# TRANSPORT ASSESSMENT
# BARUGH GREEN ROAD, BARNSLEY
# AVANT HOMES

AUGUST 2025

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# 1. INTRODUCTION

## INTRODUCTION

1.1 TPS Transport Consultants Ltd (TPS) has been appointed by Avant Homes to prepare a Transport Assessment to support a planning application for residential development on land to the south of the A635 Barugh Green Road, Barugh Green, Barnsley.

## SITE LOCATION AND DEVELOPMENT PROPOSALS

1.2 The site is located approximately 700m east of Barugh Green village centre and 3.7km northwest of Barnsley town centre. The site is currently agricultural land and is bound by the A635 Barugh Green Road to the north, residential dwellings to the east and agricultural land to the south and west. The site location is shown in **Figure 1.1**, below, whilst the proposed site layout is provided at **Appendix A**.

**Figure 1.1: Site Location**

(Source: Google Earth)

1.3 This application is for 149 dwellings on land that is allocated for mixed use within the Barnsley Local Plan (adopted 2019), forming part of a large allocation, Site MU1 – Land south of Barugh Green Road, which has an indicative capacity of 1,700 dwellings and 43 ha of

employment land. The schedule of accommodation attached at **Appendix A** indicates the proposals comprise 30 affordable homes and 119 open market homes.

1.4 Access to the site will be taken from a new priority T-junction with the A635 Barugh Green Road, on the northern boundary, which will be bound by 2m wide footways to both sides. To the east of the site access there will be a 3m wide shared footway/cycle path, running north-south through the site. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan.

## PLANNING HISTORY

1.5 It is understood that an application was previously submitted (and withdrawn) for a residential development of 140 dwellings with associated landscaping, infrastructure and open space by Countryside Properties in 2020 (ref. 2020/0977) on the site. Prior to the application being withdrawn no comment was provided by the Local Highway Authority.

1.6 The proposed development site is allocated within the Barnsley Local Plan as MU1 "Land south of Barugh Green Road" which has an indicative capacity of 1,700 dwellings and has been outlined for mixed use development. Illustrated in the Barnsley West Masterplan Framework (MU1) prepared by Bond Bryan in 2019, there are four parcels of land (including the proposed site) under private ownership, with the remainder of the allocated site under Strata Sterling Barnsley West Ltd control. It should be noted that the remaining allocation is being developed separately by Strata Sterling Barnsley West Ltd and the scheme being brought forwards by Avant sits separate from the surrounding development of the allocation.

1.7 Following receipt of a highways consultation response provided by BMBC on the 24th April 2025, this Transport Assessment and the design of the site has subsequently been updated; a full copy of the response is attached at **Appendix B.**

## REPORT STRUCTURE

1.8 Following this introductory section:

- **Section 2** describes the transport planning policy context within which the proposals will be assessed;
- **Section 3** details the accessibility of the development site by non-car modes;

- **Section 4** describes the existing highway network in the vicinity of the development and key routes to the site, with reference to historic road safety records;
- **Section 5** summarises the trip generation associated with the development proposals, and the anticipated trip distribution, by way of a Gravity Model;
- **Section 6** considers the impact of the development at the site access junction and at other off-site junctions;
- **Section 7** considers the access, parking and servicing arrangements; and
- **Section 8** offers a summary and conclusion.

# 2. POLICY CONTEXT

## INTRODUCTION

2.1 This section of the Transport Assessment identifies the policy context within which the development proposals have been assessed; it clearly demonstrates how the proposed development would contribute to the overarching principles of national and local transport policy.

## NATIONAL POLICY CONTEXT

### National Planning Policy Framework (NPPF – MHCLG, December 2024)

2.2 The revised National Planning Policy Framework was published in December 2024 and sets out the government's planning policies for England and how these are expected to be applied. It continues to encourage development through the planning system, with a presumption in favour of sustainable development. The key change in the most recent NPPF is the emphasis placed upon a vison-led approach, indeed Paragraph 109 states that "Transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places."

2.3 The focus of development proposals should be to create a vision for the site and identify how that will be achieved, prioritising accessibility by sustainable modes through design whilst ensuring that "Any significant impacts from the development on the transport network (in terms of capacity and congestions), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach."

2.4 Paragraph 116 identifies that "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, following mitigation, would be severe, taking into account all reasonable future scenarios."

2.5 This Transport Assessment will consider the development proposals, demonstrating that the site is well placed to take advantage of infrastructure to access the site by sustainable modes of travel. It will also demonstrate that the vehicular trips associated with the development proposals will not result in a significant traffic impact on the local road network, therefore, satisfying the requirements of NPPF.

## LOCAL POLICY

2.6 The proposed development site is allocated within the Barnsley Local Plan as MU1 "Land south of Barugh Green Road" which has an indicative capacity of 1,700 dwellings and has been outlined for mixed use development. For completeness, relevant policy set out in the Barnsley Local Plan is highlighted below.

**Barnsley Local Plan (2019)**

2.7 The Barnsley Local Plan was adopted in January 2019 and sets out the local planning policy for the future development of Barnsley up to 2033. The objectives of the Local Plan are:

- **Policy SD1 Presumption in Favour of Sustainable Development:** *When considering development proposals we will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. We will work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.*
- **Policy T2 Accessibility Priorities:** *Working with city region partners and other stakeholders transport investment will be set out in Transport Strategy programmes focused on development-transport corridors as shown in the Accessibility Priorities diagram below to:*
    - *Improve sustainable transport and circulation in the Accessibility Improvement Zone (AIZ) area particularly between Principal Towns;*
    - *Implement transport network improvements as supported by evidence from modelling, feasibility studies, consultation, surveys, community engagement etc;*
    - *Facilitate sustainable transport links to and from existing and proposed employment, interchange, community and leisure and tourism facilities in the borough, including provision for car parking and enhancing the non car role of the transport corridor shown on the Accessibility Priorities diagram as 'potential enhanced road based public transport corridor';*
    - *Promote high quality public transport linking the AIZ to significant places of business, employment and national / international interchange in the Leeds*

*- Sheffield City Region corridor including neighbouring Wakefield, Kirklees, Doncaster, Sheffield and Rotherham; and*

- *Improve direct public transport and freight links to London, Manchester, other Core Cities, national / international interchanges and the Humber ports.*

- **Policy T3 New Development and Sustainable Travel:** *New developments 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 the 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.*

- **Policy T4 New Development and Transport Safety:** *New development will be expected to be designed and built to provide all transport users within and surrounding the development with safe, secure and convenient access and movement.*

  *If a development is not suitably served by the existing highway, or would create or add to problems of safety or the efficiency of the highway or any adjoining rail infrastructure for users, we will expect developers to take mitigating action or to make a financial contribution to make sure the necessary improvements go ahead. Any contributions will be secured through a planning obligation or planning condition.*

- **Policy T5 Reducing the Impact of Road Travel:** *We will reduce the impact of road travel by:*

- *Developing and implementing robust, evidence based air quality action plans to improve air quality; and*
- *Working with our sub regional partners, fleet and freight operators to improve the efficiency of vehicles and goods delivery, and reduce exhaust emissions; and Implementing measures to ensure the current road system is used efficiently.*

2.8 Specifically in relation to the site allocation, the Local Plan sets out the following:

**Site MU1 Land South of Barugh Green Road:** *The site is proposed for mixed use predominantly for housing and employment. The indicative number of dwellings proposed on this site is 1,700. These are included in the housing numbers for Urban Barnsley in the housing chapter.*

*43 ha of employment land is proposed on the site and is included in the employment land figures in the Urban Barnsley section of the Economy chapter.*

*The development will be subject to the production and approval of a Masterplan Framework covering the entire site which seeks to ensure that the employment land is developed within the plan period, that community facilities come forward before completion of the housing and that development is brought forward in a comprehensive manner.*

Relevant to this document, the development will be expected to:

- Provide a primary school on the site;
- Provide on and off-site highway infrastructure works, including a link road (Claycliffe Link) and improvements at Junction 37 as necessary;
- Provide small scale convenience retail and community facilities in compliance with Local Plan policy TC5 Small Local Shops;
- Provide accessible public open space; and
- Protect the routes of the Public Rights of Way that cross the site, and make provision for these as part of any proposal.

2.9 The proposed development takes account of the overarching local policy context by providing a development that is well located to encourage trips by alternative modes of travel to the private car. The development is well located to take advantage of the facilities

which have are committed to be developed as part of the wider site allocation, such as a primary school and local facilities.

## SUMMARY

2.10 This Transport Assessment takes into account the overarching themes of both national and local policy guidance, which seek to encourage development located in accessible and sustainable locations, thereby reducing the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists.

# 3. ACCESSIBILITY

## INTRODUCTION

3.1 This section of the Transport Assessment describes the existing infrastructure that will facilitate and encourage trips to the site by foot, bicycle, or public transport, rather than by car.

3.2 ATE are a statutory consultee on developments over 150 dwellings. Although the revised layout falls below the threshold, the Active Travel England 'Planning Application Assessment Toolkit' has been utilised and annotated to demonstrate the active travel merits of the development proposals, for completeness. This can be seen at **Appendix C.**

## ACTIVE TRAVEL OPTIONS

Pedestrian Access

3.3 The Institution for Highways and Transportation (IHT) offers guidance on walking distance by journey purpose, this is summarised in **Table 3.1** below.

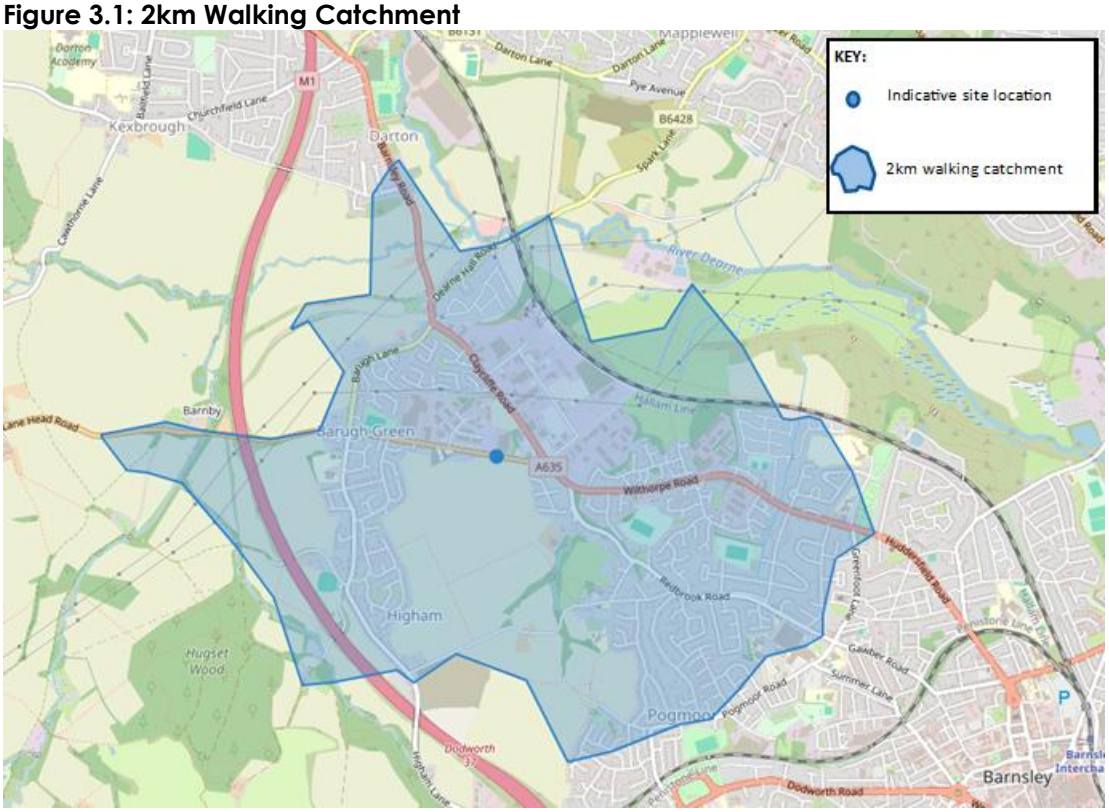
**Table 3.1: Walking Distances by Journey Type**

| Criteria | Town Centres | Commuting / School | Elsewhere |
|---|---|---|---|
| Desirable | 200m | 500m | 400m |
| Acceptable | 400m | 1000m | 800m |
| Preferred Maximum | 800m | 2000m | 1200m |

(Source: IHT)

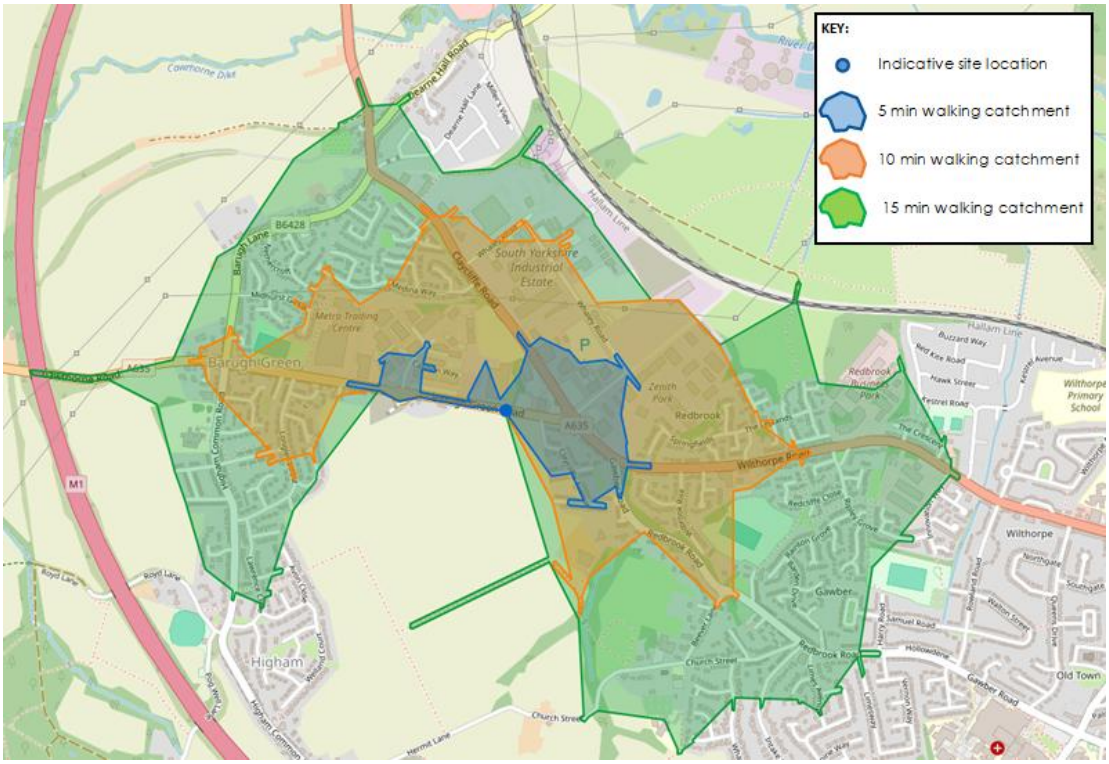
3.4 As **Table 3.1** shows, a 2km catchment is the preferred maximum walking distance for 'commuting / school'. A 2km walking catchment from the site includes Barugh Green, Higham and Pogmoor. The 2km walking catchment is illustrated in **Figure 3.1**, overleaf, whilst **Figure 3.2** highlights the accessibility of the site utilising time-based mapping. As can be seen overleaf, Redbrook and South Yorkshire Industrial Estate can be accessed in a 10-minute walk from the proposed site access on Barugh Green Road, whilst additional amenities and the surrounding residential areas such as Gawber can be accessed in a 15-minute walk, utilising existing pedestrian infrastructure available in the vicinity of the site.

**Figure 3.1: 2km Walking Catchment**




(Source: Open Street Map)

**Figure 3.2: 5, 10 & 15-Minute Walking Catchments**




(Source: Open Street Maps)

3.5 Pedestrian access to the site will be taken via the proposed vehicular access from the A635 Barugh Green Road, to the north. The access is to be bound 2m wide footways with dropped kerbs and tactile paving supporting pedestrian movement east-west along the south side of the carriageway, tying in with the existing provision along the A635 Barugh Green Road. As part of the proposed access junction works, a dropped kerb crossing with tactile paving and a pedestrian refuge island will be provided to the east of the access junction, facilitating north/south movement across Barugh Green Road and a more direct route northeast towards local amenities and employment opportunities.

