

Prepared on behalf of

Countryside Properties (UK) Ltd

**Proposed Residential Development
A635 Barugh Green Road,
Barugh Green, Barnsley**

Transport Assessment

Acknowledgements:

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

Traffic surveys have been commissioned from Road Data Services Ltd.

Traffic growth factors have been estimated using TEMPRO (V.7.2) Table AF15.

The neighbourhood statistics website has been used to obtain 2011 census information.

Accident statistics have been obtained from <https://www.crashmap.co.uk/>

Highway maintainable at public expense and public rights of way records have been obtained from Barnsley Council.

National Geographic Society Interactive MapMaker has been used to create figures within this report.

Disclaimer

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

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Report Ref:	11435-001-03		
Author:	Ian Ladbrooke		
Checked & Approved:	David Colley	Date:	13 August 2020

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1 Introduction

- 1.1 Sanderson Associates (Consulting Engineers) Ltd have been commissioned by Countryside Properties (UK) Ltd to prepare a Transport Assessment Report in support of a full planning application for a proposed residential development on land off the A635 Barugh Green Road, Barugh Green, Barnsley.
- 1.2 The development comprises up to 140 new residential properties on land defined within Barnsley Local Plan 2019 as MU1 Barnsley West. Access to the site is proposed from a new priority junction arrangement with the A635 Barugh Green Road.
- 1.3 A pre-application consultation has been undertaken with Barnsley Council. A Transport Assessment Scoping Study was submitted to Barnsley Council on 25 February 2020. The scoping study set out the transport parameters for the planning application Transport Assessment Report, which has been completed in accordance with the scoping study.
- 1.4 This Transport Assessment provides information on the traffic and transportation aspects of the proposals and is submitted to Barnsley Council in support of the planning application.
- 1.5 This Transport Assessment demonstrates that the development would not have an unacceptable impact on highway safety and that the residual cumulative impacts of the proposals on the road network would not be severe, consequently the development proposals should be supported in terms of transport.
- 1.6 A Travel Plan is provided for the development as part of the planning application. The Travel Plan sets out measures designed to minimise car trips from the development and maximise sustainable travel alternatives. The Transport Assessment report should be read in conjunction with the Travel Plan.

2 Planning Policy Context

2.1 National Planning Policy

2.1.1 In July 2019 the latest National Planning Policy Framework (NPPF) was published, which sets out the Government's planning policies for England and how these are expected to be applied.

2.1.2 At NPPF paragraph 38 it states that;

'Local planning authorities should approach decisions on proposed development in a positive and creative way. They should use the full range of planning tools available, including brownfield registers and permission in principle, and work proactively with applicants to secure developments that will improve the economic, social and environmental conditions of the area. Decision-makers at every level should seek to approve applications for sustainable development where possible.'

2.1.3 In considering development proposals NPPF paragraph 108 states that;

'In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users; and

c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'

2.1.4 NPPF paragraph 109 states:

'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.'

2.1.5 NPPF paragraph 110 states:

'Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment

area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.'

2.1.6 NPPF paragraph 111 states:

'All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.'

2.2 Barnsley Local Plan 2019

2.2.1 Barnsley's Local Plan was adopted by the Council on 3 January 2019. The following local plan policies are relevant to the development proposals:

2.2.2 Policy Mixed Use Sites 1

Policy Mixed Use Sites 1 states that planning permission will be expected to be granted if details are provided in accordance with the site-specific policies. In relation to Site MU1 ("Land south of Barugh Green Road"), amongst other things, on- and off-site highway infrastructure works are to be carried out, including a link road (Claycliffe Link) and improvements at Junction 37, as necessary.

2.2.3 The application site forms the northern part of the MU1 allocation comprising some 4.77 hectares and fronts the A635 Barugh Green Road.

2.2.4 Planning applications have been submitted by Strata Sterling Barnsley West Ltd, which seeks planning approval for the highway infrastructure works to facilitate the

future development of the remaining MU1 site and the Claycliffe Link Road. The applications are:

Application reference 2020/0027 (07.01.2020) - Barugh Green Road Roundabout and Listed Building Consent.

Application reference 2020/0028 (07.01.2020) - Higham Common Road Roundabout.

2.2.5 The implications of the Strata Sterling Barnsley West planning applications have been taken into account within this Transport Assessment. The Countryside Properties development proposals will not adversely affect the Strata Sterling Barnsley West access proposals to develop the wider MU1 site or the ability to create the Claycliffe Link Road.

2.2.6 Policy T3 New Development and Sustainable Travel.

Policy T3 states that new development will be expected to:

- Be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists.
- Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people set out in the relevant Supplementary Planning Document.
- Provide a Transport Statement or Assessment in line with guidance set out in the National Planning Policy Framework and guidance including where appropriate regard for cross boundary local authority impacts; and
- Provide a Travel Plan Statement or a Travel Plan in accordance with guidance set out in National Planning Policy Framework including where appropriate regard for cross boundary local authority impacts. Travel plans will be secured through a planning obligation or a planning condition.

Where levels of accessibility through public transport, cycling and walking are unacceptable, developers will be expected to take action or make financial contributions, secured through a planning obligation or planning condition.

2.2.7 Policy T4 New Development and Highway Improvement.

Policy T4 states that new development will be expected to be designed and built to provide safe, secure and convenient access for all road users. Where a development would create or add to highway safety problems or adversely affect the efficiency of the highway for all road users, developers will be expected to take mitigating action or to make a financial contribution to the necessary improvements.

2.3 *Barnsley Sustainable Travel Supplementary Planning Document (SPD) November 2019*

2.3.1 The spatial strategy in the Local Plan seeks to locate development in the most sustainable locations. Where levels of accessibility through public transport, cycling and walking are unacceptable, the Council will require developers to take action or make financial contributions secured through planning obligations.

2.3.2 As a minimum residential development will be required to provide electric vehicle charging points at a ratio of 1 charging point per unit (dwelling with dedicated parking), or 1 charging point per 10 spaces (unallocated parking).

2.3.3 Transport Assessments and Travel Plans are required for residential developments over 80 units.

2.3.4 The SPD contains requirements for Travel Plans including Travel Plan measures, monitoring and review.

2.4 *Barnsley Parking Supplementary Planning Document (SPD) November 2019*

2.4.1 The recommended car parking provision for C3 dwelling houses (housing and flats) is 1 space for dwellings with 1 or 2 bedrooms and 2 spaces for dwellings with 3 or more bedrooms. In addition, 1 visitor space per 4 dwellings subject to layout. Flexibility for visitor parking will be considered on a site by site basis.

2.4.2 Minimum residential cycle parking requirements are for 1 secure space per dwelling in a garage of suitable size or separate secure covered area within the plot.

2.5 *South Yorkshire Residential Design Guide December 2010*

2.5.1 The South Yorkshire Residential Design Guide sets out the design requirements for residential development in South Yorkshire.

2.6 *Barnsley Transport Strategy*

2.6.1 The Barnsley Transport Strategy sets out the transport priorities for the local area up to 2033. It aligns to the Sheffield City Region (SCR 2018-2040). The strategy's four key priorities are as follows:

1. Promote Economic Growth and Strategic Connections;
2. Promote Inclusion, Accessibility, and Better Quality of Life;
3. Promote High Quality Natural Environment, Local Air Quality and Climate Change;
4. Promote Safety, Security and Health.

3 Existing Situation

3.1 Site and Surrounding Area

3.1.1 The application site forms the northern part of the MU1 allocation comprising some 4.77 hectares and fronts the A635 Barugh Green Road. The site location is shown at **Figure 1**.

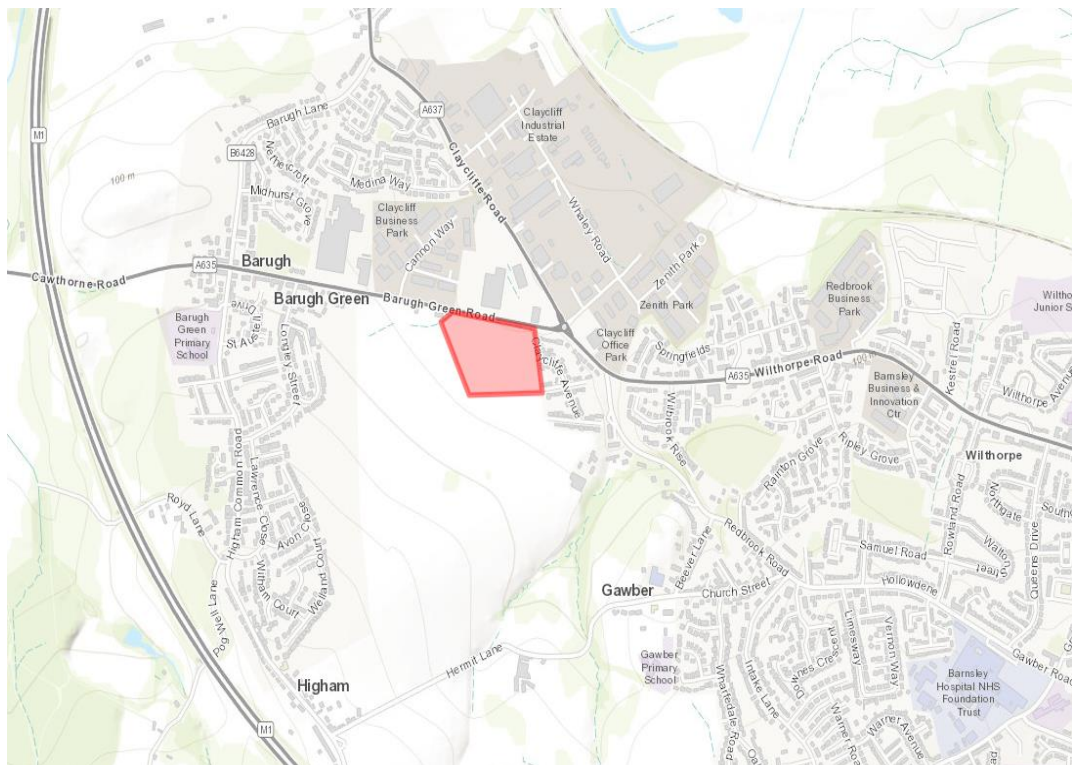


Figure 1 – Site Location Plan

3.1.2 The site comprises of agricultural land and fronts the A635 Barugh Green Road for approximately 240 metres. The site boundaries are as follows;

North: A635 Barugh Green Road.

East: Claycliffe Avenue and residential properties accessed from Claycliffe Avenue.

South: Agricultural land forming part of the larger MU1 allocation.

West: Properties fronting Barugh Green Road and agricultural land forming part of the larger MU1 allocation.

-
- 3.1.3 The site has a gated agricultural access at the western extent of the site frontage on Barugh Green Road. A dropped kerb footway crossing arrangement is provided.
- 3.1.4 The A635 and Claycliffe Avenue are adopted highways and the adoption records received from the Council are contained at **Appendix A**.
- 3.1.5 The Councils online resource has been reviewed and an extract of the PRoW map is contained at **Appendix B**. The map does not show any PRoW across the site.

3.2 Highway Network

- 3.2.1 The A635 is subject to a 40mph speed limit and street lighting is provided. The road is approximately 7.5m wide with footways on both sides of the road.
- 3.2.2 The A635 is a bus route with a bus stop and shelter along the site frontage for westbound services. A corresponding eastbound stop is located on the north side of Barugh Green Road some 30m east of the site.
- 3.2.3 Opposite the site frontage, on the north side of Barugh Green Road there is an access which serves EB Equipment Ltd.
- 3.2.4 Approximately 75m to the east of the site the A635 joins with the A637 at a four arm priority roundabout (The Chestnut Tree roundabout). Informal pedestrian crossing facilities are provided on all arms of the junction. North of the roundabout the A637 is routed to Darton and Wakefield. South of the roundabout the A635 continues to Barnsley Town Centre and also provides routes to the M1 Junction 37.
- 3.2.5 Approximately 650m to the west of the site the A635 forms a traffic signal controlled cross roads junction with Higham Common Road and Barugh Lane (Barugh Green crossroads). Controlled pedestrian crossing facilities are provided on all arms of the junction.

3.3 Traffic Data

3.3.1 An Automatic Traffic Count (ATC) was undertaken along Barugh Green Road, along the site frontage, for a 7-day period during April 2019. The data has been analysed and the network peak periods are 08:00 – 09:00 in the AM and 16:00 – 17:00 in the PM. The average weekday traffic flows are summarised at **Table 1**.

Time Period	2019 Base Two-way Traffic
07:00 - 08:00	641
08:00 - 09:00	859
09:00 - 10:00	716
15:00 - 16:00	876
16:00 - 17:00	984
17:00 - 18:00	934
18:00 - 19:00	542
00.00 - 24.00	10221

Table 1 – A635 Barugh Green Road Traffic Flows

3.3.2 Traffic counts have also been undertaken at the following junction locations on Thursday 12 March 2020 and Tuesday 17 March 2020 between 07.30-09.30hrs and 16.00-18.00hrs.

- 17.03.20 - A635 Barugh Green Road (west) / A637 Claycliffe Road / Whaley Road / A635 Barugh Green Road (south) priority roundabout (The Chestnut Tree Roundabout).
- 12.03.20 - EB Equipment access/A635 Barugh Green Road priority Junction.

3.3.3 The traffic survey at the EB Equipment access shows that traffic movements between the access and Barugh Green Road are very low and are summarised at **Table 2**.

Time	Traffic Flow at EB Equipment Access 12.03.2020			
	Right In	Left In	Right Out	Left Out
07.30-08.30	2	4	0	0
08.00-09.00	1	3	0	0
08.30-09.30	2	2	1	0
16.00-17.00	0	0	4	0
16.30-17.30	0	0	6	1
17.00-18.00	0	0	7	1

Table 2 – 2020 Traffic Flows at EB Equipment Access on A635 Barugh Breen Road

- 3.3.4 The peak hour traffic flows on Barugh Green Road from the 2019 ATC have been compared with those from the count undertaken on 12.03.2020, since these are directly comparable with no other accesses between the count locations. A Summary of the comparison is shown at **Table 3**.

Time	Total Flow on A635 Barugh Green Road		
	2019 ATC (Weekday Average)	12.03.2020	2019 to 2020 Conversion Factor
AM Peak Hour 08.00-09.00	858	841	1.020214
PM Peak Hour 16.00-17.00	984	844	1.1658768

Table 3 – 2019 – 2020 Traffic Flow Comparison A635 Barugh Green Road

- 3.3.5 The traffic flows counted at The Chestnut Tree roundabout on 17.03.2020 have been upwardly adjusted for the peak hour periods using the conversion factors presented at **Table 3**. This accounts for the larger traffic volumes recorded in 2019. The traffic peak hour flows for Barugh Green Road have been taken from the 2019 ATC data. The base 2020 traffic flow diagram is contained at **Appendix J**.

3.4 Vehicle Speed Survey

- 3.4.1 A Radar vehicle speed survey was undertaken by Sanderson's on the A635 at a central point about the site frontage. The results are contained at **Appendix C** and summarised at **Table 4**.

Direction	Recorded Speeds	
	Mean Speed	85th Percentile Wet Weather Speed
Eastbound	35.81mph	37.55mph
Westbound	38.09mph	39.93mph

Table 4 – Summary of A635 Vehicle Speed Survey

- 3.4.2 From the recorded vehicle speeds, guidance contained within Design Manual for Roads and Bridges suggest that the Design Speed is 70kph. With a 70kph Design Speed, access visibility should be 2.4m x 120m.

3.5 Personal Injury Accident Data

3.5.1 Accident information has been obtained from the online Crashmap database for recorded personal injury accidents that have occurred within the vicinity of the site within the most recent 5 year period available (2014-2018).

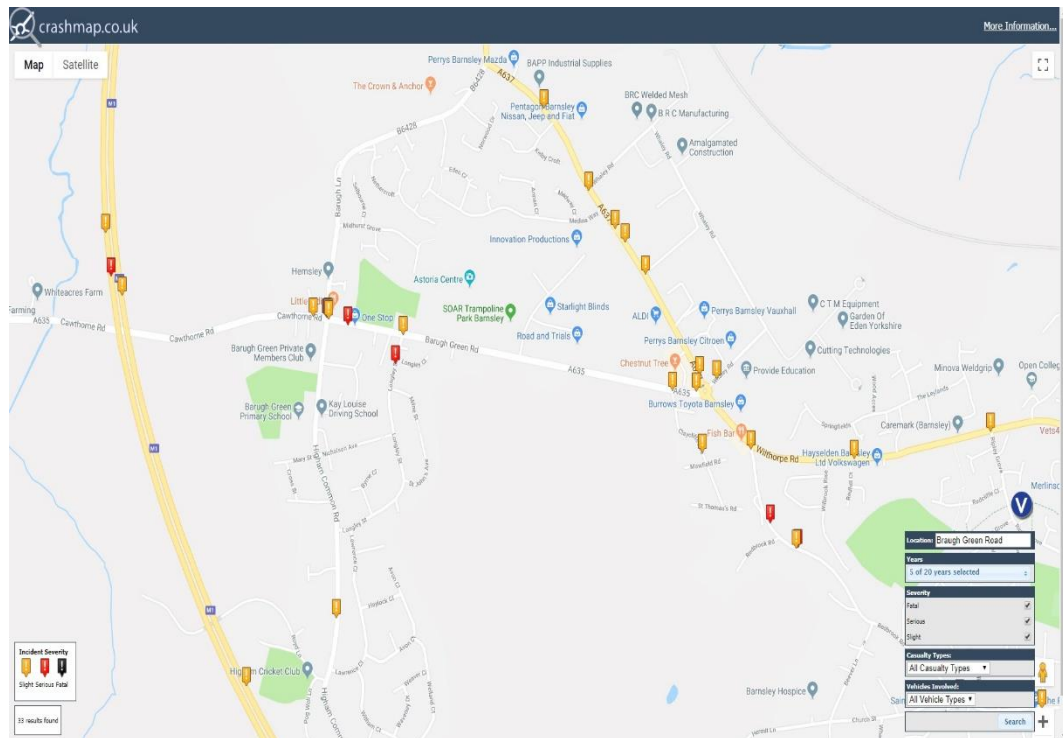


Figure 2 - Crashmap Extract

www.crashmap.co.uk

3.5.2 The accident data shows that there hasn't been any injury traffic accidents on the A635 site frontage within the search period.

3.5.3 At The Chestnut Tree roundabout immediately east of the site there has been a total of four slight severity incidents within the search period. The incidents are not clustered by location or date. One incident involved a pedestrian and one incident involved a motorcyclist.

3.5.4 At the Barugh Green crossroads (and immediate approaches) there has been a total of seven slight and two serious incidents within the search period. One serious incident involved a pedestrian and one serious incident involved a motorcyclist. Details of the Serious incidents are contained at **Appendix D** and summarised:

Incident ref 2017140230154 occurred on Tuesday 03 October 2017 at 5:45am. The weather was fine and dry in darkness with street lights present and lit. The incident involved a vehicle turning right which caused the motorcyclist accident (without impact). The serious casualty was the motorcycle rider.

Incident ref 2018140298609 occurred on Saturday 26 May 2018 at 8:01pm. The weather was fine and dry in daylight. The incident involved a pedestrian (aged 11-15) crossing the road whilst masked by vehicles to the oncoming motorist. The serious casualty was the pedestrian. The incident did not occur at the pedestrian crossing at Barugh Green crossroads.

4 Development Proposals

4.1 Overview

- 4.1.1 The development comprises up to 140 new residential properties on land defined within Barnsley Local Plan 2019 as MU1 Barnsley West. The application site forms the northern part of the MU1 allocation comprising some 4.77 hectares. The proposed development site layout plan can be found at **Appendix E**.
- 4.1.2 Subject to planning approval it is anticipated that the development would start on site in January 2021 with completion of development around April 2024.
- 4.1.3 The development proposes a mix of 2, 3 and 4 bedroom properties together with public open space and a Local Area for Play (LAP).
- 4.1.4 The site layout has been designed in cognisance of the design requirements set out within South Yorkshire Residential Design Guide. The highway network within the site will be offered for adoption under Section 38 of the Highways Act 1980.

4.2 Access

- 4.2.1 Access to the site is proposed from a new priority junction arrangement with the A635 Barugh Green Road, including ghost island right turn provision on the A635. The proposed access arrangement is shown on **Drawing 11434-001** at **Appendix F**.
- 4.2.2 The access road is shown with a 6m wide carriageway and 2m footways on both sides of the road. The access junction radii are 10m with an informal dropped kerb pedestrian crossing arrangement at the bell mouth which includes tactile paving. Access visibility at an urban minor road distance of 2.4m is 120m in both directions, which is appropriate for the speed limit and the recorded speed of vehicles on Barugh Green Road.
- 4.2.3 The proposed ghost island right turn provision on Barugh Green Road requires road widening on the south (site) side of the road. This will require alterations to the existing bus stop located to the east of the site access as well as alterations to street furniture and street lighting columns.

4.2.4 A new pedestrian refuge island is proposed on Barugh Green Road to the east side of the site access which will incorporate informal dropped kerb pedestrian facilities including tactile paving. The crossing will assist pedestrians across Barugh Green Road to access the bus stop and supermarket located on the north side of the road.

4.2.5 Pedestrian and cyclist access is proposed from Barugh Green Road.

4.2.6 A secondary vehicle access is also proposed from the end of Mawfield Road, which in turn connects to Baugh Green Road at the eastern end of the site via Claycliffe Avenue. Pedestrian and cyclist accessibility will also be available at the link.

4.2.7 The site layout will allow the potential future linkage to the wider MU1 site at the southern end of the site.

4.3 *Parking*

4.3.1 The development proposes 2 parking spaces for each property. Additional visitor parking is available on street.

4.3.2 In accordance with Barnsley Sustainable Travel Supplementary Planning Document the development will provide electric vehicle charging points at a ratio of 1 charging point per unit (dwelling with dedicated parking), or 1 charging point per 10 spaces (unallocated parking).

4.3.3 The development will provide 1 secure cycle space per dwelling within a garage or separate secure covered area within the plot.

4.4 *Servicing*

4.4.1 The site access has been assessed with a large refuse vehicle. Within the site there are turning facilities provided within adopted highway areas.

4.4.2 Refuse collection is kerbside within the site. Bin collection areas can be provided at various locations to ensure that refuse vehicles can efficiently service the site.

4.5 *Construction Phase*

- 4.5.1 The construction phase of the development is transient and will not have a lasting impact on highway conditions. Planning conditions are anticipated that will restrict and limit the impact of construction related traffic on the site and public highway.
- 4.5.2 A Construction Traffic Management Plan (CTMP) can be conditioned as part of the development to ensure appropriate construction traffic routing and strategy. On site loading and vehicle turning provision can be accommodated within the development site to limit the impact on the adjacent highway network.
- 4.5.3 The development construction phase will include measures designed to maintain existing pedestrian and cycling routes and bus services on Barugh Green Road.
- 4.5.4 Temporary measures may be required to provide a temporary bus stop adjacent to the site to accommodate construction of the site access, with details to be agreed with South Yorkshire Passenger Transport Executive.
- 4.5.5 The anticipated working hours are expected to be the standard planning allowed arrangements. This will limit the impact of construction vehicles on the highway network.

5 Sustainable Travel Accessibility

5.1 Overview

5.1.1 This section of the report seeks to demonstrate the accessibility of the site by sustainable travel modes; this includes both 'Active Transport' (walking and cycling) and 'Public Transport' (bus and rail).

