	0.018	3	0.011	2
Public Transport Trips				
Weekday AM Peak Hour 07:30 to 08:30	0.003	0	0.013	2
Weekday PM Peak Hour 17:00 to 18:00	0.013	2	0.002	0
Total People Trips				
Weekday AM Peak Hour 07:30 to 08:30	0.236	38	0.731	117
Weekday PM Peak Hour 17:00 to 18:00	0.577	92	0.340	54

Trip rates are per dwelling

6.5 The Department for Transport has provided WYG with a table summarising the results of their analysis of data taken from the NTS for the 5 years between 2006 and 2010. The category analysed was "Trip Start Time by Trip Purpose (Monday to Friday Only)". The data reveals journey purpose per hour for the AM peak period (07:00 to 09:00) and the PM peak period (16:00 to 18:00). The table obtained from the DfT marked up by WYG for ease of reference is in Appendix K.

6.6 The 07:30 to 08:30 hour has been used for the AM peak hour, and the average of the 17:00 to 18:00 hour has been used for the PM peak hour. WYG then simplified the data as follows:

- Journeys for Work were estimated by summing the Commuting and Business columns, i.e. yellow.
- Journeys for Education were estimated by summing the Education and Escort Education columns, i.e. blue.
- Journeys for Other Purposes were estimated by summing the Shopping, Other Personal Business/ Escort, Visiting Friends/ Entertainment/ Sport and Holiday/ Day Trip/ Other columns, i.e. red.

6.7 It has been assumed this distribution is representative of that which could be expected at the development site.

6.8 Table 6.2 below shows the proportions for each of those journey purposes among car driver trips during the AM and PM peak hours separately. These proportions have been applied to those predicted for the site.

Table 6.2: Car Driver Trips by Journey Purpose

Time Period	Journey Purpose			
	Work	Education	Other	Total
Weekday AM Peak Hour (%)	45%	23%	32%	**100%**
Car Trips - Arrivals	10	5	7	**23**
Car Trips - Departures	27	14	19	**59**
Time Period	**Work**	**Education**	**Other**	**Total**
Weekday PM Peak Hour (%)	47%	2%	51%	**100%**
Car Trips - Arrivals	25	1	27	**53**
Car Trips - Departures	14	1	15	**29**

Note: Other = Shopping, Other Personal Business/ Escort, Visiting Friends, Entertainment, Sport, Holiday/ Day Trip and Other.

Distribution of the Generated Traffic

6.9 Census Journey to Work data has been used to assign work related trips and a local assignment has been developed for education and non-work trips which was based on the distribution of likely destinations.

Journey to Work Distribution

6.10 Vehicle trips for work purposes have been distributed onto the local road network using an assignment based on Journey to Work data for car based trips among residents of Barnsley 026 (E02001534). Table 6.3 shows the distribution pattern to be applied to the Journey to Work trips.

Table 6.3: Journey to Work Distribution Pattern

Cordon	Distribution Pattern
A – Park Street north	2.0%
B – A633 north	14.5%
C – A633 east	27.0%
D – B6089 south	4.0%
E – Smithy Bridge Lane south	21.5%
F – Tingle Bridge Lane south	0.0%
G – A6195 west	26.0%
H – Hemingfield Road north	5.0%
Total	**100%**

6.11 The distributed travel to work trips can be seen at Appendix L.

Education Distribution

6.12 It has been assumed pupils from the proposed development will attend the local Schools in the area and the schools to be considered are as follows: -

- Wombwell Park Street Primary School;
- Brampton 'The Ellis' C of E Primary School;
- The Ellis C of E Primary School; and
- Netherwood Advanced Learning Centre.

6.13 The distribution pattern to be applied to the education car trips is detailed in the Table 6.4. The mode share by car for education trips for each school is from 2011 School Census data.

Table 6.4: Education Car Trip Distribution Pattern

School	No of Pupils	% Car Users	No. Of Cars	Distribution Pattern
Wombwell Park Street Primary School	280	32.7%	92	20.5%
Brampton 'The Ellis' C of E Primary School	255	33.9%	86	19.2%
The Ellis C of E Primary School	190	39.8%	76	16.9%
Netherwood Advanced Learning Centre	1100	17.7%	195	43.4%

6.14 The distributed education trips can be seen at Appendix L.

Other Journey Purpose Distribution

6.15 It is reasonable to assume these trips are to / from local facilities and have been distributed between Cortonwood Retail Park, Wombwell and Barnsley.

6.16 Table 6.5 shows the proportions for each of those journey purposes among car driver trips during the AM peak period and the PM peak period separately. These proportions have been applied to the car driver trips predicted for the proposed development in the Trip Generation Table 6.1.

Table 6.5: Other Journey Purposes Distribution Pattern

Local Facility Areas	Distribution Pattern
Cortonwood Retail Park	50.00%
Wombwell	25.00%
Barnsley	25.00%

6.17 The distributed other journey purpose trips and the total distributed development trips can be seen at Appendix L.

Committed Developments

6.18 It is appropriate to take account of committed developments in the vicinity of the site which were not operating at the time of the surveys.

6.19 WYG has undertaken a review of committed developments from Barnsley Metropolitan Borough Council and Rotherham Metropolitan Borough Councils planning portals. The committed developments identified do not have an impact on the highway network

analysed in this Transport Assessment. The application numbers can be seen in Table 6.6 below.

Table 6.6: Barnsley and Rotherham Committed Developments

Application Number - Barnsley
B/04/0487/WW
2006/0064 (2009/0189)
2009/1039
B/04/1311/WW
2013/0866
2015/1302
2013/0203
2006/1171
2005/1643
B/04/1496/WW
2005/1980
B/05/0608/WW
Application Number - Rotherham
RB1999/1349
RB2003/0104
RB2008/1326
RB2011/1119

Traffic Growth

6.20 Due to the scale of the development it would be sensible to assume a 'build out' rate of 35 houses per year which would equate to a period of approximately five years.

6.21 Therefore, for this assessment, analyses will be undertaken across a five-year horizon to 2022.

6.22 Traffic flows surveyed in 2016 have be projected to 2022 by applying factors extracted from the DfT's TEMPRO v7.0 program using the definitive NTEM v7.0 database and the current NTM AF09 dataset in line with WebTAG Unit 3.15.2 Use of TEMPRO Data. Barnsley 026 has been selected as the defined area.

6.23 The NTEM projection for Barnsley 026 includes for an increase of 180 households from 2016 to 2022. To account for the proposed development the future houses have been reduced by 152 houses to avoid double-counting.

6.24 The selected area chosen was "urban" and "principal" was selected as the road type, the growth factors for the AM and PM peaks are: -

- AM Peak Growth Factor 2016 to 2022 is 6.6%; and
- PM Peak Growth Factor 2016 to 2022 is 6.1%.

6.25 The growth figure calculation can be seen at Appendix M.

2022 Base No Development Traffic Flows

6.26 The 2022 Base traffic flows used in the analysis are the 2016 surveyed flows growthed to 2022 which can be seen at Appendix N.

2022 Base With Development Traffic Flows

6.27 2022 Base plus generated flows are simply the 2022 Base flows and the generated flows added together. The resultant 2022 Base plus Generated flows are detailed on the traffic flow diagrams shown at Appendix O.

National Planning Policy Framework

6.28 The future junction assessments will be undertaken for 2022 and the impact will be reviewed against NPPF which states at Chapter 4, paragraph 32: -

"Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."

6.29 Therefore, the impact of the development has been compared against the 2022 Base flows.

Wath Road / Lundhill Road Junction / Park Street Junction

6.30 The results of the 2022 traffic analysis for the Wath Road / Lundhill Road priority junction are summarised in Table 6.7.

Table 6.7: 2022 Base plus Development Flows Results Summary

Stream	AM				PM			
	2022 No Dev		2022 With Dev		2022 No Dev		2022 With Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
Lundhill Rd to Wath Rd/Park St	0.31	0.4	0.39	0.6	0.30	0.4	0.35	0.5
Park St to Wath Rd/Lundhill Rd	0.10	0.2	0.11	0.2	0.18	0.3	0.20	0.4

6.31 The analysis shows that the junction is predicted to operate within capacity on all arms with a maximum RFC of 0.39 in the AM peak and 0.35 in the PM peak both on the Lundhill Road approach. The maximum predicted queue is 0.4 in the AM peak and 0.5 in the PM peak both on the Lundhill Road approach.

6.32 The junction assessment output files are included at Appendix P.

A633 / B6089 / Wath Road Roundabout

6.33 The results of the 2022 traffic analysis for the A633 / B6089 / Wath Road roundabout are summarised in Table 6.8.

Table 6.8: 2022 Base plus Development Results Summary

Entry Arm	AM				PM			
	2022 No Dev		2022 With Dev		2022 No Dev		2022 With Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A633 (E)	0.43	0.7	0.43	0.8	0.62	1.6	0.63	1.7
B6089 Brampton Rd	0.29	0.4	0.29	0.4	0.30	0.4	0.30	0.4
Wath Rd	0.29	0.4	0.32	0.5	0.29	0.4	0.30	0.4
A633 Valley Way	0.58	1.4	0.59	1.4	0.59	1.4	0.60	1.5

6.34 The analysis shows that the junction is predicted to operate within capacity on all arms with a maximum RFC of 0.59 in the AM peak and 0.63 in the PM peak. The maximum predicted queue is 1.4 in the AM peak and 1.7 in the PM peak.

6.35 The junction assessment output files are included at Appendix P.

Hemingfield Road / A6195 Roundabout

6.36 The results of the 2022 traffic analysis for the Hemingfield Road / A6195 roundabout are summarized in Table 6.9.

Table 6.9: 2022 Base plus Development Results Summary

Entry Arm	AM				PM			
	2022 No Dev		2022 With Dev		2022 No Dev		2022 With Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A6195 Dearne Valley Parkway (E)	0.46	0.9	0.47	0.9	0.63	1.7	0.63	1.7
Hemingfield Road (S)	0.16	0.2	0.17	0.2	0.18	0.2	0.19	0.2
A6195 Dearne Valley Parkway (W)	0.40	0.7	0.41	0.7	0.42	0.7	0.42	0.7
Hemingfield Road (N)	0.20	0.3	0.20	0.3	0.30	0.4	0.30	0.4

6.37 The analysis shows that the junction is predicted to operate within capacity on all arms with a maximum RFC of 0.47 in the AM peak and 0.63 in the PM peak. The maximum predicted queue is 0.9 in the AM peak and 1.7 in the PM peak, there is no increase in queue from the No Development scenario to the Development scenario.

6.38 The junction assessment output files are included at Appendix P.

7 ROAD SAFETY

7.1 The road safety implications of the proposals have been assessed with reference to the STATS19 data collected by the Police. This data is collected from all police forces to a national standard for all accidents involving a personal injury.

7.2 Barnsley Metropolitan Borough Council have provided the most recent summary information of the personal injury road traffic accidents reported to the Police which was for the period from 1st January 2013 to 27th July 2016 for part of Lundhill Road, Beech House Road, Wath Road and Hemingfield Road Roundabout. Details of the accidents are attached at Appendix Q.

7.3 In the three-year period ending 27th July 2016 there has been a total of 17 reported accidents in the study area (and two outside the study area, on Dearne Valley Parkway) of these, three occurred at Brampton Roundabout, two occurred at the Lundhill Road / Wath Road / Park Street junction, nine occurred at the Hemingfield Road Roundabout and three occurred at sections in between. Fifteen of the accidents involved a slight injury, two of the accidents involved a serious injury and there were no fatal accidents.

7.4 A review of the accident patterns on the sections of Lundhill Road, Wath Road, Beech House Road, School Street and Hemingfield Road Roundabout has been undertaken to identify any significant cluster accidents.

7.5 Other than at the Hemingfield Road Roundabout, which had a cluster of nine accidents, there are no large clusters within the study area. The largest cluster was a group of three accidents in the vicinity of the Brampton Roundabout.

Lundhill Road / Park Street / Wath Road / Everill Gate Lane

7.6 At the Lundhill Road / Park Street / Wath Road / Everill Gate junction there were two reported accidents all of which were slight. Table 7.1 provides a summary of the accidents.

Table 7.1: Accident Summary at Lundhill Road / Park Street / Wath Road / Everill Gate Lane Junction

Ref No	Location	Lighting	Severity	Casualties
132299	Lundhill Road at Junction with Park Street	Daylight	Slight	1 Pedestrian
V1 turning right form Park Road onto Lundhill Road collides with child pedestrian crossing the junction without looking. Factors: Failed to look properly				
B-00643-13	Wath Road junction with Lundhill Road	Daylight	Slight	1 Driver & 1 Passenger
V1 turning right out of the junction collides with V2 which is overtaking a bus prior to the junction. Factors: Careless, reckless or in a hurry, Failed to look properly				

7.1 Two isolated incidents during the study period resulting in slight injuries are not considered to represent a significant road safety issue as they were un-related.

Wath Road / B6089 / A633 / Brampton Roundabout

7.2 At the Wath Road / B6089 / A633 / Brampton roundabout junction there were four reported accidents all of which were slight. Table 7.2 provides a summary of the accidents.

Table 7.2: Accident Summary at Lundhill Road / Park Street / Wath Road / Everill Gate Lane Junction

Ref No	Location	Lighting	Severity	Casualties
B-00545-14	Wath Road, Wombwell	Daylight	Slight	1 Driver
V1 pulled out of junction into the path of V2. Factors: Junction overshoot, Failed to look properly				
B-00116-14	Valley Way junction with Wath Road	Dark with streetlights	Slight	1 Driver
V2 approaching roundabout followed by V1. V2 stops at roundabout. V1 anticipating traffic to have cleared roundabout continues and runs into the rear of V2. Factors: Failed to judge other person's path or speed				
B-00324-15	Brampton roundabout junction with Wath Road	Daylight	Slight	1 Driver
V1 entered roundabout but fails to see V2 and collides with it. Factors: Failed to look properly				
B-00044-15	Wath Road junction with Brampton Road	Dark with streetlights	Slight	1 Driver & 1 Pedestrian
Pedestrian was hit by V1 whilst crossing on the pedestrian crossing. Factors: Failed to look properly, Impaired by alcohol				

7.3 As the four accidents were unrelated and occurred at different locations at the roundabout they are not considered to represent a significant road safety issue.

Beech House Road / School Street

7.4 Along Beech House Road / School Street there were two reported accidents all of which were slight. Table 7.3 provides a summary of the accidents.

Table 7.3: Accident Summary at Lundhill Road / Park Street / Wath Road / Everill Gate Lane Junction

Ref No	Location	Lighting	Severity	Casualties
B-00218-13	Beech House Road, Hemingfield	Daylight	Slight	1 Driver
Rider of V1 under the influence of drink fails to negotiate a bend at excessive speed and falls off injuring himself. Factors: Junction overshoot, Loss of control				
B-00159-15	Hemingfield Road junction with Cemetery Road	Daylight	Slight	1 Driver
V1 travelling along Hemingfield Road approaching a right hand bend when V2 approached from opposite direction on wrong side of road and collided with V1. Factors: Poor turn or manoeuvre, Swerved, Loss of control				

7.5 Two isolated incidents during the study period resulting in slight injuries are not considered to represent a significant road safety issue as they were un-related incidents.

Hemingfield Road Roundabout

7.6 At the Hemingfield Road Roundabout there were nine reported accidents all of which seven were slight and two were severe. Table 7.4 provides a summary of the accidents.

Table 7.4: Accident Summary at Hemingfield Road Roundabout

Ref No	Location	Lighting	Severity	Casualties
B-00334-13	Dearne Valley Parkway Hemingfield Road Roundabout	Daylight	Slight	1 Driver
V1 in lane 1 intending to take the third exit, V2 in lane 2 intending to take the second exit, V1 carried on round and collided with the nearside of V2 Factors: Poor turn or manoeuvre				
B-00509-14	Dearne Valley Parkway junction with Hemingfield Road	Daylight	Slight	1 Cyclist
V2 pedal cyclist turning right from Dearne Valley Parkway onto Hemingfield Road. Whilst negotiating the roundabout they are struck by V1 entering roundabout from Dearne Valley Parkway travelling in the opposite direction. Factors: Failed to look properly				
B-00723-13	Dearne Valley Parkway junction with Hemingfield Road	Daylight	Serious	1 Driver
V1 westbound on A6195 enters roundabout at speed and fails to negotiate roundabout. Vehicle clips kerb and rider is thrown from machine. Factors: Poor turn or manoeuvre, Learner or inexperienced driver/rider, Loss of control				
B-01318-14	Dearne Valley Parkway junction with Hemingfield Road Roundabout	Daylight	Slight	1 Driver & 1 Passenger
V2 collides with V1 whilst stationary at roundabout. Factors: Failed to look properly				
B-00783-14	Hemingfield Road Roundabout	Daylight	Serious	1 Driver, 1 Passenger & 1 Rider
V1 and V2 travelling along dual carriageway from Cortonwood. V1 is in lane 1, V2 is in lane 2. On getting to Hemingfield V1 is still in lane 1 which is norked for Hemingfield and A6195. V2 in lane 2 for the A6195 and Wombwell Railway Station. V1 continues on roundabout towards 3rd exit. Factors: Poor turn or manoeuvre, Failed to look properly				
B-01070-15	Hemingfield Road Roundabout	Daylight	Slight	1 Cyclist
V1 and V2 collide on roundabout Factors: Defective brakes, Passing too close to cyclist, horse rider or pedestrian				
133206	Hemingfield Road Roundabout	Daylight	Slight	1 Driver
V1 travels along Dearne Valley Parkway towards Doncaster whilst travelling around Hemingfield Roundabout in lane 1 vehicle overturns onto nearside armco barrier and railings, driver claims wind played a factor. Factors: Travelling too fast for conditions, Junction overshoot, Other				
B-01021-15	Hemingfield Road Roundabout	Dark with streetlights	Slight	2 Drivers
V1 travelling on Dearne Valley Parkway enters roundabout and collides with nearside of V2. Factors: Failed to look properly, Failed to judge other person's path or speed				
B-00954-15	Hemingfield Road Roundabout	Daylight	Slight	1 Passenger
V1 on roundabout turning right, V2 enters roundabout in front of V1 causing collision. Factors: Failed to look properly, Failed to judge other person's path or speed, Inexperienced driver/rider, Visor or windscreen dirty or scratched.				

Dearne Valley Parkway

7.7 Dearne Valley Parkway is outside of the study area defined however two accidents were included in the information received from Barnsley Metropolitan Borough Council. Both accidents resulted in slight injuries. Table 7.5 provides a summary of the accidents.

Table 7.5: Accident Summary at Dearne Valley Parkway

Ref No	Location	Lighting	Severity	Casualties
B-00610-15	Dearne Valley Parkway	Daylight	Slight	1 Driver
V2 emerged from a side road and collided with V1. Factors: Disobeyed 'Give Way' or 'Stop' sign, Junction overshoot, Failed to look properly, Careless, reckless or in a hurry, Aggressive driving				
B-01151-14	Dearne Valley Parkway	Dark with streetlights	Slight	1 Driver
V1 moves into lane 2. V2 approaches rear of V1, V1 tries to move into lane 1 causing V2 to brake heavily, loses control and collides with central reservation and V1. Factors: Failed to judge other person's path or speed				

7.8 Two isolated incidents during the study period resulting in slight injuries are not considered to represent a significant road safety issue as they were un-related incidents.

8 SUMMARY AND CONCLUSIONS

8.1 This Transport Assessment considers the highway and traffic issues raised by proposals to develop up to 152 new homes on a site off Lundhill Road, Wombwell.

8.2 The highway network in the vicinity of the site has been described.

8.3 The proposed development will be accessed from a new simple priority junction on Lundhill Road. At the junction, the available visibility from a 2.4m set-back is in excess of that required by the local highway authority.

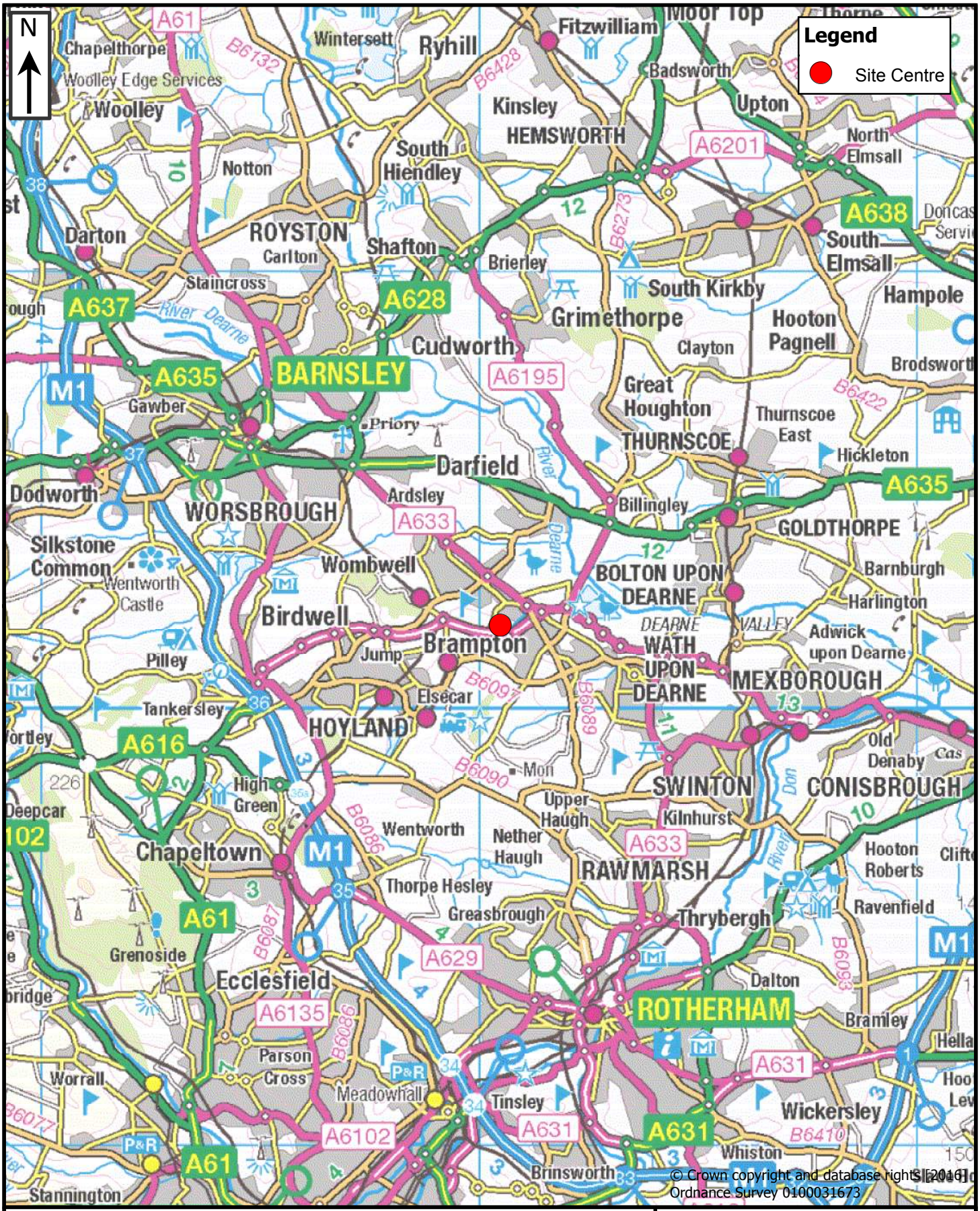
8.4 The site is accessible to a range of useful local destinations by walking, cycling and public transport. There are good bus services on Park Street which provide frequent services to Mexborough, Rotherham, Doncaster and Wath upon Dearne.

8.5 The capacity assessment has been based on 160 dwellings as detailed the Barnsley Metropolitan Borough Council emerging Local Plan.

8.6 The traffic flows associated with a development of up to 160 residential units is 82 trips in both the AM and PM peak periods which will have a negligible impact and no mitigation measures will be required.

8.7 In conclusion, it has been shown that the development can be accessed in a safe manner and the impact of the scheme on nearby junctions is considered as negligible. It is therefore concluded that there is no material highways or traffic reason why planning permission should not be granted.

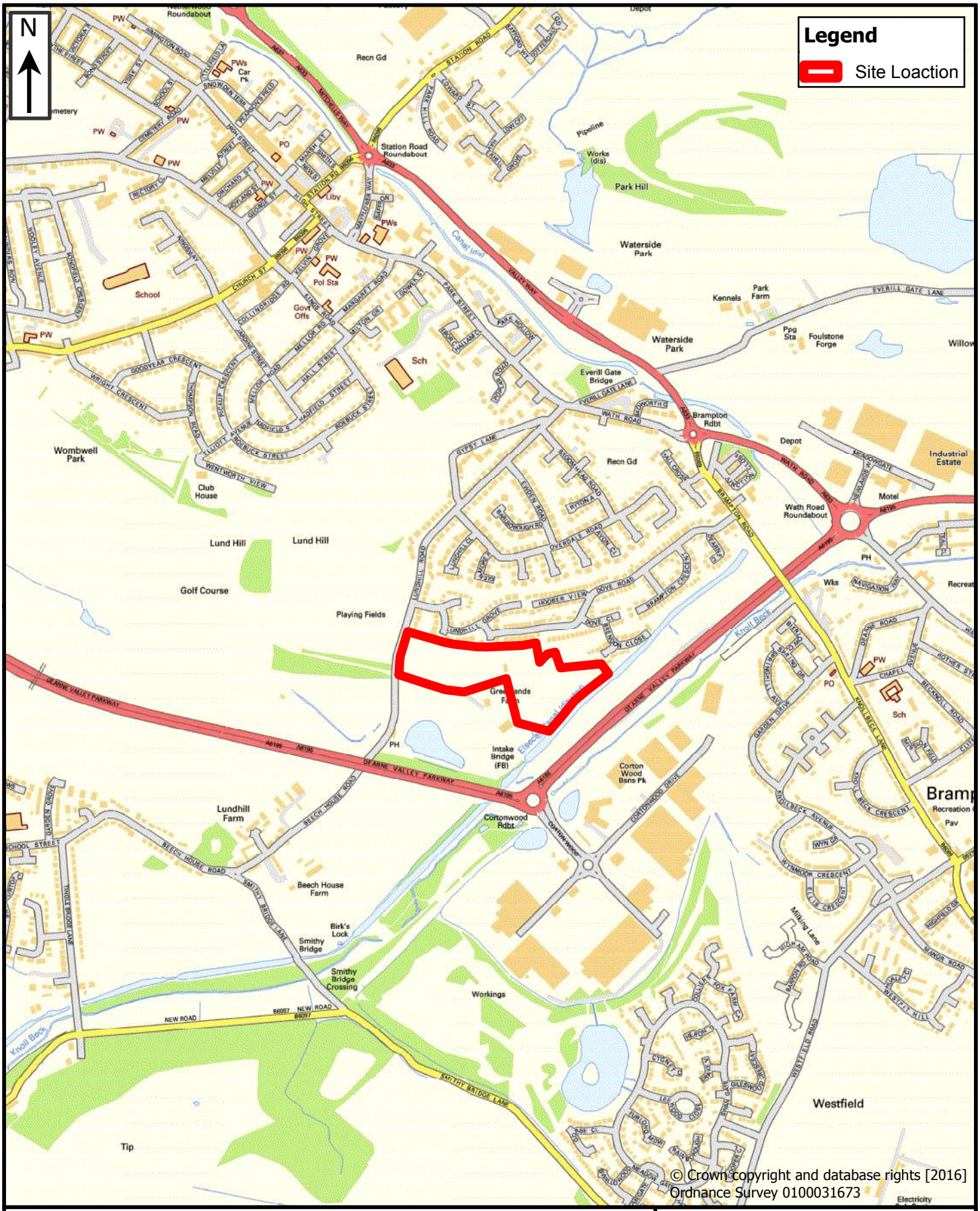
APPENDIX A



A098689 - Lundhill Road, Wombwell

Strategic Highway Network

APPENDIX B



A098689 - Lundhill Road, Wombwell

Local Highway Network

APPENDIX C

Transport Research Note

Accessibility – How Far Do People Walk and Cycle

Gareth Wakenshaw BSc(Hons)
Dr N Bunn BSc(Hons), MSc, PhD, MCIT,CMILT

Date: 7 July 2013

Introduction

Accessibility can be defined as the number of useful destinations which can be reached within a reasonable travel distance. Locations with high levels of accessibility mean that people have the choice of walking, cycling or using public transport to get to the places they want to travel to, rather than having to use a car. The more people who can walk, cycle or use the bus, rather than driving, the fewer cars there will be our roads leading to less congestion and pollution.

As a result, accessibility is an important consideration in allocating sites for development in local plans and in determining planning applications. So, how we determine what is and what is not accessible can have long lasting effects on the shape of our towns and cities.

Before the adoption of the National Planning Policy Framework[1] (NPPF), the Government set out its advice on walking and cycling distances in Planning Policy Guidance Note 13 "Transport" [2], which advised that walking trips under 2km and cycling trips under 5km have the greatest potential to replace short car trips. These distances have been used for many years to define the areas within which facilities are considered accessible on foot or by bike. NPPF replaced PPG13 and deleted the advice on walking and cycling distances, leaving local authorities and practitioners to devise their own estimates.

We have analysed walk and cycle distance data collected through the 2010 National Travel Survey (NTS) to calculate the average and 85th percentile walk and cycle distances. The survey data is collected from 7,700 households, covering over 18,000 individuals and so provides a large sample which can be analysed for variations between UK regions and variations between different reasons for travelling. The 85th percentile distance gives a good measure of the "reasonable maximum" walk or cycle distance and is reported in this paper.

We have also used the NTS data to assess how far on average public transport users walk to the bus stops or rail station.

Methodology

For journeys where walking and cycling were the single mode of travel, the journey distance (recorded to the nearest 0.1 mile), was extracted from the 2010 NTS data and cross referenced to UK region and journey purpose. In addition, NTS data provides information on the length of different stages within trips, thus enabling the walking distance from home to bus stops and rail stations to be assessed for journeys where public transport was the main mode of travel.

The reported journey distances were ranked in length order and the 85th percentile travel distance was determined as the distance not exceeded by more than 15% of the distribution.

Walk and Cycle Distances in the UK

Table 1 below shows the 85th percentile walking and cycling distances for different regions of the UK.

[1] National Planning Policy Framework; Department for Communities and Local Government, 2012
[2] Planning Policy Guidance Note 13 Transport; Department for Environment Transport and the Regions, 2000. Revised 2011 by the Department for Communities and Local Government.

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Table 1 – 85th Percentile Walk & Cycle Distances by Region

	All Journey Purposes			
	Walk		Cycle	
	Sample Size	Distance (miles)	Sample Size	Distance (miles)
UK	11492	1.2	4892	4.5
UK excluding London	9927	1.2	4185	4.0
North East	482	1.5	133	4.0
NW & Merseyside	1382	1.2	552	4.0
Yorkshire & Humberside	1022	1.2	365	6.0
East Midlands	813	1.2	356	4.0
West Midlands	1056	1.2	335	4.8
Eastern	1016	1.5	549	4.5
Greater London	1565	1.0	707	5.0
South East	1619	1.2	774	3.0
South West	1013	1.5	623	4.5
Wales	551	1.0	185	6.0
Scotland	973	1.2	313	5.0
Rural	1230	1.2	471	7.0

For the UK as a whole, the 85th percentile walk distance is 1.2 miles (1.93km) which is quite similar to the 2km previously stated in PPG13. The walking distance shows small regional variations of ±0.3 miles (0.48km) with shortest distances of 1.0 mile (1.6km) in London and Wales, and the longest distances of 1.5 miles (2.4km) in the North East, Eastern and South Western regions.

For the UK as a whole, the 85th percentile cycle distance is 4.5 miles (7.24km) which is significantly longer than the 5km previously stated in PPG13. It should be noted that the cycling sample size is small, and for the North East and Wales is below 300, which the DfT advise is the smallest sample size for reliable results. The variation in cycle distances between regions is ±1.5 miles (2.41km), with the shortest cycle distance of 3.0 miles (4.82km) in the South East and the longest cycle distance of 6.0 miles (9.65km) in Wales, although the Welsh sample is less than 300 and may be unreliable. Excluding London reduces the 85th percentile cycling distance to 4.0 miles (6.43km) for the rest of the UK.

In rural areas (population less than 3,000) it is notable that the walking distance is the same as that for the UK as a whole, but that the cycle distance is much longer at 7.0 miles (11.2km).

Walking and Cycle Distance by Journey Purpose

Table 2 below shows the 85th percentile walking and cycling distances associated with journey purpose.