3.6 To the east of the site access there will be a 3m wide shared footway/cycle path, running north-south through the site. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as direct links to the wider allocation to the south and east, in line with the MU1 Masterplan.

3.7 Approximately 200m east of the proposed site access, the A635 Barugh Green Road widens to two-lanes on approach to a 4-arm roundabout junction which gives access north via the A637 Claycliffe Road, east via Whaley Road and south, via the A635 Wilthorpe Road. Pedestrian refuge islands comprising dropped kerbs and tactile paving are in place on all approaches, assisting pedestrian movement across the junction. From this junction, the A635 Wilthorpe Road extends south before diverting east, towards Redbrook and Wilthorpe; residential dwellings take direct frontage access along both sides of the carriageway.

3.8 Supporting access to the wider allocation, the A635 Barugh Green Road forms the east and west arms of a 4-arm roundabout junction which also gives access north onto Cannon Way. Signage indicates a shared footway/cycleway runs along the south side of the junction, with refuge islands comprising dropped kerbs and tactile paving in place to support continues east-west movements along Barugh Green Road. In the vicinity of the roundabout junction, the carriageway is streetlit on both sides.

3.9 From the proposed site access, the A635 Barugh Green Road extends west for approximately 800m, after which the A635 forms the major arm of a signalised crossroads junction which gives access north towards Barugh Green and its associated residential area, south towards Higham and west towards Cawthorne.

3.10 Signalised pedestrian crossings are in place on all approaches of the junction, with footways and street lighting in place on both sides of the carriageway. Residential dwellings take direct frontage access in the vicinity of the junction, with traffic calming measures in the

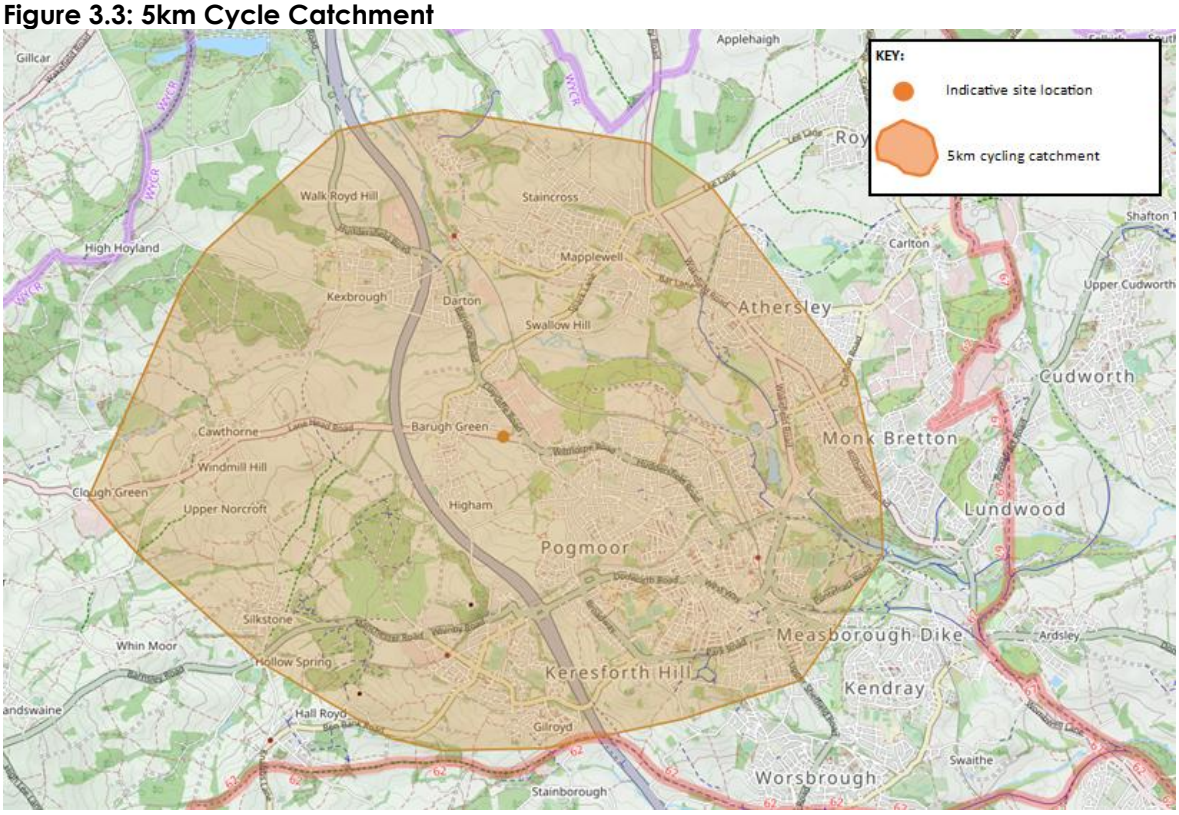
form of speed humps in place to the south, on Higham Common Road. Walking distances to a number of key local destinations from the site have been provided in the later part of this section, including a parade of shops in place along the south side of Barugh Green Road, on approach to the junction.

Cycle Access

3.11 Cycling can be a substitute for car trips, particularly those of up to 5km, with relevant guidance stating that "*cycling also has the potential to substitute for short car trips, particularly those under 5km, and to form part of a longer journey by public transport*". Cycling, therefore, plays an important role in reducing the need to travel by car.

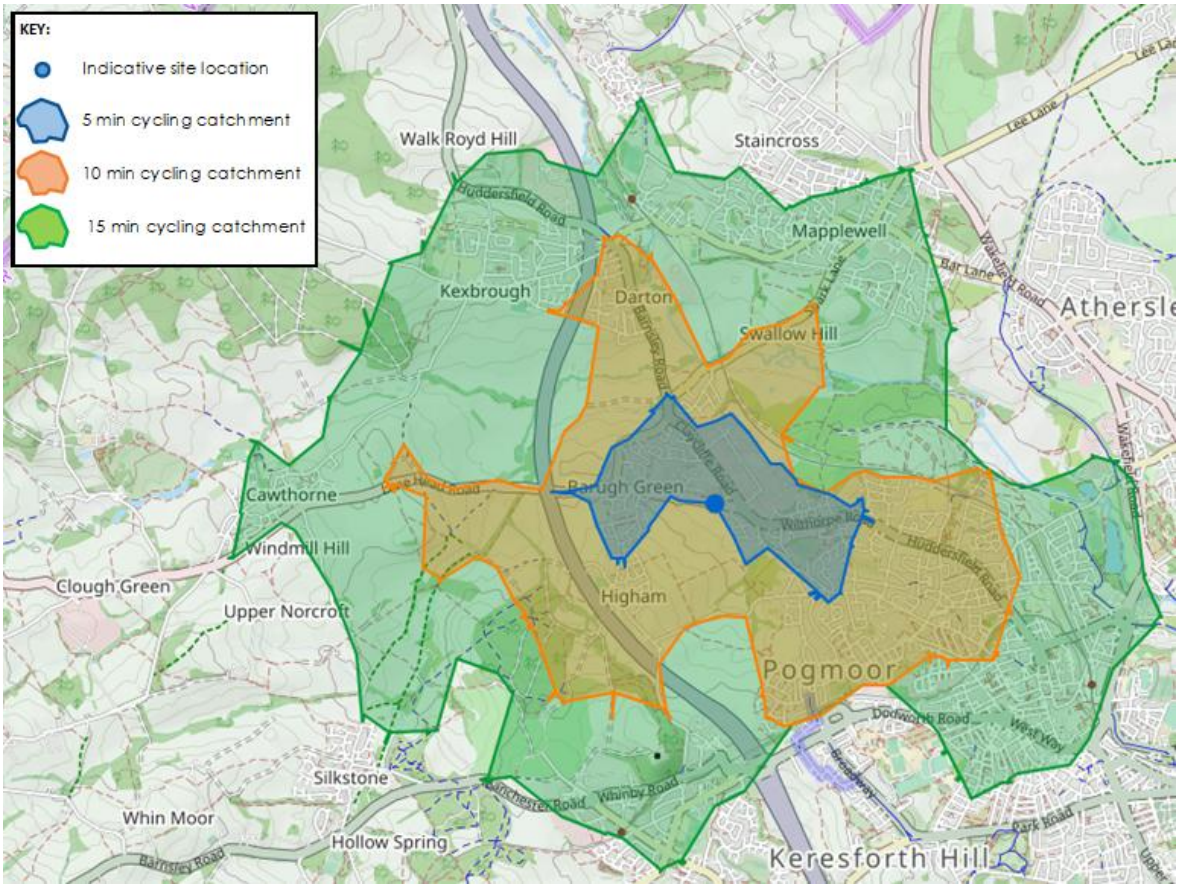
3.12 A 5km catchment of the site includes entirety of Barnsley town centre, Darton, Silkstone, Cawthorne, Pogmoor, and parts of Athersley and Monk Bretton. **Figure 3.3**, below, illustrates a 5km cycle isochrone from the site, whilst **Figure 3.4** highlights the accessibility of the site utilising time-based mapping.

**Figure 3.3: 5km Cycle Catchment**




(Source: Open Street Map)

**Figure 3.4: 5, 10 & 15-Minute Cycling Catchments**




(Source: Open Cycle Map)

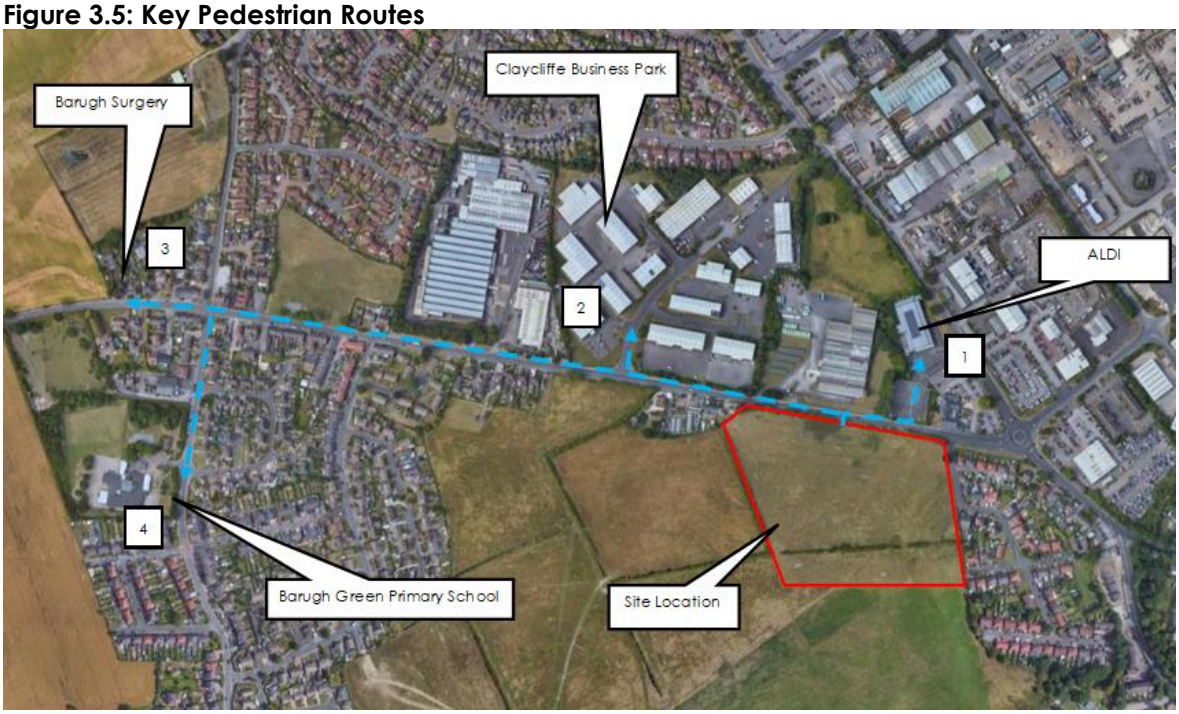
3.13 Illustrated in **Figure 3.4**, the site is located an approximate 15 minute cycle distance from the edge of Barnsley town centre, making this a realistic alternative to the private car for accessing employment and leisure facilities in the town centre, as well as additional public transport services at Barnsley Interchange.

3.14 As previously mentioned, there will be a 3m wide shared footway/cycle path to the east, running north-south through the site. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future, direct cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with LTN 1/20 guidance. These routes tie in with existing infrastructure in the vicinity of the site, namely the shared footway/cycleway in the vicinity of the A635 / Cannon Way roundabout junction to the west of the site. The closest National Cycle Network (NCN) Route to the site is NCN Route 62 which can be accessed in a 5km (24-minute) cycle via Redbrook Road. This route forms the west and central sections of the Trans Pennine Trail which runs from coast to coast across northern England.

*Key Routes*

3.15 **Figure 3.5**, below, illustrates the key pedestrian and cycle routes in the vicinity of the site and, for ease of reference, the routes are numbered, consistent with the corresponding text.

**Figure 3.5: Key Pedestrian Routes**




(Source: Open Street Map)

3.16 As can be seen in **Figure 3.5**, the site is accessed from the A635 Barugh Green Road on the northern boundary. In the vicinity of the site, extending east, the carriageway is bound by footways and street lighting on both sides. As part of the development proposals, dropped kerbs and tactile paving will be provided across the site access junction, supporting pedestrian movement east-west. Furthermore, a pedestrian refuge island comprising dropped kerbs and tactile paving will be provided to the east of the junction, supporting pedestrian movement north-south across Barugh Green Road and providing a direct link northeast towards nearby leisure and employment opportunities.

3.17 Detailed later in this section, ALDI **(1)** can be accessed in a 400m (5-minute) walk from the site, utilising this route. From the refuge island crossing, pedestrians would continue eastbound along the footway to the north of Barugh Green Road before diverting north via a ramped, level access into the ALDI car park. Past this point, the internal car park provides footways with dropped kerbs, tactile paving and zebra crossings to allow pedestrians to safely manoeuvre towards the shop; the car park benefits from lighting throughout.

3.18 To the west of the proposed site access, Barugh Green Road follows an east-west alignment as the carriageway extends west towards the centre of Barugh Green. Along its length, the carriageway is bound by footways and street lighting on both sides and, after 250m, forms the east and west arms of a 4-arm roundabout junction which gives access north onto Cannon Way and south, into the wider allocation to be brought forward as part of the MU1 Masterplan. On approach from the east, dropped kerbs and tactile paving support pedestrian movement north-south, whilst a similar arrangement is in place across the Cannon Way arm of the junction. To the south and west, refuge islands comprising dropped kerbs and tactile paving support pedestrian movement across the junction. Illustrated in **Figure 3.5,** Cannon Way (to the north) gives access to Claycliffe Business Park **(2),** from which a range of employment and leisure opportunities can be accessed.

3.19 Continuing west past the roundabout junction, the speed limit along the A635 Barugh Green Road reduces to 30mph on approach to Barugh Green village centre. Past this point, the carriageway is bound by footways and street lighting on both sides, with residential dwellings taking direct frontage access to the south. Barugh Green Road forms the major arm of a number of access junctions on both sides, albeit dropped kerbs and tactile paving are in place to support pedestrian movement east-west. After 650m, Barugh Green Recreation Ground can be accessed on the north side of the carriageway, after which the footway to the south widens in the vicinity of a parade of shops which includes a One Stop Convenience Store; this shop benefits from a ramped access with a handrail.

3.20 Approximately 800m west of the proposed site access, the A635 Barugh Green Road forms the eastern arm of a signalised crossroads junction which gives access north onto the B6428 Barugh Lane, south onto Higham Common Road and west along the A635 Cawthorne Road. Dropped kerbs and tactile paving are in place across all arms of the junction, allowing pedestrians to navigate onto the north side of Cawthorne Road which gives direct frontage access to Barugh Surgery **(3)**. Located to the west of the junction, Barugh Surgery can be accessed in a 13 minute walk from the proposed site access.

