Barnsley Road, Wombwell

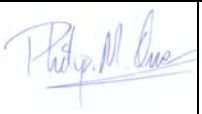
Proposed Residential Development

Transport Assessment
(& Travel Plan)

Persimmon Homes

July 2013 (Rev 1)

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Contents

1	Introduction	1
2	Existing Conditions	2
3	Development Proposals and Access Strategy	6
4	Site Accessibility	8
5	Travel Plan	10
6	Trip Generations and Distributions	13
7	Identification of Impacts	16
8	Summary and Conclusions	19

Appendices

Appendix A	Accident Data
Appendix B	Persimmon Site Masterplan (Drawing No.WOM-2013:01)
Appendix C	Proposed Site Access/Barnsley Road Junction (Optima Drawing No.12020-GA-01)
Appendix D	TRICS Data
Appendix E	Census Distribution (Spreadsheet SD1)
Appendix F	Junction Modelling Outputs

Figures

Figure 1	Site Location Plan (Strategic)
Figure 2	Site Location Plan (Local)
Figure 3	Traffic Survey Locations
Figure 4	Pedestrian Accessibility to Local Facilities
Figure 5	Cycle Accessibility
Figure 6	Existing A633 Barnsley Road/Bradberry Balk Lane/A633 Mitchells Way/Barnsley Road Junction Layout
Figure 101	AM & PM 2013 Peak Hour Count Flows
Figure 102	AM & PM 2018 Peak Hour Base Traffic Flows
Figure 103	Proposed Residential Development Distribution
Figure 104	AM & PM Peak Hour Development Trip Generations
Figure 105	AM & PM 2018 Peak Hour Design Traffic Flows

1 Introduction

1.1.1 This Transport Assessment (TA) and incorporated Travel Plan (TP) has been undertaken by Optima to consider the highways and transportation issues raised by a proposed residential development on land to the north of Barnsley Road, Wombwell.

1.1.2 The TA has been prepared in accordance with the DfT's March 2007 "Guidance on Transport Assessment" document and supports a planning application made by Persimmon Homes for 236 dwellings. Further details of the proposed development, which is also referred to as the Site within this report, are provided in Chapter 3.

1.1.3 The scope and content of this report has been discussed and broadly agreed with the highways officer at Barnsley Metropolitan Borough Council (BMBC) – in particular at the meetings held on 22nd February 2013 and 10th April 2013.

1.1.4 A public consultation exercise was held on the 4th July 2013 and consideration has also been given to these discussions in the preparation of this report.

1.1.5 This document sets out the transport issues relating to the proposed development and identifies what measures will be provided, as appropriate, to accommodate any transport impacts associated with the scheme. The TA considers the sustainability of the Site, reviewing the provision for, and quality of, facilities and connections to and from the surrounding areas. It covers a variety of topics which are set out within the following chapters:

- Chapter 2 – describes the Site itself and the existing transport conditions;
- Chapter 3 – defines the development proposals including the proposed access strategy;
- Chapter 4 – describes the accessibility of the Site by non-car modes;
- Chapter 5 – describes the Travel Plan (TP) which sets out a package of measures to improve the mode choice for those traveling to and from the Site;
- Chapter 6 – sets out the trip generation and distribution methodologies applied in the assessments of the highway network;
- Chapter 7 – provides a commentary of the capacity assessments that have been undertaken to determine the impact of the development on the highway network. This section also describes how the base and design traffic flows have been determined; and
- Chapter 8 – highlights the conclusions of the report.

2 Existing Conditions

2.1 INTRODUCTION

2.1.1 This chapter describes the Site and considers the existing conditions on the surrounding highway network for a range of transport modes.

2.2 EXISTING SITE

2.2.1 The development Site is located to the north-west of Wombwell and is situated approximately 9km south of Barnsley and 20km west of Doncaster. The Site in relation to the strategic and local highway network is shown on Figures 1 and 2 respectively.

2.2.2 The Site, which has an elongated and linear shape that runs parallel with Barnsley Road, has an overall area of approximately 6.76 hectares. The Site is predominantly bound by private residential properties to the south-east and abuts Mitchells Way and Barnsley road to the north and south of the development Site respectively.

2.3 EXISTING LOCAL HIGHWAY NETWORK

2.3.1 Barnsley Road is an adopted, lit highway which is subject to a 30mph speed limit along its length. It has a typical carriageway width of 8.6m with footways on either side of the road that vary in width – being some 1.8m to 2.4m in the vicinity of the Site frontage. A number of controlled and uncontrolled pedestrian crossing facilities are provided within the vicinity of the Site. A zebra crossing is located some 250m east of the Site frontage on Barnsley Road and a pelican crossing is located a further 300m east on High Street.

2.3.2 Barnsley Road has the following approximate traffic flows typically routing past the frontage of the development Site:

- Annual Average Daily Traffic (two-way) 6,489 vehicles;
- Weekday Morning Peak Hour (two-way) 462 vehicles
- Weekday Evening Peak Hour (two-way) 508 vehicles

2.3.3 Barnsley Road continues east of the Site some 500m towards the centre of Wombwell where it becomes High Street, whilst routing west of the development Site it meets the A633 and Bradberry Balk Lane to form a 4 arm roundabout. West of the roundabout the A633 continues as Barnsley Road with the A633 continuing east of the roundabout as Mitchells Way.

2.3.4 Mitchells Way is subject to a 40mph speed limit and has a typical carriageway width of 7.3m along its length. Although no southern footway is provided, Mitchells Way benefits from a 3.5m northern footway that extends for some 700m east of the roundabout where it forms another 4 arm roundabout providing access to the newly built Netherwood Advanced Learning Centre (ALC) secondary school, as well as to a number of residential properties located on Littlefield Lane (N).

2.3.5 Mitchells Way also provides a number of pedestrian crossing facilities within the vicinity of the Netherwood ALC/Littlefield Lane roundabout. It has an elevated footbridge connecting the school with Littlefield Lane (S), as well as low level options in the form of central refuge islands connected by a network of public footpaths both north and south of Mitchells Way.

2.3.6 Just east of its junction with Barnsley Road the following approximate traffic flows typically route along Mitchells Way:

- Annual Average Daily Traffic (two-way) 10,969 vehicles;
- Weekday Morning Peak Hour (two-way) 1023 vehicles
- Weekday Evening Peak Hour (two-way) 923 vehicles

2.4 BUS FACILITIES

2.4.1 The nearest bus stops are located immediately adjacent to the Site along the Barnsley Road frontage. The eastbound bus stop is provided with a good quality shelter, with the westbound stop provided with a pole and a plate. A summary of the bus services on Barnsley Road is shown in Table 2.1.

Table 2.1 –Bus Service Summary

Service	Route	2 Way Service Frequency	Days of Operation
Barnsley Road (Site frontage)			
22/22X	Barnsley – Wombwell - Rotherham	20 per hour	Weekday
		20 per hour	Saturday
		No Service	Sunday
67/67A	Barnsley – Worsbrough – Wombwell – Great Houghton	2 per hour	Weekday
		2 per hour	Saturday
		2 per hour	Sunday
203	Doncaster – Goldthorpe – Wombwell - Barnsley	2 per hour	Weekday
		2 per hour	Saturday
		No Service	Sunday
222	Barnsley – Wombwell – Swinton - Doncaster	4 per hour	Weekday
		4 per hour	Saturday
		2 per hour	Sunday
226	Barnsley – Wombwell – Wath upon Dearne – Thurnscoe	4 per hour	Weekday
		4 per hour	Saturday
		2 per hour	Sunday
229	Barnsley – Wombwell – Swinton - Rotherham	4 per hour	Weekday
		4 per hour	Saturday
		2 per hour	Sunday

2.4.2 During the weekday and Saturday the bus services on Barnsley Road combine to provide a minimum overall hourly frequency of 18 buses in each direction i.e. 36 bus services per hour two-way. On a Sunday the services combine to provide an overall hourly frequency of 4 buses in each direction i.e. 8 bus services per hour two-way.

2.4.3 The buses on Barnsley Road provide the Site with a regular and convenient service, which connects to Barnsley, Doncaster and Rotherham. A multitude of services and employment opportunities can be accessed at these locations as well as the opportunity for longer distance travel from Barnsley, Rotherham and Doncaster Rail Stations.

2.4.4 Rail Facilities

2.4.5 Wombwell Train Station is located approximately 1.5km to the south of the development Site, which is equivalent to an approximate 20 minute walk time and just over a 5 minute cycle ride. Wombwell Train Station provides regular connections to Huddersfield (1 per hour), Sheffield (1 per hour) and Leeds (1 per hour).

2.4.6 Wombwell station facilities include sheltered waiting areas, seating, ramp access, electronic help point and a car park with some 33 spaces thereby providing future residents with an opportunity to park and ride.

2.5 TRAFFIC SURVEYS

2.5.1 A series of junction and link counts were undertaken in May 2013 at several locations on the local highway network. A summary of the surveys is provided in Table 2.2 and the locations are shown on Figure 3.

Table 2.2 – Summary of Traffic Surveys

Location	Type	Date Undertaken	Assessment Periods
1. Barnsley Road	ATC (Fully Classified)	Saturday 18th May to Friday 24th May 2013	24hr
2. Mitchells Way	ATC (Fully Classified)	Saturday 18th May to Friday 24th May 2013	24hr
3. Barnsley Road/A633 Mitchells Way/Bradberry Balk Lane/A633 Barnsley Road	Fully Classified Manual Turning Count	Tuesday 21st May 2013	07:00 – 10:00 & 16:00 – 19:00
4. Barnsley Road (In the vicinity of the Site frontage)	Speed Radar Gun Survey	Tuesday 21st May 2013	Off Peak

2.5.2 The traffic count surveys identified the existing weekday morning and evening peak hour periods as follows:

- Weekday AM Peak – 07:45 to 08:45 ; and
- Weekday PM Peak - 17:00 to 18:00.

2.5.3 During the public consultation event held in July 2013 it was brought to Optima's attention by local residents that the ATC located on Barnsley Road had been damaged at some point after it had been laid by the survey company (Transport Data Collection Ltd).

2.5.4 Following this feedback the survey company was approached in order to confirm that no damage had been sustained during the survey period and that the results received were accurate and representative of the flows seen on Barnsley Road. Transport Data Collection Ltd clarified that although damage had been sustained to the ATC equipment (specifically the loops that are placed on the carriageway to record the data), this had occurred outside the requested survey period on the 29th May 2013 and therefore had not affected the data received in any way.

2.6 EXISTING ACCIDENT DATA ANALYSIS

2.6.1 Personal injury accident data has been obtained for the highway network in the vicinity of the Site for the most recently available five year period between January 2008 and March 2013 (which corresponds to an actual 64 month period). The area covered includes the extent of Barnsley Road and Mitchells Way as well as the junction they form with Bradberry Balk Lane. The area also covers the secondary school roundabout north of the Site and Mitchells Way's 5 arm eastern roundabout with the B6096 Station Road, Valley Way and Mayflower Way. The accident data, including a location plan, obtained from BMBC is attached in Appendix A.

2.6.2 For the 64 month period, there have been a total of 20 personal injury accidents within the entire study area – three of which were classified as being serious in nature with the remainder being slight. No fatalities have been recorded during this period.

2.6.3 A total of 10 accidents have occurred along Barnsley Road, two of which were classified as serious in nature with the remainder being slight. Both serious accidents resulted from passengers leaving a bus and attempting to cross the road with an obstructed view into oncoming traffic - they occurred in different locations along Barnsley Road and approximately 3 years apart.

2.6.4 Of the remaining slight accidents, two occurred as the result of rear shunts to stationary/slow moving vehicles, a further accident resulting from a vehicle failing to give way when exiting a side road onto Barnsley Road as well as another pedestrian attempting to cross the road from behind a parked vehicle into oncoming traffic. The remaining accidents along Barnsley Road occurred for contrasting reasons which included a motability scooter colliding with a pedestrian, a passenger complaining of an injury when a bus had to brake sharply and an intoxicated pedestrian falling into the road in front of oncoming traffic.

2.6.5 A single slight accident has occurred in the entire 5 year period at the A633/Bradberry Balk Lane/Barnsley Road roundabout and was the result of a rear shunt to a vehicle waiting to enter the roundabout, which is a typical accident seen at a roundabout. North of the roundabout on Bradberry Balk Lane a further slight accident has been recorded which resulted from a vehicle being unable to stop in icy conditions and colliding with the rear of a vehicle travelling in front.

2.6.6 A total of 8 accidents have been recorded along Mitchells Way and its roundabout with the B6096 Station Road, Valley Way and Mayflower Way. Of these 8 accidents 7 of them were recorded at the roundabout with one being classified as serious in nature. The serious accident involved two vehicles racing each other along Mitchells Way and on entering the roundabout one of them lost control, left the carriageway and collided with a pedestrian. The remaining slight accidents were made up of rear shunt incidents and vehicles failing to give way at the roundabout, both of which are typical of accidents seen at roundabouts.

2.6.7 The low incidence of accidents over a 64 month period combined with differing causal factors and locations within the study area, lead to the conclusion that there are no specific concerns relating to existing highway safety.

3 Development Proposals and Access Strategy

3.1 INTRODUCTION

3.1.1 This section of the report provides details of the development scheme including the proposed access arrangements.

3.1.2 The development proposals, which are shown on the Masterplan drawing contained in Appendix B, comprise the following:

- 236 residential dwellings; and
- Associated parking, landscaping and infrastructure works.

3.2 VEHICULAR ACCESS

3.2.1 Vehicular access to the Site is proposed from a simple priority T junction on Barnsley Road – as shown on the drawing in Appendix C.

3.2.2 During discussions with Barnsley Council it was agreed that the most appropriate access point to the Site would be from Barnsley Road. This takes into account the more strategic nature of Mitchells Way as well as providing consistency with the existing network of residential streets in Wombwell surrounding the development Site.

3.2.3 Plans displayed at the public exhibition held on the 4th July 2013 indicated that two access points may be provided onto Barnsley Road. Public feedback expressed a desire for a single access point rather than two separate points of access. The access arrangements have been reviewed and for a variety of reasons, including impact on the existing bus stops, it is now proposed to provide a single point of access onto Barnsley Road supported by an emergency only access to the west.

3.2.4 The prevailing highway design guidance for residential developments is Manual for Streets (MfS) published by the DfT. This document is deliberately non-prescriptive and one of the key changes it introduced is to "*move away from hierarchies of standard road types based on traffic flows and/or the number buildings served*" (para 1.6.1). As such MfS places no limit on the number of dwellings served by a single access instead stating "*the number of external connections that a development provides depends on the nature of its surroundings*" and "*residential areas adjacent to each other should be well connected*" (para 4.2.7). MfS re-enforces this message at various other locations including at:

- Paragraph 6.7.3 where it refers to the unjustified requests in the past by local authorities to define the requirement for a second access based on the number of properties served. This is unfounded and MfS advises that emergency access provision should instead be based on response times particularly for more rural locations (which the Wombwell Site clearly isn't);
- Figure 3.12 (a) which references a 5.5m access serving an unlimited number of properties.

3.2.5 The 2011 South Yorkshire Residential Design Guide (SYRDG) replicates the advice in MfS and is equally non-prescriptive with respect to the number of access points required in relation to the number of properties served. As such the proposed access arrangements accord with both national and regional guidance.

3.2.6 The Site Access road itself is proposed as a 5.5m wide carriageway with 2.0m footways to both sides. The generous width of Barnsley Road adjacent to the Site Access ensures that any on-street parking that currently occurs would not affect the operation of the Site Access junction.

3.2.7 As shown on the layout drawing visibility splays of 2.4x40.0m are comfortably achievable at the Site Access junction. The recorded 85th percentile traffic speeds at this location on Barnsley Road are 30 mph eastbound and 30 mph westbound. Manual for Streets requires visibility splays of 2.4x40m where traffic speeds are 30mph and therefore the Site Access road is in accordance with standards.

3.2.8 An emergency only access with a width of 6m is proposed off Barnsley Road some 100m west of the Site Access junction. The provision of removable bollards, which are shown on the Masterplan drawing contained in Appendix B, will ensure access is restricted to emergency use only and general vehicular access is not permitted.

3.3 PEDESTRIAN/CYCLE ACCESS

3.3.1 There are several options to gain access into the proposed development by foot/cycle as shown on the Masterplan contained in Appendix B.

3.3.2 As well as the vehicular access point into the development Site from Barnsley Road, connections are proposed to the east and west of the development Site providing linkages with Rimington Road/Littlefield Lane (leading to the footbridge/footpaths at Mitchells Way) as well as a further connection to Barnsley Road. This will enhance the connectivity not only for the future residents but also for other existing residents in the local area e.g. accessibility will be enhanced to the local school located immediately north of the Site.

3.3.3 As identified in Manual for Streets (MfS) pedestrian routes should be direct and accord with pedestrian desire lines as much as possible. The proposed internal layout meets with these requirements.

3.3.4 Furthermore the design of the internal layout ensures that vehicle speeds will be kept to a minimum, therefore making the bicycle an attractive form of transport when travelling through the Site. Whilst for the majority of trips, travelling through the Site will comprise a small section of the overall journey distance, it is important to recognise that good design of the internal layout will act as a further incentive for cycling.

4 Site Accessibility

4.1 INTRODUCTION

4.1.1 This chapter describes the accessibility of the Site by non-car modes.

4.2 ACCESSIBILITY BY FOOT

4.2.1 The residential design guide "Manual for Streets" (MfS) advises that "*walkable neighbourhoods are typically characterised by having a range of facilities within ten minutes (up to about 800m) walking distance of residential areas…"* (ref para 4.4.1). However, this is not regarded as an upper limit in MfS and reference is also made to walking offering "*the greatest potential to replace short car trips, particularly those under 2km*". The acceptability of walking trips up to 2km (an approximate 25 minute walk time) is also supported in the IHT document 'Providing for Journeys on Foot'.

4.2.2 Using GIS Network Analyst software typical walk times (up to 25 mins) to specific local facilities situated in close proximity to the proposed Site are shown on Figure 4. This demonstrates that:

- The centre of Wombwell can be reached within a 5-10 minute walk of the Site where numerous shops/facilities can be found including food retail (Co-operative Supermarket), doctors/health centre, dentist, pharmacist, post office, banks, pubs, restaurants and takeaways. As well as providing convenient services to local residents the majority of these facilities also provide accessible employment opportunities;
- The nearest Primary School (High View Primary Learning Centre) is within a 5-10 minute walk distance of the Site with the nearest day nursery located just west of the Primary School within a 10-15 minute walk; and
- Netherwood Advanced Learning Centre is the nearest secondary school and it can also be reached within a 5-10 minute walk from the Site.

4.2.3 It is therefore concluded that the proposed Site will provide excellent accessibility by foot to a vast range of services and facilities – the majority of which are within a 15 minute walk. As shown on Figure 4 additional services/facilities are available within a 15 to 25 minute timeframe.

4.2.4 Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.

4.3 ACCESSIBILITY BY CYCLE

4.3.1 An acceptable and comfortable distance for general cycling trips is considered to be up to 5 kilometres as referred to in Local Transport Note 2/08 (published by the DfT). However, the same guidance also refers to commuting cycle trips up to 8km. Using GIS Network Analyst software typical cycle times (with 30 mins approximating to around an 8km distance) from the Site are shown on Figure 5. This figure shows that:

- All of the numerous shops and facilities within Wombwell including schools, healthcare and food stores can be reached within less than a 5 minute cycle of the Site;
- Netherwood Advanced Learning Centre can be reached comfortably within a 5 minute cycle ride of the development site; and
- Much of the east and south-east outskirts of Barnsley can be reached within a 20 minute cycle of the Site.

4.3.2 It is therefore concluded that the proposed Site will provide excellent accessibility by cycle to a vast range of local services and facilities within a five minute cycle ride as well as access to the surrounding towns such as Hoyland to the south west and Darfield to the north east.

4.3.3 Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.

4.4 ACCESSIBILITY BY BUS

4.4.1 The nearest bus stops are located on Barnsley Road immediately adjacent to the Site, with the eastbound stop provided with a good quality shelter. The location of the stops in relation to the Site is shown on Figure 4 as well as the drawing in Appendix C.

4.4.2 The pedestrian footway links provided within the Site ensure that the entire development lies within a short 5 minute walk of the stops on Barnsley Road.

4.4.3 From the Barnsley Road stops, indicative journey times (taken from timetable information) to the following destinations are as follows:

- Barnsley Town Centre – within a 15 minute journey time on average; and
- Rotherham Town Centre – within a 40 minute journey time on average.

4.4.4 All of the buses travel to the major public transport interchanges at Barnsley and Rotherham. This provides passengers with the opportunity to access additional bus/coach/train services from Rail and Bus Stations at these locations. These connections provide the opportunity to conveniently access regional and national services and destinations.

4.4.5 It is therefore concluded that the proposed Site will provide excellent accessibility by bus. Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.

4.5 ACCESSIBILITY BY RAIL

4.5.1 Wombwell Train Station is located approximately 1.5km to the south of the development Site, which is within a 20 minute walk time and just over a 5 minute cycle. Wombwell Train Station provides regular connections to Huddersfield (1 per hour), Sheffield (1 per hour) and Leeds (1 per hour). Direct services to major destinations such as London, Edinburgh and Manchester can be accessed from these stations.

4.5.2 It is therefore concluded that the proposed Site will provide good accessibility to rail services. Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.

5 Travel Plan

5.1 INTRODUCTION

5.1.1 This TP sets out potential facilities/initiatives to encourage residents to use sustainable transport along with suggested initiatives for consideration by the developer marketing company. This TP contains the following elements:

- Objectives and scope of the Plan;
- Travel Plan targets;
- Description of roles and responsibilities;
- Potential additional measures to encourage, promote and increase the use of public transport, cycling and walking and reduce the level of single occupancy car trips; and
- A brief communication strategy.

5.2 OBJECTIVES AND SCOPE OF THE PLAN

5.2.1 The Travel Plan shall, by containing appropriate measures, assist in improving the environment by reducing the number of trips made to and from the development by private car. Residents shall be made aware of the measures included within the Travel Plan in order that positive benefits can be delivered and the number of trips undertaken by public transport, walking or cycling can be increased.

5.2.2 In order to ensure that the measures contained within the Travel Plan are capable of delivering a sustainable travel demand pattern for the development it is important to identify some key objectives. The overall travel management objectives for the proposed development are:

- Promoting walking, cycling and public transport as the primary mode of travel; and
- To deliver mode shift from single occupancy car journeys to alternative modes including multi-occupancy vehicle trips.

5.3 TARGETS

5.3.1 The Travel Plan will aim to promote travel choice for the occupiers and users of the development, and hence to increase the use of sustainable transport modes.

5.3.2 Mode split targets will be set that will seek to reflect or improve on the predicted traffic generation figures set out in Chapter 6 of this report.