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Table 2 – 85th Percentile Walk & Cycle Distances by Journey Purpose

	Walk		Cycle	
	Sample	Distance (miles)	Sample	Distance (miles)
Commuting	694	1.5	1458	6.0
Business	81	1.7	131	5.5
Education/ Escort Education	2193	1.0	455	3.0
Shopping	2291	1.0	571	2.0
Other Escort	501	1.5	78	3.0
Personal Business	1128	1.0	317	3.0
Leisure	2108	1.2	1882	5.0
Other incl. just Walk	2496	1.5	n/a	n/a

Table 2 shows that walking mainly used for education, shopping and leisure. The walking distance for education is 1.0 mile (1.6km), and for commuting is 1.5 miles (2.4km). In the Guidelines for Providing for Journeys on Foot[3], the preferred maximum walking distance for school and commuting is 2.0km, which lies between the observed 85th percentile distances for these journey purposes. It is notable that the 85th percentile walk distance for shopping is 1.0 mile (1.6km).

Cycling is mainly used for commuting and leisure journey purposes. In the Local Transport Note 2/08 Cycle Infrastructure Design[4] it is stated that the trip length for commuting by bike exceeds 3.1 miles (5km). In Table 2 it can be seen that the 85th percentile cycle distance for commuting is significantly longer at 6 miles (9.6km). The 85th percentile cycle distance for shopping trips is 2.0 miles (3.2km) and is 3.0 miles (4.8km) for education trips.

Walking Distances to Public Transport

For journeys where the main mode of travel was bus or rail, the distance of the first walk stage from home to the bus stop or to the rail station was extracted from the NTS data for the UK as a whole and is reported in Table 3, below.

Table 3 – Average and 85th Percentile Walk Distances To Public Transport

	Bus Stop		
	Sample	Average Walk Distance (miles)	85th Percentile Walk Distance (miles)
UK	755	0.35	0.5
London	315	0.28	0.4
UK excluding London	440	0.41	0.6
	Rail Station		
All Rail Stations	543	0.54	1.0
London Underground	180	0.4	0.6
Surface Rail	331	0.64	1.0

[3] Guidelines for Providing for Journeys on Foot; Institution of Highways and Transportation, 2000
[4] Local Transport Note 2/08 Cycle Infrastructure Design; Department for Transport, 2008

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Table 3 shows that the 85th percentile walk distance to a bus stop for the UK is 0.5 miles (0.8km) and to any rail station is 1.0 mile (1.6km). In the Guidelines for Planning for Public Transport in Developments[5] it is advised that new developments should be located so that public transport trips involve a walking distance of less than 400m from the nearest bus stop or 800m from the nearest railway station. In Table 3 it can be seen that the average walk distance to a bus stop is 0.35 miles (0.57km) or any rail station is 0.54 miles (0.86km) which are both greater than the recommended values. This means that over 50% of people will walk further than the distances recommended in the IHT Guidelines.

Table 3 also shows that the walk distance to bus stops in London is significantly shorter than that for the rest of the UK, which may arise from the denser public transport network. The average walk distance in the UK excluding London is 0.41 miles (0.64km), and the 85th percentile walk distance is 0.6 miles (0.97km). The situation is similar for rail stations in London, whereby the average walk distance to a London Underground station is 0.4 miles (0.64km), and the 85th percentile walk distance is 0.6 mile s(0.97km). In contrast the average walk distance to a surface railway station outside of London is 0.64 miles (1.03km), and the 85th percentile walk distance is 1.0 mile (1.6km).

Conclusions

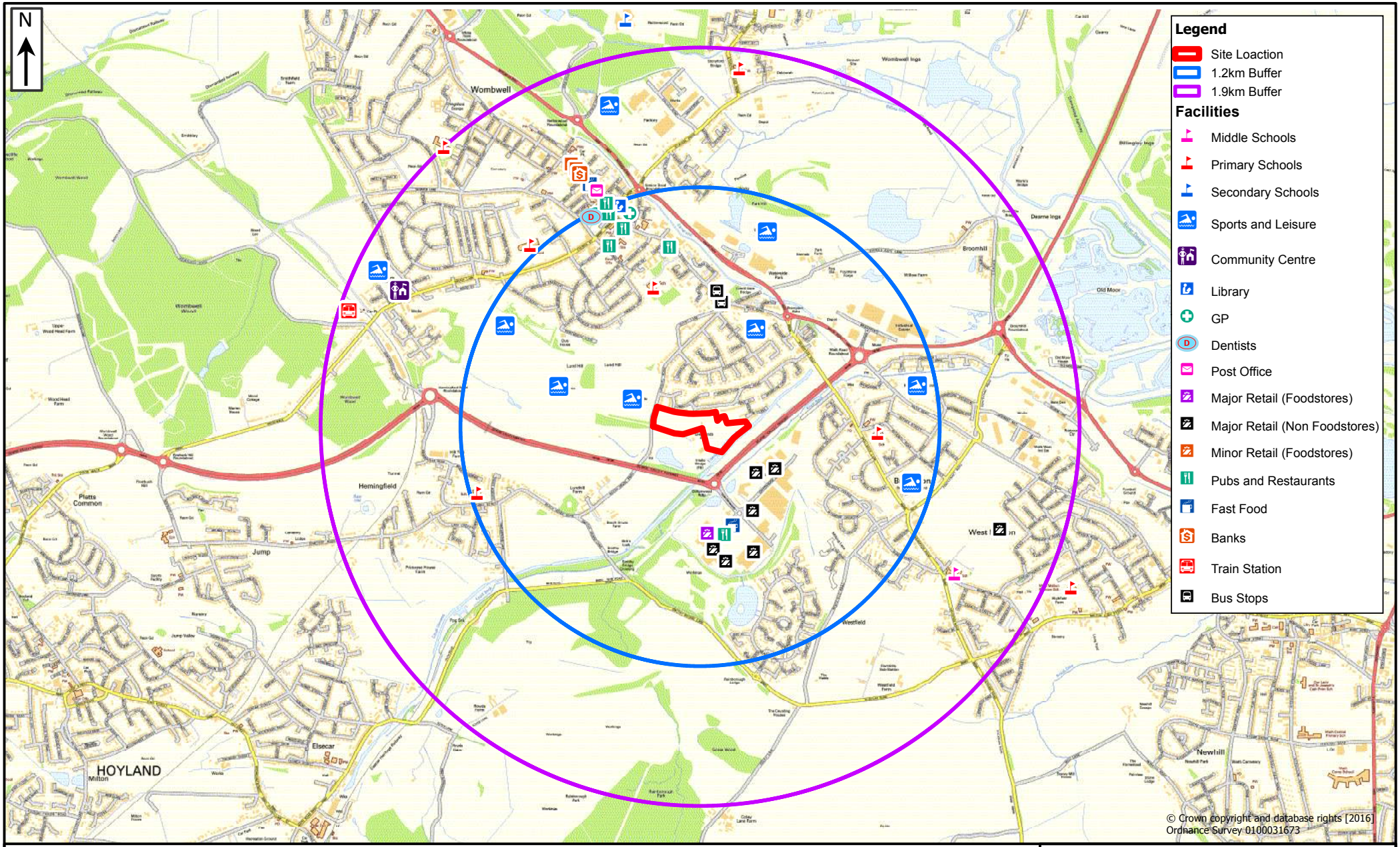
From analysis of the NTS data, the 85th percentile walk distance for all journey purposes across the UK is similar to the 2km walk distance advised in PPG 13. However the 85th percentile cycle distance for all journey purposes across the UK is significantly longer than the 5km cycle distance advised in PPG13. It would therefore seem that using the PPG13 cycle distance underestimates the destinations available to cyclists. It is considered that for accessibility planning purposes a 2km walk distance and a 7km cycle distance would be appropriate.

There are some regional variations in walk and cycle distances and differences related to journey purpose. It might be appropriate to take these into account when assessing accessibility in particular areas or for particular journey purposes.

The NTS data shows that more than 50% of people walk further to a bus stop or any rail station than the distances advised by the IHT Guidelines. Outside London, 50% of people will walk 0.64km to a bus stop and the 85th percentile distance is 0.97km. To surface rail stations outside of London, 50% of people will walk 1.03km and the 85th percentile is 1.6km. It is considered that the average walk distance should be used as the desirable walk distance to public transport, and the 85th percentile walk distance as the limit of accessibility.

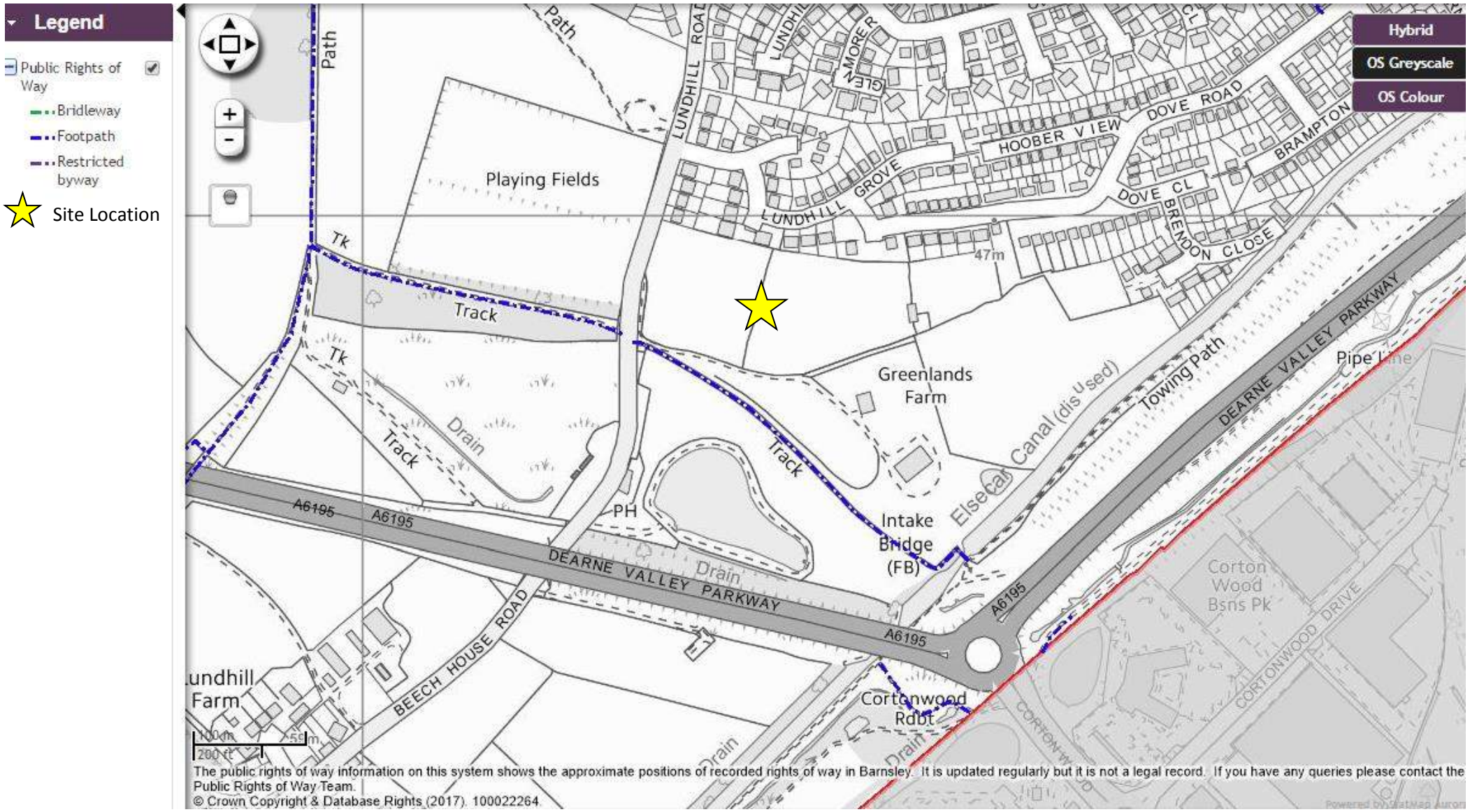
[5] Guidelines for Planning for Public Transport in Developments, Institution of Highways and Transportation, 1999,

APPENDIX D



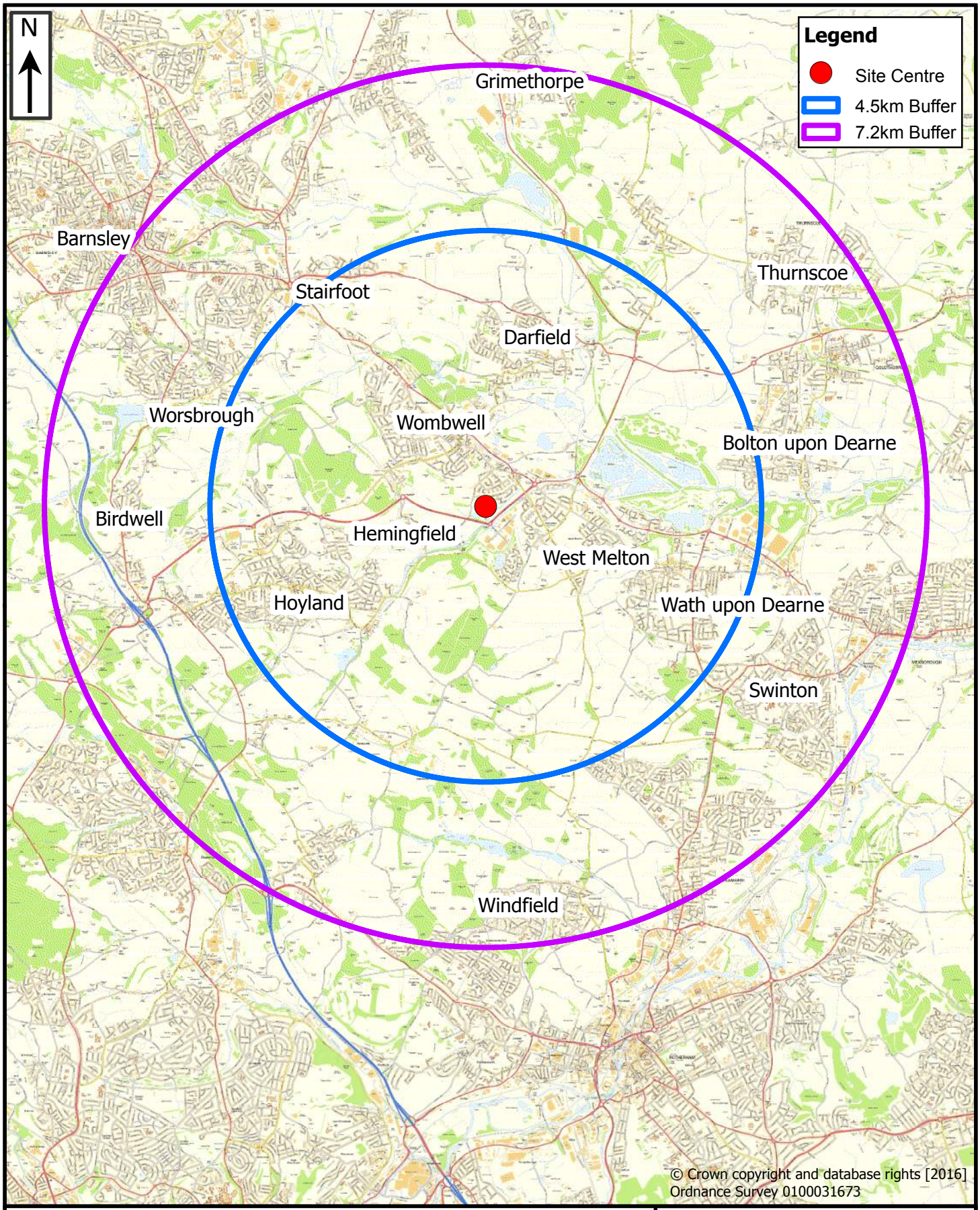
A098689 - Lundhill Road, Wombwell

Walking Catchment



Extract from Barnsley Metropolitan Borough Council Public Rights of Way Map

APPENDIX E



A098689 - Lundhill Road, Wombwell

Cycling Catchment

APPENDIX F

TRANSPORT Data Collection

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: WATH ROAD / LUNDHILL ROAD

APPROACHING FROM: WATH ROAD (EAST)

TIME / CLASS	LEFT TO LUNDHILL ROAD								STRAIGHT TO WATH ROAD (WEST)								U-TURN TO WATH ROAD (EAST)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	4	0	0	0	0	4	1	0	21	2	2	0	4	30	0	0	0	0	0	0	0	0	34
07:15 - 07:30	0	0	3	1	1	0	0	5	0	0	20	1	1	0	1	23	0	0	0	0	0	0	0	0	28
07:30 - 07:45	0	0	7	0	0	0	0	7	0	0	29	8	3	0	4	44	0	0	0	0	0	0	0	0	51
07:45 - 08:00	0	1	5	0	0	0	0	6	0	0	37	7	2	0	3	49	0	0	0	0	0	0	0	0	55
HOURLY TOTAL	0	1	19	1	1	0	0	22	1	0	107	18	8	0	12	146	0	0	0	0	0	0	0	0	168
08:00 - 08:15	0	0	9	2	0	0	0	11	0	0	51	7	4	1	3	66	0	0	0	0	0	0	0	0	77
08:15 - 08:30	0	0	8	2	0	0	0	10	0	0	77	7	3	0	2	89	0	0	0	0	0	0	0	0	99
08:30 - 08:45	0	0	6	1	0	0	0	7	0	0	50	6	1	1	3	61	0	0	0	0	0	0	0	0	68
08:45 - 09:00	0	0	9	3	1	1	0	14	0	1	51	5	3	0	1	61	0	0	0	0	0	0	0	0	75
HOURLY TOTAL	0	0	32	8	1	1	0	42	0	1	229	25	11	2	9	277	0	0	0	0	0	0	0	0	319
09:00 - 09:15	0	0	8	1	0	0	0	9	0	1	57	7	5	0	6	76	0	0	0	0	0	0	0	0	85
09:15 - 09:30	0	0	5	2	0	0	0	7	0	0	45	7	1	0	1	54	0	0	0	0	0	0	0	0	61
1/2 HOUR TOTAL	0	0	13	3	0	0	0	16	0	1	102	14	6	0	7	130	0	0	0	0	0	0	0	0	146
PERIOD TOTAL	0	1	64	12	2	1	0	80	1	2	438	57	25	2	28	553	0	0	0	0	0	0	0	0	633
16:30 - 16:45	0	0	20	2	0	0	0	22	0	0	63	10	0	0	2	75	0	0	0	0	0	0	0	0	97
16:45 - 17:00	0	0	18	4	0	0	0	22	1	1	62	8	0	0	3	75	0	0	0	0	0	0	0	0	97
17:00 - 17:15	0	0	24	3	0	0	0	27	0	2	56	7	0	0	4	69	0	0	0	0	0	0	0	0	96
17:15 - 17:30	1	0	17	1	0	0	0	19	1	1	83	6	0	0	2	93	0	0	0	0	0	0	0	0	112
HOURLY TOTAL	1	0	79	10	0	0	0	90	2	4	264	31	0	0	11	312	0	0	0	0	0	0	0	0	402
17:30 - 17:45	0	0	20	0	0	0	0	20	1	3	67	5	0	0	2	78	0	0	0	0	0	0	0	0	98
17:45 - 18:00	0	0	18	4	0	0	0	22	1	0	68	3	1	0	4	77	0	0	0	0	0	0	0	0	99
18:00 - 18:15	1	1	18	2	0	0	0	22	1	0	62	7	2	0	1	73	0	0	0	0	0	0	0	0	95
18:15 - 18:30	0	0	10	1	0	0	0	11	0	2	40	7	1	0	2	52	0	0	0	0	0	0	0	0	63
HOURLY TOTAL	1	1	66	7	0	0	0	75	3	5	237	22	4	0	9	280	0	0	0	0	0	0	0	0	355
PERIOD TOTAL	2	1	145	17	0	0	0	165	5	9	501	53	4	0	20	592	0	0	0	0	0	0	0	0	757

TRANSPORT Data Collection

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: WATH ROAD / LUNDHILL ROAD

APPROACHING FROM: LUNDHILL ROAD

TIME / CLASS	LEFT TO WATH ROAD (WEST)								RIGHT TO WATH ROAD (EAST)								U-TURN TO LUNDHILL ROAD								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	9	1	0	0	0	10	0	0	14	2	0	0	0	16	0	0	0	0	0	0	0	0	26
07:15 - 07:30	0	0	6	0	0	0	0	6	0	0	20	6	1	0	0	27	0	0	0	0	0	0	0	0	33
07:30 - 07:45	0	0	10	3	0	0	0	13	0	0	12	2	0	0	0	14	0	0	0	0	0	0	0	0	27
07:45 - 08:00	0	0	18	1	0	0	0	19	0	0	14	1	0	0	0	15	0	0	0	0	0	0	0	0	34
HOURLY TOTAL	0	0	43	5	0	0	0	48	0	0	60	11	1	0	0	72	0	0	0	0	0	0	0	0	120
08:00 - 08:15	0	0	17	3	0	0	0	20	1	0	23	5	0	0	0	29	0	0	0	0	0	0	0	0	49
08:15 - 08:30	0	0	11	2	1	0	0	14	0	0	13	2	0	0	0	15	0	0	0	0	0	0	0	0	29
08:30 - 08:45	0	0	8	0	0	0	0	8	0	0	16	0	0	0	0	16	0	0	0	0	0	0	0	0	24
08:45 - 09:00	0	0	8	0	2	0	0	10	0	0	18	0	0	0	0	18	0	0	0	0	0	0	0	0	28
HOURLY TOTAL	0	0	44	5	3	0	0	52	1	0	70	7	0	0	0	78	0	0	0	0	0	0	0	0	130
09:00 - 09:15	0	0	9	2	0	0	0	11	0	0	17	1	0	0	0	18	0	0	0	0	0	0	0	0	29
09:15 - 09:30	0	0	11	1	0	0	0	12	0	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0	23
HOURLY TOTAL	0	0	20	3	0	0	0	23	0	0	27	2	0	0	0	29	0	0	0	0	0	0	0	0	52
PERIOD TOTAL	0	0	107	13	3	0	0	123	1	0	157	20	1	0	0	179	0	0	0	0	0	0	0	0	302
16:30 - 16:45	0	0	10	1	0	0	0	11	0	0	3	4	1	0	0	8	0	0	0	0	0	0	0	0	19
16:45 - 17:00	0	0	12	0	0	0	0	12	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0	22
17:00 - 17:15	1	0	8	1	1	0	0	11	0	0	11	1	0	0	0	12	0	0	0	0	0	0	0	0	23
17:15 - 17:30	0	0	13	1	0	0	0	14	0	0	13	1	0	0	0	14	0	0	0	0	0	0	0	0	28
HOURLY TOTAL	1	0	43	3	1	0	0	48	0	0	36	7	1	0	0	44	0	0	0	0	0	0	0	0	92
17:30 - 17:45	0	0	13	2	1	0	0	16	0	0	15	1	1	0	0	17	0	0	0	0	0	0	0	0	33
17:45 - 18:00	0	0	14	0	1	0	0	15	0	1	25	1	0	0	0	27	0	0	0	0	0	0	0	0	42
18:00 - 18:15	0	0	12	0	0	0	0	12	0	0	15	0	1	0	0	16	0	0	0	0	0	0	0	0	28
18:15 - 18:30	0	0	9	1	0	0	0	10	0	0	22	0	1	0	0	23	0	0	0	0	0	0	0	0	33
HOURLY TOTAL	0	0	48	3	2	0	0	53	0	1	77	2	3	0	0	83	0	0	0	0	0	0	0	0	136
PERIOD TOTAL	1	0	91	6	3	0	0	101	0	1	113	9	4	0	0	127	0	0	0	0	0	0	0	0	228

Queue Lengths, Wombwell

DATE: TUESDAY 28th JUNE 2016

LOCATION: WATH ROAD / LUNDHILL ROAD

ARM:	WATH ROAD (EAST)			LUNDHILL ROAD			WATH ROAD (WEST)		
spot Q on 5th min intervals	LANE 1			LANE 1			LANE 1		
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)
07:00	0	0	0	1	0	6	0	0	0
07:05	0	0	0	0	0	0	0	0	0
07:10	0	0	0	0	0	0	0	0	0
07:15	0	0	0	1	0	6	0	0	0
07:20	0	0	0	1	0	6	0	0	0
07:25	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0
07:35	0	0	0	2	0	11	0	0	0
07:40	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0
07:50	0	0	0	0	0	0	0	0	0
07:55	0	0	0	1	0	6	0	0	0
08:00	0	0	0	0	0	0	0	0	0
08:05	0	0	0	0	0	0	0	0	0
08:10	0	0	0	0	0	0	0	0	0
08:15	0	0	0	1	0	6	0	0	0
08:20	0	0	0	1	0	6	0	0	0
08:25	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0
08:35	0	0	0	0	0	0	0	0	0
08:40	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0
08:50	0	0	0	0	0	0	0	0	0
08:55	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0
09:05	2	0	11	0	0	0	0	0	0
09:10	0	0	0	1	0	6	0	0	0
09:15	0	0	0	0	0	0	0	0	0
09:20	0	0	0	0	0	0	0	0	0
09:25	0	0	0	0	0	0	0	0	0

Queue Lengths, Wombwell

DATE: TUESDAY 28th JUNE 2016

LOCATION: WATH ROAD / LUNDHILL ROAD

ARM:	WATH ROAD (EAST)			LUNDHILL ROAD			WATH ROAD (WEST)		
spot Q on 5th min intervals	LANE 1			LANE 1			LANE 1		
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)
16:30	0	0	0	0	0	0	0	0	0
16:35	0	0	0	0	0	0	0	0	0
16:40	0	0	0	1	0	6	0	0	0
16:45	0	0	0	0	0	0	0	0	0
16:50	0	0	0	1	0	6	0	0	0
16:55	0	0	0	1	0	6	0	0	0
17:00	0	0	0	1	0	6	0	0	0
17:05	0	0	0	1	0	6	0	0	0
17:10	0	0	0	0	0	0	0	0	0
17:15	0	0	0	1	0	6	0	0	0
17:20	0	0	0	1	0	6	0	0	0
17:25	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0
17:35	0	0	0	0	0	0	0	0	0
17:40	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0
17:50	0	0	0	0	0	0	0	0	0
17:55	0	0	0	1	0	6	0	0	0
18:00	0	0	0	1	0	6	0	0	0
18:05	1	0	6	1	1	21	0	0	0
18:10	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0
18:20	0	0	0	0	0	0	0	0	0
18:25	0	0	0	1	0	6	0	0	0

TRANSPORT Data Collection

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: WATH ROAD / LUNDHILL ROAD

APPROACHING FROM: WATH ROAD (WEST)

TIME / CLASS	STRAIGHT TO WATH ROAD (EAST)								RIGHT TO LUNDHILL ROAD								U-TURN TO WATH ROAD (WEST)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	19	5	3	0	3	30	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	33
07:15 - 07:30	0	0	29	6	2	0	2	39	0	0	4	2	0	0	0	6	0	0	0	0	0	0	0	0	45
07:30 - 07:45	0	0	48	6	1	0	3	58	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0	63
07:45 - 08:00	1	1	36	5	3	0	5	51	0	0	7	3	0	0	0	10	0	0	0	0	0	0	0	0	61
HOURLY TOTAL	1	1	132	22	9	0	13	178	0	0	18	6	0	0	0	24	0	0	0	0	0	0	0	0	202
08:00 - 08:15	0	0	52	9	0	0	0	61	0	0	9	3	3	0	0	15	0	0	0	0	0	0	0	0	76
08:15 - 08:30	0	0	60	5	1	0	5	71	0	0	9	2	0	0	0	11	0	0	0	0	0	0	0	0	82
08:30 - 08:45	1	1	56	5	2	1	3	69	0	0	9	2	0	0	0	11	0	0	0	0	0	0	0	0	80
08:45 - 09:00	0	0	57	6	2	0	2	67	0	0	17	3	0	0	0	20	0	0	0	0	0	0	0	0	87
HOURLY TOTAL	1	1	225	25	5	1	10	268	0	0	44	10	3	0	0	57	0	0	0	0	0	0	0	0	325
09:00 - 09:15	0	1	31	4	2	0	3	41	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0	50
09:15 - 09:30	0	0	50	10	1	2	3	66	0	0	10	2	0	0	0	12	0	0	0	0	0	0	0	0	78
HOURLY TOTAL	0	1	81	14	3	2	6	107	0	0	18	3	0	0	0	21	0	0	0	0	0	0	0	0	128
PERIOD TOTAL	2	3	438	61	17	3	29	553	0	0	80	19	3	0	0	102	0	0	0	0	0	0	0	0	655
16:30 - 16:45	0	1	44	6	0	0	1	52	0	0	8	0	1	0	0	9	0	0	0	0	0	0	0	0	61
16:45 - 17:00	0	0	53	9	1	0	2	65	0	0	15	1	1	0	0	17	0	0	0	0	0	0	0	0	82
17:00 - 17:15	0	2	68	5	0	0	5	80	0	0	15	2	0	0	0	17	0	0	0	0	0	0	0	0	97
17:15 - 17:30	1	1	53	2	1	0	3	61	0	0	13	1	1	0	0	15	0	0	0	0	0	0	0	0	76
HOURLY TOTAL	1	4	218	22	2	0	11	258	0	0	51	4	3	0	0	58	0	0	0	0	0	0	0	0	316
17:30 - 17:45	1	0	45	2	1	0	2	51	0	0	14	1	0	0	0	15	0	0	0	0	0	0	0	0	66
17:45 - 18:00	0	0	55	9	0	0	2	66	0	0	23	4	0	0	0	27	0	0	0	0	0	0	0	0	93
18:00 - 18:15	2	0	39	2	1	0	3	47	2	0	11	3	1	0	0	17	0	0	0	0	0	0	0	0	64
18:15 - 18:30	0	1	40	1	0	0	1	43	0	0	14	0	0	0	0	14	0	0	0	0	0	0	0	0	57
HOURLY TOTAL	3	1	179	14	2	0	8	207	2	0	62	8	1	0	0	73	0	0	0	0	0	0	0	0	280
PERIOD TOTAL	4	5	397	36	4	0	19	465	2	0	113	12	4	0	0	131	0	0	0	0	0	0	0	0	596

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: A633 / B6089 / WATH ROAD

APPROACHING FROM: A633 (NORTH)

TIME / CLASS	LEFT TO A633 (EAST)								STRAIGHT TO B6089								RIGHT TO WATH ROAD								U-TURN TO A633 (NORTH)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	52	14	4	2	1	73	0	1	19	4	1	0	0	25	1	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	101
07:15 - 07:30	0	0	71	10	3	1	1	86	0	1	41	4	1	1	0	48	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	135
07:30 - 07:45	0	0	101	11	1	2	0	115	0	3	61	13	3	0	0	80	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	196
07:45 - 08:00	0	0	66	10	4	2	1	83	0	1	48	10	5	0	0	64	0	1	3	0	0	0	2	6	0	0	0	0	0	0	0	0	153
HOURLY TOTAL	0	0	290	45	12	7	3	357	0	6	169	31	10	1	0	217	1	1	7	0	0	0	2	11	0	0	0	0	0	0	0	0	585
08:00 - 08:15	0	0	93	15	2	3	0	113	0	0	54	11	1	1	0	67	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	186
08:15 - 08:30	0	0	99	13	2	1	0	115	0	0	47	9	4	0	0	60	0	0	13	1	0	0	0	14	0	0	0	0	0	0	0	0	189
08:30 - 08:45	0	1	74	7	4	1	0	87	0	0	38	3	1	0	0	42	0	0	4	2	0	0	0	6	0	0	0	0	0	0	0	0	135
08:45 - 09:00	0	0	77	13	4	3	0	97	0	0	30	7	5	2	0	44	0	0	3	0	2	1	0	6	0	0	0	0	0	0	0	0	147
HOURLY TOTAL	0	1	343	48	12	8	0	412	0	0	169	30	11	3	0	213	0	0	25	4	2	1	0	32	0	0	0	0	0	0	0	0	657
09:00 - 09:15	0	0	78	9	5	1	0	93	0	0	31	5	0	0	0	36	0	0	5	1	0	0	1	7	0	0	0	0	0	0	0	0	136
09:15 - 09:30	0	0	67	10	4	1	0	82	0	1	27	3	0	0	0	31	0	0	3	1	1	0	0	5	0	0	0	0	0	0	0	0	118
/2 HOUR TOTAL	0	0	145	19	9	2	0	175	0	1	58	8	0	0	0	67	0	0	8	2	1	0	1	12	0	0	0	0	0	0	0	0	254
PERIOD TOTAL	0	1	778	112	33	17	3	944	0	7	396	69	21	4	0	497	1	1	40	6	3	1	3	55	0	0	0	0	0	0	0	0	1496
16:30 - 16:45	0	0	103	10	3	2	0	118	0	0	57	13	1	0	0	71	0	1	7	0	0	0	0	8	0	0	0	0	0	0	0	0	197
16:45 - 17:00	0	0	82	15	1	0	0	98	0	0	40	5	2	1	0	48	0	0	8	1	0	0	0	9	0	0	1	0	0	0	0	1	156
17:00 - 17:15	0	1	103	14	1	1	0	120	1	0	64	6	2	0	0	73	0	0	9	0	0	0	1	10	0	0	1	0	0	0	0	1	204
17:15 - 17:30	0	1	98	13	1	0	0	113	0	0	48	10	0	0	0	58	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	182
HOURLY TOTAL	0	2	386	52	6	3	0	449	1	0	209	34	5	1	0	250	0	1	35	1	0	0	1	38	0	0	2	0	0	0	0	2	739
17:30 - 17:45	2	0	106	10	3	3	0	124	1	3	64	6	0	0	0	74	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	203
17:45 - 18:00	0	0	70	13	0	1	0	84	0	1	63	5	1	0	1	71	0	0	6	2	0	0	0	8	0	0	0	0	0	0	0	0	163
18:00 - 18:15	0	0	82	4	2	2	0	90	0	5	49	5	0	0	1	60	1	0	6	0	0	0	0	7	0	0	1	0	0	0	0	1	158
18:15 - 18:30	0	0	78	6	1	0	0	85	0	1	43	4	0	0	0	48	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	137
HOURLY TOTAL	2	0	336	33	6	6	0	383	1	10	219	20	1	0	2	253	1	0	21	2	0	0	0	24	0	0	1	0	0	0	0	1	661
PERIOD TOTAL	2	2	722	85	12	9	0	832	2	10	428	54	6	1	2	503	1	1	56	3	0	0	1	62	0	0	3	0	0	0	0	3	1400