3.21 To the south of the crossroads junction, Higham Common Road runs north-south between Barugh Green and Higham and has footways and street lighting on both sides. Approximately 150m south, Barugh Green Primary School **(4)** takes access on the west side of the carriageway, with traffic calming measures in the form of speed humps and 'SCHOOL-KEEP-CLEAR' road markings in place in the vicinity of the school access. Furthermore, adjacent the gated pedestrian access, a crossing point comprising dropped

kerbs, tactile paving and bollards supports pedestrian movement east-west, across Higham Common Road.

## LOCAL PUBLIC TRANSPORT OPTIONS

Local Bus Services

3.22 There are a number of bus stops located within a short walk of the site. The closest bus stop are located on the A635 Barugh Green Road, approximately 100m / 140m east of the site. Located on both sides of the carriageway, both stops comprise a shelter, seating and timetable information. Further stops can be accessed approximately 400m / 450m west of the site in Barugh Green village centre. **Figure 3.6,** below, illustrates the location of these bus stops, whilst **Table 3.2**, overleaf, summarises the services that can be accessed from them.

**Figure 3.6: Bus Stop Locations**

(Source: Google Maps)

**Table 3.2: Bus Services**

| Service | | Frequency | | |
|---|---|---|---|---|
| | | Weekday | Saturday | Sunday |
| **Barugh Green Road** | | | | |
| 93 | Barnsley (Circular) | 60 mins | 60 mins | - |
| 94/A | Barnsley Interchange – Denby Dale | 120 mins | 120 mins | - |
| 95 | Barnsley Interchange – Kexborough | 30 mins | 30 mins | - |
| 96B | Barnsley Interchange – Wakefield | 120 mins | 120 mins | 120 mins |
| 353 | Barnsley - Holmfirth | 3 Services* | - | - |
| 412 | Barnsley – Penistone Grammar | 1 AM / 1 PM Service | - | - |

(Source: Public Transport Operator Websites) *Monday, Wednesday, Friday

3.23 As can be seen in **Table 3.2,** Barugh Green Road is served by 3-5 separate services per hour, providing services to key destinations, including Barnsley and Wakefield. It is, therefore, expected that residents could make use of the bus services to travel to destinations further afield.

Rail Services

3.24 The closest railway station to the site is Barnsley Interchange, located approximately 3.8km southeast of the site. Accessible in an 18-minute cycle via Redbrook Road, Barnsley Interchange can also be accessed in a 24-minute multi-modal journey via 93/94/95/96 bus service, accessible on the A635 Barugh Green Road.

3.25 Barnsley Interchange benefits a range of facilities such as accessible ticket machines, waiting rooms and 24 cycle storage spaces. The station benefits from level access to both platforms 2 platforms and is served by approximately 6-8 trains per hour, to a number of regional and national destinations such as Sheffield, Huddersfield and Leeds. **Table 3.3**, below, outlines the key destinations accessible from Barnsley Interchange.

**Table 3.3: Barnsley Interchange railway station services**

| Destination | Frequency |
|---|---|
| Leeds (Express) via Wakefield Kirkgate | 2 per hour |
| Leeds (Slow) via Castleford | 1 per hour |
| Sheffield (Express) via Meadowhall | 1 per hour |
| Sheffield (Slow) via Wombwell, Chapeltown and Meadowhall | 1 per hour |
| Huddersfield | 1 per hour |
| Nottingham via Sheffield & Chesterfield | 1 per hour |

| | |
|---|---|
| Lincoln via Sheffield, Worksop & Gainsborough Lea | 1 per hour |

(Source: National Rail)

## LOCAL AMENITIES

3.26 **Table 3.4**, below, provides a summary of local facilities which are available within the preferred maximum walking (2km) or cycling (5km) distances of the site, with approximate journey times. Measurements are taken from the proposed vehicular access, from the A635 Barugh Green Road. It should be noted that, as part of the wider MU1 'Land South of Barugh Green Road' site, the proposals comprise mixed use development and are expected to provide a primary school, small scale convenience, retail and community facilities and employment facilities, as well as access to public open space. The above will all be accessible within the preferred maximum walking and cycling distances.

**Table 3.4: Local Facilities**

| Amenity | Distance | Walk Time | Cycle Time |
|---|---|---|---|
| Chestnut Tree Pub/Restaurant | 350m | 5 mins | 1 min |
| Aldi | 400m | 5 mins | 1 min |
| Claycliffe Business Park | 400m | 6 mins | 2 mins |
| Barugh Green Recreation Ground | 650m | 10 mins | 3 mins |
| One Stop Convenience Store | 700m | 10 mins | 3 mins |
| Little India Takeaway | 750m | 11 mins | 3 mins |
| Cawthorne Road Day Nursery | 800m | 12 mins | 4 mins |
| Barugh Surgery | 850m | 13 mins | 4 mins |
| Pharmacy Wise Barugh Green | 900m | 13 mins | 4 mins |
| Barugh Green Primary School | 1.0km | 15 mins | 5 mins |
| The Royal Pub & Restaurant | 1.2km | 17 mins | 4 mins |
| Sainsbury's Local | 1.2km | 19 mins | 8 mins |
| The Crown & Anchor Pub | 1.3km | 18 mins | 5 mins |
| Vets for Pets | 1.3km | 19 mins | 5 mins |
| The Pantry & Gawber Post Office | 1.4km | 22 mins | 10 mins |
| Barnsley Business & Innovation Centre | 1.5km | 22 mins | 9 mins |
| Higham Cricket Club | 1.5km | 23 mins | 9 mins |
| Tesco Express | 1.6km | 23 mins | 9 mins |
| Barnsley Hospital | 1.8km | 28 mins | 12 mins |
| Summer Lane Primary School | 2.0km | 32 mins | 12 mins |

(Source: Google Maps)

## SUMMARY

3.27 The site is located within the vicinity of an established residential area and, as such, benefits from an existing network of infrastructure to support sustainable travel. There are existing footways in the vicinity of the site to support active modes of travel. Similarly, the site is in within walking distance of a number of bus stops, which prospective residents could make use of for accessing employment and leisure opportunities. As such it is considered that there is good sustainable transport infrastructure within the vicinity of the development site, with a range of opportunities for site users to travel by sustainable modes.

# 4. EXISTING HIGHWAY NETWORK AND HIGHWAY SAFETY RECORD

## INTRODUCTION

4.1 This section of the Transport Assessment describes the existing highway and provides an overview of the historic road safety in the vicinity of the site.

## HIGHWAY NETWORK

4.2 A description is provided below of the local highway network in the immediate vicinity of the site; for ease, it is also shown in **Figure 4.1**, below.

**Figure 4.1: Existing Highway Network**

(Source: Google Maps)

4.3 The site will take vehicular access from the A635 Barugh Green Road, on the northern boundary, via a new priority T-junction. The development proposals comprise a 3m wide right turn ghost island for eastbound vehicles, with a pedestrian refuge island comprising dropped kerbs and tactile paving proposed to the east of the junction, supporting pedestrian movement north-south. In the vicinity of the site, the A635 Barugh Green Road is subject to a 40mph speed limit and is bound by footways and street lighting on both sides.

4.4 Running broadly east-west for approximately 1.0km, the A635 Barugh Green Road forms the major arm of a number of priority T-junctions along its length. Approximately 280m west of

the proposed site access, Cannon Way takes access to the north, giving access north towards Claycliffe Business Park; access is supported by a right turn ghost island with central hatching separating the two lanes of traffic. It should be noted that as part of the access proposals for the Strata Sterling Barnsley West scheme this junction is currently being converted to a four arm roundabout junction, with the southern arm providing access to the wider allocation and Cannon Way forming the northern arm of the junction.

4.5 Approximately 200m east of the proposed site access, the A635 Barugh Green Road widens to two lanes on approach to a 4-arm roundabout junction which gives access north onto the A637 Claycliffe Road, west via Whaley Road and south via the A635 Wilthorpe Road. The A637 Claycliffe Road is approximately 10m wide and subject to a 40mph speed limit, with footways and street lighting on both sides.

4.6 From the roundabout junction, Claycliffe Road runs broadly north-south for approximately 900m, forming the major arm of a number of priority T-junctions along its length. Whaley Road extends east, away from the roundabout junction, giving access to industrial units and business units on both sides, along its length. Approximately 9m wide, Whaley Road is bound by footways and street lighting on both sides, with no parking restrictions in place along its length.

4.7 To the south of the roundabout junction, the A635 Wilthorpe Road extends south before diverting east, towards Redbrook and Wilthorpe. In the vicinity of the junction, the carriageway is bound by footways and street lighting on both sides, with residential dwellings taking direct frontage access to the south. After 150m, the A635 Wilthorpe Road forms the major arm of a priority T-junction with Redbrook Road which extends south towards Gawber and Barnsley town centre. Bound by footways and street lighting on both sides, the carriageway is subject to a 40mph speed limit.

4.8 Back to the site, the A635 Barugh Green Road extends west for approximately 800m before forming the major arm of a signalised crossroads junction which gives access north towards Barugh Green, south towards Higham and west towards Cawthorne. Bound by footways and street lighting on all approaches, pedestrian movement across the junction is supported by dropped kerbs and tactile paving. Double yellow line parking restrictions are in place in the vicinity of the junction. From this junction, the A635 extends west onto Cawthorne Road which is bound by footways and street lighting on both sides; the footway on the south side of the carriageway terminates after 90m. Past this point, signage indicates vehicles are subject to national speed limit, as the carriageway extends west towards Cawthorne.

## ROAD SAFETY

4.9 Accident data for the most recent 5-year period (2020 – 2025) has been obtained from BMBC's Traffic Team for the highway network surrounding the site. A map of the accidents recorded within the vicinity of the site is shown in **Figure 4.2**, below, whilst **Table 4.1** summarises the accidents by location, date and severity. A full copy of the accident data obtained from BMBC is attached at **Appendix D.**

**Figure 4.1: Study Area**

(Source: BMBC)

**Table 4.1: Accident Summary**

| | 2020 | 2021 | 2022 | 2023 | 2024 | Total |
|---|---|---|---|---|---|---|
| Slight | 0 | 0 | 2 | 0 | 2 | **4** |
| Serious | 0 | 1 | 0 | 1 | 0 | **2** |
| Fatal | 0 | 0 | 0 | 0 | 1 | **1** |
| **TOTAL** | **0** | **1** | **2** | **1** | **3** | **7** |

(Source: BMBC)

4.10 As can be seen in **Table 4.1**, there have been seven recorded accidents in the most recent 5-year period. Of the accidents recorded, four were classified as slight, two classified as serious and one classified as fatal. Across the 5-year study period, this equates to less than 1.4 accidents per year. A summary of each of the recorded accidents is provided below:

**211067623 –** This accident was classified as serious and involved the driver of a vehicle colliding with a stationary vehicle as she sneezed;

**221128311 –** Involving three vehicles, this accident was recorded at the A635 / A637 roundabout junction in 2022. Vehicle one was waiting at the roundabout before colliding with a cyclist in front. The driver of vehicle one got out of their vehicle to check on the cyclist, after which their vehicle rolled back into vehicle two;

**221209360 –** This accident was recorded along Barugh Green Road where a driver had a seizure and blacked out before veering onto the pavement prior to the A635 / B6428 crossroads junction;

**231337283 –** Involved a vehicle driving into the back of another vehicle, resulting in two casualties suffering serious injuries;

**241410015 –** A vehicle was driving along Barugh Green Road on approach to the A635 / A637 roundabout junction before colliding with a pedestrian crossing the road. It should be noted that there was heavy traffic due to road works and temporary traffic lights in the vicinity of the accident;

**241424051 –** Recorded in 2024, this accident involved seven vehicles and resulted in nine casualties, including two fatalities. It is understood that vehicle one approached the A635 / B6428 crossroads junction at significant speed and collided head on with vehicle two which was turning right at the junction and subsequently spun backwards and collided with vehicle three. Following the collision, vehicle one continued travelling forward, hitting vehicle four and five that were parked nearby before colliding with a garden wall and striking a pedestrian who was walking on the footpath. At the same time, vehicle two continued spinning and hit vehicle six before coming to a stop;

**241469803 –** On approach to the A635 / B6428 crossroads junction, a vehicle waiting at the junction set off once the light turned green, however, a pedal cyclist came across the crossroads from Higham Common Road and collided with the vehicle.

4.11 As can be seen above, there is no common casualty in the recorded accidents and none which can be attributed to the design of the roads or junctions. With this in mind, it is not expected that the addition of development generated traffic would exacerbate existing collision history in the vicinity of the site.

# 5. TRIP GENERATION AND DISTRIBUTION

## INTRODUCTION

5.1 This section of the Transport Assessment considers the likely trip generation associated with the development proposals.

## TRIP GENERATION

5.2 The TRICS database has been interrogated to derive representative trip rates (excluding sites surveyed during COVID) associated with the proposed 149 dwellings; the following TRICS parameters have been selected:

- Land Use: Residential, Houses Privately Owned;
- Range: 80 – 230 dwellings;
- Date Range: 01/01/2016 – 28/06/2024; and
- Location: Edge of Town.

5.3 **Table 5.1** summarises the trip rates and resultant trip generation, whilst the full TRICS output is provided at **Appendix E.**

**Table 5.1: Proposed Vehicle Trip Rates**

| Land Use | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| | Arrival | Departure | Two-Way | Arrival | Departure | Two-Way |
| Trip Rates | 0.144 | 0.355 | 0.499 | 0.323 | 0.158 | 0.481 |
| Trip Generation | 21 | 53 | 74 | 48 | 24 | 72 |

(Source: TRICS)

5.4 As can be seen in **Table 5.1**, the proposals are anticipated to generate 74 two-way vehicle trips in the AM peak hour and 72 two-way vehicle trips in the PM peak hour.

5.5 The site is located within the Barnsley 012 MSOA. 2011 Census Method of Travel to Work data has been obtained and is summarised in **Table 5.2,** overleaf, to demonstrate to Active Travel England the likely mode split of trips to/from the site, based on the best information available at the time of writing this report.

**Table 5.2: Barnsley 012 Modal Split**

| Mode | Percentage |
|---|---|
| Train | 2% |
| Bus | 4% |
| Motorcycle | 1% |
| Driving a car/van | 74% |
| Passenger in a car/van | 6% |
| Bicycle | 1% |
| On Foot | 11% |
| Other | 1% |
| **Total** | **100%** |

(Source: Nomis)

5.6 On the basis that the proposed development is anticipated to generate 74 and 72 two-way vehicle trips in the AM and PM peak hours, respectively, and these account for 74% of overall trips to/from the site, it is possible to understand the level of trips associated with alternative modes of transport. The results are summarised in **Table 5.3,** below.

**Table 5.3: Trip Generation by Mode**

| Mode | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | In | Out | 2-Way | In | Out | 2-Way |
| **Train** | 1 | 2 | 2 | 1 | 1 | 2 |
| **Bus** | 1 | 3 | 4 | 3 | 1 | 4 |
| **Motorcycle** | 0 | 0 | 1 | 0 | 0 | 0 |
| **Driving a car/van** | 21 | 53 | 74 | 48 | 24 | 72 |
| **Passenger in a car/van** | 2 | 4 | 6 | 4 | 2 | 6 |
| **Bicycle** | 0 | 0 | 1 | 0 | 0 | 1 |
| **On Foot** | 3 | 8 | 11 | 7 | 4 | 11 |
| **Other** | 0 | 1 | 1 | 1 | 0 | 1 |
| **Total** | **28** | **71** | **100** | **65** | **32** | **97** |

(Source: Consultant Calculation) *Subject to rounding

5.7 It is considered that this provides a worst-case assessment of the likely level of vehicle trips associated with the proposed development, as there has been a shift in working practices across the UK, with a significantly higher uptake in flexible working and working from home practices, which would further reduce peak hour vehicle trips.

## TRIP DISTRIBUTION

5.8 Trips associated with the development have been assigned to the local highway network using a gravity model, based on Census 2011 'Location of usual residence and place of work' data for MSOA Barnsley 012, within which the site is located.