5.4 ROLES AND RESPONSIBILITIES

5.4.1 An important aspect of a successful Travel Plan is the allocation of sufficient resources to enable it to happen. This can in part be achieved by the recognition from the outset of the roles and responsibilities of those who will be involved. This will ensure the appropriate allocation of time and resources to those charged with managing the process.

5.4.2 An appointed site management company will act as the Travel Plan Co-ordinator (TPC) for the development. The anticipated duties of the Travel Plan Co-ordinator will include:

- Acting as a single point of contact for all transport, access and travel related issues for the development;

- Obtaining and providing site occupants with up to date details of information relating to access to the site via sustainable modes;
- Liaison with BMBC and other key stakeholders; and

5.5 TRAVEL PLAN MEASURES

5.5.1 In addition to the internal Site infrastructure proposed, the following measures will be included in the TP:

Walking and Cycling

- A plan showing the key pedestrian routes to the site including any crossing facilities;
- A plan showing the key cycling routes to the site including any crossing facilities and details/locations of cycle parking (this information may be combined with the pedestrian plan).
- Details of nearby cycle shops including location, contact information and those that may offer discounts on cycles and repairs/maintenance.
- Provide details of third party walking and cycling organisations such as 'bikebudi' (www.bikebudi.com), 'walkbudi' (www.walkbudi.com) and 'walkit' (www.walkit.com).
- Provide details of cycling events throughout the year.
- Promote and encourage walking and cycling to work, through events such as 'Bike to Work Day' and 'Bike Week' (www.bikeweek.org), to heighten awareness.
- Provide details of the DfT Cycle to Work scheme available at http://www.dft.gov.uk/pgr/sustainable/cycling/cycletoworkschemeimplementat5732 .

Public Transport

- Provision of up to date information relating to bus services, routes, destinations, times/frequencies.
- Details of bus stop locations close to the site;
- Details of all school bus services close to the site;
- Details of any AccessBus scheme for disabled users.
- Details of personalised public transport journey planner information.
- Any bus promotional offers including details of concessionary travel; and
- Contact details of taxi operators and locations of nearby taxi ranks.

School Travel

5.5.2 The responsibility for obtaining the most up to date information regarding local schools rests with the Travel Plan Co-ordinator. This package of information will include school location, distance from the Site, appropriate pedestrian/cycle routes to the school and details of public transport services. This information will be made available to residents in the welcome packs.

5.5.3 The Travel Plan Co-ordinator will also investigate (by talking to schools and/or parents) which local schools operate a School Travel Plan, what measures are already in place, and whether a Walk to School Campaign is promoted.

Home Delivery Services

5.5.4 The Travel Plan Co-ordinator will promote the use of home delivery services including providing details of local grocery stores and information on stores which provide home delivery services.

5.6 COMMUNICATION

5.6.1 The public transport authority should be contacted regarding the provision of leaflets, timetable and promotions/offers.

5.6.2 All prospective residents will be made aware of the implementation of the Travel Plan at the Site and the sustainable travel options available potentially via a marketing website.

5.6.3 The TPC should consider membership of any local authority Travel Plan Network which may be established during the lifetime of the Travel Plan.

6 Trip Generations and Distributions

6.1 INTRODUCTION

6.1.1 This chapter sets out the trip generations and distribution methodologies associated with the proposed development Site for 236 residential units.

6.2 VEHICULAR TRIP GENERATIONS

6.2.1 To determine appropriate residential trip rates reference has been made to the TRICS database to establish total vehicular trip rates. The time periods selected are the weekday morning (08:00-09:00) and evening (17:00-18:00) peak hour periods. Survey sites within the database have been chosen using the following parameters:

- Land use Residential/Houses Privately Owned selected;
- Multi modal vehicular trip rates selected;
- Surveys undertaken in the last seven years;
- Sites with comparable access to similar public transport facilities;
- London & Irish sites excluded;
- Town Centre, Neighbourhood Centre and Edge of Town Centre excluded; and
- Range of households between 50 and 400 selected

6.2.2 This selection process yields 5 surveys completed at representative sites and the TRICS outputs for these have been attached at Appendix D for information. The resulting weekday peak hour total vehicular trip rates are shown in Table 6.1.

6.2.3 Based on the characteristics of the sites that have been selected being representative of the development site it is appropriate to apply average trip rates. This methodology is in accordance with the Department for Transport (DfT) document Guidance on Transport Assessment (GTA) which states that 85th percentile trip rates should only be used when appropriate, comparable sites cannot be found. The selected sites are comparable.

Table 6.1 – Proposed Total Vehicular Average Weekday Trip Rates

	Total Vehicular Trip Rates (per unit)		
Time Period	Arrivals	Departures	Total
AM 08:00 - 09:00	0.151	0.379	0.530
PM 17:00 – 18:00	0.368	0.201	0.569

6.2.4 The total vehicular trip rates shown in Table 6.1 have been multiplied by 236 (the proposed number of dwellings) to give the total vehicular trip generations as shown in Tables 6.2 and 6.3 for the AM and PM peaks respectively.

Table 6.2 – Proposed AM Total Vehicular Weekday Trip Rates and Generations

	Arrivals	Departures	Total
Trip Rate	0.151	0.379	0.530
Trip Generation	36	89	125

Table 6.3 – Proposed PM Total Vehicular Weekday Trip Rates and Generations

	Arrivals	Departures	Total
Trip Rate	0.368	0.201	0.569
Trip Generation	87	47	134

6.3 TRIP DISTRIBUTION AND ASSIGNMENT

6.3.1 The traffic distribution of the proposed development has been assessed based on local travel patterns contained within the 2001 census data and this information has been obtained from www.nomisweb.co.uk. The raw data collected covers the whole of the United Kingdom and as such it has not been appended to this report.

6.3.2 Application of the journey to work data from the census is considered to be an appropriate base for determining the peak hour distribution, due to the fact that the majority of residential morning and evening peak hour trips will be journeys to and from work.

6.3.3 The proposed development is located within the Wombwell North ward boundary. The travel to work data for all of the residents who travel to work by car has been summarised on Spreadsheet SD1 attached at Appendix E. The travel to work by car information (raw data) that was originally interrogated included destinations across the United Kingdom i.e. the raw data had multiple destinations that had no recording of trips between Wombwell North and that particular destination. Therefore, Spreadsheet SD1 has been amended to only include wards in the UK that served as a journey to work destination for residents of Wombwell North as recorded in the 2001 Census.

6.3.4 These area specific distributions have then been assigned to one of the four following routes to/from the Site:

- Barnsley Road (SE);
- A633 Barnsley Road (NW);
- A633 Mitchells Way; and
- Bradberry Balk Lane;

6.3.5 The assignment process is detailed on the Spreadsheet SD1 contained in Appendix E and produces the proposed vehicular distributions summarised in Table 6.4. These distributions are to be applied to both the AM and PM peak hour development generated trips.

Table 6.4 – Proposed Residential Vehicular Distribution - Route Assignment Summary

Barnsley Road (SE)	A633 Barnsley Road (NW)	A633 Mitchells Way	Bradberry Balk Lane	**Total**
27%	**40%**	**31%**	**3%**	**100%**

6.3.6 Having established the geographic distribution of all residential trips from the selected ward it is then necessary to assign the car driver distributions on to the highway network. This has been completed by first producing a visual distribution map of the car trips – as shown on Figure 103.

6.3.7 To illustrate the specific distribution and routing of traffic to and from the development site, the values shown in Table 6.4 have then been applied to the trip generations in Tables 6.2 and 6.3 to produce the residential trip generation diagrams shown on Figure 104.

7 Identification of Impacts

7.1 INTRODUCTION

7.1.1 This chapter describes the impact of the development trips on the highway network and identifies any mitigation works required. During pre-application discussions with BC the scope/extent of the highway network to be tested was broadly agreed and the junctions to be assessed are as follows:

- A633 Barnsley Road/Bradberry Balk Lane/A633 Mitchells Way/Barnsley Road Roundabout; and
- Barnsley Road/Site Access.

7.2 PEAK HOUR TRAFFIC FLOWS

7.2.1 As referred to in Chapter 2, the May 2013 traffic surveys identify the following existing weekday peak hour periods:

- Weekday AM Peak – 07:45 to 08:45; and
- Weekday PM Peak - 17:00 to 18:00.

7.2.2 The traffic count flows for these periods are shown on Figure 101 for the morning and evening peak hours and will be used to provide an insight into the existing operation of the junctions.

Future Assessment Year and Traffic Growth

7.2.3 In accordance with the DfT guidelines on the preparation of Transport Assessments it is necessary to test the capacity of the highway network for 'a minimum of 5 years post registration of the application'. However, in consideration of a future year assessment it is also important to recognise the likely future build out of the scheme, therefore a design year of 2018 has been deemed a realistic date for completion of the development.

7.2.4 Background traffic growth rates, between 2013 and 2018, have been obtained from TEMPRO v6.2 and these values are as follows:

- AM peak hour growth rate of 6.4%; and
- PM peak hour growth rate of 6.6%;

7.2.5 Applying these growth rates to the 2013 traffic counts produces the base traffic flows shown on Figure 102 for the morning and evening peak hours.

7.2.6 As discussed and agreed with BC at pre-application discussions there are no consented sites that require inclusion within the base year traffic flows. Notwithstanding this of course the background growth rate applied already includes for an element of traffic from other development sites.

Design Traffic Flows

7.2.7 Adding the proposed development trips described in Chapter 6 to the base traffic flows produces the design traffic flows and these are shown diagrammatically on Figure 105 for the morning and evening peak hours.

7.2.8 It should be noted that these design traffic flows are considered to be robust as no discount has been applied to the development trip generations to allow for the effect of the proposed Travel Plan.

7.3 OPERATIONAL ASSESSMENT OF HIGHWAY NETWORK

7.3.1 This section describes the junction capacity assessments which have been undertaken. Full software output data can be found in Appendix F.

Existing A633 Barnsley Road/Bradberry Balk Lane/A633 Mitchells Way/Barnsley Road Roundabout

7.3.2 The existing layout of the A633 Barnsley Road/Bradberry Balk Lane/A633 Mitchells Way/Barnsley Road Roundabout is shown on Figure 6 and has been modelled as a 4 arm roundabout using the ARCADY software. The junction has initially been modelled for the AM and PM peak hours with surveyed traffic flows and the results are summarised in Table 7.1.

Table 7.1 A633 Barnsley Road/Bradberry Balk Lane/Mitchells Way/Barnsley Road Roundabout AM and PM 2012 Count

Movement	AM		PM	
	RFC	Mean Q	RFC	Mean Q
Mitchells Way	0.44	1	0.41	1
Barnsley Road (S)	0.26	0	0.21	0
Barnsley Road (W)	0.43	1	0.48	1
Bradberry Balk Lane	0.16	0	0.20	0

All Queue values are in PCUs

7.3.3 The results in Table 7.1 show that the existing junction with the count flows is predicted to operate significantly below capacity in both the AM and PM peak periods. These results reflect the relatively low flows at the junction, the surveyed queue lengths as well as on-site observations. It is therefore considered that the model is representative.

7.3.4 The junction has then been modelled for the 2018 Base situation i.e. the count information has been growthed to represent the levels of traffic that is predicted would be on the network without the proposed development being constructed. The results of the assessment for the AM and PM base peak periods are summarised in Table 7.2.

Table 7.2 A633 Barnsley Road/Bradberry Balk Lane/Mitchells Way/Barnsley Road Roundabout AM and PM 2018 Base

Movement	AM		PM	
	RFC	Mean Q	RFC	Mean Q
Mitchells Way	0.47	1	0.44	1
Barnsley Road (S)	0.28	0	0.22	0
Barnsley Road (W)	0.46	1	0.51	1
Bradberry Balk Lane	0.17	0	0.21	0

All Queue values are in PCUs

7.3.5 The results in Table 7.2 demonstrate that the junction when modelled in the 2018 base situation will continue to operate comfortably within capacity. All of the predicted RFC values at the junction are below the desired threshold of 0.85, above which it is considered that any capacity problems are exacerbated.

7.3.6 The final assessment of the junction is completed for the design scenario i.e. the 2018 base traffic added to the predicted development traffic. The results are given in Table 7.3.

Table 7.3 A633 Barnsley Road/Bradberry Balk Lane/Mitchells Way/Barnsley Road Roundabout AM and PM 2018 Design

Movement	AM		PM	
	RFC	Mean Q	RFC	Mean Q
Mitchells Way	0.48	1	0.48	1
Barnsley Road (S)	0.33	0	0.25	0
Barnsley Road (W)	0.48	1	0.54	1
Bradberry Balk Lane	0.18	0	0.22	0

All Queue values are in PCUs

7.3.7 The results in Table 7.3 show that the proposed development traffic can be comfortably accommodated by the existing 4 arm roundabout.

Proposed Site Access Priority Junction

7.3.8 The proposed Site Access junction is shown on the drawing contained in Appendix C and has been modelled as a simple 3 arm priority junction using the PICADY software. The junction has been modelled for the AM and PM design peak hours and the results are summarised in Table 7.4.

Table 7.4 Site Access/Barnsley Road AM and PM 2018 Design (Proposed Junction)

Movement	AM		PM	
	RFC	Mean Q	RFC	Mean Q
Site Access	0.23	0	0.13	0
Hartcliff Road	0.02	0	0.05	0

All Queue values are in PCUs

7.3.9 The results in Table 7.4 show that the proposed Site access junction is predicted to operate comfortably within capacity in both the AM and PM peak periods.

Summary

7.3.10 The analysis has demonstrated that the junctions assessed have sufficient capacity in both the base and design scenarios to accommodate development traffic.

7.3.11 Furthermore the residual cumulative impact of the development is certainly not considered to be 'severe' (as referenced in paragraph 32 of the National Planning Policy Framework - NPPF).

8 Summary and Conclusions

8.1.1 This report has addressed the highways and transport issues raised by the proposed development of 236 dwellings on land to the south of Barnsley Road, Wombwell.

8.1.2 The scope and content of the TA has been discussed with the highways officer at Barnsley Metropolitan Borough Council (BMBC) and a public consultation exercise was held on the 4th July 2013.

8.1.3 Vehicular access to the Site is proposed from a simple priority junction from Barnsley Road supported by an emergency access to the west of the Site. The drawing in Appendix C shows that appropriate visibility splays in accordance with MfS can be achieved from these junctions.

8.1.4 Pedestrian and cycle access to the proposed development will also take place from the Barnsley Road Site Access junction, as well as provision of footway/cycle links to the east and west of the Site. Numerous internal pedestrian/cycle links will be provided within the Site to facilitate and encourage walking and cycling. The location of the Site along with the implementation of these links results in the achievement of the following accessibility criteria:

- The centre of Wombwell can be reached within a 5-10 minute walk or less than a 5 minute cycle where numerous shops/facilities can be found including food retail (Co-operative Supermarket), doctors/health centre, dentist, pharmacist, post office, banks, pubs, restaurants and takeaways;
- The nearest Primary School (High View Primary Learning Centre) is within a 10 to 15 minute walk distance of the Site with the nearest day nursery located just west of the Primary School within a 10-15 minute walk; and
- Netherwood Advanced Learning Centre is the nearest secondary school and it can be reached within a 5-10 minute walk or less than a 5 minute cycle.

8.1.5 It is therefore concluded that the proposed Site will provide excellent accessibility by foot and cycle to a vast range of services and facilities – the majority of which are within a 10 minute walk or 5 minute bike ride.

8.1.6 The nearest bus stops are located on Barnsley Road ensuring that the entire Site lies within a short 5 minute walk of these stops. The bus service routes to Barnsley (typical 15 minute journey time) and Rotherham (typical 40 minute journey time) as well as connecting to Wombwell town centre.

8.1.7 Wombwell Train Station is located approximately 1.5km to the south of the development Site, which is within a 20 minute walk time and just over a 5 minute cycle. Wombwell Train Station provides regular connections to Huddersfield (1 per hour), Sheffield (1 per hour) and Leeds (1 per hour).

8.1.8 It is therefore concluded that the proposed Site will provide an excellent level of public transport accessibility and fully accords with the principles of sustainable development as set out in the NPPF.

8.1.9 A review of the personal injury accident data has been undertaken for the study area, which has shown that there are no specific accident concerns. This conclusion is based on the infrequency and random nature/location of accidents over the most recently available 64 month period.

8.1.1 The development trip generations have been predicted using the TRICS database information and junction assessments have been undertaken across the local highway network using industry standard software. This analysis has demonstrated that the junctions assessed have sufficient capacity

in both the base and design scenarios to accommodate development traffic. Furthermore the residual cumulative impact of the development is certainly not considered to be 'severe' (as referenced in paragraph 32 of the NPPF).

8.1.2 These junctions have also been assessed against design standards in order to ensure they comply with geometric requirements and it is concluded that the junctions will operate safely and satisfactorily.

8.1.3 From all of the work undertaken it is concluded that there are no reasons on highways or transport grounds why the development Site should not be granted planning permission for residential purposes.

Appendices

Appendix A Accident Data

f 1

Colour coding by SEVERITY

- Fatal (0)
- Serious (3)
- Slight (17)

Accidents between dates 01/01/2008 and 20/04/2013
Selected using Build Query : Local_auth = 'BARNSLEY'; Refined using Accidents within selected Polygons -Mick H's Polygons ("Rory Price Wombwell")

B-00744-10
B-00462-11
B-00021-09
B-00558-09
B-00238-08
B-00796-08
B-01385-10

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MAKING SOUTH YORKSHIRE ROADS SAFER

DRAWING TITLE	Selected map area
SCALE	1 : 1940
DATE	25/06/2013
DWG No.	
DRAWN BY	

Colour coding by SEVERITY

- Fatal (0)
- Serious (3)
- Slight (17)

Accidents between dates 01/01/2008 and 20/04/2013
Selected using Build Query : Local_auth = 'BARNSLEY'; Refined using Accidents within selected Polygons -Mick H's Polygons ("Rory Price Wombwell")

B-01217-08
B-00264-11
B-01441-08
B-00835-12
B-01308-09
B-01373-08

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MAKING SOUTH YORKSHIRE ROADS SAFER

DRAWING TITLE
Selected map area

SCALE	1 : 1940
DATE	25/06/2013
DWG No.	
DRAWN BY	

f 1

Accidents between dates 01/01/2008 and 20/04/2013
Selected using Build Query - Local_auth = 'BARNSLEY'; Refined using Accidents within selected Polygons -Mick H's Polygons ("Rory Price Wombwell")

Colour coding by SEVERITY
- Fatal (0)
- Serious (3)
- Slight (17)

N W E S

B-00512-09
B-00115-12
B-00087-08
B-00823-09
B-00129-11
B-01217-08
B-00264-11
B-01441-08
B-00835-12

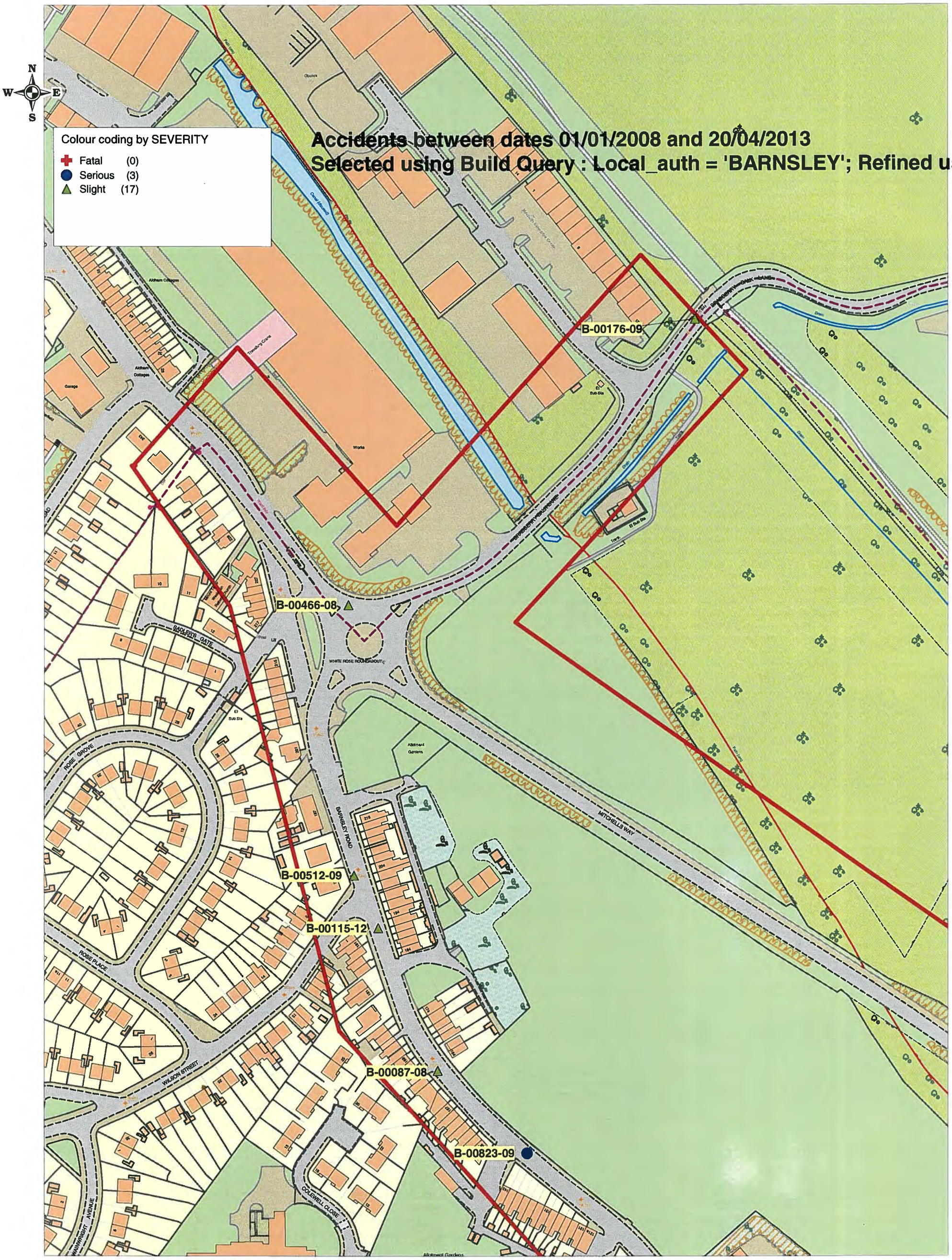
WOLERS GATE
WHITE ROSE ROUNDABOUT
BARNSLEY ROAD
MITCHELLS WAY
WILSON STREET
COLEWELL CLOSE
Highfield Grange Resource Centre
Allotment Gardens
JOHN STREET
HIGHFIELD COURT
MYRTLE ROAD

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MAKING SOUTH YORKSHIRE ROADS SAFER

DRAWING TITLE	Selected map area
SCALE	1 : 1940
DATE	25/06/2013
DWG No.	
DRAWN BY	



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South Yorkshire LTP Partnership Licence No: 100019587 2013

Selected map area

SCALE	1 : 1940
DATE	25/06/2013
DRWG No.	
DRN BY	

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec
Selected Polygon:Rory Price Wombwell

B-00087-08 19/01/2008 Saturday Time:1058 Vehicles 2 Casualties 2 Slight
Easting: 439,268 Northing: 403,624
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 30

Location: BARNSLEY ROAD WOMBWELL O/S 163
Description:V1 TRVLS ON BARNSLEY RD TWDS BARNSLEY V2 TRVLS BHND V1 V1 STPS TO ALLOW ONCOMING TRFC TO CLEAR V2 FLS TO STP & CLLS WITH R V1

Vehicle Reference1 Car Waiting to go ahead but held up
First point of impact:Back
Vehicle direction: SE to NW Journey: Not known
Age of Driver : 20 Breath test:Not applicable

Contributory Factors : 203 406

Casualty Reference 1 Age:20 Female Driver/rider Severity:Slight
Ped Dir: Ped Movement :
Ped Location:

Casualty Reference 2 Age:20 Male Passenger Severity:Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference2 Car Going ahead
First point of impact:Front
Vehicle direction: SE to NW Journey: Journey as part of work
Age of Driver : 24 Breath test:Not applicable

Contributory Factors : 203 406

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00238-08 18/02/2008 Monday Time:1440 Vehicles 2 Casualties 2 Slight
Easting: 440,151 Northing: 403,082
Fine without high winds Road Surface:Wet/Damp Daylight: no street lighting
Road Type: Roundabout Speed Limit: 30

Location: STATION RD WOMBWELL AT J/W MITCHELLS WAY
Description:V1 STATIONARY AT ATS WHEN V2 COLL WITH REAR OF V1.