5.2 Accessibility on Foot

5.2.1 Guidance indicates that walking is the most common form of travel and has the greatest potential to replace short car trips, particularly those under 2km.

5.2.2 In relation to walking distances Manual for Streets, which is the latest national guidance on the design of residential roads, offers the following guidance in Section 4.4 "The walkable neighbourhood".

"4.4.1 Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPG 13 states walking offers the greatest potential to replace short car trips, particularly those under 2 km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents".

5.2.3 **Figure 3** indicates destinations which lie within an 800m and 2km radius of the application site. It is noted that walking routes will not follow the simple radius of this plan and the plan is provided as an indication of where destinations lie and the general extent to which the local area can be accessed on foot.

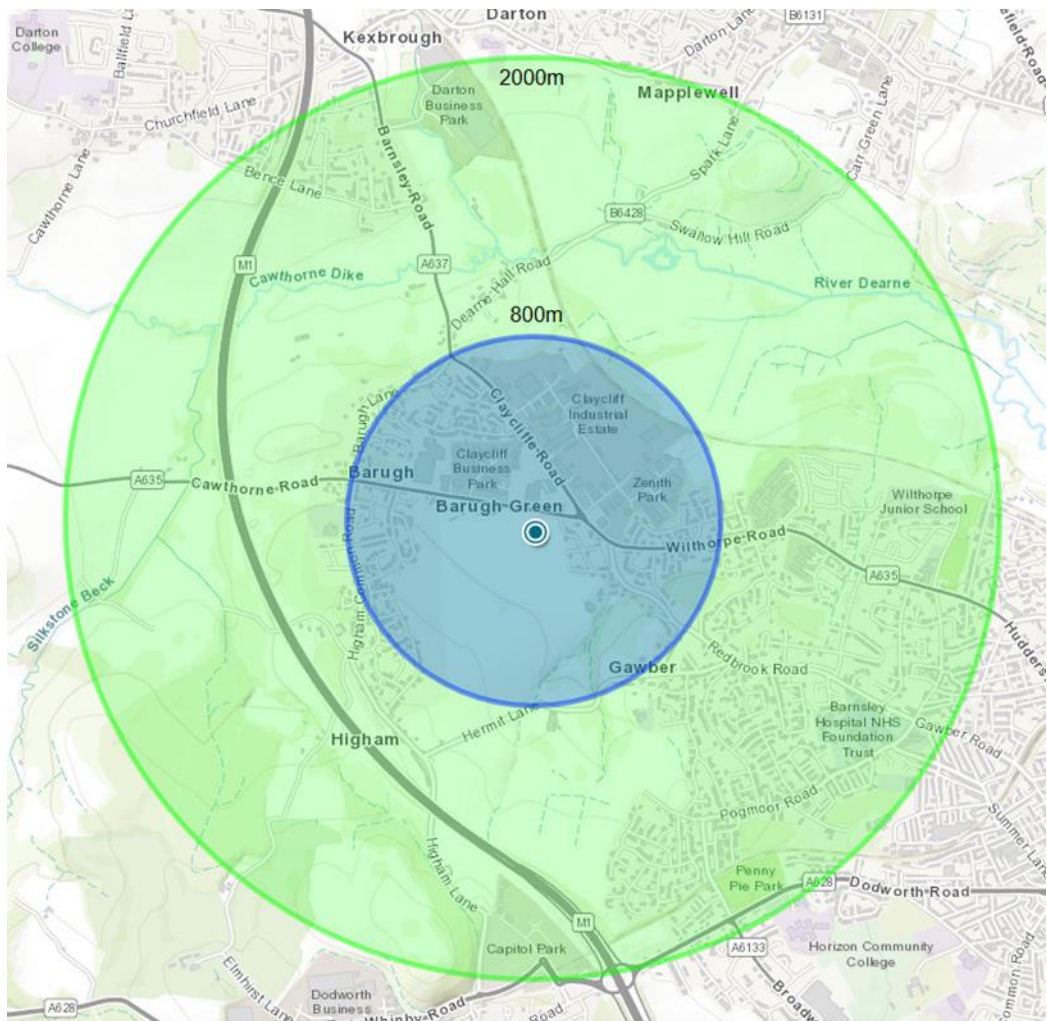


Figure 3 – Indicative Walking Distance

(Source: NatGeo Mapmaker)

5.2.4 The following amenities can be found within 800m of the site:-

Pub / restaurant (200m)	Café (670m)
Aldi supermarket (230m)	Sandwich bar (680m)
Garden Centre (280m)	Rec and sports court (740m)
Fisheries (380m)	Convenience store (740m)
Claycliffe office park (400m)	Hair and beauty studio (750m)
Claycliffe business park (450m)	Pre-school (770m)
Metro trading centre (600m)	Chinese takeaway (770m)
Zenith business park (640m)	Indian takeaway (800m)

5.2.5 The following amenities can be found within 2km of the site:-

Pharmacy (910m)	Gawber Primary School (1300m)
Barugh Surgery (950m)	Higham Cricket Club (1600m)
Barugh Green Primary School (1100m)	Wilthorpe Primary school (1900m)
Post Office (1300m)	Dentist (1900m)
Florist (1300m)	Barnsley Hospital (1900m)

5.2.6 In addition to these amenities there are also bus stop located along the site frontage, details of the services available from these stops are summarised within section 5.4.

5.2.7 Footways are provided on both sides of the roads which links the site to the wider pedestrian network, connecting to local amenities and Barnsley town centre. Street lighting is present on all of the main pedestrian routes.

5.2.8 Informal pedestrian crossing facilities are provided on all arms of The Chestnut Tree roundabout located approximately 75m to the east of the site. Controlled pedestrian crossing facilities are provided on all arms of the junction located approximately 650m to the west of the site.

5.3 Accessibility by Cycle

5.3.1 Guidance indicates that cycling has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer journey by public transport. However, The National Travel Survey suggests that 5.3km is an average cycle distance and 7.3km is the 85th percentile distance.

5.3.2 **Figure 4** indicates destinations that lie within 5km and 7.5km radii of the site. Again it is noted that cycling will not follow the simple radius shown on this plan and it is provided to give an indication of where destinations lie and the general extent to which the site is accessible by cycle.

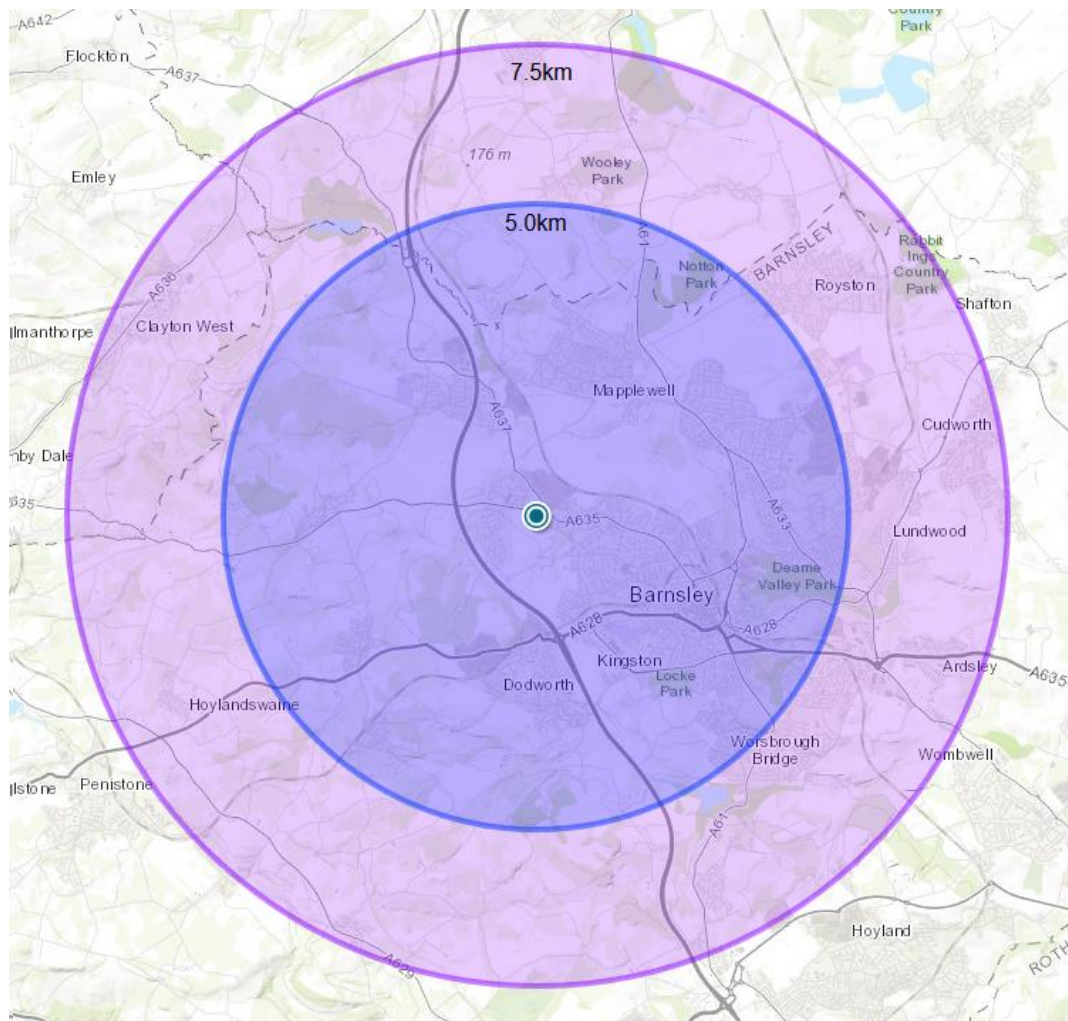


Figure 4 – Indicative Cycle Distances

(Source: NatGeo Mapmaker)

- 5.3.3 Barnsley town centre and several surrounding areas (including Kexborough, Staincross and Dodworth) are located within 5km of the site. Also all the facilities described in the previous 'Walking' section are also within cycling distance of the site.
- 5.3.4 The centre of Barnsley is located 3.6km cycle distance to the southeast, which represents an approximate 11 minute cycle journey based on an average cycling speed of 20kph. It is therefore considered that Barnsley town is well within cycle distance for commuters.

5.4 Accessibility by Bus

- 5.4.1 Barugh Green Road is a bus route with a bus stop and shelter along the site frontage for westbound services. A corresponding eastbound stop is located on the north side of Barugh Green Road some 30m east of the site. A plan indicating the location of the bus stops in the proximity of the site is shown on **Figure 5**.



Figure 5 – Indicative bus stop location

(Source: NatGeo Mapmaker)

- 5.4.2 Details of the facilities provided at the stops along with the available services are provided below:-

A635 – Barugh Green Road Eastbound

Location:	A635 north side, some 30m east of the site
Reference:	37055018
Facilities:	Shelter, seating and timetable information
Bus services:	93, 93a, 94/94a, 95, 95a, 96, 96a

A635 – Barugh Green Road Westbound

Location: 300m from the centre of site
Reference: 37055075
Facilities: Shelter, seating and timetable information
Bus services: 93, 93a, 94/94a, 95, 95a, 96, 96a

5.4.3 A summary of the bus services which operate at the above stops is summarised at **Table 5**.

Summary of services		Frequency (Minutes)			
Service	Route	Mon – Fri Daytime	Saturday Daytime	Sunday Daytime	Evening Daily
93	Barnsley – Darton – Woolley Grange	2 buses per hour	60	60	60 (not Sun eves)
93a	Barnsley - Mapplewell	60	60	No service	No service
94/94a	Barnsley – Higham - Cawthorne	60	60	120	120
95	Barnsley - Kexborough	20	30	60	60 (not Sun eves)
95a	Barnsley – Kexborough - Darton	No service (see 93,95)	Few buses	No service (see 93,95)	60 Sun eve late eve Mon-Sat
96	Barnsley – Kexborough - Wakefield	60	60	No service	No service
96a	Wakefield – Kexborough – Higham - Barnsley	1 journey	No service	No service	No service

Table 5 – Bus Services and Frequency

5.4.4 **Table 5** shows that there is a peak frequency of 8 buses per hour from Monday to Friday, 6 buses per hour on Saturdays, 2-3 buses per hour on Sundays and generally 3-4 buses in evening times.

5.4.5 The bus services nearby link to Barnsley Interchange in Barnsley Town Centre which is an approximate 15 minute bus journey from Barugh Green. All bus and rail journey destinations from Barnsley are available from the Interchange. Service 93/93a also links to Darton railway station which is an approximate 5 minute bus journey from Barugh Green.

5.5 *Accessibility by Rail*

5.5.1 The nearest railway stations to the site are Barnsley Interchange located approximately 3km southeast of the site, Darton railway station located approximately 2.5km north of the site and Dodworth railway station located approximately 4.5km to the southwest of the site. The three stations are within cycle distance of the site and Barnsley and Darton are also accessible by bus services which operate at stops located adjacent to the site.

5.6 *Sustainable Accessibility Summary*

5.6.1 The development site is sustainably located with both active transport opportunities and access to public passenger transport arrangements. As such residents and visitors will have a choice of sustainable travel options.

5.6.2 The development scheme will positively influence travel behaviour at the site by incorporating facilities to encourage sustainable trip movements and ensuring easy, convenient access to sustainable travel options. A Travel Plan has been developed for the site which sets out the strategy and initiatives that will be adopted in order to encourage the use of sustainable modes of travel associated with the development.

6 Multimodal Trip Assessment

6.1 Multimodal development traffic generations have been derived from the TRICS database. The TRICS data is contained at **Appendix G**.

6.2 An Automatic Traffic Count (ATC) was undertaken along Barugh Green Road, along the site frontage, for a 7-day period during April 2019. The data has been analysed and the network peak periods are 08:00 – 09:00hrs in the AM and 16:00 – 17:00hrs in the PM.

6.3 The weekday hourly two-way flows are set at **Table 6** alongside the predicted development trip generations from 140 dwellings for each corresponding hour.

Time Period	2019 Base Two-way Traffic	Total Development Traffic (140 dwellings)	Combined Traffic
07:00 - 08:00	641	55	696
08:00 - 09:00	859	69	928
09:00 - 10:00	716	41	757
15:00 - 16:00	876	60	936
16:00 - 17:00	984	61	1045
17:00 - 18:00	934	66	1000
18:00 - 19:00	542	62	604

Table 6 – ATC Summary and Development Traffic Generations

6.4 From the information above, the cumulative peak periods are considered to be 08:00 – 09:00 in the AM and 16:00 – 17:00 in the PM.

6.5 The Multi Modal trip rates and the resultant people generations for up to 140 dwellings are summarised at **Table 7**, overleaf, for the weekday network peaks hours 08.00-09.00hrs, 16.00-17.00hrs and Daily (07.00-19.00hrs) periods.

	Trip Rate	Modal Split	Generations
AM Peak Hour Modal Split			
Pedestrians	0.095	10.2%	13
Cyclists	0.019	2.0%	3
Public Transport Users	0.025	2.7%	3
Total Vehicle Occupants	0.795	85.1%	111
Total People Trips	0.934	100.0%	131
PM Peak Hour Modal Split			
Pedestrians	0.084	10.3%	12
Cyclists	0.014	1.7%	2
Public Transport Users	0.021	2.6%	3
Total Vehicle Occupants	0.699	85.4%	98
Total People Trips	0.817	100.0%	114
Daily Modal Split			
Pedestrians	0.842	10.9%	118
Cyclists	0.129	1.7%	18
Public Transport Users	0.165	2.1%	23
Total Vehicle Occupants	6.575	85.3%	921
Total People Trips	7.704	100.0%	1080

Table 7 - Multimodal Trip Rates and Traffic Generations

- 6.6 Based on the TRICS data the development could be expected to generate approximately 15% travel by walking, cycling and public transport modes in the AM and PM peak hour periods. For a weekday daily period approximately 15% of travel could be by sustainable modes.
- 6.7 Actual peak hour demand from the development for walking, cycling and public transport is modest and at a level which can readily be accommodated within the existing infrastructure provision.
- 6.8 The TRICS data has been compared with 2011 Census modal data. The site is located within the Barnsley 012 Middle Super Output Area. The Method of Travel to Work is summarised at **Table 8**.

	Barnsley 012	Barnsley	England
Method of Travel	% working	% working	% working
Working Mainly at or From Home	3.7	3.4	5.4
Underground, Metro, Light Rail, Tram	0.2	0.1	4.1
Train	2.0	2.0	5.3
Bus, Minibus or Coach	3.9	6.3	7.5
Taxi	0.5	0.5	0.5
Motorcycle, Scooter or Moped	0.5	0.8	0.8
Driving a Car or Van	71.5	68.3	57.0
Passenger in a Car or Van	6.0	7.4	5.0
Bicycle	0.6	0.7	3.0
On Foot	10.7	10.0	10.7
Other Method of Travel to Work	0.4	0.5	0.6

Table 8 – 2011 Census data

6.9 The census data suggests that the modal split travel to work from the site by sustainable modes could be 29.5% (including 3.7% working from home). The census modal split for walking, cycling and public transport use is approximately 17%, which is slightly higher than the 15% TRICS modal split.

6.10 From the TRICS data the vehicle trip rates per dwelling and associated trips based on up to 140 dwellings are summarised at **Table 9**:

Time	Arrival	Departure	Total
08.00-09.00	0.120 17	0.369 52	0.489 69
16.00-17.00	0.274 38	0.163 23	0.437 61
07.00-17.00	2.207 309	2.239 313	4.446 622

Table 9 – Peak Hour Traffic Generations

6.11 The proposed development would result in 17 inbound movements and 52 outbound movements in the AM peak hour. This equates to approximately 1 vehicle inbound every 3.5 minutes inbound and 1 vehicle outbound approximately every minute. In the PM peak hour the development would generate 38 inbound movements and 23 outbound movements. This equates to approximately 1 vehicle inbound every 1.5 minutes inbound and 1 vehicle outbound every 2.6 minutes.

7 Junction Modelling Parameters

7.1 Overview

7.1.1 In considering the effects of the development proposal the weekday AM and PM peak hour periods have been considered (08.00-09.00hrs and 16.00-17.00hrs). These periods represent the maximum effect expected on the transport network.

7.1.2 The following scenarios have been considered and take into account the overall cumulative effects of the proposal and including the potential impact from the MU1 first phase development at 2026.

- 2020 Planning Application Year
- 2024 Completion Year
- 2026 Future Year (MU1 Phase 1)

7.2 Gravity Model

7.2.1 The distribution of traffic from the site has been predicted using 2011 Census: Origin / Destination statistics (Dataset: WU03EW) which identifies 'Location of usual residence and place of work by method of travel to work' at Middle Super Output Area (MSOA) level. This data identifies the existing travel to work patterns of people who reside within the sites representative MSOA, which for reference is 'Barnsley 012'.

7.2.2 As the MSOA data includes all nationwide destinations, the results of the search have been refined to exclude all MSOA's which generate less than 15 trips which equates to less than 0.7% of the overall sample. It is considered that this excluded information is not relevant in terms of establishing a 'likely' distribution of traffic.

7.2.3 The likely traffic route assignments between the site and the identified MSOA's have been determined using online route mapping and Population Centroid Data which identifies the centre of each MSOA based upon its residential population.

7.2.4 A table summarising the assigned route from each qualifying MSOA is included at **Appendix H** whilst the traffic assignments are illustrated in percentage terms on the traffic figure diagram at **Appendix I**.

7.2.5 The predicted development trip generations have been applied to the distribution proportions to produce the development traffic flow diagram which is included at **Appendix I**.

7.2.6 From the gravity model assessment it is considered that the development would have a material operational impact at the following junction locations:

- The priority site access junction on the A635 Barugh Green Road.
- The A635 / A637 (The Chestnut Tree) roundabout.

7.3 **Traffic Growth**

7.3.1 Growth factors have been generated utilising TEMPRO (7.2) Table AF15 adjusted against NTEM Dataset 7.2 of the Department for Transport's National Traffic Model. A summary of the growth factors for the 2020 traffic counts are summarised at **Table 10**.

TEMPRO	Weekday AM Peak Period	Weekday PM Peak Period
2020-2024	1.0655	1.0649
2020-2026	1.0916	1.0912

Table 10 – TEMPRO Growth Factors

7.4 **Committed Development**

7.4.1 Details of committed development traffic has been obtained from the Transport Statement (21.11.2019) prepared by Fore Consulting Limited for the Strata Sterling Barnsley West Ltd MU1 access planning application. The report states that the committed developments have been agreed with Barnsley Council and Highways England. A summary of the committed developments is summarised at **Table 11**.

Planning Reference	Application Summary
2016/0259	Smithy Wood Lane – Residential development of 36 dwellings
2016/0268	Green Road – Residential development of 50 dwellings
2017/1002	Capitol Park – development of approx. 7,000 sqm of industrial land use
2016/0713	Capitol Park Industrial Estate – outline application for 16,499 sqm GFA of industrial development
2017/0987	Capitol Park – NHS Blood storage facility on Unit C
B/04/1998/	Capitol Park – Industrial development with a site area of 0.95 hectares
2019/0286	Capitol Park – Employment development of approximately 16,723 sqm

Table 11 – Committed Developments

- 7.4.2 The transport reports associated with the committed developments have been reviewed to ascertain the weekday peak hour traffic flows within the vicinity of the site. These are summarised at **Figure 6**.

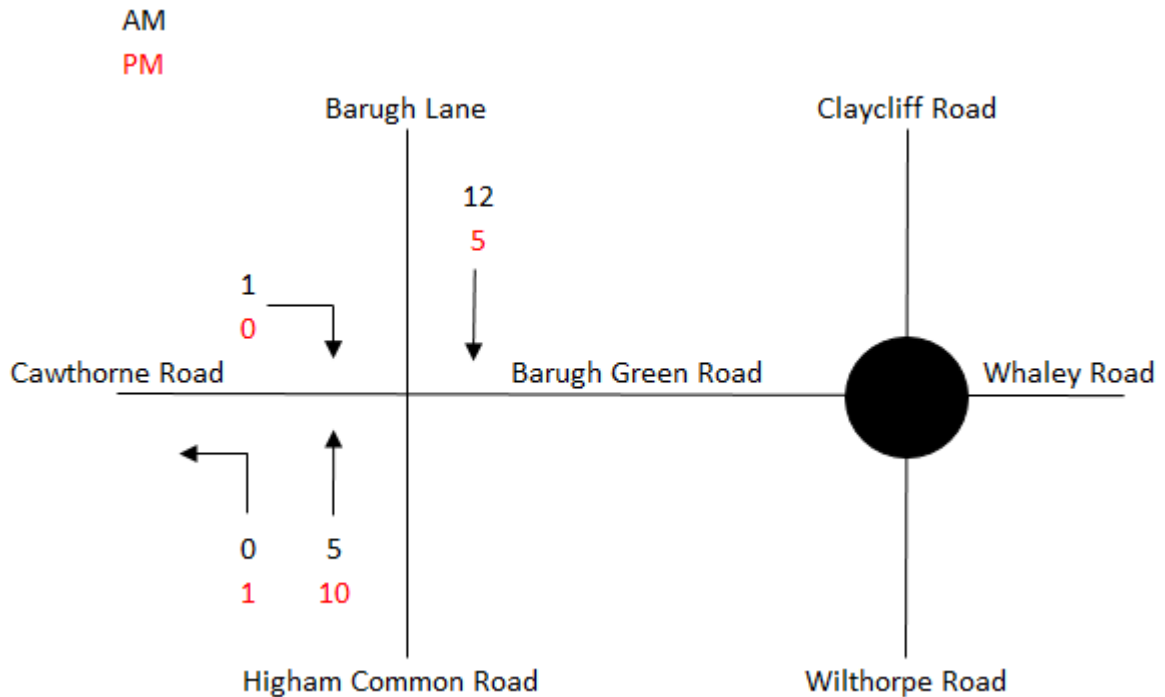


Figure 6 – Committed Development Weekday Peak Hour Traffic Flows

- 7.4.3 The review demonstrates that the committed developments are not predicted to impact Barugh Green Road past the site access or at the adjacent A635 / A637 (The Chestnut Tree) roundabout.
- 7.4.4 As requested by Barnsley Council, the traffic generations associated with the Strata Sterling Barnsley West Ltd MU1 access planning application have been taken into account for the 2026 Phase 1 scenario. Details have been obtained from the Transport Statement (21.11.2019) prepared by Fore Consulting Limited and the weekday peak hour traffic flows within the vicinity of the site are summarised at **Figure 7**.