5.9 **Table 5.4**, below, provides a summary of the gravity model, whilst the full calculations are provided at **Appendix F.**

**Table 5.4: Summary of Trip Distribution**

| Route | % |
|---|---|
| A635 Barugh Green Road (Eastbound) | 85% |
| A635 Barugh Green Road (Westbound) | 15% |

(Source: Consultant Calculation)

5.10 Flow diagrams provided at **Appendix G** show the distribution in **Table 5.4,** represented graphically. This trip distribution has been applied to the predicted trip generation, set out in **Table 5.1** and can be seen on the flow diagram attached at **Appendix H**.

## MATERIALITY

5.11 In order to understand the potential impact of the development proposals, an assessment of the uplift in movements as a consequence of the development has been undertaken and is presented in **Table 5.5**, below.

**Table 5.5: Number of Development Trips by Junction**

| Junction | Trips | |
|---|---|---|
| | AM | PM |
| Site Access / A635 Barugh Green Road | 74 | 72 |
| A637 / A635 / Whaley Road Roundabout Junction | 64 | 61 |
| A635 / B6428 / Higham Common Road Crossroads Junction | 10 | 11 |

(Source: Consultant Calculation) *Subject to rounding

5.12 A threshold of an uplift of 30 or more two-way trips associated with the development proposals has been applied; beyond this, the uplift in traffic flows is not be considered to be material. Based upon this threshold, and for completeness, further consideration will be given to the impact of the development proposals at the following junctions:

- Site Access / A635 Barugh Green Road;
- A637 / A635 / Whaley Road Roundabout Junction; and
- A635 / B6428 / Higham Common Road Crossroads Junction.

# 6. OPERATIONAL ASSESSMENTS

## INTRODUCTION

6.1 This section of the Transport Assessment considers operational assessments of a number of junctions on the local road network, as well as the site access. These assessments also consider the development traffic associated with the proposed development of the surrounding MU1 application, as detailed in the Transport Assessment prepared by Fore Consulting in support of the wider application.

6.2 In order to demonstrate the impact of the development proposals on highway capacity. The following junctions have been assessed:

- Site Access / A635 Barugh Green Road;
- A637 / A635 / Whaley Road Roundabout Junction; and
- A635 / B6428 / Higham Common Road Crossroads Junction.

6.3 Beyond the junctions modelled as part of this Transport Assessment, traffic will dissipate, such that it doesn't have a material impact elsewhere on the highway network.

## BASE SURVEY DATA

6.4 Fully classified turning counts have been undertaken at the junctions identified above, in order to establish a base situation. The surveys covered the periods 07:00-10:00 and 15:30-18:30 and were undertaken on Thursday 3rd July 2025. An analysis of the turning count data identifies that the network peak hours were 07:45-08:45 and 16:15-17:15. The full traffic count data is included at **Appendix I,** and the surveyed peak hour flows are illustrated in figures provided at **Appendix J.**

## NTM ADJUSTED TEMPRO GROWTH RATES

6.5 In line with industry standard methodology, the assessments consider a design year 5 years post submission of the planning application, i.e. 2030. To establish the likely traffic growth from the 2025 base traffic flows to a future year of 2030, the TEMPro 7.2 table "RTF 2018 Scenario 1" has been used. The growth factors obtained from Tempro are set out in **Table 6.1,** overleaf.

**Table 6.1: NTM Adjusted TEMPro Growth Rates**

| Amenity | AM | PM |
|---|---|---|
| Barnsley 012 | 1.0604 | 1.0607 |

(Source: TEMPro)

## COMMITTED DEVELOPMENT

6.6 To account for the development traffic associated with the proposed development of the surrounding MU1 application, the total development flows for the application, included within the Fore Consulting Transport Assessment (7 July 2021) have been utilised. These have been taken from Figures 41 and 42, submitted as part of the Transport Assessment. Flow diagrams are provided at **Appendix K,** which show traffic growthed to the design year of 2030 and include the committed development as described above.

6.7 It should be noted that this presents a robust assessment of background traffic growth, given that the traffic associated with MU1 would be taken account of in the Tempro background traffic growth rates, owing to its allocation in the Local Plan.

## MODELLING SCENARIOS

6.8 The junctions will be assessed in the following scenarios:

- 2025 AM and PM Base;
- 2030 AM and PM Base + Committed Development; and
- 2030 AM and PM Base + Committed Development + Development.

## OPERATIONAL ASSESSMENTS

6.9 Junctions modelling software has been used to assess the operation of all junctions; the results are summarised for each junction in turn below. The Junctions software predicts the Ratio of Flow to Capacity (RFC) on each approach / turning movement and resultant queue length. An RFC value of less than 0.85 is generally accepted as indicating that a junction is operating within theoretical capacity. The full model outputs are provided at **Appendix L**.

6.10 With regard to signalised junctions, Linsig predicts the Degree of Saturation (DoS) as a percentage. A DoS of 90% is considered to demonstrate the practical capacity of a junction.

*Site Access / A635 Barugh Green Road*

6.11 The results of the assessments of the proposed site access on the A635 Barugh Green Road is summarised in **Table 6.2,** below; the full modelling outputs are provided at **Appendix L.**

**Table 6.2: Site Access / A635 Barugh Green Road**

| | 2030 Base + CD + Dev | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | RFC | Q | RFC | Q |
| Site Access – Barugh Green Road East | 0.02 | 0.0 | 0.01 | 0.0 |
| Site Access – Barugh Green Road West | 0.15 | 0.2 | 0.09 | 0.1 |
| Barugh Green Road West - Site Access | 0.01 | 0.0 | 0.02 | 0.0 |

(Source: Junctions 11)

6.12 As can be seen in **Table 6.2,** the junction of the Site Access / A635 Barugh Green Road is predicted to operate well within its practical capacity (RFC of less than 0.85) in both the AM and PM peak hours.

*Barugh Green Road / Wilthorpe Road Roundabout Junction*

6.13 In order to understand the existing situation at the above junction, a comparison of the observed queues and modelled queues in the 2025 base scenario is provided in **Table 6.3** below. These are provided as mean queue and maximum queue for the peak hours which correspond with the overall peak hour of the local highway network, with the full results of the surveys attached at **Appendix L.**

**Table 6.3: Barugh Green Road / Wilthorpe Road Roundabout Junction**

| | 2025 Observed Queues | | | | 2025 Base Modelling Results | | | |
|---|---|---|---|---|---|---|---|---|
| | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | Mean | Max | Mean | Max | RFC | Q | RFC | Q |
| Claycliffe Road | 1.33 | 6 | 0.33 | 2 | 0.66 | 1.9 | 0.60 | 1.5 |
| Whaley Road | 0.75 | 3 | 1.00 | 7 | 0.17 | 0.2 | 0.35 | 0.5 |
| Wilthorpe Road | 0.08 | 1 | 0.08 | 1 | 0.61 | 1.6 | 0.71 | 2.4 |
| Barugh Green Road | 1.00 | 5 | 1.50 | 4 | 0.43 | 0.8 | 0.39 | 0.6 |

(Source: Junctions 11)

6.14 As can be seen in **Table 6.3**, the observed queues at the junction are broadly comparable with the modelled queues at the junction. It is noted that there is a maximum queue of seven vehicles on the Whaley Road arm of the roundabout junction, however, this was specific to one five-minute period and was not consistent across the whole peak hour. A truly direct comparison cannot be drawn between the observed queues and the modelled queues owing to how the traffic flow data is interpreted in Junctions 11, whereby it is modelled across the whole hour and doesn't take account of specific 'mini-peaks' within the surveyed traffic flows, which is the likely cause of the queue of seven vehicles.

6.15 **Table 6.4,** below, summarises the results of the assessment of the Barugh Green Road / Wilthorpe Road roundabout junction; the full modelling outputs are provided at **Appendix L.**

**Table 6.4: Barugh Green Road / Wilthorpe Road Roundabout Junction**

| | 2030 Base + CD | | | | 2030 Base + CD + Dev | | | |
|---|---|---|---|---|---|---|---|---|
| | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | RFC | Q | RFC | Q | RFC | Q | RFC | Q |
| Claycliffe Road | 0.80 | 3.9 | 0.74 | 2.8 | 0.83 | 4.5 | 0.76 | 3.0 |
| Whaley Road | 0.21 | 0.3 | 0.45 | 0.8 | 0.22 | 0.3 | 0.47 | 0.9 |
| Wilthorpe Road | 0.72 | 2.5 | 0.87 | 6.3 | 0.73 | 2.6 | 0.90 | 7.8 |
| Barugh Green Road | 0.64 | 1.7 | 0.55 | 1.2 | 0.68 | 2.1 | 0.57 | 1.3 |

(Source: Junctions 11)

6.16 As can be seen in **Table 6.4,** the Barugh Green Road / Wilthorpe Road roundabout junction is predicted to operate broadly in line with its practical capacity (RFC of less than 0.85), with a maximum RFC of 0.90 with the committed development and development trips, in the design year of 2030. It is not considered that this impact is material, as the RFC is still below 1.00.

*A635 / B6428 / Higham Common Road Crossroads Junction*

6.17 In order to understand the existing situation at the above junction, a comparison of the observed queues and modelled queues in the 2025 base scenario is provided in **Table 6.5,** overleaf. These are provided as mean queue and maximum queue for the peak hours which correspond with the overall peak hour of the local highway network, with the full results of the surveys attached at **Appendix L.**

**Table 6.5: A635 / B6428 / Higham Common Road Crossroads**

| | 2025 Observed Queues | | | | 2025 Base Modelling Results | | | |
|---|---|---|---|---|---|---|---|---|
| | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | Mean | Max | Mean | Max | DoS | Q | DoS | Q |
| Barugh Lane | 11.08 | 25 | 16.25 | 25 | 56.6% | 7.8 | 66.3% | 8.3 |
| Barugh Green Road | 2.75 | 13 | 9.25 | 15 | 31.3% | 4.4 | 67.2% | 10.8 |
| Higham Common Road | 3.00 | 7 | 9.75 | 26 | 39.4% | 4.8 | 54.4% | 7.9 |
| Cawthorne Road | 7.83 | 17 | 7.00 | 16 | 57.9% | 9.7 | 47.5% | 7.0 |
| **PRC over all lanes** | | | | | **55.4%** | | **34.0%** | |

(Source: Linsig)

6.18 As can be seen in **Table 6.5,** the observed mean queues are broadly comparable with the modelled queue in both the AM peak scenarios. With regard to the PM peak scenario, it is recognised that there are some differences between the observed and modelled queues, however, this could relate to specific factors on the day of the survey, which are impossible to predicted as part of the modelling of the operation of the junction. Given this, it is considered that the model is validated against the base scenario and has, therefore, been utilised to assess the impact of the development in the future year scenario.

6.19 **Table 6.6,** below, summarises the results of the operational assessment of the A635 / B6428 / Higham Common Road crossroads junction, in the 2030 Base + Committed Development and the 2030 Base + Committed Development + Development scenarios, in order to demonstrate the impact of the development traffic on this junction. The full outputs are attached at **Appendix L.**

**Table 6.6: A635 / B6428 / Higham Common Road Crossroads Junction**

| | 2030 Base + CD | | | | 2030 Base + CD + D | | | |
|---|---|---|---|---|---|---|---|---|
| | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | DoS | MMQ | DoS | MMQ | DoS | MMQ | DoS | MMQ |
| Barugh Lane | 67.1% | 9.8 | 79.9% | 11.5 | 67.1% | 9.8 | 83.4% | 12.1 |
| Barugh Green Road | 41.1% | 5.6 | 85.4% | 14.8 | 42.0% | 5.8 | 85.7% | 14.9 |
| Higham Common Road | 47.1% | 6.3 | 63.0% | 9.9 | 47.4% | 6.4 | 63.6% | 10.1 |
| Cawthorne Road | 67.8% | 11.7 | 58.1% | 8.8 | 67.9% | 11.8 | 58.4% | 8.8 |
| **PRC over all lanes** | **32.7%** | | **5.4%** | | **32.5%** | | **5.1%** | |

(Source: Linsig)

6.20 As can be seen in **Table 6.3**, the A635 / B6428 / Higham Common Road crossroads junction is predicted to operate within its practical capacity (DoS of less than 90%) with or without the development trips, in the design year of 2030. The development will have limited impact on the PRC over all lanes and does not result in a material impact in queueing at the junction.

## SUMMARY

6.21 Capacity assessments have been undertaken for the site access junction and two off-site junctions where the development proposals were identified as potentially having a material impact. The modelling results indicate all junctions will operate satisfactorily in both peak hours with the addition of the development traffic in both the current and design year and, therefore, no mitigation works are required.

# 7. ACCESS, PARKING AND SERVICING

## INTRODUCTION

7.1 This section of the Transport Assessment considers the proposed access, parking and servicing arrangements for the site.

## ACCESS

7.2 As can be seen from the site layout, provided at **Appendix A**, vehicular access to the proposed development will be taken via a new priority T-junction on the northern boundary of the site, from the A635 Barugh Green Road. Shown at **Appendix M**, the proposed access benefits from a 3m wide right turn ghost island and has been designed in line with the requirements of DMRB. Bound by 2m wide footways and street lighting on both sides, dropped kerbs and tactile paving are proposed to support pedestrian movement east-west, along the A635 Barugh Green Road. Furthermore, a pedestrian refuge island comprising dropped kerbs and tactile paving is proposed immediately east of the proposed access junction, supporting pedestrian movement north-south.

7.3 Illustrated at **Appendix M,** 2.4m x 120m visibility splays can be achieved from the Site Access junction, in line with the posted 40mph speed limit along the A635 Barugh Green Road.

7.4 The primary route into the site will be 6m wide and bound by a 3m wide footway/cycle path to the east, separated from the carriageway by a grass verge, and a 2m wide footway to the west. Past this point, internal carriageways will be 5.5m wide, with dwellings taking direct frontage access on both sides; the carriageway is to be bound by footways and street lighting along its length. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan.

## PARKING

7.5 Car parking standards for new residential developments in Barnsley are provided by Barnsley Metropolitan Borough Council in the Barnsley Local Plan – Parking SPD, adopted in November 2019. For ease, these can be summarised as:

- 1-2 bed dwellings – 1 car parking space;
- 3+ bed dwellings – 2 car parking spaces;

- 1 visitor car parking space per 4 dwellings (subject to layout); and
- 1 secure cycle space per dwelling (in garage or separate secure covered area within plot).

7.6 As can be seen from the layout provided at **Appendix A**, parking is provided in line with local parking standards; an electric vehicle charging point is provided for each dwelling in line with building regulations. With regard to cycle parking, where dwellings do not provide a garage, alternative storage will be provided in the form of a shed, in order to provide sufficient space(s) per dwelling.

## SERVICING

*General Servicing and Refuse Collection*

7.7 General servicing and delivery access will take place from the roadside within the development. Waste will be collected by Barnsley Metropolitan Borough Council. The swept path analysis, undertaken within the site, shown on drawings provided at **Appendix N,** demonstrates that an 11.6m refuse vehicle can manoeuvre within the site and egress in forward gear, with minimum requirement for reversing throughout the site.

*Fire Appliance Access*

7.8 Manual for Streets (MfS) indicates that the access requirements for emergency vehicles are generally stipulated by the Fire Service. Table 8 of the *The Building* Regulations *2010 'Fire Safety' (2019 edition, incorporating the 2020 amendments) Approved Document B Section 5 'Access and Facilities for the Fire and Rescue Service'*, sets out that a minimum road width of 3.7m be provided and turning facilities should be provided in any cul-de-sac that is more that 20m long. Fire tenders and emergency vehicles will access the site from the A635 Barugh Green Road and can utilise the turning arrangements throughout the site to access all dwellings.

# 8. SUMMARY AND CONCLUSIONS

8.1 TPS has prepared this Transport Assessment to accompany a planning application for 149 dwellings on land to the south of the A635 Barugh Green Road, Barugh Green, Barnsley. The following summarises the key points:

- The proposals are in keeping with both the local and national transport and land use planning policy agenda;
- The site benefits from good connectivity with the facilities and amenities in the surrounding area, with numerous opportunities for residents to travel by non-car modes;
- An analysis of contemporary accident data suggests that there are no accident trends that might be exacerbated by the addition of development related traffic;
- The development proposals are anticipated to generate 74 two-way vehicle trips in the AM peak hour and 72 two-way vehicle trips in the PM peak hour;
- Operational assessments of the local highway network have been undertaken based on 2025 survey data, growthed to a future year of 2030 using NTM adjusted TEMPro growth rates;
- The operational assessments demonstrate that the local highway network has sufficient capacity to accommodate the predicted trip generation of the proposed development;
- The servicing arrangements for the site have been considered; swept path analysis has been undertaken of the proposed turning heads throughout the site, to demonstrate that a refuse vehicle will be able to enter and exit the site in forward gear; and
- Car parking and cycle parking will be provided to meet Barnsley Metropolitan Borough Council parking standards.