Vehicle Reference1 Car Waiting to go ahead but held up
First point of impact:Back
Vehicle direction: Parked to Parked Journey: Commuting to/from work
Age of Driver : 47 Breath test:Not applicable

Contributory Factors : 308 406 602

Casualty Reference 1 Age:47 Female Driver/rider Severity:Slight
Ped Dir: Ped Movement :
Ped Location:

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

Vehicle Reference2 Car Going ahead
First point of impact:Front
Vehicle direction: Parked to Parked Journey: Not known
Age of Driver : Breath test:Not applicable

Contributory Factors : 308 406 602

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00466-08 15/04/2008 Tuesday Time:0730 Vehicles 2 Casualties 1 Slight
Easting: 439,220 Northing: 403,872
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Roundabout Speed Limit: 30

Location: BARNSLEY RD WOMBWELL AT J/W BY PASS
Description:V1 SLOWED DOWN FOR MINI RDBT, VEH STALLED AND V2 FOLLOWING COLL WITH REAR OF V1.

Vehicle Reference1 Car Slowing or Stopping
First point of impact:Back
Vehicle direction: NW to SE Journey: Journey as part of work
Age of Driver : 18 Breath test:Not applicable

Contributory Factors : 406

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

Vehicle Reference2 Car Slowing or Stopping
First point of impact:Front
Vehicle direction: NW to SE Journey: Not known
Age of Driver : 39 Breath test:Not applicable

Contributory Factors : 406

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: **Notes:**
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00796-08 02/07/2008 Wednesday Time:1015 Vehicles 2 Casualties 1 Serious
Easting: 440,162 Northing: 403,068
Fine without high winds Road Surface:Dry Darkness: street lights present and lit
Road Type: Roundabout Speed Limit: 60

Location: WOMBWELL BY PASS WOMBWELL
Description:CAR RACING ANOTHER OVERTAKING AND MOUNTED KERB COLL WITH PED CYC

Vehicle Reference1 Pedal cycle Going ahead
First point of impact:Back
Vehicle direction: Parked to Parked Journey: Commuting to/from work
Age of Driver : 29 Breath test:Not applicable

Contributory Factors : 602

Casualty Reference 1 Age:29 Male Driver/rider Severity:Serious
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference2 Car Overtaking on nearside
First point of impact:Offside
Vehicle direction: Parked to Parked Journey: Not known
Age of Driver : Breath test:Not applicable

Contributory Factors : 602

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-01217-08 03/10/2008 Friday Time:1225 Vehicles 1 Casualties 1 Slight
Easting: 439,494 Northing: 403,420
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 30

Location: HIGH ST WOMBWELL J/W MAIN ST
Description:V1 (PCV0 HAS TO BRAKE SHARPLY DUE TO VEH PULLING OUT OF JCT IN PATH OF V1. PASS COMPLAINED OF INJS

Vehicle Reference:1 Bus or coach Going ahead
First point of impact:Did not impact
Vehicle direction: Parked to Parked Journey: Journey as part of work
Age of Driver : 34 Breath test:Not applicable

Contributory Factors :

Casualty Reference 1 Age: Female Passenger Severity:Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-01373-08 05/11/2008 Wednesday Time:2015 Vehicles 2 Casualties 1 Slight
Easting: 439,785 Northing: 403,235
Fine without high winds Road Surface:Wet/Damp Darkness: street lights present and lit
Road Type: Single carriageway Speed Limit: 50

Location: BARNSLEY RD WOMBWELL J/W LITTLEFIELD LN
Description:V1 STATIONARY, WAITING & INDICATING TO TURN R ONTO LITLEFIELD LN FROM A633. V2 TV SAME DIRC AT SPEED, FAILED TO SLOW DOWN & ATTEMPTED TO UNDERTAKE V1 BUT COLL WITH REAR N/S CORNER OF V1.

Vehicle Reference1 Car Waiting to turn right
First point of impact:Back
Vehicle direction: SE to N Journey: Not known
Age of Driver : 36 Breath test:Not applicable

Contributory Factors :

Casualty Reference 1 Age:36 Female Driver/rider Severity:Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference2 Car Going ahead
First point of impact:Front
Vehicle direction: SE to NW Journey: Not known
Age of Driver : Breath test:Not applicable

Contributory Factors :

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-01441-08 20/11/2008 Thursday Time:1413 Vehicles 2 Casualties 1 Slight
Easting: 439,495 Northing: 403,418
Fine with high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 30

Location: BARNSLEY RD WOMBWELL J/W MAIN ST
Description:V1 TV ALONG BARNSLEY RD INDICATING TO TURN L ONTO MAIN ST. V2 WAS FOLLOWING V1 BUT DIDN'T SEE THE INDICATION UNTIL IT WAS TOO LATE. V2 COLL WITH REAR OF V1.

Vehicle Reference1 Car Turning left
First point of impact:Back
Vehicle direction: SE to SW Journey: Journey as part of work
Age of Driver : 46 Breath test:Not applicable

Contributory Factors : 405

Casualty Reference 1 Age:46 Male Driver/rider Severity:Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference2 Car Going ahead
First point of impact:Nearside
Vehicle direction: SE to NW Journey: Not known
Age of Driver : 21 Breath test:Not applicable

Contributory Factors : 405

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: **Notes:**
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00021-09 05/01/2009 Monday Time:0915 Vehicles 2 Casualties 1 Slight
Easting: 440,164 Northing: 403,106
Other Road Surface:Wet/Damp Darkness: street lights present but unlit
Road Type: Roundabout Speed Limit: 50

Location: WOMBWELL BYPASS WOMBWELL AT J/W RDBT
Description:BOTH VEH'S APPROACHING RDBT, V2 STOPS AT GIVE WAY BUT V1 FOLLOWING FAILS TO REACT IN TIME AND COLL WITH REAR OF V2.

Vehicle Reference1 Car Going ahead
First point of impact:Front
Vehicle direction: NW to SE Journey: Journey as part of work
Age of Driver : 37 Breath test:Not applicable

Contributory Factors : 103 405 706

Vehicle Reference2 Car Parked
First point of impact:Back
Vehicle direction: NW to SE Journey: Not known
Age of Driver : 41 Breath test:Not applicable

Contributory Factors : 103 405 706

Casualty Reference 1 Age:41 Male Driver/rider Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: **Notes:**
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00176-09 11/02/2009 Wednesday Time:0829 Vehicles 2 Casualties 1 Slight
Easting: 439,406 Northing: 404,024
Fine without high winds Road Surface:Frost/Ice Daylight: no street lighting
Road Type: Single carriageway Speed Limit: 60

Location: BRADBURY BALK LN WOMBWELL
Description:V1 SKIDDED ON ICE AND CAME TO A STANDSTILL, V2 SKIDDED AND COLL WITH REAR OF V1.

Vehicle Reference1 Car Slowing or Stopping
First point of impact:Back
Vehicle direction: NW to SE Journey: Taking pupil to/from school
Age of Driver : 35 Breath test:Not applicable

Contributory Factors : 104 104

Casualty Reference 1 Age:7 Female Passenger Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Vehicle Reference2 Van or Goods <= 3.5 tonnes m Slowing or Stopping
First point of impact:Front
Vehicle direction: NW to SE Journey: Journey as part of work
Age of Driver : 27 Breath test:Not applicable

Contributory Factors : 104 104

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00512-09 11/05/2009 Monday Time:1800 Vehicles 1 Casualties 1 Slight
Easting: 439,223 Northing: 403,728
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 30

Location: BARNSLEY RD WOMBWELL 1MTR WILSON ST
Description:MOBILITY SCOOTER HITS PEDAL CYCLIST ON PAVEMENT. RIDER OF SCOOTER SUFFERS BRUISING TO HAND

Vehicle Reference1 Pedal cycle Going ahead
First point of impact:Front
Vehicle direction: SW to NE Journey: Not known
Age of Driver : 18 Breath test:Not applicable

Contributory Factors : 405

Casualty Reference 1 Age:67 Male Pedestrian Severity:Slight
Ped Dir:9 Ped Movement : Movement U/K
Ped Location:Location U/K

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00558-09 27/05/2009 Wednesday Time:1424 Vehicles 2 Casualties 1 Slight
Easting: 440,175 Northing: 403,097
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Roundabout Speed Limit: 50

Location: MITCHELLS WAY WOMBWELL AT J/W VALLEY WAY
Description:V2 TR AROUND RDBT WHEN V1 ENTERS RDBT AND COLL WITH R/O/S OF V2.

Vehicle Reference1 Car Moving off
First point of impact:Front
Vehicle direction: SW to NE Journey: Journey as part of work
Age of Driver : 47 Breath test:Not applicable

Contributory Factors : 402 405 602

Vehicle Reference2 Car Turning right
First point of impact:Back
Vehicle direction: E to W Journey: Not known
Age of Driver : 42 Breath test:Not applicable

Contributory Factors : 402 405 602

Casualty Reference 1 Age:42 Female Driver/rider Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00823-09 31/07/2009 Friday Time:1410 Vehicles 1 Casualties 1 Serious
Easting: 439,316 Northing: 403,580
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 30

Location: BARNSLEY RD WOMBWELL
Description:CASUALTY GOT OFF BUS AND RAN ROUND INTO RD INTO PATH OF V1 AND COLL OCC

Vehicle Reference1 Other motor vehicle Overtaking stationary vehicle on its offside
First point of impact:Front
Vehicle direction: W to E Journey: Journey as part of work
Age of Driver : 39 Breath test:Not applicable

Contributory Factors : 801 802 808

Casualty Reference 1 Age:16 Male Pedestrian Severity:Serious
Ped Dir:Pedestrian Di Ped Movement : Driver's nearside masked
Ped Location:In carr elsewhere

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-01308-09 25/11/2009 Wednesday Time:1922 Vehicles 1 Casualties 1 Slight
Easting: 439,663 Northing: 403,313
Fine without high winds Road Surface:Dry Darkness: street lights present and lit
Road Type: Single carriageway Speed Limit: 30

Location: BARNSLEY RD WOMBWELL J/W YORK ST
Description:INTOXICATED PED WALKING ALONG BARNSLEY RD TW BARNSLEY . PED FELL INTO RD INTO PATH OF V1. V1 COLL WITH CAS & FAILED TO STOP AT SCENE.

Vehicle Reference1 Car Going ahead
First point of impact:Front
Vehicle direction: SE to NW Journey: Not known
Age of Driver : Breath test:Not applicable

Contributory Factors : 805

Casualty Reference 1 Age:33 Male Pedestrian Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : In carr not crossing
Ped Location:In carr not crossing

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00744-10 14/07/2010 Wednesday Time:1800 Vehicles 2 Casualties 1 Slight
Easting: 440,151 Northing: 403,122
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 50

Location: MITCHELLS WAY WOMBWELL
Description:V1 PARKED BEHIND STATIONARY TF WAITING TO GO AHEAD BUT V2 FOLLOWING FAILED TO REACT IN TIME AND COLL WITH REAR OF V1.

Vehicle Reference1 Car Waiting to go ahead but held up
First point of impact:Back
Vehicle direction: SE to NW Journey: Not known
Age of Driver : 19 Breath test:Not applicable

Contributory Factors : 405

Casualty Reference 1 Age:19 Male Driver/rider Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Vehicle Reference2 Car Going ahead
First point of impact:Front
Vehicle direction: SE to NW Journey: Not known
Age of Driver : 54 Breath test:Not applicable

Contributory Factors : 405

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-01385-10 24/12/2010 Friday Time:1209 Vehicles 2 Casualties 1 Slight
Easting: 440,184 Northing: 403,070
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Roundabout Speed Limit: 40

Location: MITCHELLS WAY WOMBWELL AT J/W STATION RD
Description:V1 ENTERED RDBT BUT WAS BLINDED BY SUN AND COLL WITH V2 ALREADY ON RDBT

Vehicle Reference1 Car Going ahead
First point of impact:Front
Vehicle direction: E to W Journey: Not known
Age of Driver : 62 Breath test:Not applicable

Contributory Factors : 706 406 405 504

Vehicle Reference2 Car Turning right
First point of impact:Nearside
Vehicle direction: W to S Journey: Not known
Age of Driver : 50 Breath test:Not applicable

Contributory Factors : 706 406 405 504

Casualty Reference 1 Age:50 Female Passenger Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00129-11 10/02/2011 Thursday Time:0702 Vehicles 2 Casualties 1 Slight
Easting: 439,586 Northing: 403,610
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 50

Location: MITCHELLS WAY WOMBWELL
Description:V2 TV ALONG MITCHELLS WAY HEADING TW PIT ST, WOMBWELL. AS V2 PASSED V1 (PED CYC) WING MIRROR CLIPPED V1 & CYCLIST WAS KNOCKED OFF BIKE ONTO GRASS VERGE

Vehicle Reference1 Pedal cycle Going ahead
First point of impact:Offside
Vehicle direction: E to W Journey: Not known
Age of Driver : 28 Breath test:Not requested

Contributory Factors : 407

Casualty Reference 1 Age:28 Male Driver/rider Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Vehicle Reference2 Other motor vehicle Going ahead
First point of impact:Nearside
Vehicle direction: E to W Journey: Journey as part of work
Age of Driver : 40 Breath test:Not requested

Contributory Factors : 407

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00264-11 18/03/2011 Friday Time:1800 Vehicles 2 Casualties 2 Slight
Easting: 439,452 Northing: 403,445
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Dual carriageway Speed Limit: 30

Location: BARNSLEY RD WOMBWELL J/W MYRTLE RD
Description:V1 PULLED OUT OF MYRTLE RD ONTO BARNSLEY RD (TURNING R TW W/WELL) & COLL WITH V2 TV ALONG BARNSLEY (OUT OF WOMBWELL).

Vehicle Reference1 Car Turning right
First point of impact:Offside
Vehicle direction: SW to SE Journey: Not known
Age of Driver : 66 Breath test:Negative

Contributory Factors : 701

Casualty Reference 1 Age:67 Male Passenger Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Vehicle Reference2 Other motor vehicle Going ahead
First point of impact:Offside
Vehicle direction: NW to SE Journey: Journey as part of work
Age of Driver : 53 Breath test:Negative

Contributory Factors : 701

Casualty Reference 2 Age:53 Male Driver/rider Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00462-11 17/05/2011 Tuesday Time:1230 Vehicles 2 Casualties 1 Slight
Easting: 440,174 Northing: 403,102
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Roundabout Speed Limit: 30

Location: DEARNE VALLEY PARKWAY WOMBWELL (BOTTOM OF STATION RD)
Description:V1 (M/CYCLE) TV FROM DIRC OF BRAMPTON ROUND R/ABOUT (INTENDING TO TAKE DARFIELD TURN OFF) WHEN V2 PULLED STRAIGHT ONTO R/ABOUT FROM BARNSLEY SIDE. THIS CAUSED V1 TO BRAKE SHARPLY, V1 FELL TO FLOOR & RIDER SUSTAINED INJURY.

Vehicle Reference1 Motorcycle over 500cc Changing lane to left
First point of impact:Did not impact
Vehicle direction: E to N Journey: Not known
Age of Driver : 48 Breath test:Driver not contacted

Contributory Factors : 405

Casualty Reference 1 Age:48 Male Driver/rider Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Not pedestrian
Ped Location:

Vehicle Reference2 Car Going ahead
First point of impact:Did not impact
Vehicle direction: W to E Journey: Not known
Age of Driver : 26 Breath test:Driver not contacted

Contributory Factors : 405

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00115-12 06/02/2012 Monday Time:1600 Vehicles 1 Casualties 1 Slight
Easting: 439,236 Northing: 403,700
Fine without high winds Road Surface:Frost/Ice Daylight:street lights present
Road Type: Single carriageway Speed Limit: 30

Location: BARNSLEY RD WOMBWELL AT J/W WILSON ST
Description:PED ATTEMPTS TO CROSS BARNSLEY RD, VIEW PARTIALLY OBSCURED BY STATIC TRANSIT VAN. AS PED BEGAN TO CROSS V1 TV ROUND BEND & COLL WITH PED.

Vehicle Reference1 Bus or coach Going ahead left hand bend
First point of impact:Front
Vehicle direction: SE to NW Journey: Journey as part of work
Age of Driver : 27 Breath test:Driver not contacted

Contributory Factors : 801

Casualty Reference 1 Age:16 Male Pedestrian Severity:Slight
Ped Dir:Pedestrian Di Ped Movement : Driver's offside masked
Ped Location:In carr elsewhere

Accidents between dates 01/01/2008 and 20/04/2013 (64) months
Selection: Notes:
Selected using Build Query : Local_auth = 'BARNSLEY'; Refinec

B-00835-12 15/09/2012 Saturday Time:0928 Vehicles 1 Casualties 1 Serious
Easting: 439,514 Northing: 403,410
Fine without high winds Road Surface:Dry Daylight:street lights present
Road Type: Single carriageway Speed Limit: 30

Location: BARNSLEY RD WOMBWELL BARNSLEY 20M J/W MAIN ST
Description:VH1 M/CAR TRV BARNSLEY RD TWDS BARNSLEY OVTKS PKD PSV AT BUS STOP. PEDN ALIGHTS PSV AND WALKS INTO RD INFRNT OF PSV INTO PATH VH1. VH1 COLL PEDN

Vehicle Reference:1 Car Overtaking stationary vehicle on its offside
First point of impact:Front
Vehicle direction: SE to NW Journey: Not known
Age of Driver : 46 Breath test:Not requested

Contributory Factors : 802

Casualty Reference 1 Age:12 Male Pedestrian Severity:Serious
Ped Dir:Pedestrian Di Ped Movement : Driver's nearside masked
Ped Location:In carr elsewhere

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only excluding 2-wheels	0	2	14	16
2-wheeled motor vehicles	0	0	1	1
Pedal cycles	0	1	2	3
Horses & other	0	0	0	0
Total	0	3	17	20

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	9	9
Passenger	0	0	6	6
Motorcycle ride	0	0	1	1
Cyclist	0	1	1	2
Pedestrian	0	2	3	5
Other	0	0	0	0
Total	0	3	20	23

Accidents between dates **01/01/2008 and 20/04/2013** (64) months

Selection:

Selected using Build Query : Local_auth = 'BARNSLEY';
Refined using Accidents within selected Polygons -Mick H's Polygons ("Rory Price Wombwell")

Notes:

Police Ref.	Date	Cas.	Sev.	Cycs	Peds	Ch	OAPs	Vis.	Manv.	Road Cond.	Time	Location
Selected Polygon:Rory Price Wombwell												
B-00087-08	19/01/2008	2	Slight	0	0	0	0	Light	No turn	Dry	1058	BARNSLEY ROAD WOMBWELL O/S 163
B-00238-08	18/02/2008	2	Slight	0	0	0	0	Light	No turn	Wet/Damp	1440	STATION RD WOMBWELL AT J/W MITCHELLS WAY
B-00466-08	15/04/2008	1	Slight	0	0	0	0	Light	No turn	Dry	0730	BARNSLEY RD WOMBWELL AT J/W BY PASS
B-00796-08	02/07/2008	1	Serious	1	0	0	0	Dark	No turn	Dry	1015	WOMBWELL BY PASS WOMBWELL
B-01217-08	03/10/2008	1	Slight	0	0	0	0	Light	No turn	Dry	1225	HIGH ST WOMBWELL J/W MAIN ST
B-01373-08	05/11/2008	1	Slight	0	0	0	0	Dark	Right	Wet/Damp	2015	BARNSLEY RD WOMBWELL J/W LITTLEFIELD LN
B-01441-08	20/11/2008	1	Slight	0	0	0	0	Light	Left	Dry	1413	BARNSLEY RD WOMBWELL J/W MAIN ST
B-00021-09	05/01/2009	1	Slight	0	0	0	0	Dark	No turn	Wet/Damp	0915	WOMBWELL BYPASS WOMBWELL AT J/W RDBT
B-00176-09	11/02/2009	1	Slight	0	0	1	0	Light	No turn	Frost/Ice	0829	BRADBURY BALK LN WOMBWELL
B-00512-09	11/05/2009	1	Slight	1	1	0	1	Light	No turn	Dry	1800	BARNSLEY RD WOMBWELL 1MTR WILSON ST
B-00558-09	27/05/2009	1	Slight	0	0	0	0	Light	Right	Dry	1424	MITCHELLS WAY WOMBWELL AT J/W VALLEY WAY
B-00823-09	31/07/2009	1	Serious	0	1	0	0	Light	No turn	Dry	1410	BARNSLEY RD WOMBWELL
B-01308-09	25/11/2009	1	Slight	0	1	0	0	Dark	No turn	Dry	1922	BARNSLEY RD WOMBWELL J/W YORK ST
B-00744-10	14/07/2010	1	Slight	0	0	0	0	Light	No turn	Dry	1800	MITCHELLS WAY WOMBWELL
B-01385-10	24/12/2010	1	Slight	0	0	0	0	Light	Right	Dry	1209	MITCHELLS WAY WOMBWELL AT J/W STATION RD
B-00129-11	10/02/2011	1	Slight	1	0	0	0	Light	No turn	Dry	0702	MITCHELLS WAY WOMBWELL
B-00264-11	18/03/2011	2	Slight	0	0	0	1	Light	Right	Dry	1800	BARNSLEY RD WOMBWELL J/W MYRTLE RD
B-00462-11	17/05/2011	1	Slight	0	0	0	0	Light	No turn	Dry	1230	DEARNE VALLEY PARKWAY WOMBWELL (BOTTOM OF STATION RI
B-00115-12	06/02/2012	1	Slight	0	1	0	0	Light	No turn	Frost/Ice	1600	BARNSLEY RD WOMBWELL AT J/W WILSON ST
B-00835-12	15/09/2012	1	Serious	0	1	1	0	Light	No turn	Dry	0928	BARNSLEY RD WOMBWELL BARNSLEY 20M J/W MAIN ST
Column Totals		23		3	5	2	2					
No. of Accidents				3	5	2	2					