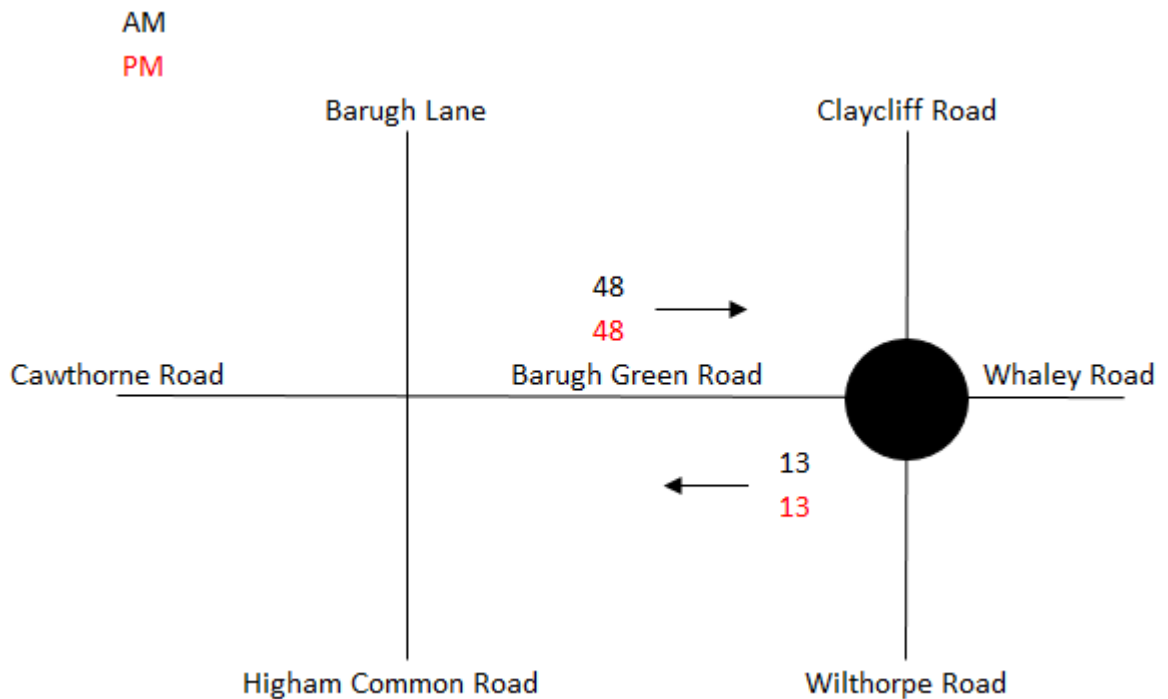


Figure 7 – Strata Sterling Barnsley West Ltd MU1 Phase 1 2026 Committed Development Weekday Peak Hour Traffic Flows

- 7.4.5 The MU1 2026 traffic flows on Barugh Green Road have been assigned at The Chestnut Tree roundabout based on existing turning proportions.

7.5 Assessment Scenarios

- 7.5.1 The growth factors have been applied to the base traffic surveys. The 2020 Planning Application Year, 2024 Completion Year and 2026 Future Year weekday peak hour traffic diagrams are contained at **Appendix J**.
- 7.5.2 The committed developments will not affect the 2020 and 2024 scenarios. The MU1 phase 1 traffic flows have been applied to the 2026 scenario.

8 Traffic Impact Assessment

8.1 Overview

- 8.1.1 Junctions 9 is the latest version of Transport Research Laboratories (TRL) industry-standard package for modelling priority junctions and roundabouts. Junctions 9 models have been developed for the site access priority junction on Barugh Green Road and for The Chestnut Tree roundabout.
- 8.1.2 The ratio of flow to capacity (RFC) is an indicator of the likely performance of a junction under design year loading. Due to site variation, there may be a standard error of predication of the entry capacity by the formulae of + or – 15% for any site. Thus queuing should not occur in the various turning movements in the chosen design year peak hour in 5 of 6 peak hour periods, if a maximum RFC of about 85% is used.
- 8.1.3 The general use of designs with an RFC of about 85% is likely to result in a level of provision which will be economically justified.

8.2 Site Access / A635 Barugh Green Road Priority Junction

- 8.2.1 The Junction 9 results are contained at **Appendix K** and summarised at **Table 12**.

Arm A – Site Access Left Turn

Arm B – Site Access Right Turn

Arm C – Barugh Green Road (West) Right Turn to Site Access

2020 Planning Application Year

Movement	Weekday AM Peak 08.00 – 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.01	0.0	0.00	0.0
Arm B	0.16	0.2	0.08	0.1
Arm C	0.00	0.0	0.01	0.0

Table 12 (a) – Junction 9 Results 2020

2024 Completion Year

Movement	Weekday AM Peak 08.00 - 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.01	0.0	0.00	0.0
Arm B	0.16	0.2	0.08	0.1
Arm C	0.00	0.0	0.01	0.0

Table 12 (b) – Junction 9 Results 2024

2026 Future Year

Movement	Weekday AM Peak 08.00 - 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.01	0.0	0.00	0.0
Arm B	0.17	0.2	0.09	0.1
Arm C	0.00	0.0	0.01	0.0

Table 12 (c) – Junction 9 Results 2026 Including MU1 Phase 1 Committed Development

8.2.2 The capacity assessment for the proposed site access junction predicts that the junction will operate well within capacity for all assessment scenarios with all ratios of flow to capacity remaining significantly below 0.85 RFC.

8.2.3 The development site access will not have an adverse effect on the EB Equipment access on the opposite side of the road. The traffic data presented at **Table 2** demonstrates that the network peak period traffic flows at the EB access are very low.

8.3 A635 / A637 (The Chestnut Tree) Roundabout

8.3.1 The Junction 9 results are contained at **Appendix L** and summarised at **Table 13**.

Arm A – Claycliffe Road

Arm B – Whaley Road

Arm C – Wilthorpe Road

Arm D – Barugh Green Road

2020 Planning Application Year

Movement	Weekday AM Peak 08.00 - 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.52	1.1	0.56	1.3
Arm B	0.14	0.2	0.34	0.5
Arm C	0.55	1.3	0.76	3.2
Arm D	0.58	1.4	0.46	0.9

Table 13 (a) – Junction 9 Results 2020 Base

Movement	Weekday AM Peak 08.00 - 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.53	1.2	0.57	1.3
Arm B	0.14	0.2	0.35	0.5
Arm C	0.56	1.3	0.78	3.6
Arm D	0.64	1.8	0.49	1.0

Table 13 (b) – Junction 9 Results 2020 Base + Development

2024 Completion Year

Movement	Weekday AM Peak 08.00 – 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.57	1.3	0.60	1.5
Arm B	0.15	0.2	0.38	0.6
Arm C	0.59	1.5	0.81	4.3
Arm D	0.64	1.8	0.51	1.0

Table13 (c) – Junction 9 Results 2024 Base

Movement	Weekday AM Peak 08.00 - 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.58	1.4	0.61	1.6
Arm B	0.15	0.2	0.39	0.6
Arm C	0.60	1.5	0.84	5.0
Arm D	0.69	2.2	0.53	1.1

Table 13 (d) – Junction 9 Results 2024 Base + Development

2026 Future Year

Movement	Weekday AM Peak 08.00 – 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.60	1.5	0.64	1.8
Arm B	0.16	0.2	0.41	0.7
Arm C	0.61	1.6	0.85	5.3
Arm D	0.71	2.5	0.58	1.4

Table 13 (e) – Junction 9 Results 2026 Base (Including MU1)

Movement	Weekday AM Peak 08.00 - 09.00		Weekday PM Peak 16.00 - 17.00	
	Max RFC	Max Queue	Max RFC	Max Queue
Arm A	0.62	1.7	0.65	1.9
Arm B	0.17	0.2	0.42	0.7
Arm C	0.62	1.7	0.87	6.3
Arm D	0.77	3.2	0.61	1.6

Table 13 (f) – Junction 9 Results 2026 Base (Including MU1) + Development

-
- 8.3.2 The capacity assessment for The Chestnut Tree roundabout predicts that the junction will operate within capacity for the 2020 and 2024 scenarios with all ratios of flow to capacity remaining below 0.85 RFC.
- 8.3.3 At 2026 the Wilthorpe Road (A635 south) arm of the junction is predicted to operate at capacity in the base (do nothing) scenario, however queuing remains modest. With development traffic the maximum vehicle queuing on this arm is only predicted to increase by 1 vehicle. This is not significant. All other arms of the junction are predicted to operate within capacity.
- 8.3.4 Away from the site the development traffic flows will become further diluted on the highway network. The development is therefore not anticipated to have an adverse impact on local traffic conditions.

8.4 *Consideration of the Wider MU1 Allocation*

- 8.4.1 The implications of the Strata Sterling Barnsley West planning applications for access to the Wider MU1 Allocation and potential Claycliffe Link Road have been considered. The Countryside Properties development site is included within the MU1 allocation and therefore has been taken into account within the transport studies undertaken in support of the Strata Sterling Barnsley West planning applications.
- 8.4.2 The impact of the MU1 site accesses and Claycliffe Link Road is assessed within the Transport Statements prepared by Fore Consulting Limited and submitted with the Strata Sterling Barnsley West Ltd planning applications, which includes an EIA Transport Screening Assessment.
- 8.4.3 The Transport Screening Assessment concludes that, for the operational phase of the development, the highways impact of the proposals will be beneficial and there would be no potential for residual adverse effects that could be considered significant in EIA terms. The transport screening assessment sets out the benefits and dis-benefits of the proposed MU1 accesses and link road, as follows:

Benefits

The reassignment of traffic flows on the local highway network removes a considerable amount of traffic from Barugh Green village, and in particular from the Barugh Green signal-controlled crossroads. As such, when completed, the new link road represents a permanent, long term benefit in terms of the operation of the highway network in Barugh Green and Higham residential areas. The significant benefit of this reassignment is removing traffic from a congested area of the network which includes static queueing at the existing signal-controlled junction. The road will also provide cycle and pedestrian links which will support sustainable movements in Barugh Green. There are other localised benefits in terms of a reduction in traffic flows, such as Higham Lane and Dodworth Road.

Dis-benefits

The reassignment of traffic flows on the highway network increases traffic flows in localised areas as a consequence of the network changes. Overall traffic flows are broadly the same on the wider highway network however there are local increases along Barugh Green Road (east) up to the Chestnut Tree Roundabout and on the improved route to towards J37 of the M1 through Capitol Close.

- 8.4.4 The Transport Statement concludes that the proposed MU1 access roundabout is acceptable from a transport and highways perspective and is predicted to be able to satisfactorily accommodate traffic growth and committed developments and that a sensitivity test has been undertaken, confirming that traffic associated with the wider MU1 development site would be satisfactorily accommodated by the proposed layout.
- 8.4.5 The Transport Statement provides a junction capacity assessment for the proposed MU1 site access roundabout on Barugh Green Road. The assessment scenarios are 2021 (Opening Year), 2026 (Phase 1) and 2033 (Full Development). The worst case 2033 RFC values for the MU1 site access arm is 0.44 (AM) and 0.54 (PM). The worst case 2033 RFC values for the Barugh Green Road east arm is 0.50 (AM) and 0.70 (PM). The Transport Statement concludes that *'The assessment demonstrates that the proposed roundabout is predicted to operate satisfactorily during the AM and PM peak hours, with negligible queueing in all scenarios. The roundabout has been designed in order to accommodate any future development as identified in the Local Plan at site MU1, this has been demonstrated in the 2033 sensitivity test scenario.'*

-
- 8.4.6 The Countryside Properties application for up to 140 dwellings will not adversely affect the proposed MU1 access roundabout on Barugh Green Road with the gravity model assessment suggesting only 7% (maximum 4 movements) of development peak hour traffic assigned in this direction.
- 8.4.7 The Countryside Properties development traffic will potentially benefit from the advantages identified as a result of the Claycliffe Link Road and without any significant residual EIA adverse effects. In operational terms the re-assignment of a small proportion of development traffic to/from the south using the Claycliffe Link Road (16%, maximum 9 movements) would not adversely affect the capacity of the MU1 roundabout, which has been shown to have reserve capacity, and would result in an associated reduced impact at The Chestnut Tree roundabout.
- 8.4.8 The Countryside Properties development proposals will therefore not adversely affect the Strata Sterling Barnsley West access proposals to develop the wider MU1 site or for the potential Claycliffe Link Road.

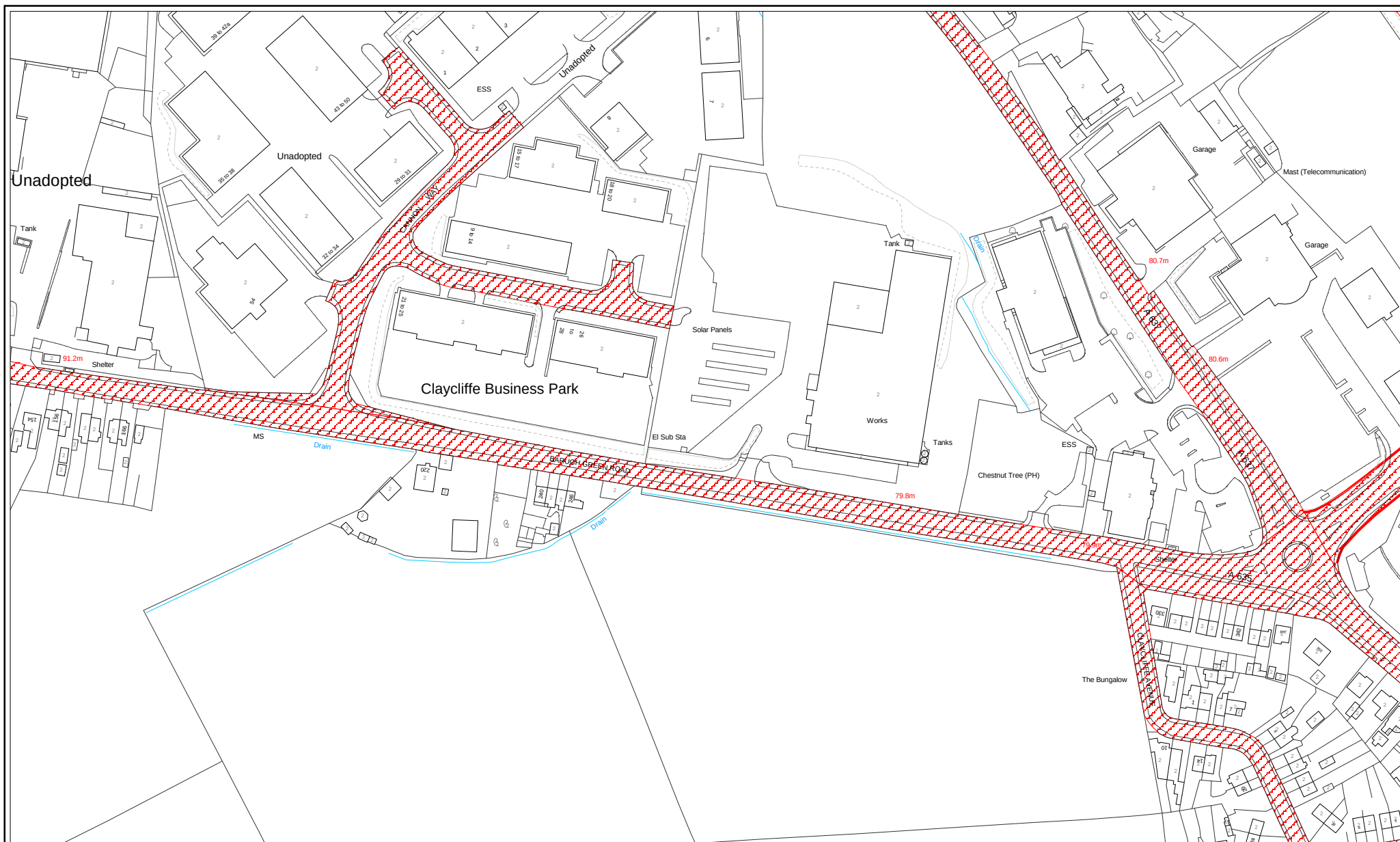
9 Summary and Conclusions

- 9.1 Sanderson Associates (Consulting Engineers) Ltd have been commissioned by Countryside Properties (UK) Ltd to prepare a Transport Assessment Report in support of a full planning application for a proposed residential development on land off the A635 Barugh Green Road, Barugh Green, Barnsley.
- 9.2 The development comprises up to 140 new residential properties on land defined within Barnsley Local Plan 2019 as MU1 Barnsley West. The application site forms the northern part of the MU1 allocation comprising some 4.77 hectares. The development proposes a mix of 2, 3 and 4 bedroom properties together with public open space and a Local Area for Play (LAP). Subject to planning approval it is anticipated that the development would start on site in January 2021 with completion of development around April 2024.
- 9.3 Access to the site is proposed from a new priority junction arrangement with the A635 Barugh Green Road, including ghost island right turn provision on the A635. This will require road widening on the south (site) side of Barugh Green Road together with alterations to the existing bus stop located to the east of the site access and alterations to street furniture and street lighting columns. A new pedestrian refuge island is proposed on Barugh Green Road to the east side of the site access which will incorporate informal dropped kerb pedestrian facilities including tactile paving. Pedestrian and cyclist access is proposed from Barugh Green Road.
- 9.4 A secondary vehicle access is proposed from the end of Mawfield Road, which in turn connects to Baugh Green Road at the eastern end of the site via Claycliffe Avenue. Pedestrian and cyclist accessibility will also be available at the link. The site layout will allow the potential future linkage to the wider MU1 site at the southern end of the site.
- 9.5 The development will provide car parking, electric vehicle charging provision and cycle parking in accordance with Barnsley Council standards.

-
- 9.6 The development site layout can accommodate residential servicing requirements with vehicle turning facilities provided within highway areas proposed for adoption.
- 9.7 The construction phase of the development is transient and will not have a lasting impact on highway conditions. Planning conditions are anticipated that will restrict and limit the impact of construction related traffic on the site and public highway.
- 9.8 The development site is sustainably located with both active transport opportunities and access to public passenger transport arrangements. As such residents and visitors will have a choice of sustainable travel options.
- 9.9 The development scheme will positively influence travel behaviour at the site by incorporating facilities to encourage sustainable trip movements and ensuring easy, convenient access to sustainable travel options. A Travel Plan has been developed for the site which sets out the strategy and initiatives that will be adopted in order to encourage the use of sustainable modes of travel associated with the development.
- 9.10 An assessment of the junctions that will be materially affected by the development has been assessed using junction modelling techniques. The assessment includes future year assessment periods and all committed development, including MU1 Phase 1. The assessment demonstrated that the development will not have any adverse impact on junction capacity.
- 9.11 The implications of the Strata Sterling Barnsley West planning applications for access to the Wider MU1 Allocation and potential Claycliffe Link Road have been considered. The Countryside Properties development site is included within the MU1 allocation and therefore has been taken into account within the transport studies undertaken in support of the Strata Sterling Barnsley West planning applications. The assessments undertaken demonstrate that the development proposals will not adversely affect the Strata Sterling Barnsley West access proposals to develop the wider MU1 site or for the potential Claycliffe Link Road.

-
- 9.12 An investigation of road traffic injury accidents has not identified any accident history problems on the local highway network which would be cause for concern or potentially exacerbated by the development proposals.
- 9.13 The development supports Barnsley Local Plan Policy Mixed Use Sites 1 in that it will deliver the northern area of the MU1 site allocation without any adverse implications for the access proposals for the wider MU1 allocation or the potential Claycliffe Link Road.
- 9.14 The development is in accordance with Barnsley Local Plan Policies T3 and T4 in that the site is sustainably located and is able to provide safe, secure and convenient access for all road users. The development is also in accordance with Barnsley Sustainable Travel and Parking Supplementary Planning Documents. The development supports the aspirations of the Barnsley Transport Strategy.
- 9.15 This Transport Assessment demonstrates that the development would not have an unacceptable impact on highway safety and the residual cumulative impact on the road network is not severe. Accordingly this development should be supported on transport grounds, subject to appropriate planning conditions.

APPENDIX A
Highway Adoption Records



Scale : Not to scale

Drawn by: K.E.

Project: A635 Baugh Green Road, Baugh Green,
Barnsley 10949

Drg No: .

Date: 2nd April 2019

Drawing: Extents of adopted highway
maintainable at public expense.



BARNLSLEY
Metropolitan Borough Council

Highways, Engineering & Transportation

Head of Service: Paul Castle
PO Box 601
Barnsley S70 9FA

APPENDIX B
Public Rights of Way Records

Location:

Legend

Public Rights of Way

Bridleway

Footpath

Restricted byway

Hybrid

OS Greyscale

OS Colour

How would you rate your online experience?

A - Z Directory

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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APPENDIX C
Vehicle Speed Data



SANDERSON ASSOCIATES (CONSULTING ENGINEERS) LTD
Sanderson House, Jubilee Way, Huddersfield, WF4 4TD

Tel: 01924 844080
Fax: 01924 844081

SPEED SURVEY

Location Barugh Green Road
Direction of Travel Eastbound

Project Number 10949
Date of Survey 04/04/19
Start Time 11:56
Finish Time 12:25

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26		51		76	
2		27		52		77	
3		28	2	53		78	
4		29	3	54	1	79	
5		30	4	55		80	
6		31	3	56		81	
7		32	6	57		82	
8		33	10	58		83	
9		34	10	59		84	
10		35	14	60		85	
11		36	3	61		86	
12		37	12	62		87	
13		38	16	63		88	
14		39	3	64		89	
15		40	5	65		90	
16		41	3	66		91	
17		42	3	67		92	
18		43		68		93	
19		44		69		94	
20		45	1	70		95	
21		46		71		96	
22		47		72		97	
23		48	1	73		98	
24		49		74		99	
25		50		75		100	

Number of Readings = 100

Dual C'way Y/N? n

Mean Speed = 35.81

Single C'way Y/N? y

Standard Deviation = 4.0767758

Wet Road Surface Y/N? n

85 Percentile Speed = 40.037617

85 Percentile Wet Weather Speed = 37.552617 <<<<

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with <<<<.