## CONCLUSION

8.2 Given the above, it is considered that the proposals will not result in a 'severe residual cumulative impact' (the test set out in NPPF); indeed, they will be complementary to the prevailing policy agenda. As such, there are no substantive highway grounds why the development should not be granted consent.

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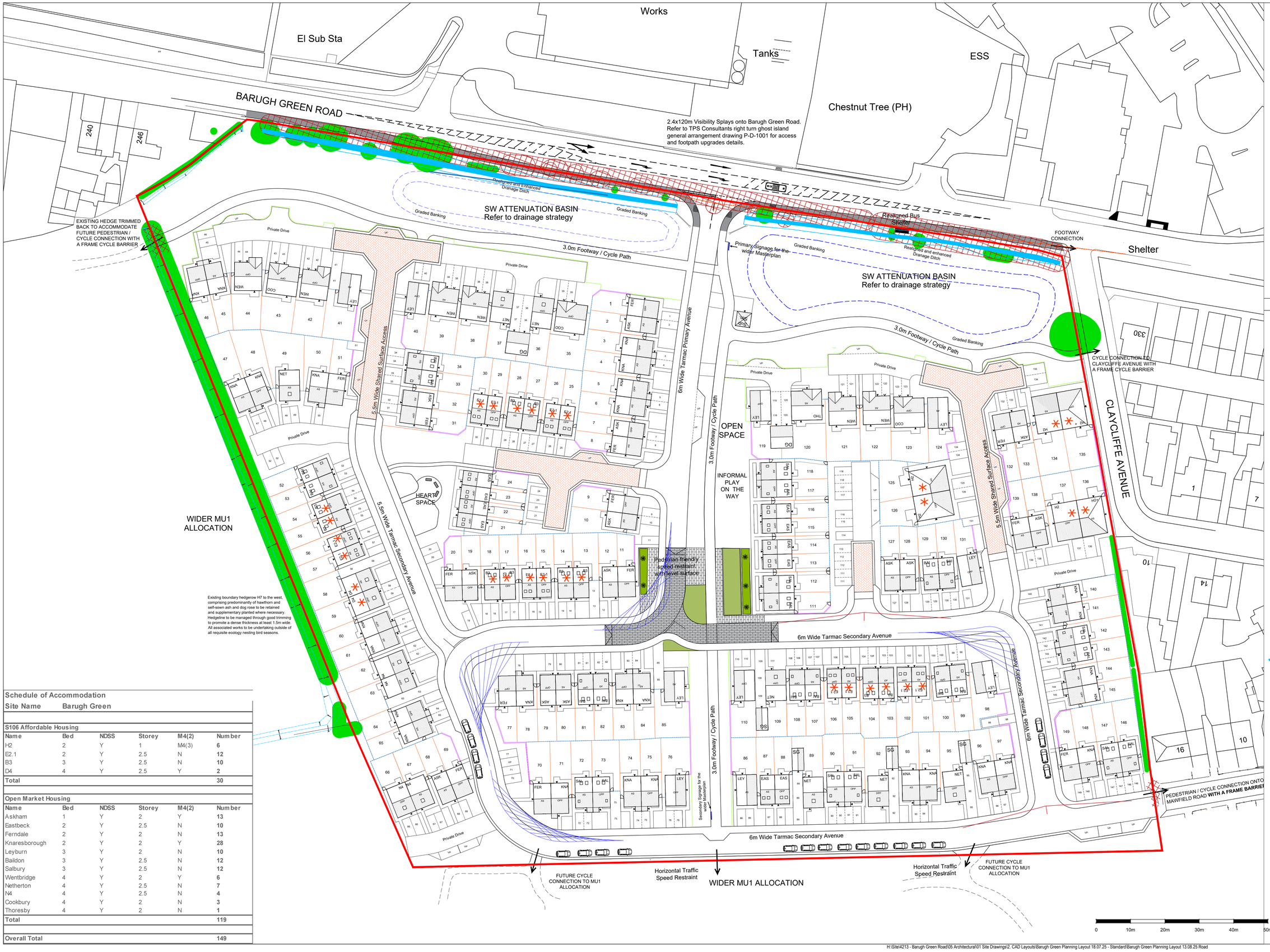
# REPORT APPENDICES

# Appendix A

**Indicative Site Layout**




Existing boundary hedgerow H7 to the west, comprising predominantly of hawthorn and self-sown ash and dog rose to be retained and supplementary planted where necessary. Hedgeline to be managed through good trimming to promote a dense thickness at least 1.5m wide. All associated works to be undertaking outside of all requisite ecology nesting bird seasons.

## Schedule of Accommodation

**Site Name** Barugh Green

**S106 Affordable Housing**

| Name | Bed | NDSS | Storey | M4(2) | Number |
|---|---|---|---|---|---|
| H2 | 2 | Y | 1 | M4(3) | 6 |
| E2.1 | 2 | Y | 2.5 | N | 12 |
| B3 | 3 | Y | 2.5 | N | 10 |
| D4 | 4 | Y | 2.5 | Y | 2 |
| Total | | | | | 30 |

**Open Market Housing**

| Name | Bed | NDSS | Storey | M4(2) | Number |
|---|---|---|---|---|---|
| Askham | 1 | Y | 2 | Y | 13 |
| Eastbeck | 2 | Y | 2.5 | N | 10 |
| Ferndale | 2 | Y | 2 | N | 13 |
| Knaresborough | 2 | Y | 2 | Y | 28 |
| Leyburn | 3 | Y | 2 | N | 10 |
| Baildon | 3 | Y | 2.5 | N | 12 |
| Salbury | 3 | Y | 2.5 | N | 12 |
| Wentbridge | 4 | Y | 2 | Y | 6 |
| Netherton | 4 | Y | 2.5 | N | 7 |
| N4 | 4 | Y | 2.5 | N | 4 |
| Cookbury | 4 | Y | 2 | N | 3 |
| Thoresby | 4 | Y | 2 | N | 1 |
| Total | | | | | 119 |
| Overall Total | | | | | 149 |

N

PLANNING KEY

PLANNING LAYOUT KEY:

- SITE BOUNDARY
- ROAD
- ROAD MARKINGS
- DRIVES & PATHS
- 1.8m TIMBER SCREEN FENCE
- 1.2m POST & RAIL FENCE
- 1.8m TIMBER GATE
- 0.45m KNEE HIGH RAIL
- 1.8m SCREEN WALL & FENCE PANEL INFILL
- 2m ACOUSTIC FENCE/SCREEN WALL
- VISIBILITY SPLAY
- BIN STORAGE
- BIN COLLECTION POINT
- 6'x4' SECURE CYCLE/SHED
- 288 PLOT NUMBERS
- 288 PARKING SPACES
- S106 AFFORDABLE PLOTS
- SIGNAGE FOR THE WIDER MASTERPLAN
- BLOCK PAVING
- EXISTING TREES AND HEDGING
- TREES AND HEDGING TO BE REMOVED
- PROPOSED TREE PLANTING - Refer to Landscape Masterplan
- EXISTING WATERCOURSE
- STREET FURNITURE
- ENTRANCE FEATURE WALL

| REV | DATE | BY | AMENDMENTS |
|---|---|---|---|
| A | 11.08.25 | SH | LAYOUT AMENDS FOR PLANNING RESUBMISSION |

AVANT homes
Unit 2, Mariner Court, Peel Avenue, Durkar, Wakefield, WF4 3FL.
Tel: 01924 248413. Fax: 01924 248488.
www.avanthomes.co.uk

| DATE: | SCALE: | DRAWN BY: |
|---|---|---|
| 09/01/25 | 1:500 @ A1 | CR |

DWG TITLE: Planning Site Layout

PROJECT: Barugh Green Road, Barugh Green, Barnsley

DWG No. 4213-200 REV. A

H:\Site\4213 - Barugh Green Road\05 Architectural\01 Site Drawings\2. CAD Layouts\Barugh Green Planning Layout 18.07.25 - Standard\Barugh Green Planning Layout 13.08.25 Road

# Appendix B

**Highways Consultation Response**

BARNSLEY
Metropolitan Borough Council

# PLANNING CONSULTATION RESPONSE

| | |
|---|---|
| **Application No** | 2025/0122 |
| **Proposal** | Land south of Barugh Green Road, Barugh Green, Barnsley |
| **Address** | Erection of 155no. residential dwellings and associated works. |
| **Date of Consultation Reply** | 24/4/2025 |
| **Consultee** | Highways Development Control |

## Consultation Assessment and Justification

Thank you for consulting Highways Development Control on this planning application for a large residential development at land to the south of Barugh Green Road. Pre-application discussions were held in June 2024, and initial highway comments were provided at that time.

The site forms part of the MU1 allocation within the Barnsley Local Plan and sits within the Barnsley West Masterplan Framework area.

It is noted that the current proposal is for 155 dwellings, which falls within the capacity envisaged by the MU1 allocation (indicative 1,700 dwellings). However, as previously stated, development of any residential units within MU1 must not proceed until both the Northern and Southern Access Roundabouts are fully constructed and operational, in accordance with the infrastructure phasing requirements of the Masterplan Framework.

**Site Layout Comments:**

The proposed access is via a new priority T-junction from the A635 Barugh Green Road, including ghost island right turn lane and a pedestrian refuge. It will be necessary to provide a Designer's Checklist in relation to the new site access to ensure that it meets required design standards and guidance, including compliance with DMRB CD 123 (Geometric Design of at-grade Priority Junctions). This should be submitted for review by the Local Highway Authority.

A 2m wide footway is shown along the full frontage of the site on Barugh Green Road, which is welcomed and in line with previous guidance.

The current site layout does not demonstrate compliance with LTN 1/20 for cycle infrastructure. All shared pedestrian/cycle paths must be a minimum of 3m wide, continuous, and legible, with appropriate crossings.

The submitted site sections show a noticeable change in levels across the site, ranging from approximately 79.00m to over 87.00m. Several road and footway alignments traverse areas where level differences of 1–2m or more occur over relatively short distances. This introduces potential concerns around footway gradients, adoptable infrastructure, and the possible requirement for retaining structures.

The applicant must demonstrate that all pedestrian routes, including shared footways/cycleways and those alongside carriageways, comply with maximum gradient standards in accordance with SYRDG and MfS: no steeper than 1:12 for short distances (≤5m) and 1:15 for stretches of 5–10m. These must be verified through longitudinal section drawings.

Where significant level changes occur between plots, between the highway and adjacent land, or around open space and attenuation features, retaining structures may be necessary. Any such structures should be clearly identified on the site plan.

Forward visibility splays must be provided throughout the site layout in accordance with the South Yorkshire Residential Design Guide. On standard residential streets, a minimum forward visibility splay of 25m must be achieved, measured to a 1m object height in the centre of the carriageway. On shared surface streets and areas with design speeds of less than 20mph, this can be reduced accordingly in line with guidance. These visibility envelopes must be kept clear of obstruction at all times, should be demonstrated on submitted plans, and must be contained entirely within the public highway and not encroach into private driveways or plot boundaries.

Turning heads throughout the site must maintain a minimum 2m setback between the carriageway edge and any adjacent boundary treatment (fence, wall, hedge) in accordance with SYRDG Section B.4.3.6. This clearance is required to prevent damage from overhanging manoeuvres by refuse and delivery vehicles. The current layout does not consistently achieve this clearance and must be revised accordingly.

Vehicular and pedestrian/cycle connectivity to the adjoining development sites within the MU1 allocation must be clearly integrated into the layout to ensure permeability and enable comprehensive delivery of the wider masterplan area.

The applicant is also requested to complete and submit the Active Travel England (ATE) Assessment Toolkit to assist in evaluating the site's alignment with national active travel objectives.

**Transport Assessment Comments:**

Notwithstanding the comments below, it should be noted that the full scope of the Transport Assessment was not agreed with the Local Highway Authority prior to submission. It will be necessary to review this in further detail.

The trip rates used in the Transport Assessment are derived from TRICS and represent vehicular trip rates only. These have not been converted into person trips by mode. In accordance with guidance from Active Travel England and DfT, the applicant should provide multi-modal person trip rates, either using the person trip functionality within TRICS or derived from National Travel Survey data and adjusted with local mode share data. This will help ensure the Transport Assessment properly evaluates the demand placed on all transport modes and supports a more holistic infrastructure planning process.

Trip generation has been derived from TRICS using surveys from 2016–2023. Any survey data collected during COVID-19 restrictions should be removed to avoid skewed results.

No queue length surveys have been undertaken to validate the model, which is a requirement and as such should be carried out.

A Stage 1/2 Road Safety Audit (RSA) must be undertaken and the brief shared with BMBC Traffic Team to agree and be invited to attend in line with DMRB GG119.

The Transport Assessment includes reference to the wider MU1 allocation as committed development, using figures from a previous Transport Assessment prepared by Fore Consulting. This is welcomed and provides a more robust baseline. However, as the full scope of the TA was not agreed with the Local Highway Authority prior to submission, the approach taken and level of consideration of committed development may be subject to change.

The Transport Assessment includes a review of walking and cycling catchments based on distance (e.g., 2km walking and 5km cycling isochrones). While this approach is commonly used, it does not align with the expectations of LTN 1/20 or DfT best practice guidance, which place emphasis on realistic journey time rather than radial distance alone. It is therefore requested that the applicant supplement this analysis with time-based accessibility mapping, showing 5, 10 and 15-minute walking and cycling isochrones to key destinations. This should be supported by commentary on infrastructure quality, gradients, directness of routes, and potential barriers. The purpose of this additional mapping is to demonstrate how the development will encourage a shift toward sustainable modes through safe, attractive and direct active travel connections.

**Travel Plan Comments:**

The submitted Travel Plan is broadly in line with expectations for a development of this scale and reflects national and local policy. It includes:

- Targets for reducing single occupancy car trips.

BARNSLEY
Metropolitan Borough Council

- Proposals for promoting walking, cycling, and public transport.
- Management arrangements for monitoring and review.

BMBC's Transportation Team is reviewing the Travel Plan and comments will be provided separately.