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: A633 / B6089 / WATH ROAD

APPROACHING FROM: A633 (EAST)

TIME / CLASS	LEFT TO B6089								STRAIGHT TO WATH ROAD								RIGHT TO A633 (NORTH)								U-TURN TO A633 (EAST)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	1	0	4	1	0	0	0	6	0	0	10	1	1	0	1	13	0	1	35	15	2	4	0	57	0	0	0	0	0	0	0	0	76
07:15 - 07:30	0	0	3	1	0	0	0	4	0	0	13	1	1	0	0	15	0	0	49	10	1	2	0	62	0	0	0	0	0	0	0	0	81
07:30 - 07:45	0	0	4	1	0	0	0	5	0	0	18	0	2	0	2	22	0	0	65	10	2	1	0	78	0	0	0	0	0	0	0	0	105
07:45 - 08:00	0	0	6	0	0	0	0	6	0	0	23	4	1	0	0	28	0	1	92	13	4	3	0	113	0	0	0	0	0	0	0	0	147
HOURLY TOTAL	1	0	17	3	0	0	0	21	0	0	64	6	5	0	3	78	0	2	241	48	9	10	0	310	0	0	0	0	0	0	0	0	409
08:00 - 08:15	0	0	7	2	0	1	0	10	0	0	41	8	3	1	1	54	0	0	66	8	3	2	0	79	0	0	0	0	0	0	0	0	143
08:15 - 08:30	0	0	3	0	0	0	0	3	0	0	47	5	3	0	0	55	0	0	68	7	6	1	0	82	0	0	0	0	0	0	0	0	140
08:30 - 08:45	0	0	5	3	1	0	0	9	0	0	38	5	1	1	1	46	0	0	52	8	5	1	0	66	0	0	0	0	0	0	0	0	121
08:45 - 09:00	0	0	12	0	0	0	0	12	0	1	40	3	1	0	0	45	0	1	66	13	4	1	0	85	0	0	0	0	0	0	0	0	142
HOURLY TOTAL	0	0	27	5	1	1	0	34	0	1	166	21	8	2	2	200	0	1	252	36	18	5	0	312	0	0	0	0	0	0	0	0	546
9:00 - 9:15	0	0	10	1	0	0	0	11	0	1	33	5	3	0	2	44	0	0	63	9	2	2	0	76	0	0	0	0	0	0	0	0	131
9:15 - 9:30	0	0	7	2	0	0	0	9	0	0	30	5	2	0	0	37	0	0	53	10	2	1	0	66	0	0	2	1	0	0	0	3	115
1/2 HOUR TOTAL	0	0	17	3	0	0	0	20	0	1	63	10	5	0	2	81	0	0	116	19	4	3	0	142	0	0	2	1	0	0	0	3	246
PERIOD TOTAL	1	0	61	11	1	1	0	75	0	2	293	37	18	2	7	359	0	3	609	103	31	18	0	764	0	0	2	1	0	0	0	3	1201
16:30 - 16:45	0	0	23	3	0	0	0	26	0	0	55	10	0	0	1	66	0	0	75	13	3	2	0	93	0	0	0	0	0	0	0	0	185
16:45 - 17:00	0	0	13	4	1	0	0	18	0	0	66	8	0	0	1	75	0	0	83	10	2	2	0	97	0	0	0	0	0	0	0	0	190
17:00 - 17:15	0	0	30	3	0	0	0	33	0	2	53	7	0	0	0	62	0	1	113	8	1	1	0	124	0	0	0	0	0	0	0	0	219
17:15 - 17:30	0	1	25	0	1	0	0	27	1	0	70	6	1	0	1	79	0	2	98	7	0	2	0	109	0	0	1	1	0	0	0	2	217
HOURLY TOTAL	0	1	91	10	2	0	0	104	1	2	244	31	1	0	3	282	0	3	369	38	6	7	0	423	0	0	1	1	0	0	0	2	811
17:30 - 17:45	0	0	23	4	0	0	0	27	1	2	60	4	0	0	1	68	0	1	97	6	2	1	0	107	0	0	0	0	0	0	0	0	202
17:45 - 18:00	0	3	17	4	0	0	0	24	1	0	59	3	1	0	1	65	0	0	84	2	1	0	0	87	0	0	0	0	0	0	0	0	176
18:00 - 18:15	0	0	25	3	0	0	0	28	0	1	49	5	2	0	0	57	0	1	95	7	2	1	1	107	0	0	0	0	0	0	0	0	192
18:15 - 18:30	0	0	29	1	1	0	0	31	0	2	36	6	0	0	1	45	0	1	88	4	2	0	0	95	0	0	0	0	0	0	0	0	171
HOURLY TOTAL	0	3	94	12	1	0	0	110	2	5	204	18	3	0	3	235	0	3	364	19	7	2	1	396	0	0	0	0	0	0	0	0	741
PERIOD TOTAL	0	4	185	22	3	0	0	214	3	7	448	49	4	0	6	517	0	6	733	57	13	9	1	819	0	0	1	1	0	0	0	2	1552

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: A633 / B6089 / WATH ROAD

APPROACHING FROM: B6089

TIME / CLASS	LEFT TO WATH ROAD								STRAIGHT TO A633 (NORTH)								RIGHT TO A633 (EAST)								U-TURN TO B6089								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	12	2	0	0	2	16	0	1	24	3	1	1	1	31	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	52
07:15 - 07:30	0	0	10	1	1	0	1	13	0	1	33	8	0	0	0	42	0	0	8	2	1	0	0	11	0	0	0	0	0	0	0	0	66
07:30 - 07:45	0	0	15	5	0	0	3	23	0	0	56	9	0	0	0	65	0	0	11	0	0	0	0	11	0	0	1	0	0	0	0	1	100
07:45 - 08:00	0	0	12	3	1	0	1	17	0	2	44	10	4	0	0	60	0	0	10	1	1	0	0	12	0	0	0	0	0	0	0	0	89
HOURLY TOTAL	0	0	49	11	2	0	7	69	0	4	157	30	5	1	1	198	0	0	34	3	2	0	0	39	0	0	1	0	0	0	0	1	307
08:00 - 08:15	0	0	14	2	1	0	2	19	0	0	57	10	0	1	0	68	0	0	8	0	1	0	0	9	0	0	0	0	0	0	0	0	96
08:15 - 08:30	0	0	24	1	0	0	3	28	0	2	34	6	2	0	0	44	0	0	9	2	2	0	0	13	0	0	0	0	0	0	0	0	85
08:30 - 08:45	0	0	14	2	0	0	1	17	0	0	37	3	4	0	0	44	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	68
08:45 - 09:00	0	0	15	3	1	0	1	20	0	0	32	12	2	1	0	47	0	0	12	1	1	0	0	14	0	0	0	0	0	0	0	0	81
HOURLY TOTAL	0	0	67	8	2	0	7	84	0	2	160	31	8	2	0	203	0	0	36	3	4	0	0	43	0	0	0	0	0	0	0	0	330
9:00 - 9:15	0	0	26	4	2	0	3	35	0	0	25	8	1	2	0	36	0	0	13	2	1	0	0	16	0	0	1	0	0	0	0	1	88
9:15 - 9:30	0	0	16	3	0	0	1	20	0	0	21	0	0	0	0	21	0	0	14	2	0	0	0	16	0	0	0	0	0	0	0	0	57
1/2 HOUR TOTAL	0	0	42	7	2	0	4	55	0	0	46	8	1	2	0	57	0	0	27	4	1	0	0	32	0	0	1	0	0	0	0	1	145
PERIOD TOTAL	0	0	158	26	6	0	18	208	0	6	363	69	14	5	1	458	0	0	97	10	7	0	0	114	0	0	2	0	0	0	0	2	782
16:30 - 16:45	0	0	15	1	0	0	2	18	1	1	36	7	1	0	1	47	0	0	5	2	0	0	0	7	0	0	0	0	0	0	0	0	72
16:45 - 17:00	1	1	10	2	0	0	1	15	0	0	38	5	3	0	1	47	0	0	9	2	0	0	0	11	0	0	0	0	0	0	0	0	73
17:00 - 17:15	0	0	19	4	0	0	3	26	0	1	38	4	0	0	0	43	0	1	11	1	1	0	0	14	0	0	0	0	0	0	0	0	83
17:15 - 17:30	1	0	29	1	0	0	1	32	0	1	39	4	0	0	0	44	0	1	7	0	0	1	0	9	0	0	0	0	0	0	0	0	85
HOURLY TOTAL	2	1	73	8	0	0	7	91	1	3	151	20	4	0	2	181	0	2	32	5	1	1	0	41	0	0	0	0	0	0	0	0	313
17:30 - 17:45	0	1	33	1	0	0	1	36	0	1	45	10	1	0	0	57	0	0	15	1	2	0	0	18	0	0	2	0	0	0	0	2	113
17:45 - 18:00	0	0	16	1	0	0	3	20	0	1	42	6	0	0	0	49	1	0	7	3	0	0	0	11	0	0	0	0	0	0	0	0	80
18:00 - 18:15	0	0	23	6	0	0	1	30	0	0	53	2	0	0	0	55	0	1	13	1	0	0	0	15	0	0	0	0	0	0	0	0	100
18:15 - 18:30	0	0	14	2	0	0	1	17	0	0	30	7	1	0	0	38	0	0	15	0	0	0	0	15	0	0	1	0	0	0	0	1	71
HOURLY TOTAL	0	1	86	10	0	0	6	103	0	2	170	25	2	0	0	199	1	1	50	5	2	0	0	59	0	0	3	0	0	0	0	3	364
PERIOD TOTAL	2	2	159	18	0	0	13	194	1	5	321	45	6	0	2	380	1	3	82	10	3	1	0	100	0	0	3	0	0	0	0	3	677

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: A633 / B6089 / WATH ROAD

APPROACHING FROM: WATH ROAD

TIME / CLASS	LEFT TO A633 (NORTH)								STRAIGHT TO A633 (EAST)								RIGHT TO B6089								U-TURN TO WATH ROAD								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	3	0	0	0	0	3	0	0	23	8	1	0	1	33	0	0	8	0	0	0	2	10	0	0	0	0	0	0	0	0	46
07:15 - 07:30	0	0	5	1	0	0	0	6	0	0	34	10	3	0	1	48	0	0	11	0	1	0	1	13	0	0	0	0	0	0	0	0	67
07:30 - 07:45	0	0	5	1	0	0	0	6	0	0	39	5	0	0	0	44	0	0	16	3	1	0	3	23	0	0	0	0	0	0	0	0	73
07:45 - 08:00	0	0	5	0	0	0	1	6	0	0	34	5	2	0	1	42	0	1	13	2	1	0	4	21	0	0	1	0	0	0	0	1	70
HOURLY TOTAL	0	0	18	2	0	0	1	21	0	0	130	28	6	0	3	167	0	1	48	5	3	0	10	67	0	0	1	0	0	0	0	1	256
08:00 - 08:15	0	0	12	0	0	0	0	12	0	0	37	10	0	0	0	47	0	0	24	3	0	0	0	27	0	0	1	0	0	0	0	1	87
08:15 - 08:30	0	0	9	1	1	0	0	11	0	0	45	5	0	0	2	52	0	0	16	0	0	0	3	19	0	0	1	0	0	0	0	1	83
08:30 - 08:45	0	0	4	0	0	0	0	4	0	0	53	4	2	0	1	60	0	1	17	2	0	0	2	22	0	0	1	0	0	0	0	1	87
08:45 - 09:00	0	0	5	0	0	0	0	5	0	0	50	2	1	0	1	54	0	0	18	1	1	0	1	21	0	0	1	0	0	0	0	1	81
HOURLY TOTAL	0	0	30	1	1	0	0	32	0	0	185	21	3	0	4	213	0	1	75	6	1	0	6	89	0	0	4	0	0	0	0	4	338
9:00 - 9:15	0	0	5	0	0	0	1	6	0	0	29	4	3	0	0	36	0	1	14	1	0	0	2	18	0	0	0	0	0	0	0	0	60
9:15 - 9:30	0	0	4	0	0	0	0	4	0	0	38	8	1	2	1	50	0	0	18	5	0	0	2	25	0	0	2	0	0	0	0	2	81
I/2 HOUR TOTAL	0	0	9	0	0	0	1	10	0	0	67	12	4	2	1	86	0	1	32	6	0	0	4	43	0	0	2	0	0	0	0	2	141
PERIOD TOTAL	0	0	57	3	1	0	2	63	0	0	382	61	13	2	8	466	0	3	155	17	4	0	20	199	0	0	7	0	0	0	0	7	735
16:30 - 16:45	0	0	2	0	0	0	0	2	0	0	28	3	1	0	0	32	0	1	18	5	0	0	1	25	0	0	0	0	0	0	0	0	59
16:45 - 17:00	0	0	7	0	0	0	0	7	0	0	34	5	1	0	1	41	0	0	18	4	0	0	1	23	0	0	2	0	0	0	0	2	73
17:00 - 17:15	0	0	8	0	0	0	1	9	0	1	59	4	0	0	1	65	0	1	19	2	0	0	3	25	0	0	0	0	0	0	0	0	99
17:15 - 17:30	0	0	5	0	0	0	0	5	0	1	34	3	0	0	0	38	0	0	22	1	1	0	2	26	0	0	0	0	0	0	0	0	69
HOURLY TOTAL	0	0	22	0	0	0	1	23	0	2	155	15	2	0	2	176	0	2	77	12	1	0	7	99	0	0	2	0	0	0	0	2	300
17:30 - 17:45	0	0	7	0	0	0	0	7	0	0	33	3	1	0	1	38	0	0	25	1	2	0	2	30	0	0	0	0	0	0	0	0	75
17:45 - 18:00	0	0	9	0	0	0	1	10	0	1	42	5	0	0	0	48	0	0	31	4	0	0	1	36	0	0	1	0	0	0	0	1	95
18:00 - 18:15	0	0	4	0	0	0	0	4	2	0	33	1	0	0	1	37	0	0	16	1	1	0	2	20	0	0	0	0	0	0	0	0	61
18:15 - 18:30	0	0	8	0	0	0	0	8	0	1	40	1	1	0	0	43	0	0	18	0	0	0	1	19	0	0	0	0	0	0	0	0	70
HOURLY TOTAL	0	0	28	0	0	0	1	29	2	2	148	10	2	0	2	166	0	0	90	6	3	0	6	105	0	0	1	0	0	0	0	1	301
PERIOD TOTAL	0	0	50	0	0	0	2	52	2	4	303	25	4	0	4	342	0	2	167	18	4	0	13	204	0	0	3	0	0	0	0	3	601

Queue Lengths, Wombwell

DATE: TUESDAY 28th JUNE 2016

LOCATION: A633 / B6089 / WATH ROAD

ARM:	A633 (NORTH)						A633 (EAST)						B6089						WATH ROAD					
spot Q on 5th min intervals	LANE 1			LANE 2			LANE 1			LANE 2			LANE 1			LANE 2			LANE 1			LANE 2		
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:20	0	0	0	0	0	0	0	0	0	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0
07:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
07:40	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
07:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0
07:55	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	17	0	0	0
08:10	3	0	17	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	1	0	6	1	0	6
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0
08:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:25	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:40	3	0	17	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:55	0	0	0	0	0	0	2	0	11	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0
09:00	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
09:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Queue Lengths, Wombwell

DATE: TUESDAY 28th JUNE 2016

LOCATION: A633 / B6089 / WATH ROAD

ARM:	A633 (NORTH)						A633 (EAST)						B6089						WATH ROAD					
spot Q on 5th min intervals	LANE 1			LANE 2			LANE 1			LANE 2			LANE 1			LANE 2			LANE 1			LANE 2		
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:50	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:55	0	0	0	1	0	6	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:10	0	0	0	0	0	0	0	0	0	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:25	0	0	0	0	0	0	1	0	6	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0
17:30	6	1	48	0	0	0	1	0	6	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0
17:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
17:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
17:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	1	0	6
18:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
18:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: HEMINGFIELD ROAD / A6195

APPROACHING FROM: HEMINGFIELD ROAD (NORTH)

TIME / CLASS	LEFT TO A6195 (EAST)								STRAIGHT TO HEMINGFIELD ROAD (SOUTH)								RIGHT TO A6195 (WEST)								U-TURN TO HEMINGFIELD ROAD (NORTH)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	18	4	0	0	1	23	0	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
07:15 - 07:30	0	0	16	6	1	0	0	23	0	0	8	2	0	0	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
07:30 - 07:45	0	0	23	3	0	0	0	26	0	1	4	3	0	0	0	8	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	36
07:45 - 08:00	0	0	28	2	0	0	2	32	0	0	6	3	1	0	0	10	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0	46
HOURLY TOTAL	0	0	85	15	1	0	3	104	0	1	22	8	2	0	1	34	0	0	4	2	0	0	0	6	0	0	0	0	0	0	0	0	144
08:00 - 08:15	0	0	17	3	0	0	0	20	0	0	6	0	0	0	0	6	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	27
08:15 - 08:30	0	0	20	4	1	0	1	26	0	0	13	0	0	1	0	14	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	44
08:30 - 08:45	0	0	21	2	0	0	0	23	0	0	6	1	1	0	0	8	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	33
08:45 - 09:00	0	0	31	3	0	0	1	35	0	0	2	2	0	0	0	4	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	40
HOURLY TOTAL	0	0	89	12	1	0	2	104	0	0	27	3	1	1	0	32	0	0	6	1	1	0	0	8	0	0	0	0	0	0	0	0	144
09:00 - 09:15	0	0	15	2	0	0	1	18	0	0	5	1	0	0	0	6	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	25
09:15 - 09:30	0	0	20	4	1	0	1	26	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
/2 HOUR TOTAL	0	0	35	6	1	0	2	44	0	0	12	2	0	0	0	14	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	59
PERIOD TOTAL	0	0	209	33	3	0	7	252	0	1	61	13	3	1	1	80	0	0	11	3	1	0	0	15	0	0	0	0	0	0	0	0	347
16:30 - 16:45	0	0	29	1	0	0	1	31	0	0	9	0	0	0	0	9	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	42
16:45 - 17:00	0	0	30	2	0	0	0	32	0	0	14	1	1	0	0	16	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	51
17:00 - 17:15	0	0	28	3	0	0	2	33	0	0	16	3	0	0	0	19	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	56
17:15 - 17:30	0	0	35	2	0	0	0	37	0	0	14	2	1	0	0	17	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	57
HOURLY TOTAL	0	0	122	8	0	0	3	133	0	0	53	6	2	0	0	61	0	0	7	5	0	0	0	12	0	0	0	0	0	0	0	0	206
17:30 - 17:45	1	0	37	5	0	0	0	43	0	0	23	3	0	0	0	26	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	74
17:45 - 18:00	0	0	27	2	2	0	1	32	0	0	12	1	0	0	0	13	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	47
18:00 - 18:15	1	0	34	1	0	0	1	37	1	0	23	1	0	0	0	25	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	65
18:15 - 18:30	0	0	22	2	0	0	1	25	0	0	12	1	0	0	0	13	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	39
HOURLY TOTAL	2	0	120	10	2	0	3	137	1	0	70	6	0	0	0	77	0	0	8	3	0	0	0	11	0	0	0	0	0	0	0	0	225
PERIOD TOTAL	2	0	242	18	2	0	6	270	1	0	123	12	2	0	0	138	0	0	15	8	0	0	0	23	0	0	0	0	0	0	0	0	431

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: HEMINGFIELD ROAD / A6195

APPROACHING FROM: A6195 (EAST)

TIME / CLASS	LEFT TO HEMINGFIELD ROAD (SOUTH)								STRAIGHT TO A6195 (WEST)								RIGHT TO HEMINGFIELD ROAD (NORTH)								U-TURN TO A6195 (EAST)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	4	1	0	0	2	7	0	0	108	31	9	4	0	152	0	1	6	4	0	0	0	11	0	0	0	0	0	0	0	0	170
07:15 - 07:30	0	0	0	1	0	0	0	1	0	0	135	26	8	6	2	177	0	0	12	1	0	0	0	13	0	0	0	0	0	0	0	0	191
07:30 - 07:45	0	0	1	2	0	0	0	3	0	0	137	32	11	5	1	186	0	0	11	0	0	0	2	13	0	0	0	0	0	0	0	0	202
07:45 - 08:00	0	0	4	1	0	0	1	6	0	2	145	19	7	7	1	181	0	0	17	4	0	0	0	21	0	0	0	0	0	0	0	0	208
HOURLY TOTAL	0	0	9	5	0	0	3	17	0	2	525	108	35	22	4	696	0	1	46	9	0	0	2	58	0	0	0	0	0	0	0	0	771
08:00 - 08:15	0	0	4	2	0	0	0	6	0	1	157	32	10	4	0	204	0	0	8	3	0	0	1	12	0	0	0	0	0	0	0	0	222
08:15 - 08:30	0	0	3	1	0	0	1	5	0	1	147	26	9	4	0	187	0	0	11	2	0	0	0	13	0	0	0	0	0	0	0	0	205
08:30 - 08:45	0	0	5	0	0	0	0	5	0	1	161	22	11	9	0	204	0	0	4	1	0	0	1	6	0	0	0	0	0	0	0	0	215
08:45 - 09:00	0	0	3	2	0	0	0	5	0	3	126	18	6	12	0	165	0	0	10	1	0	0	1	12	0	0	0	1	0	0	0	1	183
HOURLY TOTAL	0	0	15	5	0	0	1	21	0	6	591	98	36	29	0	760	0	0	33	7	0	0	3	43	0	0	0	1	0	0	0	1	825
9:00 - 9:15	0	0	9	1	0	0	1	11	0	0	104	18	10	8	0	140	0	0	11	1	0	0	1	13	0	0	0	0	0	0	0	0	164
9:15 - 9:30	0	0	4	6	0	0	1	11	0	0	105	16	8	6	1	136	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	156
1/2 HOUR TOTAL	0	0	13	7	0	0	2	22	0	0	209	34	18	14	1	276	0	0	20	1	0	0	1	22	0	0	0	0	0	0	0	0	320
PERIOD TOTAL	0	0	37	17	0	0	6	60	0	8	1325	240	89	65	5	1732	0	1	99	17	0	0	6	123	0	0	0	1	0	0	0	1	1916
16:30 - 16:45	0	0	16	1	0	0	1	18	0	1	188	31	7	5	0	232	0	0	34	0	1	0	1	36	0	0	0	0	0	0	0	0	286
16:45 - 17:00	0	0	17	3	0	0	1	21	0	2	212	27	4	2	0	247	0	0	37	0	0	0	0	37	0	0	0	0	0	0	0	0	305
17:00 - 17:15	0	0	22	3	1	0	1	27	0	2	208	12	2	2	1	227	0	0	35	0	0	0	0	35	0	0	0	0	0	0	0	0	289
17:15 - 17:30	0	0	28	1	0	0	1	30	1	2	224	30	2	2	0	261	0	1	38	2	0	0	1	42	0	0	0	0	0	0	0	0	333
HOURLY TOTAL	0	0	83	8	1	0	4	96	1	7	832	100	15	11	1	967	0	1	144	2	1	0	2	150	0	0	0	0	0	0	0	0	1213
17:30 - 17:45	0	0	23	4	0	0	0	27	0	2	154	13	4	3	0	176	0	0	43	5	0	0	0	48	0	0	0	0	0	0	0	0	251
17:45 - 18:00	0	0	20	2	0	0	0	22	0	2	192	19	2	5	0	220	0	0	37	1	0	0	1	39	0	0	0	0	0	0	0	0	281
18:00 - 18:15	0	0	15	1	0	0	0	16	2	0	167	15	0	2	3	189	0	0	37	8	1	0	0	46	0	0	0	0	0	0	0	0	251
18:15 - 18:30	0	0	19	1	1	0	2	23	2	4	167	20	0	4	0	197	0	0	25	6	0	0	1	32	0	1	0	0	0	0	0	1	253
HOURLY TOTAL	0	0	77	8	1	0	2	88	4	8	680	67	6	14	3	782	0	0	142	20	1	0	2	165	0	1	0	0	0	0	0	1	1036
PERIOD TOTAL	0	0	160	16	2	0	6	184	5	15	1512	167	21	25	4	1749	0	1	286	22	2	0	4	315	0	1	0	0	0	0	0	1	2249

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: HEMINGFIELD ROAD / A6195

APPROACHING FROM: HEMINGFIELD ROAD (SOUTH)

TIME / CLASS	LEFT TO A6195 (WEST)								STRAIGHT TO HEMINGFIELD ROAD (NORTH)								RIGHT TO A6195 (EAST)								U-TURN TO HEMINGFIELD ROAD (SOUTH)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	7	1	0	0	0	8	0	0	4	2	0	0	0	6	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0	23
07:15 - 07:30	0	0	14	1	0	0	0	15	0	0	11	4	1	0	0	16	0	0	6	4	0	0	0	10	0	0	0	0	0	0	0	0	41
07:30 - 07:45	0	0	5	2	0	0	0	7	0	0	13	1	0	0	0	14	0	0	8	2	1	0	2	13	0	0	0	0	0	0	0	0	34
07:45 - 08:00	0	0	11	4	0	0	0	15	0	0	12	1	0	0	0	13	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0	36
HOURLY TOTAL	0	0	37	8	0	0	0	45	0	0	40	8	1	0	0	49	0	0	29	8	1	0	2	40	0	0	0	0	0	0	0	0	134
08:00 - 08:15	0	0	9	2	0	0	0	11	0	0	12	0	1	0	0	13	0	0	12	2	0	0	0	14	0	0	0	0	0	0	0	0	38
08:15 - 08:30	0	0	13	1	0	0	0	14	0	0	9	1	0	0	0	10	0	0	16	1	0	0	0	17	0	0	1	0	0	0	0	1	42
08:30 - 08:45	0	0	16	1	0	0	0	17	0	0	14	1	0	0	0	15	0	0	11	1	0	0	2	14	0	0	0	0	0	0	0	0	46
08:45 - 09:00	0	0	10	1	0	0	0	11	0	0	11	0	0	0	0	11	0	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0	33
HOURLY TOTAL	0	0	48	5	0	0	0	53	0	0	46	2	1	0	0	49	0	0	49	5	0	0	2	56	0	0	1	0	0	0	0	1	159
9:00 - 9:15	0	0	9	0	0	0	0	9	0	0	12	0	1	0	0	13	0	1	8	1	1	0	0	11	0	0	0	0	0	0	0	0	33
9:15 - 9:30	0	0	8	0	0	0	0	8	0	0	8	2	0	0	0	10	0	0	13	2	1	0	0	16	0	0	0	0	0	0	0	0	34
1/2 HOUR TOTAL	0	0	17	0	0	0	0	17	0	0	20	2	1	0	0	23	0	1	21	3	2	0	0	27	0	0	0	0	0	0	0	0	67
PERIOD TOTAL	0	0	102	13	0	0	0	115	0	0	106	12	3	0	0	121	0	1	99	16	3	0	4	123	0	0	1	0	0	0	0	1	360
16:30 - 16:45	0	0	9	2	0	0	0	11	0	0	12	2	1	0	0	15	0	0	9	4	0	0	1	14	0	0	0	0	0	0	0	0	40
16:45 - 17:00	0	0	8	0	0	0	0	8	0	0	13	0	0	0	0	13	0	0	11	0	0	0	1	12	0	0	0	0	0	0	0	0	33
17:00 - 17:15	0	0	2	1	1	0	0	4	0	0	16	3	0	0	0	19	0	0	11	1	0	0	0	12	0	0	0	0	0	0	0	0	35
17:15 - 17:30	0	0	9	0	0	0	0	9	0	0	23	2	0	0	0	25	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	44
HOURLY TOTAL	0	0	28	3	1	0	0	32	0	0	64	7	1	0	0	72	0	0	41	5	0	0	2	48	0	0	0	0	0	0	0	0	152
17:30 - 17:45	0	0	3	1	0	0	0	4	0	0	15	2	0	0	0	17	0	0	14	1	0	0	0	15	0	0	0	0	0	0	0	0	36
17:45 - 18:00	0	0	8	1	0	0	0	9	0	0	13	5	0	0	0	18	0	0	10	0	0	0	2	12	0	0	0	0	0	0	0	0	39
18:00 - 18:15	0	0	6	1	0	0	0	7	0	0	13	1	0	0	0	14	0	0	11	1	0	0	0	12	0	0	0	0	0	0	0	0	33
18:15 - 18:30	0	0	7	0	0	0	0	7	0	0	14	4	0	0	0	18	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	36
HOURLY TOTAL	0	0	24	3	0	0	0	27	0	0	55	12	0	0	0	67	0	0	46	2	0	0	2	50	0	0	0	0	0	0	0	0	144
PERIOD TOTAL	0	0	52	6	1	0	0	59	0	0	119	19	1	0	0	139	0	0	87	7	0	0	4	98	0	0	0	0	0	0	0	0	296

DATE: TUESDAY 28th JUNE 2016

TURNING COUNT LOCATION: HEMINGFIELD ROAD / A6195

APPROACHING FROM: A6195 (WEST)

TIME / CLASS	LEFT TO HEMINGFIELD ROAD (NORTH)								STRAIGHT TO A6195 (EAST)								RIGHT TO HEMINGFIELD ROAD (SOUTH)								U-TURN TO A6195 (WEST)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
07:00 - 07:15	0	0	0	0	0	0	0	0	0	1	105	29	6	7	2	150	0	1	1	2	0	0	0	4	0	0	1	0	0	0	0	1	155
07:15 - 07:30	0	0	0	1	0	0	0	1	0	1	172	28	5	4	0	210	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	214
07:30 - 07:45	0	0	0	0	1	0	0	1	1	0	174	21	8	3	0	207	0	0	2	2	1	0	0	5	0	0	0	0	0	0	0	0	213
07:45 - 08:00	0	0	0	0	0	0	0	0	1	2	192	24	8	8	0	235	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	236
HOURLY TOTAL	0	0	0	1	1	0	0	2	2	4	643	102	27	22	2	802	0	2	6	4	1	0	0	13	0	0	1	0	0	0	0	1	818
08:00 - 08:15	0	0	1	0	0	0	0	1	1	2	204	13	2	8	0	230	0	0	1	1	1	0	0	3	0	0	0	0	0	0	0	0	234
08:15 - 08:30	0	0	0	0	0	0	0	0	1	2	181	30	8	7	0	229	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	230
08:30 - 08:45	0	0	1	0	0	0	0	1	0	1	158	20	15	8	0	202	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	204
08:45 - 09:00	0	0	1	0	0	0	0	1	0	2	163	26	9	7	1	208	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	211
HOURLY TOTAL	0	0	3	0	0	0	0	3	2	7	706	89	34	30	1	869	0	0	3	1	3	0	0	7	0	0	0	0	0	0	0	0	879
9:00 - 9:15	0	0	2	0	0	0	1	3	0	0	163	22	7	3	0	195	0	0	4	0	0	0	0	4	0	0	1	0	0	0	0	1	203
9:15 - 9:30	0	0	3	2	0	0	0	5	0	1	151	27	9	5	0	193	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	199
/2 HOUR TOTAL	0	0	5	2	0	0	1	8	0	1	314	49	16	8	0	388	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1	402
PERIOD TOTAL	0	0	8	3	1	0	1	13	4	12	1663	240	77	60	3	2059	0	2	14	5	4	0	0	25	0	0	2	0	0	0	0	2	2099
16:30 - 16:45	0	0	0	0	0	0	0	0	0	2	160	38	9	4	0	213	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0	221
16:45 - 17:00	0	0	3	0	0	0	0	3	0	0	180	28	4	5	0	217	0	0	3	2	1	0	0	6	0	0	0	0	0	0	0	0	226
17:00 - 17:15	0	0	0	0	0	0	0	0	0	1	262	19	2	4	0	288	0	0	5	2	0	0	0	7	0	0	0	0	0	0	0	0	295
17:15 - 17:30	0	0	2	0	0	0	0	2	1	0	175	22	5	2	0	205	0	0	4	0	0	0	0	4	0	0	0	0	1	0	0	1	212
HOURLY TOTAL	0	0	5	0	0	0	0	5	1	3	777	107	20	15	0	923	0	0	19	5	1	0	0	25	0	0	0	0	1	0	0	1	954
17:30 - 17:45	0	0	0	0	0	0	0	0	0	4	184	18	1	4	1	212	0	0	13	1	0	0	0	14	0	0	0	0	0	0	0	0	226
17:45 - 18:00	0	0	0	0	0	0	0	0	0	3	186	19	5	4	0	217	0	0	9	3	0	0	0	12	0	0	0	0	0	0	0	0	229
18:00 - 18:15	0	0	1	0	0	0	0	1	0	2	154	16	4	6	1	183	0	0	7	2	0	0	0	9	0	0	0	0	0	0	0	0	193
18:15 - 18:30	0	0	0	0	0	0	0	0	0	1	170	23	2	3	1	200	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	201
HOURLY TOTAL	0	0	1	0	0	0	0	1	0	10	694	76	12	17	3	812	0	0	30	6	0	0	0	36	0	0	0	0	0	0	0	0	849
PERIOD TOTAL	0	0	6	0	0	0	0	6	1	13	1471	183	32	32	3	1735	0	0	49	11	1	0	0	61	0	0	0	0	1	0	0	1	1803