SANDERSON ASSOCIATES (CONSULTING ENGINEERS) LTD
Sanderson House, Jubilee Way, Huddersfield, WF4 4TD

Tel: 01924 844080
Fax: 01924 844081

SPEED SURVEY

Location Barugh Green Road
Direction of Travel Westbound

Project Number 10949
Date of Survey 04/04/19
Start Time 11:56
Finish Time 12:28

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26		51		76	
2		27		52		77	
3		28		53		78	
4		29		54		79	
5		30	1	55		80	
6		31	1	56		81	
7		32	3	57		82	
8		33	9	58		83	
9		34	4	59		84	
10		35	13	60		85	
11		36	10	61		86	
12		37	7	62		87	
13		38	14	63		88	
14		39	6	64		89	
15		40	6	65		90	
16		41	5	66		91	
17		42	3	67		92	
18		43	6	68		93	
19		44	3	69		94	
20		45	3	70		95	
21		46	4	71		96	
22		47		72		97	
23		48		73		98	
24		49	1	74		99	
25		50	1	75		100	

Number of Readings = 100

Dual C'way Y/N? n

Mean Speed = 38.09

Single C'way Y/N? y

Standard Deviation = 4.1708343

Wet Road Surface Y/N? n

85 Percentile Speed = 42.415155

85 Percentile Wet Weather Speed = 39.930155 <<<<

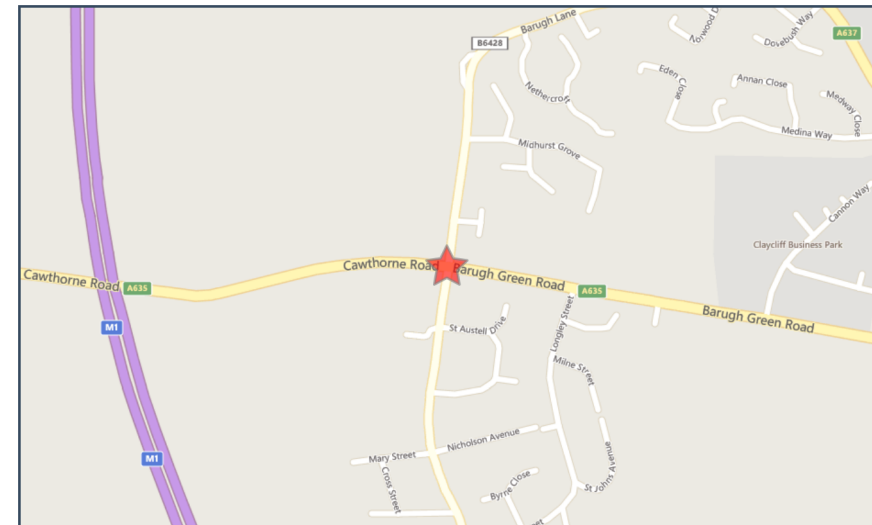
Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with <<<<.

APPENDIX D
Road Traffic Accident Reports



crashmap.co.uk

Crash Date:	Tuesday, October 03, 2017	Time of Crash:	5:45:00 AM	Crash Reference:	2017140230154
Highest Injury Severity:	Serious	Road Number:	U0	Number of Casualties:	1
Highway Authority:	Barnsley			Number of Vehicles:	2
Local Authority:	Barnsley Metropolitan Borough			OS Grid Reference:	431043 408043
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Unknown	-1	Unknown	Unknown	Vehicle is in the act of turning right	Did not impact	Other	None	None
1	Motorcycle over 50cc and up to 125cc	3	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

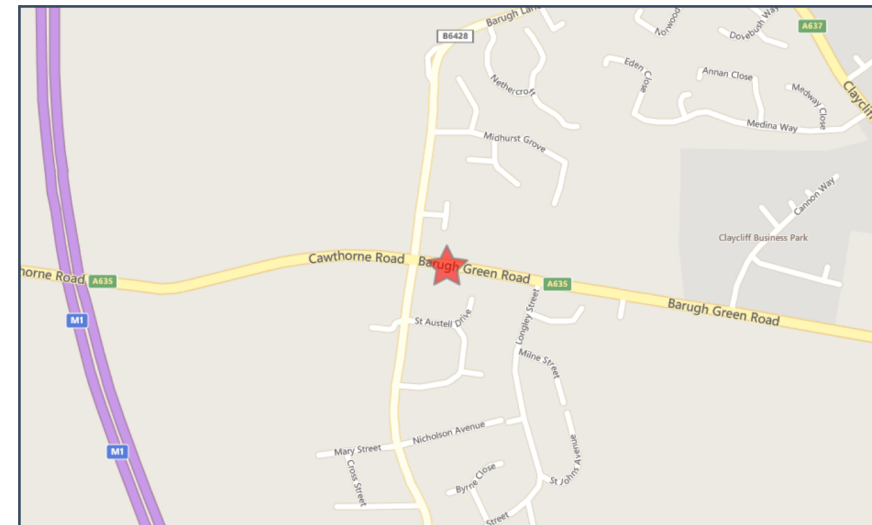
For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



crashmap.co.uk

Crash Date:	Saturday, May 26, 2018	Time of Crash:	8:01:00 PM	Crash Reference:	2018140298609
Highest Injury Severity:	Serious	Road Number:	A635	Number of Casualties:	1
Highway Authority:	Barnsley	Number of Vehicles:	1	OS Grid Reference:	431098 408032
Local Authority:	Barnsley Metropolitan Borough				
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



crashmap.co.uk

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	7	Female	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Pedestrian	Male	11 - 15	In carriageway, crossing elsewhere	Crossing from driver's nearside - masked by parked or stationary vehicle

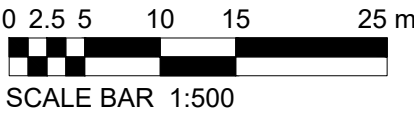
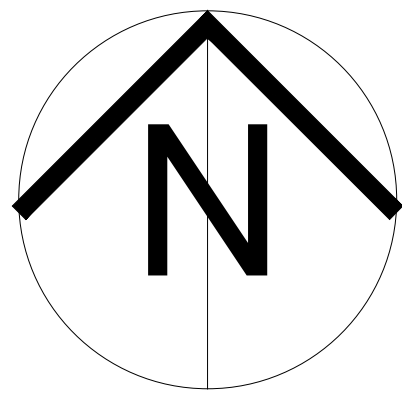
For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services

APPENDIX E

Site Layout Plan

SITE DATA	
TENURE	PFS & AFFORDABLE
PART Q BUILDING REGULATIONS / SECURED BY DESIGN	TBC POST PLANNING
PART M BUILDING REGULATIONS	TBC POST PLANNING
PART L BUILDING REGULATIONS	2013
CODE FOR SUSTAINABLE HOMES	NO REQUIREMENT
ACOUSTIC REQUIREMENTS	AWAITING REPORT - MEASURES TBC
OTHER	-



LEGEND

- EASEMENT
- 1800mm HIGH BRICK WALL, SEE NSD 9001 TYPE 1.
- 1800mm HIGH CLOSE BOARD FENCE, SEE NSD 9102 TYPE A (TIMBERS TO COMPLY WITH BS55989 WHERE NOTED).
- 2100mm HIGH CLOSE BOARD FENCE, SEE NSD 9102 TYPE A (TIMBERS TO COMPLY WITH BS55989 WHERE NOTED).
- 1100mm HIGH HOOPED TOP METAL RAILING, SEE NSD 9202.
- POST AND RAIL FENCE, SEE NSD 9105 (TIMBERS TO COMPLY WITH BS55989 WHERE NOTED).
- 1800mm HIGH CLOSE BOARDED GATE, SLAM TO LOCK WITH ACCESS KEY, GATES MARKED WITH AN * TO BE SLAM TO LOCK WITH COMMUNAL ACCESS KEY, UNDERPASS GATES TO BE METAL AS PER WORKING DRAWINGS.
- FRONT ENTRANCE DOOR, ALL DOORS TO HAVE FLUSH THRESHOLD, UNLESS NOTED OTHERWISE PROVIDE 1200 x 900mm LEVEL PLATFORM AT ENTRANCE TO DWELLING.
- PATIO / FRENCH DOORS
- GARAGE PERSONNEL DOORS
- GARAGE DOORS
- DENOTES PLOTS WITH GABLE WINDOWS OMITTED
- DENOTES PLOTS WITH WINDOWS REQUIRING ACOUSTIC GLAZING
- DENOTES PLOTS WITH FEATURE ROOF TILE BANDING.

- TREES TO BE RETAINED (REFER TO TREE SURVEY).
- ROOT PROTECTION AREA (REFER TO TREE SURVEY FOR RADIUS).
- TREES TO BE REMOVED (REFER TO TREE SURVEY).
- MINESHAFT STANDOFF
- INDICATIVE LANDSCAPING

BUILDING REGULATIONS

NO GLAZING EXCEEDING 1M² TO BE INCLUDED TO ELEVATIONS WITHIN 1M OF THE BOUNDARY.

NO TWO FACING BOILER FLUES ARE TO DISCHARGE WITHIN 1.2M OF EACH OTHER.

NOTES

- PATHS GENERALLY TO BE 900mm WIDE.
- PATIOS GENERALLY TO BE 2700 x 1800mm UNLESS INDICATED OTHERWISE.
- PAVING SLABS TO BE OFFSET 10mm WHERE FOOTPATH OR PATIO IS ADJACENT TO DWELLING.
- MOWING STRIP TO BE PROVIDED WHERE TURFED AREAS ADJUT HOUSE, TO CONSIST OF 150mm WIDE GOLDEN (BUFF) STONE CHIPPINGS.
- GROUND LEVEL ADJACENT TO HOUSE TO BE 150mm BELOW S.S.L. UNLESS OTHERWISE NOTED.

MATERIAL REFERENCE

- 6.0 = BRICK
- 6.1 = BRICK / RENDER
- 6.2 = BRICK / TILE-HANGING

HOUSETYPE REFERENCE

Element	Element	HOUSETYPE NAME
(PFS)	(PFS)	(HOUSE AND DOOR PACK TYPE)
(OPP)	(OPP)	(PLOT HANGING)
(PFA)	(PFA)	(ELEVATIONAL TREATMENT (ROOF STYLE))

Affordable Accomodation Schedule				Number	SQFT	Bed	Total SQFT	Mid	End	Det	Total
Arun				19	759	2	14421	5	14	0	19
Bourne				9	918	3	8262	1	8	0	9
Total				28			22683				28
Nett Area (Acres)				1.25							
Coverage SQFT				18146.4							
Density (Units Per Acre)				22.4							
Open Market Accomodation Schedule				Number	SQFT	Bed	Total SQFT	Mid	End	Det	Total
Arun				20	759	2	15180	2	18	0	20
Hollinwood				24	948	3	22752	0	24	0	24
Midford				4	986	3	3944	0	4	0	4
Rydal				7	1067	3	7469	0	7	0	7
Rydal FCT				12	1067	3	12804	0	7	5	12
Sinkley				28	1073	3	30044	0	28	0	28
Southwick				8	1131	4	9048	0	5	3	8
Southwick SA				9	1131	4	10179	0	5	4	9
Total				112			111420				112
Nett Area (Acres)				7.22							
Coverage				15432.133							
Density (Units Per Acre)				15.512465							
Totals				140			134103				140
Gross Area (Acres)				11.79							
POS Area (Acres)				2.07							
Nett Area (Acres)				8.57							
Coverage SQFT/Acre				15647.96							
Density (Units Per Acre)				16.33606							



D	05.08.20	ZE	Drawing Number updated from SKPY004-PL-01, Schedule updated
C	27.07.20	ZE	Redrawn with new mix.
B	21.04.2020	LB	Footpath / cycle links added to POS areas.
A	20.04.2020	LB	AMENDMENTS FOLLOWING INTERVENTION COMMENTS: Various rear garden fences / walls adjusted to improve gardens. Various plot positions tweaked. Bin collection points added to shared drives. Shared drive widths reduced where possible. Post and rail fence added to POS areas.

COUNTRYSIDE
Places People Love

Countryside Properties (UK) Limited
Partnerships Yorkshire
Airedale, 3200 Century Way,
Thorpe Park, Leeds, LS15 8EB
Tel: 0115 324600
www.countrysideproperties.com

site:

Barugh Green Road
Barnsley

title:

Planning Layout

scale:

@A1 1:500

date:

10.04.20

drawn by:

ZE

checked:

drawing no:

SKPY-004-PL-PL-01

sheet no:

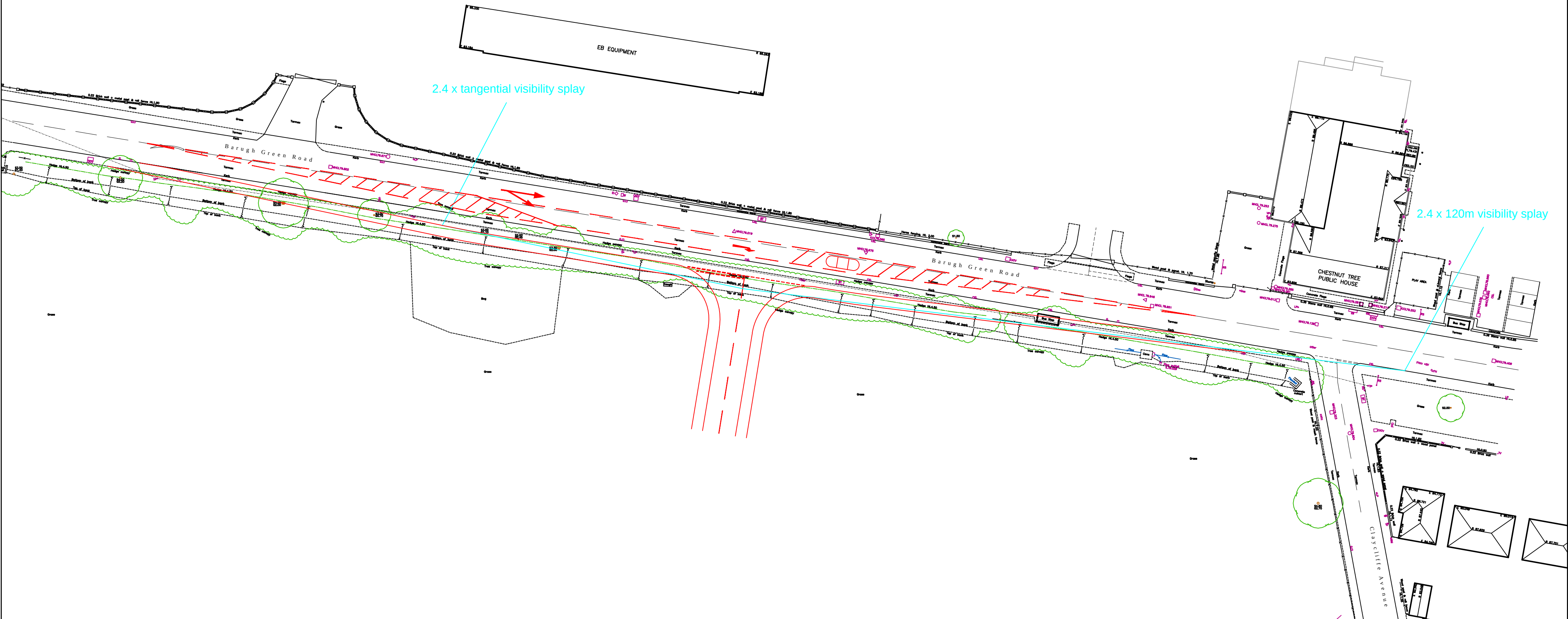
Sheet 1 of 1

revision:

D

APPENDIX F

Proposed Site Access Drawing



Sa sanderson associates (consulting engineers) ltd Highways Traffic Transportation Water T 01924 844080 mail@sandersonassociates.co.uk F 01924 844081 www.sandersonassociates.co.uk	Client Countryside Properties (UK) Ltd	Project Title Barugh Green Road, Barugh Green	Drawing Title Preliminary Access Design Right Turn Lane	Rev	Amendment	Drawn	Date	Checked	Scale 1:500	Drawn By AA
									Drawing Size A2	Checked By IEL
									Date 27.02.2020	Approved By IEL
									Drawing Number	
									11434-001	

APPENDIX G

TRICS Data: Residential

Calculation Reference: AUDIT-109307-190405-0401

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	3 days
	HC HAMPSHIRE	2 days
	KC KENT	2 days
	SC SURREY	1 days
	WS WEST SUSSEX	4 days
03	SOUTH WEST	
	DC DORSET	1 days
	SM SOMERSET	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	ST STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	2 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	GM GREATER MANCHESTER	1 days

Secondary Filtering selection:

Parameter: Number of dwellings
 Actual Range: 23 to 432 (units:)
 Range Selected by User: 20 to 500 (units:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 20/11/18

Selected survey days:

Monday	4 days
Tuesday	3 days
Wednesday	6 days
Thursday	6 days
Friday	3 days

Selected survey types:

Manual count	22 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	22
--------------	----

Selected Location Sub Categories:

Residential Zone	20
No Sub Category	2

Secondary Filtering selection:

Use Class:

C3	22 days
----	---------

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
5,001 to 10,000	3 days
10,001 to 15,000	8 days
15,001 to 20,000	5 days
20,001 to 25,000	2 days
25,001 to 50,000	1 days

Secondary Filtering selection (Cont.):

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	1 days
50,001 to 75,000	3 days
75,001 to 100,000	6 days
100,001 to 125,000	1 days
125,001 to 250,000	7 days
250,001 to 500,000	1 days
500,001 or More	1 days

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	19 days

Travel Plan:

Yes	7 days
No	15 days

PTAL Rating:

No PTAL Present	22 days
-----------------	---------

LIST OF SITES relevant to selection parameters

1	CH-03-A-09 GREYSTOKE ROAD MACCLESFIELD HURDSFIELD Edge of Town Residential Zone Total Number of dwellings: 24 Survey date: MONDAY 24/11/14	TERRACED HOUSES	CESHIRE	Survey Type: MANUAL
2	DC-03-A-08 HURSTDENE ROAD BOURNEMOUTH CASTLE LANE WEST Edge of Town Residential Zone Total Number of dwellings: 28 Survey date: MONDAY 24/03/14	BUNGALOWS	DORSET	Survey Type: MANUAL
3	DS-03-A-02 RADBOURNE LANE DERBY Edge of Town Residential Zone Total Number of dwellings: 371 Survey date: TUESDAY 10/07/18	MIXED HOUSES	DERBYSHIRE	Survey Type: MANUAL
4	ES-03-A-02 SOUTH COAST ROAD PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: 37 Survey date: FRIDAY 18/11/11	PRIVATE HOUSING	EAST SUSSEX	Survey Type: MANUAL
5	ES-03-A-03 SHEPHAM LANE POLEGATE Edge of Town Residential Zone Total Number of dwellings: 212 Survey date: MONDAY 11/07/16	MIXED HOUSES & FLATS	EAST SUSSEX	Survey Type: MANUAL
6	ES-03-A-04 NEW LYDD ROAD CAMBER Edge of Town Residential Zone Total Number of dwellings: 134 Survey date: FRIDAY 15/07/16	MIXED HOUSES & FLATS	EAST SUSSEX	Survey Type: MANUAL
7	GM-03-A-10 BUTT HILL DRIVE MANCHESTER PRESTWICH Edge of Town Residential Zone Total Number of dwellings: 29 Survey date: WEDNESDAY 12/10/11	DETACHED / SEMI	GREATER MANCHESTER	Survey Type: MANUAL
8	HC-03-A-21 PRIESTLEY ROAD BASINGSTOKE HOUNDMILLS Edge of Town Residential Zone Total Number of dwellings: 39 Survey date: TUESDAY 13/11/18	TERRACED & SEMI-DETACHED	HAMPSHIRE	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9	HC-03-A-22	MIXED HOUSES	HAMPSHIRE
	BOW LAKE GARDENS		
	NEAR EASTLEIGH		
	BISHOPSTOKE		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	40	
	Survey date: WEDNESDAY	31/10/18	Survey Type: MANUAL
10	KC-03-A-04	SEMI-DETACHED & TERRACED	KENT
	KILN BARN ROAD		
	AYLESFORD		
	DITTON		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	110	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
11	KC-03-A-07	MIXED HOUSES	KENT
	RECULVER ROAD		
	HERNE BAY		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	288	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
12	NE-03-A-02	SEMI DETACHED & DETACHED	NORTH EAST LINCOLNSHIRE
	HANOVER WALK		
	SCUNTHORPE		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	432	
	Survey date: MONDAY	12/05/14	Survey Type: MANUAL
13	NY-03-A-10	HOUSES AND FLATS	NORTH YORKSHIRE
	BOROUGHBRIDGE ROAD		
	RIPON		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	71	
	Survey date: TUESDAY	17/09/13	Survey Type: MANUAL
14	NY-03-A-11	PRIVATE HOUSING	NORTH YORKSHIRE
	HORSEFAIR		
	BOROUGHBRIDGE		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	23	
	Survey date: WEDNESDAY	18/09/13	Survey Type: MANUAL
15	SC-03-A-04	DETACHED & TERRACED	SURREY
	HIGH ROAD		
	BYFLEET		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	71	
	Survey date: THURSDAY	23/01/14	Survey Type: MANUAL
16	SH-03-A-05	SEMI-DETACHED / TERRACED	SHROPSHIRE
	SANDCROFT		
	TELFORD		
	SUTTON HILL		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	54	
	Survey date: THURSDAY	24/10/13	Survey Type: MANUAL
17	SM-03-A-01	DETACHED & SEMI	SOMERSET
	WEMBDON ROAD		
	BRIDGWATER		
	NORTHFIELD		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	33	
	Survey date: THURSDAY	24/09/15	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

18	ST-03-A-07 BEACONSIDE STAFFORD MARSTON GATE Edge of Town Residential Zone Total Number of dwellings: Survey date: WEDNESDAY	DETACHED & SEMI-DETACHED 248 22/11/17	STAFFORDSHIRE Survey Type: MANUAL
19	WS-03-A-04 HILLS FARM LANE HORSHAM BROADBRIDGE HEATH Edge of Town Residential Zone Total Number of dwellings: Survey date: THURSDAY	MIXED HOUSES 151 11/12/14	WEST SUSSEX Survey Type: MANUAL
20	WS-03-A-08 ROUNDSTONE LANE ANGMERING Edge of Town Residential Zone Total Number of dwellings: Survey date: THURSDAY	MIXED HOUSES 180 19/04/18	WEST SUSSEX Survey Type: MANUAL
21	WS-03-A-09 LITTLEHAMPTON ROAD WORTHING WEST DURRINGTON Edge of Town Residential Zone Total Number of dwellings: Survey date: THURSDAY	MIXED HOUSES & FLATS 197 05/07/18	WEST SUSSEX Survey Type: MANUAL
22	WS-03-A-10 TODDINGTON LANE LITTLEHAMPTON WICK Edge of Town Residential Zone Total Number of dwellings: Survey date: WEDNESDAY	MIXED HOUSES 79 07/11/18	WEST SUSSEX Survey Type: MANUAL