Developer contributions in line with the Sustainable Travel SPD will be required, calculated as follows:
155 dwellings x trip rate x £100 = Contribution amount (to be finalised)

Many thanks,

Sarah Sharp
Senior Engineer

| | | |
|---|---|---|
| ~~**NO OBJECTION***~~ | **Defer for amends/further information*** | ~~**OBJECT***~~ |

**Consultation Suggested Conditions:**

**Consultation Informative(s):**

**Planning Obligations required:**

# Appendix C

**ATE Checklist**

| Criterion | Description | Common Shortfalls | Rating | Appraiser Comments | Local Policy & Guidance |
|---|---|---|---|---|---|
| **1. Trip generation and assignment** | Does the application appropriately forecast all day trips to, from and within the site by walking, wheeling and cycling? | Source data is not representative of the proposed development, is out-of-date or is confined to commuting journeys only.<br><br>Forecasted trip generation is limited to motor vehicle traffic or peak hours only.<br><br>Future year forecasts do not realise the potential of the development to support a greater number of walking, wheeling and cycling journeys or do not align with the national target (or any adopted local targets) that half of all journeys in towns and cities shall be walked, wheeled or cycled by 2030. | **Pass** | Section 5 of the Transport Assessment considers the all mode trip generation of the development based on trip rates obtained from the TRICS database and method of travel to work data, in the absence of an alternative source of information. | |
| **2. Active travel route audit** | Has an appropriate assessment on the design and accessibility of existing active travel routes in the locality of the site been presented? | Local pedestrian and cycling routes are only identified in application documents by their location, with no assessment provided on whether these are safe, direct, convenient and accessible for people of all abilities (paragraph 82 of the National Design Guide) or coherent, direct, safe, comfortable and attractive (core design principles in LTN 1/20).<br><br>Applications that include new dwellings have not demonstrated how local schools and colleges will be accessed by active travel modes.<br><br>Qualitative analysis to inform any necessary improvements to the design and accessibility of key routes does not include maps, photographs and comments nor has regard to the following guidance, tools and plans in the assessment of key routes:<br>• Inclusive Mobility (Chapters 3, 4, 6, 7 and 15; and Sections 5.2, 5.7, 9.1, 9.3, 9.4 and 9.7 as appropriate);<br>• PAS 6463: Design for the Mind (Sections 5.2.1, 5.2.3, 6.4, 7.6.2, 7.6.3, 7.7 and 11.12);<br>• LTN 1/20: Cycle Infrastructure Design (including Appendix A: Cycling Level of Service Tool; and Appendix B: Junction Assessment Tool);<br>• the government's Walking Route Audit Tool; and<br>• any adopted or emerging Local Cycling and Walking Infrastructure Plans (LCWIPs). | **Pass** | A site visit has been undertaken and it is considered that the walking environment in the vicinity of the site gives access to a range of health, education, retail, leisure and employment opportunities. Highlighted in Section 3, this demonstrated that there are fully surfaced, street lit and clean walking routes to facilities to the north and west of the site, accessible via Barugh Green Road. They are of sufficient quality to facilitate the likely additional active travel movements from the development. | Policy T2 |
| **3. Pedestrian access to local amenities** | Are most buildings within 800m from a range of amenities (such as primary schools, parks, play areas, food shops, cafes and community buildings) using well-designed routes? | Trip lengths to key amenities as presented in application documents are based on straight-line distances from site boundaries or main access points.<br><br>There are few everyday amenities within the recommended distance from most buildings using safe and accessible routes for pedestrians.<br><br>Footpaths/ways to local amenities do not conform to the National Design Guide standards of being safe, direct, convenient and accessible for people of all abilities, which includes but is not limited to routes that:<br>• have a minimum width of 2m, with limited pinch points no less than 1.5m;<br>• are step-free;<br>• have a smooth, even surface;<br>• have seating at regular intervals;<br>• are uncluttered;<br>• have good natural surveillance and clear lines of sight;<br>• have street lighting;<br>• have wayfinding; and<br>• have crossing points suitable for the speed and traffic flow of the road(s). | **Pass** | Section 3 describes the existing infrastructure that will facilitate and encourage trips to the site by foot, bicycle or public transport. Figures are used to illustrate the accessibility of the site utilising distance and time based mapping, supported by commentary on the infrastructure quality. | |
| **4. Cycling accessibility** | Are a range of local amenities, and town centres, railway stations, employment areas and the National Cycle Network as appropriate, accessible for cyclists using well-designed routes? | Cycle routes relied on by the development are not coherent, direct, safe, comfortable or attractive in line with the five core design principles and geometric requirements in LTN 1/20 (see Sections 4.2 and 5). This may be due to physical features, steps, steep gradients or surface quality; or the absence of ramps, lighting or appropriate crossing facilities.<br><br>The development relies on shared use routes in full or intermittently, which conflicts with the clear position in paragraph 1.6.1 (2) of LTN 1/20 that cycles must be treated as vehicles and not as pedestrians.<br><br>There is insufficient protection from motor traffic in accordance with the suitability and segregation standards in LTN 1/20 (see Figure 4.1 and Section 6) such that some potential cyclists would be excluded. | **Pass** | To the east of the site access there will be a 3m wide shared footway/cycle path, running north-south through the site. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan. Furthermore, existing pedestrian infrastructure in the vicinity of the site supports access east-west away from the site, via Barugh Green Road. | Policy T3 |
| **5. Access to public transport** | Are all buildings within 400m of a high-frequency bus stop or 800m of a rail/light rail station or tram stop, with appropriate facilities, using well-designed routes? | There are no public transport nodes with a regular service (this will differ between urban and rural areas) within the recommended distances.<br><br>Local bus stops do not have good natural surveillance or do not provide seating, lighting, shelter, real-time passenger information and raised bus boarders or specialist kerbs. Local rail stations do not provide sufficient cycle parking, including spaces for non-standard cycles.<br><br>Footpaths/ways to public transport nodes do not conform to the National Design Guide standards of being safe, direct, convenient and accessible for people of all abilities, which includes but is not limited to routes that:<br>• have a minimum width of 2m, with limited pinch points no less than 1.5m;<br>• are step-free;<br>• have a smooth, even surface;<br>• have seating at regular intervals;<br>• are uncluttered;<br>• have good natural surveillance and clear lines of sight;<br>• have street lighting;<br>• have wayfinding; and<br>• have crossing points suitable for the speed and traffic flow of the road(s). | **Pass** | The closest bus stops to site are located on Barugh Green Road, to the east of the proposed site access. Located on both sides of the carriageway, both stops comprise a shelter, seating and timetable information, benefitting from good natural surveillance and clear lines of sight. From these stops, residents can access the twice-hourly 95 service. | Policy T3 |
| **6. Off-site transport infrastructure** | Does the application include proposals to enhance local active travel and public transport infrastructure? | The application fails to identify necessary, directly related and proportionate improvements or contributions to:<br>• footpaths/ways in line with the design standards identified in criteria 3 and 5;<br>• cycling routes in line with LTN 1/20 standards identified in criteria 4; or<br>• public transport infrastructure (where this is not provided on-site) that may include: new or extended services; seating, lighting, shelter, real-time passenger information and raised bus boarders or specialist kerbs at bus stops; and secure cycle parking with pumps and repair tools at rail stations and mobility hubs.<br><br>The application fails to identify the mechanism to secure identified improvements and the trigger point(s) for delivery or payment.<br><br>Proposed road/junction improvements do not prioritise pedestrian and cycling movements, including appropriate crossings. | **Pass** | Vehicular access to the proposed development will be taken via a new priority T-junction on the northern boundary of the site, from the A635 Barugh Green Road. The proposed access benefits from a 3m wide right turn ghost island and has been designed in line with the requirements of DMRB. Bound by 2m wide footways and street lighting on both sides, dropped kerbs and tactile paving are proposed to support pedestrian movement east-west, along the A635 Barugh Green Road. Furthermore, a pedestrian refuge island comprising dropped kerbs and tactile paving is proposed immediately east of the proposed access junction, supporting pedestrian movement north-south. | Policy T4 |
| **7. Site permeability** | Does the development prioritise pedestrian and cycle movements within the site? | Opportunities have been missed to maximise accessibility for active travel modes, including:<br>• the development does not provide or safeguard pedestrian and cycling connections to neighbouring sites including future phases of development;<br>• routes for pedestrians and cyclists are not at least as direct – and preferably more direct – than the equivalent by car;<br>• routes are not fully accessible or do not have adjacent accessible alternatives (e.g. ramps alongside steps or bound paths next to unbound paths);<br>• inappropriate or infrequent crossings are proposed (see Inclusive Mobility Sections 4.10-4.11, PAS 6463 Section 7.6.2, LTN 1/20 Table 10-2, Manual for Streets Section 6.3 and Manual for Steets 2 Section 9.3);<br>• pedestrians and cyclists are not prioritised at side road crossing points (see LTN 1/20 Figure 10.13);<br>• priority junctions have radii that interrupts the pedestrian desire line (see Manual for Streets Sections 6.3-6.4 and Manual for Streets 2 Section 9.4);<br>• there are red/zero scores when applying the Junction Assessment Tool in LTN 1/20;<br>• signalised junctions do not have pedestrian aspects on some arms;<br>• where cyclists would mix with motor vehicles, lane widths are between 3.2m and 3.9m (paragraph 7.2.5 of LTN 1/20 identifies that such widths allow motor vehicles to drive alongside a cyclist without a safety margin for their comfort and protection);<br>• there are unsafe or poorly signed transitions for cyclists when moving between cycleways on and off the carriageway; or<br>• cycleways within commercial sites are not continuous through to cycle parking areas.<br><br>Shared use routes for pedestrians and cyclists are proposed and these do not meet the limited situations listed in paragraph 6.5.6 of LTN 1/20. Where shared use routes are acceptable, their widths are below 3m (<300 cyclists per hour) or below 4.5m elsewhere, contrary to LTN 1/20 Table 6-3. | **Pass** | There are proposed pedestrian/cycle connections from the site connecting with the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan. | Policy T2 |

| | | | | | |
|---|---|---|---|---|---|
| **8. Placemaking** | Does the development establish a strong sense of place, with well-designed streets, public spaces that feel safe and key amenities provided? | The design of streets does not encourage social interaction or create attractive, safe and accessible open spaces that would support an active life for everyone, contrary to the National Design Guide (See Part 2). This may include missed opportunities to incorporate green infrastructure / street trees, shared space residential streets (such as appropriately designed home-zones, mews and culs-de-sac), equipped play facilities, seating at regular intervals, and clear lines of sight to assist with orientation (including measures to prevent inconsiderate parking).<br><br>Aspects of the proposed design give rise to personal and highway safety concerns, including:<br>• streets, public transport nodes and other public spaces do not benefit from appropriate levels of natural surveillance and lighting;<br>• the requirements of disabled people have not been appropriately considered;<br>• the development includes 'blind-spots', sharp turns or high-sided boundary treatments;<br>• the development does not provide continuous and legible routes or is not supported by an effective wayfinding strategy; or<br>• residential or local streets encourage traffic movements through the site or are not designed for a 20mph speed limit (see Manual for Streets Section 7.4 for guidance on achieving appropriate traffic speeds).<br><br>There are gaps in the provision of well-located, on-site amenities to support the quantum of development proposed, in conflict with paragraph 83 of the National Design Guide. For larger residential-led developments, this may include a lack of evidence that the applicant has utilised local authority pupil yield data (or the Department for Education's Pupil Yield Dashboard in the absence of such) to inform the need for new schools and early years settings. | **Pass** | The site incorporates green infrastrcuture at various points throughout, which encourage safe and accessible open spaces that would support an active lifestyle. Indeed, there are clear lines of sight to assist with orientation throughout. | |
| **9. Cycle parking and trip-end facilities** | Does the application provide the requisite amount and quality of cycle parking and trip-end facilities? | Cycle parking is not provided in accordance with up-to-date local standards, or Section 11 of LTN 1/20 in the absence of such. Details of accessibility, parking types and dimensions, security arrangements or lighting as appropriate is not provided (highly accessible cycle parking is essential for people with sensory and/or information processing differences and disabled cyclists who may be unable to walk very far or navigate a change in levels).<br><br>For workplaces, public buildings (including those used for leisure and recreation) larger retail developments and other developments with communal parking:<br>• internal cycle stores cannot be accessed from building frontages, are not step-free or require passing through more than two sets of doors;<br>• a proportion of cycle parking (typically 5%) is not provided for non-standard cycles to accommodate people with mobility impairments, which is contrary to paragraph 11.3.2 of LTN 1/20 (Table 11-2 also advises on bay lengths and access aisle widths for larger cycles using Sheffield stands); or<br>• high-quality facilities including showers, lockers, changing rooms and drying areas are not provided for cyclists in non-residential settings (see Section 11.7 of LTN 1/20, BREEAM guidance and any local standards).<br><br>The quantum and quality of the cycle parking and trip-end facilities proposed does not align with travel plan targets for cycling or application objectives to deliver a sustainable form of development. | **Pass** | With regard to cycle parking, where dwellings do not provide a garage, alternative storage will be provided in the form of a shed, in order to provide sufficient space(s) per dwelling. | Policy T3 |
| **10. Travel planning** | Does the travel plan outline ambitious mode share targets and measures to embed active travel, alongside appropriate monitoring and remedial strategies? | A 'full', 'framework' or 'interim' travel plan has not been submitted as appropriate (a framework travel plan is generally only appropriate for commercial developments where the end user is unknown, while an interim travel plan can be acceptable where the split of uses is not yet confirmed).<br><br>Where the appropriate travel plan has been submitted:<br>• targets for active travel mode share lack ambition or do not align with the national target (or any adopted local target) that half of all journeys in towns and cities shall be walked, wheeled or cycled by 2030;<br>• mode share targets are not set for the end of each phase (where identifiable) nor extend to five years beyond the final occupation of the development;<br>• there is an absence of travel plan targets for all uses proposed within the application site as appropriate;<br>• the travel plan does not provide sufficient detail on the active travel and public transport infrastructure to be provided or improved (both on and off-site) or how its use will be embedded by initiatives and incentives to be secured through planning conditions and obligations; or<br>• there are no details of effective and influential actions to be taken if targets are not met, with the intention for these to be secured and monitored (if triggered) through planning conditions and obligations. | **Pass** | The Travel Plan submitted alongside this Transport Assessment outlines the mode share targets, proposed measures and the monitoring strategy (to be agreed with BMBC). | Policy T3 |

**The Assessment Report table will be populated upon entering text in columns D, E and F in the 'User input' sheet.**
**Please enter all relevant information in rows 4 to 12 below to complete your assessment.**

Active Travel England

# Active Travel England
# Planning Application Assessment Toolkit
# Appraiser Report

| | |
|---|---|
| Site address | Barugh Green Road, Barnsley |
| Summary of proposal | The development of 149 dwellings on land to the south of Barugh Green Road, Barnsley |
| ATE reference | |
| Local authority reference | |
| Local planning authority | Barnsley |
| Local highway authority | Barnsley |
| Completed by | JA |
| Date (DD/MM/YY) | 05 July 2025 |
| Application type | Full planning permission |
| Model version | 2.0 |