Total number of accidents listed: 20

Accidents between dates **01/01/2008 and 20/04/2013** (64) months

Selection:

Selected using Build Query : Local_auth = 'BARNSLEY';
Refined using Accidents within selected Polygons -Mick H's Polygons ("Rory Price Wombwell")

Notes:

Police Ref.	Acc Class	Date	Time	Grid References	Casualties Ftl	Ser	Slt	Causation Factors/ Prob	Ped L M D	Light	Weather	Road Surface	Vehicle Types
Selected Polygon:Rory Price Wombwell													
B-00087-08	Slight	19/01/2008	1058	439268 403624	0	0	2	203V2A 406V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00238-08	Slight	18/02/2008	1440	440151 403082	0	0	2	308V2B 406V2B 602V2B	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
B-00466-08	Slight	15/04/2008	0730	439220 403872	0	0	1	406V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00796-08	Serious	02/07/2008	1015	440162 403068	0	1	0	602V2B	0 0 0	Dark	Fine without high winds	Dry	1 9
B-01217-08	Slight	03/10/2008	1225	439494 403420	0	0	1		0 0 0	Light	Fine without high winds	Dry	11
B-01373-08	Slight	05/11/2008	2015	439785 403235	0	0	1		0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
B-01441-08	Slight	20/11/2008	1413	439495 403418	0	0	1	405V2A	0 0 0	Light	Fine with high winds	Dry	9 9
B-00021-09	Slight	05/01/2009	0915	440164 403106	0	0	1	103V1B 405V1A 706V1A	0 0 0	Dark	Other	Wet/Damp	9 9
B-00176-09	Slight	11/02/2009	0829	439406 404024	0	0	1	104V1A 104V2A	0 0 0	Light	Fine without high winds	Frost/Ice	9 19
B-00512-09	Slight	11/05/2009	1800	439223 403728	0	0	1	405V1A	10 9 9	Light	Fine without high winds	Dry	1
B-00558-09	Slight	27/05/2009	1424	440175 403097	0	0	1	402V1A 405V1A 602V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00823-09	Serious	31/07/2009	1410	439316 403580	0	1	0	801C1A 802C1A 808C1A	5 2 5	Light	Fine without high winds	Dry	14
B-01308-09	Slight	25/11/2009	1922	439663 403313	0	0	1	805C1A	9 5 0	Dark	Fine without high winds	Dry	9
B-00744-10	Slight	14/07/2010	1800	440151 403122	0	0	1	405V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-01385-10	Slight	24/12/2010	1209	440184 403070	0	0	1	706V1A 406V1A 405V1B 504V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00129-11	Slight	10/02/2011	0702	439586 403610	0	0	1	407V1A	0 0 0	Light	Fine without high winds	Dry	14 1
B-00264-11	Slight	18/03/2011	1800	439452 403445	0	0	2	701V1A	0 0 0	Light	Fine without high winds	Dry	14 9
B-00462-11	Slight	17/05/2011	1230	440174 403102	0	0	1	405V2B	0 0 0	Light	Fine without high winds	Dry	9 5
B-00115-12	Slight	06/02/2012	1600	439236 403700	0	0	1	801C1A	5 4 5	Light	Fine without high winds	Frost/Ice	11
B-00835-12	Serious	15/09/2012	0928	439514 403410	0	1	0	802C1A	5 2 5	Light	Fine without high winds	Dry	9
Column Totals					0	3	1						

Total number of accidents listed: 20

Appendix B Persimmon Site Masterplan (Drawing No.WOM-2013:01)



KEY:

- DENOTES 1800 HIGH CLOSE BOARDED FENCE
- DENOTES 900 HIGH 2 POST AND RAIL TIMBER FENCE
- DENOTES 1800 HIGH SCREEN WALL / FENCE
- DENOTES 900 HIGH RAILINGS
- DENOTES 450 HIGH TIMBER KNEE RAIL
- BRICK RETAINING WALL MAX 1.5M HIGH
- TITLE BOUNDARY
- PROPOSED TREE PLANTING
- TURF PLANTING AREA

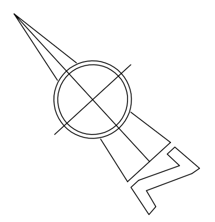
FOR FULL LANDSCAPE DETAILS SEE LANDSCAPE ARCHITECTS PLANS

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

- DENOTES DUAL ELEVATION PLOT
- * DENOTES AFFORDABLE HOUSING (15%)

SCHEDULE OF ACCOMMODATION

Housetype		Total
Mou	Moulton 2 Storey 2 Bed Semi Detached/Terraced House	33 No.
Bra	Brampton 2 Storey 2 Bed Semi/Terrace	34 No.
Bra (dual)	Brampton (dual) 2 Storey 2 Bed Semi/Terrace	2 No.
Ruf	Rufford 2 Storey 3 Bed Detached House	22 No.
Ruf(s)	Rufford Semi 2 Storey 3 Bed Semi Detached	4 No.
Han	Hanbury 2 Storey 3 Bed Semi Detached/Terraced House	54 No.
Han (dual)	Hanbury (dual) 2 Storey 3 Bed Semi Detached/Terraced House	6 No.
Sou	Souter 2 ½ Storey 3 Bed Semi Detached/Terraced House	42 No.
Cla	Clanden 2 Storey 3 Bed Detached House	2 No.
Hat	Hatfield 2 Storey 3 Bed Detached House	15 No.
Ros	Roseberry 2 Storey 4 Bed Detached House	11 No.
Kea	Keating 2 Storey 4 Bed Detached House	6 No.
Win	Winster 2 Storey 4 Bed Detached House	4 No.
Cle	Clevedon 2 Storey 3 Bed Detached House	1 No.
		Total 236



PERSIMMON
Together, we make a home

Proposed Residential Development
Off Barnsley Road, Wombwell

Proposed Planning & Landscape Layout

Scale	1:500@A0	Drawing Number WOM-2013:01
Drawn By	NSR	
Checked By	CAH	July 13

Appendix C Proposed Site Access/Barnsley Road Junction (Optima Drawing No.12020-GA-01)

DO NOT SCALE

KEY

- EXTENT OF ADOPTED HIGHWAY
- PROPOSED HIGHWAY IMPROVEMENTS
- 2.4m X 40m VISIBILITY SPLAYS
- BS BUS STOP LOCATIONS (EASTBOUND STOP INCLUDES A SHELTER)

NOTES

1. PRELIMINARY DESIGN SUBJECT TO FULL DETAILED DESIGN INCLUDING CDM COMPLIANCE, STATUTORY UNDERTAKERS REQUIREMENTS, DRAINAGE PROVISION, THIRD PARTY LAND CONSTRAINTS AND LOCAL AUTHORITY APPROVAL
* ADOPTED HIGHWAY SHOWN INDICATIVELY AS TRANSPOSED FROM DATA PROVIDED BY BARNSLEY COUNCIL

N

54.0m

BARNSLEY ROAD

164

169

157

145

26

22

12

2.0m

5.5m

2.0m

BS

143

131

121

121a

54.3m

BARNSLEY ROAD

PRIVATE ACCESS ROAD

JOHN STREET ONE-WAY SOUTHBOUND

Allotment Gardens

REV	DATE	BY	DESCRIPTION	CHK	APP
A	25/07/13	RP	INITIAL ISSUE	PMO	PMO

STATUS: PRELIMINARY

PROJECT: BARNSLEY ROAD, WOMBWELL

CLIENT: PERSIMMON HOMES

DRAWING TITLE: PROPOSED SITE ACCESS JUNCTION

CHECKED	APPROVED	DRG No.	
PMO	PMO	12020-GA-01	
DRAWN BY:	SCALE @ A3	DATE	REV.
RP	1:500	25/07/2013	A

OPTIMA
Intelligent Highways Solutions
Atlas House, 31 King Street, Leeds, LS1 2HL
T 0113 245 1679 F 0113 245 9042

Appendix D TRICS Data

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

03	SOUTH WEST		
	CW	CORNWALL	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	WM	WEST MIDLANDS	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: 73 to 108 (units:)
Range Selected by User: 50 to 400 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/06 to 22/10/12

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	2 days
Tuesday	1 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	5 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)	4
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	4
No Sub Category	1

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	5 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:

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

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

Population within 5 miles:

25,001 to 50,000	1 days
75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 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:

0.5 or Less	1 days
1.1 to 1.5	4 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:

No	5 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 CW-03-A-02 SEMI D./DETATCHED CORNWALL
BOSVEAN GARDENS

TRURO
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 73
Survey date: TUESDAY 18/09/07 Survey Type: MANUAL

2 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

3 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

4 WL-03-A-01 SEMI D./TERRACED W. BASSETT WILTSHIRE
MAPLE DRIVE

WOOTTON BASSETT
Edge of Town
Residential Zone
Total Number of dwellings: 99
Survey date: MONDAY 02/10/06 Survey Type: MANUAL

5 WM-03-A-01 TERRACED WEST MIDLANDS
FOLESHILL ROAD
FOLESHILL
COVENTRY
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 79
Survey date: FRIDAY 03/02/06 Survey Type: MANUAL

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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AD-03-A-01	Low PT
CB-03-A-04	Low PT
CF-03-A-02	Low PT
CH-03-A-02	Low PT
CH-03-A-06	Low PT
DC-03-A-01	Low PT
EX-03-A-01	Low PT
FI-03-A-03	Low PT
HI-03-A-11	Low PT
HI-03-A-14	Low PT
LN-03-A-01	Low PT
LN-03-A-02	Low PT
NT-03-A-03	Low PT
NY-03-A-01	Low PT
NY-03-A-05	Low PT
NY-03-A-06	Low PT
SF-03-A-01	Low PT

MANUALLY DESELECTED SITES (Cont.)

Site Ref	Reason for Deselection
SF-03-A-02	Low PT
SF-03-A-03	Low PT
SR-03-A-01	Housing
WM-03-A-03	Low PT
WO-03-A-03	Housing

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
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	5	91	0.066	5	91	0.319	5	91	0.385
08:00 - 09:00	5	91	0.151	5	91	0.379	5	91	0.530
09:00 - 10:00	5	91	0.149	5	91	0.208	5	91	0.357
10:00 - 11:00	5	91	0.109	5	91	0.147	5	91	0.256
11:00 - 12:00	5	91	0.138	5	91	0.142	5	91	0.280
12:00 - 13:00	5	91	0.166	5	91	0.147	5	91	0.313
13:00 - 14:00	5	91	0.153	5	91	0.138	5	91	0.291
14:00 - 15:00	5	91	0.160	5	91	0.171	5	91	0.331
15:00 - 16:00	5	91	0.225	5	91	0.197	5	91	0.422
16:00 - 17:00	5	91	0.289	5	91	0.182	5	91	0.471
17:00 - 18:00	5	91	0.368	5	91	0.201	5	91	0.569
18:00 - 19:00	5	91	0.243	5	91	0.175	5	91	0.418
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.217			2.406			4.623

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:	73 - 108 (units:)
Survey date date range:	01/01/06 - 22/10/12
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	22

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 E Census Distribution (Spreadsheet SD1)

Spreadsheet SD1

area of workplace : 2003 CAS ward	Local Authority	T203:27 (Car - driver : Not full-time student: in employment full-time)	Percentage	Barnsley Road (SE)	A633 Barnsley Road (NW)	A633 Mitchells Way	Bradberry Balk Lane
00CCFA : Ardsley	Barnsley	44	3.93%		2.60%	1.30%	
00CCFB : Athersley	Barnsley	15	1.34%		1.34%		
00CCFC : Brierley	Barnsley	9	0.80%		0.80%		
00CCFD : Central	Barnsley	75	6.70%		6.70%		
00CCFE : Cudworth	Barnsley	5	0.45%		0.29%	0.15%	
00CCFF : Darfield	Barnsley	15	1.34%	0.67%			0.67%
00CCFG : Darton	Barnsley	22	1.97%		1.97%		
00CCFH : Dearne South	Barnsley	23	2.06%	2.06%			
00CCFJ : Dearne Thurnscoe	Barnsley	10	0.89%	0.89%			
00CCFK : Dodworth	Barnsley	37	3.31%		3.31%		
00CCFL : Hoyland East	Barnsley	16	1.43%	1.43%			
00CCFM : Hoyland West	Barnsley	28	2.50%	2.50%			
00CCFN : Monk Bretton	Barnsley	18	1.61%		1.61%		
00CCFP : North West	Barnsley	11	0.98%		0.98%		
00CCFQ : Park	Barnsley	14	1.25%	0.63%	0.63%		
00CCFR : Penistone East	Barnsley	18	1.61%	0.80%		0.80%	
00CCFS : Penistone West	Barnsley	3	0.27%	0.13%		0.13%	
00CCFT : Royston	Barnsley	20	1.79%		1.79%		
00CCFU : South West	Barnsley	43	3.84%	3.84%			
00CCFW : Wombwell North	Barnsley	178	15.91%	2.00%	6.00%	6.00%	1.91%
00CCFX : Wombwell South	Barnsley	43	3.84%	0.84%		3.00%	
00CEFA : Adwick	Doncaster	6	0.54%			0.54%	
00CEFD : Balby	Doncaster	3	0.27%			0.27%	
00CEFE : Bentley Central	Doncaster	3	0.27%			0.27%	
00CEFF : Bentley North Road	Doncaster	3	0.27%			0.27%	
00CEFH : Central	Doncaster	3	0.27%			0.27%	
00CEFN : Mexborough	Doncaster	3	0.27%			0.27%	
00CEFQ : Rossington	Doncaster	3	0.27%			0.27%	
00CEFT : Stainforth	Doncaster	4	0.36%			0.36%	
00CEFW : Town Field	Doncaster	8	0.71%			0.71%	
00CEFX : Wheatley	Doncaster	10	0.89%			0.89%	
00CFFC : Boston	Rotherham	7	0.63%			0.63%	
00CFFD : Bramley, Ravenfield and Wicke	Rotherham	3	0.27%			0.27%	
00CFFE : Brampton, Melton and Wentwor	Rotherham	22	1.97%			1.97%	
00CFFH : Central	Rotherham	19	1.70%			1.70%	
00CFFJ : Dalton, Hooton Roberts and Thr	Rotherham	3	0.27%			0.27%	
00CFFK : Greasbrough	Rotherham	4	0.36%			0.36%	
00CFFL : Herringthorpe	Rotherham	3	0.27%			0.27%	
00CFFM : Kimberworth	Rotherham	3	0.27%			0.27%	
00CFFN : Kiveton Park	Rotherham	3	0.27%			0.27%	
00CFFP : Maltby	Rotherham	6	0.54%			0.54%	
00CFFQ : Park	Rotherham	3	0.27%			0.27%	
00CFFR : Rawmarsh East	Rotherham	4	0.36%			0.36%	
00CFFS : Rawmarsh West	Rotherham	13	1.16%			1.16%	
00CFFU : Swinton	Rotherham	7	0.63%			0.63%	
00CFFY : Wath	Rotherham	40	3.57%			3.57%	
00CGFB : Birley	Sheffield	3	0.27%	0.27%			
00CGFC : Brightside	Sheffield	3	0.27%	0.27%			
00CGFE : Burngreave	Sheffield	10	0.89%	0.89%			
00CGFF : Castle	Sheffield	3	0.27%	0.27%			
00CGFG : Chapel Green	Sheffield	11	0.98%	0.98%			
00CGFH : Darnall	Sheffield	17	1.52%	1.52%			
00CGFK : Ecclesall	Sheffield	3	0.27%	0.27%			
00CGFT : Mosborough	Sheffield	3	0.27%	0.27%			
00CGFU : Nether Edge	Sheffield	3	0.27%	0.27%			
00CGFW : Nether Shire	Sheffield	3	0.27%	0.27%			
00CGFX : Netherthorpe	Sheffield	18	1.61%	1.61%			
00CGFZ : Owlerton	Sheffield	10	0.89%	0.89%			
00CGGB : Sharrow	Sheffield	5	0.45%	0.45%			
00CGGC : Southey Green	Sheffield	3	0.27%	0.27%			
00CGGD : South Wortley	Sheffield	6	0.54%	0.54%			
00CGGE : Stocksbridge	Sheffield	4	0.36%	0.36%			
00CXGD : University	Bradford	3	0.27%		0.27%		
00CXGG : Wyke	Bradford	3	0.27%		0.27%		
00CYFA : Brighouse	Calderdale	3	0.27%		0.27%		
00CYFC : Elland	Calderdale	3	0.27%		0.27%		
00CZFE : Birstall and Birkenshaw	Kirklees	3	0.27%		0.27%		
00CZFK : Deighton	Kirklees	3	0.27%		0.27%		
00CZFL : Denby Dale	Kirklees	3	0.27%		0.27%		
00CZFM : Dewsbury East	Kirklees	3	0.27%		0.27%		
00DAFD : Beeston	Leeds	3	0.27%		0.27%		
00DAFH : City and Holbeck	Leeds	17	1.52%		1.52%		
00DAFK : Garforth and Swillington	Leeds	3	0.27%		0.27%		
00DAFQ : Hunslet	Leeds	3	0.27%		0.27%		
00DAFU : Morley North	Leeds	4	0.36%		0.36%		
00DAFZ : Pudsey North	Leeds	3	0.27%		0.27%		

area of workplace : 2003 CAS ward	Local Authority	T203:27 (Car - driver : Not full-time student: in employment full-time)	Percentage	Barnsley Road (SE)	A633 Barnsley Road (NW)	A633 Mitchells Way	Bradberry Balk Lane
00DAGB : Richmond Hill	Leeds	3	0.27%		0.27%		
00DAGC : Rothwell	Leeds	3	0.27%		0.27%		
00DAGE : Seacroft	Leeds	3	0.27%		0.27%		
00DAGG : Weetwood	Leeds	3	0.27%		0.27%		
00DAGK : Wortley	Leeds	3	0.27%		0.27%		
00DBFC : Castleford Whitwood	Wakefield	9	0.80%		0.80%		
00DBFE : Featherstone	Wakefield	3	0.27%		0.27%		
00DBFG : Horbury	Wakefield	4	0.36%		0.36%		
00DBFH : Knottingley	Wakefield	3	0.27%		0.27%		
00DBFJ : Normanton and Sharlston	Wakefield	3	0.27%		0.27%		
00DBFK : Ossett	Wakefield	3	0.27%		0.27%		
00DBFL : Pontefract North	Wakefield	9	0.80%		0.80%		
00DBFM : Pontefract South	Wakefield	3	0.27%		0.27%		
00DBFP : South Kirkby	Wakefield	3	0.27%		0.27%		
00DBFQ : Stanley and Altofts	Wakefield	4	0.36%		0.36%		
00DBFR : Stanley and Wrenthorpe	Wakefield	3	0.27%		0.27%		
00DBFS : Wakefield Central	Wakefield	6	0.54%		0.54%		
00DBFT : Wakefield East	Wakefield	5	0.45%		0.45%		
00DBFW : Wakefield Rural	Wakefield	3	0.27%		0.27%		
00DBFX : Wakefield South	Wakefield	5	0.45%		0.45%		
00FBND : Beverley Rural	East Riding of Yorkshire	3	0.27%			0.27%	
00FBNZ : Snaith, Airmyn, Rawcliffe and M	East Riding of Yorkshire	3	0.27%			0.27%	
00FBPC : South West Holderness	East Riding of Yorkshire	3	0.27%			0.27%	
00FDMY : Brigg and Wolds	North Lincolnshire	3	0.27%			0.27%	
00FDND : Crosby and Park	North Lincolnshire	3	0.27%			0.27%	
00FDNF : Frodingham	North Lincolnshire	3	0.27%			0.27%	
17UDFX : Barrow Hill and New Whittington	Chesterfield	3	0.27%	0.27%			
17UDGN : St Helen's	Chesterfield	3	0.27%	0.27%			
17UDGP : St Leonard's	Chesterfield	3	0.27%	0.27%			
17UDGR : West	Chesterfield	3	0.27%	0.27%			
36UHHA : Riccall with Escrick	Selby	4	0.36%			0.36%	
36UHHJ : Whitley	Selby	3	0.27%			0.27%	
37UCHD : Worksop North West	Bassetlaw	3	0.27%	0.13%		0.13%	
37UCHF : Worksop South East	Bassetlaw	3	0.27%	0.13%		0.13%	
		1,119	100.00%	27%	40%	31%	3%

Appendix F Junction Modelling Outputs

ARCADY 8

Version: 8.0.0.296 [27 Feb 2012]
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Barnsley Road - Mitchells Way Roundabout.arc8
Path: O:\Barnsley Road, Wombwell\ANALYSIS\ARCADY\Barnsley Road-Mitchells Way Roundabout
Report generation date: 03/07/2013 11:09:02

« (Default Analysis Set) - 2013 Count, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2013 Count			
Arm 1	0.77	4.38	0.44	A
Arm 2	0.36	2.93	0.26	A
Arm 3	0.76	3.57	0.43	A
Arm 4	0.19	4.01	0.16	A

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

"D1 - 2013 Count, AM " model duration: 08:00 - 09:30

Run using ARCADY 8.0.0.296 at 03/07/2013 11:09:02

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	03/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price
Description	

Analysis Options

Vehicle Length	Do Queue	Calculate Residual	Residual Capacity Criteria	RFC	Average Delay Threshold	Queue Threshold

(m)	Variations	Capacity	Type	Threshold	(s)	(PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2013 Count, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2013 Count, AM	2013 Count	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4			3.72	A

Junction Network Options

Driving Side	Lighting	Road Surface
Left	Normal/unknown	(Mini-roundabouts only)

Arms

Arms

Arm	Name	Description
1	Mitchells Way	
2	Barnsley Road (S)	
3	Barnsley Road (W)	
4	Bradberry Balk Lane	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.68	7.69	14.20	20.90	43.60	45.00	
2	5.99	8.16	4.50	36.90	43.60	34.00	
3	5.22	7.57	8.70	34.80	43.60	43.00	
4	3.84	7.20	8.50	23.80	43.60	42.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.611	1665.732
2		(calculated)	(calculated)	0.712	2091.173
3		(calculated)	(calculated)	0.667	1915.844
4		(calculated)	(calculated)	0.594	1558.443