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

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
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	22	130	0.077	22	130	0.313	22	130	0.390
08:00 - 09:00	22	130	0.120	22	130	0.369	22	130	0.489
09:00 - 10:00	22	130	0.136	22	130	0.160	22	130	0.296
10:00 - 11:00	22	130	0.123	22	130	0.149	22	130	0.272
11:00 - 12:00	22	130	0.130	22	130	0.148	22	130	0.278
12:00 - 13:00	22	130	0.149	22	130	0.139	22	130	0.288
13:00 - 14:00	22	130	0.157	22	130	0.147	22	130	0.304
14:00 - 15:00	22	130	0.167	22	130	0.178	22	130	0.345
15:00 - 16:00	22	130	0.256	22	130	0.176	22	130	0.432
16:00 - 17:00	22	130	0.274	22	130	0.163	22	130	0.437
17:00 - 18:00	22	130	0.333	22	130	0.136	22	130	0.469
18:00 - 19:00	22	130	0.285	22	130	0.161	22	130	0.446
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.207			2.239			4.446

Parameter summary

Trip rate parameter range selected:	23 - 432 (units:)
Survey date date range:	01/01/11 - 20/11/18
Number of weekdays (Monday-Friday):	22
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
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	22	130	0.005	22	130	0.009	22	130	0.014
08:00 - 09:00	22	130	0.005	22	130	0.014	22	130	0.019
09:00 - 10:00	22	130	0.000	22	130	0.002	22	130	0.002
10:00 - 11:00	22	130	0.002	22	130	0.004	22	130	0.006
11:00 - 12:00	22	130	0.003	22	130	0.004	22	130	0.007
12:00 - 13:00	22	130	0.004	22	130	0.004	22	130	0.008
13:00 - 14:00	22	130	0.004	22	130	0.002	22	130	0.006
14:00 - 15:00	22	130	0.004	22	130	0.003	22	130	0.007
15:00 - 16:00	22	130	0.006	22	130	0.004	22	130	0.010
16:00 - 17:00	22	130	0.008	22	130	0.006	22	130	0.014
17:00 - 18:00	22	130	0.014	22	130	0.006	22	130	0.020
18:00 - 19:00	22	130	0.008	22	130	0.008	22	130	0.016
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.063			0.066			0.129

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

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
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	22	130	0.094	22	130	0.446	22	130	0.540
08:00 - 09:00	22	130	0.156	22	130	0.639	22	130	0.795
09:00 - 10:00	22	130	0.179	22	130	0.232	22	130	0.411
10:00 - 11:00	22	130	0.162	22	130	0.209	22	130	0.371
11:00 - 12:00	22	130	0.177	22	130	0.213	22	130	0.390
12:00 - 13:00	22	130	0.206	22	130	0.190	22	130	0.396
13:00 - 14:00	22	130	0.222	22	130	0.207	22	130	0.429
14:00 - 15:00	22	130	0.234	22	130	0.247	22	130	0.481
15:00 - 16:00	22	130	0.445	22	130	0.254	22	130	0.699
16:00 - 17:00	22	130	0.456	22	130	0.243	22	130	0.699
17:00 - 18:00	22	130	0.501	22	130	0.194	22	130	0.695
18:00 - 19:00	22	130	0.418	22	130	0.251	22	130	0.669
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.250			3.325			6.575

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

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
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	22	130	0.013	22	130	0.027	22	130	0.040
08:00 - 09:00	22	130	0.026	22	130	0.069	22	130	0.095
09:00 - 10:00	22	130	0.031	22	130	0.035	22	130	0.066
10:00 - 11:00	22	130	0.033	22	130	0.034	22	130	0.067
11:00 - 12:00	22	130	0.024	22	130	0.027	22	130	0.051
12:00 - 13:00	22	130	0.032	22	130	0.025	22	130	0.057
13:00 - 14:00	22	130	0.026	22	130	0.026	22	130	0.052
14:00 - 15:00	22	130	0.031	22	130	0.039	22	130	0.070
15:00 - 16:00	22	130	0.063	22	130	0.038	22	130	0.101
16:00 - 17:00	22	130	0.053	22	130	0.031	22	130	0.084
17:00 - 18:00	22	130	0.049	22	130	0.028	22	130	0.077
18:00 - 19:00	22	130	0.041	22	130	0.041	22	130	0.082
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.422			0.420			0.842

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

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
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	22	130	0.001	22	130	0.015	22	130	0.016
08:00 - 09:00	22	130	0.000	22	130	0.025	22	130	0.025
09:00 - 10:00	22	130	0.002	22	130	0.010	22	130	0.012
10:00 - 11:00	22	130	0.001	22	130	0.004	22	130	0.005
11:00 - 12:00	22	130	0.002	22	130	0.004	22	130	0.006
12:00 - 13:00	22	130	0.003	22	130	0.005	22	130	0.008
13:00 - 14:00	22	130	0.002	22	130	0.004	22	130	0.006
14:00 - 15:00	22	130	0.004	22	130	0.002	22	130	0.006
15:00 - 16:00	22	130	0.017	22	130	0.007	22	130	0.024
16:00 - 17:00	22	130	0.017	22	130	0.004	22	130	0.021
17:00 - 18:00	22	130	0.009	22	130	0.003	22	130	0.012
18:00 - 19:00	22	130	0.019	22	130	0.005	22	130	0.024
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.077			0.088			0.165

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

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
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	22	130	0.113	22	130	0.497	22	130	0.610
08:00 - 09:00	22	130	0.187	22	130	0.747	22	130	0.934
09:00 - 10:00	22	130	0.212	22	130	0.279	22	130	0.491
10:00 - 11:00	22	130	0.197	22	130	0.251	22	130	0.448
11:00 - 12:00	22	130	0.206	22	130	0.247	22	130	0.453
12:00 - 13:00	22	130	0.244	22	130	0.224	22	130	0.468
13:00 - 14:00	22	130	0.254	22	130	0.237	22	130	0.491
14:00 - 15:00	22	130	0.272	22	130	0.291	22	130	0.563
15:00 - 16:00	22	130	0.531	22	130	0.303	22	130	0.834
16:00 - 17:00	22	130	0.534	22	130	0.283	22	130	0.817
17:00 - 18:00	22	130	0.573	22	130	0.231	22	130	0.804
18:00 - 19:00	22	130	0.486	22	130	0.305	22	130	0.791
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.809			3.895			7.704

APPENDIX H
Gravity Model Data

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

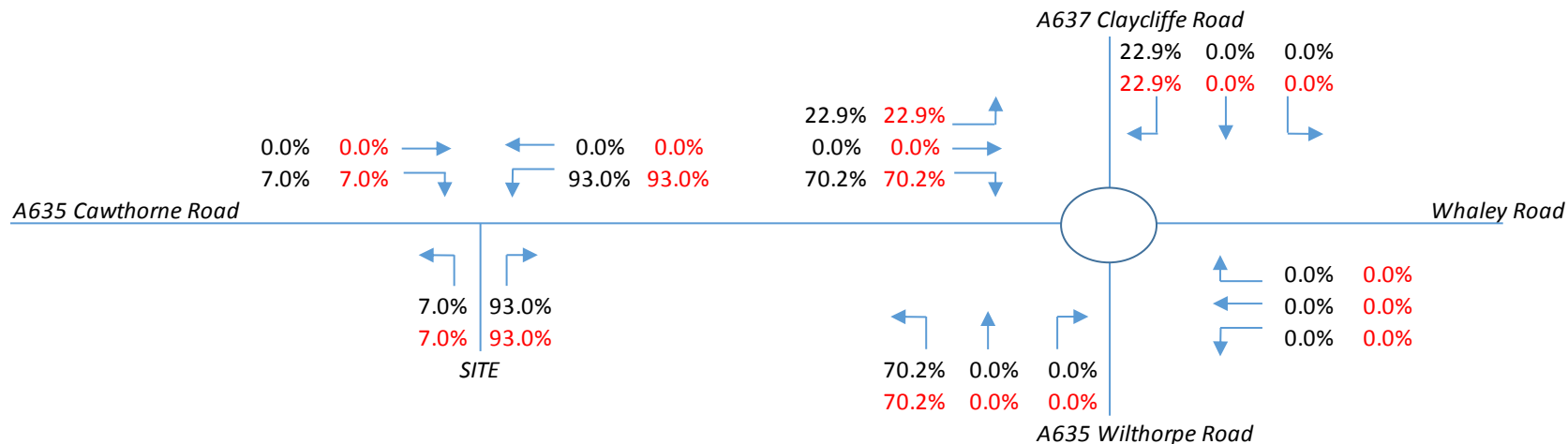
ONS Crown Copyright Reserved [from Nomis on 21 February 2020]

population All usual residents aged 16 and over in employment the week before the census
units Persons
date 2011
method of travel to work Driving a car or van

usual residence									
place of work : 2011 super output area - middle layer	E02001520 : Barnsley 012	%	Co-ordinates		A635 Huddersfield Road	Redbrook Road	A637 (N)	Barugh Lane	Higham Common Rd
E02001521 : Barnsley 013	468	20.7%	53.55028	-1.48868	6.2%	14.5%			
E02001520 : Barnsley 012	349	15.5%	53.55971	-1.51054		15.5%			
E02001523 : Barnsley 015	149	6.6%	53.54683	-1.44274	3.3%	3.3%			
E02001518 : Barnsley 010	92	4.1%	53.56329	-1.48573	4.1%				
E02001510 : Barnsley 002	82	3.6%	53.59575	-1.44659			3.6%		
E02001515 : Barnsley 007	63	2.8%	53.58093	-1.47499			2.8%		
E02001513 : Barnsley 005	61	2.7%	53.58388	-1.53274			2.7%		
E02001527 : Barnsley 019	56	2.5%	53.54165	-1.52038					2.5%
E02001536 : Barnsley 028	54	2.4%	53.50295	-1.47533		2.4%			
E02001579 : Rotherham 002	54	2.4%	53.49745	-1.34206		2.4%			
E02006875 : Leeds 111	52	2.3%	53.79782	-1.54578			2.3%		
E02001512 : Barnsley 004	46	2.0%	53.58798	-1.5056			2.0%		
E02001524 : Barnsley 016	46	2.0%	53.54649	-1.56963				2.0%	
E02001529 : Barnsley 021	39	1.7%	53.53274	-1.46468	0.5%	1.2%			
E02001628 : Sheffield 018	39	1.7%	53.41221	-1.39669		1.7%			
E02001525 : Barnsley 017	38	1.7%	53.54495	-1.47434	0.5%	1.2%			
E02002456 : Wakefield 019	38	1.7%	53.68742	-1.51352			1.7%		
E02001531 : Barnsley 023	37	1.6%	53.52647	-1.40865	0.8%	0.8%			
E02001535 : Barnsley 027	36	1.6%	53.5095	-1.58048				1.6%	
E02002454 : Wakefield 017	36	1.6%	53.68777	-1.49436			1.6%		
E02006843 : Sheffield 073	34	1.5%	53.38594	-1.47565		1.5%			
E02001534 : Barnsley 026	31	1.4%	53.519	-1.39823	0.7%	0.7%			
E02002467 : Wakefield 030	28	1.2%	53.6677	-1.48459			1.2%		
E02001632 : Sheffield 022	27	1.2%	53.3979	-1.45583		1.2%			
E02001519 : Barnsley 011	26	1.2%	53.56226	-1.43664	1.2%				
E02002451 : Wakefield 014	25	1.1%	53.70051	-1.52546			1.1%		
E02001560 : Doncaster 022	21	0.9%	53.51831	-1.13004	0.5%	0.5%			
E02001594 : Rotherham 017	21	0.9%	53.42979	-1.34949		0.9%			
E02001614 : Sheffield 004	20	0.9%	53.46304	-1.47237		0.9%			
E02001509 : Barnsley 001	19	0.8%	53.59971	-1.45938			0.8%		
E02001532 : Barnsley 024	19	0.8%	53.52285	-1.63146				0.8%	
E02001578 : Rotherham 001	19	0.8%	53.50678	-1.36995	0.4%	0.4%			
E02006876 : Leeds 112	19	0.8%	53.78168	-1.53016			0.8%		
E02001517 : Barnsley 009	17	0.8%	53.5651	-1.45631	0.4%	0.4%			
E02001530 : Barnsley 022	17	0.8%	53.53171	-1.30774	0.8%				
E02001538 : Barnsley 030	17	0.8%	53.50137	-1.44457		0.8%			
E02001514 : Barnsley 006	16	0.7%	53.58092	-1.37906	0.4%		0.4%		
E02002481 : Wakefield 044	16	0.7%	53.5925	-1.2879	0.4%		0.4%		
E02001516 : Barnsley 008	15	0.7%	53.5717	-1.41356	0.3%		0.3%		
E02002461 : Wakefield 024	15	0.7%	53.68518	-1.38421			0.7%		
Total	2,257	100.0%			20.3%	49.8%	22.9%	0.0%	2.5%

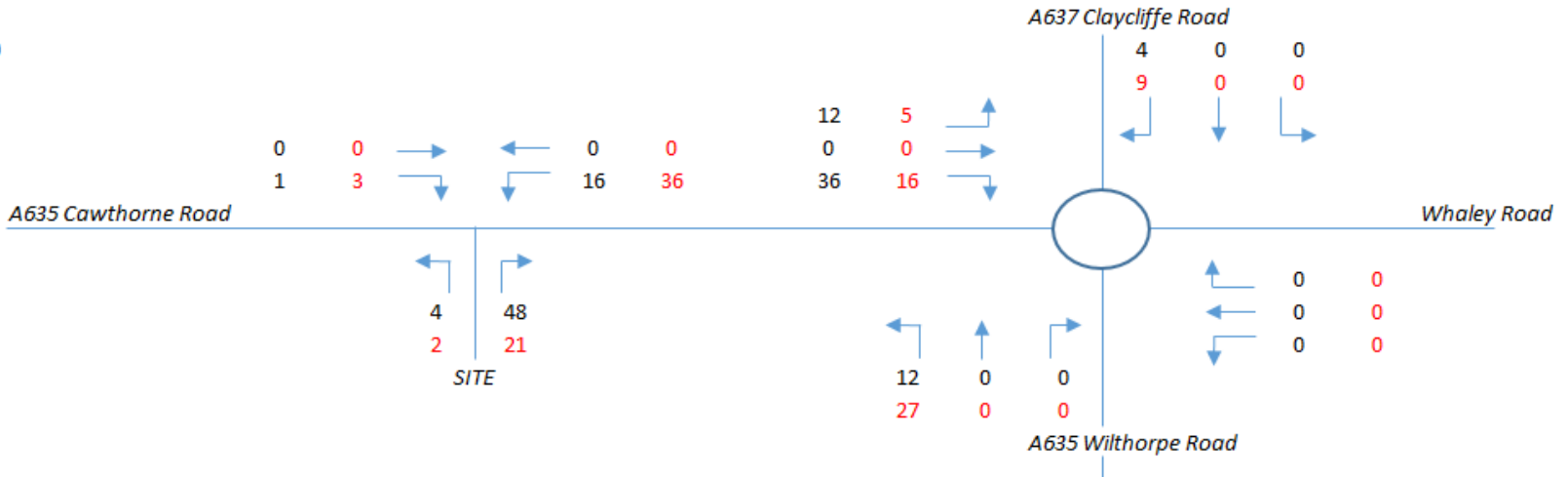
APPENDIX I
Development Traffic Assignments

AM
PM



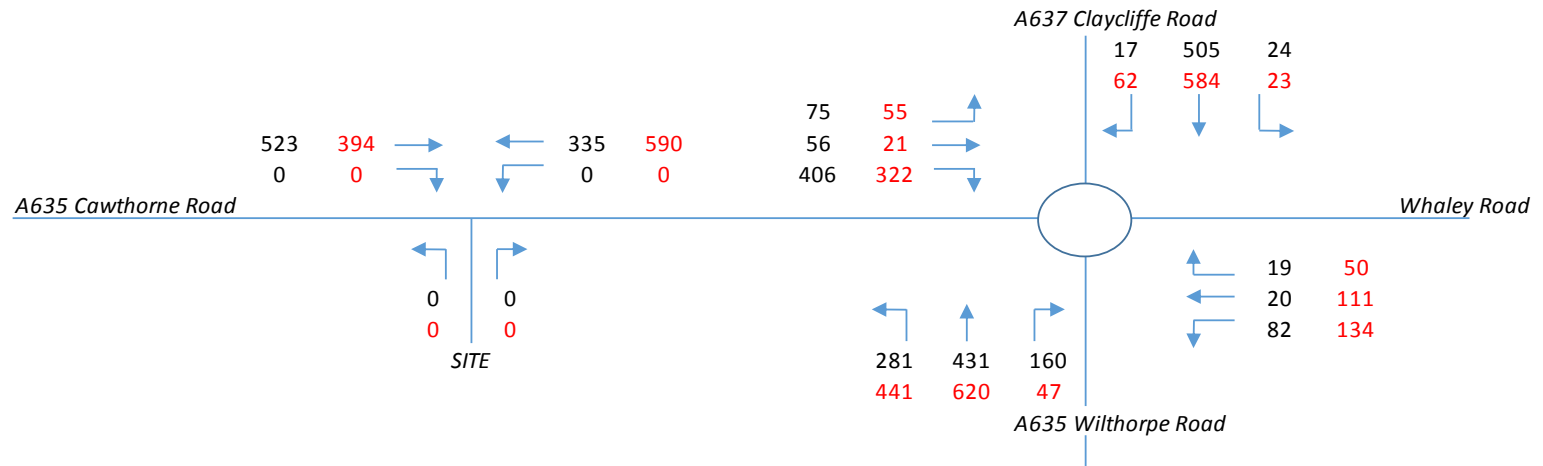
		Trip Rates		Generations	
		Arr	Dep	Arr	Dep
08:00 - 09:00	AM	0.120	0.369	17	52
16:00 - 17:00	PM	0.274	0.163	38	23