**Assessment Report**

| Criterion | Rating | Appraiser Comments | Relevant Policy & Guidance |
|---|---|---|---|
| **1. Trip generation and assignment** | Pass | Section 5 of the Transport Assessment considers the all mode trip generation of the development based on trip rates obtained from the TRICS database and method of travel to work data, in the absence of an alternative source of information. | National Planning Policy Framework: 108, 114, 117;<br>Planning Policy Guidance: Travel Plans, Transport Assessments and Statements;<br>LTN 1/20: 14.3.6;<br>; |
| **2. Active travel route audit** | Pass | A site visit has been undertaken and it is considered that the walking environment in the vicinity of the site gives access to a range of health, education, retail, leisure and employment opportunities. Highlighted in Section 3, this demonstrated that there are fully surfaced, street lit and clean walking routes to facilities to the north and west of the site, accessible via Barugh Green Road. They are of sufficient quality to facilitate the likely additional active travel movements from the development. | National Planning Policy Framework: 8, 74, 87, 96, 97, 108, 112, 114, 116;<br>National Design Guide: 81, 82, 83, 119;<br>National Model Design Code: 59i-ii, 64iv-vi (Part 1); M.1.ii, M.2, U.3 (Part 2);<br>Planning Practice Guidance: Travel Plans, Transport Assessments and Statements;<br>Active Design (Sport England): Principles 2, 3;<br>Designing for Walking (CIHT);<br>Inclusive Mobility;<br>LTN 1/20;<br>PAS 6463;<br>; Policy T2 |
| **3. Pedestrian access to local amenities** | Pass | Section 3 describes the existing infrastructure that will facilitate and encourage trips to the site by foot, bicycle or public transport. Figures are used to illustrate the accessibility of the site utilising distance and time based mapping, supported by commentary on the infrastructure quality. | National Planning Policy Framework: 8, 74, 87, 96, 97, 108, 112, 114, 116;<br>National Design Guide: 82, 83, 119;<br>National Model Design Code: 59ii, 64iv-vi (Part 1); M.2, U.3 (Part 2);<br>Active Design (Sport England): Principles 2, 3;<br>Designing for Walking (CIHT);<br>Inclusive Mobility;<br>Manual for Streets: 4.4;<br>PAS 6463;<br>; |
| **4. Cycling accessibility** | Pass | To the east of the site access there will be a 3m wide shared footway/cycle path, running north-south through the site. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan. Furthermore, existing pedestrian infrastructure in the vicinity of the site supports access east-west away from the site, via Barugh Green Road. | National Planning Policy Framework: 8, 74, 87, 96, 97, 108, 112, 114, 116;<br>National Design Guide: 82, 83, 119;<br>National Model Design Code: 59ii, 64iv-vi (Part 1); M.2, U.3 (Part 2);<br>Active Design (Sport England): Principles 2, 3;<br>Inclusive Mobility;<br>LTN 1/20;<br>PAS 6463;<br>; Policy T3 |
| **5. Access to public transport** | Pass | The closest bus stops to site are located on Barugh Green Road, to the east of the proposed site access. Located on both sides of the carriageway, both stops comprise a shelter, seating and timetable information, benefitting from good natural surveillance and clear lines of sight. From these stops, residents can access the twice-hourly 95 service. | National Planning Policy Framework: 8, 74, 85, 87, 108, 116;<br>National Design Guide: 81;<br>National Model Design Code: 59i-ii (Part 1); M.1.ii, M.2 (Part 2);<br>Active Design (Sport England): Principles 2, 3;<br>Buses in Urban Developments (CIHT): A.4.1-A.4.5, B.2.3, B.7.2;<br>Inclusive Mobility: Chapter 9;<br>LTN 1/24;<br>; Policy T3 |
| **6. Off-site transport infrastructure** | Pass | Vehicular access to the proposed development will be taken via a new priority T-junction on the northern boundary of the site, from the A635 Barugh Green Road. The proposed access benefits from a 3m wide right turn ghost island and has been designed in line with the requirements of DMRB. Bound by 2m wide footways and street lighting on both sides, dropped kerbs and tactile paving are proposed to support pedestrian movement east-west, along the A635 Barugh Green Road. Furthermore, a pedestrian refuge island comprising dropped kerbs and tactile paving is proposed immediately east of the proposed access junction, supporting pedestrian movement north-south. | National Planning Policy Framework: 108, 112, 114, 116;<br>National Model Design Code: 59i-ii, 64iv-vi (Part 1); M.1.ii, M.2, U.3 (Part 2);<br>Planning Practice Guidance: Planning Obligations;<br>LTN 1/20: 14.3.12;<br>; Policy T4 |
| **7. Site permeability** | Pass | There are proposed pedestrian/cycle connections from the site connecting with the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan. | National Planning Policy Framework: 96, 108, 114, 116;<br>National Design Guide: 82, 83, 119;<br>National Model Design Code: Figure 11, 59i-ii (Part 1); M.1.i, M.1.iii, M.2 (Part 2);<br>Active Design (Sport England): Principles 2, 3;<br>Designing for Walking (CIHT);<br>Inclusive Mobility;<br>LTN 1/20;<br>Manual for Streets: 4.2, 6.3, 6.4;<br>Manual for Streets 2: 9.3, 9.4;<br>PAS 6463;<br>; Policy T2 |
| **8. Placemaking** | Pass | The site incorporates green infrastrcuture at various points throughout, which encourage safe and accessible open spaces that would support an active lifestyle. Indeed, there are clear lines of sight to assist with orientation throughout. | National Planning Policy Framework: 8, 74, 87, 96, 97, 99, 108, 114, 116, 135, 136;<br>National Design Guide;<br>National Model Design Code: 51i, 59iii, 62i, 63, 64ii-ii (Part 1);<br>N.1.iii, M.3.i, I.1, P.1-3, U.1 (Part 2);<br>Active Design (Sport England): Principles 4, 5, 6;<br>Designing for Walking (CIHT);<br>Inclusive Mobility;<br>LTN 1/20;<br>LTN 1/24: 4.6;<br>Manual for Streets: 2.2.5, 5.7, 6.3, 6.4, 7.2.8-7.2.22, 8.3;<br>PAS 6463;<br>; |
| **9. Cycle parking and trip-end facilities** | Pass | With regard to cycle parking, where dwellings do not provide a garage, alternative storage will be provided in the form of a shed, in order to provide sufficient space(s) per dwelling. | National Planning Policy Framework: 114, 116;<br>National Design Guide: 85;<br>National Model Design Code: 59iv (Part 1); M.3.ii (Part 2);<br>Active Design (Sport England): 7.1, 8.2;<br>Inclusive Mobility: 7.4;<br>LTN 1/20: Chapter 11;<br>Manual for Streets: 8.2;<br>Manual for Streets 2: 2.5.4;<br>PAS 6463: 5.2.3;<br>; Policy T3 |
| **10. Travel planning** | Pass | The Travel Plan submitted alongside this Transport Assessment outlines the mode share targets, proposed measures and the monitoring strategy (to be agreed with BMBC). | National Planning Policy Framework: 114, 117;<br>Planning Practice Guidance: Travel Plans, Transport Assessments and Statements;<br>Active Design (Sport England): 2.4;<br>; Policy T3 |

# Appendix D

## Accident Data

**Details of Personal Injury Accidents for Period -** **17/03/2020** **to** **17/03/2025** (60) months

**Selection:** **Notes:**

Selected using Manual Selection

| | | | Vehicles | Casualties |
|---|---|---|---|---|
| **Police Ref.** | Day | Location Description | Veh No / Type / Manv / Dir / Class | Sex / Age / Sev |
| | Date | | | |
| **Road No.** | Time | | | |
| **2nd Road No.** | | | | |
| **Grid Ref.** | D/L | | | |
| | R.S.C | | | |
| | Weather | | | |
| | Speed | | | |
| | Account of Accident | | | |
| **Causation Factor:** | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **211067623** | Monday | BARUGH GREEN ROAD (A635) - 44 | Veh 1 | Car | Going ahead | E | to | W | Dri | F | 73 | Serious |
| | 19/07/2021 | METRES FROM JUNCTION WITH THE | Veh 2 | Car | Parked | 0 | to | 0 | Dri | F | 27 | Slight |
| **R1: A 635** | 1144hrs | MEADOWS | | | | | | | | | | |
| | Daylight:street lights present | | | | | | | | | | | |
| **E 431,415** | Dry | | | | | | | | | | | |
| **N 407,981** | Fine without high winds | | | | | | | | | | | |
| | 30 mph | | | | | | | | | | | |

| **Causation Factor:** | | **Participant:** | **Confidence:** |
|---|---|---|---|
| **1st:** | Dazzling sun | Vehicle 1 | Very Likely |
| **2nd:** | Other | Vehicle 1 | Very Likely |

DRIVER OF VEH 01 WAS DRIVING ON BAURGH GREEN ROAD WHEN DUE TO THE SUN SHE SNEEZED AND AS SHE DID SO SHE COLLIDED WITH STATIONARY VEH 02

---

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **221128311** | Tuesday | BARUGH GREEN ROAD (A635) | Veh 1 | Car | Wait go ahead held | SE | to | NW | | | | |
| | 04/01/2022 | | Veh 2 | Car | Stopping | S | to | N | | | | |
| **R1: A 635** | 1745hrs | | Veh 3 | Pedal cycle | Starting | S | to | N | Dri | M | 38 | Slight |
| **R2: A( 635** | Darkness: street lights present a | | | | | | | | | | | |
| **E 432,030** | Frost/Ice | | | | | | | | | | | |
| **N 407,876** | Other | | | | | | | | | | | |
| | 40 mph | | | | | | | | | | | |

| **Causation Factor:** | | **Participant:** | **Confidence:** |
|---|---|---|---|
| **1st:** | Failed to judge other persons path or speed | Vehicle 1 | Possible |
| **2nd:** | Passing too close to cyclist, horse rider or pedestrian | Vehicle 1 | Possible |
| **3rd:** | Inexperience with type of vehicle | Vehicle 1 | |

V001 HAS BEEN STATIONARY AT THE ROUNDABOUT AWAITING AN OPPORTUNITY TO PULL OUT. A CYCLIST AHEAD HAS SET OFF BUT THEN STOPPED V001 HAS MOVED FORWARD AND NUDGED THE CYCLIST KNOCKING HIM OFF CAUSING MINOR INJURY. THE DRIVER OF V001 HAS GOT OUT IN A PANIC, V
001 HAS ROLLED BACK INTO V002. THE DRIVER STATED ITS A NEW CAR AND HE HAS BEEN HAVING ISSUES WITH THE ELECTRONIC HANDBRAKE.

---

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **221209360** | Monday | BARUGH LANE (B6428) NEAR | Veh 1 | Car | Going ahead | N | to | S | Dri | F | 21 | Slight |
| | 15/08/2022 | JUNCTION WITH BARUGH GREEN | | | | | | | | | | |
| **R1: B 6428** | 1840hrs | ROAD (A635), BARUGH GREEN, | | | | | | | | | | |
| **R2: A 635** | Daylight:street lights present | | | | | | | | | | | |
| **E 431,044** | Dry | | | | | | | | | | | |
| **N 408,057** | Fine without high winds | | | | | | | | | | | |
| | 30 mph | | | | | | | | | | | |

| **Causation Factor:** | | **Participant:** | **Confidence:** |
|---|---|---|---|
| **1st:** | Illness or disability, mental or physical | Vehicle 1 | Very Likely |

VEHICLE HAS BEEN DRIVING UP BARUGH LANE WHERE THE PASSENGER HAS WITNESSED THE DRIVER HAVE A SEIZURE AND BLACK OUT. THE VEHICLE HAS VEERED ON TO THE PAVEMENT JUST PRIOR THE CROSS ROAD AND JUNCTION OF CAWTHORNE. THERE HAS BEEN SIGNIFICANT FRONT END DAMAGE
TO THE VEHICLE AND BOTH PASSENGER AND DRIVER AIRBAGS HAVE DEPLOYED.

---

**Details of Personal Injury Accidents for Period -** **17/03/2020** **to** **17/03/2025** (60) months

**Selection:**

**Notes:**

Selected using Manual Selection

| | | | Vehicles | | | | | Casualties | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Police Ref.** | Day | Location Description | Veh No / Type / Manv / Dir / Class | | | | | Sex / Age / Sev | | | |
| | Date | | | | | | | | | | |
| **Road No.** | Time | | | | | | | | | | |
| **2nd Road No.** | | | | | | | | | | | |
| **Grid Ref.** | D/L | | | | | | | | | | |
| | R.S.C | | | | | | | | | | |
| | Weather | | | | | | | | | | |
| | Speed | | | | | | | | | | |
| | Account of Accident | | | | | | | | | | |
| **Causation Factor:** | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **231337283** | Tuesday | BARUGH GREEN ROAD (A635) - 83 | Veh 1 | Car | Stopping | W to E | | | | | |
| | 01/08/2023 | METRES FROM JUNCTION WITH | Veh 2 | Car | Going ahead | W to E | RSP | M | 19 | Slight | |
| **R1: A 635** | 2118hrs | CLAYCLIFFE AVENUE, BARUGH | Veh 2 | Car | Going ahead | W to E | FSP | M | 19 | Serious | |
| | Daylight:street lights present | | | | | | | | | | |
| **E 431,852** | Dry | | | | | | | | | | |
| **N 407,912** | Fine without high winds | | | | | | | | | | |
| | 30 mph | | | | | | | | | | |

| **Causation Factor:** | | **Participant:** | **Confidence:** |
|---|---|---|---|
| **1st:** | Following too close | Vehicle 2 | Possible |

V2 DROVE INTO THE BACK OF V1 - THIS WAS A RESULT OF DRIVER ERROR. THERE WERE TWO PARTIES INJURED.

---

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **241410015** | Wednesday | BARUGH GREEN ROAD (A635) AT | Veh 1 | Car | Stopping | W to E | Ped | F | 11 | Slight | |
| | 14/02/2024 | JUNCTION WITH CLAYCLIFFE | | | | | | | | | |
| **R1: A 635** | 1705hrs | AVENUE, BARUGH GREEN, | | | | | | | | | |
| **R2: U** | Daylight:street lights present | | | | | | | | | | |
| **E 431,933** | Dry | | | | | | | | | | |
| **N 407,900** | Fine without high winds | | | | | | | | | | |
| | 40 mph | | | | | | | | | | |

| **Causation Factor:** | | **Participant:** | **Confidence:** |
|---|---|---|---|
| **1st:** | Other | Vehicle 1 | Possible |

VEHICLE WAS DRIVING ALONG BARUGH GREEN ROAD TOWARDS ROUNDABOUT WITH CLAYCLIFFE ROAD AND WILTHROPE ROAD. AS THE VEHICLE APPROACHED THE ROAD TO RIGHT SIDE CLAYCLIFFE AVEUNE IT HAS COLLIDED WITH PEDESTRIAN CROSSING ROAD. THERE WAS HEAVY TRAFFIC DUE TO ROAD
WORKS AND TEMPORARY TRAFFIC LIGHTS ON CLAYCLIFFE ROAD. VEHICLE WAS DOING BETWEEN 10MPH TO 15MPH. VEHICLE HAD STOPPED AT SCENE AND PROVIDED DETAILS AND WAS TOLD TO LEAVE BY PEDESTRIAN'S MOTHER. DRIVER LOCATED AND WORDS OF ADVICE GIVEN.

---

**Details of Personal Injury Accidents for Period -** **17/03/2020** **to** **17/03/2025** (60) months

**Selection:** **Notes:**

Selected using Manual Selection

| | | | Vehicles | | | | | | | Casualties | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Police Ref.** | Day | Location Description | Veh No / Type / Manv / Dir / Class | | | | | | | Sex / Age / Sev | | |
| | Date | | | | | | | | | | | |
| **Road No.** | Time | | | | | | | | | | | |
| **2nd Road No.** | | | | | | | | | | | | |
| **Grid Ref.** | D/L | | | | | | | | | | | |
| | R.S.C | | | | | | | | | | | |
| | Weather | | | | | | | | | | | |
| | Speed | | | | | | | | | | | |
| | Account of Accident | | | | | | | | | | | |
| **Causation Factor:** | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **241424051** | Saturday | BARUGH GREEN ROAD (A635) NEAR JUNCTION WITH BARUGH GREEN LANE (B6428) | Veh 1 | Car | Going ahead | W | to | E | FSP | M | 53 | Slight |
| | 23/03/2024 | | Veh 1 | Car | Going ahead | W | to | E | RSP | F | 62 | Serious |
| **R1: A 635** | 1400hrs | | Veh 1 | Car | Going ahead | W | to | E | RSP | F | 57 | Serious |
| **R2: A 635** | Daylight:street lights present | | Veh 1 | Car | Going ahead | W | to | E | Ped | M | 74 | Serious |
| **E 431,045** | Dry | | Veh 1 | Car | Going ahead | W | to | E | Dri | M | 65 | Serious |
| **N 408,046** | Fine with high winds | | Veh 2 | Car | Turning right | E | to | N | FSP | F | 85 | Fatal |
| | 30 mph | | Veh 2 | Car | Turning right | E | to | N | Dri | M | 75 | Fatal |
| | | | Veh 3 | Car | Going ahead | E | to | W | Dri | F | 51 | Slight |
| | | | Veh 4 | Car | Going ahead | S | to | N | | | | |
| | | | Veh 5 | Car | Parked | 0 | to | 0 | | | | |
| | | | Veh 6 | Car | Going ahead | E | to | W | Dri | F | 57 | Slight |
| | | | Veh 7 | Car | Parked | 0 | to | 0 | | | | |

| **Causation Factor:** | | **Participant:** | **Confidence:** |
|---|---|---|---|
| **1st:** | Aggressive driving | Vehicle 1 | Very Likely |
| **2nd:** | Careless/Reckless/In a hurry | Vehicle 1 | Very Likely |

V1 BELIEVED TO HAVE APPROACHED CROSSROADS AT SPEED AND HAS STRUCK V2 HEAD ON WHICH IS TURNING RIGHT AT THE JUNCTION. THE IMPACT HAS CAUSED V2 TO SPIN BACKWARDS AND COLLIDE WITH V3. V1 HAS CONTINUED TRAVELLING FORWARD HITTING V4 AND V5 THAT WERE PARKED AN
D CONTINUED FORWARD HITTING A GARDEN WALL AND STRUCK P1 WHO WAS WALKING ON THE PATH V2 HAS CONTINUED SPINNING AND HIT V6 BEFORE COMING TO A STOP. **FOR STATS: PEDESTRIAN IS ON FOOTPATH AT TIME OF COLLISION**

---

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **241469803** | Friday | CAWTHORNE ROAD (A635) NEAR JUNCTION WITH BARUGH LANE (B6428), BARUGH GREEN, | Veh 1 | Car | Starting | W | to | E | | | | |
| | 19/07/2024 | | Veh 2 | Pedal cycle | Going ahead | S | to | N | Dri | M | 23 | Slight |
| **R1: A 635** | 0725hrs | | | | | | | | | | | |
| **R2: B 6428** | Daylight:street lights present | | | | | | | | | | | |
| **E 431,040** | Dry | | | | | | | | | | | |
| **N 408,044** | Other | | | | | | | | | | | |
| | 30 mph | | | | | | | | | | | |

| **Causation Factor:** | | **Participant:** | **Confidence:** |
|---|---|---|---|
| **1st:** | Failed to look properly | Casualty 1 | Very Likely |

V01 HAS BEEN TRAVELLING ON CAWTHORNE ROAD AND WHEN V01 HAS REACHED THE CROSSROADS, HE HAS STOPPED FOR A RED LIGHT. V01 WHILST STATIONARY HAS OBSERVED A HGV TURNING LEFT, FROM HIGHAM COMMON ROAD ONTO CAWTHORNE LANE. DURING THIS MANOEUVRE, V01'S LIGHT
HAS TURNED GREEN AND HE HAS SET OFF ONTO BARUGH GREEN ROAD. A PEDAL CYCLE HAS THEN COME ACROSS THE CROSS ROADS, FROM HIGHAM COMMON ROAD TO BARUGH LANE AND HAS COLLIDED WITH V01.