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	576.00	100.000
2	ONE HOUR	✓	398.00	100.000
3	ONE HOUR	✓	699.00	100.000
4	ONE HOUR	✓	154.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	85.000	466.000	25.000
	2	99.000	0.000	234.000	65.000
	3	474.000	177.000	0.000	48.000
	4	19.000	82.000	53.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

	To

		1	2	3	4
From	1	0.00	0.15	0.81	0.04
	2	0.25	0.00	0.59	0.16
	3	0.68	0.25	0.00	0.07
	4	0.12	0.53	0.34	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	4.38	0.77	A
2	0.26	2.93	0.36	A
3	0.43	3.57	0.76	A
4	0.16	4.01	0.19	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	433.64	432.06	234.11	0.00	1522.77	0.285	0.40	3.296	A
2	299.64	298.84	408.06	0.00	1800.75	0.166	0.20	2.395	A
3	526.24	524.63	141.89	0.00	1821.14	0.289	0.40	2.773	A
4	115.94	115.52	562.93	0.00	1223.86	0.095	0.10	3.248	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	517.81	517.29	280.24	0.00	1494.60	0.346	0.53	3.681	A

2	357.79	357.56	488.56	0.00	1743.45	0.205	0.26	2.597	A
3	628.39	627.88	169.79	0.00	1802.52	0.349	0.53	3.063	A
4	138.44	138.32	673.70	0.00	1158.03	0.120	0.14	3.529	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	634.19	633.24	343.11	0.00	1456.22	0.436	0.77	4.371	A
2	438.21	437.81	598.07	0.00	1665.51	0.263	0.36	2.932	A
3	769.61	768.71	207.89	0.00	1777.08	0.433	0.76	3.566	A
4	169.56	169.35	824.82	0.00	1068.21	0.159	0.19	4.004	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	634.19	634.17	343.51	0.00	1455.97	0.436	0.77	4.380	A
2	438.21	438.20	598.94	0.00	1664.89	0.263	0.36	2.934	A
3	769.61	769.60	208.09	0.00	1776.95	0.433	0.76	3.572	A
4	169.56	169.55	825.75	0.00	1067.66	0.159	0.19	4.008	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	517.81	518.75	280.89	0.00	1494.21	0.347	0.53	3.696	A
2	357.79	358.18	489.92	0.00	1742.49	0.205	0.26	2.602	A
3	628.39	629.28	170.11	0.00	1802.30	0.349	0.54	3.073	A
4	138.44	138.65	675.16	0.00	1157.16	0.120	0.14	3.534	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	433.64	434.18	235.13	0.00	1522.15	0.285	0.40	3.312	A
2	299.64	299.87	410.05	0.00	1799.33	0.167	0.20	2.400	A
3	526.24	526.76	142.41	0.00	1820.79	0.289	0.41	2.782	A
4	115.94	116.06	565.18	0.00	1222.53	0.095	0.11	3.255	A

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 25/07/2013 14:58:52

« (Default Analysis Set) - 2018 Design, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2018 Design			
Stream B-AC	0.29	10.88	0.23	B
Stream C-AB	0.02	6.53	0.02	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2018 Design, AM " model duration: 08:00 - 09:30
"D2 - 2018 Design, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.1.305 at 25/07/2013 14:58:52

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	25/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2018 Design, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2018 Design, AM	2018 Design	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
(untitled)	T-Junction	Two-way	A,B,C	10.44	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm Type
A	Barnsley Road (W)		Major
B	Site access		Minor
C	Barnsley Road (E)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	9.20		0.00		2.20	85.00	✓	3.00

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)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	2.75										31	25

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None

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	487.406	0.076	0.193	0.122	0.276
1	B-C	623.664	0.082	0.208	-	-
1	C-B	623.188	0.208	0.208	-	-

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	268.00	100.000
B	ONE HOUR	✓	89.00	100.000
C	ONE HOUR	✓	287.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	26.000	242.000
	B	65.000	0.000	24.000

	C	277.000	10.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.10	0.90
	B	0.73	0.00	0.27
	C	0.97	0.03	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.23	10.88	0.29	B
C-AB	0.02	6.53	0.02	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	67.00	66.33	0.00	457.26	0.147	0.17	9.193	A
C-AB	7.53	7.48	0.00	581.25	0.013	0.01	6.274	A
C-A	208.54	208.54	0.00	-	-	-	-	-
A-B	19.57	19.57	0.00	-	-	-	-	-
A-C	182.19	182.19	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	80.01	79.82	0.00	445.35	0.180	0.22	9.843	A
C-AB	8.99	8.98	0.00	573.11	0.016	0.02	6.380	A
C-A	249.02	249.02	0.00	-	-	-	-	-
A-B	23.37	23.37	0.00	-	-	-	-	-
A-C	217.55	217.55	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	97.99	97.69	0.00	428.84	0.229	0.29	10.861	B
C-AB	11.01	10.99	0.00	561.86	0.020	0.02	6.534	A
C-A	304.98	304.98	0.00	-	-	-	-	-
A-B	28.63	28.63	0.00	-	-	-	-	-
A-C	266.45	266.45	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	97.99	97.98	0.00	428.84	0.229	0.29	10.880	B
C-AB	11.01	11.01	0.00	561.86	0.020	0.02	6.534	A
C-A	304.98	304.98	0.00	-	-	-	-	-
A-B	28.63	28.63	0.00	-	-	-	-	-
A-C	266.45	266.45	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	80.01	80.30	0.00	445.35	0.180	0.22	9.871	A
C-AB	8.99	9.01	0.00	573.11	0.016	0.02	6.383	A
C-A	249.02	249.02	0.00	-	-	-	-	-
A-B	23.37	23.37	0.00	-	-	-	-	-
A-C	217.55	217.55	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	67.00	67.20	0.00	457.24	0.147	0.17	9.234	A
C-AB	7.53	7.54	0.00	581.25	0.013	0.01	6.274	A
C-A	208.54	208.54	0.00	-	-	-	-	-
A-B	19.57	19.57	0.00	-	-	-	-	-
A-C	182.19	182.19	0.00	-	-	-	-	-

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 25/07/2013 14:59:35

« (Default Analysis Set) - 2018 Design, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2018 Design			
Stream B-AC	0.15	10.16	0.13	B
Stream C-AB	0.05	7.09	0.05	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2018 Design, AM" model duration: 08:00 - 09:30
"D2 - 2018 Design, PM " model duration: 17:00 - 18:30

Run using Junctions 8.0.1.305 at 25/07/2013 14:59:34

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	25/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2018 Design, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2018 Design, PM	2018 Design	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
(untitled)	T-Junction	Two-way	A,B,C	9.16	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm Type
A	Barnsley Road (W)		Major
B	Site access		Minor
C	Barnsley Road (E)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	9.20		0.00		2.20	85.00	✓	3.00

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)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	2.75										31	25

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None

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	487.406	0.076	0.193	0.122	0.276
1	B-C	623.664	0.082	0.208	-	-
1	C-B	623.188	0.208	0.208	-	-

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	394.00	100.000
B	ONE HOUR	✓	48.00	100.000
C	ONE HOUR	✓	261.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	63.000	331.000
	B	35.000	0.000	13.000

	C	238.000	23.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.16	0.84
	B	0.73	0.00	0.27
	C	0.91	0.09	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.13	10.16	0.15	B
C-AB	0.05	7.09	0.05	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	36.14	35.79	0.00	442.63	0.082	0.09	8.842	A
C-AB	17.32	17.19	0.00	561.54	0.031	0.03	6.611	A
C-A	179.18	179.18	0.00	-	-	-	-	-
A-B	47.43	47.43	0.00	-	-	-	-	-
A-C	249.19	249.19	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	43.15	43.06	0.00	427.82	0.101	0.11	9.354	A
C-AB	20.68	20.65	0.00	549.58	0.038	0.04	6.805	A
C-A	213.96	213.96	0.00	-	-	-	-	-
A-B	56.64	56.64	0.00	-	-	-	-	-
A-C	297.56	297.56	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	52.85	52.70	0.00	407.29	0.130	0.15	10.148	B
C-AB	25.32	25.28	0.00	533.05	0.048	0.05	7.089	A
C-A	262.04	262.04	0.00	-	-	-	-	-
A-B	69.36	69.36	0.00	-	-	-	-	-
A-C	364.44	364.44	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	52.85	52.85	0.00	407.28	0.130	0.15	10.156	B
C-AB	25.32	25.32	0.00	533.05	0.048	0.05	7.089	A
C-A	262.04	262.04	0.00	-	-	-	-	-
A-B	69.36	69.36	0.00	-	-	-	-	-
A-C	364.44	364.44	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	43.15	43.29	0.00	427.80	0.101	0.11	9.365	A
C-AB	20.68	20.72	0.00	549.58	0.038	0.04	6.806	A
C-A	213.96	213.96	0.00	-	-	-	-	-
A-B	56.64	56.64	0.00	-	-	-	-	-
A-C	297.56	297.56	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	36.14	36.23	0.00	442.59	0.082	0.09	8.860	A
C-AB	17.32	17.35	0.00	561.54	0.031	0.03	6.617	A
C-A	179.18	179.18	0.00	-	-	-	-	-
A-B	47.43	47.43	0.00	-	-	-	-	-
A-C	249.19	249.19	0.00	-	-	-	-	-

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 24/07/2013 13:43:00

« (Default Analysis Set) - 2018 Design, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2018 Design			
Arm 1	0.90	5.24	0.48	A
Arm 2	0.33	2.85	0.25	A
Arm 3	1.15	4.25	0.54	A
Arm 4	0.29	4.61	0.22	A

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

"D1 - 2013 Count, AM" model duration: 08:00 - 09:30
"D2 - 2013 Count, PM" model duration: 17:00 - 18:30
"D3 - 2018 Base, AM" model duration: 08:00 - 09:30
"D4 - 2018 Base, PM" model duration: 17:00 - 18:30
"D5 - 2018 Design, AM" model duration: 08:00 - 09:30
"D6 - 2018 Design, PM " model duration: 17:00 - 18:30

Run using Junctions 8.0.1.305 at 24/07/2013 13:42:59

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	03/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price

Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2018 Design, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2018 Design, PM	2018 Design	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4			4.30	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Mitchells Way	
2	Barnsley Road (S)	
3	Barnsley Road (W)	
4	Bradberry Balk Lane	

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	3.68	7.69	14.20	20.90	43.60	45.00	
2	5.99	8.16	4.50	36.90	43.60	34.00	
3	5.22	7.57	8.70	34.80	43.60	43.00	
4	3.84	7.20	8.50	23.80	43.60	42.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.611	1665.732
2		(calculated)	(calculated)	0.712	2091.173
3		(calculated)	(calculated)	0.667	1915.844
4		(calculated)	(calculated)	0.594	1558.443

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	565.00	100.000
2	ONE HOUR	✓	376.00	100.000
3	ONE HOUR	✓	890.00	100.000
4	ONE HOUR	✓	206.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	**2**	**3**	**4**
From	**1**	0.000	100.000	455.000	10.000
	2	50.000	0.000	266.000	60.000
	3	446.000	345.000	0.000	99.000

	4	20.000	122.000	64.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.18	0.81	0.02
	2	0.13	0.00	0.71	0.16
	3	0.50	0.39	0.00	0.11
	4	0.10	0.59	0.31	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.48	5.24	0.90	A
2	0.25	2.85	0.33	A
3	0.54	4.25	1.15	A
4	0.22	4.61	0.29	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	425.36	423.66	398.35	0.00	1422.48	0.299	0.42	3.598	A
2	283.07	282.33	396.68	0.00	1808.85	0.156	0.18	2.357	A
3	670.04	667.79	90.10	0.00	1855.71	0.361	0.56	3.026	A
4	155.09	154.49	631.05	0.00	1183.38	0.131	0.15	3.497	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	507.92	507.29	476.87	0.00	1374.54	0.370	0.58	4.148	A
2	338.02	337.80	474.98	0.00	1753.12	0.193	0.24	2.543	A
3	800.09	799.29	107.80	0.00	1843.89	0.434	0.76	3.445	A
4	185.19	184.99	755.30	0.00	1109.53	0.167	0.20	3.892	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	622.08	620.82	583.73	0.00	1309.28	0.475	0.90	5.219	A
2	413.98	413.63	581.30	0.00	1677.45	0.247	0.33	2.848	A
3	979.91	978.38	132.00	0.00	1827.74	0.536	1.14	4.230	A
4	226.81	226.46	924.55	0.00	1008.94	0.225	0.29	4.598	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	622.08	622.06	584.63	0.00	1308.73	0.475	0.90	5.242	A
2	413.98	413.98	582.42	0.00	1676.65	0.247	0.33	2.850	A
3	979.91	979.89	132.12	0.00	1827.66	0.536	1.15	4.246	A
4	226.81	226.81	925.94	0.00	1008.11	0.225	0.29	4.607	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	507.92	509.16	478.26	0.00	1373.69	0.370	0.59	4.171	A
2	338.02	338.37	476.69	0.00	1751.90	0.193	0.24	2.546	A
3	800.09	801.61	108.00	0.00	1843.76	0.434	0.77	3.458	A
4	185.19	185.54	757.43	0.00	1108.26	0.167	0.20	3.904	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	425.36	426.01	400.26	0.00	1421.32	0.299	0.43	3.621	A
2	283.07	283.29	398.85	0.00	1807.30	0.157	0.19	2.363	A
3	670.04	670.85	90.42	0.00	1855.49	0.361	0.57	3.040	A
4	155.09	155.29	633.90	0.00	1181.68	0.131	0.15	3.509	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 24/07/2013 13:44:12

« (Default Analysis Set) - 2018 Design, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2018 Design			
Arm 1	0.91	4.82	0.48	A
Arm 2	0.49	3.28	0.33	A
Arm 3	0.91	3.95	0.48	A
Arm 4	0.22	4.34	0.18	A

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

"D1 - 2013 Count, AM" model duration: 08:00 - 09:30
"D2 - 2013 Count, PM" model duration: 17:00 - 18:30
"D3 - 2018 Base, AM" model duration: 08:00 - 09:30
"D4 - 2018 Base, PM" model duration: 17:00 - 18:30
"D5 - 2018 Design, AM " model duration: 08:00 - 09:30
"D6 - 2018 Design, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.1.305 at 24/07/2013 13:44:11

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	03/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price

Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2018 Design, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2018 Design, AM	2018 Design	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4			4.08	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Mitchells Way	
2	Barnsley Road (S)	
3	Barnsley Road (W)	
4	Bradberry Balk Lane	

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	3.68	7.69	14.20	20.90	43.60	45.00	
2	5.99	8.16	4.50	36.90	43.60	34.00	
3	5.22	7.57	8.70	34.80	43.60	43.00	
4	3.84	7.20	8.50	23.80	43.60	42.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.611	1665.732
2		(calculated)	(calculated)	0.712	2091.173
3		(calculated)	(calculated)	0.667	1915.844
4		(calculated)	(calculated)	0.594	1558.443

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	623.00	100.000
2	ONE HOUR	✓	490.00	100.000
3	ONE HOUR	✓	757.00	100.000
4	ONE HOUR	✓	164.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	101.000	495.000	27.000
	2	133.000	0.000	285.000	72.000
	3	504.000	202.000	0.000	51.000

	4	20.000	88.000	56.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.16	0.79	0.04
	2	0.27	0.00	0.58	0.15
	3	0.67	0.27	0.00	0.07
	4	0.12	0.54	0.34	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.48	4.82	0.91	A
2	0.33	3.28	0.49	A
3	0.48	3.95	0.91	A
4	0.18	4.34	0.22	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	469.03	467.23	259.59	0.00	1507.22	0.311	0.45	3.455	A
2	368.90	367.86	433.48	0.00	1782.65	0.207	0.26	2.543	A
3	569.91	568.06	174.15	0.00	1799.61	0.317	0.46	2.920	A
4	123.47	123.00	629.64	0.00	1184.22	0.104	0.12	3.390	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	560.06	559.43	310.75	0.00	1475.97	0.379	0.61	3.925	A
2	440.50	440.17	519.03	0.00	1721.76	0.256	0.34	2.809	A
3	680.53	679.90	208.40	0.00	1776.74	0.383	0.62	3.280	A
4	147.43	147.29	753.57	0.00	1110.56	0.133	0.15	3.736	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	685.94	684.73	380.42	0.00	1433.43	0.479	0.91	4.800	A
2	539.50	538.92	635.29	0.00	1639.02	0.329	0.49	3.270	A
3	833.47	832.32	255.14	0.00	1745.55	0.477	0.91	3.937	A
4	180.57	180.31	922.52	0.00	1010.14	0.179	0.22	4.337	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	685.94	685.92	380.95	0.00	1433.11	0.479	0.91	4.817	A
2	539.50	539.49	636.37	0.00	1638.25	0.329	0.49	3.275	A
3	833.47	833.46	255.43	0.00	1745.35	0.478	0.91	3.947	A
4	180.57	180.56	923.74	0.00	1009.42	0.179	0.22	4.343	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	560.06	561.25	311.57	0.00	1475.47	0.380	0.62	3.944	A
2	440.50	441.08	520.69	0.00	1720.58	0.256	0.35	2.816	A
3	680.53	681.67	208.86	0.00	1776.44	0.383	0.62	3.291	A
4	147.43	147.69	755.47	0.00	1109.43	0.133	0.15	3.746	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	469.03	469.67	260.79	0.00	1506.49	0.311	0.45	3.473	A
2	368.90	369.23	435.74	0.00	1781.04	0.207	0.26	2.550	A
3	569.91	570.54	174.83	0.00	1799.15	0.317	0.47	2.933	A
4	123.47	123.62	632.33	0.00	1182.62	0.104	0.12	3.399	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 24/07/2013 13:36:43

« (Default Analysis Set) - 2018 Base, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2018 Base			
Arm 1	0.80	4.86	0.44	A
Arm 2	0.29	2.77	0.22	A
Arm 3	1.04	4.01	0.51	A
Arm 4	0.27	4.40	0.21	A

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

"D1 - 2013 Count, AM" model duration: 08:00 - 09:30
"D2 - 2013 Count, PM" model duration: 17:00 - 18:30
"D3 - 2018 Base, AM" model duration: 08:00 - 09:30
"D4 - 2018 Base, PM " model duration: 17:00 - 18:30

Run using Junctions 8.0.1.305 at 24/07/2013 13:36:43

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	03/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2018 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2018 Base, PM	2018 Base	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4			4.07	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Mitchells Way	
2	Barnsley Road (S)	
3	Barnsley Road (W)	
4	Bradberry Balk Lane	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.68	7.69	14.20	20.90	43.60	45.00	
2	5.99	8.16	4.50	36.90	43.60	34.00	

3	5.22	7.57	8.70	34.80	43.60	43.00	
4	3.84	7.20	8.50	23.80	43.60	42.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.611	1665.732
2		(calculated)	(calculated)	0.712	2091.173
3		(calculated)	(calculated)	0.667	1915.844
4		(calculated)	(calculated)	0.594	1558.443

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	539.00	100.000
2	ONE HOUR	✓	341.00	100.000
3	ONE HOUR	✓	855.00	100.000
4	ONE HOUR	✓	203.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	74.000	455.000	10.000
	2	35.000	0.000	247.000	59.000
	3	446.000	310.000	0.000	99.000
	4	20.000	119.000	64.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.14	0.84	0.02
	2	0.10	0.00	0.72	0.17
	3	0.52	0.36	0.00	0.12
	4	0.10	0.59	0.32	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	4.86	0.80	A
2	0.22	2.77	0.29	A
3	0.51	4.01	1.04	A
4	0.21	4.40	0.27	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	405.79	404.23	369.87	0.00	1439.87	0.282	0.39	3.472	A
2	256.72	256.06	396.73	0.00	1808.81	0.142	0.16	2.317	A
3	643.69	641.59	78.09	0.00	1863.72	0.345	0.52	2.940	A
4	152.83	152.25	593.58	0.00	1205.65	0.127	0.14	3.415	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	484.55	484.00	442.77	0.00	1395.36	0.347	0.53	3.947	A
2	306.55	306.37	475.03	0.00	1753.08	0.175	0.21	2.488	A
3	768.63	767.91	93.43	0.00	1853.48	0.415	0.70	3.315	A
4	182.49	182.31	710.44	0.00	1136.19	0.161	0.19	3.773	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	593.45	592.39	542.03	0.00	1334.75	0.445	0.79	4.842	A
2	375.45	375.14	581.42	0.00	1677.36	0.224	0.29	2.764	A
3	941.37	940.03	114.40	0.00	1839.48	0.512	1.04	3.997	A
4	223.51	223.18	869.69	0.00	1041.54	0.215	0.27	4.397	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	593.45	593.43	542.79	0.00	1334.28	0.445	0.80	4.858	A
2	375.45	375.45	582.42	0.00	1676.64	0.224	0.29	2.766	A
3	941.37	941.35	114.51	0.00	1839.42	0.512	1.04	4.008	A
4	223.51	223.50	870.89	0.00	1040.83	0.215	0.27	4.404	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	484.55	485.59	443.96	0.00	1394.63	0.347	0.54	3.964	A
2	306.55	306.85	476.56	0.00	1751.99	0.175	0.21	2.493	A
3	768.63	769.95	93.60	0.00	1853.37	0.415	0.71	3.326	A
4	182.49	182.81	712.29	0.00	1135.09	0.161	0.19	3.780	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	405.79	406.35	371.59	0.00	1438.83	0.282	0.39	3.490	A
2	256.72	256.91	398.80	0.00	1807.33	0.142	0.17	2.321	A
3	643.69	644.42	78.36	0.00	1863.54	0.345	0.53	2.956	A
4	152.83	153.02	596.17	0.00	1204.11	0.127	0.15	3.427	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 24/07/2013 13:35:25

« (Default Analysis Set) - 2018 Base, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2018 Base			
Arm 1	0.87	4.68	0.47	A
Arm 2	0.40	3.07	0.28	A
Arm 3	0.86	3.79	0.46	A
Arm 4	0.21	4.20	0.17	A

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

"D1 - 2013 Count, AM" model duration: 08:00 - 09:30
"D2 - 2013 Count, PM" model duration: 17:00 - 18:30
"D3 - 2018 Base, AM " model duration: 08:00 - 09:30
"D4 - 2018 Base, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.1.305 at 24/07/2013 13:35:24

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	03/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2018 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2018 Base, AM	2018 Base	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4			3.95	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Mitchells Way	
2	Barnsley Road (S)	
3	Barnsley Road (W)	
4	Bradberry Balk Lane	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.68	7.69	14.20	20.90	43.60	45.00	
2	5.99	8.16	4.50	36.90	43.60	34.00	