Units 140



APPENDIX J
2020, 2024 & 2026 Traffic Flow Diagrams

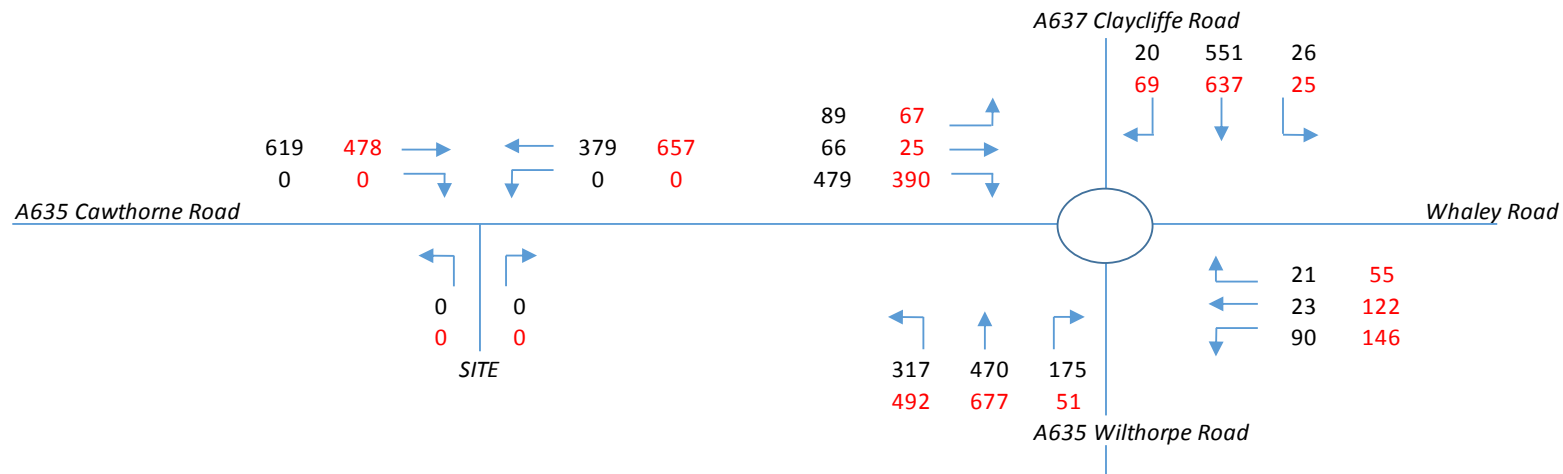
AM
PM



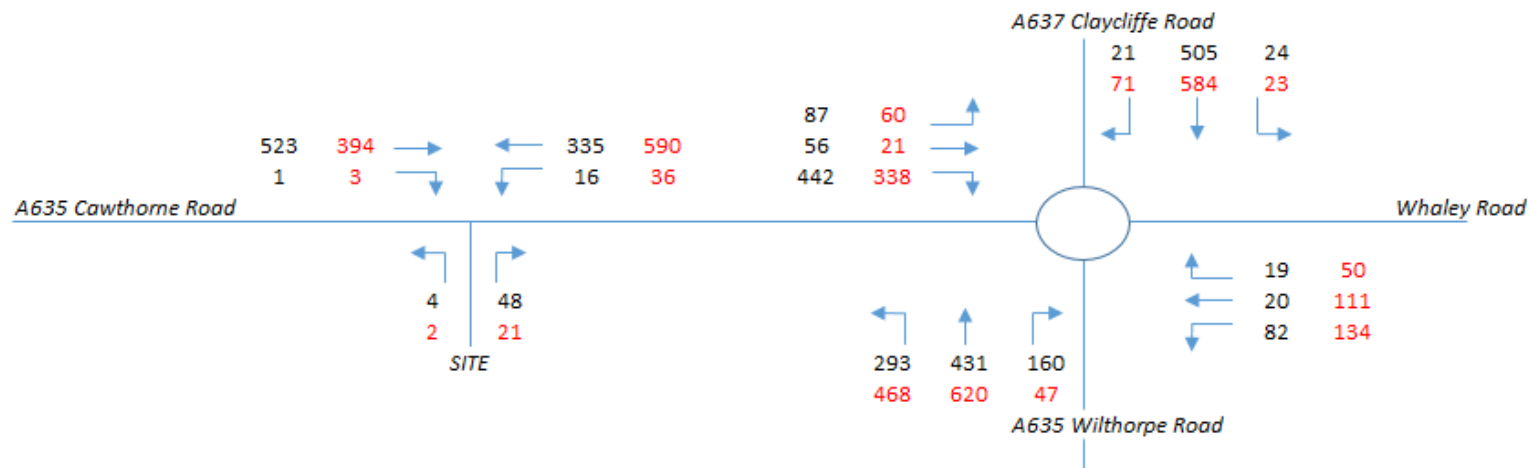
AM
PM



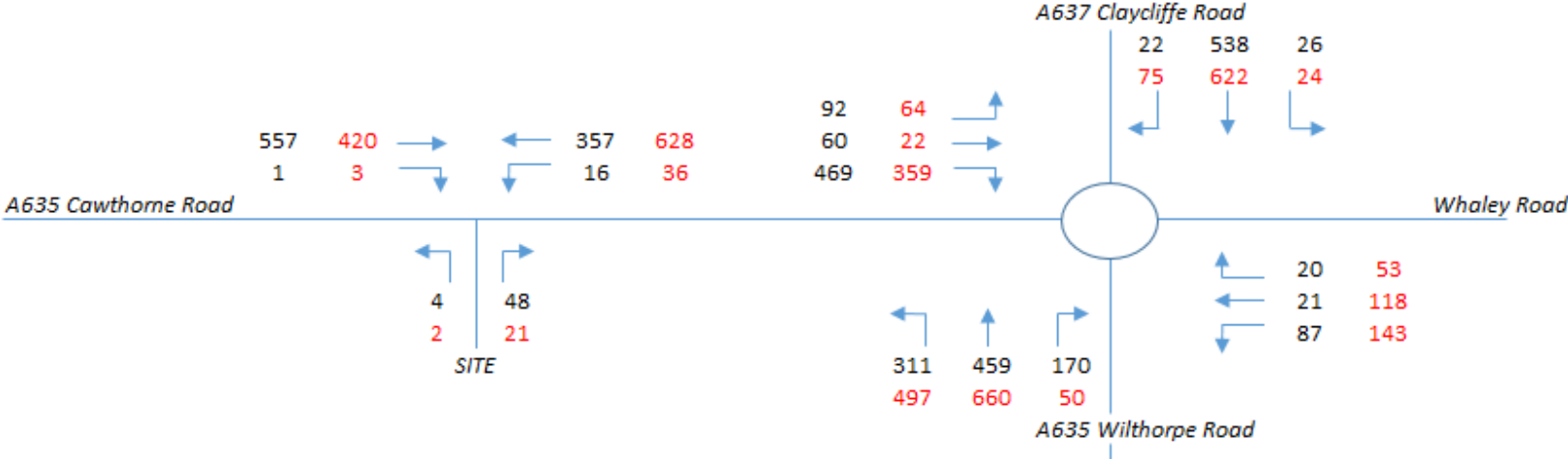
AM
PM



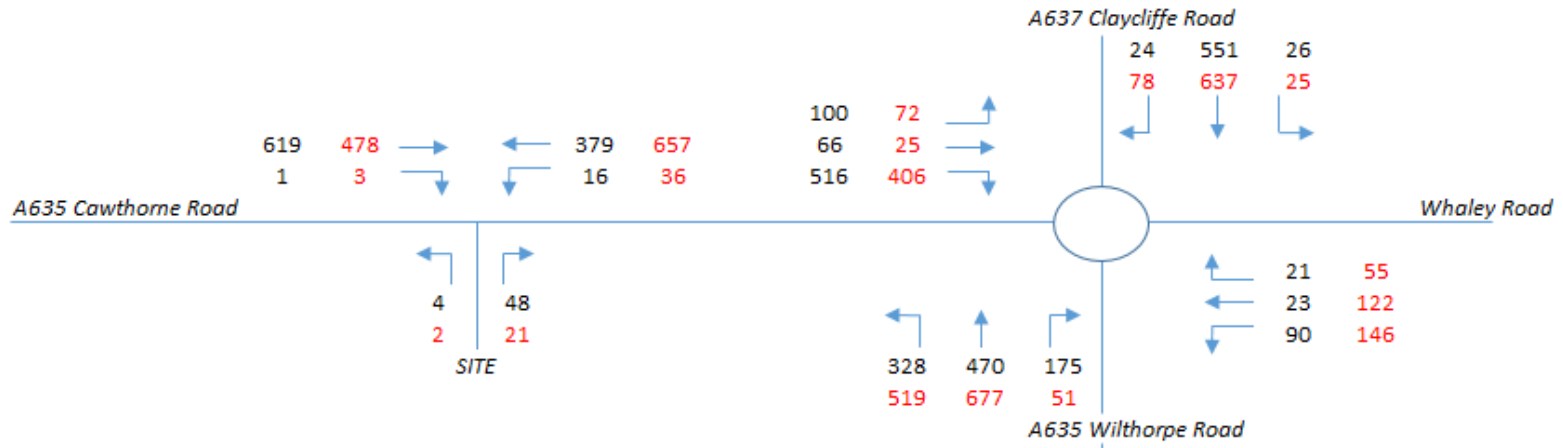
AM
PM



AM
PM



AM
PM



APPENDIX K

Junctions 9: Site Access/A635 Junction

Junctions 9						
PICADY 9 - Priority Intersection Module						
Version: 9.5.1.7462						
© Copyright TRL Limited, 2019						
For sales and distribution information, program advice and maintenance, contact TRL:						
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk						
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: Site Access JT Rev B - 140 units.j9

Path: J:\11000\11400\11435_TABarughGreenRoadBar\engineering\Traffic_Programs\Picady

Report generation date: 12/08/2020 12:04:56

»2020 Do Something, AM

»2020 Do Something, PM

»2024 Do Something, AM

»2024 Do Something, PM

»2026 Do Something, AM

»2026 Do Something, PM

Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Do Something						
Stream B-C	0.0	5.96	0.01	0.0	6.58	0.00
Stream B-A	0.2	12.53	0.16	0.1	13.10	0.08
Stream C-AB	0.0	5.63	0.00	0.0	6.45	0.01
2024 Do Something						
Stream B-C	0.0	6.04	0.01	0.0	6.73	0.00
Stream B-A	0.2	13.03	0.16	0.1	13.79	0.08
Stream C-AB	0.0	5.69	0.00	0.0	6.59	0.01
2026 Do Something						
Stream B-C	0.0	6.13	0.01	0.0	6.85	0.00
Stream B-A	0.2	13.81	0.17	0.1	14.74	0.09
Stream C-AB	0.0	5.75	0.00	0.0	6.71	0.01

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

File summary

File Description

Title	Barugh Green Rd - Site Access
Location	
Site number	
Date	21/02/2020
Version	
Status	Preliminary
Identifier	
Client	
Jobnumber	11434
Enumerator	brett.littlewood [PC128]
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Do Something	AM	ONE HOUR	07:45	09:15	15	✓
D2	2020 Do Something	PM	ONE HOUR	15:45	17:15	15	✓
D3	2024 Do Something	AM	ONE HOUR	07:45	09:15	15	✓
D4	2024 Do Something	PM	ONE HOUR	15:45	17:15	15	✓
D5	2026 Do Something	AM	ONE HOUR	07:45	09:15	15	✓
D6	2026 Do Something	PM	ONE HOUR	15:45	17:15	15	✓

Analysis Set Details

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

2020 Do Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Barugh Green Rd (E)		Major
B	Site Access		Minor
C	Barugh Green Rd (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Barugh Green Rd (W)	7.00		✓	3.50	180.0	✓	6.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane plus flare	10.00	4.20	3.00	3.00	3.00		1.00	25	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	527	0.092	0.232	0.146	0.332
B-C	764	0.112	0.283	-	-
C-B	774	0.287	0.287	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Do Something	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Barugh Green Rd (E)		ONE HOUR	✓	351	100.000
B - Site Access		ONE HOUR	✓	52	100.000
C - Barugh Green Rd (W)		ONE HOUR	✓	524	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	From			
	A - Barugh Green Rd (E)	0	16	335
	B - Site Access	48	0	4
	C - Barugh Green Rd (W)	523	1	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	From			
	A - Barugh Green Rd (E)	3	3	3
	B - Site Access	3	3	3
	C - Barugh Green Rd (W)	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.01	5.96	0.0	A	4	6
B-A	0.16	12.53	0.2	B	44	66
C-AB	0.00	5.63	0.0	A	0.92	1
C-A					480	720
A-B					15	22
A-C					307	461

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.75	653	0.005	3	0.0	0.0	5.536	A
B-A	36	9	394	0.092	36	0.0	0.1	10.023	B
C-AB	0.75	0.19	676	0.001	0.75	0.0	0.0	5.332	A
C-A	394	98			394				
A-B	12	3			12				
A-C	252	63			252				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	0.90	635	0.006	4	0.0	0.0	5.704	A
B-A	43	11	372	0.116	43	0.1	0.1	10.950	B
C-AB	0.90	0.22	661	0.001	0.90	0.0	0.0	5.452	A
C-A	470	118			470				
A-B	14	4			14				
A-C	301	75			301				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	608	0.007	4	0.0	0.0	5.963	A
B-A	53	13	340	0.155	53	0.1	0.2	12.511	B
C-AB	1	0.28	641	0.002	1	0.0	0.0	5.627	A
C-A	576	144			576				
A-B	18	4			18				
A-C	369	92			369				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	608	0.007	4	0.0	0.0	5.964	A
B-A	53	13	340	0.155	53	0.2	0.2	12.528	B
C-AB	1	0.28	641	0.002	1	0.0	0.0	5.627	A
C-A	576	144			576				
A-B	18	4			18				
A-C	369	92			369				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	0.90	634	0.006	4	0.0	0.0	5.705	A
B-A	43	11	372	0.116	43	0.2	0.1	10.970	B
C-AB	0.90	0.22	661	0.001	0.90	0.0	0.0	5.454	A
C-A	470	118			470				
A-B	14	4			14				
A-C	301	75			301				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.75	653	0.005	3	0.0	0.0	5.538	A
B-A	36	9	394	0.092	36	0.1	0.1	10.052	B
C-AB	0.75	0.19	676	0.001	0.75	0.0	0.0	5.334	A
C-A	394	98			394				
A-B	12	3			12				
A-C	252	63			252				

2020 Do Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Do Something	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Barugh Green Rd (E)		ONE HOUR	✓	626	100.000
B - Site Access		ONE HOUR	✓	23	100.000
C - Barugh Green Rd (W)		ONE HOUR	✓	397	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	0	36	590
	B - Site Access	21	0	2
	C - Barugh Green Rd (W)	394	3	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	2	2	2
	B - Site Access	2	2	2
	C - Barugh Green Rd (W)	2	2	2

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.00	6.58	0.0	A	2	3
B-A	0.08	13.10	0.1	B	19	29
C-AB	0.01	6.45	0.0	A	3	4
C-A					362	542
A-B					33	50
A-C					541	812

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	613	0.002	1	0.0	0.0	5.881	A
B-A	16	4	367	0.043	16	0.0	0.0	10.233	B
C-AB	2	0.56	624	0.004	2	0.0	0.0	5.791	A
C-A	297	74			297				
A-B	27	7			27				
A-C	444	111			444				

16:00 - 16:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	587	0.003	2	0.0	0.0	6.154	A
B-A	19	5	338	0.056	19	0.0	0.1	11.271	B
C-AB	3	0.67	598	0.005	3	0.0	0.0	6.051	A
C-A	354	89			354				
A-B	32	8			32				
A-C	530	133			530				

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	549	0.004	2	0.0	0.0	6.578	A
B-A	23	6	298	0.078	23	0.1	0.1	13.087	B
C-AB	3	0.83	561	0.006	3	0.0	0.0	6.451	A
C-A	434	108			434				
A-B	40	10			40				
A-C	650	162			650				

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	549	0.004	2	0.0	0.0	6.578	A
B-A	23	6	298	0.078	23	0.1	0.1	13.095	B
C-AB	3	0.83	561	0.006	3	0.0	0.0	6.451	A
C-A	434	108			434				
A-B	40	10			40				
A-C	650	162			650				

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	587	0.003	2	0.0	0.0	6.154	A
B-A	19	5	338	0.056	19	0.1	0.1	11.282	B
C-AB	3	0.67	598	0.005	3	0.0	0.0	6.051	A
C-A	354	89			354				
A-B	32	8			32				
A-C	530	133			530				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	613	0.002	2	0.0	0.0	5.885	A
B-A	16	4	367	0.043	16	0.1	0.0	10.246	B
C-AB	2	0.56	624	0.004	2	0.0	0.0	5.794	A
C-A	297	74			297				
A-B	27	7			27				
A-C	444	111			444				

2024 Do Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2024 Do Something	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Barugh Green Rd (E)		ONE HOUR	✓	373	100.000
B - Site Access		ONE HOUR	✓	52	100.000
C - Barugh Green Rd (W)		ONE HOUR	✓	558	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	0	16	357
	B - Site Access	48	0	4
	C - Barugh Green Rd (W)	557	1	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	3	3	3
	B - Site Access	3	3	3
	C - Barugh Green Rd (W)	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.01	6.04	0.0	A	4	6
B-A	0.16	13.03	0.2	B	44	66
C-AB	0.00	5.69	0.0	A	0.92	1
C-A					511	767
A-B					15	22
A-C					328	491

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.75	648	0.005	3	0.0	0.0	5.578	A
B-A	36	9	387	0.093	36	0.0	0.1	10.240	B
C-AB	0.75	0.19	671	0.001	0.75	0.0	0.0	5.370	A
C-A	419	105			419				
A-B	12	3			12				
A-C	269	67			269				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	0.90	629	0.006	4	0.0	0.0	5.758	A
B-A	43	11	363	0.119	43	0.1	0.1	11.258	B
C-AB	0.90	0.22	655	0.001	0.90	0.0	0.0	5.499	A
C-A	501	125			501				
A-B	14	4			14				
A-C	321	80			321				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	600	0.007	4	0.0	0.0	6.039	A
B-A	53	13	329	0.161	53	0.1	0.2	13.010	B
C-AB	1	0.28	634	0.002	1	0.0	0.0	5.689	A
C-A	613	153			613				
A-B	18	4			18				
A-C	393	98			393				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	600	0.007	4	0.0	0.0	6.041	A
B-A	53	13	329	0.161	53	0.2	0.2	13.031	B
C-AB	1	0.28	634	0.002	1	0.0	0.0	5.689	A
C-A	613	153			613				
A-B	18	4			18				
A-C	393	98			393				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	0.90	628	0.006	4	0.0	0.0	5.760	A
B-A	43	11	363	0.119	43	0.2	0.1	11.284	B
C-AB	0.90	0.22	655	0.001	0.90	0.0	0.0	5.501	A
C-A	501	125			501				
A-B	14	4			14				
A-C	321	80			321				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.75	648	0.005	3	0.0	0.0	5.583	A
B-A	36	9	387	0.093	36	0.1	0.1	10.272	B
C-AB	0.75	0.19	671	0.001	0.75	0.0	0.0	5.370	A
C-A	419	105			419				
A-B	12	3			12				
A-C	269	67			269				

2024 Do Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2024 Do Something	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Barugh Green Rd (E)		ONE HOUR	✓	664	100.000
B - Site Access		ONE HOUR	✓	23	100.000
C - Barugh Green Rd (W)		ONE HOUR	✓	423	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	0	36	628
	B - Site Access	21	0	2
	C - Barugh Green Rd (W)	420	3	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	2	2	2
	B - Site Access	2	2	2
	C - Barugh Green Rd (W)	2	2	2

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.00	6.73	0.0	A	2	3
B-A	0.08	13.79	0.1	B	19	29
C-AB	0.01	6.59	0.0	A	3	4
C-A					385	578
A-B					33	50
A-C					576	864

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	605	0.002	1	0.0	0.0	5.961	A
B-A	16	4	358	0.044	16	0.0	0.0	10.517	B
C-AB	2	0.56	616	0.004	2	0.0	0.0	5.869	A
C-A	316	79			316				
A-B	27	7			27				
A-C	473	118			473				

16:00 - 16:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	577	0.003	2	0.0	0.0	6.259	A
B-A	19	5	327	0.058	19	0.0	0.1	11.683	B
C-AB	3	0.67	588	0.005	3	0.0	0.0	6.152	A
C-A	378	94			378				
A-B	32	8			32				
A-C	565	141			565				

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	537	0.004	2	0.0	0.0	6.728	A
B-A	23	6	284	0.081	23	0.1	0.1	13.782	B
C-AB	3	0.83	549	0.006	3	0.0	0.0	6.593	A
C-A	462	116			462				
A-B	40	10			40				
A-C	691	173			691				

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	537	0.004	2	0.0	0.0	6.728	A
B-A	23	6	284	0.081	23	0.1	0.1	13.792	B
C-AB	3	0.83	549	0.006	3	0.0	0.0	6.593	A
C-A	462	116			462				
A-B	40	10			40				
A-C	691	173			691				

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	577	0.003	2	0.0	0.0	6.262	A
B-A	19	5	327	0.058	19	0.1	0.1	11.699	B
C-AB	3	0.67	588	0.005	3	0.0	0.0	6.155	A
C-A	378	94			378				
A-B	32	8			32				
A-C	565	141			565				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	605	0.002	2	0.0	0.0	5.962	A
B-A	16	4	358	0.044	16	0.1	0.0	10.531	B
C-AB	2	0.56	616	0.004	2	0.0	0.0	5.871	A
C-A	316	79			316				
A-B	27	7			27				
A-C	473	118			473				

2026 Do Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2026 Do Something	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Barugh Green Rd (E)		ONE HOUR	✓	395	100.000
B - Site Access		ONE HOUR	✓	52	100.000
C - Barugh Green Rd (W)		ONE HOUR	✓	620	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	0	16	379
	B - Site Access	48	0	4
	C - Barugh Green Rd (W)	619	1	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
	A - Barugh Green Rd (E)	3	3	3
	B - Site Access	3	3	3
	C - Barugh Green Rd (W)	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.01	6.13	0.0	A	4	6
B-A	0.17	13.81	0.2	B	44	66
C-AB	0.00	5.75	0.0	A	0.92	1
C-A					568	852
A-B					15	22
A-C					348	522

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.75	643	0.005	3	0.0	0.0	5.622	A
B-A	36	9	376	0.096	36	0.0	0.1	10.559	B
C-AB	0.75	0.19	666	0.001	0.75	0.0	0.0	5.408	A
C-A	466	117			466				
A-B	12	3			12				
A-C	285	71			285				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	0.90	622	0.006	4	0.0	0.0	5.817	A
B-A	43	11	350	0.123	43	0.1	0.1	11.725	B
C-AB	0.90	0.22	650	0.001	0.90	0.0	0.0	5.547	A
C-A	556	139			556				
A-B	14	4			14				
A-C	341	85			341				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	592	0.007	4	0.0	0.0	6.124	A
B-A	53	13	313	0.169	53	0.1	0.2	13.786	B
C-AB	1	0.28	627	0.002	1	0.0	0.0	5.752	A
C-A	682	170			682				
A-B	18	4			18				
A-C	417	104			417				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	592	0.007	4	0.0	0.0	6.125	A
B-A	53	13	313	0.169	53	0.2	0.2	13.810	B
C-AB	1	0.28	627	0.002	1	0.0	0.0	5.752	A
C-A	682	170			682				
A-B	18	4			18				
A-C	417	104			417				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	0.90	622	0.006	4	0.0	0.0	5.819	A
B-A	43	11	350	0.123	43	0.2	0.1	11.755	B
C-AB	0.90	0.22	650	0.001	0.90	0.0	0.0	5.547	A
C-A	556	139			556				
A-B	14	4			14				
A-C	341	85			341				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.75	643	0.005	3	0.0	0.0	5.625	A
B-A	36	9	376	0.096	36	0.1	0.1	10.593	B
C-AB	0.75	0.19	666	0.001	0.75	0.0	0.0	5.410	A
C-A	466	117			466				
A-B	12	3			12				
A-C	285	71			285				

2026 Do Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2026 Do Something	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Barugh Green Rd (E)		ONE HOUR	✓	693	100.000
B - Site Access		ONE HOUR	✓	23	100.000
C - Barugh Green Rd (W)		ONE HOUR	✓	481	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
From	A - Barugh Green Rd (E)	0	36	657
	B - Site Access	21	0	2
	C - Barugh Green Rd (W)	478	3	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Barugh Green Rd (E)	B - Site Access	C - Barugh Green Rd (W)
From	A - Barugh Green Rd (E)	2	2	2
	B - Site Access	2	2	2
	C - Barugh Green Rd (W)	2	2	2

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.00	6.85	0.0	A	2	3
B-A	0.09	14.74	0.1	B	19	29
C-AB	0.01	6.71	0.0	A	3	4
C-A					439	658
A-B					33	50
A-C					603	904

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	599	0.003	1	0.0	0.0	6.024	A
B-A	16	4	346	0.046	16	0.0	0.0	10.881	B
C-AB	2	0.56	609	0.004	2	0.0	0.0	5.929	A
C-A	360	90			360				
A-B	27	7			27				
A-C	495	124			495				

16:00 - 16:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	569	0.003	2	0.0	0.0	6.343	A
B-A	19	5	313	0.060	19	0.0	0.1	12.227	B
C-AB	3	0.67	580	0.005	3	0.0	0.0	6.232	A
C-A	430	107			430				
A-B	32	8			32				
A-C	591	148			591				

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	528	0.004	2	0.0	0.0	6.851	A
B-A	23	6	267	0.086	23	0.1	0.1	14.723	B
C-AB	3	0.83	540	0.006	3	0.0	0.0	6.705	A
C-A	526	132			526				
A-B	40	10			40				
A-C	723	181			723				

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	528	0.004	2	0.0	0.0	6.851	A
B-A	23	6	267	0.086	23	0.1	0.1	14.738	B
C-AB	3	0.83	540	0.006	3	0.0	0.0	6.705	A
C-A	526	132			526				
A-B	40	10			40				
A-C	723	181			723				

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	569	0.003	2	0.0	0.0	6.347	A
B-A	19	5	313	0.060	19	0.1	0.1	12.241	B
C-AB	3	0.67	580	0.005	3	0.0	0.0	6.232	A
C-A	430	107			430				
A-B	32	8			32				
A-C	591	148			591				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	599	0.003	2	0.0	0.0	6.028	A
B-A	16	4	346	0.046	16	0.1	0.0	10.897	B
C-AB	2	0.56	609	0.004	2	0.0	0.0	5.932	A
C-A	360	90			360				
A-B	27	7			27				
A-C	495	124			495				

APPENDIX L

Junctions 9: A635/A637 Roundabout

Junctions 9	
ARCADY 9 - Roundabout Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk	
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: Barugh Geen Road - Wilthope Road Roundabout JT Rev B - 140 units.j9
Path: J:\11000\11400\11435_TABarughGreenRoadBar\engineering\Traffic_Programs\Arcady
Report generation date: 12/08/2020 12:08:14

»2020 Base, AM
 »2020 Base, PM
 »2024 Base, AM
 »2024 Base, PM
 »2026 Base, AM
 »2026 Base, PM
 »2026 Base + Comm, AM
 »2026 Base + Comm, PM
 »2020 Base + Dev, AM
 »2020 Base + Dev, PM
 »2024 Base + Dev, AM
 »2024 Base + Dev, PM
 »2026 Base + Comm + Dev, AM
 »2026 Base + Comm + Dev, PM

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2020 Base						
A - Claycliffe Road	1.1	6.66	0.52	1.3	6.30	0.56
B - Whaley Road	0.2	4.38	0.14	0.5	5.85	0.34
C - Wilthorpe Road	1.3	4.81	0.55	3.2	9.50	0.76
D - Barugh Green Road	1.4	8.78	0.58	0.9	7.17	0.46
2024 Base						
A - Claycliffe Road	1.3	7.58	0.57	1.5	7.08	0.60
B - Whaley Road	0.2	4.65	0.15	0.6	6.53	0.38
C - Wilthorpe Road	1.5	5.24	0.59	4.3	12.34	0.81
D - Barugh Green Road	1.8	10.30	0.64	1.0	8.03	0.51
2026 Base						
A - Claycliffe Road	1.4	8.02	0.59	1.6	7.47	0.62
B - Whaley Road	0.2	4.79	0.16	0.7	6.85	0.40
C - Wilthorpe Road	1.6	5.46	0.61	5.0	14.05	0.84
D - Barugh Green Road	1.9	11.06	0.66	1.1	8.45	0.52
2026 Base + Comm						
A - Claycliffe Road	1.5	8.57	0.60	1.8	7.95	0.64
B - Whaley Road	0.2	4.96	0.16	0.7	7.24	0.41
C - Wilthorpe Road	1.6	5.57	0.61	5.3	14.80	0.85
D - Barugh Green Road	2.5	13.09	0.71	1.4	9.62	0.58
2020 Base + Dev						
A - Claycliffe Road	1.2	7.03	0.53	1.3	6.53	0.57
B - Whaley Road	0.2	4.53	0.14	0.5	6.02	0.35
C - Wilthorpe Road	1.3	4.91	0.56	3.6	10.49	0.78
D - Barugh Green Road	1.8	10.04	0.64	1.0	7.50	0.49
2024 Base + Dev						
A - Claycliffe Road	1.4	8.07	0.58	1.6	7.38	0.61
B - Whaley Road	0.2	4.82	0.15	0.6	6.74	0.39
C - Wilthorpe Road	1.5	5.36	0.60	5.0	14.02	0.84
D - Barugh Green Road	2.2	12.07	0.69	1.1	8.46	0.53
2026 Base + Comm + Dev						
A - Claycliffe Road	1.7	9.20	0.62	1.9	8.32	0.65
B - Whaley Road	0.2	5.16	0.17	0.7	7.50	0.42
C - Wilthorpe Road	1.7	5.69	0.62	6.3	17.23	0.87
D - Barugh Green Road	3.2	16.05	0.77	1.6	10.23	0.61