Queue Lengths, Wombwell

DATE: TUESDAY 28th JUNE 2016

LOCATION: HEMINGFIELD ROAD / A6195

ARM:	HEMINGFIELD ROAD (NORTH)			A6195 (EAST)			HEMINGFIELD ROAD (SOUTH)						A6195 (SOUTH)					
spot Q on 5th min intervals	LANE 1			LANE 1			LANE 1			LANE 2			LANE 1			LANE 2		
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:10	0	0	0	0	0	0	2	0	11	0	0	0	0	0	0	0	0	0
07:15	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:25	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	1	0	6
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
07:50	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0
07:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:10	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:25	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0
08:35	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
08:40	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:50	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
08:55	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Queue Lengths, Wombwell

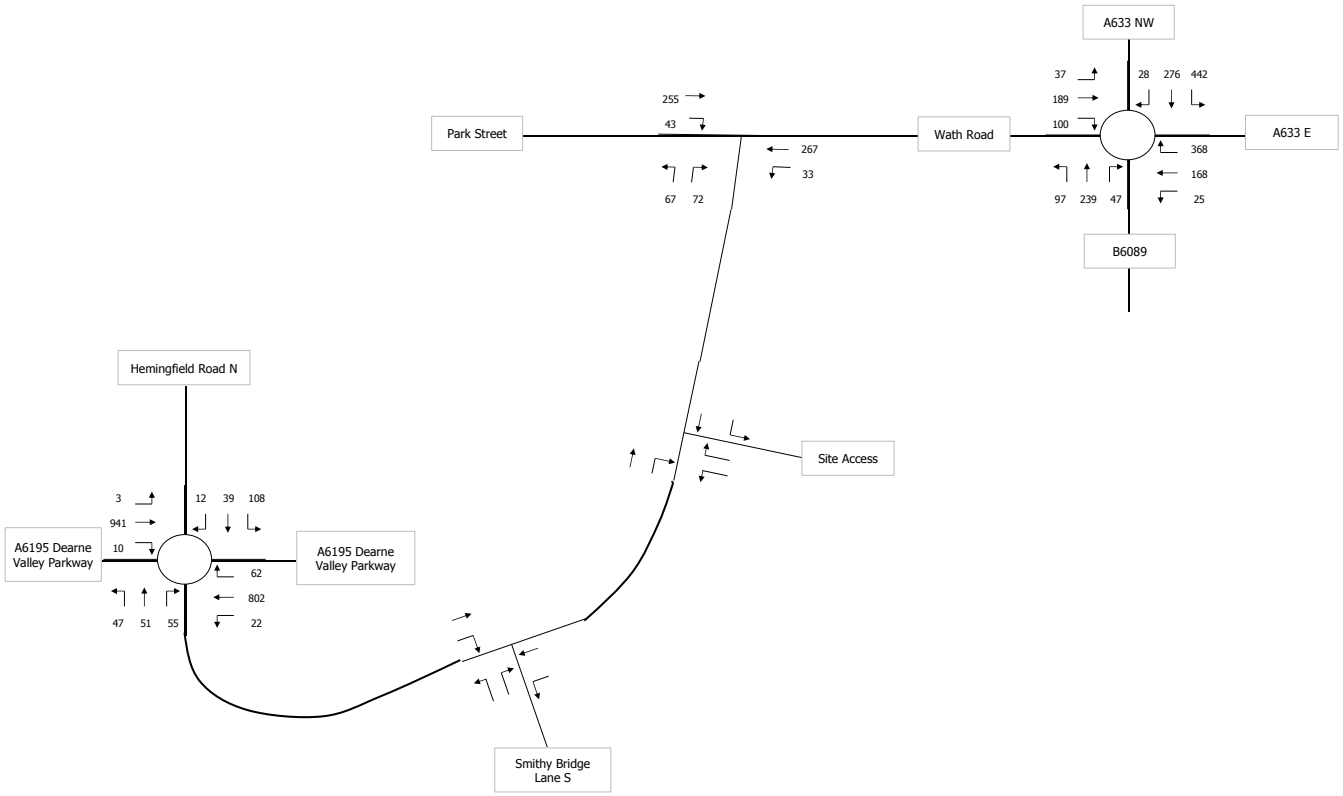
DATE: TUESDAY 28th JUNE 2016

LOCATION: HEMINGFIELD ROAD / A6195

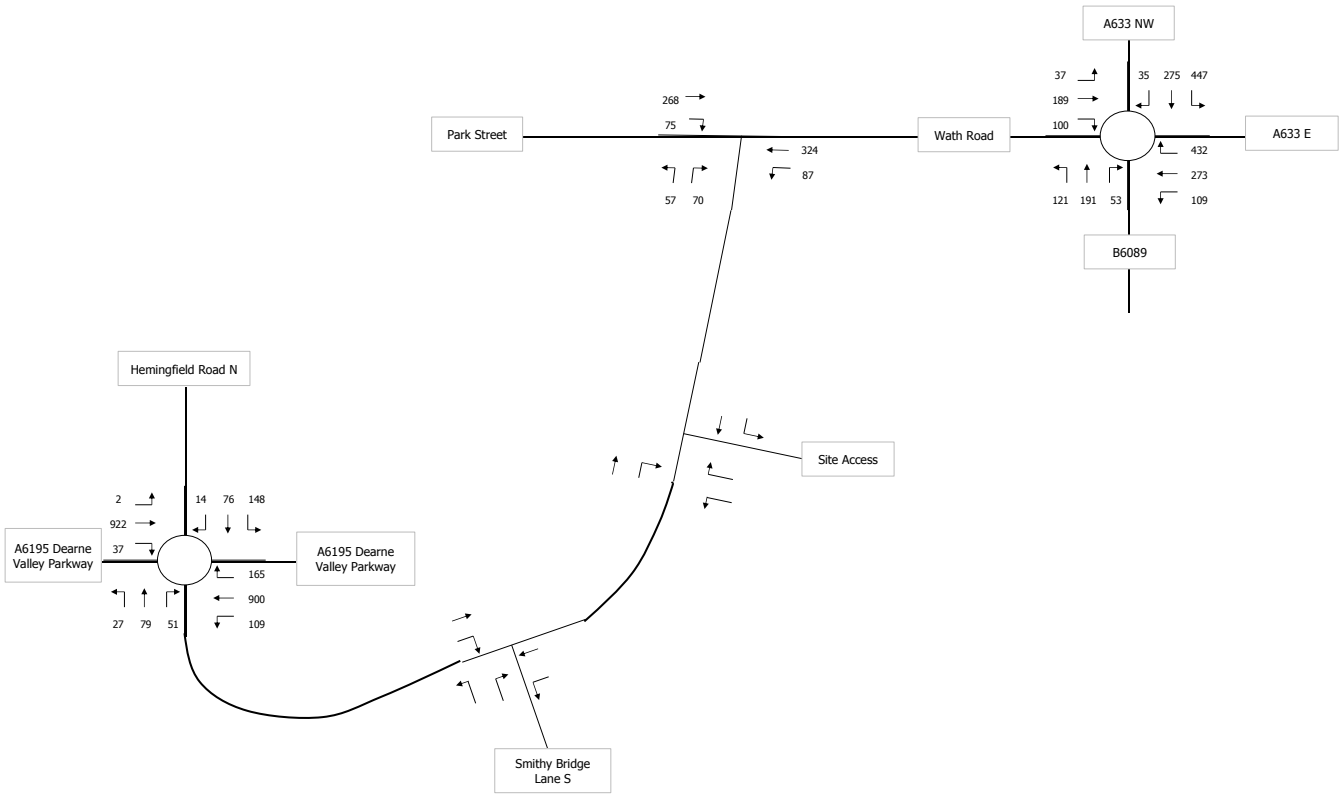
ARM:	HEMINGFIELD ROAD (NORTH)			A6195 (EAST)			HEMINGFIELD ROAD (SOUTH)						A6195 (SOUTH)					
spot Q on 5th min intervals	LANE 1			LANE 1			LANE 1			LANE 2			LANE 1			LANE 2		
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:40	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:55	0	0	0	0	0	0	3	0	17	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6
17:05	1	0	6	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
17:10	0	0	0	0	0	0	0	0	0	1	0	6	3	0	17	2	0	11
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:25	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0
17:30	1	0	6	0	0	0	1	0	6	1	0	6	0	0	0	0	0	0
17:35	4	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:40	3	0	17	0	0	0	0	0	0	0	0	0	3	0	17	0	0	0
17:45	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
17:50	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:55	1	0	6	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
18:05	1	0	6	0	0	0	1	0	6	1	0	6	0	0	0	0	0	0
18:10	1	0	6	0	0	0	0	0	0	0	0	0	1	0	6	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:20	2	0	11	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0
18:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX G

AM 07:30 - 08:30



PM 17:00 - 18:00



A098689 - Lunhill Road, Wombwell

2016 Base

Flows are in Passenger Car Units

APPENDIX H

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: Park St Wath Rd Lundhill Rd 160 units REV3 2016.j9
Path: W:\Projects\A090000 - A09999\A098689\calculations\Transport Planning\Junction Models\Park St _Wath Rd_ Lundhill Rd\160 Units TA
Report generation date: 07/11/2017 08:09:27

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2016							
Stream B-AC	0.4	9.39	0.29	A	0.4	10.08	0.28	B
Stream C-AB	0.2	4.95	0.09	A	0.3	5.46	0.17	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	Park St Wath Rd Lundhill Rd
Location	Wombwell
Site number	
Date	16/08/2016
Version	
Status	
Identifier	
Client	
Jobnumber	A098689
Enumerator	WYG\d.liddell-crewe
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	mph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	15	✓

D2	2016	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2016, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Wath Road		Major
B	Lundhill Road		Minor
C	Park Street		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	8.84			220.0	✓	0.00

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	4.55	17	41

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	581	0.093	0.235	0.148	0.335
1	B-C	751	0.101	0.255	-	-
1	C-B	701	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	300	100.000
B		ONE HOUR	✓	139	100.000
C		ONE HOUR	✓	298	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	33	267
	B	72	0	67
	C	255	43	0

Vehicle Mix

Heavy Vehicle Percentages

		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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.29	9.39	0.4	A	128	191
C-AB	0.09	4.95	0.2	A	57	85
C-A					217	325
A-B					30	45
A-C					245	368

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	105	26	574	0.182	104	0.0	0.2	7.647	A
C-AB	43	11	770	0.056	43	0.0	0.1	4.946	A
C-A	181	45			181				
A-B	25	6			25				
A-C	201	50			201				

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

B-AC	125	31	558	0.224	125	0.2	0.3	8.301	A
C-AB	55	14	785	0.070	55	0.1	0.1	4.927	A
C-A	213	53			213				
A-B	30	7			30				
A-C	240	60			240				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	153	38	536	0.285	153	0.3	0.4	9.371	A
C-AB	73	18	806	0.090	73	0.1	0.2	4.907	A
C-A	255	64			255				
A-B	36	9			36				
A-C	294	73			294				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	153	38	536	0.285	153	0.4	0.4	9.392	A
C-AB	73	18	806	0.090	73	0.2	0.2	4.911	A
C-A	255	64			255				
A-B	36	9			36				
A-C	294	73			294				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	125	31	558	0.224	125	0.4	0.3	8.330	A
C-AB	55	14	785	0.070	55	0.2	0.1	4.933	A
C-A	213	53			213				
A-B	30	7			30				
A-C	240	60			240				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	105	26	574	0.182	105	0.3	0.2	7.686	A
C-AB	43	11	771	0.056	43	0.1	0.1	4.953	A
C-A	181	45			181				
A-B	25	6			25				
A-C	201	50			201				

2016, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2016	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	411	100.000
B		ONE HOUR	✓	127	100.000
C		ONE HOUR	✓	343	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	87	324
	B	70	0	57
	C	268	75	0

Vehicle Mix

Heavy Vehicle Percentages

		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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.28	10.08	0.4	B	117	175
C-AB	0.17	5.46	0.3	A	102	154
C-A					212	318
A-B					80	120
A-C					297	446

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	96	24	546	0.175	95	0.0	0.2	7.971	A
C-AB	77	19	759	0.101	76	0.0	0.2	5.270	A
C-A	181	45			181				
A-B	65	16			65				
A-C	244	61			244				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	114	29	525	0.217	114	0.2	0.3	8.744	A
C-AB	98	25	772	0.127	98	0.2	0.2	5.340	A
C-A	210	53			210				
A-B	78	20			78				
A-C	291	73			291				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	140	35	497	0.281	139	0.3	0.4	10.050	B
C-AB	132	33	792	0.167	132	0.2	0.3	5.458	A
C-A	246	61			246				
A-B	96	24			96				
A-C	357	89			357				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	140	35	497	0.281	140	0.4	0.4	10.075	B
C-AB	132	33	792	0.167	132	0.3	0.3	5.464	A
C-A	246	61			246				
A-B	96	24			96				
A-C	357	89			357				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	114	29	525	0.217	115	0.4	0.3	8.776	A
C-AB	98	25	772	0.127	99	0.3	0.2	5.349	A
C-A	210	52			210				
A-B	78	20			78				
A-C	291	73			291				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	96	24	545	0.175	96	0.3	0.2	8.012	A
C-AB	77	19	759	0.102	77	0.2	0.2	5.283	A
C-A	181	45			181				
A-B	65	16			65				
A-C	244	61			244				

APPENDIX I

LUNDHILL ROAD

LUNDHILL GROVE

GRANTLEY CLOSE

51.5m

39.6m

Gas Gov

El Sub Sta

Greenlands Farm

Pond

P.O.S.

6.5m Side to Side

14.2m Side to Side

18.5m Front to side

Side to Side

14.2m Back to Side

26.5m Back to Back

20m Back to Back

20.1m Back to Back

22.3m Back to Back

Existing overhead cables to be removed and diverted. Diversion route to be confirmed

Existing hedges to be retained

Existing hedge

Line denotes approximate extent of Flood Zone 3

New marshy grass areas formed to replace lost area

Mown path through rough grassed area

Approximate location of existing ditch to be maintained

Existing overhead cables to be removed and diverted. Diversion route to be confirmed

Easement for culvert diversion

SCHEDULE OF ACCOMMODATION PERSIMMON

Housetype	No.
Brampton 2 Storey 2 Bed Semi Detached	9
Bickleigh 2 ½ Storey 3 Bed Terraced House	10
Willow Bungalow 2 Bed Semi Detached	4
Alnwick 2 Storey 2 Bed Semi detached / Terraced House	12
Hanbury 2 Storey 3 Bed Semi Detached / Terraced House	22
Hatfield 2 Storey 3 Bed Detached House	15
Rufford detached 2 Storey 3 Bed Detached House	16
Rufford semi 2 Storey 3 Bed Semi Detached	8
Souter 2 ½ Storey 3 Bed Semi Detached / Terraced House	7
Clayton Corner 2 Storey 3 Bed Detached House	8
Roseberry 2 Storey 4 Bed Detached House	15
Lumley 2 ½ Storey 4 Bed Detached House	3
Chedworth 2 Storey 4 Bed Detached House	7
Kendal 2 Storey 4 Bed Detached House	7
Winster 2 Storey 4 Bed Detached House	9

Total = 152

KEY:

- DENOTES 1800 HIGH CLOSE BOARDED FENCE
- DENOTES 900 HIGH POST AND 2 RAIL TIMBER FENCE
- DENOTES 1800 HIGH SCREEN WALL / FENCE
- DENOTES 450 HIGH TIMBER KNEE RAIL
- DENOTES 450 KNEE RAIL TIMBER FENCE TO FRONT OF HEDGE
- DENOTES AFFORDABLE HOUSING
- DENOTES PROPOSED TREES
- EXISTING TREE (REMOVED)
- EXISTING TREE (RETAINED)
- BLOCK PAVING
- TURF PLANTING AREA
- ROUGH GRASS AREA
- MARSH GRASS AREA

FOR FULL LANDSCAPE DETAILS SEE LANDSCAPE ARCHITECTS PLANS

PARKING SPACES TO BE 5m X 2.5m
ALL DRIVEWAYS ARE A MIN OF 5.6m LONG
SINGLE DRIVES ARE 3m WIDE
DOUBLE DRIVEWAYS ARE 6m WIDE
6m x 3m GARAGES ARE INDICATED ON PLAN

0 10 20 30 40m
Scale 1:500

Rev C - 12.10.17 - SAC
Alterations following planning & Highway comments
Rev B - 05.07.17 - CJB
Alterations to P.O.S & minor alterations to layout following engineering feasibility
Rev A - 03.03.17 - CJB
Substation added & layout revised to incorporate drainage, scheme reduced to 150 plots.

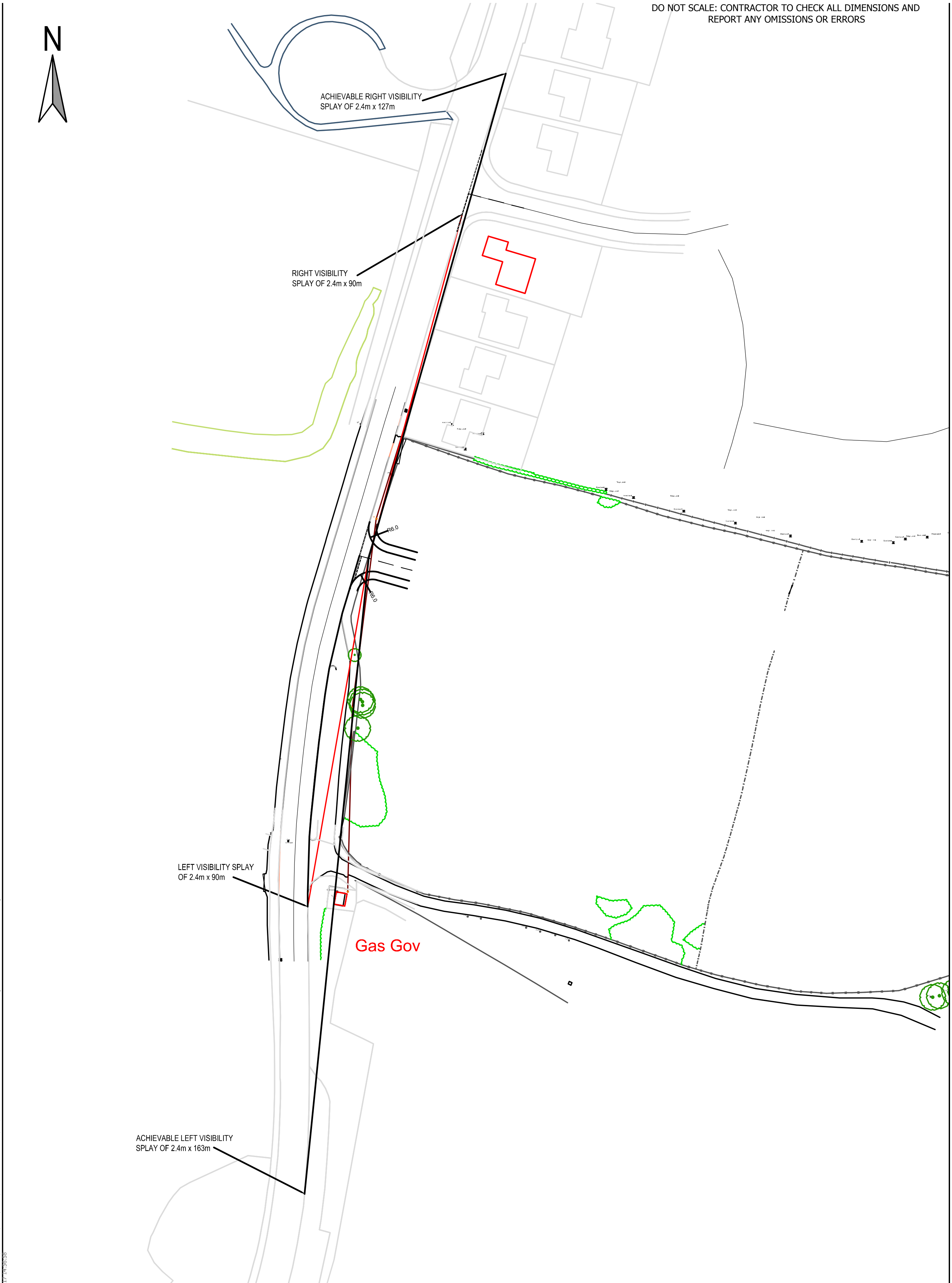
PERSIMMON
Together, we make a home

Proposed Residential Development
Lundhill Road, Wombwell

Proposed Planning Layout

Scale	1:500@A0	Drawing Number	LRW-2017:001C
Drawn By	CJB		
Checked By	SAC		FEB 17

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



REV	DESCRIPTION	BY	CHK	APP	DATE

ARNDALE COURT
HEADINGLEY
LEEDS
LS6 2UJ

TEL: +44 (0)113 278 7111
FAX: +44 (0)113 278 3487
e-mail: leeds@wyg.com

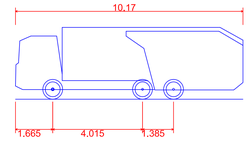
Client	Project:	Drawing Title:
PERSIMMONS	LUNDHILL ROAD, WOMBWELL	ACCESS

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
1:1250	AB	JULY 16				

Project No.	Office	Type	Drawing No.	Revision
A098689	21	TP	SK 001	P3

ENAME : W:\PROJECTS\A090000 - A09999\A098689\ACAD\DWGS\TRANSPORT PLANNING\PDF\BOUND\SK 001 P3 PROPOSED SITE ACCESS.DWG | PLOTTED BY : AMARJIT.BILKHU |
OTTED DATE : 13 September 2017 14:56:58

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



Phoenix 2 High Capacity Twin Pack 20 (with Elite 2 6x4 chassis)

Overall Length	10.170m
Overall Width	2.530m
Overall Body Height	3.211m
Min Body Ground Clearance	0.416m
Track Width	2.530m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	10.300m

Visability Splay 2.4m x 43m

Visability Splay 2.4m x 43m

Knee rail timber fence to front of hedge

New hedging to be planted and conveyed to plots

Existing overhead cables to be removed and diverted. Diversion route to be confirmed

Existing hedge to be trimmed & retained

Approximate location of existing ditch to be maintained

Existing hedges to be retained

Existing hedges to be retained

Existing hedge

P.O.S.

Mown path through rough grassed area

Line denotes approximate extent of Flood Zone 3

New marshy grass areas formed to replace lost area

Pond

New pond & adjacent ditches to be formed for ecological enhancements

Mown path through rough grassed area

New marshy grass areas formed to replace lost area

P.O.S.

Existing overhead cables to be removed and diverted. Diversion route to be confirmed

Approximate location of existing ditch to be maintained

SCHEDULE OF ACCOMMODATION PERSIMMON

Housetype	No.
Brampton 2 Storey 2 Bed Semi Detached	4
Bickleigh 2 ½ Storey 3 Bed Terraced House	7
Willow Bungalow 2 Bed Semi Detached	4
Alnwick 2 Storey 2 Bed Semi detached / Terraced House	13
Hanbury 2 Storey 3 Bed Semi Detached / Terraced House	20
Hatfield 2 Storey 3 Bed Detached House	15
Rufford detached 2 Storey 3 Bed Detached House	16
Rufford semi 2 Storey 3 Bed Semi Detached	10
Souter 2 ½ Storey 3 Bed Semi Detached / Terraced House	9
Clayton Corner 2 Storey 3 Bed Detached House	6
Roseberry 2 Storey 4 Bed Detached House	16
Lumley 2 ½ Storey 4 Bed Detached House	4
Chedworth 2 Storey 4 Bed Detached House	9
Kendal 2 Storey 4 Bed Detached House	7
Winster 2 Storey 4 Bed Detached House	11
	Total = 151

REV	DESCRIPTION	BY	CHK	APP	DATE

ARNDALE COURT
HEADINGLEY
LEEDS
LS6 2UJ

TEL: +44 (0)113 278 7111
FAX: +44 (0)113 278 3487
e-mail: leeds@wyg.com

Client: PERSIMMON HOMES LTD

Project: LUNDHILL ROAD, WOMBWELL

Drawing Title: SWEPT PATH ASSESSMENT

Scale @ A0	Drawn	Date	Checked	Date	Approved	Date
1:500	DLC	FEB 17	JAB	FEB 17		

Project No.	Office	Type	Drawing No.	Revision
A098689	21	TS	SK002	

FILENAME : W:\PROJECTS\A090000 - A099999\A098689\ACAD\DWGS\TRANSPORT PLANNING\SKETCHES\SK002 SWEPT PATH ASSESSMENT.DWG | PLOTTED BY : DOMINIC.LIDDELL-CREWE | PLOTTED DATE - 17 February 2017 12:54:53

APPENDIX J

Calculation Reference: AUDIT-705101-160815-0806

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	EX	ESSEX	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	DV	DEVON	2 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	3 days
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
09	NORTH		
	CB	CUMBRIA	1 days
11	SCOTLAND		
	FA	FALKIRK	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: 52 to 237 (units:)
Range Selected by User: 50 to 250 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/08 to 28/09/15

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	3 days
Tuesday	3 days
Wednesday	2 days
Thursday	4 days
Friday	3 days

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

Selected survey types:

Manual count	15 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)	9
Edge of Town	6

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.

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

Filtering Stage 3 selection:

Use Class:

C3	15 days

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

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	4 days
10,001 to 15,000	4 days
15,001 to 20,000	3 days
20,001 to 25,000	2 days

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

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	2 days
75,001 to 100,000	4 days
100,001 to 125,000	3 days
125,001 to 250,000	2 days
250,001 to 500,000	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	3 days
1.1 to 1.5	12 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	1 days
No	14 days

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

LIST OF SITES relevant to selection parameters

1 CB-03-A-04 SEMI DETACHED CUMBRIA
MOORCLOSE ROAD
SALTERBACK
WORKINGTON
Edge of Town
No Sub Category
Total Number of dwellings: 82
Survey date: FRIDAY 24/04/09 Survey Type: MANUAL

2 CH-03-A-06 SEMI-DET./BUNGALOWS CHESHIRE
CREWE ROAD

CREWE
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 129
Survey date: TUESDAY 14/10/08 Survey Type: MANUAL

3 DV-03-A-02 HOUSES & BUNGALOWS DEVON
MILLHEAD ROAD

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 116
Survey date: FRIDAY 25/09/15 Survey Type: MANUAL

4 DV-03-A-03 TERRACED & SEMI DETACHED DEVON
LOWER BRAND LANE

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 70
Survey date: MONDAY 28/09/15 Survey Type: MANUAL

5 EX-03-A-01 SEMI-DET. ESSEX
MILTON ROAD
CORRINGHAM
STANFORD-LE-HOPE
Edge of Town
Residential Zone
Total Number of dwellings: 237
Survey date: TUESDAY 13/05/08 Survey Type: MANUAL

6 FA-03-A-02 MIXED HOUSES FALKIRK
ROSEBANK AVENUE & SPRINGFIELD DRIVE

FALKIRK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 161
Survey date: WEDNESDAY 29/05/13 Survey Type: MANUAL

7 NF-03-A-02 HOUSES & FLATS NORFOLK
DEREHAM ROAD

NORWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 98
Survey date: MONDAY 22/10/12 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 NY-03-A-06 BUNGALOWS & SEMI DET. NORTH YORKSHIRE
HORSEFAIR

BOROUGHBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: FRIDAY 14/10/11 Survey Type: MANUAL

9 NY-03-A-09 MIXED HOUSING NORTH YORKSHIRE
GRAMMAR SCHOOL LANE

NORTHALLERTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

10 NY-03-A-10 HOUSES AND FLATS NORTH YORKSHIRE
BOROUGHBRIDGE ROAD

RIPON
Edge of Town
No Sub Category
Total Number of dwellings: 71
Survey date: TUESDAY 17/09/13 Survey Type: MANUAL

11 SC-03-A-04 DETACHED & TERRACED SURREY
HIGH ROAD

BYFLEET
Edge of Town
Residential Zone
Total Number of dwellings: 71
Survey date: THURSDAY 23/01/14 Survey Type: MANUAL

12 SH-03-A-04 TERRACED SHROPSHIRE
ST MICHAEL'S STREET

SHREWSBURY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 108
Survey date: THURSDAY 11/06/09 Survey Type: MANUAL

13 SH-03-A-05 SEMI-DETACHED/TERRACED SHROPSHIRE
SANDCROFT
SUTTON HILL
TELFORD
Edge of Town
Residential Zone
Total Number of dwellings: 54
Survey date: THURSDAY 24/10/13 Survey Type: MANUAL

14 SY-03-A-01 SEMI DETACHED HOUSES SOUTH YORKSHIRE
A19 BENTLEY ROAD
BENTLEY RISE
DONCASTER
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 54
Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15 WS-03-A-04 MIXED HOUSES WEST SUSSEX
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY 11/12/14 Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
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	15	105	0.075	15	105	0.266	15	105	0.341
08:00 - 09:00	15	105	0.142	15	105	0.370	15	105	0.512
09:00 - 10:00	15	105	0.153	15	105	0.176	15	105	0.329
10:00 - 11:00	15	105	0.133	15	105	0.175	15	105	0.308
11:00 - 12:00	15	105	0.149	15	105	0.150	15	105	0.299
12:00 - 13:00	15	105	0.177	15	105	0.154	15	105	0.331
13:00 - 14:00	15	105	0.175	15	105	0.164	15	105	0.339
14:00 - 15:00	15	105	0.150	15	105	0.163	15	105	0.313
15:00 - 16:00	15	105	0.269	15	105	0.188	15	105	0.457
16:00 - 17:00	15	105	0.278	15	105	0.171	15	105	0.449
17:00 - 18:00	15	105	0.331	15	105	0.184	15	105	0.515
18:00 - 19:00	15	105	0.206	15	105	0.154	15	105	0.360
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.238			2.315			4.553

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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 TAXIS
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	15	105	0.006	15	105	0.004	15	105	0.010
08:00 - 09:00	15	105	0.003	15	105	0.004	15	105	0.007
09:00 - 10:00	15	105	0.004	15	105	0.003	15	105	0.007
10:00 - 11:00	15	105	0.002	15	105	0.001	15	105	0.003
11:00 - 12:00	15	105	0.003	15	105	0.003	15	105	0.006
12:00 - 13:00	15	105	0.003	15	105	0.003	15	105	0.006
13:00 - 14:00	15	105	0.003	15	105	0.002	15	105	0.005
14:00 - 15:00	15	105	0.003	15	105	0.003	15	105	0.006
15:00 - 16:00	15	105	0.008	15	105	0.006	15	105	0.014
16:00 - 17:00	15	105	0.003	15	105	0.004	15	105	0.007
17:00 - 18:00	15	105	0.004	15	105	0.003	15	105	0.007
18:00 - 19:00	15	105	0.002	15	105	0.003	15	105	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.044			0.039			0.083