3	5.22	7.57	8.70	34.80	43.60	43.00	
4	3.84	7.20	8.50	23.80	43.60	42.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.611	1665.732
2		(calculated)	(calculated)	0.712	2091.173
3		(calculated)	(calculated)	0.667	1915.844
4		(calculated)	(calculated)	0.594	1558.443

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	612.00	100.000
2	ONE HOUR	✓	423.00	100.000
3	ONE HOUR	✓	743.00	100.000
4	ONE HOUR	✓	163.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	**2**	**3**	**4**
From	**1**	0.000	90.000	495.000	27.000
	2	105.000	0.000	249.000	69.000
	3	504.000	188.000	0.000	51.000
	4	20.000	87.000	56.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.15	0.81	0.04
	2	0.25	0.00	0.59	0.16
	3	0.68	0.25	0.00	0.07
	4	0.12	0.53	0.34	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.47	4.68	0.87	A
2	0.28	3.07	0.40	A
3	0.46	3.79	0.86	A
4	0.17	4.20	0.21	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	460.75	459.01	248.35	0.00	1514.08	0.304	0.44	3.406	A
2	318.46	317.59	433.51	0.00	1782.63	0.179	0.22	2.456	A
3	559.37	557.60	150.89	0.00	1815.13	0.308	0.44	2.859	A
4	122.71	122.26	598.16	0.00	1202.93	0.102	0.11	3.329	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	550.18	549.58	297.29	0.00	1484.19	0.371	0.59	3.849	A
2	380.27	380.01	519.05	0.00	1721.75	0.221	0.28	2.683	A
3	667.94	667.36	180.56	0.00	1795.33	0.372	0.59	3.189	A
4	146.53	146.39	715.88	0.00	1132.96	0.129	0.15	3.648	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	673.82	672.70	363.96	0.00	1443.48	0.467	0.87	4.664	A
2	465.73	465.28	635.34	0.00	1638.98	0.284	0.40	3.067	A
3	818.06	817.00	221.07	0.00	1768.29	0.463	0.85	3.781	A
4	179.47	179.23	876.41	0.00	1037.55	0.173	0.21	4.193	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	673.82	673.81	364.43	0.00	1443.20	0.467	0.87	4.678	A
2	465.73	465.73	636.37	0.00	1638.25	0.284	0.40	3.069	A
3	818.06	818.04	221.30	0.00	1768.13	0.463	0.86	3.788	A
4	179.47	179.46	877.50	0.00	1036.90	0.173	0.21	4.198	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	550.18	551.29	298.04	0.00	1483.74	0.371	0.59	3.866	A
2	380.27	380.71	520.64	0.00	1720.62	0.221	0.28	2.689	A
3	667.94	668.99	180.93	0.00	1795.08	0.372	0.60	3.201	A
4	146.53	146.77	717.57	0.00	1131.95	0.129	0.15	3.654	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	460.75	461.36	249.47	0.00	1513.40	0.304	0.44	3.425	A
2	318.46	318.72	435.72	0.00	1781.06	0.179	0.22	2.463	A
3	559.37	559.96	151.46	0.00	1814.75	0.308	0.45	2.869	A
4	122.71	122.86	600.64	0.00	1201.45	0.102	0.11	3.337	A

ARCADY 8

Version: 8.0.0.296 [27 Feb 2012]
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Filename: Barnsley Road - Mitchells Way Roundabout.arc8
Path: O:\Barnsley Road, Wombwell\ANALYSIS\ARCADY\Barnsley Road-Mitchells Way Roundabout
Report generation date: 03/07/2013 11:13:53

« (Default Analysis Set) - 2013 Count, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2013 Count			
Arm 1	0.69	4.51	0.41	A
Arm 2	0.26	2.67	0.21	A
Arm 3	0.92	3.75	0.48	A
Arm 4	0.24	4.18	0.20	A

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

"D1 - 2013 Count, AM" model duration: 08:00 - 09:30
"D2 - 2013 Count, PM " model duration: 17:00 - 18:30

Run using ARCADY 8.0.0.296 at 03/07/2013 11:13:52

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	03/07/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	OPTIMA\Rory.Price
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2013 Count, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2013 Count, PM	2013 Count	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4			3.81	A

Junction Network Options

Driving Side	Lighting	Road Surface
Left	Normal/unknown	(Mini-roundabouts only)

Arms

Arms

Arm	Name	Description
1	Mitchells Way	
2	Barnsley Road (S)	
3	Barnsley Road (W)	
4	Bradberry Balk Lane	

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	3.68	7.69	14.20	20.90	43.60	45.00	
2	5.99	8.16	4.50	36.90	43.60	34.00	
3	5.22	7.57	8.70	34.80	43.60	43.00	
4	3.84	7.20	8.50	23.80	43.60	42.00	

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

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.611	1665.732
2		(calculated)	(calculated)	0.712	2091.173
3		(calculated)	(calculated)	0.667	1915.844
4		(calculated)	(calculated)	0.594	1558.443

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	505.00	100.000
2	ONE HOUR	✓	320.00	100.000
3	ONE HOUR	✓	803.00	100.000
4	ONE HOUR	✓	191.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	69.000	427.000	9.000
	2	33.000	0.000	232.000	55.000
	3	419.000	291.000	0.000	93.000
	4	19.000	112.000	60.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

	To

		1	2	3	4
From	1	0.00	0.14	0.85	0.02
	2	0.10	0.00	0.73	0.17
	3	0.52	0.36	0.00	0.12
	4	0.10	0.59	0.31	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.41	4.51	0.69	A
2	0.21	2.67	0.26	A
3	0.48	3.75	0.92	A
4	0.20	4.18	0.24	A

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	380.19	378.78	347.40	0.00	1453.59	0.262	0.35	3.345	A
2	240.91	240.31	372.03	0.00	1826.39	0.132	0.15	2.270	A
3	604.54	602.63	72.83	0.00	1867.23	0.324	0.48	2.843	A
4	143.79	143.27	557.62	0.00	1227.02	0.117	0.13	3.320	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	453.98	453.51	415.86	0.00	1411.79	0.322	0.47	3.754	A

2	287.67	287.51	445.43	0.00	1774.15	0.162	0.19	2.421	A
3	721.88	721.26	87.15	0.00	1857.68	0.389	0.63	3.166	A
4	171.71	171.54	667.37	0.00	1161.79	0.148	0.17	3.635	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	556.02	555.14	509.11	0.00	1354.85	0.410	0.69	4.497	A
2	352.33	352.06	545.26	0.00	1703.09	0.207	0.26	2.664	A
3	884.12	882.99	106.71	0.00	1844.62	0.479	0.91	3.738	A
4	210.29	210.02	817.04	0.00	1072.84	0.196	0.24	4.171	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	556.02	556.00	509.76	0.00	1354.45	0.411	0.69	4.508	A
2	352.33	352.32	546.09	0.00	1702.50	0.207	0.26	2.665	A
3	884.12	884.11	106.80	0.00	1844.56	0.479	0.92	3.747	A
4	210.29	210.29	818.05	0.00	1072.24	0.196	0.24	4.176	A

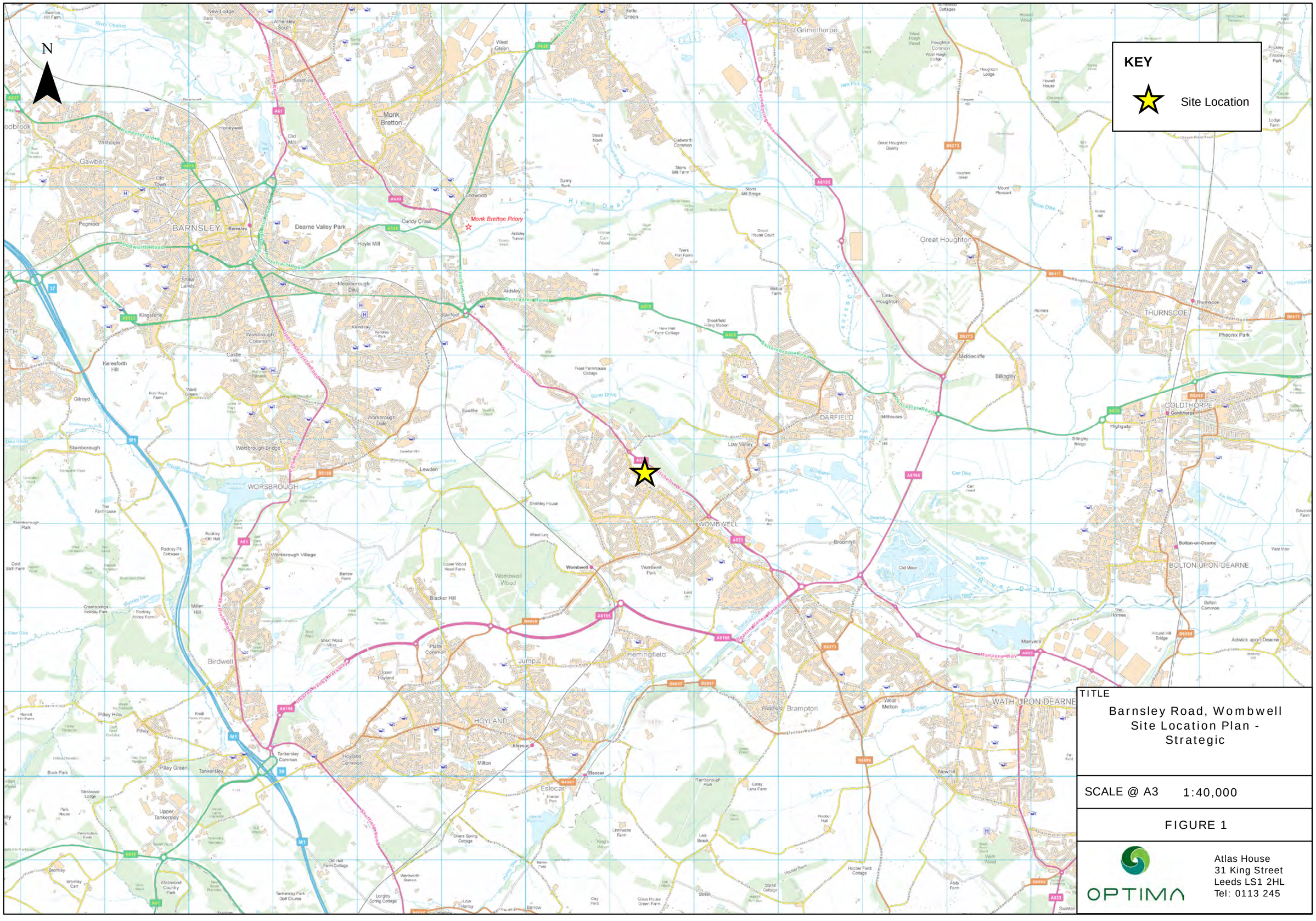
Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	453.98	454.85	416.88	0.00	1411.17	0.322	0.48	3.769	A
2	287.67	287.94	446.73	0.00	1773.22	0.162	0.19	2.423	A
3	721.88	722.99	87.29	0.00	1857.58	0.389	0.64	3.175	A
4	171.71	171.98	668.95	0.00	1160.85	0.148	0.17	3.643	A

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

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	380.19	380.67	348.95	0.00	1452.65	0.262	0.36	3.359	A
2	240.91	241.08	373.88	0.00	1825.07	0.132	0.15	2.272	A
3	604.54	605.17	73.08	0.00	1867.06	0.324	0.48	2.855	A
4	143.79	143.96	559.95	0.00	1225.64	0.117	0.13	3.330	A

Figures



TITLE

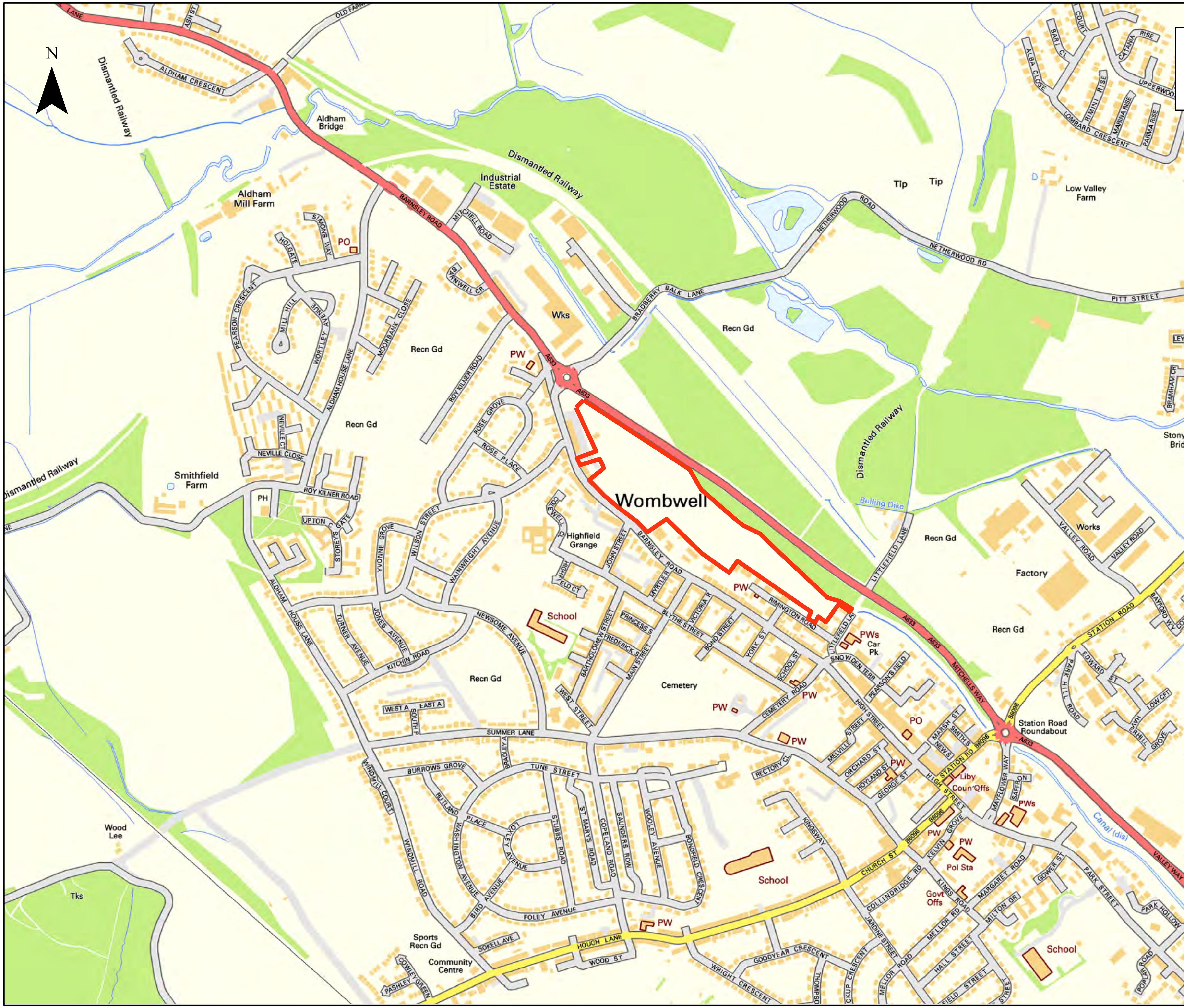
Barnsley Road, Wombwell
Site Location Plan -
Strategic

SCALE @ A3 1:40,000

FIGURE 1

OPTIMA
Atlas House
31 King Street
Leeds LS1 2HL
Tel: 0113 245

Path: O:\Barnsley Road, Wombwell\DRAWINGS\GIS\ARCEDITOR\Site Location Plan.mxd



TITLE

Barnsley Road, Wombwell
Site Location Plan - Local

SCALE @ A3 1:8,000

FIGURE 2

OPTIMA

Atlas House
31 King Street
Leeds LS1 2HL
Tel: 0113 245

Path: O:\Barnsley Road, Wombwell\DRAWINGS\GIS\ARCEDITOR\Site Location Plan - Local.mxd



TITLE

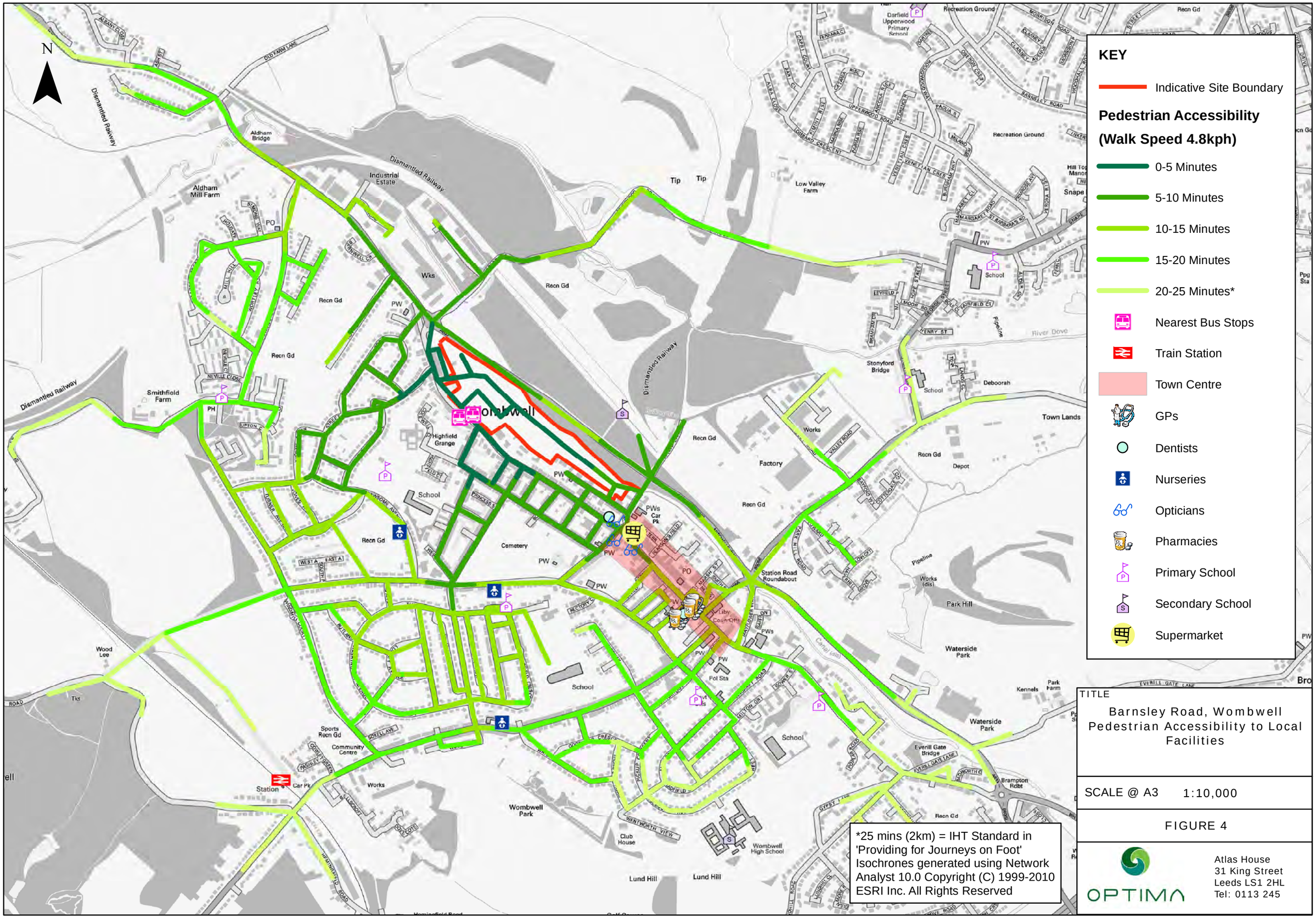
Barnsley Road, Wombwell
Traffic Survey Locations

SCALE @ A3 1:3,500

FIGURE 3

OPTIMA
Atlas House
31 King Street
Leeds LS1 2HL
Tel: 0113 245

Path: O:\Barnsley Road, Wombwell\DRAWINGS\GIS\ARCEDITOR\Traffic Survey Locations.mxd



TITLE

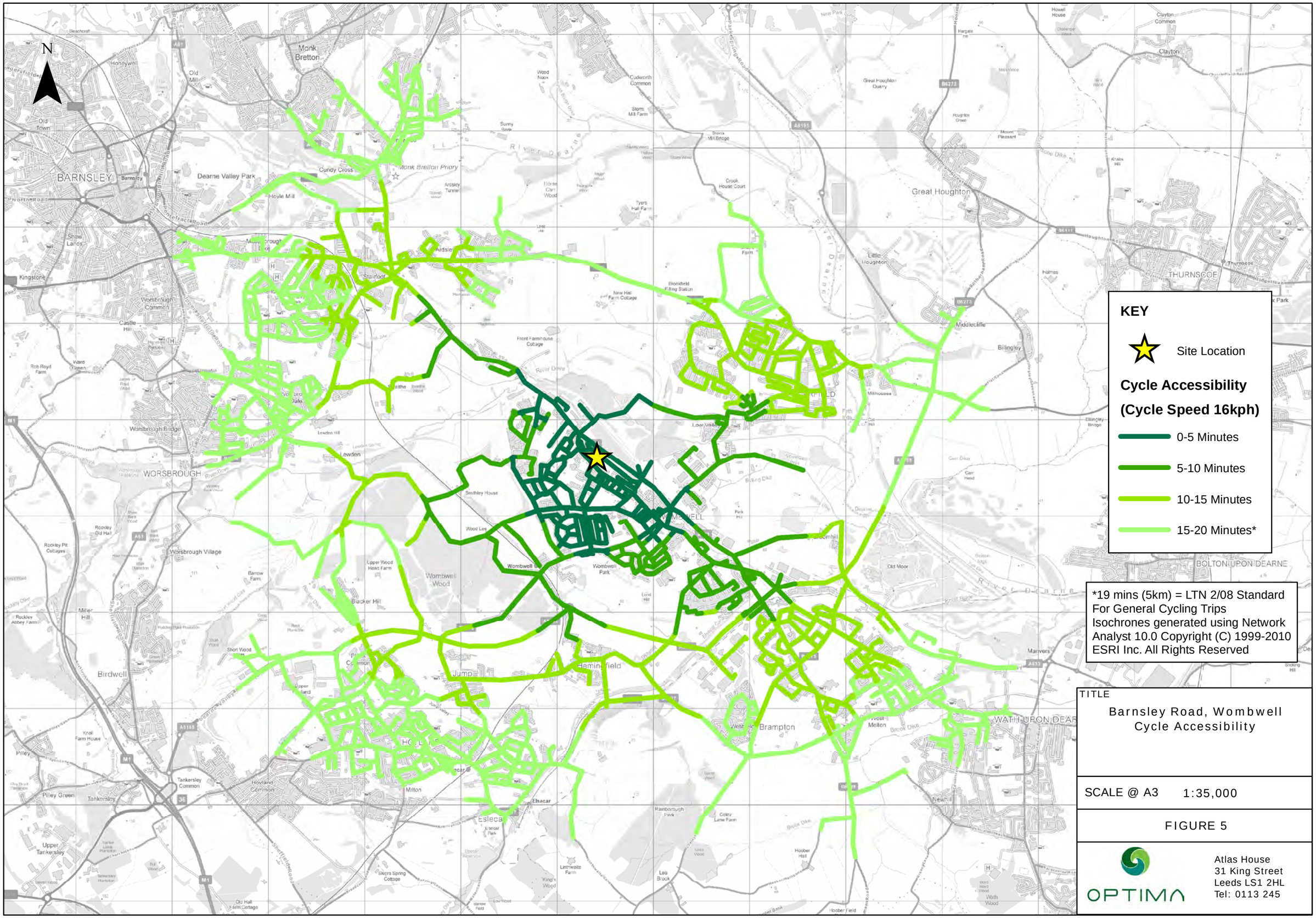
Barnsley Road, Wombwell
Pedestrian Accessibility to Local Facilities