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

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

File summary

File Description

Title	
Location	
Site number	
Date	19/03/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SANDERSONASSOC\ashley.armitage
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2020 Base	PM	ONE HOUR	15:45	17:15	15	✓
D3	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓
D4	2024 Base	PM	ONE HOUR	15:45	17:15	15	✓
D5	2026 Base	AM	ONE HOUR	07:45	09:15	15	✓
D6	2026 Base	PM	ONE HOUR	15:45	17:15	15	✓
D7	2026 Base + Comm	AM	ONE HOUR	07:45	09:15	15	✓
D8	2026 Base + Comm	PM	ONE HOUR	15:45	17:15	15	✓
D9	2020 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓
D10	2020 Base + Dev	PM	ONE HOUR	15:45	17:15	15	✓
D11	2024 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓
D12	2024 Base + Dev	PM	ONE HOUR	15:45	17:15	15	✓
D13	2026 Base + Comm + Dev	AM	ONE HOUR	07:45	09:15	15	✓
D14	2026 Base + Comm + Dev	PM	ONE HOUR	15:45	17:15	15	✓

Analysis Set Details

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

2020 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	6.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Claycliffe Road	
B	Whaley Road	
C	Wilthorpe Road	
D	Barugh Green Road	

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
A - Claycliffe Road	3.90	5.90	12.0	12.5	35.0	19.0	
B - Whaley Road	4.70	5.60	9.0	15.0	35.0	25.0	
C - Wilthorpe Road	3.20	5.90	52.0	38.0	35.0	19.0	
D - Barugh Green Road	3.80	6.20	17.0	10.0	35.0	65.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Claycliffe Road	0.632	1591
B - Whaley Road	0.638	1632
C - Wilthorpe Road	0.685	1774
D - Barugh Green Road	0.533	1371

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	546	100.000
B - Whaley Road		ONE HOUR	✓	121	100.000
C - Wilthorpe Road		ONE HOUR	✓	872	100.000
D - Barugh Green Road		ONE HOUR	✓	537	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From A - Claycliffe Road	0	24	505	17
From B - Whaley Road	19	0	82	20
From C - Wilthorpe Road	431	160	0	281
From D - Barugh Green Road	75	56	406	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From A - Claycliffe Road	3	3	3	3
From B - Whaley Road	3	3	3	3
From C - Wilthorpe Road	3	3	3	3
From D - Barugh Green Road	3	3	3	3

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.52	6.66	1.1	A	501	752
B - Whaley Road	0.14	4.38	0.2	A	111	167
C - Wilthorpe Road	0.55	4.81	1.3	A	800	1200
D - Barugh Green Road	0.58	8.78	1.4	A	493	739

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	411	103	466	1296	0.317	409	394	0.0	0.5	4.171	A
B - Whaley Road	91	23	695	1189	0.077	91	180	0.0	0.1	3.377	A
C - Wilthorpe Road	656	164	42	1745	0.376	654	744	0.0	0.6	3.392	A
D - Barugh Green Road	404	101	458	1127	0.359	402	238	0.0	0.6	5.098	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	491	123	558	1238	0.396	490	471	0.5	0.7	4.952	A
B - Whaley Road	109	27	833	1101	0.099	109	215	0.1	0.1	3.736	A
C - Wilthorpe Road	784	196	50	1739	0.451	783	891	0.6	0.8	3.875	A
D - Barugh Green Road	483	121	548	1079	0.447	482	286	0.6	0.8	6.197	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	601	150	683	1159	0.519	599	577	0.7	1.1	6.602	A
B - Whaley Road	133	33	1018	982	0.136	133	264	0.1	0.2	4.364	A
C - Wilthorpe Road	960	240	62	1731	0.555	958	1090	0.8	1.3	4.785	A
D - Barugh Green Road	591	148	670	1014	0.583	589	349	0.8	1.4	8.678	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	601	150	685	1158	0.519	601	578	1.1	1.1	6.658	A
B - Whaley Road	133	33	1022	980	0.136	133	264	0.2	0.2	4.376	A
C - Wilthorpe Road	960	240	62	1731	0.555	960	1093	1.3	1.3	4.807	A
D - Barugh Green Road	591	148	672	1013	0.584	591	350	1.4	1.4	8.782	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	491	123	561	1236	0.397	493	473	1.1	0.7	4.998	A
B - Whaley Road	109	27	838	1098	0.099	109	216	0.2	0.1	3.749	A
C - Wilthorpe Road	784	196	50	1739	0.451	786	896	1.3	0.9	3.897	A
D - Barugh Green Road	483	121	550	1078	0.448	485	287	1.4	0.8	6.277	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	411	103	469	1294	0.318	412	396	0.7	0.5	4.206	A
B - Whaley Road	91	23	700	1186	0.077	91	181	0.1	0.1	3.390	A
C - Wilthorpe Road	656	164	42	1745	0.376	657	749	0.9	0.6	3.412	A
D - Barugh Green Road	404	101	460	1126	0.359	405	240	0.8	0.6	5.154	A

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	7.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	669	100.000
B - Whaley Road		ONE HOUR	✓	295	100.000
C - Wilthorpe Road		ONE HOUR	✓	1108	100.000
D - Barugh Green Road		ONE HOUR	✓	398	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From				
A - Claycliffe Road	0	23	584	62
B - Whaley Road	50	0	134	111
C - Wilthorpe Road	620	47	0	441
D - Barugh Green Road	55	21	322	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	2	2	2	2
	B - Whaley Road	2	2	2	2
	C - Wilthorpe Road	2	2	2	2
	D - Barugh Green Road	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.56	6.30	1.3	A	614	921
B - Whaley Road	0.34	5.85	0.5	A	271	406
C - Wilthorpe Road	0.76	9.50	3.2	A	1017	1525
D - Barugh Green Road	0.46	7.17	0.9	A	365	548

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	504	126	292	1406	0.358	501	543	0.0	0.6	4.049	A
B - Whaley Road	222	56	725	1170	0.190	221	68	0.0	0.2	3.867	A
C - Wilthorpe Road	834	209	167	1659	0.503	830	779	0.0	1.0	4.409	A
D - Barugh Green Road	300	75	537	1085	0.276	298	460	0.0	0.4	4.660	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	601	150	350	1370	0.439	601	650	0.6	0.8	4.768	A
B - Whaley Road	265	66	869	1078	0.246	265	82	0.2	0.3	4.514	A
C - Wilthorpe Road	996	249	200	1636	0.609	994	933	1.0	1.6	5.695	A
D - Barugh Green Road	358	89	643	1028	0.348	357	551	0.4	0.5	5.467	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	737	184	428	1320	0.558	735	795	0.8	1.3	6.251	A
B - Whaley Road	325	81	1063	954	0.340	324	100	0.3	0.5	5.821	A
C - Wilthorpe Road	1220	305	245	1606	0.760	1214	1142	1.6	3.1	9.224	A
D - Barugh Green Road	438	110	786	952	0.460	437	673	0.5	0.9	7.106	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	737	184	429	1319	0.558	737	798	1.3	1.3	6.299	A
B - Whaley Road	325	81	1066	952	0.341	325	100	0.5	0.5	5.851	A
C - Wilthorpe Road	1220	305	246	1605	0.760	1220	1145	3.1	3.2	9.503	A
D - Barugh Green Road	438	110	789	951	0.461	438	676	0.9	0.9	7.166	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	601	150	352	1368	0.440	603	656	1.3	0.8	4.810	A
B - Whaley Road	265	66	873	1075	0.247	266	82	0.5	0.3	4.542	A
C - Wilthorpe Road	996	249	201	1636	0.609	1002	938	3.2	1.6	5.852	A
D - Barugh Green Road	358	89	648	1026	0.349	359	555	0.9	0.6	5.519	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	504	126	294	1405	0.359	505	547	0.8	0.6	4.084	A
B - Whaley Road	222	56	730	1166	0.190	222	69	0.3	0.2	3.891	A
C - Wilthorpe Road	834	209	168	1658	0.503	836	784	1.6	1.0	4.481	A
D - Barugh Green Road	300	75	541	1083	0.277	300	463	0.6	0.4	4.697	A

2024 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	7.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	582	100.000
B - Whaley Road		ONE HOUR	✓	128	100.000
C - Wilthorpe Road		ONE HOUR	✓	928	100.000
D - Barugh Green Road		ONE HOUR	✓	573	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	0	26	538	18
	B - Whaley Road	20	0	87	21
	C - Wilthorpe Road	459	170	0	299
	D - Barugh Green Road	80	60	433	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	3	3	3	3
	B - Whaley Road	3	3	3	3
	C - Wilthorpe Road	3	3	3	3
	D - Barugh Green Road	3	3	3	3

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.57	7.58	1.3	A	534	801
B - Whaley Road	0.15	4.65	0.2	A	117	176
C - Wilthorpe Road	0.59	5.24	1.5	A	852	1277
D - Barugh Green Road	0.64	10.30	1.8	B	526	789

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	438	110	496	1277	0.343	436	419	0.0	0.5	4.399	A
B - Whaley Road	96	24	741	1160	0.083	96	192	0.0	0.1	3.486	A
C - Wilthorpe Road	699	175	44	1743	0.401	696	792	0.0	0.7	3.531	A
D - Barugh Green Road	431	108	487	1112	0.388	429	253	0.0	0.6	5.409	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	523	131	595	1215	0.431	522	502	0.5	0.8	5.345	A
B - Whaley Road	115	29	887	1066	0.108	115	230	0.1	0.1	3.898	A
C - Wilthorpe Road	834	209	53	1737	0.480	833	949	0.7	0.9	4.097	A
D - Barugh Green Road	515	129	583	1061	0.486	514	303	0.6	1.0	6.768	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	641	160	727	1131	0.566	639	614	0.8	1.3	7.492	A
B - Whaley Road	141	35	1084	940	0.150	141	281	0.1	0.2	4.636	A
C - Wilthorpe Road	1022	255	65	1729	0.591	1020	1160	0.9	1.5	5.210	A
D - Barugh Green Road	631	158	713	991	0.637	628	371	1.0	1.8	10.117	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	641	160	730	1129	0.567	641	615	1.3	1.3	7.584	A
B - Whaley Road	141	35	1089	938	0.150	141	282	0.2	0.2	4.654	A
C - Wilthorpe Road	1022	255	65	1729	0.591	1022	1165	1.5	1.5	5.241	A
D - Barugh Green Road	631	158	715	990	0.637	631	372	1.8	1.8	10.303	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	523	131	599	1212	0.432	525	504	1.3	0.8	5.416	A
B - Whaley Road	115	29	894	1062	0.108	115	231	0.2	0.1	3.916	A
C - Wilthorpe Road	834	209	53	1737	0.480	836	956	1.5	1.0	4.125	A
D - Barugh Green Road	515	129	585	1059	0.486	518	305	1.8	1.0	6.891	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	438	110	500	1274	0.344	439	422	0.8	0.5	4.445	A
B - Whaley Road	96	24	747	1156	0.083	96	193	0.1	0.1	3.502	A
C - Wilthorpe Road	699	175	44	1743	0.401	700	799	1.0	0.7	3.556	A
D - Barugh Green Road	431	108	489	1110	0.389	433	255	1.0	0.7	5.482	A

2024 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	9.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2024 Base	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	712	100.000
B - Whaley Road		ONE HOUR	✓	314	100.000
C - Wilthorpe Road		ONE HOUR	✓	1180	100.000
D - Barugh Green Road		ONE HOUR	✓	424	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	0	24	622	66
	B - Whaley Road	53	0	143	118
	C - Wilthorpe Road	660	50	0	470
	D - Barugh Green Road	59	22	343	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	2	2	2	2
	B - Whaley Road	2	2	2	2
	C - Wilthorpe Road	2	2	2	2
	D - Barugh Green Road	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.60	7.08	1.5	A	653	980
B - Whaley Road	0.38	6.53	0.6	A	288	432
C - Wilthorpe Road	0.81	12.34	4.3	B	1083	1624
D - Barugh Green Road	0.51	8.03	1.0	A	389	584

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	536	134	311	1394	0.384	534	578	0.0	0.6	4.254	A
B - Whaley Road	236	59	772	1139	0.207	235	72	0.0	0.3	4.058	A
C - Wilthorpe Road	888	222	178	1652	0.538	884	830	0.0	1.2	4.752	A
D - Barugh Green Road	319	80	571	1067	0.299	317	490	0.0	0.4	4.892	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	640	160	372	1355	0.472	639	692	0.6	0.9	5.118	A
B - Whaley Road	282	71	925	1042	0.271	282	86	0.3	0.4	4.827	A
C - Wilthorpe Road	1061	265	213	1628	0.652	1058	994	1.2	1.9	6.411	A
D - Barugh Green Road	381	95	684	1006	0.379	380	587	0.4	0.6	5.857	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	784	196	455	1303	0.602	781	844	0.9	1.5	7.008	A
B - Whaley Road	346	86	1131	910	0.380	345	105	0.4	0.6	6.482	A
C - Wilthorpe Road	1299	325	260	1595	0.814	1290	1216	1.9	4.2	11.680	B
D - Barugh Green Road	467	117	834	927	0.504	465	716	0.6	1.0	7.933	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	784	196	457	1302	0.602	784	850	1.5	1.5	7.083	A
B - Whaley Road	346	86	1135	908	0.381	346	106	0.6	0.6	6.529	A
C - Wilthorpe Road	1299	325	261	1595	0.815	1299	1220	4.2	4.3	12.336	B
D - Barugh Green Road	467	117	840	924	0.505	467	720	1.0	1.0	8.035	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	640	160	375	1354	0.473	642	700	1.5	0.9	5.178	A
B - Whaley Road	282	71	930	1039	0.272	283	87	0.6	0.4	4.868	A
C - Wilthorpe Road	1061	265	214	1627	0.652	1070	1000	4.3	1.9	6.705	A
D - Barugh Green Road	381	95	692	1002	0.380	383	592	1.0	0.6	5.940	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	536	134	313	1393	0.385	537	583	0.9	0.6	4.298	A
B - Whaley Road	236	59	778	1136	0.208	237	72	0.4	0.3	4.087	A
C - Wilthorpe Road	888	222	179	1651	0.538	891	836	1.9	1.2	4.851	A
D - Barugh Green Road	319	80	576	1064	0.300	320	494	0.6	0.4	4.942	A

2026 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	7.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2026 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	596	100.000
B - Whaley Road		ONE HOUR	✓	133	100.000
C - Wilthorpe Road		ONE HOUR	✓	952	100.000
D - Barugh Green Road		ONE HOUR	✓	586	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	0	26	551	19
	B - Whaley Road	21	0	90	22
	C - Wilthorpe Road	470	175	0	307
	D - Barugh Green Road	82	61	443	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	3	3	3	3
	B - Whaley Road	3	3	3	3
	C - Wilthorpe Road	3	3	3	3
	D - Barugh Green Road	3	3	3	3

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.59	8.02	1.4	A	547	820
B - Whaley Road	0.16	4.79	0.2	A	122	183
C - Wilthorpe Road	0.61	5.46	1.6	A	874	1310
D - Barugh Green Road	0.66	11.06	1.9	B	538	807

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	449	112	508	1270	0.353	446	430	0.0	0.6	4.494	A
B - Whaley Road	100	25	758	1148	0.087	100	196	0.0	0.1	3.536	A
C - Wilthorpe Road	717	179	46	1742	0.411	714	812	0.0	0.7	3.596	A
D - Barugh Green Road	441	110	499	1105	0.399	438	261	0.0	0.7	5.542	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	536	134	609	1206	0.444	535	514	0.6	0.8	5.518	A
B - Whaley Road	120	30	909	1053	0.114	119	235	0.1	0.1	3.974	A
C - Wilthorpe Road	856	214	56	1735	0.493	855	972	0.7	1.0	4.205	A
D - Barugh Green Road	527	132	598	1052	0.501	525	312	0.7	1.0	7.018	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	656	164	744	1120	0.586	654	629	0.8	1.4	7.903	A
B - Whaley Road	146	37	1110	924	0.159	146	288	0.1	0.2	4.767	A
C - Wilthorpe Road	1048	262	68	1727	0.607	1046	1188	1.0	1.6	5.425	A
D - Barugh Green Road	645	161	732	981	0.658	642	382	1.0	1.9	10.805	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	656	164	747	1118	0.587	656	631	1.4	1.4	8.018	A
B - Whaley Road	146	37	1115	921	0.159	146	288	0.2	0.2	4.788	A
C - Wilthorpe Road	1048	262	68	1727	0.607	1048	1193	1.6	1.6	5.462	A
D - Barugh Green Road	645	161	733	980	0.658	645	383	1.9	1.9	11.055	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	536	134	614	1203	0.445	538	517	1.4	0.8	5.601	A
B - Whaley Road	120	30	916	1048	0.114	120	236	0.2	0.1	3.995	A
C - Wilthorpe Road	856	214	56	1735	0.493	858	980	1.6	1.0	4.239	A
D - Barugh Green Road	527	132	600	1051	0.501	530	314	1.9	1.1	7.167	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	449	112	513	1267	0.354	450	432	0.8	0.6	4.544	A
B - Whaley Road	100	25	765	1144	0.088	100	198	0.1	0.1	3.551	A
C - Wilthorpe Road	717	179	47	1742	0.412	718	818	1.0	0.7	3.628	A
D - Barugh Green Road	441	110	502	1103	0.400	443	262	1.1	0.7	5.625	A

2026 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	10.51	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2026 Base	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	730	100.000
B - Whaley Road		ONE HOUR	✓	322	100.000
C - Wilthorpe Road		ONE HOUR	✓	1209	100.000
D - Barugh Green Road		ONE HOUR	✓	434	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	0	25	637	68
	B - Whaley Road	55	0	146	121
	C - Wilthorpe Road	677	51	0	481
	D - Barugh Green Road	60	23	351	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	2	2	2	2
	B - Whaley Road	2	2	2	2
	C - Wilthorpe Road	2	2	2	2
	D - Barugh Green Road	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.62	7.47	1.6	A	670	1005
B - Whaley Road	0.40	6.85	0.7	A	295	443
C - Wilthorpe Road	0.84	14.05	5.0	B	1109	1664
D - Barugh Green Road	0.52	8.45	1.1	A	398	597

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	550	137	318	1390	0.395	547	593	0.0	0.7	4.344	A
B - Whaley Road	242	61	791	1128	0.215	241	74	0.0	0.3	4.138	A
C - Wilthorpe Road	910	228	183	1648	0.552	905	849	0.0	1.2	4.910	A
D - Barugh Green Road	327	82	586	1059	0.309	325	502	0.0	0.5	4.993	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	656	164	381	1350	0.486	655	710	0.7	1.0	5.277	A
B - Whaley Road	289	72	948	1028	0.282	289	89	0.3	0.4	4.967	A
C - Wilthorpe Road	1087	272	219	1624	0.669	1084	1018	1.2	2.0	6.763	A
D - Barugh Green Road	390	98	702	997	0.391	389	601	0.5	0.6	6.035	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	804	201	466	1296	0.620	801	865	1.0	1.6	7.379	A
B - Whaley Road	355	89	1159	893	0.397	353	108	0.4	0.7	6.792	A
C - Wilthorpe Road	1331	333	268	1590	0.837	1320	1244	2.0	4.8	13.076	B
D - Barugh Green Road	478	119	855	915	0.522	476	733	0.6	1.1	8.324	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	804	201	468	1295	0.621	804	872	1.6	1.6	7.469	A
B - Whaley Road	355	89	1163	890	0.398	355	109	0.7	0.7	6.850	A
C - Wilthorpe Road	1331	333	269	1590	0.837	1330	1248	4.8	5.0	14.051	B
D - Barugh Green Road	478	119	862	912	0.524	478	737	1.1	1.1	8.454	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	656	164	384	1348	0.487	659	719	1.6	1.0	5.350	A
B - Whaley Road	289	72	953	1024	0.283	291	90	0.7	0.4	5.015	A
C - Wilthorpe Road	1087	272	220	1623	0.670	1098	1024	5.0	2.1	7.152	A
D - Barugh Green Road	390	98	711	992	0.393	392	608	1.1	0.7	6.134	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	550	137	321	1388	0.396	551	598	1.0	0.7	4.393	A
B - Whaley Road	242	61	797	1124	0.216	243	75	0.4	0.3	4.171	A
C - Wilthorpe Road	910	228	184	1647	0.552	914	856	2.1	1.3	5.027	A
D - Barugh Green Road	327	82	592	1056	0.309	328	506	0.7	0.5	5.049	A

2026 Base + Comm, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	8.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2026 Base + Comm	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	597	100.000
B - Whaley Road		ONE HOUR	✓	134	100.000
C - Wilthorpe Road		ONE HOUR	✓	962	100.000
D - Barugh Green Road		ONE HOUR	✓	634	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From				
A - Claycliffe Road	0	26	551	20
B - Whaley Road	21	0	90	23
C - Wilthorpe Road	470	175	0	317
D - Barugh Green Road	89	66	479	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	3	3	3	3
	B - Whaley Road	3	3	3	3
	C - Wilthorpe Road	3	3	3	3
	D - Barugh Green Road	3	3	3	3

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.60	8.57	1.5	A	548	822
B - Whaley Road	0.16	4.96	0.2	A	123	184
C - Wilthorpe Road	0.61	5.57	1.6	A	883	1324
D - Barugh Green Road	0.71	13.09	2.5	B	582	873

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	449	112	539	1250	0.360	447	435	0.0	0.6	4.604	A
B - Whaley Road	101	25	786	1131	0.089	100	200	0.0	0.1	3.599	A
C - Wilthorpe Road	724	181	48	1741	0.416	721	838	0.0	0.7	3.626	A
D - Barugh Green Road	477	119	499	1105	0.432	474	270	0.0	0.8	5.852	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	537	134	646	1183	0.454	536	521	0.6	0.8	5.721	A
B - Whaley Road	120	30	942	1031	0.117	120	240	0.1	0.1	4.069	A
C - Wilthorpe Road	865	216	57	1734	0.499	864	1004	0.7	1.0	4.254	A
D - Barugh Green Road	570	142	598	1052	0.542	568	323	0.8	1.2	7.635	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	657	164	788	1093	0.602	655	637	0.8	1.5	8.413	A
B - Whaley Road	148	37	1150	899	0.164	147	293	0.1	0.2	4.934	A
C - Wilthorpe Road	1059	265	70	1725	0.614	1057	1227	1.0	1.6	5.525	A
D - Barugh Green Road	698	175	732	981	0.711	693	395	1.2	2.4	12.657	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	657	164	793	1090	0.603	657	639	1.5	1.5	8.565	A
B - Whaley Road	148	37	1156	895	0.165	148	294	0.2	0.2	4.961	A
C - Wilthorpe Road	1059	265	70	1725	0.614	1059	1233	1.6	1.6	5.565	A
D - Barugh Green Road	698	175	733	980	0.712	698	396	2.4	2.5	13.093	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	537	134	652	1179	0.455	539	523	1.5	0.9	5.823	A
B - Whaley Road	120	30	950	1026	0.117	121	241	0.2	0.1	4.098	A
C - Wilthorpe Road	865	216	58	1734	0.499	867	1013	1.6	1.0	4.288	A
D - Barugh Green Road	570	142	600	1051	0.542	575	325	2.5	1.2	7.866	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	449	112	544	1247	0.360	451	438	0.9	0.6	4.661	A
B - Whaley Road	101	25	793	1126	0.090	101	201	0.1	0.1	3.616	A
C - Wilthorpe Road	724	181	48	1741	0.416	725	846	1.0	0.7	3.658	A
D - Barugh Green Road	477	119	502	1103	0.433	479	271	1.2	0.8	5.955	A