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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 OGVS
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	15	105	0.001	15	105	0.001	15	105	0.002
08:00 - 09:00	15	105	0.002	15	105	0.001	15	105	0.003
09:00 - 10:00	15	105	0.003	15	105	0.001	15	105	0.004
10:00 - 11:00	15	105	0.002	15	105	0.002	15	105	0.004
11:00 - 12:00	15	105	0.003	15	105	0.002	15	105	0.005
12:00 - 13:00	15	105	0.004	15	105	0.004	15	105	0.008
13:00 - 14:00	15	105	0.004	15	105	0.004	15	105	0.008
14:00 - 15:00	15	105	0.001	15	105	0.003	15	105	0.004
15:00 - 16:00	15	105	0.001	15	105	0.001	15	105	0.002
16:00 - 17:00	15	105	0.000	15	105	0.001	15	105	0.001
17:00 - 18:00	15	105	0.001	15	105	0.001	15	105	0.002
18:00 - 19:00	15	105	0.001	15	105	0.001	15	105	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.023			0.022			0.045

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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 PSVS
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	15	105	0.000	15	105	0.000	15	105	0.000
08:00 - 09:00	15	105	0.001	15	105	0.001	15	105	0.002
09:00 - 10:00	15	105	0.000	15	105	0.000	15	105	0.000
10:00 - 11:00	15	105	0.000	15	105	0.000	15	105	0.000
11:00 - 12:00	15	105	0.002	15	105	0.002	15	105	0.004
12:00 - 13:00	15	105	0.000	15	105	0.000	15	105	0.000
13:00 - 14:00	15	105	0.000	15	105	0.000	15	105	0.000
14:00 - 15:00	15	105	0.000	15	105	0.000	15	105	0.000
15:00 - 16:00	15	105	0.000	15	105	0.000	15	105	0.000
16:00 - 17:00	15	105	0.000	15	105	0.000	15	105	0.000
17:00 - 18:00	15	105	0.000	15	105	0.000	15	105	0.000
18:00 - 19:00	15	105	0.000	15	105	0.000	15	105	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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	15	105	0.005	15	105	0.013	15	105	0.018
08:00 - 09:00	15	105	0.002	15	105	0.018	15	105	0.020
09:00 - 10:00	15	105	0.002	15	105	0.006	15	105	0.008
10:00 - 11:00	15	105	0.003	15	105	0.007	15	105	0.010
11:00 - 12:00	15	105	0.003	15	105	0.003	15	105	0.006
12:00 - 13:00	15	105	0.005	15	105	0.004	15	105	0.009
13:00 - 14:00	15	105	0.004	15	105	0.003	15	105	0.007
14:00 - 15:00	15	105	0.004	15	105	0.004	15	105	0.008
15:00 - 16:00	15	105	0.015	15	105	0.007	15	105	0.022
16:00 - 17:00	15	105	0.015	15	105	0.005	15	105	0.020
17:00 - 18:00	15	105	0.018	15	105	0.011	15	105	0.029
18:00 - 19:00	15	105	0.013	15	105	0.006	15	105	0.019
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.089			0.087			0.176

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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	15	105	0.085	15	105	0.321	15	105	0.406
08:00 - 09:00	15	105	0.180	15	105	0.534	15	105	0.714
09:00 - 10:00	15	105	0.181	15	105	0.233	15	105	0.414
10:00 - 11:00	15	105	0.165	15	105	0.222	15	105	0.387
11:00 - 12:00	15	105	0.189	15	105	0.196	15	105	0.385
12:00 - 13:00	15	105	0.225	15	105	0.187	15	105	0.412
13:00 - 14:00	15	105	0.228	15	105	0.213	15	105	0.441
14:00 - 15:00	15	105	0.188	15	105	0.208	15	105	0.396
15:00 - 16:00	15	105	0.402	15	105	0.251	15	105	0.653
16:00 - 17:00	15	105	0.370	15	105	0.233	15	105	0.603
17:00 - 18:00	15	105	0.430	15	105	0.238	15	105	0.668
18:00 - 19:00	15	105	0.270	15	105	0.217	15	105	0.487
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.913			3.053			5.966

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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	15	105	0.030	15	105	0.073	15	105	0.103
08:00 - 09:00	15	105	0.050	15	105	0.166	15	105	0.216
09:00 - 10:00	15	105	0.054	15	105	0.069	15	105	0.123
10:00 - 11:00	15	105	0.050	15	105	0.055	15	105	0.105
11:00 - 12:00	15	105	0.033	15	105	0.031	15	105	0.064
12:00 - 13:00	15	105	0.043	15	105	0.031	15	105	0.074
13:00 - 14:00	15	105	0.031	15	105	0.043	15	105	0.074
14:00 - 15:00	15	105	0.041	15	105	0.052	15	105	0.093
15:00 - 16:00	15	105	0.157	15	105	0.076	15	105	0.233
16:00 - 17:00	15	105	0.099	15	105	0.056	15	105	0.155
17:00 - 18:00	15	105	0.079	15	105	0.040	15	105	0.119
18:00 - 19:00	15	105	0.062	15	105	0.047	15	105	0.109
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.729			0.739			1.468

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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	15	105	0.001	15	105	0.011	15	105	0.012
08:00 - 09:00	15	105	0.003	15	105	0.013	15	105	0.016
09:00 - 10:00	15	105	0.001	15	105	0.007	15	105	0.008
10:00 - 11:00	15	105	0.003	15	105	0.006	15	105	0.009
11:00 - 12:00	15	105	0.004	15	105	0.007	15	105	0.011
12:00 - 13:00	15	105	0.006	15	105	0.008	15	105	0.014
13:00 - 14:00	15	105	0.006	15	105	0.001	15	105	0.007
14:00 - 15:00	15	105	0.003	15	105	0.004	15	105	0.007
15:00 - 16:00	15	105	0.003	15	105	0.005	15	105	0.008
16:00 - 17:00	15	105	0.005	15	105	0.003	15	105	0.008
17:00 - 18:00	15	105	0.013	15	105	0.002	15	105	0.015
18:00 - 19:00	15	105	0.011	15	105	0.000	15	105	0.011
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.059			0.067			0.126

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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	15	105	0.120	15	105	0.418	15	105	0.538
08:00 - 09:00	15	105	0.236	15	105	0.731	15	105	0.967
09:00 - 10:00	15	105	0.237	15	105	0.315	15	105	0.552
10:00 - 11:00	15	105	0.221	15	105	0.291	15	105	0.512
11:00 - 12:00	15	105	0.229	15	105	0.236	15	105	0.465
12:00 - 13:00	15	105	0.279	15	105	0.229	15	105	0.508
13:00 - 14:00	15	105	0.268	15	105	0.259	15	105	0.527
14:00 - 15:00	15	105	0.237	15	105	0.269	15	105	0.506
15:00 - 16:00	15	105	0.577	15	105	0.340	15	105	0.917
16:00 - 17:00	15	105	0.489	15	105	0.298	15	105	0.787
17:00 - 18:00	15	105	0.540	15	105	0.292	15	105	0.832
18:00 - 19:00	15	105	0.356	15	105	0.271	15	105	0.627
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.789			3.949			7.738

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:	52 - 237 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

APPENDIX K

Trip start time by trip purpose (Monday to Friday only): Great Britain, 2006/10
car driver trips

	Commuting	Business	Education	Escort education	Shiopping	Other Personal business and escort	Visiting friends/ entertainment /sports	Holiday/ Day trip/ Other
0700 - 0759	65%	7%	0%	4%	2%	17%	3%	1%
0800 - 0859	39%	6%	1%	22%	5%	22%	4%	1%
	45%		**23%**		**32%**			
1600 - 1659	30%	7%	1%	5%	16%	24%	13%	3%
1700 - 1759	42%	5%	0%	2%	12%	23%	14%	2%
	47%		**2%**		**51%**			

Source: National Travel Survey

All Purpose Trips (locally Derived Trip Rates)

Weekday Average Vehicle Trips for Houses

	Trip Rate	No. Units	Trips	Total
AM Arrivals	0.142	160	23	82
AM Departures	0.37	160	59	
PM Arrivals	0.331	160	53	82
PM Departures	0.184	160	29	

Houses 160 **Units**

Journeys for Work

AM	**45%**
PM	**47%**

Weekday Average Vehicle Trips for Houses

	Trip Rate	No. Units	Trips	Total
AM Arrivals	0.064	160	10	37
AM Departures	0.167	160	27	
PM Arrivals	0.156	160	25	39
PM Departures	0.086	160	14	

Journeys for Education

AM	**23%**
PM	**2%**

Weekday Average Vehicle Trips for Houses

	Trip Rate	No. Units	Trips	Total
AM Arrivals	0.033	160	5	19
AM Departures	0.085	160	14	
PM Arrivals	0.007	160	1	2
PM Departures	0.004	160	1	

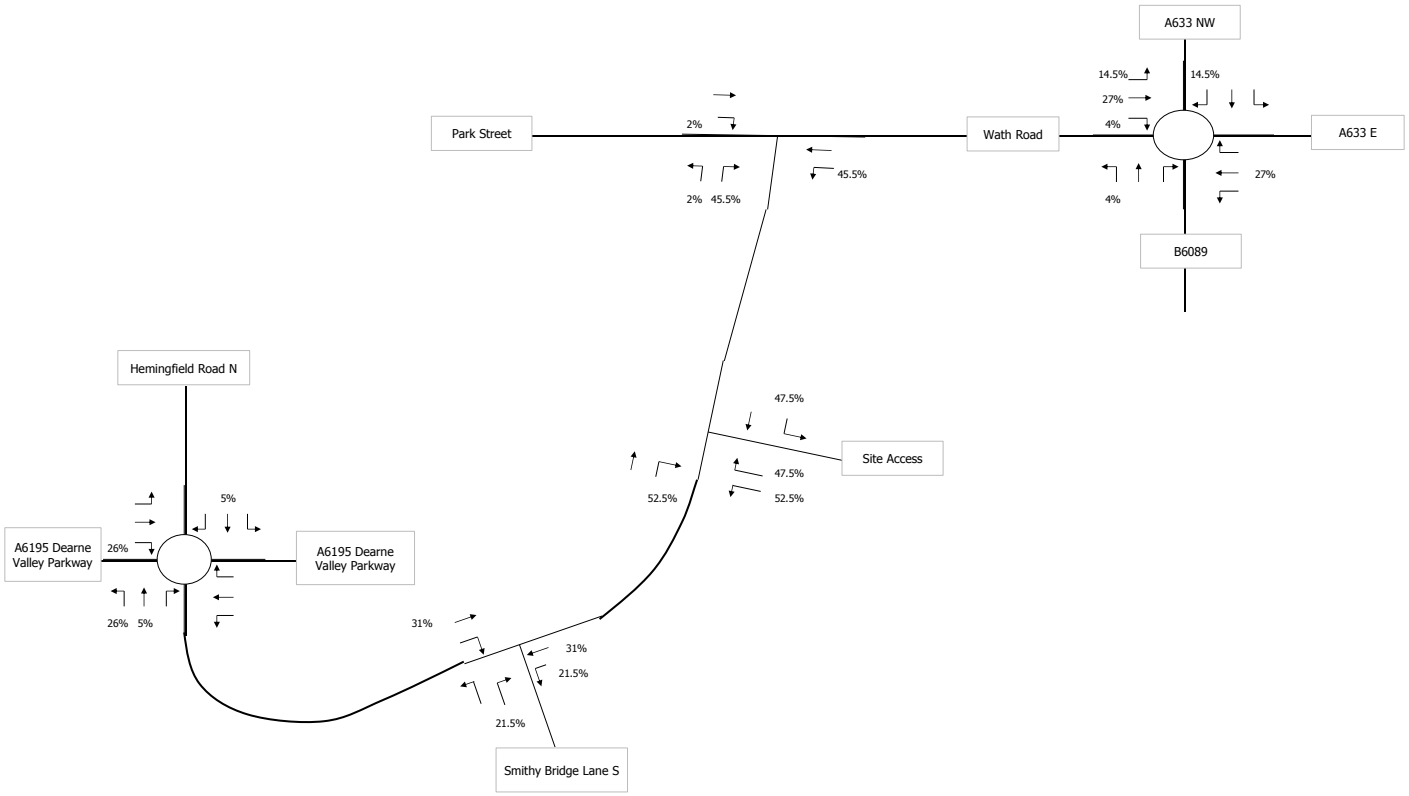
Journeys for Other Purposes

AM	**32%**
PM	**51%**

Weekday Average Vehicle Trips for Houses

	Trip Rate	No. Units	Trips	Total
AM Arrivals	0.045	160	7	26
AM Departures	0.118	160	19	
PM Arrivals	0.169	160	27	42
PM Departures	0.094	160	15	

APPENDIX L



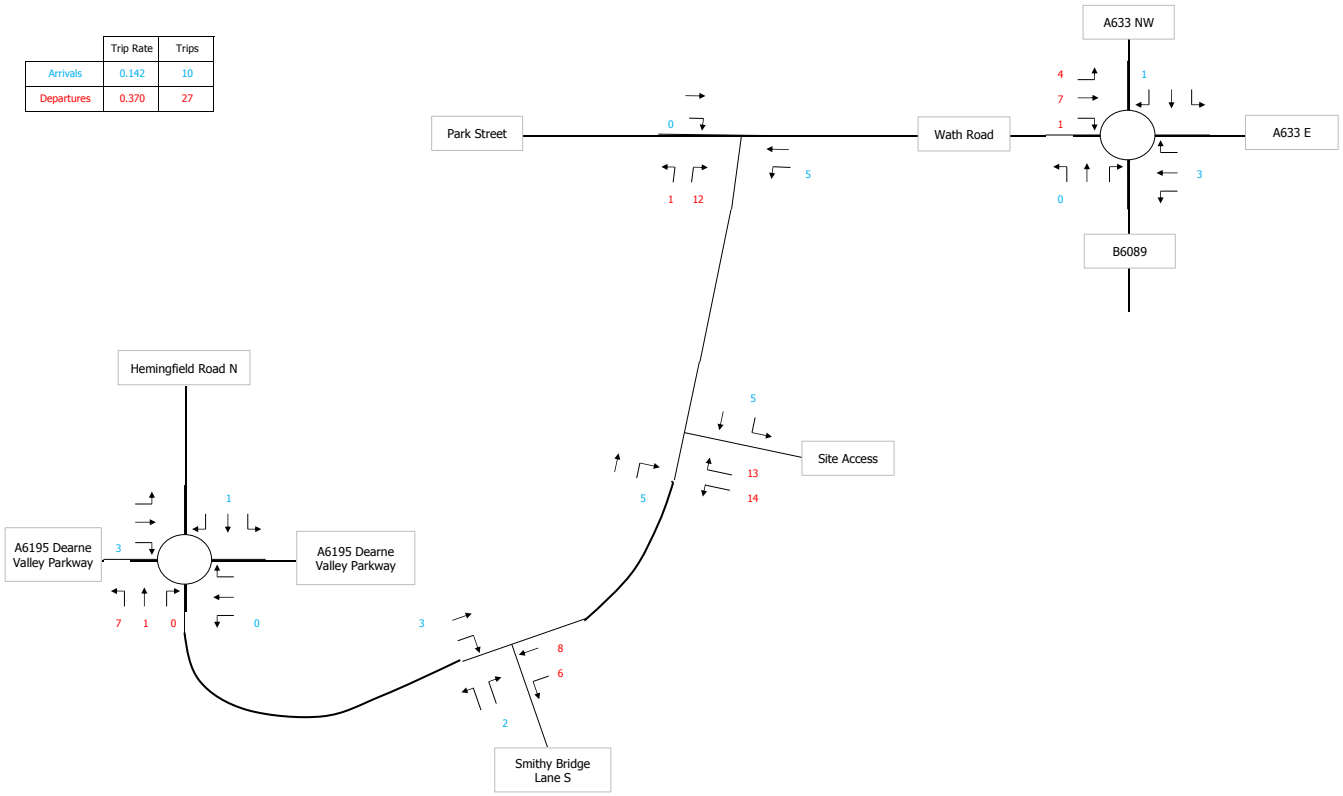
A098689 - Lunhill Road, Wombwell

Journey to Work Distribution

Flows are in Passenger Car Units

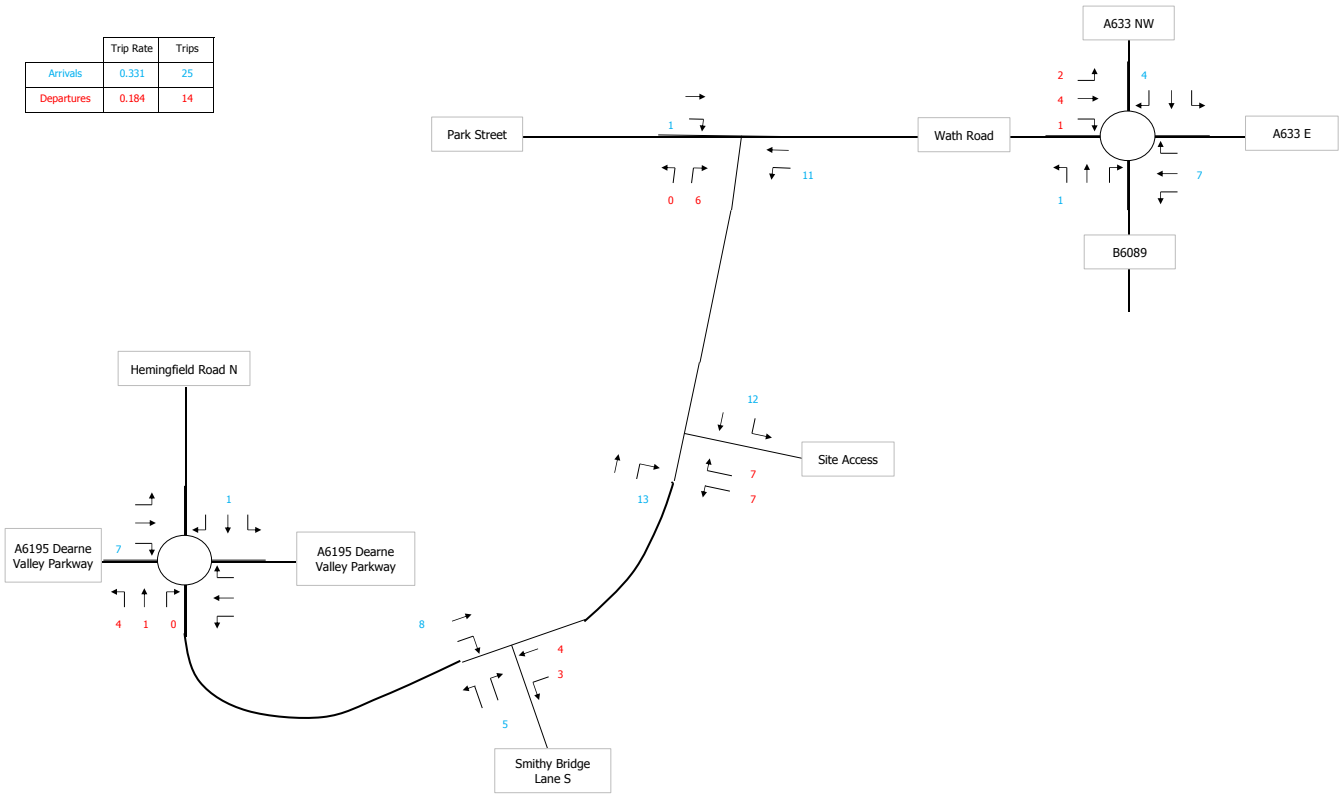
AM

	Trip Rate	Trips
Arrivals	0.142	10
Departures	0.370	27



PM

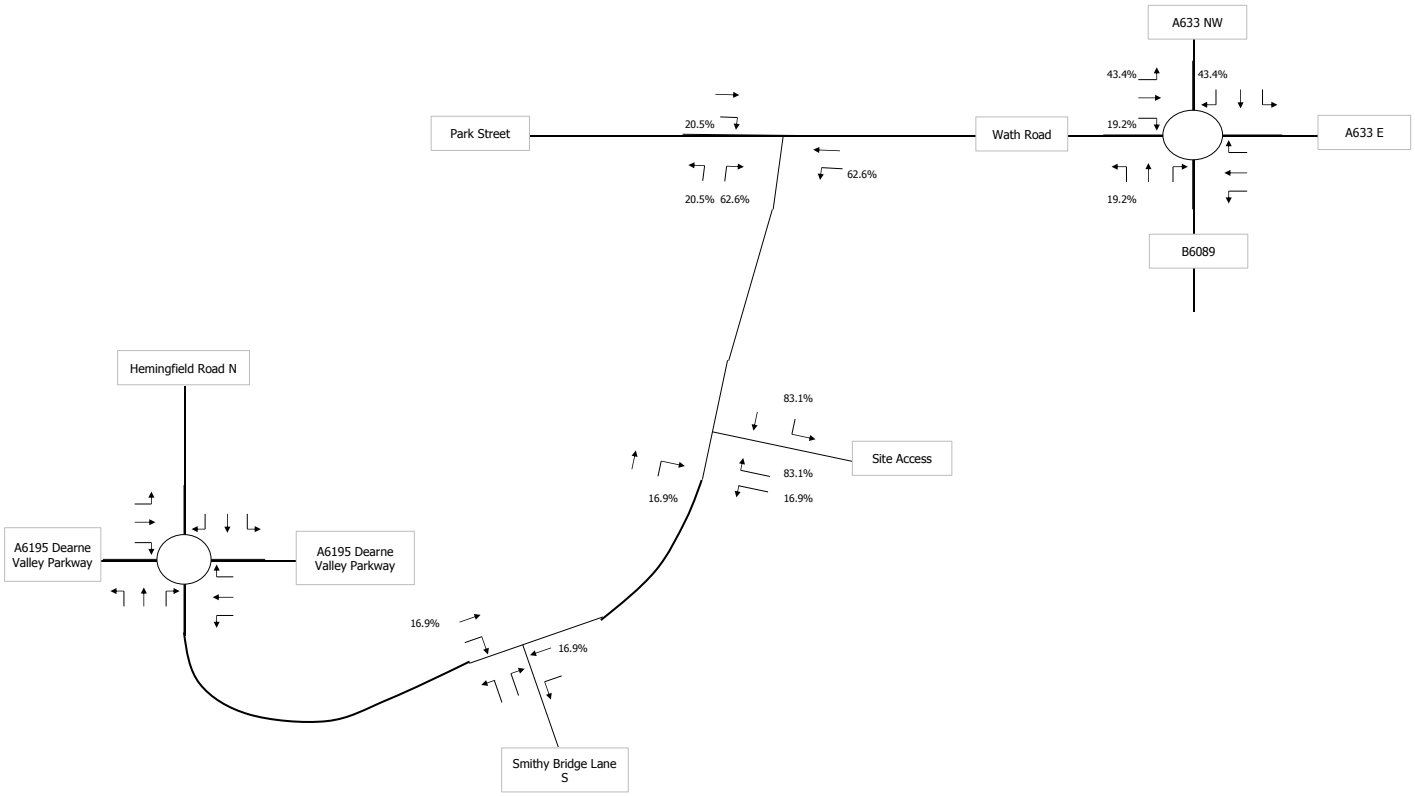
	Trip Rate	Trips
Arrivals	0.331	25
Departures	0.184	14



A098689 - Lunhill Road, Wombwell

Journeys to Work Assignment

Flows are in Passenger Car Units



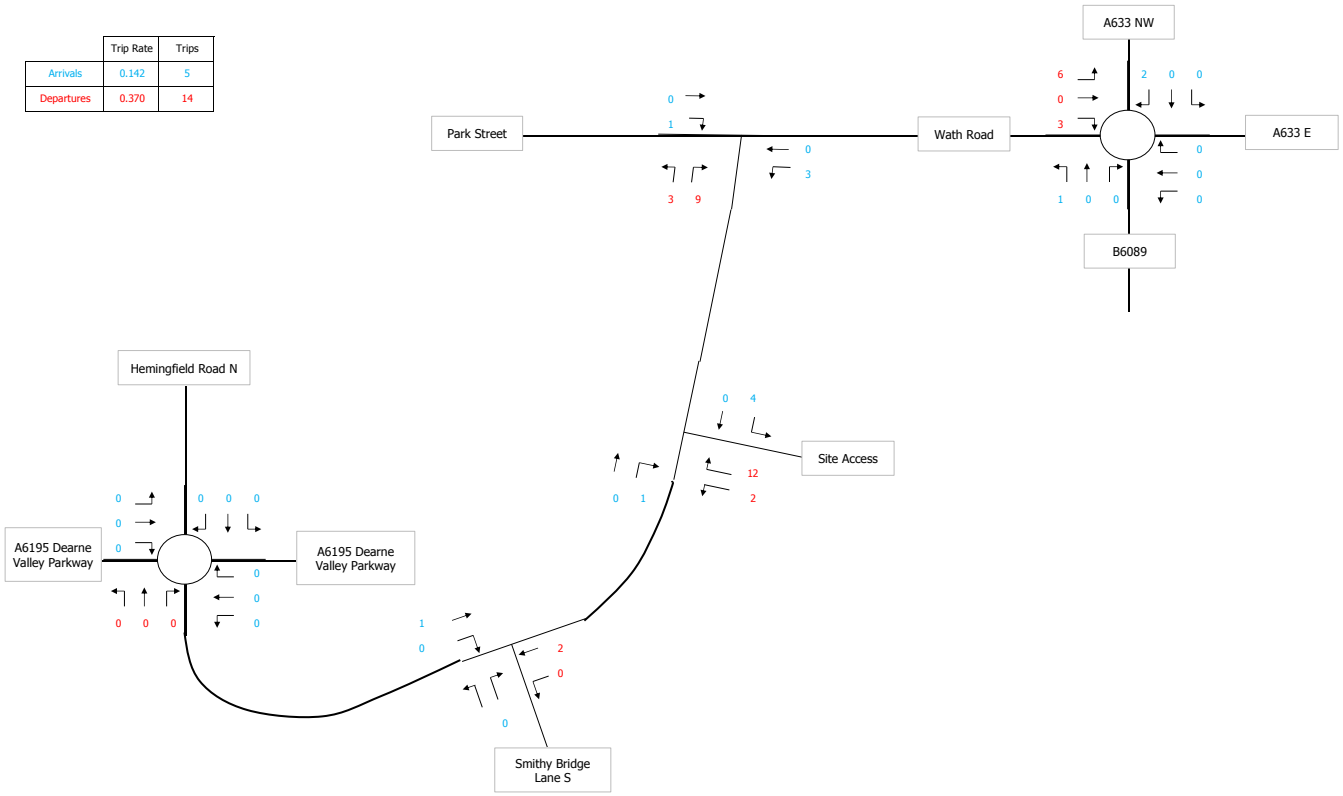
A098689 - Lunhill Road, Wombwell

Journeys to Education Distribution

Flows are in Passenger Car Units

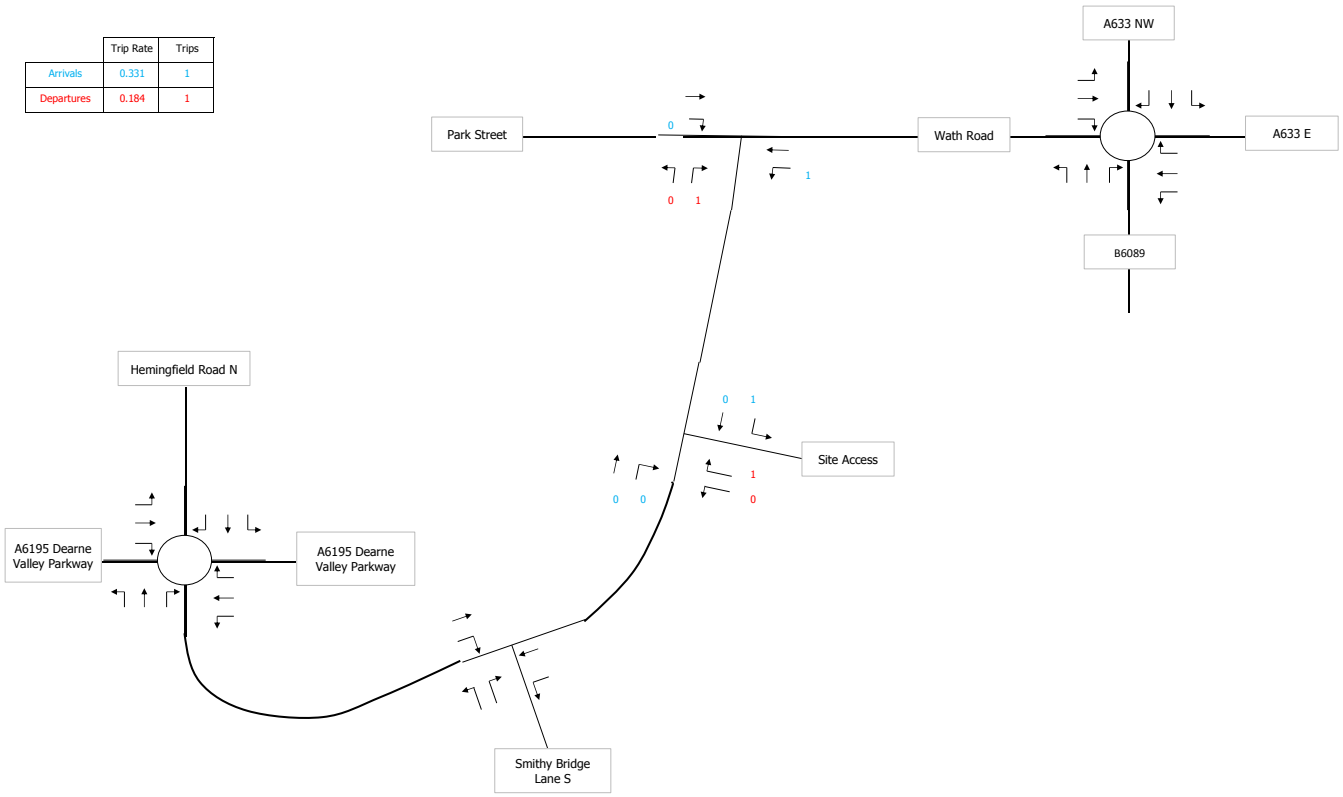
AM

	Trip Rate	Trips
Arrivals	0.142	5
Departures	0.370	14



PM

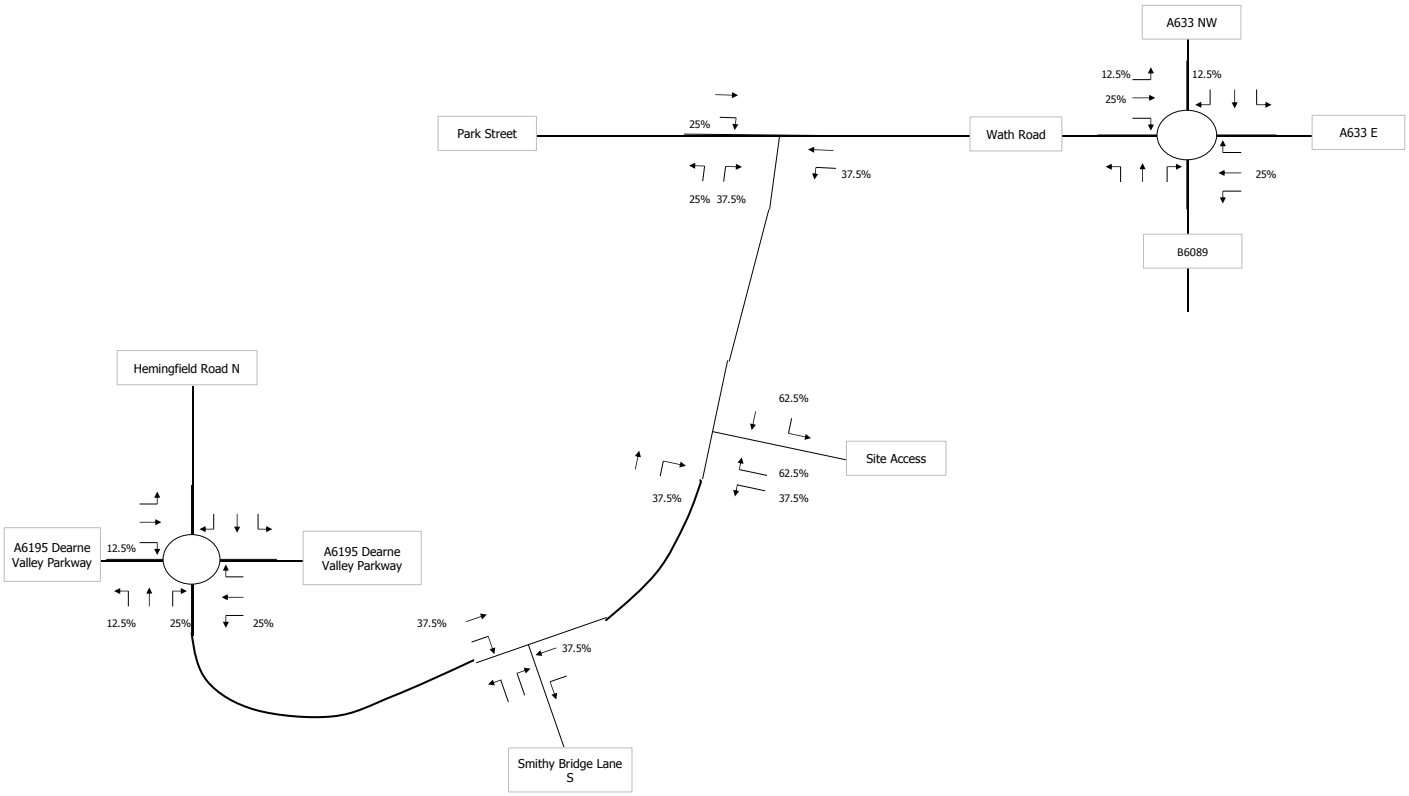
	Trip Rate	Trips
Arrivals	0.331	1
Departures	0.184	1