SCALE @ A3 1:10,000

FIGURE 4

*25 mins (2km) = IHT Standard in 'Providing for Journeys on Foot' Isochrones generated using Network Analyst 10.0 Copyright (C) 1999-2010 ESRI Inc. All Rights Reserved

OPTIMA
Atlas House
31 King Street
Leeds LS1 2HL
Tel: 0113 245



TITLE

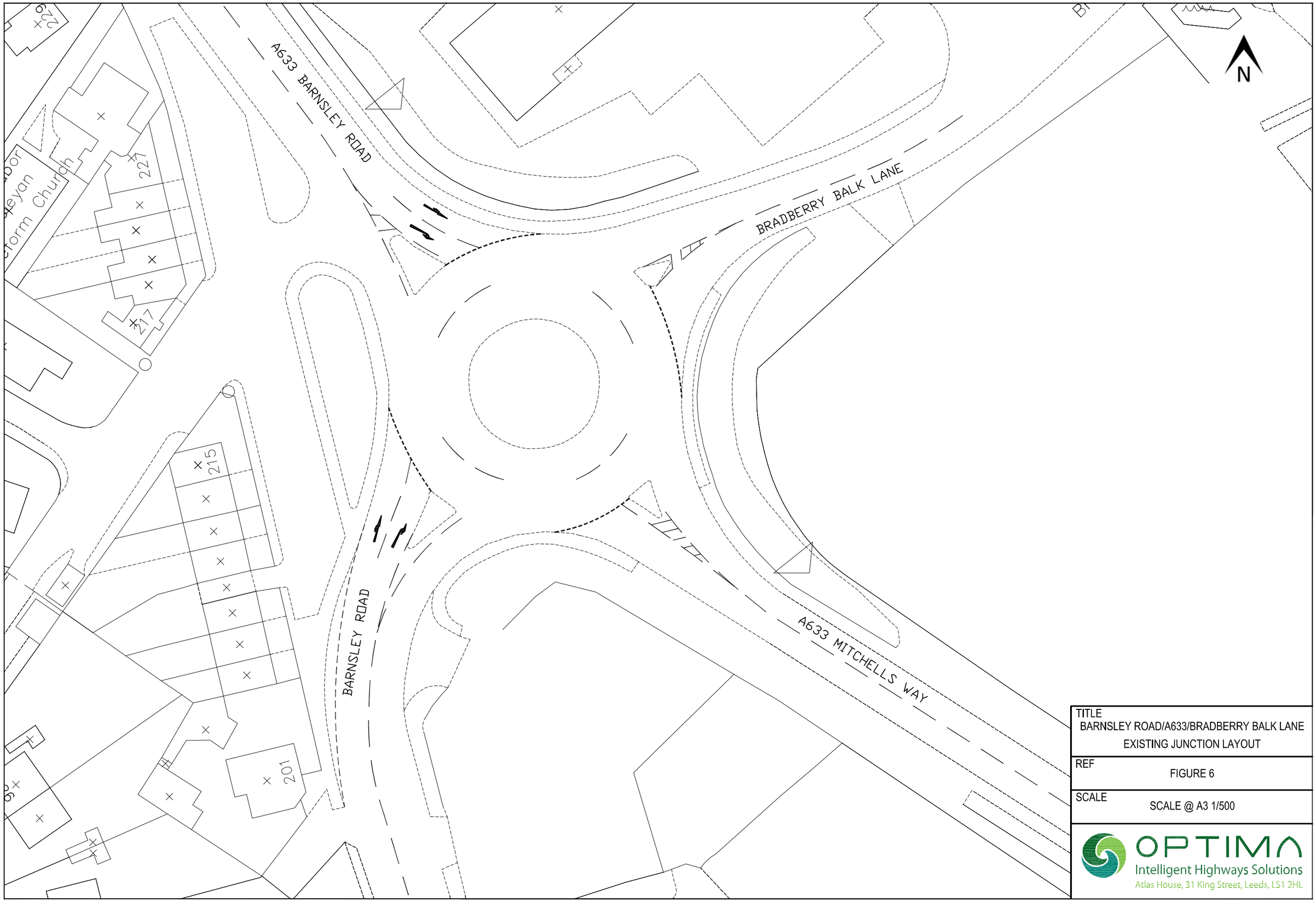
Barnsley Road, Wombwell
Cycle Accessibility

SCALE @ A3 1:35,000

FIGURE 5

OPTIMA
Atlas House
31 King Street
Leeds LS1 2HL
Tel: 0113 245

Path: O:\Barnsley Road, Wombwell\DRAWINGS\GIS\ARCEDITOR\Cycle Accessibility.mxd



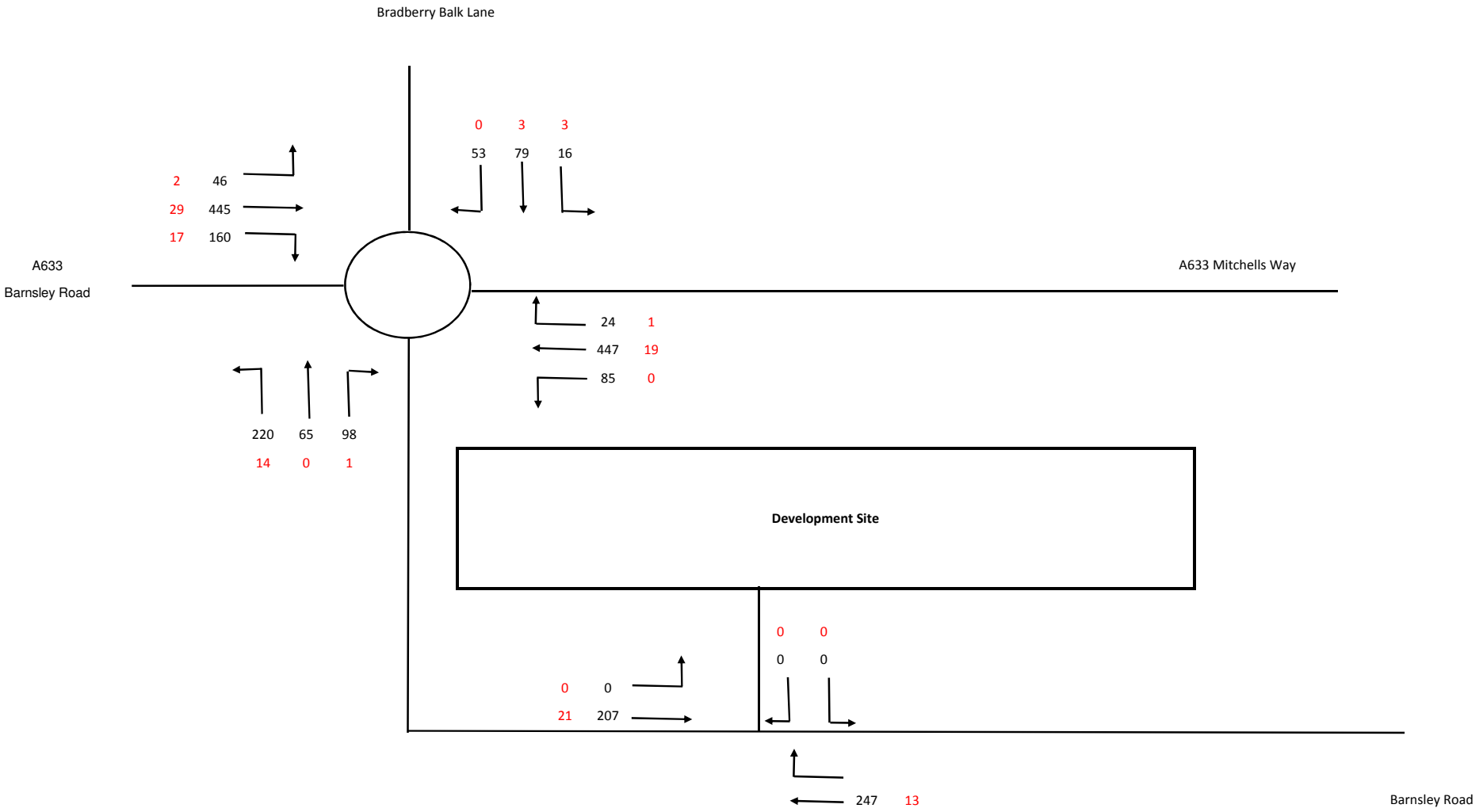
TITLE
BARNSLEY ROAD/A633/BRADBERRY BALK LANE
EXISTING JUNCTION LAYOUT

REF
FIGURE 6

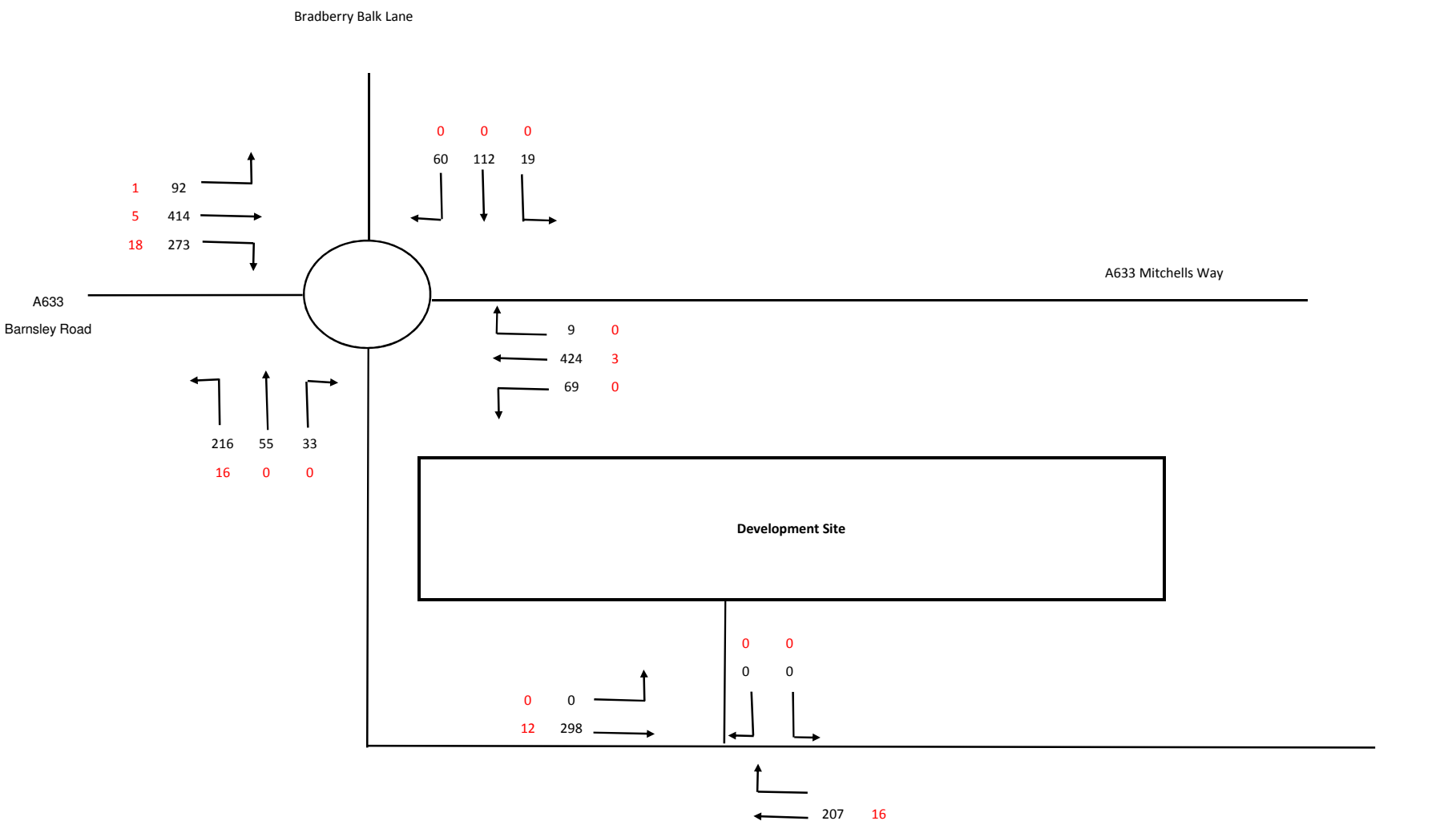
SCALE
SCALE @ A3 1/500

OPTIMA
Intelligent Highways Solutions
Atlas House, 31 King Street, Leeds, LS1 2HL

AM PEAK 7:45 - 8:45



PM PEAK 17:00 - 18:00



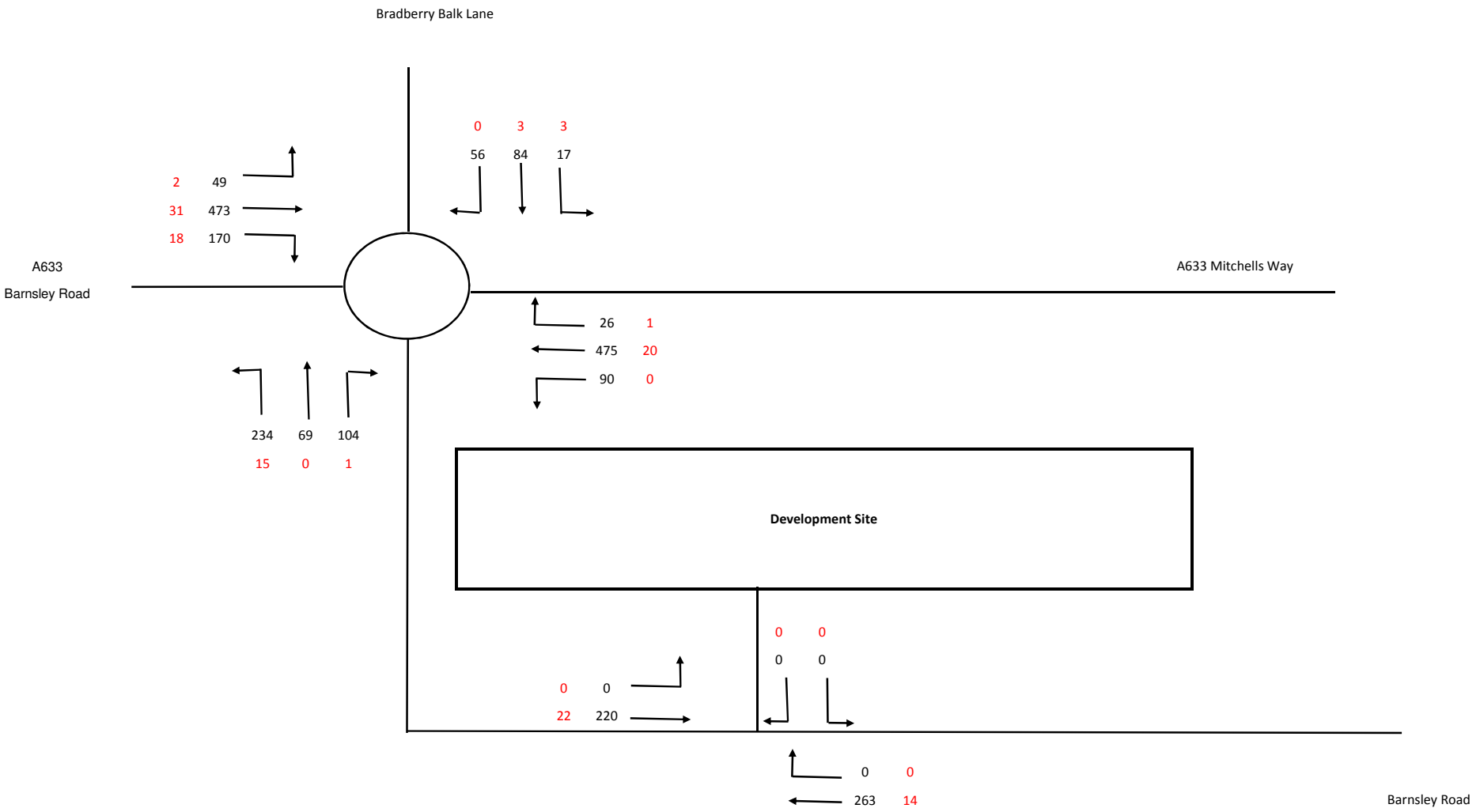
0 All Vehicles

0 HGV Only

OPTIMA Intelligent Highways Solutions	Project: Barnsley Road, Wombwell AM & PM Peak Hour 2013 Traffic Count Flows	Figure: 101