2026 Base + Comm, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	11.19	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2026 Base + Comm	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	731	100.000
B - Whaley Road		ONE HOUR	✓	323	100.000
C - Wilthorpe Road		ONE HOUR	✓	1220	100.000
D - Barugh Green Road		ONE HOUR	✓	482	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From				
A - Claycliffe Road	0	25	637	69
B - Whaley Road	55	0	146	122
C - Wilthorpe Road	677	51	0	492
D - Barugh Green Road	67	25	390	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	2	2	2	2
	B - Whaley Road	2	2	2	2
	C - Wilthorpe Road	2	2	2	2
	D - Barugh Green Road	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.64	7.95	1.8	A	671	1006
B - Whaley Road	0.41	7.24	0.7	A	296	445
C - Wilthorpe Road	0.85	14.80	5.3	B	1119	1679
D - Barugh Green Road	0.58	9.62	1.4	A	442	663

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	550	138	349	1370	0.402	548	598	0.0	0.7	4.449	A
B - Whaley Road	243	61	821	1109	0.219	242	76	0.0	0.3	4.232	A
C - Wilthorpe Road	918	230	184	1647	0.558	913	879	0.0	1.3	4.970	A
D - Barugh Green Road	363	91	586	1059	0.343	361	511	0.0	0.5	5.246	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	657	164	418	1327	0.495	656	716	0.7	1.0	5.464	A
B - Whaley Road	290	73	983	1005	0.289	290	91	0.3	0.4	5.132	A
C - Wilthorpe Road	1097	274	221	1622	0.676	1094	1052	1.3	2.1	6.900	A
D - Barugh Green Road	433	108	702	997	0.435	432	612	0.5	0.8	6.489	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	805	201	511	1268	0.635	802	873	1.0	1.7	7.825	A
B - Whaley Road	356	89	1202	865	0.411	354	110	0.4	0.7	7.172	A
C - Wilthorpe Road	1343	336	270	1589	0.846	1331	1286	2.1	5.1	13.659	B
D - Barugh Green Road	531	133	855	916	0.580	528	746	0.8	1.4	9.420	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	805	201	513	1267	0.635	805	879	1.7	1.8	7.947	A
B - Whaley Road	356	89	1207	862	0.412	356	111	0.7	0.7	7.244	A
C - Wilthorpe Road	1343	336	271	1588	0.846	1342	1291	5.1	5.3	14.800	B
D - Barugh Green Road	531	133	862	912	0.582	531	752	1.4	1.4	9.621	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	657	164	422	1324	0.496	660	726	1.8	1.0	5.551	A
B - Whaley Road	290	73	990	1001	0.290	292	92	0.7	0.4	5.186	A
C - Wilthorpe Road	1097	274	222	1621	0.676	1109	1060	5.3	2.2	7.340	A
D - Barugh Green Road	433	108	712	992	0.437	436	620	1.4	0.8	6.629	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	550	138	352	1368	0.402	552	604	1.0	0.7	4.504	A
B - Whaley Road	243	61	827	1104	0.220	244	76	0.4	0.3	4.268	A
C - Wilthorpe Road	918	230	186	1646	0.558	922	885	2.2	1.3	5.094	A
D - Barugh Green Road	363	91	592	1056	0.344	364	516	0.8	0.5	5.317	A

2020 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	6.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2020 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	550	100.000
B - Whaley Road		ONE HOUR	✓	121	100.000
C - Wilthorpe Road		ONE HOUR	✓	884	100.000
D - Barugh Green Road		ONE HOUR	✓	585	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	0	24	505	21
	B - Whaley Road	19	0	82	20
	C - Wilthorpe Road	431	160	0	293
	D - Barugh Green Road	87	56	442	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	3	3	3	3
	B - Whaley Road	3	3	3	3
	C - Wilthorpe Road	3	3	3	3
	D - Barugh Green Road	3	3	3	3

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.53	7.03	1.2	A	505	757
B - Whaley Road	0.14	4.53	0.2	A	111	167
C - Wilthorpe Road	0.56	4.91	1.3	A	811	1217
D - Barugh Green Road	0.64	10.04	1.8	B	537	805

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	414	104	493	1279	0.324	412	403	0.0	0.5	4.266	A
B - Whaley Road	91	23	725	1170	0.078	91	180	0.0	0.1	3.436	A
C - Wilthorpe Road	666	166	45	1743	0.382	663	771	0.0	0.6	3.427	A
D - Barugh Green Road	440	110	457	1127	0.391	438	250	0.0	0.7	5.358	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	494	124	590	1218	0.406	494	482	0.5	0.7	5.116	A
B - Whaley Road	109	27	868	1078	0.101	109	215	0.1	0.1	3.824	A
C - Wilthorpe Road	795	199	54	1737	0.458	794	923	0.6	0.9	3.928	A
D - Barugh Green Road	526	131	548	1079	0.487	525	300	0.7	1.0	6.672	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	606	151	721	1135	0.534	604	590	0.7	1.2	6.959	A
B - Whaley Road	133	33	1062	955	0.140	133	264	0.1	0.2	4.510	A
C - Wilthorpe Road	973	243	66	1728	0.563	972	1129	0.9	1.3	4.886	A
D - Barugh Green Road	644	161	670	1014	0.635	641	367	1.0	1.7	9.862	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	606	151	724	1133	0.535	606	591	1.2	1.2	7.030	A
B - Whaley Road	133	33	1066	952	0.140	133	264	0.2	0.2	4.526	A
C - Wilthorpe Road	973	243	66	1728	0.563	973	1133	1.3	1.3	4.910	A
D - Barugh Green Road	644	161	672	1013	0.636	644	368	1.7	1.8	10.036	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	494	124	594	1215	0.407	496	484	1.2	0.7	5.171	A
B - Whaley Road	109	27	874	1074	0.101	109	216	0.2	0.1	3.842	A
C - Wilthorpe Road	795	199	54	1737	0.458	796	929	1.3	0.9	3.951	A
D - Barugh Green Road	526	131	550	1078	0.488	529	301	1.8	1.0	6.791	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	414	104	497	1277	0.324	415	405	0.7	0.5	4.307	A
B - Whaley Road	91	23	731	1166	0.078	91	181	0.1	0.1	3.451	A
C - Wilthorpe Road	666	166	45	1743	0.382	666	777	0.9	0.6	3.450	A
D - Barugh Green Road	440	110	460	1126	0.391	442	252	1.0	0.7	5.429	A

2020 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	8.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2020 Base + Dev	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	678	100.000
B - Whaley Road		ONE HOUR	✓	295	100.000
C - Wilthorpe Road		ONE HOUR	✓	1135	100.000
D - Barugh Green Road		ONE HOUR	✓	419	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From				
A - Claycliffe Road	0	23	584	71
B - Whaley Road	50	0	134	111
C - Wilthorpe Road	620	47	0	468
D - Barugh Green Road	60	21	338	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	2	2	2	2
	B - Whaley Road	2	2	2	2
	C - Wilthorpe Road	2	2	2	2
	D - Barugh Green Road	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.57	6.53	1.3	A	622	933
B - Whaley Road	0.35	6.02	0.5	A	271	406
C - Wilthorpe Road	0.78	10.49	3.6	B	1041	1562
D - Barugh Green Road	0.49	7.50	1.0	A	384	577

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	510	128	304	1399	0.365	508	547	0.0	0.6	4.112	A
B - Whaley Road	222	56	744	1158	0.192	221	68	0.0	0.2	3.917	A
C - Wilthorpe Road	854	214	174	1654	0.516	850	791	0.0	1.1	4.541	A
D - Barugh Green Road	315	79	537	1085	0.291	314	487	0.0	0.4	4.753	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	610	152	364	1361	0.448	609	655	0.6	0.8	4.877	A
B - Whaley Road	265	66	891	1064	0.249	265	82	0.2	0.3	4.595	A
C - Wilthorpe Road	1020	255	208	1631	0.626	1018	948	1.1	1.7	5.966	A
D - Barugh Green Road	377	94	643	1028	0.366	376	583	0.4	0.6	5.623	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	746	187	445	1309	0.570	744	799	0.8	1.3	6.478	A
B - Whaley Road	325	81	1090	937	0.347	324	100	0.3	0.5	5.986	A
C - Wilthorpe Road	1250	312	255	1599	0.782	1242	1159	1.7	3.5	10.097	B
D - Barugh Green Road	461	115	785	953	0.484	460	712	0.6	0.9	7.430	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	746	187	447	1308	0.571	746	804	1.3	1.3	6.535	A
B - Whaley Road	325	81	1093	935	0.347	325	100	0.5	0.5	6.019	A
C - Wilthorpe Road	1250	312	255	1599	0.782	1249	1163	3.5	3.6	10.486	B
D - Barugh Green Road	461	115	789	951	0.485	461	716	0.9	1.0	7.505	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	610	152	367	1359	0.448	612	661	1.3	0.8	4.924	A
B - Whaley Road	265	66	896	1061	0.250	266	82	0.5	0.3	4.624	A
C - Wilthorpe Road	1020	255	209	1630	0.626	1028	953	3.6	1.7	6.164	A
D - Barugh Green Road	377	94	649	1025	0.367	378	588	1.0	0.6	5.688	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	510	128	306	1397	0.365	511	551	0.8	0.6	4.149	A
B - Whaley Road	222	56	749	1154	0.192	222	69	0.3	0.2	3.943	A
C - Wilthorpe Road	854	214	175	1654	0.517	857	797	1.7	1.1	4.623	A
D - Barugh Green Road	315	79	541	1083	0.291	316	491	0.6	0.4	4.797	A

2024 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	7.86	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2024 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	586	100.000
B - Whaley Road		ONE HOUR	✓	128	100.000
C - Wilthorpe Road		ONE HOUR	✓	940	100.000
D - Barugh Green Road		ONE HOUR	✓	621	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	0	26	538	22
	B - Whaley Road	20	0	87	21
	C - Wilthorpe Road	459	170	0	311
	D - Barugh Green Road	92	60	469	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	3	3	3	3
	B - Whaley Road	3	3	3	3
	C - Wilthorpe Road	3	3	3	3
	D - Barugh Green Road	3	3	3	3

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.58	8.07	1.4	A	538	807
B - Whaley Road	0.15	4.82	0.2	A	117	176
C - Wilthorpe Road	0.60	5.36	1.5	A	863	1294
D - Barugh Green Road	0.69	12.07	2.2	B	570	855

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	441	110	523	1260	0.350	439	428	0.0	0.6	4.504	A
B - Whaley Road	96	24	770	1141	0.084	96	192	0.0	0.1	3.549	A
C - Wilthorpe Road	708	177	47	1741	0.406	705	819	0.0	0.7	3.569	A
D - Barugh Green Road	468	117	487	1112	0.421	465	265	0.0	0.7	5.704	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	527	132	627	1195	0.441	526	513	0.6	0.8	5.537	A
B - Whaley Road	115	29	923	1043	0.110	115	230	0.1	0.1	3.993	A
C - Wilthorpe Road	845	211	57	1735	0.487	844	981	0.7	1.0	4.156	A
D - Barugh Green Road	558	140	583	1061	0.526	557	318	0.7	1.1	7.338	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	645	161	766	1107	0.583	643	627	0.8	1.4	7.947	A
B - Whaley Road	141	35	1127	913	0.154	141	281	0.1	0.2	4.800	A
C - Wilthorpe Road	1035	259	69	1726	0.600	1033	1199	1.0	1.5	5.330	A
D - Barugh Green Road	684	171	713	991	0.690	679	389	1.1	2.2	11.735	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	645	161	769	1104	0.584	645	629	1.4	1.4	8.069	A
B - Whaley Road	141	35	1133	910	0.155	141	282	0.2	0.2	4.824	A
C - Wilthorpe Road	1035	259	69	1726	0.600	1035	1204	1.5	1.5	5.364	A
D - Barugh Green Road	684	171	715	990	0.690	684	390	2.2	2.2	12.068	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	527	132	632	1191	0.442	529	515	1.4	0.8	5.624	A
B - Whaley Road	115	29	931	1038	0.111	115	231	0.2	0.1	4.018	A
C - Wilthorpe Road	845	211	57	1735	0.487	847	989	1.5	1.0	4.189	A
D - Barugh Green Road	558	140	585	1059	0.527	563	319	2.2	1.2	7.527	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	441	110	528	1257	0.351	442	431	0.8	0.6	4.555	A
B - Whaley Road	96	24	777	1137	0.085	96	193	0.1	0.1	3.564	A
C - Wilthorpe Road	708	177	48	1741	0.406	709	826	1.0	0.7	3.595	A
D - Barugh Green Road	468	117	489	1110	0.421	469	267	1.2	0.8	5.800	A

2024 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	10.47	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2024 Base + Dev	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	721	100.000
B - Whaley Road		ONE HOUR	✓	314	100.000
C - Wilthorpe Road		ONE HOUR	✓	1207	100.000
D - Barugh Green Road		ONE HOUR	✓	445	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	0	24	622	75
	B - Whaley Road	53	0	143	118
	C - Wilthorpe Road	660	50	0	497
	D - Barugh Green Road	64	22	359	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	2	2	2	2
	B - Whaley Road	2	2	2	2
	C - Wilthorpe Road	2	2	2	2
	D - Barugh Green Road	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.61	7.38	1.6	A	662	992
B - Whaley Road	0.39	6.74	0.6	A	288	432
C - Wilthorpe Road	0.84	14.02	5.0	B	1108	1661
D - Barugh Green Road	0.53	8.46	1.1	A	408	613

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	543	136	323	1387	0.391	540	582	0.0	0.7	4.324	A
B - Whaley Road	236	59	791	1128	0.210	235	72	0.0	0.3	4.110	A
C - Wilthorpe Road	909	227	184	1647	0.552	904	842	0.0	1.2	4.906	A
D - Barugh Green Road	335	84	571	1067	0.314	333	517	0.0	0.5	4.995	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	648	162	387	1346	0.481	647	697	0.7	0.9	5.241	A
B - Whaley Road	282	71	948	1028	0.275	282	86	0.3	0.4	4.920	A
C - Wilthorpe Road	1085	271	221	1622	0.669	1082	1009	1.2	2.0	6.756	A
D - Barugh Green Road	400	100	684	1007	0.397	399	619	0.5	0.7	6.039	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	794	198	473	1292	0.614	791	849	0.9	1.6	7.293	A
B - Whaley Road	346	86	1159	893	0.387	345	105	0.4	0.6	6.685	A
C - Wilthorpe Road	1329	332	270	1589	0.837	1318	1233	2.0	4.8	13.047	B
D - Barugh Green Road	490	122	833	927	0.529	488	754	0.7	1.1	8.331	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	794	198	474	1291	0.615	794	855	1.6	1.6	7.383	A
B - Whaley Road	346	86	1163	890	0.388	346	106	0.6	0.6	6.739	A
C - Wilthorpe Road	1329	332	271	1588	0.837	1328	1237	4.8	5.0	14.016	B
D - Barugh Green Road	490	122	840	924	0.530	490	759	1.1	1.1	8.462	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	648	162	389	1345	0.482	651	705	1.6	1.0	5.311	A
B - Whaley Road	282	71	953	1024	0.276	283	87	0.6	0.4	4.963	A
C - Wilthorpe Road	1085	271	222	1622	0.669	1097	1015	5.0	2.1	7.142	A
D - Barugh Green Road	400	100	693	1002	0.399	402	626	1.1	0.7	6.137	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	543	136	325	1385	0.392	544	587	1.0	0.7	4.371	A
B - Whaley Road	236	59	797	1124	0.210	237	72	0.4	0.3	4.143	A
C - Wilthorpe Road	909	227	186	1646	0.552	912	848	2.1	1.3	5.024	A
D - Barugh Green Road	335	84	576	1064	0.315	336	521	0.7	0.5	5.049	A

2026 Base + Comm + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	9.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2026 Base + Comm + Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	601	100.000
B - Whaley Road		ONE HOUR	✓	134	100.000
C - Wilthorpe Road		ONE HOUR	✓	973	100.000
D - Barugh Green Road		ONE HOUR	✓	682	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	0	26	551	24
	B - Whaley Road	21	0	90	23
	C - Wilthorpe Road	470	175	0	328
	D - Barugh Green Road	100	66	516	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	3	3	3	3
	B - Whaley Road	3	3	3	3
	C - Wilthorpe Road	3	3	3	3
	D - Barugh Green Road	3	3	3	3

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.62	9.20	1.7	A	551	827
B - Whaley Road	0.17	5.16	0.2	A	123	184
C - Wilthorpe Road	0.62	5.69	1.7	A	893	1339
D - Barugh Green Road	0.77	16.05	3.2	C	626	939

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	452	113	566	1233	0.367	450	443	0.0	0.6	4.723	A
B - Whaley Road	101	25	816	1111	0.091	100	200	0.0	0.1	3.665	A
C - Wilthorpe Road	733	183	51	1739	0.421	730	866	0.0	0.7	3.664	A
D - Barugh Green Road	513	128	499	1105	0.465	510	281	0.0	0.9	6.197	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	540	135	679	1162	0.465	539	530	0.6	0.9	5.943	A
B - Whaley Road	120	30	978	1008	0.119	120	240	0.1	0.1	4.176	A
C - Wilthorpe Road	875	219	61	1732	0.505	874	1037	0.7	1.0	4.314	A
D - Barugh Green Road	613	153	598	1052	0.583	611	337	0.9	1.4	8.359	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	662	165	827	1068	0.620	659	648	0.9	1.6	8.994	A
B - Whaley Road	148	37	1193	871	0.169	147	293	0.1	0.2	5.124	A
C - Wilthorpe Road	1071	268	75	1722	0.622	1069	1266	1.0	1.7	5.651	A
D - Barugh Green Road	751	188	732	981	0.765	744	412	1.4	3.1	15.198	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	662	165	833	1064	0.622	662	651	1.6	1.7	9.203	A
B - Whaley Road	148	37	1201	866	0.170	148	294	0.2	0.2	5.159	A
C - Wilthorpe Road	1071	268	75	1722	0.622	1071	1273	1.7	1.7	5.694	A
D - Barugh Green Road	751	188	733	980	0.766	750	413	3.1	3.2	16.047	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	540	135	687	1157	0.467	543	534	1.7	0.9	6.077	A
B - Whaley Road	120	30	989	1001	0.120	121	241	0.2	0.1	4.212	A
C - Wilthorpe Road	875	219	61	1732	0.505	877	1048	1.7	1.1	4.353	A
D - Barugh Green Road	613	153	600	1051	0.583	620	338	3.2	1.5	8.742	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	452	113	572	1229	0.368	454	446	0.9	0.6	4.788	A
B - Whaley Road	101	25	824	1106	0.091	101	202	0.1	0.1	3.690	A
C - Wilthorpe Road	733	183	51	1738	0.421	734	874	1.1	0.8	3.697	A
D - Barugh Green Road	513	128	502	1103	0.465	516	283	1.5	0.9	6.335	A

2026 Base + Comm + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	C - Wilthorpe Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	12.52	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2026 Base + Comm + Dev	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Claycliffe Road		ONE HOUR	✓	740	100.000
B - Whaley Road		ONE HOUR	✓	323	100.000
C - Wilthorpe Road		ONE HOUR	✓	1247	100.000
D - Barugh Green Road		ONE HOUR	✓	503	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
From	A - Claycliffe Road	0	25	637	78
	B - Whaley Road	55	0	146	122
	C - Wilthorpe Road	677	51	0	519
	D - Barugh Green Road	72	25	406	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Claycliffe Road	B - Whaley Road	C - Wilthorpe Road	D - Barugh Green Road
	A - Claycliffe Road	2	2	2	2
	B - Whaley Road	2	2	2	2
	C - Wilthorpe Road	2	2	2	2
	D - Barugh Green Road	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Claycliffe Road	0.65	8.32	1.9	A	679	1019
B - Whaley Road	0.42	7.50	0.7	A	296	445
C - Wilthorpe Road	0.87	17.23	6.3	C	1144	1716
D - Barugh Green Road	0.61	10.23	1.6	B	462	692

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	557	139	361	1363	0.409	554	602	0.0	0.7	4.526	A
B - Whaley Road	243	61	839	1097	0.222	242	76	0.0	0.3	4.291	A
C - Wilthorpe Road	939	235	191	1643	0.572	933	890	0.0	1.3	5.141	A
D - Barugh Green Road	379	95	586	1059	0.358	376	538	0.0	0.6	5.365	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	665	166	432	1318	0.505	664	721	0.7	1.0	5.606	A
B - Whaley Road	290	73	1006	991	0.293	290	91	0.3	0.4	5.237	A
C - Wilthorpe Road	1121	280	229	1617	0.693	1117	1067	1.3	2.2	7.298	A
D - Barugh Green Road	452	113	702	997	0.453	451	645	0.6	0.8	6.710	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	815	204	528	1257	0.648	812	877	1.0	1.8	8.180	A
B - Whaley Road	356	89	1229	848	0.419	354	110	0.4	0.7	7.420	A
C - Wilthorpe Road	1373	343	280	1582	0.868	1358	1304	2.2	5.9	15.479	C
D - Barugh Green Road	554	138	853	916	0.604	551	785	0.8	1.5	9.975	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	815	204	531	1255	0.649	815	884	1.8	1.9	8.325	A
B - Whaley Road	356	89	1234	845	0.421	356	111	0.7	0.7	7.504	A
C - Wilthorpe Road	1373	343	281	1581	0.868	1372	1309	5.9	6.3	17.227	C
D - Barugh Green Road	554	138	861	912	0.607	554	791	1.5	1.6	10.234	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	665	166	436	1315	0.506	668	732	1.9	1.1	5.708	A
B - Whaley Road	290	73	1013	986	0.295	292	92	0.7	0.4	5.297	A
C - Wilthorpe Road	1121	280	230	1616	0.694	1137	1074	6.3	2.4	7.900	A
D - Barugh Green Road	452	113	713	991	0.456	455	654	1.6	0.9	6.885	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Claycliffe Road	557	139	364	1361	0.409	558	608	1.1	0.7	4.584	A
B - Whaley Road	243	61	846	1092	0.223	244	76	0.4	0.3	4.329	A
C - Wilthorpe Road	939	235	192	1642	0.572	943	898	2.4	1.4	5.282	A
D - Barugh Green Road	379	95	592	1056	0.359	380	543	0.9	0.6	5.442	A