A098689 - Lunhill Road, Wombwell

Journeys to Education Assignment

Flows are in Passenger Car Units



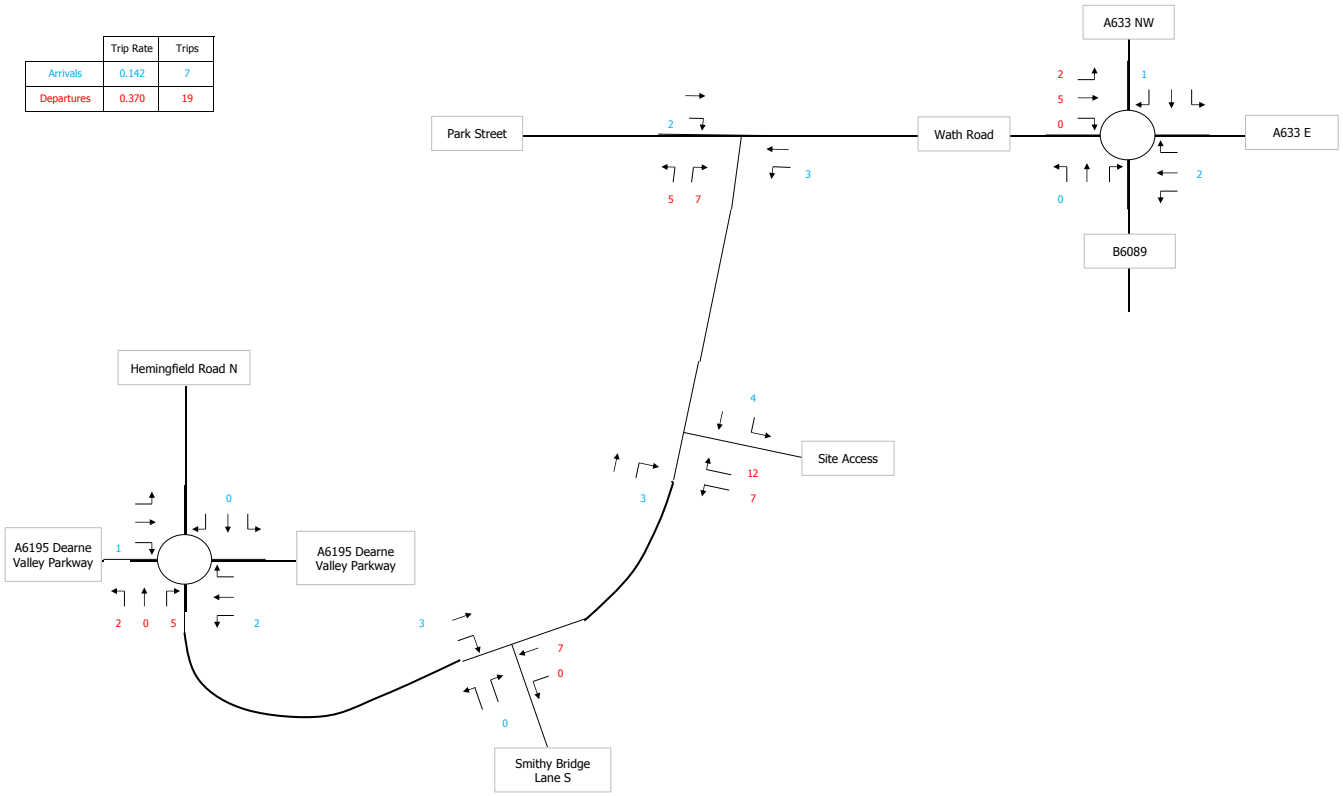
A098689 - Lunhill Road, Wombwell

Journeys to Leisure Distribution

Flows are in Passenger Car Units

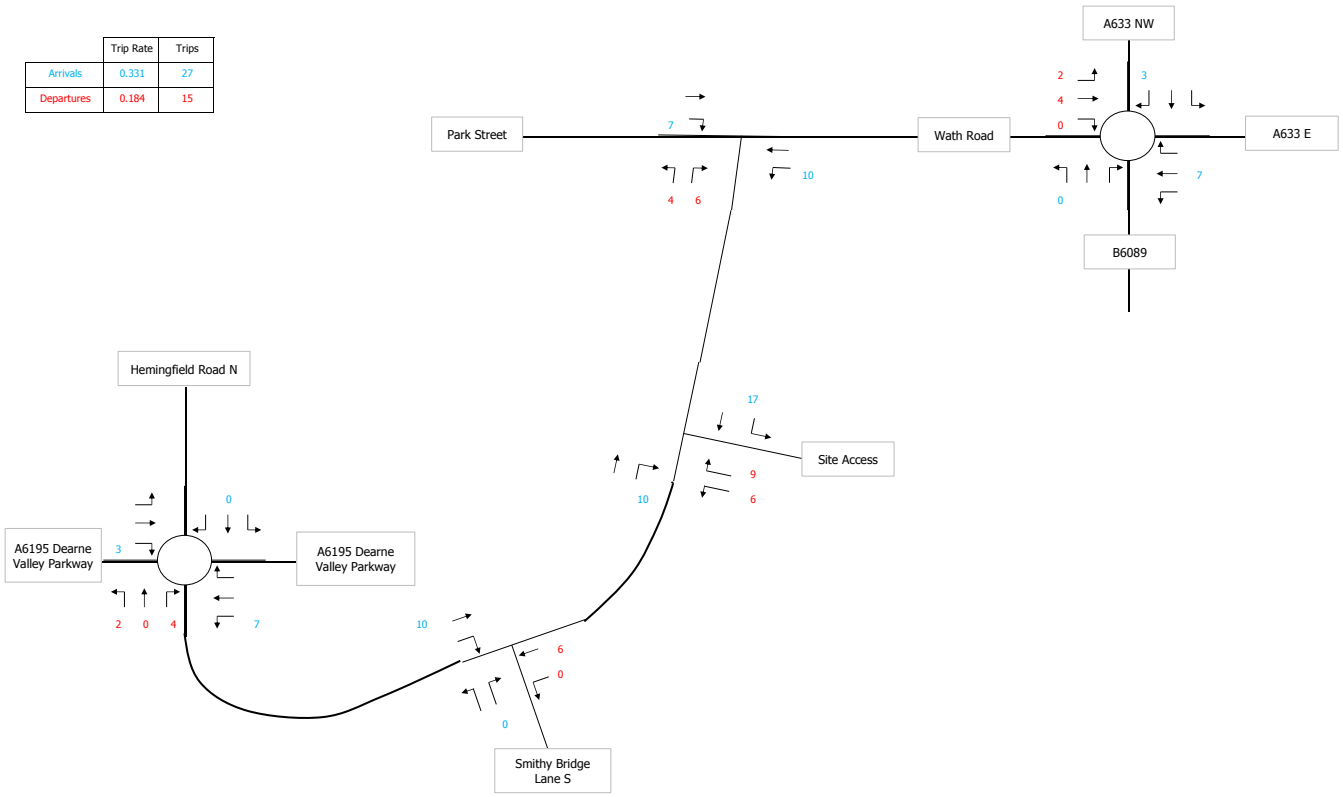
AM

	Trip Rate	Trips
Arrivals	0.142	7
Departures	0.370	19



PM

	Trip Rate	Trips
Arrivals	0.331	27
Departures	0.184	15



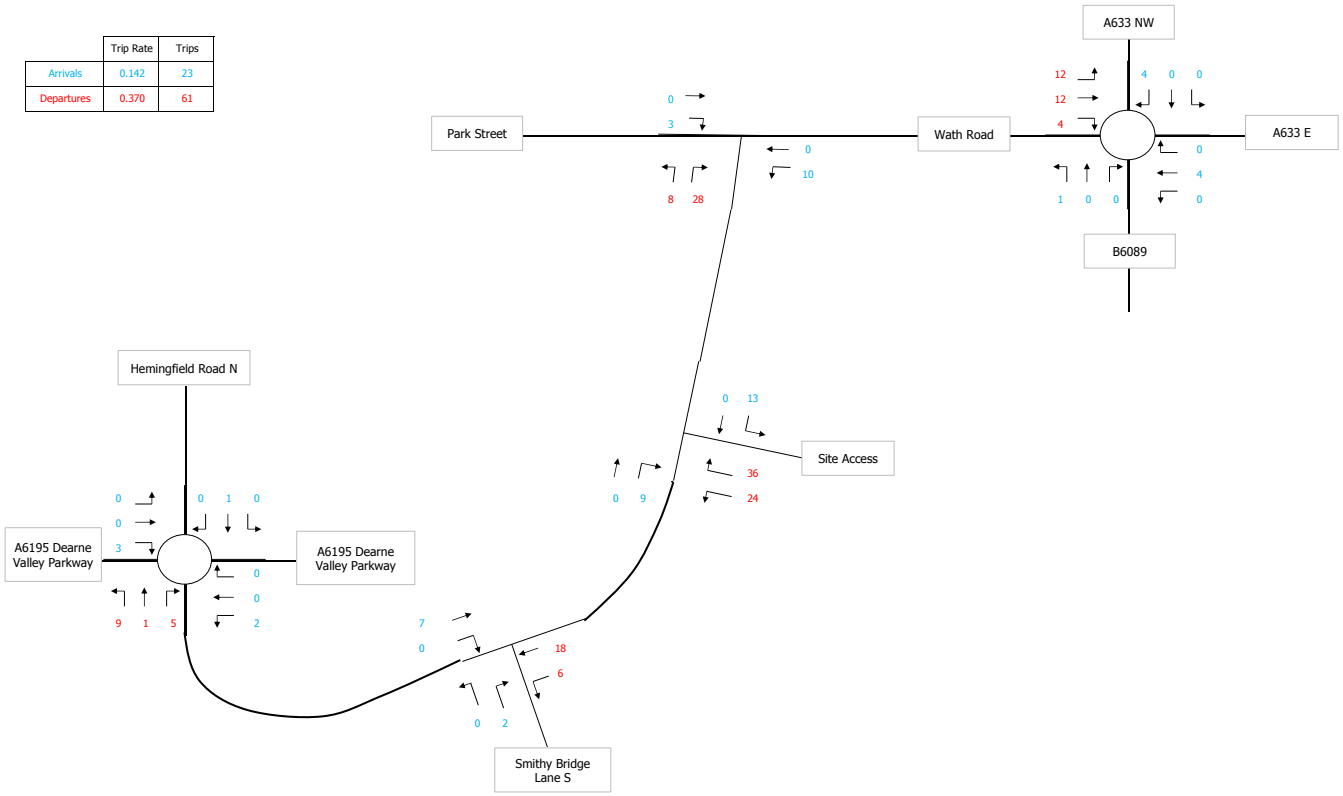
A098689 - Lunhill Road, Wombwell

Journeys to Leisure Assignment

Flows are in Passenger Car Units

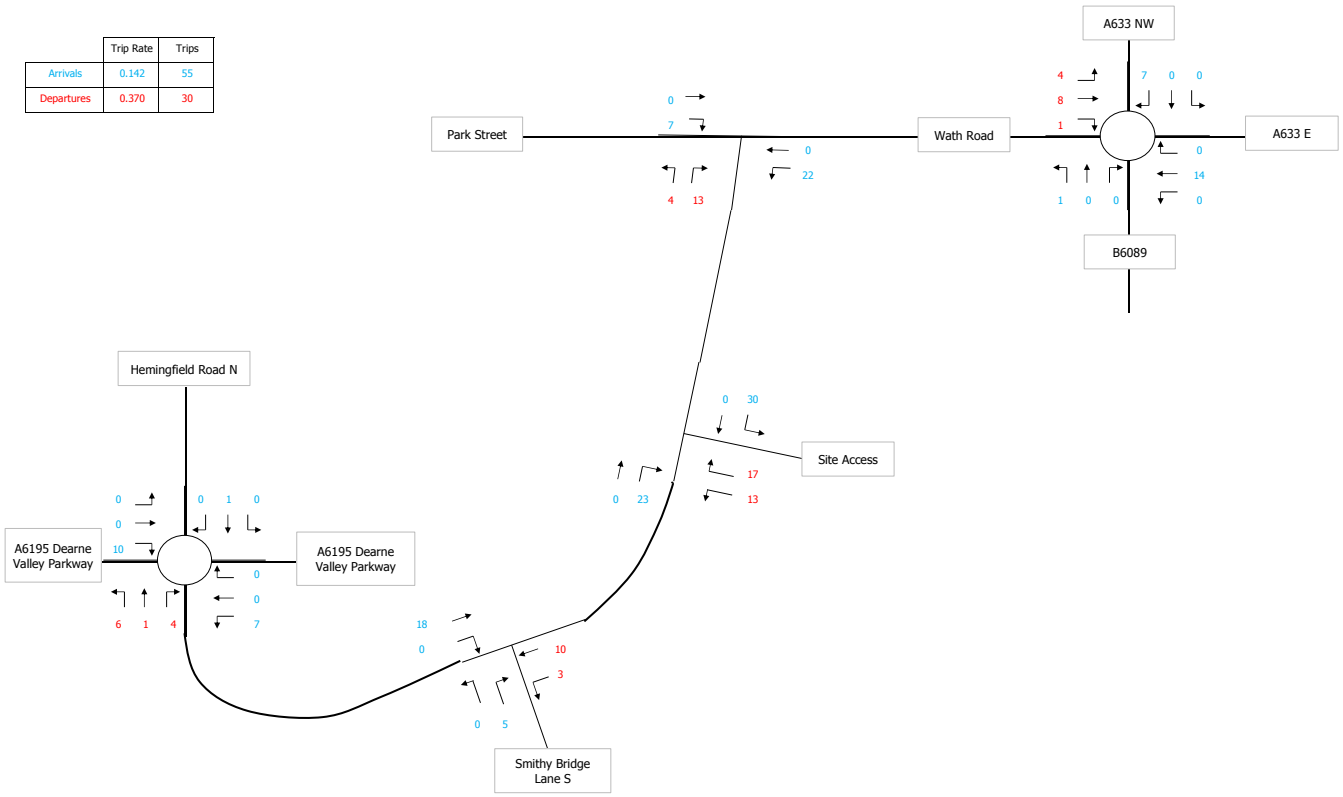
AM

	Trip Rate	Trips
Arrivals	0.142	23
Departures	0.370	61



PM

	Trip Rate	Trips
Arrivals	0.142	55
Departures	0.370	30



A098689 - Lunhill Road, Wombwell

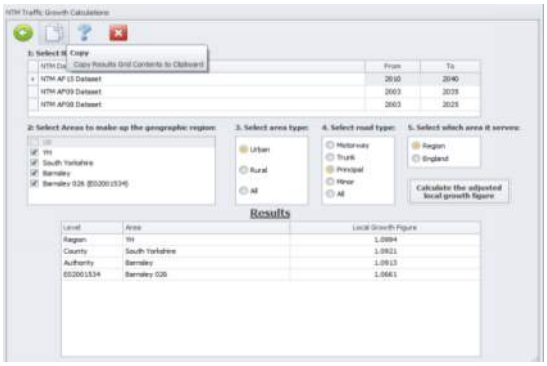
Combined Development Flows

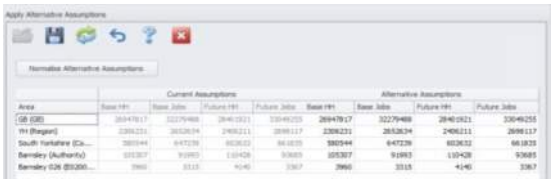
Flows are in Passenger Car Units

APPENDIX M

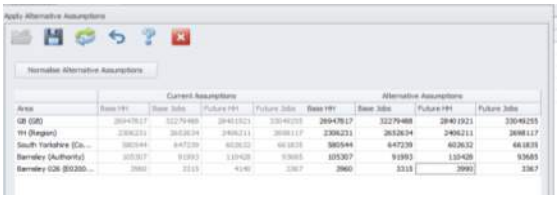
Dataset Version:	70
Result Type:	Trip ends by time period
Base Year:	2016
Future Year:	2022
Trip Purpose Group:	All purposes
Time Period:	Weekday AM peak period (0700 - 0959)
Trip End Type:	Origin/Destination
Alternative Assumptions applied:	Yes

Area Description		**All purposes**	
Level	**Name**	**Origin**	**Destination**
GB	GB	1.0493	1.0493
Region	YH	1.0539	1.0539
County	South Yorkshire	1.0469	1.0469
Authority	Barnsley	1.0485	1.0438
E02001534	Barnsley 026	1.0115	1.0324





HH 4140 150 3990

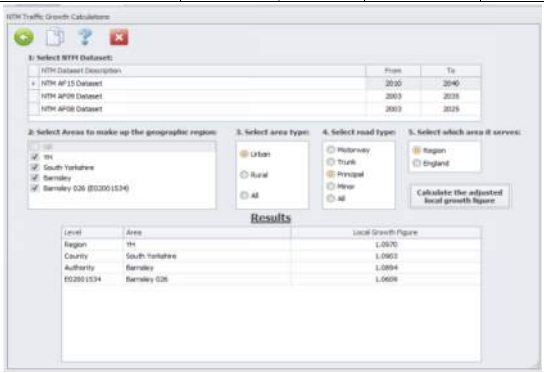


Weekday AM peak period (0700 - 0959)

Local Growth Figure		
Level	**Area**	**Local Growth Figure**
Region	YH	1.0994
County	South Yorkshire	1.0921
Authority	Barnsley	1.0913
E02001534	Barnsley 026	1.0661

Dataset Version:	70
Result Type:	Trip ends by time period
Base Year:	2016
Future Year:	2022
Trip Purpose Group:	All purposes
Time Period:	Weekday PM peak period (1600 - 1859)
Trip End Type:	Origin/Destination
Alternative Assumptions applied:	Yes

Area Description		**All purposes**	
Level	**Name**	**Origin**	**Destination**
GB	GB	1.0484	1.0484
Region	YH	1.0516	1.0516
County	South Yorkshire	1.0452	1.0452
Authority	Barnsley	1.043	1.0456
E02001534	Barnsley 026	1.0234	1.0106

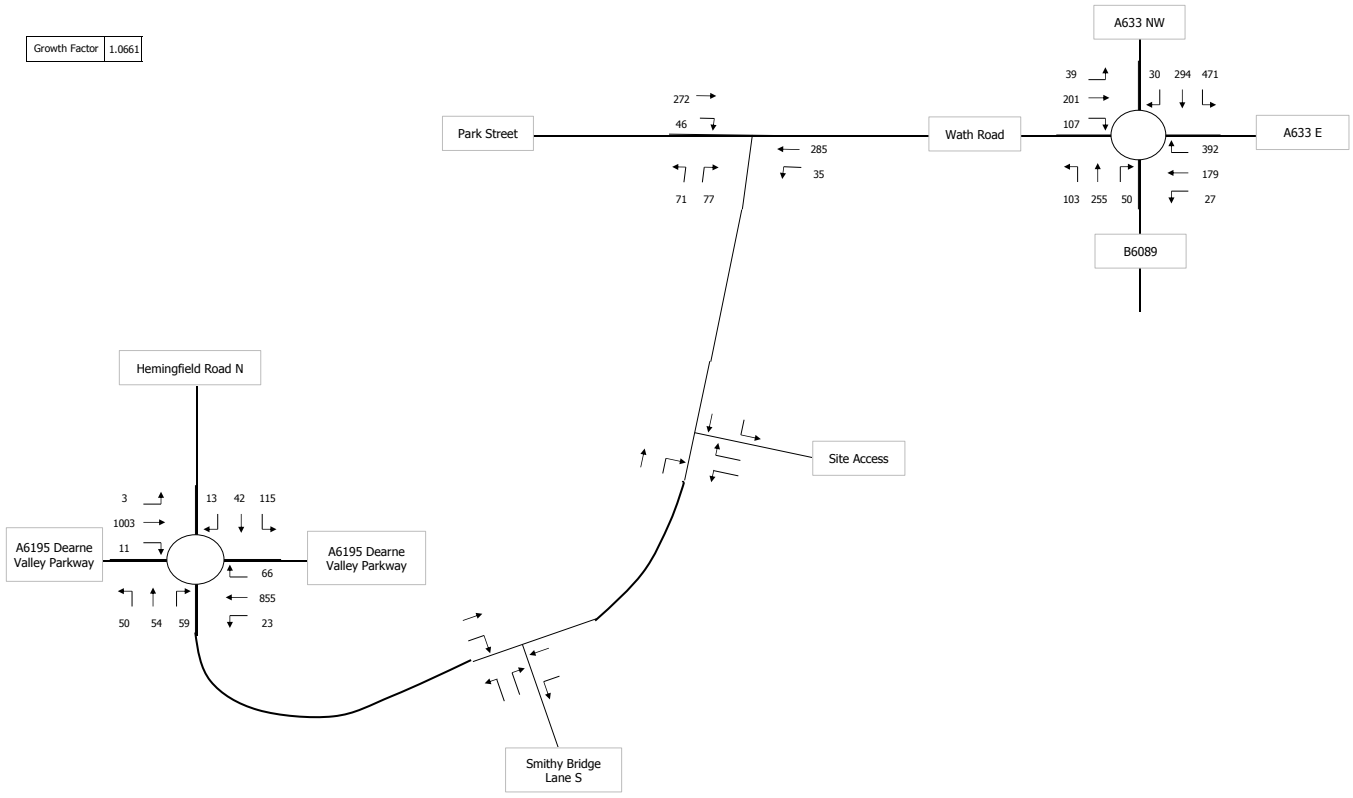


Weekday PM peak period (1600 - 18959)

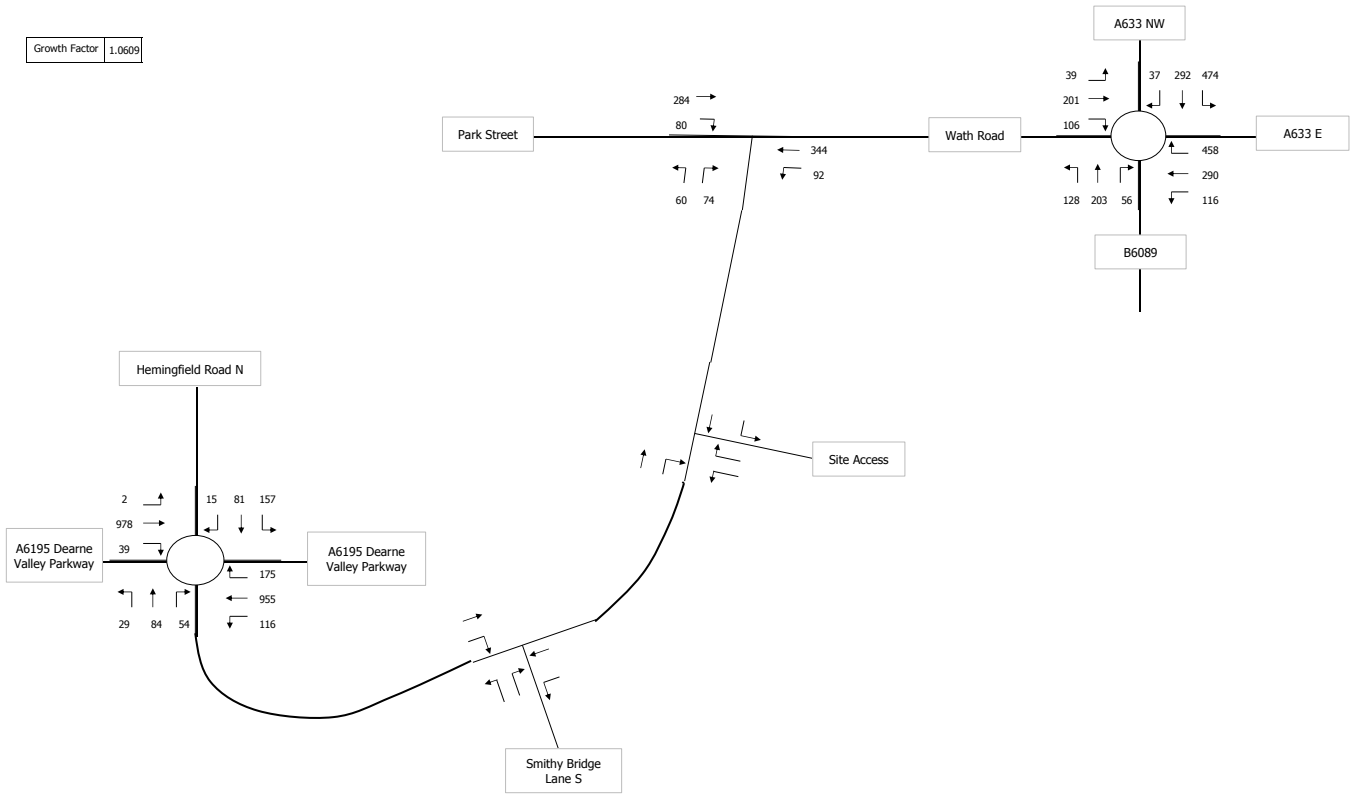
Local Growth Figure		
Level	**Area**	**Local Growth Figure**
Region	YH	1.0970
County	South Yorkshire	1.0903
Authority	Barnsley	1.0894
E02001534	Barnsley 026	1.0609

APPENDIX N

AM 07:30 - 08:30



PM 17:00 - 18:00



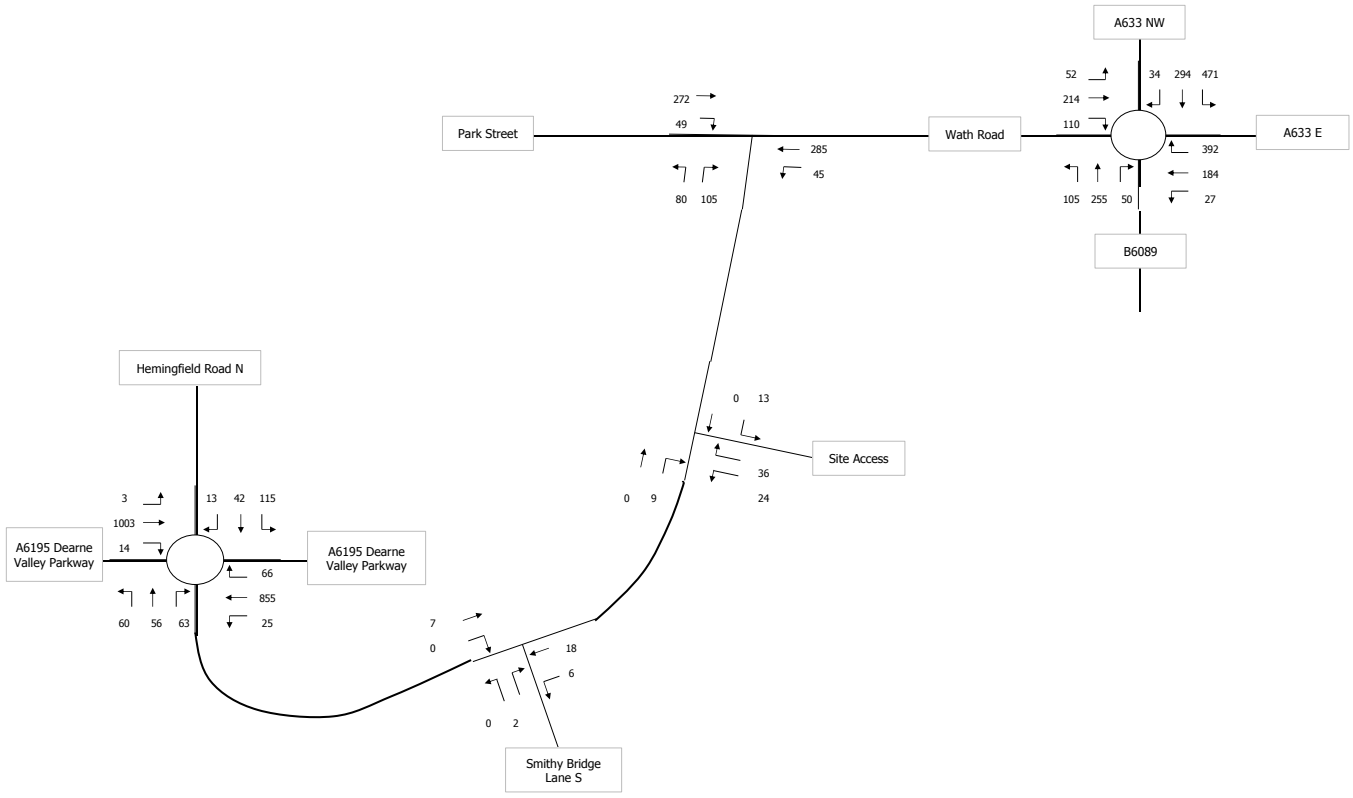
A098689 - Lunhill Road, Wombwell

2022 Base

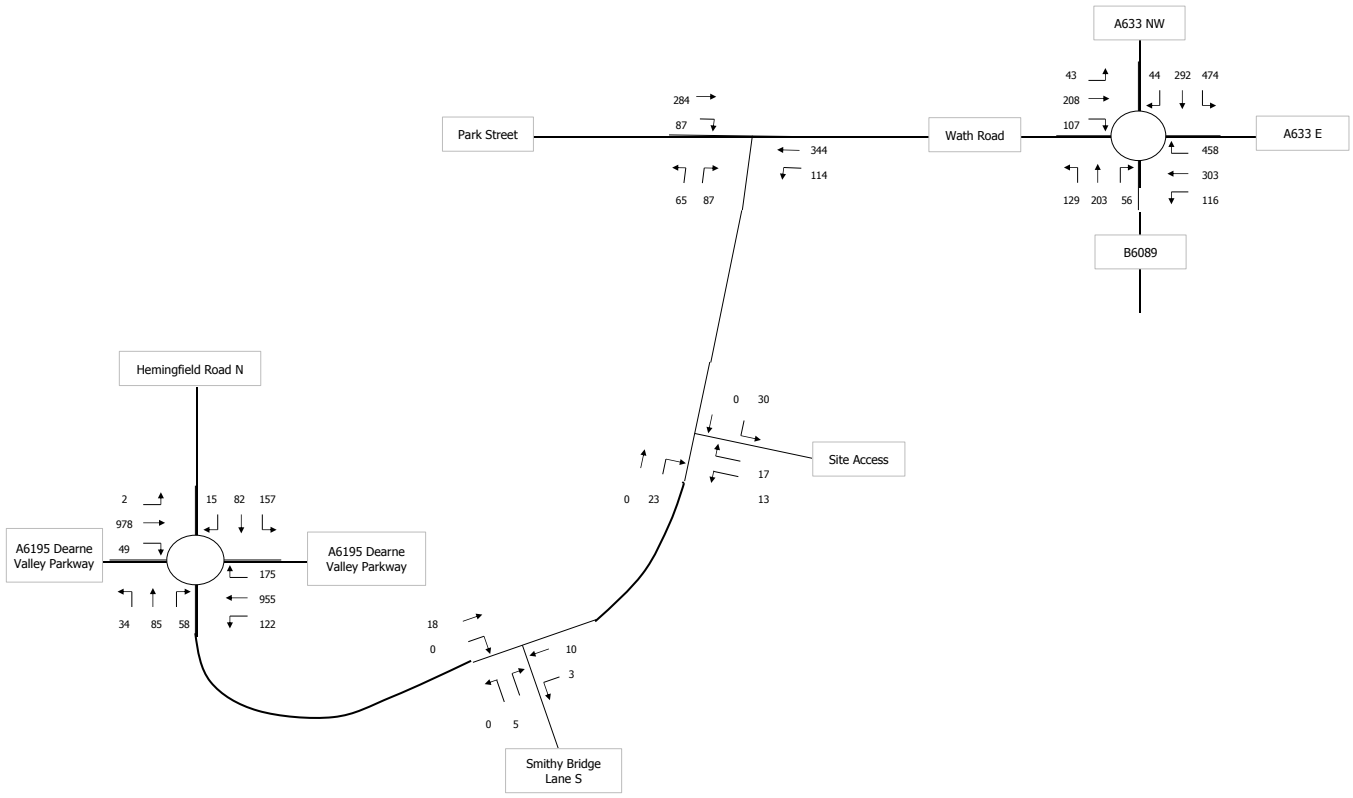
Flows are in Passenger Car Units

APPENDIX O

AM 07:30 - 08:30



PM 17:00 - 18:00



A098689 - Lunhill Road, Wombwell

2022 Base + Development Traffic Flows

Flows are in Passenger Car Units

APPENDIX P

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: Park St Wath Rd Lundhill Rd 160 units REV3 2022.j9
Path: W:\Projects\A090000 - A09999\A098689\calculations\Transport Planning\Junction Models\Park St _Wath Rd_ Lundhill Rd\160 Units TA
Report generation date: 07/11/2017 08:12:32