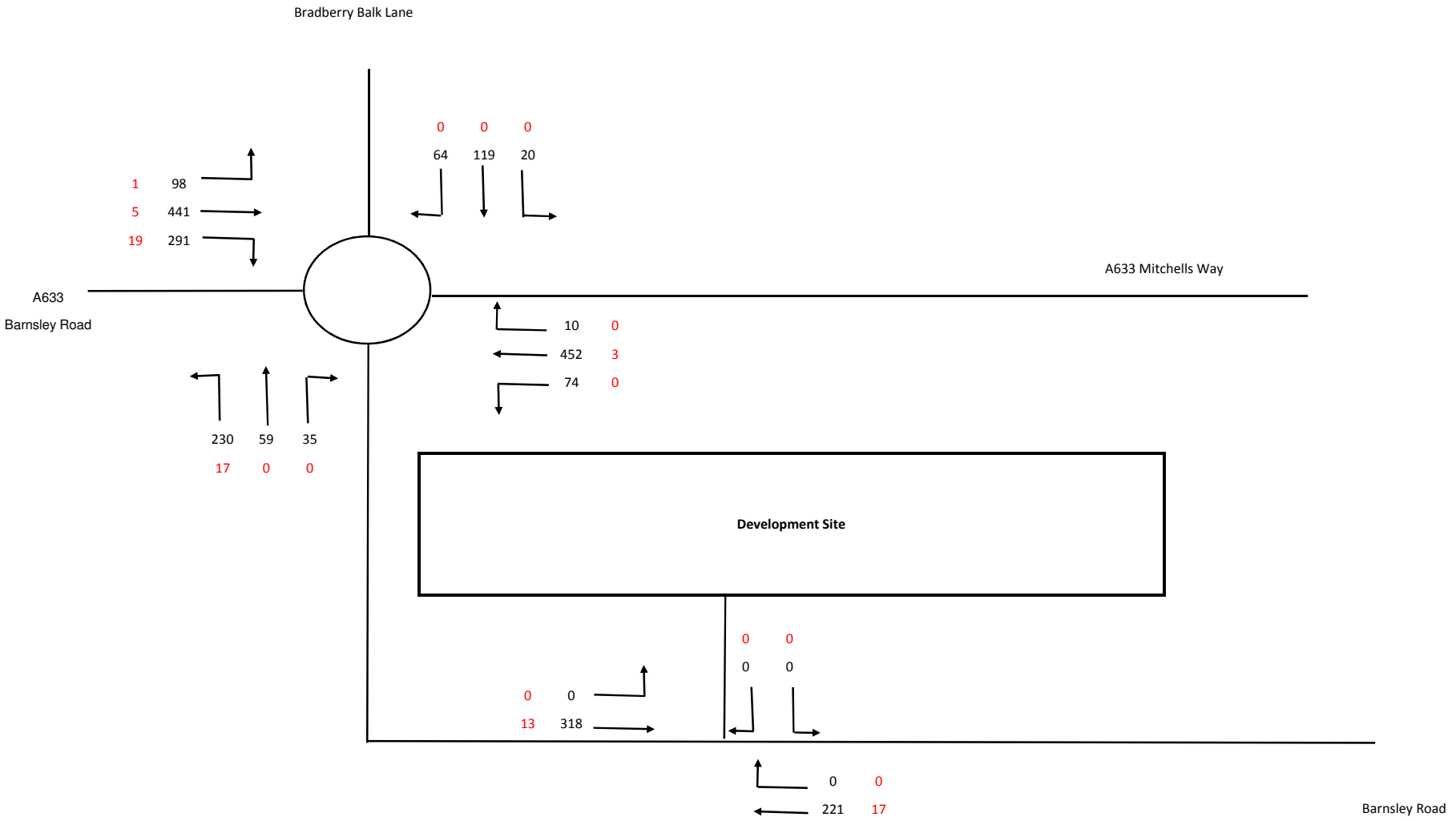
AM PEAK 7:45 - 8:45

Growth = 1.064



PM PEAK 17:00 - 18:00

Growth = 1.07

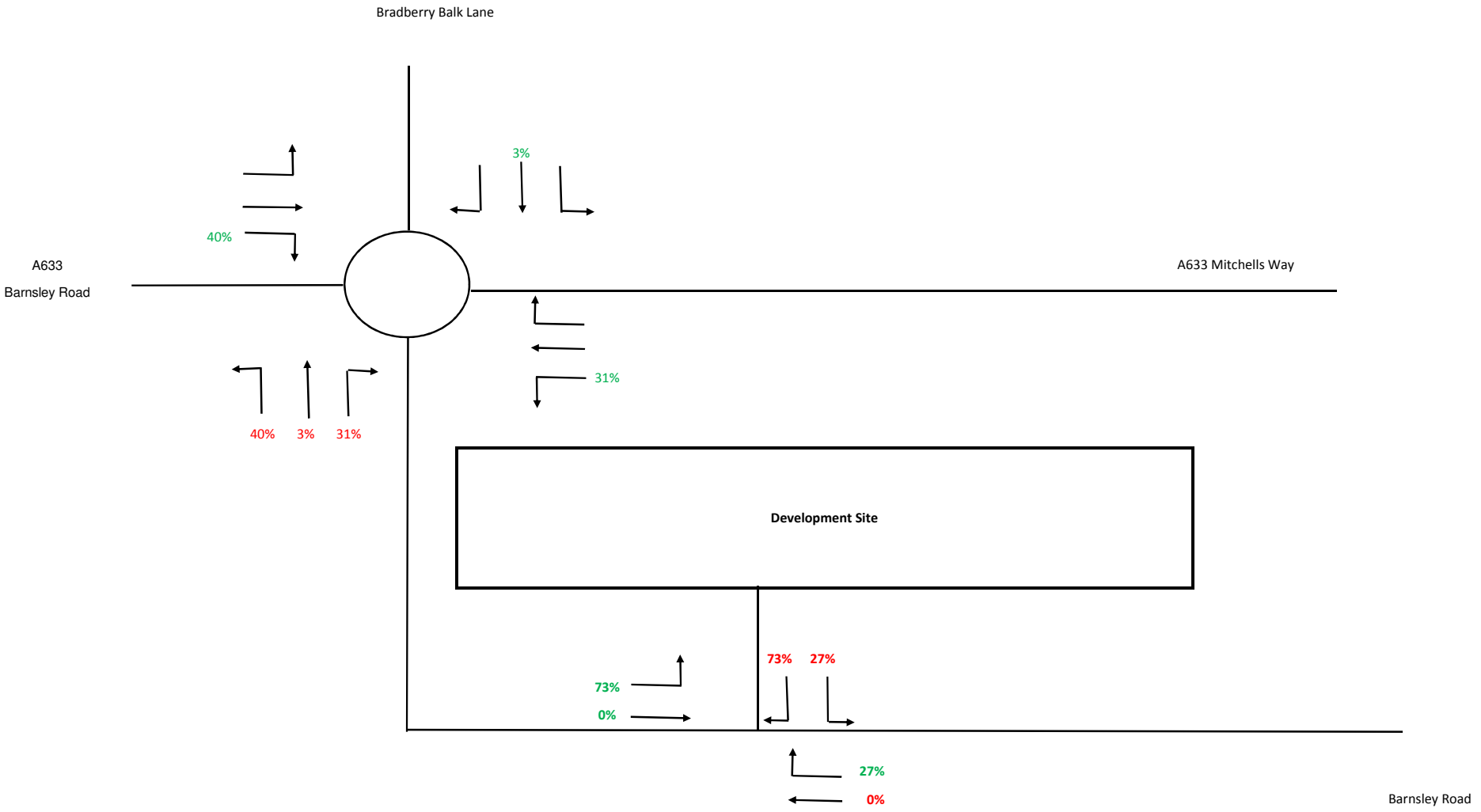


0 All Vehicles

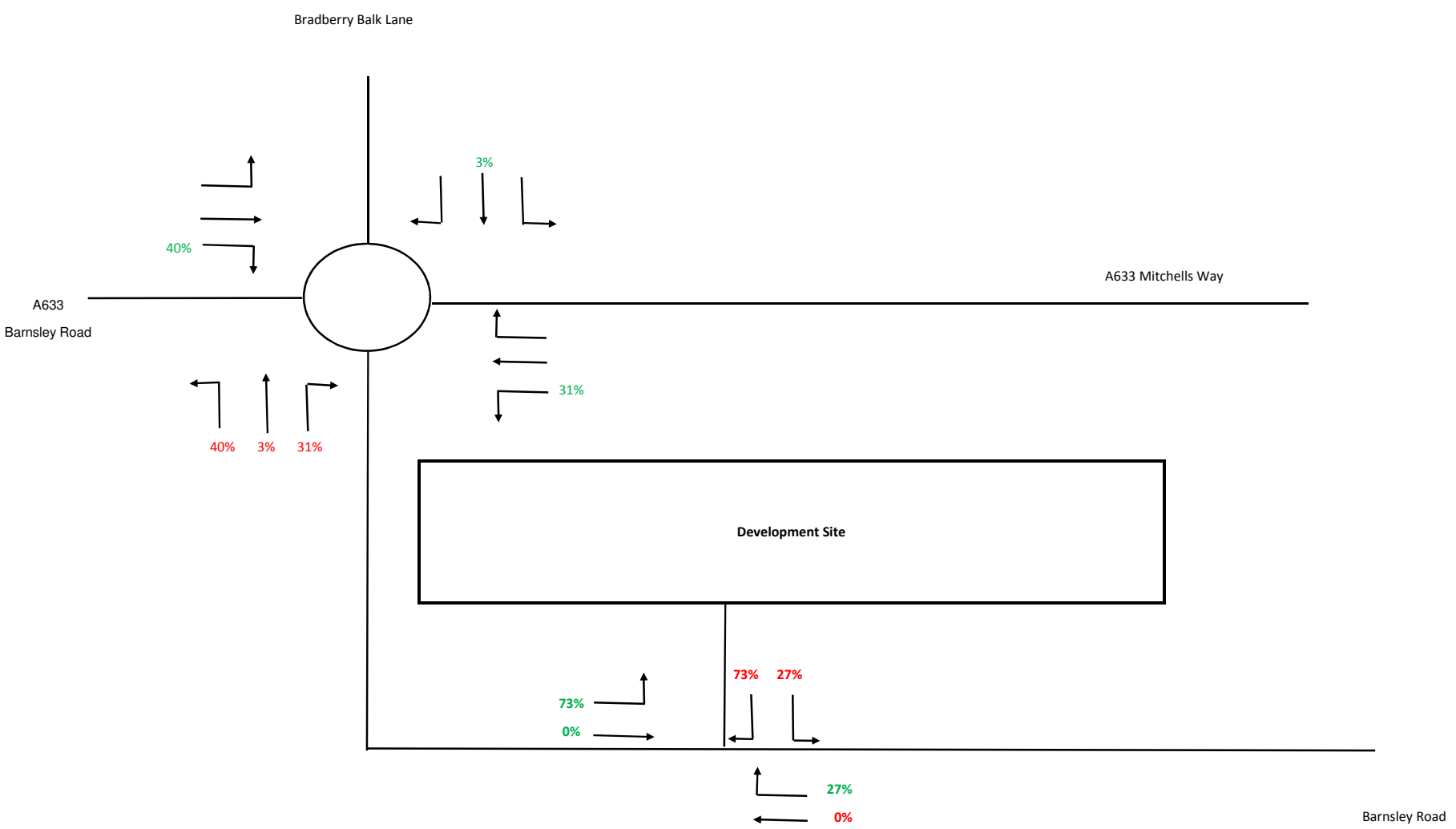
0 HGV Only

OPTIMA Intelligent Highways Solutions	Project: Barnsley Road, Wombwell AM & PM Peak Hour 2018 Traffic Base Flows	Figure: 102

AM PEAK 7:45 - 8:45



PM PEAK 17:00 - 18:00



0% Arrivals

0% Departures

OPTIMA
Intelligent Highways Solutions

Project: Barnsley Road, Wombwell

Proposed Residential Development Distribution

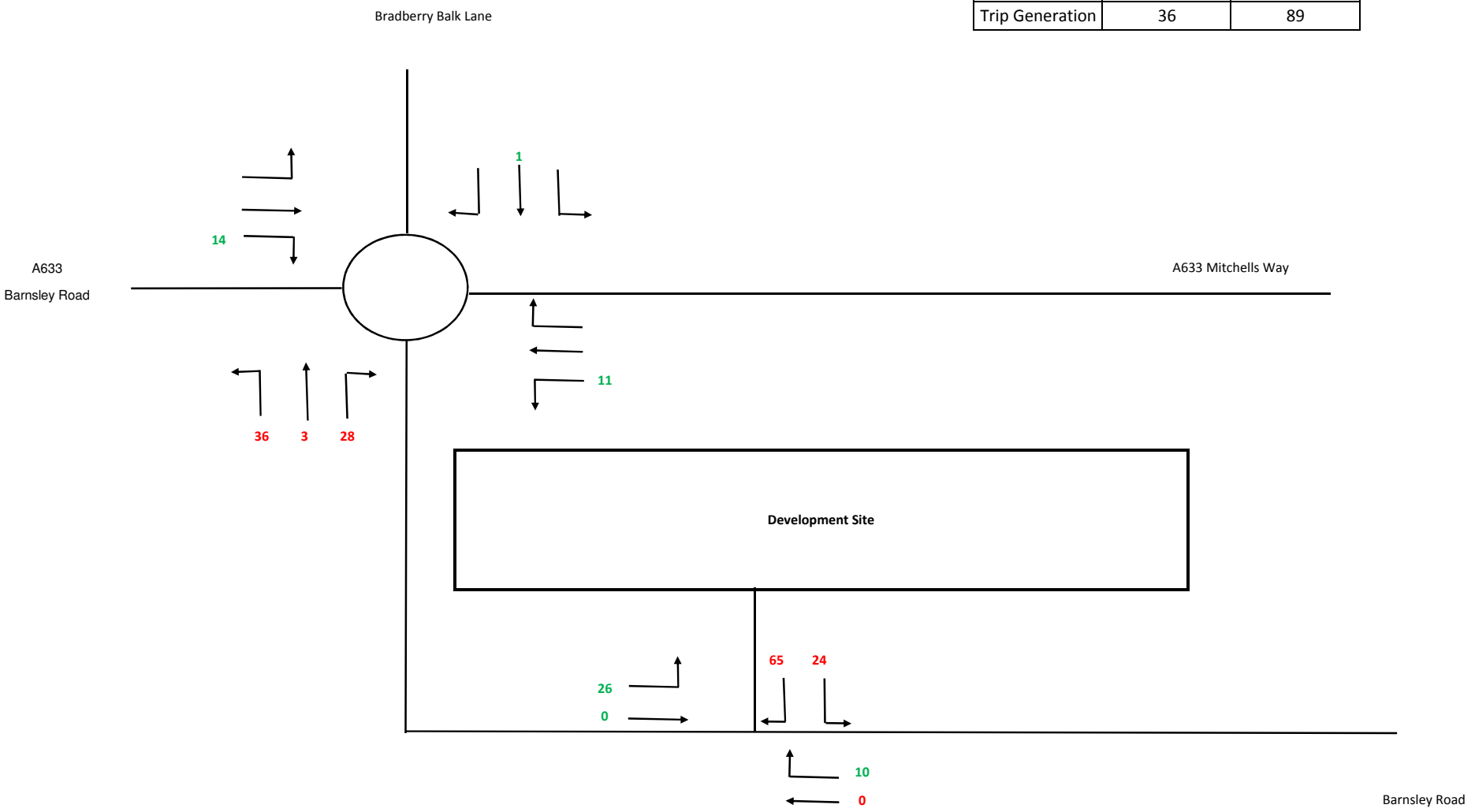
Figure:

103

AM PEAK 7:45 - 8:45

Dwellings 236

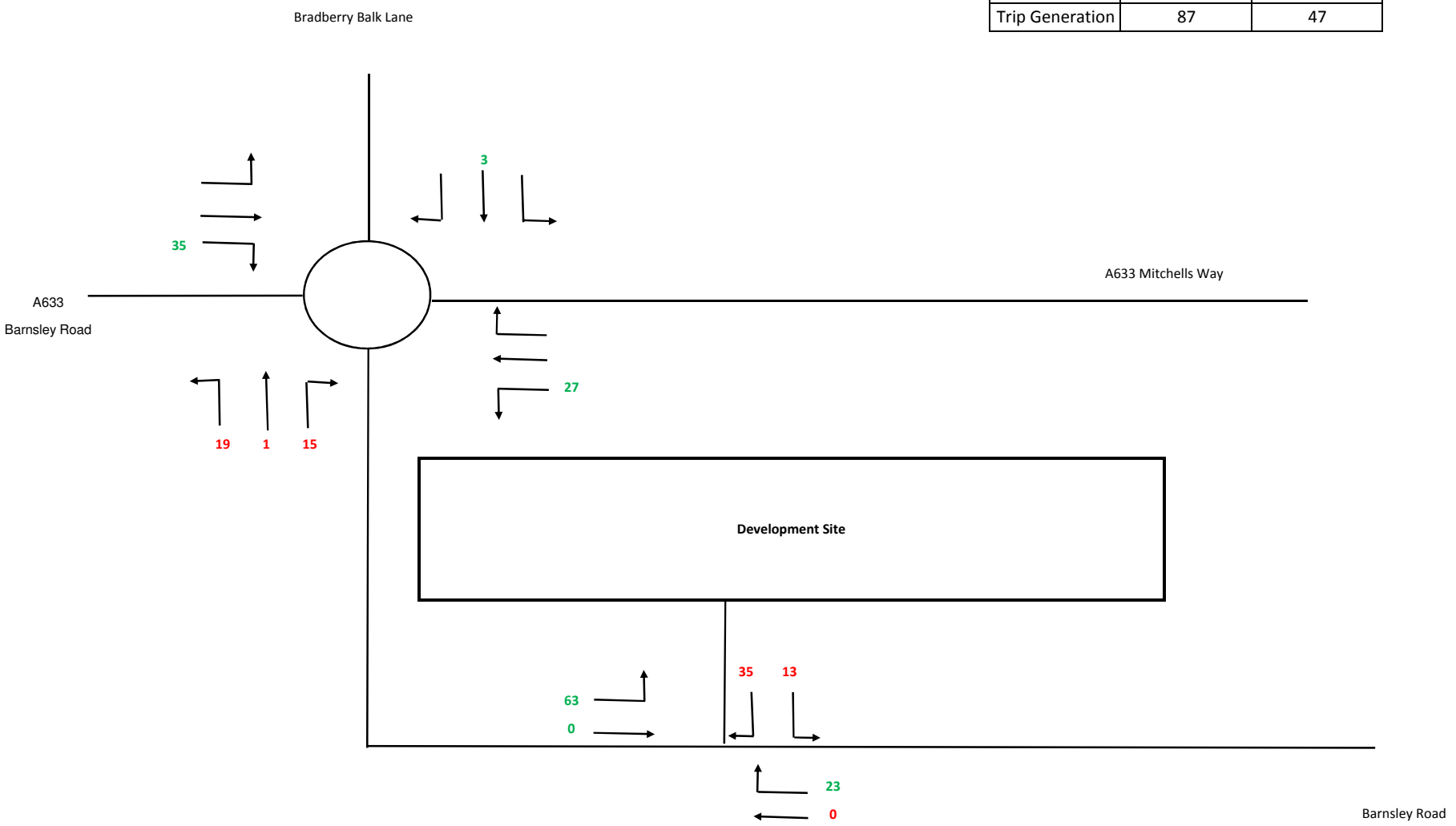
	Arrival	Departure
Trip Rate	0.151	0.379
Trip Generation	36	89



PM PEAK 17:00 - 18:00

Dwellings 236

	Arrival	Departure
Trip Rate	0.368	0.201
Trip Generation	87	47



0 Arrivals

0 Departures

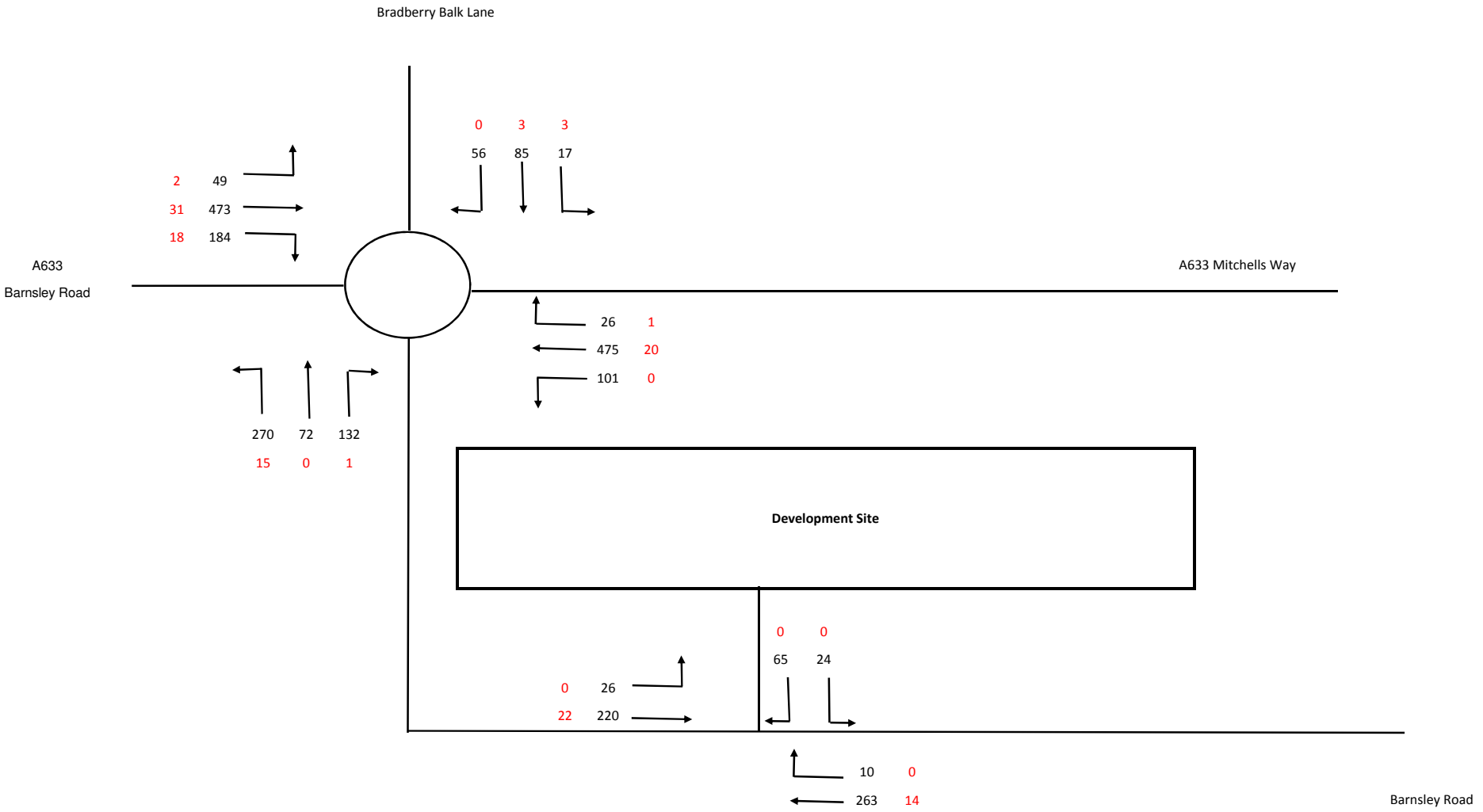
OPTIMA Intelligent Highways Solutions

Project: Barnsley Road, Wombwell

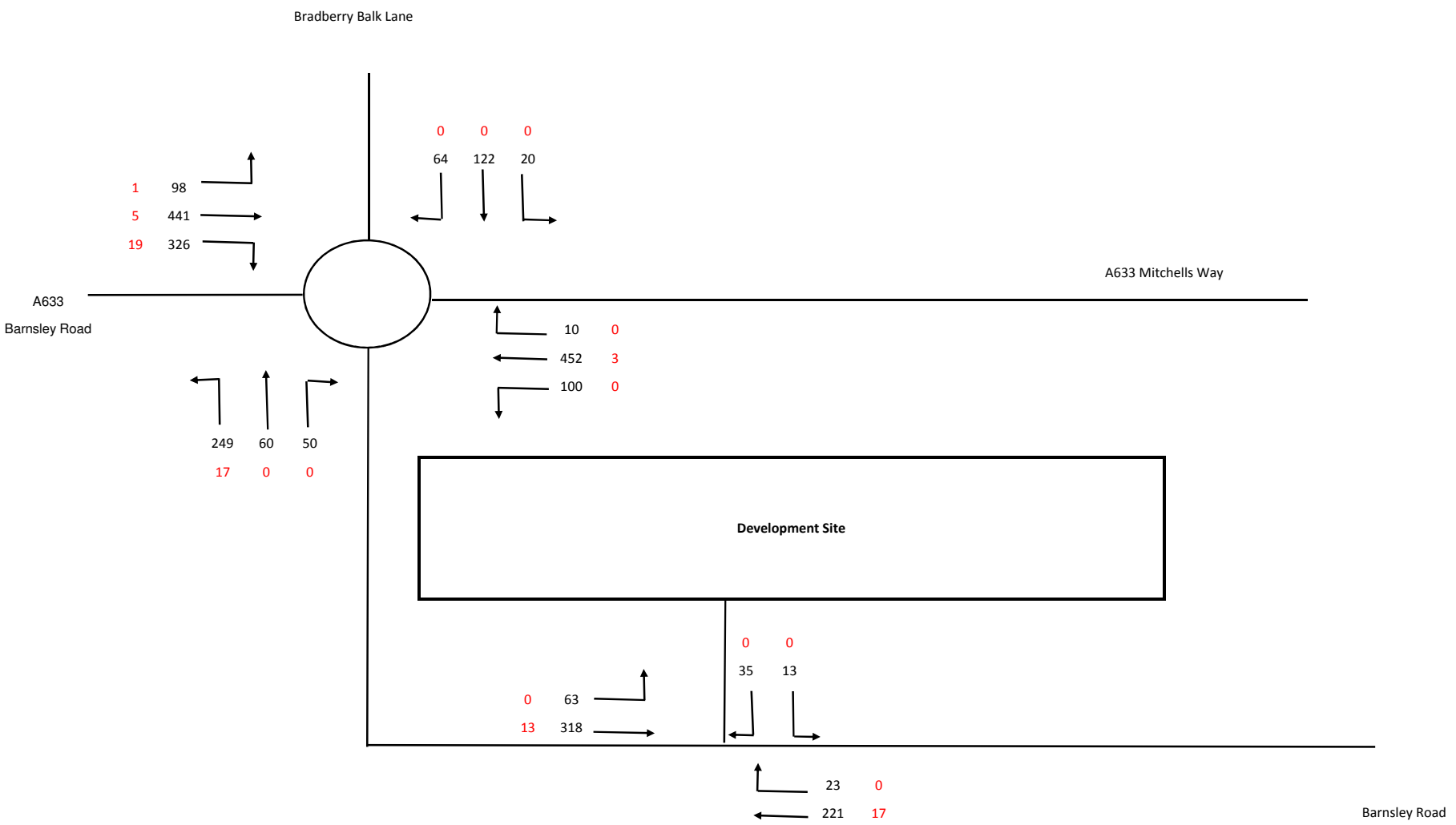
AM & PM Peak Hour Trip Generations

Figure: 104

AM PEAK 7:45 - 8:45



PM PEAK 17:00 - 18:00



0 Arrivals

0 Departures

OPTIMA Intelligent Highways Solutions	Project: Barnsley Road, Wombwell AM & PM Peak Hour 2018 Design Flows	Figure: 105