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2022 Base							
Stream B-AC	0.4	9.87	0.31	A	0.4	10.59	0.30	B
Stream C-AB	0.2	4.95	0.10	A	0.3	5.52	0.18	A
	2022 Base + Dev							
Stream B-AC	0.6	11.52	0.39	B	0.5	11.57	0.35	B
Stream C-AB	0.2	4.98	0.11	A	0.4	5.68	0.20	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	Park St Wath Rd Lundhill Rd
Location	Wombwell
Site number	
Date	16/08/2016
Version	
Status	
Identifier	
Client	
Jobnumber	A098689
Enumerator	WYG\d.liddell-crewe
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	mph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2022 Base	AM	ONE HOUR	07:15	08:45	15	✓
D4	2022 Base	PM	ONE HOUR	16:45	18:15	15	✓
D5	2022 Base + Dev	AM	ONE HOUR	07:15	08:45	15	✓
D6	2022 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Wath Road		Major
B	Lundhill Road		Minor
C	Park Street		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	8.84			220.0	✓	0.00

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	4.55	17	41

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	581	0.093	0.235	0.148	0.335
1	B-C	751	0.101	0.255	-	-
1	C-B	701	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2022 Base	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	320	100.000
B		ONE HOUR	✓	148	100.000
C		ONE HOUR	✓	318	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	35	285
	B	77	0	71
	C	272	46	0

Vehicle Mix

Heavy Vehicle Percentages

		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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.31	9.87	0.4	A	136	204
C-AB	0.10	4.95	0.2	A	62	94
C-A					229	344
A-B					32	48
A-C					262	392

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	111	28	568	0.196	110	0.0	0.2	7.854	A
C-AB	47	12	776	0.061	47	0.0	0.1	4.939	A
C-A	192	48			192				
A-B	26	7			26				
A-C	215	54			215				

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

B-AC	133	33	551	0.241	133	0.2	0.3	8.598	A
C-AB	60	15	791	0.076	60	0.1	0.1	4.923	A
C-A	226	56			226				
A-B	31	8			31				
A-C	256	64			256				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	163	41	528	0.309	162	0.3	0.4	9.838	A
C-AB	80	20	814	0.099	80	0.1	0.2	4.905	A
C-A	270	67			270				
A-B	39	10			39				
A-C	314	78			314				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	163	41	528	0.309	163	0.4	0.4	9.866	A
C-AB	80	20	814	0.099	80	0.2	0.2	4.907	A
C-A	270	67			270				
A-B	39	10			39				
A-C	314	78			314				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	133	33	551	0.241	134	0.4	0.3	8.631	A
C-AB	60	15	792	0.076	60	0.2	0.1	4.927	A
C-A	226	56			226				
A-B	31	8			31				
A-C	256	64			256				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	111	28	568	0.196	112	0.3	0.2	7.899	A
C-AB	47	12	776	0.061	47	0.1	0.1	4.947	A
C-A	192	48			192				
A-B	26	7			26				
A-C	215	54			215				

2022 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2022 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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	436	100.000
B		ONE HOUR	✓	134	100.000
C		ONE HOUR	✓	364	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	92	344
	B	74	0	60
	C	284	80	0

Vehicle Mix

Heavy Vehicle Percentages

		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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.30	10.59	0.4	B	123	184
C-AB	0.18	5.52	0.3	A	112	168
C-A					222	333
A-B					84	127
A-C					316	473

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	101	25	539	0.187	100	0.0	0.2	8.183	A
C-AB	84	21	763	0.110	83	0.0	0.2	5.292	A
C-A	190	48			190				
A-B	69	17			69				
A-C	259	65			259				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	120	30	517	0.233	120	0.2	0.3	9.055	A
C-AB	107	27	777	0.138	107	0.2	0.2	5.374	A
C-A	220	55			220				
A-B	83	21			83				
A-C	309	77			309				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	148	37	487	0.303	147	0.3	0.4	10.561	B
C-AB	145	36	798	0.182	145	0.2	0.3	5.515	A
C-A	255	64			255				
A-B	101	25			101				
A-C	379	95			379				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	148	37	487	0.303	148	0.4	0.4	10.595	B
C-AB	145	36	798	0.182	145	0.3	0.3	5.522	A
C-A	255	64			255				
A-B	101	25			101				
A-C	379	95			379				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	120	30	517	0.233	121	0.4	0.3	9.093	A
C-AB	108	27	777	0.138	108	0.3	0.2	5.384	A
C-A	220	55			220				
A-B	83	21			83				
A-C	309	77			309				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	101	25	539	0.187	101	0.3	0.2	8.232	A
C-AB	84	21	763	0.110	84	0.2	0.2	5.306	A
C-A	190	48			190				
A-B	69	17			69				
A-C	259	65			259				

2022 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.98	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2022 Base + Dev	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	330	100.000
B		ONE HOUR	✓	185	100.000
C		ONE HOUR	✓	321	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	45	285
	B	105	0	80
	C	272	49	0

Vehicle Mix

Heavy Vehicle Percentages

		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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.39	11.52	0.6	B	170	255
C-AB	0.11	4.98	0.2	A	67	100
C-A					228	342
A-B					41	62
A-C					262	392

Main Results for each time segment

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	139	35	557	0.250	138	0.0	0.3	8.558	A
C-AB	50	13	774	0.065	50	0.0	0.1	4.971	A
C-A	192	48			192				
A-B	34	8			34				
A-C	215	54			215				

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	166	42	540	0.308	166	0.3	0.4	9.608	A
C-AB	64	16	790	0.081	64	0.1	0.1	4.963	A
C-A	225	56			225				
A-B	40	10			40				
A-C	256	64			256				

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	204	51	516	0.395	203	0.4	0.6	11.464	B
C-AB	86	21	812	0.106	85	0.1	0.2	4.958	A
C-A	268	67			268				
A-B	50	12			50				
A-C	314	78			314				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	204	51	516	0.395	204	0.6	0.6	11.522	B
C-AB	86	21	812	0.106	86	0.2	0.2	4.960	A
C-A	268	67			268				
A-B	50	12			50				
A-C	314	78			314				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	166	42	540	0.308	167	0.6	0.5	9.672	A
C-AB	64	16	790	0.081	64	0.2	0.1	4.967	A
C-A	225	56			225				
A-B	40	10			40				
A-C	256	64			256				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	139	35	557	0.250	140	0.5	0.3	8.633	A
C-AB	50	13	774	0.065	50	0.1	0.1	4.979	A
C-A	191	48			191				
A-B	34	8			34				
A-C	215	54			215				

2022 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2022 Base + 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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	458	100.000
B		ONE HOUR	✓	152	100.000
C		ONE HOUR	✓	371	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	114	344
	B	87	0	65
	C	284	87	0

Vehicle Mix

Heavy Vehicle Percentages

		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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.35	11.57	0.5	B	139	209
C-AB	0.20	5.68	0.4	A	122	184
C-A					218	327
A-B					105	157
A-C					316	473

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	114	29	532	0.215	113	0.0	0.3	8.575	A
C-AB	91	23	759	0.120	90	0.0	0.2	5.377	A
C-A	188	47			188				
A-B	86	21			86				
A-C	259	65			259				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	137	34	510	0.268	136	0.3	0.4	9.630	A
C-AB	117	29	773	0.151	117	0.2	0.3	5.486	A
C-A	216	54			216				
A-B	102	26			102				
A-C	309	77			309				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	167	42	479	0.350	167	0.4	0.5	11.516	B
C-AB	159	40	793	0.200	158	0.3	0.4	5.674	A
C-A	250	62			250				
A-B	126	31			126				
A-C	379	95			379				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	167	42	478	0.350	167	0.5	0.5	11.567	B
C-AB	159	40	793	0.200	159	0.4	0.4	5.683	A
C-A	250	62			250				
A-B	126	31			126				
A-C	379	95			379				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	137	34	510	0.268	137	0.5	0.4	9.686	A
C-AB	117	29	773	0.152	118	0.4	0.3	5.498	A
C-A	216	54			216				
A-B	102	26			102				
A-C	309	77			309				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	114	29	532	0.215	115	0.4	0.3	8.641	A
C-AB	91	23	760	0.120	92	0.3	0.2	5.394	A
C-A	188	47			188				
A-B	86	21			86				
A-C	259	65			259				

Junctions 9

ARCADY 9 - Roundabout Module

Filename: A633 Brampton Rd Wath Rd 160 Units.j9
Path: \\leeds2\EnvData\Projects\A090000 - A09999\A098689\calculations\Transport Planning\Junction Models\A633 Valley Way_A633 Wath Rd_ B6089 Brampton Rd\160 Units
Report generation date: 24/04/2017 09:56:58

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2016 Base							
Arm 1	0.6	3.79	0.39	A	1.3	5.41	0.57	A
Arm 2	0.4	3.06	0.26	A	0.4	3.39	0.27	A
Arm 3	0.4	3.65	0.27	A	0.4	3.71	0.27	A
Arm 4	1.2	5.13	0.54	A	1.2	5.25	0.55	A
	2022 Base							
Arm 1	0.7	4.05	0.43	A	1.6	6.08	0.62	A
Arm 2	0.4	3.21	0.29	A	0.4	3.59	0.30	A
Arm 3	0.4	3.87	0.29	A	0.4	3.92	0.29	A
Arm 4	1.4	5.69	0.58	A	1.4	5.81	0.59	A
	2022 Base + Dev							
Arm 1	0.8	4.10	0.43	A	1.7	6.29	0.63	A
Arm 2	0.4	3.24	0.29	A	0.4	3.66	0.30	A
Arm 3	0.5	4.01	0.32	A	0.4	3.98	0.30	A
Arm 4	1.4	5.84	0.59	A	1.5	5.94	0.60	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	A633 Valley Way / A633 / Wath Rd / Brampton Rd
Location	Wombwell
Site number	
Date	18/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	A098689
Enumerator	WYG\d.liddell-crewe
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)

5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016 Base	AM	ONE HOUR	07:15	08:45	15	✓
D2	2016 Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2022 Base	AM	ONE HOUR	07:15	08:45	15	✓
D4	2022 Base	PM	ONE HOUR	16:45	18:15	15	✓
D5	2022 Base + Dev	AM	ONE HOUR	07:15	08:45	15	✓
D6	2022 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2016 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	4.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A633 E	
2	B6089 Brampton Rd	
3	Wath Rd	
4	A633 Valley Way	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	5.40	8.70	3.4	9.6	43.2	18.0	
2	5.24	8.07	9.0	11.6	43.2	17.0	
3	4.05	8.65	10.9	11.4	43.2	20.0	
4	3.53	8.00	11.8	17.1	43.2	13.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.662	1861
2	0.702	2034
3	0.655	1815
4	0.662	1768

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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016 Base	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	561	100.000
2		ONE HOUR	✓	383	100.000
3		ONE HOUR	✓	326	100.000
4		ONE HOUR	✓	746	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	25	168	368
	2	47	0	97	239
	3	189	100	0	37
	4	442	276	28	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.39	3.79	0.6	A	515	772
2	0.26	3.06	0.4	A	351	527
3	0.27	3.65	0.4	A	299	449
4	0.54	5.13	1.2	A	685	1027

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	422	106	303	1660	0.254	421	509	0.0	0.3	2.903	A
2	288	72	423	1737	0.166	288	301	0.0	0.2	2.483	A
3	245	61	491	1494	0.164	245	220	0.0	0.2	2.881	A
4	562	140	252	1601	0.351	559	483	0.0	0.5	3.448	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	504	126	363	1621	0.311	504	609	0.3	0.4	3.222	A
2	344	86	507	1678	0.205	344	360	0.2	0.3	2.698	A
3	293	73	587	1430	0.205	293	263	0.2	0.3	3.164	A
4	671	168	302	1568	0.428	670	578	0.5	0.7	4.003	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	618	154	444	1567	0.394	617	745	0.4	0.6	3.786	A

2	422	105	620	1599	0.264	421	441	0.3	0.4	3.058	A
3	359	90	719	1344	0.267	359	322	0.3	0.4	3.650	A
4	821	205	370	1524	0.539	820	708	0.7	1.2	5.101	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	618	154	445	1566	0.394	618	746	0.6	0.6	3.794	A
2	422	105	621	1598	0.264	422	441	0.4	0.4	3.059	A
3	359	90	720	1344	0.267	359	323	0.4	0.4	3.655	A
4	821	205	370	1523	0.539	821	709	1.2	1.2	5.127	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	504	126	364	1620	0.311	505	611	0.6	0.5	3.233	A
2	344	86	508	1677	0.205	345	361	0.4	0.3	2.701	A
3	293	73	589	1430	0.205	293	264	0.4	0.3	3.169	A
4	671	168	302	1568	0.428	672	580	1.2	0.8	4.025	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	422	106	305	1659	0.255	423	511	0.5	0.3	2.914	A
2	288	72	425	1735	0.166	289	302	0.3	0.2	2.489	A
3	245	61	493	1492	0.164	246	221	0.3	0.2	2.889	A
4	562	140	253	1601	0.351	562	485	0.8	0.5	3.472	A

2016 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	4.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2016 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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	814	100.000
2		ONE HOUR	✓	365	100.000
3		ONE HOUR	✓	326	100.000
4		ONE HOUR	✓	757	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	109	273	432
	2	53	0	121	191
	3	189	100	0	37
	4	447	275	35	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.57	5.41	1.3	A	747	1120
2	0.27	3.39	0.4	A	335	502
3	0.27	3.71	0.4	A	299	449
4	0.55	5.25	1.2	A	695	1042

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	613	153	308	1657	0.370	610	517	0.0	0.6	3.433	A
2	275	69	555	1644	0.167	274	363	0.0	0.2	2.626	A
3	245	61	507	1483	0.165	245	322	0.0	0.2	2.905	A
4	570	142	257	1598	0.357	568	495	0.0	0.6	3.485	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	732	183	368	1617	0.453	731	619	0.6	0.8	4.058	A
2	328	82	664	1567	0.209	328	435	0.2	0.3	2.904	A
3	293	73	607	1418	0.207	293	385	0.2	0.3	3.200	A
4	681	170	307	1565	0.435	680	593	0.6	0.8	4.063	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	896	224	451	1562	0.574	894	757	0.8	1.3	5.371	A
2	402	100	813	1463	0.275	401	532	0.3	0.4	3.388	A
3	359	90	743	1329	0.270	358	471	0.3	0.4	3.709	A
4	833	208	376	1519	0.549	832	725	0.8	1.2	5.221	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	896	224	451	1562	0.574	896	759	1.3	1.3	5.407	A
2	402	100	815	1462	0.275	402	533	0.4	0.4	3.395	A
3	359	90	744	1328	0.270	359	472	0.4	0.4	3.715	A
4	833	208	377	1519	0.549	833	727	1.2	1.2	5.250	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	732	183	369	1616	0.453	734	621	1.3	0.8	4.089	A
2	328	82	667	1566	0.210	329	436	0.4	0.3	2.912	A
3	293	73	609	1416	0.207	293	387	0.4	0.3	3.206	A
4	681	170	308	1564	0.435	682	595	1.2	0.8	4.090	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	613	153	309	1656	0.370	614	519	0.8	0.6	3.459	A
2	275	69	558	1642	0.167	275	365	0.3	0.2	2.635	A
3	245	61	510	1481	0.166	246	323	0.3	0.2	2.915	A
4	570	142	258	1598	0.357	571	498	0.8	0.6	3.507	A

2022 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	4.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2022 Base	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	598	100.000
2		ONE HOUR	✓	408	100.000
3		ONE HOUR	✓	347	100.000
4		ONE HOUR	✓	795	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	27	179	392
	2	50	0	103	255
	3	201	107	0	39
	4	471	294	30	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.43	4.05	0.7	A	549	823
2	0.29	3.21	0.4	A	374	562
3	0.29	3.87	0.4	A	318	478
4	0.58	5.69	1.4	A	730	1094

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	450	113	323	1647	0.273	449	542	0.0	0.4	3.001	A
2	307	77	451	1717	0.179	306	321	0.0	0.2	2.550	A
3	261	65	523	1473	0.177	260	234	0.0	0.2	2.968	A
4	599	150	269	1590	0.376	596	515	0.0	0.6	3.611	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	538	134	387	1604	0.335	537	648	0.4	0.5	3.370	A
2	367	92	540	1655	0.222	367	384	0.2	0.3	2.794	A
3	312	78	626	1405	0.222	312	280	0.2	0.3	3.292	A
4	715	179	322	1555	0.459	714	616	0.6	0.8	4.274	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	658	165	474	1547	0.426	657	793	0.5	0.7	4.042	A
2	449	112	661	1570	0.286	449	470	0.3	0.4	3.208	A
3	382	96	766	1313	0.291	382	343	0.3	0.4	3.863	A
4	875	219	394	1508	0.581	873	754	0.8	1.4	5.656	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	658	165	475	1547	0.426	658	795	0.7	0.7	4.053	A
2	449	112	662	1569	0.286	449	471	0.4	0.4	3.213	A
3	382	96	767	1312	0.291	382	344	0.4	0.4	3.868	A
4	875	219	394	1507	0.581	875	755	1.4	1.4	5.695	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	538	134	388	1604	0.335	539	651	0.7	0.5	3.385	A
2	367	92	541	1654	0.222	367	386	0.4	0.3	2.800	A
3	312	78	628	1404	0.222	312	281	0.4	0.3	3.298	A
4	715	179	322	1555	0.460	717	618	1.4	0.9	4.305	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	450	113	325	1646	0.274	451	544	0.5	0.4	3.013	A
2	307	77	453	1716	0.179	307	323	0.3	0.2	2.555	A
3	261	65	525	1471	0.178	262	235	0.3	0.2	2.978	A
4	599	150	270	1590	0.377	600	517	0.9	0.6	3.641	A

2022 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	5.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2022 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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	864	100.000
2		ONE HOUR	✓	387	100.000
3		ONE HOUR	✓	346	100.000
4		ONE HOUR	✓	803	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	116	290	458
	2	56	0	128	203
	3	201	106	0	39
	4	474	292	37	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.62	6.08	1.6	A	793	1189
2	0.30	3.59	0.4	A	355	533
3	0.29	3.92	0.4	A	317	476
4	0.59	5.81	1.4	A	737	1105

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	650	163	326	1645	0.395	648	548	0.0	0.6	3.603	A
2	291	73	589	1621	0.180	290	385	0.0	0.2	2.705	A
3	260	65	538	1463	0.178	260	341	0.0	0.2	2.990	A
4	605	151	272	1588	0.381	602	525	0.0	0.6	3.642	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	777	194	391	1602	0.485	776	656	0.6	0.9	4.349	A
2	348	87	705	1539	0.226	348	461	0.2	0.3	3.021	A
3	311	78	644	1394	0.223	311	409	0.2	0.3	3.324	A
4	722	180	326	1552	0.465	721	629	0.6	0.9	4.323	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	951	238	478	1544	0.616	949	803	0.9	1.6	6.017	A
2	426	107	862	1429	0.298	426	565	0.3	0.4	3.586	A
3	381	95	788	1299	0.293	380	500	0.3	0.4	3.917	A
4	884	221	399	1504	0.588	882	769	0.9	1.4	5.768	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	951	238	479	1544	0.616	951	805	1.6	1.6	6.076	A
2	426	107	864	1427	0.299	426	566	0.4	0.4	3.595	A
3	381	95	789	1298	0.293	381	501	0.4	0.4	3.925	A
4	884	221	400	1504	0.588	884	771	1.4	1.4	5.809	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	777	194	392	1601	0.485	779	659	1.6	1.0	4.395	A
2	348	87	708	1537	0.226	348	463	0.4	0.3	3.029	A
3	311	78	646	1392	0.223	312	410	0.4	0.3	3.335	A
4	722	180	327	1552	0.465	724	631	1.4	0.9	4.359	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	650	163	328	1644	0.396	652	551	1.0	0.7	3.632	A
2	291	73	592	1618	0.180	292	388	0.3	0.2	2.715	A
3	260	65	541	1461	0.178	261	343	0.3	0.2	2.999	A
4	605	151	274	1587	0.381	606	528	0.9	0.6	3.673	A

2022 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	4.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2022 Base + Dev	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	603	100.000
2		ONE HOUR	✓	410	100.000
3		ONE HOUR	✓	376	100.000
4		ONE HOUR	✓	799	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	27	184	392
	2	50	0	105	255
	3	214	110	0	52
	4	471	294	34	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.43	4.10	0.8	A	553	830
2	0.29	3.24	0.4	A	376	564
3	0.32	4.01	0.5	A	345	518
4	0.59	5.84	1.4	A	733	1100

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	454	113	328	1643	0.276	452	551	0.0	0.4	3.019	A
2	309	77	458	1713	0.180	308	323	0.0	0.2	2.561	A
3	283	71	523	1473	0.192	282	242	0.0	0.2	3.020	A
4	602	150	281	1582	0.380	599	525	0.0	0.6	3.651	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	542	136	393	1600	0.339	542	660	0.4	0.5	3.398	A

2	369	92	548	1649	0.223	368	387	0.2	0.3	2.810	A
3	338	85	626	1405	0.241	338	290	0.2	0.3	3.372	A
4	718	180	336	1546	0.465	717	628	0.6	0.9	4.339	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	664	166	481	1542	0.431	663	808	0.5	0.8	4.090	A
2	451	113	671	1563	0.289	451	474	0.3	0.4	3.235	A
3	414	103	766	1313	0.315	413	355	0.3	0.5	3.998	A
4	880	220	411	1496	0.588	878	769	0.9	1.4	5.799	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	664	166	482	1541	0.431	664	809	0.8	0.8	4.102	A
2	451	113	672	1562	0.289	451	475	0.4	0.4	3.239	A
3	414	103	767	1312	0.315	414	356	0.5	0.5	4.006	A
4	880	220	412	1496	0.588	880	770	1.4	1.4	5.843	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	542	136	395	1599	0.339	543	662	0.8	0.5	3.410	A
2	369	92	549	1648	0.224	369	388	0.4	0.3	2.814	A
3	338	85	628	1404	0.241	339	291	0.5	0.3	3.382	A
4	718	180	337	1545	0.465	720	629	1.4	0.9	4.375	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	454	113	330	1642	0.276	454	554	0.5	0.4	3.034	A
2	309	77	460	1711	0.180	309	325	0.3	0.2	2.569	A
3	283	71	525	1471	0.192	283	243	0.3	0.2	3.031	A
4	602	150	282	1582	0.380	603	527	0.9	0.6	3.679	A

2022 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	5.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2022 Base + 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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	877	100.000
2		ONE HOUR	✓	388	100.000
3		ONE HOUR	✓	358	100.000
4		ONE HOUR	✓	810	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	116	303	458
	2	56	0	129	203
	3	208	107	0	43
	4	474	292	44	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.63	6.29	1.7	A	805	1207
2	0.30	3.66	0.4	A	356	534
3	0.30	3.98	0.4	A	329	493
4	0.60	5.94	1.5	A	743	1115

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	660	165	332	1641	0.402	658	553	0.0	0.7	3.653	A
2	292	73	604	1610	0.181	291	386	0.0	0.2	2.728	A
3	270	67	538	1463	0.184	269	357	0.0	0.2	3.013	A
4	610	152	278	1584	0.385	607	528	0.0	0.6	3.677	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	788	197	398	1597	0.494	787	663	0.7	1.0	4.437	A
2	349	87	723	1527	0.228	349	462	0.2	0.3	3.055	A
3	322	80	644	1394	0.231	322	427	0.2	0.3	3.358	A
4	728	182	333	1548	0.470	727	632	0.6	0.9	4.382	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

1	966	241	487	1539	0.628	963	811	1.0	1.7	6.223	A
2	427	107	884	1413	0.302	427	566	0.3	0.4	3.646	A
3	394	99	788	1299	0.303	394	523	0.3	0.4	3.972	A
4	892	223	408	1498	0.595	890	773	0.9	1.4	5.891	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	966	241	488	1538	0.628	966	813	1.7	1.7	6.288	A
2	427	107	886	1412	0.303	427	567	0.4	0.4	3.655	A
3	394	99	789	1298	0.304	394	524	0.4	0.4	3.982	A
4	892	223	408	1498	0.595	892	775	1.4	1.5	5.939	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	788	197	399	1596	0.494	791	665	1.7	1.0	4.485	A
2	349	87	726	1524	0.229	349	464	0.4	0.3	3.067	A
3	322	80	646	1392	0.231	322	429	0.4	0.3	3.369	A
4	728	182	334	1547	0.471	730	635	1.5	0.9	4.419	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	660	165	334	1640	0.403	661	556	1.0	0.7	3.687	A
2	292	73	607	1608	0.182	292	388	0.3	0.2	2.739	A
3	270	67	541	1461	0.184	270	359	0.3	0.2	3.022	A
4	610	152	280	1583	0.385	611	531	0.9	0.6	3.705	A

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Dearne Valley Prakway Hemingfield Road 160 units.j9
Path: \\leeds2\EnvData\Projects\A090000 - A09999\A098689\calculations\Transport Planning\Junction Models\Dearne Valley Parkway_Hemingfield Rd\160 Units
Report generation date: 24/04/2017 10:19:48

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2016							
Arm 1	0.8	2.85	0.44	A	1.4	3.97	0.59	A
Arm 2	0.2	3.63	0.15	A	0.2	4.07	0.16	A
Arm 3	0.6	2.08	0.38	A	0.6	2.20	0.39	A
Arm 4	0.2	4.57	0.18	A	0.4	5.15	0.27	A
	2022 Base							
Arm 1	0.9	3.01	0.46	A	1.7	4.38	0.63	A
Arm 2	0.2	3.79	0.16	A	0.2	4.29	0.18	A
Arm 3	0.7	2.17	0.40	A	0.7	2.31	0.42	A
Arm 4	0.3	4.84	0.20	A	0.4	5.51	0.30	A
	2022 Base + Dev							
Arm 1	0.9	3.02	0.47	A	1.7	4.45	0.63	A
Arm 2	0.2	3.86	0.17	A	0.2	4.34	0.19	A
Arm 3	0.7	2.18	0.41	A	0.7	2.33	0.42	A
Arm 4	0.3	4.86	0.20	A	0.4	5.57	0.30	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	Hemingfield Road Roundabout
Location	Wombwell
Site number	
Date	19/07/2016
Version	
Status	
Identifier	
Client	
Jobnumber	A098689
Enumerator	WYG\d.liddell-crewe
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	mph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	15	✓
D2	2016	PM	ONE HOUR	16:45	18:15	15	✓
D3	2022 Base	AM	ONE HOUR	07:15	08:45	15	✓
D4	2022 Base	PM	ONE HOUR	16:45	18:15	15	✓
D5	2022 Base + Dev	AM	ONE HOUR	07:15	08:45	15	✓
D6	2022 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2016, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	2.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description

1	A6195 Dearne Valley Parkway E	
2	Hemingfield Road S	
3	A6195 Dearne Valley Parkway W	
4	Hemingfield Road N	

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	7.70	7.70	0.0	9.2	80.2	20.5	
2	3.88	6.32	10.2	12.6	80.2	20.5	
3	9.36	9.36	0.0	11.9	80.2	13.5	
4	3.10	5.56	19.5	8.9	80.2	19.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.551	2276
2	0.458	1601
3	0.654	2904
4	0.428	1437

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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	886	100.000
2		ONE HOUR	✓	153	100.000
3		ONE HOUR	✓	954	100.000
4		ONE HOUR	✓	159	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	22	802	62
	2	55	0	47	51
	3	941	10	0	3
	4	108	39	12	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.44	2.85	0.8	A	813	1220
2	0.15	3.63	0.2	A	140	211
3	0.38	2.08	0.6	A	875	1313
4	0.18	4.57	0.2	A	146	219

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	667	167	46	2251	0.296	665	829	0.0	0.4	2.269	A
2	115	29	658	1300	0.089	115	53	0.0	0.1	3.038	A
3	718	180	126	2822	0.255	717	647	0.0	0.3	1.710	A
4	120	30	756	1113	0.108	119	87	0.0	0.1	3.619	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	796	199	55	2246	0.355	796	992	0.4	0.5	2.483	A
2	138	34	787	1241	0.111	137	64	0.1	0.1	3.262	A
3	858	214	151	2805	0.306	857	774	0.3	0.4	1.847	A
4	143	36	904	1050	0.136	143	104	0.1	0.2	3.969	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	976	244	67	2239	0.436	975	1215	0.5	0.8	2.846	A
2	168	42	964	1160	0.145	168	78	0.1	0.2	3.631	A
3	1050	263	185	2783	0.377	1050	947	0.4	0.6	2.077	A
4	175	44	1107	963	0.182	175	128	0.2	0.2	4.566	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	976	244	67	2239	0.436	975	1216	0.8	0.8	2.848	A
2	168	42	964	1159	0.145	168	78	0.2	0.2	3.632	A
3	1050	263	185	2783	0.377	1050	948	0.6	0.6	2.077	A
4	175	44	1108	963	0.182	175	128	0.2	0.2	4.570	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	796	199	55	2246	0.355	797	993	0.8	0.6	2.488	A

2	138	34	788	1240	0.111	138	64	0.2	0.1	3.265	A
3	858	214	151	2805	0.306	858	775	0.6	0.4	1.848	A
4	143	36	905	1049	0.136	143	104	0.2	0.2	3.975	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	667	167	46	2251	0.296	668	832	0.6	0.4	2.276	A
2	115	29	660	1299	0.089	115	54	0.1	0.1	3.043	A
3	718	180	127	2821	0.255	719	649	0.4	0.3	1.714	A
4	120	30	758	1112	0.108	120	87	0.2	0.1	3.629	A

2016, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	3.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2016	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1174	100.000
2		ONE HOUR	✓	157	100.000
3		ONE HOUR	✓	961	100.000
4		ONE HOUR	✓	238	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	109	900	165
	2	51	0	27	79
	3	922	37	0	2
	4	148	76	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.59	3.97	1.4	A	1077	1616
2	0.16	4.07	0.2	A	144	216
3	0.39	2.20	0.6	A	882	1323
4	0.27	5.15	0.4	A	218	328

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	884	221	95	2224	0.397	881	842	0.0	0.7	2.678	A
2	118	30	810	1230	0.096	118	167	0.0	0.1	3.236	A
3	723	181	221	2759	0.262	722	706	0.0	0.4	1.767	A
4	179	45	759	1112	0.161	178	185	0.0	0.2	3.853	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1055	264	114	2213	0.477	1054	1007	0.7	0.9	3.103	A
2	141	35	969	1157	0.122	141	199	0.1	0.1	3.542	A
3	864	216	265	2731	0.316	863	845	0.4	0.5	1.928	A
4	214	53	908	1048	0.204	214	221	0.2	0.3	4.312	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1293	323	140	2199	0.588	1291	1233	0.9	1.4	3.953	A
2	173	43	1186	1058	0.163	173	244	0.1	0.2	4.066	A
3	1058	265	324	2692	0.393	1057	1034	0.5	0.6	2.201	A
4	262	66	1111	961	0.273	262	270	0.3	0.4	5.143	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1293	323	140	2199	0.588	1293	1234	1.4	1.4	3.971	A
2	173	43	1188	1057	0.164	173	244	0.2	0.2	4.072	A
3	1058	265	325	2692	0.393	1058	1036	0.6	0.6	2.203	A
4	262	66	1112	961	0.273	262	271	0.4	0.4	5.151	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

1	1055	264	114	2213	0.477	1057	1009	1.4	0.9	3.119	A
2	141	35	972	1156	0.122	141	200	0.2	0.1	3.551	A
3	864	216	266	2730	0.316	865	848	0.6	0.5	1.931	A
4	214	53	909	1048	0.204	214	222	0.4	0.3	4.323	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	884	221	96	2223	0.398	885	845	0.9	0.7	2.691	A
2	118	30	813	1229	0.096	118	167	0.1	0.1	3.242	A
3	723	181	222	2759	0.262	724	709	0.5	0.4	1.768	A
4	179	45	761	1111	0.161	179	185	0.3	0.2	3.864	A

2022 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	2.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2022 Base	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	944	100.000
2		ONE HOUR	✓	163	100.000
3		ONE HOUR	✓	1017	100.000
4		ONE HOUR	✓	170	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	23	855	66
	2	59	0	50	54
	3	1003	11	0	3
	4	115	42	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.46	3.01	0.9	A	866	1299
2	0.16	3.79	0.2	A	150	224
3	0.40	2.17	0.7	A	933	1400
4	0.20	4.84	0.3	A	156	234

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	711	178	50	2249	0.316	709	884	0.0	0.5	2.334	A
2	123	31	701	1280	0.096	122	57	0.0	0.1	3.110	A
3	766	191	134	2816	0.272	764	689	0.0	0.4	1.754	A
4	128	32	806	1092	0.117	127	92	0.0	0.1	3.731	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	849	212	59	2243	0.378	848	1058	0.5	0.6	2.578	A
2	147	37	839	1217	0.120	146	68	0.1	0.1	3.363	A
3	914	229	161	2799	0.327	914	825	0.4	0.5	1.909	A
4	153	38	964	1024	0.149	153	110	0.1	0.2	4.130	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1039	260	73	2236	0.465	1038	1295	0.6	0.9	3.002	A
2	179	45	1027	1130	0.159	179	84	0.1	0.2	3.784	A
3	1120	280	197	2775	0.403	1119	1010	0.5	0.7	2.172	A
4	187	47	1181	931	0.201	187	135	0.2	0.2	4.832	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1039	260	73	2236	0.465	1039	1296	0.9	0.9	3.007	A
2	179	45	1028	1130	0.159	179	84	0.2	0.2	3.786	A
3	1120	280	197	2775	0.403	1120	1011	0.7	0.7	2.174	A
4	187	47	1181	931	0.201	187	135	0.2	0.3	4.838	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

1	849	212	59	2243	0.378	850	1059	0.9	0.6	2.586	A
2	147	37	841	1216	0.121	147	68	0.2	0.1	3.366	A
3	914	229	161	2799	0.327	915	826	0.7	0.5	1.913	A
4	153	38	965	1024	0.149	153	111	0.3	0.2	4.137	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	711	178	50	2249	0.316	711	887	0.6	0.5	2.343	A
2	123	31	704	1279	0.096	123	57	0.1	0.1	3.116	A
3	766	191	135	2816	0.272	766	692	0.5	0.4	1.755	A
4	128	32	808	1091	0.117	128	93	0.2	0.1	3.742	A

2022 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	3.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2022 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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1246	100.000
2		ONE HOUR	✓	167	100.000
3		ONE HOUR	✓	1019	100.000
4		ONE HOUR	✓	253	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	116	955	175
	2	54	0	29	84
	3	978	39	0	2
	4	157	81	15	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.63	4.38	1.7	A	1143	1715
2	0.18	4.29	0.2	A	153	230
3	0.42	2.31	0.7	A	935	1403
4	0.30	5.51	0.4	A	232	348

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	938	235	101	2220	0.422	935	893	0.0	0.7	2.796	A
2	126	31	859	1207	0.104	125	177	0.0	0.1	3.324	A
3	767	192	235	2751	0.279	766	750	0.0	0.4	1.814	A
4	190	48	805	1092	0.174	190	196	0.0	0.2	3.985	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1120	280	121	2209	0.507	1119	1068	0.7	1.0	3.299	A
2	150	38	1028	1130	0.133	150	212	0.1	0.2	3.672	A
3	916	229	281	2720	0.337	916	897	0.4	0.5	1.995	A
4	227	57	962	1025	0.222	227	234	0.2	0.3	4.512	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1372	343	148	2194	0.625	1369	1308	1.0	1.6	4.351	A
2	184	46	1258	1025	0.179	184	259	0.2	0.2	4.279	A
3	1122	280	344	2679	0.419	1121	1098	0.5	0.7	2.309	A
4	279	70	1178	932	0.299	278	287	0.3	0.4	5.496	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1372	343	149	2194	0.625	1372	1309	1.6	1.7	4.377	A
2	184	46	1261	1024	0.180	184	260	0.2	0.2	4.286	A
3	1122	280	345	2679	0.419	1122	1100	0.7	0.7	2.311	A
4	279	70	1179	932	0.299	279	287	0.4	0.4	5.508	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

1	1120	280	122	2209	0.507	1123	1070	1.7	1.0	3.322	A
2	150	38	1032	1129	0.133	150	213	0.2	0.2	3.680	A
3	916	229	282	2720	0.337	917	900	0.7	0.5	1.999	A
4	227	57	964	1024	0.222	228	235	0.4	0.3	4.523	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	938	235	102	2220	0.423	939	896	1.0	0.7	2.812	A
2	126	31	863	1206	0.104	126	178	0.2	0.1	3.333	A
3	767	192	236	2750	0.279	768	753	0.5	0.4	1.818	A
4	190	48	807	1091	0.175	191	197	0.3	0.2	3.999	A

2022 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	2.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2022 Base + Dev	AM	ONE HOUR	07:15	08:45	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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	946	100.000
2		ONE HOUR	✓	179	100.000
3		ONE HOUR	✓	1020	100.000
4		ONE HOUR	✓	170	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	25	855	66
	2	63	0	60	56
	3	1003	14	0	3
	4	115	42	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.47	3.02	0.9	A	868	1302
2	0.17	3.86	0.2	A	164	246
3	0.41	2.18	0.7	A	936	1404
4	0.20	4.86	0.3	A	156	234

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	712	178	52	2248	0.317	710	887	0.0	0.5	2.338	A
2	135	34	701	1280	0.105	134	61	0.0	0.1	3.140	A
3	768	192	139	2813	0.273	766	697	0.0	0.4	1.759	A
4	128	32	811	1089	0.117	127	94	0.0	0.1	3.740	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	850	213	62	2242	0.379	850	1061	0.5	0.6	2.584	A
2	161	40	839	1217	0.132	161	73	0.1	0.2	3.408	A
3	917	229	166	2795	0.328	917	834	0.4	0.5	1.915	A
4	153	38	970	1021	0.150	153	112	0.1	0.2	4.142	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1042	260	76	2234	0.466	1041	1299	0.6	0.9	3.012	A
2	197	49	1027	1130	0.174	197	89	0.2	0.2	3.855	A
3	1123	281	203	2771	0.405	1122	1021	0.5	0.7	2.182	A
4	187	47	1188	928	0.202	187	137	0.2	0.3	4.854	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1042	260	76	2234	0.466	1042	1300	0.9	0.9	3.017	A
2	197	49	1028	1130	0.174	197	89	0.2	0.2	3.858	A
3	1123	281	204	2771	0.405	1123	1022	0.7	0.7	2.184	A
4	187	47	1189	928	0.202	187	138	0.3	0.3	4.860	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

1	850	213	62	2242	0.379	851	1063	0.9	0.6	2.592	A
2	161	40	841	1216	0.132	161	73	0.2	0.2	3.415	A
3	917	229	167	2795	0.328	918	835	0.7	0.5	1.920	A
4	153	38	972	1021	0.150	153	113	0.3	0.2	4.151	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	712	178	52	2247	0.317	713	890	0.6	0.5	2.346	A
2	135	34	704	1279	0.105	135	61	0.2	0.1	3.149	A
3	768	192	139	2813	0.273	768	699	0.5	0.4	1.760	A
4	128	32	814	1089	0.118	128	94	0.2	0.1	3.748	A

2022 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3,4	3.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2022 Base + 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	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1252	100.000
2		ONE HOUR	✓	177	100.000
3		ONE HOUR	✓	1029	100.000
4		ONE HOUR	✓	254	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	122	955	175
	2	58	0	34	85
	3	978	49	0	2
	4	157	82	15	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.63	4.45	1.7	A	1149	1723
2	0.19	4.34	0.2	A	162	244
3	0.42	2.33	0.7	A	944	1416
4	0.30	5.57	0.4	A	233	350

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	943	236	110	2216	0.425	940	896	0.0	0.7	2.815	A
2	133	33	859	1207	0.110	133	190	0.0	0.1	3.347	A
3	775	194	239	2748	0.282	773	753	0.0	0.4	1.820	A
4	191	48	815	1088	0.176	190	197	0.0	0.2	4.008	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1126	281	131	2204	0.511	1124	1072	0.7	1.0	3.332	A
2	159	40	1028	1130	0.141	159	227	0.1	0.2	3.706	A
3	925	231	286	2717	0.340	925	902	0.4	0.5	2.008	A
4	228	57	975	1019	0.224	228	235	0.2	0.3	4.548	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1378	345	160	2188	0.630	1376	1312	1.0	1.7	4.420	A
2	195	49	1258	1025	0.190	195	278	0.2	0.2	4.336	A
3	1133	283	350	2676	0.423	1132	1103	0.5	0.7	2.331	A
4	280	70	1194	926	0.302	279	288	0.3	0.4	5.561	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	1378	345	161	2188	0.630	1378	1314	1.7	1.7	4.449	A
2	195	49	1261	1024	0.190	195	279	0.2	0.2	4.343	A
3	1133	283	350	2675	0.424	1133	1105	0.7	0.7	2.333	A
4	280	70	1195	925	0.302	280	288	0.4	0.4	5.574	A

17:45 - 18:00

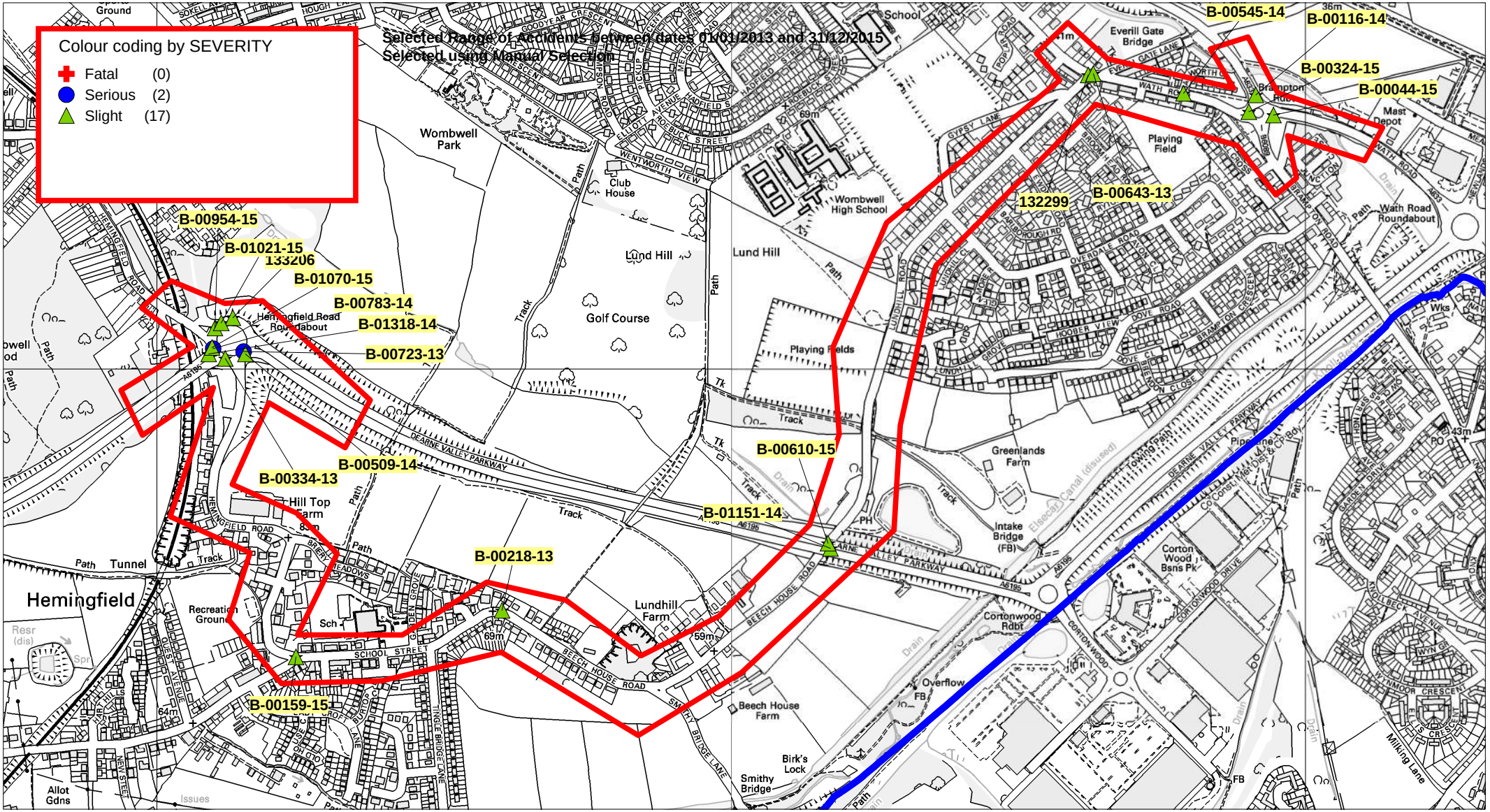
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

1	1126	281	132	2204	0.511	1128	1074	1.7	1.1	3.354	A
2	159	40	1032	1128	0.141	159	228	0.2	0.2	3.714	A
3	925	231	286	2717	0.340	926	905	0.7	0.5	2.010	A
4	228	57	976	1019	0.224	229	236	0.4	0.3	4.561	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	943	236	110	2215	0.425	944	899	1.1	0.7	2.835	A
2	133	33	863	1206	0.111	133	191	0.2	0.1	3.359	A
3	775	194	240	2747	0.282	775	757	0.5	0.4	1.827	A
4	191	48	817	1087	0.176	192	197	0.3	0.2	4.021	A

APPENDIX Q



MAKING SOUTH YORKSHIRE ROADS SAFER

Selected map area

SCALE	1 : 9200
DATE	27/07/2016
DRWG No.	
DRN BY	

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

132299 10/01/2013 Thursday Time: 1142 Vehicles 1 Casualties 1 Slight
Easting: 440,622 Northing: 402,512
Fine without high winds Road Surface: Dry Daylight
Road Type: Single carriageway Speed Limit: 30

Location: LUNDHILL RD AT JUNCTION WITH PARK ST WOMBWELL SOUTH YORKSHIRE
Description: VH1 M/CAR TURNING RIGHT FROM PARK RD ONTO LUNDHILL RD COLL CHILD PEDN CROSSING JNC WITHOUT LOOKING TRV IN DIREC OF ? NO STATS

Vehicle Reference: 1 Car Turning right
First point of impact: Offside
Vehicle direction: NW to SW Journey: Other
Age of Driver : 73 Breath test:

Contributory Factors : 802

Casualty Reference: 1 Age: 8 Male Pedestrian Severity: Slight
Ped Dir: 9 Ped Movement : Driver's offside
Ped Location: In cent carr

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

133206 31/01/2013 Thursday Time: 1420 Vehicles 1 Casualties 1 Slight
Easting: 439,132 Northing: 402,089
Fine with high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 70

Location: A 6195 DEARNE VALLEY PARKWAY AT JUNCTION WITH NEMMING FIELD ROAD WOMBWELL SOUTH YORKSHIRE
Description: V1 TRAVELS DEARNE VALLEY PARKWAY TOWARD DONCASTER WHILST TRAVELLING AROUND NEMMINGFIELD ROAD ROUNDABOUT IN LANE 1 VEHICLE OVERTURNS ONTO NEARSIDE ARM CODE BARRIER AND RAILINGS DRIVER CLAIMS WINDS PLAYED A FACTOR.

Vehicle Reference: 1 Goods >= 7.5 tonnes mgw Going ahead right hand bend
First point of impact: Nearside
Vehicle direction: SW to SE Journey: Journey as part of work
Age of Driver : 43 Breath test:

Contributory Factors : 999 307 401

Casualty Reference: 1 Age: 43 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00218-13 04/05/2013 Saturday Time: 1540 Vehicles 1 Casualties 1 Slight
Easting: 439,601 Northing: 401,579
Fine without high winds Road Surface: Dry Daylight
Road Type: Single carriageway Speed Limit: 30

Location: BEECH HOUSE ROAD, HEMINGFIELD BARNSLEY O/S NUMBER 38
Description: RIDER OF V1 UNDER THE INFLUENCE OF DRINK FAILS TO NEGOTIATE A BEND AT EXCESSIVE SPEED AND FALLS OFF INJURING HIMSELF

Vehicle Reference: 1 Motorcycle over 50cc and up Going ahead right hand bend
First point of impact: Front
Vehicle direction: SW to E Journey: Other
Age of Driver : 18 Breath test: Not requested

Contributory Factors : 401 410

Casualty Reference: 1 Age: 18 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00334-13 20/06/2013 Thursday Time: 1140 Vehicles 2 Casualties 1 Slight
Easting: 439,119 Northing: 402,018
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 60

Location: DEARNE VALLEY PARKWAY HEMINGFIELD AT J/W HEMINGFIELD RDBT
Description: V1 IN LN 1 INTENDING TO TAKE 3RD EXIT, V2 IN LN 2 INTENDING TO TAKE 2ND EXIT, V1 CARRIED ON ROUND AND COLL WITH N/S OF V2.

Vehicle Reference: 1 Car Going ahead right hand bend
First point of impact: Offside
Vehicle direction: SE to NW Journey: Other
Age of Driver : 39 Breath test: Negative

Contributory Factors : 403

Vehicle Reference: 2 Car Going ahead right hand bend
First point of impact: Nearside
Vehicle direction: SE to SW Journey: Commuting to/from work
Age of Driver : 44 Breath test: Negative

Contributory Factors : 403

Casualty Reference: 1 Age: 44 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00723-13 26/08/2013 Monday Time: 1800 Vehicles 1 Casualties 1 Serious
Easting: 439,151 Northing: 402,030
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 70

Location: DEARNE VALLEY PARKWAY HEMINGFIELD J/W HEMINGFIELD RD
Description: V1 WESTBOUND ON A6195 ENTERS R/ABOUT AT SPEED & FAILS TO NEGOTIATE R/ABOUT. VEHICLE CLIPS KERB RIDER IS THROWN FROM MACHINE.

Vehicle Reference: 1 Motorcycle over 50cc and up Going ahead
First point of impact: Front
Vehicle direction: E to W Journey: Other
Age of Driver : 18 Breath test: Negative

Contributory Factors : 403 605 410

Casualty Reference: 1 Age: 18 Male Driver/rider Severity: Serious
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013 and 31/12/2015 (36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00643-13 19/10/2013 Saturday Time: 1610 Vehicles 2 Casualties 2 Slight
Easting: 440,631 Northing: 402,514
Unknown Road Surface: Dry Daylight
Road Type: Single carriageway Speed Limit: 30

Location: WATH ROAD WOMBWELL J/W LUNDHILL ROAD
Description: V1 TURNING RIGHT OUT OF JUNCTION COLL WITH V1 WHICH IS OVERTAKING BUS PRIOR TO JUNCTION

Vehicle Reference: 1 Car Moving off
First point of impact: Front
Vehicle direction: SW to E Journey: Not known
Age of Driver : 48 Breath test: Not requested

Contributory Factors : 602 405

Casualty Reference: 1 Age: 48 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Casualty Reference: 2 Age: 18 Female Passenger Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Car Going ahead
First point of impact: Front
Vehicle direction: E to W Journey: Not known
Age of Driver : 30 Breath test: Not requested

Contributory Factors : 602 405

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00116-14 05/02/2014 Wednesda Time: 2149 Vehicles 2 Casualties 1 Slight
Easting: 440,914 Northing: 402,477
Raining without high winds Road Surface: Wet/Damp Darkness: street lights present and lit
Road Type: Single carriageway Speed Limit: 30

Location: VALLEY WAY WOMBWELL J/W WATH ROAD
Description: VEH2 APPROACHING RNDBT FOLLOWED BY VEH1. VEH2 STOPS AT RNDBT .VEH1 ANTICIPATING TRAFFIC TO HAVE CLEARED RNDBT CONTINUES AND RUNS INTO REAR OF VEH2

Vehicle Reference: 1 Car Going ahead
First point of impact: Front
Vehicle direction: NW to SE Journey: Other
Age of Driver : 41 Breath test: Not requested

Contributory Factors : 406

Vehicle Reference: 2 Car Slowing or Stopping
First point of impact: Back
Vehicle direction: NW to SE Journey: Other
Age of Driver : 58 Breath test: Not requested

Contributory Factors : 406

Casualty Reference: 1 Age: 58 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00545-14 15/04/2014 Tuesday Time: 1512 Vehicles 2 Casualties 1 Slight
Easting: 440,788 Northing: 402,480
Fine without high winds Road Surface: Dry Daylight
Road Type: Single carriageway Speed Limit: 30

Location: WATH ROAD WOMBWELL J/W BADSWORTH CLOSE
Description: V1 PULLED OUT OF JUNCTION INTO PATH OF V2

Vehicle Reference: 1 Car Turning left
First point of impact: Front
Vehicle direction: N to E Journey: Other
Age of Driver : 28 Breath test: Negative

Contributory Factors : 401 403

Vehicle Reference: 2 Car Going ahead
First point of impact: Front
Vehicle direction: E to W Journey: Journey as part of work
Age of Driver : 19 Breath test: Negative

Contributory Factors : 401 403

Casualty Reference: 1 Age: 19 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00509-14 02/06/2014 Monday Time: 1410 Vehicles 2 Casualties 1 Slight
Easting: 439,154 Northing: 402,026
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 60

Location: DEARNE VALLEY PARKWAY WOMBWELL J/W HEMINGFIELD ROAD
Description: VEH2, PEDAL CYCLIST TURNING RIGHT FROM DEARNE VALLEY PARKWAY ONTO HEMINGFIELD ROAD. WHILST NEGOTIATING RNDBT IS STRUCK BY VEH1 ENTERING RNDBT FROM DEARNE VALLEY PARKWAY TRAVELLING IN THE OPPOSITE DIRECTION.

Vehicle Reference: 1 Car Moving off
First point of impact: Offside
Vehicle direction: SE to NW Journey: Other
Age of Driver : 37 Breath test: Negative

Contributory Factors : 405

Vehicle Reference: 2 Pedal cycle Turning left
First point of impact: Nearside
Vehicle direction: SW to S Journey: Other
Age of Driver : 43 Breath test: Not requested

Contributory Factors : 405

Casualty Reference: 1 Age: 43 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00783-14 22/08/2014 Friday Time: 1825 Vehicles 2 Casualties 3 Serious
Easting: 439,098 Northing: 402,035
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 60

Location: HEMINGFIELD ROAD ROUNDABOUT BARNSLEY J/W DEARNE VALLEY PARKWAY
Description: V1 & V2 TRAVELLING ALONG 2 LN C.W FROM CORTONWOOD. V1 IS IN LN 1, V2 IS IN LN 2. ON GETTING TO HEMINGFIELD V1 IS STILL IN LN 1 WHICH IS NORKED FOR HEMINGFIELD AND A6195. V2 IN LN 2 FOR THE A6195 AND WOMBWELL RAILWAY STN. V1 CONTINUES ON RNDBT T/W 3RD

Vehicle Reference: 1 Car Going ahead
First point of impact: Offside
Vehicle direction: SE to NW Journey: Other
Age of Driver : 67 Breath test: Negative

Contributory Factors : 403 405

Casualty Reference: 1 Age: 67 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Casualty Reference: 3 Age: 68 Female Passenger Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Motorcycle over 500cc Going ahead
First point of impact: Nearside
Vehicle direction: SE to NW Journey: Other
Age of Driver : 37 Breath test: Negative

Contributory Factors : 403 405

Casualty Reference: 2 Age: 37 Male Driver/rider Severity: Serious
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-01151-14 25/11/2014 Tuesday Time: 1940 Vehicles 2 Casualties 1 Slight
Easting: 440,173 Northing: 401,687
Fine without high winds Road Surface: Dry Darkness: street lights present and lit
Road Type: Dual carriageway Speed Limit: 70

Location: DEARNE VALLEY PARKWAY BARNSLEY CORTONWOOD ROUNDABOUT
Description: V1 MOVES INTO LANE 2. V2 APPRAOCHES REAR OF V1, V1 TRIES TO MOVE INTO LANE 1 CAUSING V2 TO BRAKE HEAVILY , LOSES CONTROL AND COLL WITH CENTRAL RESERVATION AND V1

Vehicle Reference: 1 Car Changing lane to left
First point of impact: Front
Vehicle direction: Parked to Parked Journey: Commuting to/from work
Age of Driver : 36 Breath test: Negative

Contributory Factors : 406 406

Vehicle Reference: 2 Car Overtaking moving vehicle on its offside
First point of impact: Front
Vehicle direction: Parked to Parked Journey: Other
Age of Driver : 45 Breath test: Not requested

Contributory Factors : 406 406

Casualty Reference: 1 Age: 45 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013 and 31/12/2015 (36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-01318-14 15/12/2014 Monday Time: 1215 Vehicles 2 Casualties 2 Slight
Easting: 439,090 Northing: 402,026
Unknown Road Surface: Dry Daylight
Road Type: Dual carriageway Speed Limit: 70

Location: DEARNE VALLEY PARKWAY BARNSLEY J/W HEMINGFIELD ROAD ROUNDABOUT
Description: V2 COLL WITH V1 WHILST STATIONARY AT ROUNDABOUT

Vehicle Reference: 1 Car Waiting to go ahead but held up
First point of impact: Back
Vehicle direction: SW to NE Journey: Other
Age of Driver : 28 Breath test: Not requested

Contributory Factors : 405

Casualty Reference: 1 Age: 28 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Casualty Reference: 2 Age: 58 Female Passenger Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Car Going ahead
First point of impact: Front
Vehicle direction: SW to NE Journey: Other
Age of Driver : 0 Breath test: Not requested

Contributory Factors : 405

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00044-15 15/01/2015 Thursday Time: 1830 Vehicles 1 Casualties 2 Slight
Easting: 440,945 Northing: 402,442
Raining with high winds Road Surface: Wet/Damp Darkness: street lights present and lit
Road Type: Single carriageway Speed Limit: 40

Location: WATH ROAD WOMBWELL J/W BRAMPTON ROAD
Description: CAS001 HIT BY V1 WHILST CROSSING ON PED CROSSING

Vehicle Reference: 1 Car Going ahead
First point of impact: Front
Vehicle direction: E to W Journey: Other
Age of Driver : 23 Breath test: Negative

Contributory Factors : 405 501

Casualty Reference: 1 Age: 23 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Casualty Reference: 2 Age: 35 Male Pedestrian Severity: Slight
Ped Dir: 9 Ped Movement : Movement U/K
Ped Location: On Ped Crossing

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00159-15 18/02/2015 Wednesda Time: 1400 Vehicles 2 Casualties 1 Slight
Easting: 439,242 Northing: 401,498
Fine without high winds Road Surface: Dry Daylight
Road Type: Single carriageway Speed Limit: 30

Location: HEMINGFIELD ROAD HEMINGFIELD J/W CEMETERY ROAD
Description: V1 TV ALONG HEMINGFIELD RD APPROACHING R/H BEND WHEN V2 APPROACHED FROM OPPOSITE DIRC ON WRONG SIDE OF ROAD & COLLIDED WITH V1

Vehicle Reference: 1 Car Going ahead left hand bend
First point of impact: Nearside
Vehicle direction: N to E Journey: Other
Age of Driver : 24 Breath test: Driver not contacted

Contributory Factors : 403 409 410

Casualty Reference: 1 Age: 24 Female Driver/rider Severity: Slight

Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Car Going ahead right hand bend
First point of impact: Offside
Vehicle direction: E to N Journey: Other
Age of Driver : Breath test: Driver not contacted

Contributory Factors : 403 409 410

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00324-15 10/04/2015 Friday Time: 1353 Vehicles 2 Casualties 1 Slight
Easting: 440,902 Northing: 402,448
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 30

Location: BRAMPTON ROUNDABOUT WOMBWELL J/W WATH ROAD
Description: V1 ENTERD RDBT BUT FAILS TO SEE V2 AND COLL OCC

Vehicle Reference: 1 Car Going ahead
First point of impact: Offside
Vehicle direction: W to E Journey: Other
Age of Driver : 33 Breath test: Negative

Contributory Factors : 405 405

Vehicle Reference: 2 Pedal cycle Going ahead
First point of impact: Front
Vehicle direction: S to N Journey: Other
Age of Driver : 52 Breath test: Not requested

Contributory Factors : 405 405

Casualty Reference: 1 Age: 52 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013 and 31/12/2015 (36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00610-15 08/07/2015 Wednesda Time: 1620 Vehicles 2 Casualties 1 Slight
Easting: 440,169 Northing: 401,696
Fine without high winds Road Surface: Dry Daylight
Road Type: Single carriageway Speed Limit: 40

Location: DEARNE VALLEY PARKWAY DARFIELD
Description: V2 EMERGED FROM SIDE ROAD AND COLL WITH V1

Vehicle Reference: 1 Car Going ahead
First point of impact: Nearside
Vehicle direction: W to E Journey: Other
Age of Driver : 19 Breath test: Not requested

Contributory Factors : 302 405 401 602 601

Casualty Reference: 1 Age: 19 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Car Turning left
First point of impact: Back
Vehicle direction: N to E Journey: Other
Age of Driver : Breath test: Not requested

Contributory Factors : 302 405 401 602 601

Accidents between dates **01/01/2013 and 31/12/2015 (36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-00954-15 19/10/2015 Monday Time: 0730 Vehicles 2 Casualties 1 Slight
Easting: 439,101 Northing: 402,071
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 60

Location: HEMMINGFIELD ROAD ROUNDABOUT BARNSLEY J/W HEMMINGFIELD ROAD
Description: V1 ON ROUNDABOUT TURNING RIGHT, V2 ENTERS ROUNDABOUT IN FRONT OF V1 CAUSING COLL

Vehicle Reference: 1 Car Turning right
First point of impact: Front
Vehicle direction: SW to SE Journey: Commuting to/from work
Age of Driver : 43 Breath test: Negative

Contributory Factors : 405 406 606 709

Casualty Reference: 1 Age: 52 Male Passenger Severity: Slight

Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Van or Goods <= 3.5 tonnes Moving off
First point of impact: Front
Vehicle direction: W to SE Journey: Journey as part of work
Age of Driver : 68 Breath test: Negative

Contributory Factors : 405 406 606 709

Accidents between dates **01/01/2013 and 31/12/2015 (36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-01021-15 09/11/2015 Monday Time: 0609 Vehicles 2 Casualties 2 Slight
Easting: 439,112 Northing: 402,080
Other Road Surface: Wet/Damp Darkness: street lights present and lit
Road Type: Roundabout Speed Limit: 60

Location: HEMINGFIELD ROAD ROUNDABOUT BARNSLEY J/W DEARNE VALLEY PARKWAY
Description: VEH1 TV DEARNE VALLEY PARKWAY ENTERS RNDBT COLL WITH N/S OF VEH2.

Vehicle Reference: 1 Car Going ahead
First point of impact: Front
Vehicle direction: W to E Journey: Commuting to/from work
Age of Driver : 51 Breath test: Negative

Contributory Factors : 405 406

Casualty Reference: 1 Age: 51 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Van or Goods <= 3.5 tonnes Going ahead
First point of impact: Nearside
Vehicle direction: NW to E Journey: Commuting to/from work
Age of Driver : 25 Breath test: Not requested

Contributory Factors : 405 406

Casualty Reference: 2 Age: 25 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013 and 31/12/2015 (36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

B-01070-15 23/11/2015 Monday Time: 0710 Vehicles 2 Casualties 1 Slight
Easting: 439,096 Northing: 402,037
Fine without high winds Road Surface: Wet/Damp Darkness: street lights present and lit
Road Type: Roundabout Speed Limit: 60

Location: HEMMINGFIELD ROAD ROUNDABOUT WOMBWELL J/W DEARNE VALLEY PARKWAY
Description: V1 & V2 COLL ON ROUNDABOUT

Vehicle Reference: 1 Car Moving off
First point of impact: Nearside
Vehicle direction: SW to NE Journey: Commuting to/from work
Age of Driver : 65 Breath test: Negative

Contributory Factors : 203 407

Vehicle Reference: 2 Pedal cycle Slowing or Stopping
First point of impact: Front
Vehicle direction: SW to NE Journey: Commuting to/from work
Age of Driver : 49 Breath test: Not requested

Contributory Factors : 203 407

Casualty Reference: 1 Age: 49 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2013** **and** **31/12/2015** **(36) months**
Selection: **Notes:**
Selected using Manual Selection **Dominic Liddell**

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only excluding 2-wheels	0	0	13	13
2-wheeled motor vehicles	0	2	1	3
Pedal cycles	0	0	3	3
Horses & other	0	0	0	0
Total	0	2	17	19

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	13	13
Passenger	0	0	4	4
Motorcycle rider	0	2	1	3
Cyclist	0	0	3	3
Pedestrian	0	0	2	2
Other	0	0	0	0
Total	0	2	23	25