---

**Accidents between dates** **17/03/2020** **and** **17/03/2025** (60) months

**Selection:**

Selected using Manual Selection

**Notes:**

| Police Ref. | Acc Class | Date | Day | Time | Grid References | Casualties Ftl | Casualties Ser | Casualties Slt | Causation Factors/ Prob | Ped L M D | Light | Weather | Road Surface | Vehicle Types |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 211067623 | Serious | 19/07/2021 | Mon | 1144 | 431415 407981 | 0 | 1 | 1 | 706V1A 999V1A | 0 0 0 | Light | Fine without high winds | Dry | 9 9 |
| 221128311 | Slight | 04/01/2022 | Tue | 1745 | 432030 407876 | 0 | 0 | 1 | 406V1B 407V1B 607V1B | 0 0 0 | Dark | Other | Frost/Ice | 9 9 1 |
| 221209360 | Slight | 15/08/2022 | Mon | 1840 | 431044 408057 | 0 | 0 | 1 | 505V1A | 0 0 0 | Light | Fine without high winds | Dry | 9 |
| 231337283 | Serious | 01/08/2023 | Tue | 2118 | 431852 407912 | 0 | 1 | 1 | 308V2B | 0 0 0 | Light | Fine without high winds | Dry | 9 9 |
| 241410015 | Slight | 14/02/2024 | Wed | 1705 | 431933 407900 | 0 | 0 | 1 | 999V1B | 5 1 5 | Light | Fine without high winds | Dry | 9 |
| 241424051 | Fatal | 23/03/2024 | Sat | 1400 | 431045 408046 | 2 | 4 | 3 | 601V1A 602V1A | 6 9 3 | Light | Fine with high winds | Dry | 9 9 9 9 9 9 9 |
| 241469803 | Slight | 19/07/2024 | Fri | 0725 | 431040 408044 | 0 | 0 | 1 | 802C1A | 0 0 0 | Light | Other | Dry | 9 1 |
| **Column Totals** | **Slight :** | 4 | | | | 2 | 6 | 0 | | | **Light :** | 6 | **Dry :** | 6 |
| | **Serious :** | 2 | | | | | | | | | **Dark :** | 1 | **Wet :** | 0 |
| | **Fatal :** | 1 | | | | | | | | | | | | |

Total number of accidents listed: 7

# Appendix E

**TRICS Output**

Calculation Reference: AUDIT-640801-250820-0814

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

*Selected regions and areas:*

| | | | |
|---|---|---|---|
| 02 | SOUTH EAST | | |
| | ES | EAST SUSSEX | 5 days |
| | EX | ESSEX | 2 days |
| | HC | HAMPSHIRE | 3 days |
| | HF | HERTFORDSHIRE | 2 days |
| | KC | KENT | 3 days |
| | SC | SURREY | 2 days |
| | WB | WEST BERKSHIRE | 1 days |
| | WS | WEST SUSSEX | 4 days |
| 03 | SOUTH WEST | | |
| | DC | DORSET | 1 days |
| 04 | EAST ANGLIA | | |
| | NF | NORFOLK | 7 days |
| 09 | NORTH | | |
| | IM | ISLE OF MAN | 1 days |
| 11 | SCOTLAND | | |
| | AS | ABERDEENSHIRE | 1 days |

Primary Filtering selection:

| | |
|---|---|
| Parameter: | No of Dwellings |
| Actual Range: | 80 to 212 (units: ) |
| Range Selected by User: | 80 to 230 (units: ) |

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 28/06/24

*Selected survey days:*

| | |
|---|---|
| Monday | 6 days |
| Tuesday | 12 days |
| Wednesday | 6 days |
| Thursday | 6 days |
| Friday | 2 days |

*Selected survey types:*

| | |
|---|---|
| Manual count | 29 days |
| Directional ATC Count | 3 days |

*Selected Locations:*

| | |
|---|---|
| Edge of Town | 32 |

*Selected Location Sub Categories:*

| | |
|---|---|
| Residential Zone | 30 |
| Out of Town | 1 |
| No Sub Category | 1 |

*Inclusion of Servicing Vehicles Counts:*

| | |
|---|---|
| Servicing vehicles Included | 7 days - Selected |
| Servicing vehicles Excluded | 44 days - Selected |

Secondary Filtering selection:

*Use Class:*

| | |
|---|---|
| C3 | 32 days |

*Population within 500m Range:*
All Surveys Included

*Population within 1 mile:*

| | |
|---|---|
| 1,001 to 5,000 | 4 days |
| 5,001 to 10,000 | 9 days |
| 10,001 to 15,000 | 11 days |
| 15,001 to 20,000 | 5 days |
| 20,001 to 25,000 | 3 days |

*Population within 5 miles:*

| | |
|---|---|
| 5,001 to 25,000 | 8 days |
| 25,001 to 50,000 | 4 days |
| 50,001 to 75,000 | 3 days |
| 75,001 to 100,000 | 2 days |
| 100,001 to 125,000 | 2 days |
| 125,001 to 250,000 | 11 days |
| 250,001 to 500,000 | 2 days |

*Car ownership within 5 miles:*

| | |
|---|---|
| 0.6 to 1.0 | 6 days |
| 1.1 to 1.5 | 23 days |
| 1.6 to 2.0 | 3 days |

Secondary Filtering selection (Cont.):

*Travel Plan:*

| | |
|---|---|
| Yes | 25 days |
| No | 7 days |

*PTAL Rating:*

| | |
|---|---|
| No PTAL Present | 31 days |
| 2 Poor | 1 days |

*LIST OF SITES relevant to selection parameters*

1 AS-03-A-02 MIXED HOUSES ABERDEENSHIRE
FARROCHIE ROAD
STONEHAVEN

Edge of Town
Residential Zone
Total No of Dwellings: 131
*Survey date: WEDNESDAY 20/04/22 Survey Type: MANUAL*

2 DC-03-A-11 MIXED HOUSES DORSET
A350
SHAFTESBURY

Edge of Town
No Sub Category
Total No of Dwellings: 141
*Survey date: TUESDAY 31/10/23 Survey Type: MANUAL*

3 ES-03-A-03 MIXED HOUSES & FLATS EAST SUSSEX
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total No of Dwellings: 212
*Survey date: MONDAY 11/07/16 Survey Type: MANUAL*

4 ES-03-A-07 MIXED HOUSES & FLATS EAST SUSSEX
NEW ROAD
HAILSHAM
HELLINGLY
Edge of Town
Residential Zone
Total No of Dwellings: 91
*Survey date: THURSDAY 07/11/19 Survey Type: MANUAL*

5 ES-03-A-08 MIXED HOUSES & FLATS EAST SUSSEX
WRESTWOOD ROAD
BEXHILL

Edge of Town
Residential Zone
Total No of Dwellings: 110
*Survey date: WEDNESDAY 12/10/22 Survey Type: MANUAL*

6 ES-03-A-10 MIXED HOUSES & FLATS EAST SUSSEX
WATERGATE
BEXHILL-ON-SEA

Edge of Town
Residential Zone
Total No of Dwellings: 139
*Survey date: THURSDAY 28/09/23 Survey Type: MANUAL*

7 ES-03-A-14 MIXED HOUSES & FLATS EAST SUSSEX
RATTLE ROAD
NEAR EASTBOURNE
STONE CROSS
Edge of Town
Residential Zone
Total No of Dwellings: 120
*Survey date: TUESDAY 30/04/24 Survey Type: MANUAL*

8 EX-03-A-02 DETACHED & SEMI-DETACHED ESSEX
MANOR ROAD
CHIGWELL
GRANGE HILL
Edge of Town
Residential Zone
Total No of Dwellings: 97
*Survey date: MONDAY 27/11/17 Survey Type: MANUAL*

*LIST OF SITES relevant to selection parameters (Cont.)*

9 EX-03-A-03 MIXED HOUSES ESSEX
KESTREL GROVE
RAYLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 123
*Survey date: MONDAY* *27/09/21* *Survey Type: MANUAL*

10 HC-03-A-28 MIXED HOUSES & FLATS HAMPSHIRE
EAGLE AVENUE
WATERLOOVILLE
LOVEDEAN
Edge of Town
Residential Zone
Total No of Dwellings: 125
*Survey date: MONDAY* *08/11/21* *Survey Type: MANUAL*

11 HC-03-A-36 MIXED HOUSES & FLATS HAMPSHIRE
HAVANT ROAD
EMSWORTH

Edge of Town
Residential Zone
Total No of Dwellings: 145
*Survey date: TUESDAY* *12/09/23* *Survey Type: MANUAL*

12 HC-03-A-38 MIXED HOUSES & FLATS HAMPSHIRE
CROW LANE
RINGWOOD
CROW
Edge of Town
Residential Zone
Total No of Dwellings: 195
*Survey date: WEDNESDAY* *26/06/24* *Survey Type: MANUAL*

13 HF-03-A-03 MIXED HOUSES HERTFORDSHIRE
HARE STREET ROAD
BUNTINGFORD

Edge of Town
Residential Zone
Total No of Dwellings: 160
*Survey date: MONDAY* *08/07/19* *Survey Type: MANUAL*

14 HF-03-A-06 MIXED HOUSES & FLATS HERTFORDSHIRE
A505
ROYSTON

Edge of Town
Residential Zone
Total No of Dwellings: 180
*Survey date: TUESDAY* *28/11/23* *Survey Type: MANUAL*

15 IM-03-A-06 MIXED HOUSES ISLE OF MAN
MOORAGH PROMENADE
RAMSEY

Edge of Town
Residential Zone
Total No of Dwellings: 129
*Survey date: THURSDAY* *23/05/24* *Survey Type: MANUAL*

*LIST OF SITES relevant to selection parameters (Cont.)*

16 KC-03-A-04 SEMI-DETACHED & TERRACED KENT
KILN BARN ROAD
AYLESFORD
DITTON
Edge of Town
Residential Zone
Total No of Dwellings: 110
*Survey date: FRIDAY* *22/09/17* *Survey Type: MANUAL*

17 KC-03-A-10 MIXED HOUSES KENT
HEADCORN ROAD
STAPLEHURST

Edge of Town
Residential Zone
Total No of Dwellings: 106
*Survey date: TUESDAY* *09/05/23* *Survey Type: MANUAL*

18 KC-03-A-12 MIXED HOUSES & FLATS KENT
WESTERN LINK
FAVERSHAM
DAVINGTON
Edge of Town
Residential Zone
Total No of Dwellings: 186
*Survey date: TUESDAY* *19/09/23* *Survey Type: MANUAL*

19 NF-03-A-13 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 198
*Survey date: TUESDAY* *11/09/18* *Survey Type: DIRECTIONAL ATC COUNT*

20 NF-03-A-32 MIXED HOUSES & FLATS NORFOLK
HUNSTANTON ROAD
HUNSTANTON

Edge of Town
Residential Zone
Total No of Dwellings: 164
*Survey date: WEDNESDAY* *21/09/22* *Survey Type: DIRECTIONAL ATC COUNT*

21 NF-03-A-33 MIXED HOUSES NORFOLK
LONDON ROAD
ATTLEBOROUGH

Edge of Town
Residential Zone
Total No of Dwellings: 143
*Survey date: THURSDAY* *29/09/22* *Survey Type: MANUAL*

22 NF-03-A-34 MIXED HOUSES NORFOLK
NORWICH ROAD
SWAFFHAM

Edge of Town
Out of Town
Total No of Dwellings: 80
*Survey date: TUESDAY* *27/09/22* *Survey Type: MANUAL*

*LIST OF SITES relevant to selection parameters (Cont.)*

23 NF-03-A-35 MIXED HOUSES & FLATS NORFOLK
REPTON AVENUE
NORWICH

Edge of Town
Residential Zone
Total No of Dwellings: 116
*Survey date: WEDNESDAY* *28/09/22* *Survey Type: MANUAL*

24 NF-03-A-39 MIXED HOUSES NORFOLK
HEATH DRIVE
HOLT

Edge of Town
Residential Zone
Total No of Dwellings: 212
*Survey date: TUESDAY* *27/09/22* *Survey Type: MANUAL*

25 NF-03-A-48 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 181
*Survey date: THURSDAY* *19/09/19* *Survey Type: DIRECTIONAL ATC COUNT*

26 SC-03-A-05 MIXED HOUSES SURREY
REIGATE ROAD
HORLEY

Edge of Town
Residential Zone
Total No of Dwellings: 207
*Survey date: MONDAY* *01/04/19* *Survey Type: MANUAL*

27 SC-03-A-11 MIXED HOUSES SURREY
FOLLY HILL
FARNHAM

Edge of Town
Residential Zone
Total No of Dwellings: 96
*Survey date: TUESDAY* *14/05/24* *Survey Type: MANUAL*

28 WB-03-A-03 MIXED HOUSES WEST BERKSHIRE
DORKING WAY
READING
CALCOT
Edge of Town
Residential Zone
Total No of Dwellings: 108
*Survey date: FRIDAY* *09/09/22* *Survey Type: MANUAL*

29 WS-03-A-08 MIXED HOUSES WEST SUSSEX
ROUNDSTONE LANE
ANGMERING

Edge of Town
Residential Zone
Total No of Dwellings: 180
*Survey date: THURSDAY* *19/04/18* *Survey Type: MANUAL*

30 WS-03-A-14 MIXED HOUSES WEST SUSSEX
TODDINGTON LANE
LITTLEHAMPTON
WICK
Edge of Town
Residential Zone
Total No of Dwellings: 117
*Survey date: WEDNESDAY* *20/10/21* *Survey Type: MANUAL*

*LIST OF SITES relevant to selection parameters (Cont.)*

31 WS-03-A-22 MIXED HOUSES & FLATS WEST SUSSEX
SHOPWHYKE ROAD
CHICHESTER

Edge of Town
Residential Zone
Total No of Dwellings: 129
*Survey date: TUESDAY* *19/03/24* *Survey Type: MANUAL*

32 WS-03-A-23 MIXED HOUSES & FLATS WEST SUSSEX
TURNERS HILL ROAD
EAST GRINSTEAD

Edge of Town
Residential Zone
Total No of Dwellings: 197
*Survey date: TUESDAY* *14/05/24* *Survey Type: MANUAL*

*MANUALLY DESELECTED SITES*

| Site Ref | Reason for Deselection |
|---|---|
| SF-03-A-10 | COVID |
| WS-03-A-13 | COVID |

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

## TOTAL VEHICLES

### Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

| | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---|---|---|---|---|---|---|---|---|---|
| Time Range | No. Days | Ave. DWELLS | Trip Rate | No. Days | Ave. DWELLS | Trip Rate | No. Days | Ave. DWELLS | Trip Rate |
| 00:00 - 01:00 | | | | | | | | | |
| 01:00 - 02:00 | | | | | | | | | |
| 02:00 - 03:00 | | | | | | | | | |
| 03:00 - 04:00 | | | | | | | | | |
| 04:00 - 05:00 | | | | | | | | | |
| 05:00 - 06:00 | | | | | | | | | |
| 06:00 - 07:00 | | | | | | | | | |
| 07:00 - 08:00 | 32 | 145 | 0.084 | 32 | 145 | 0.288 | 32 | 145 | 0.372 |
| 08:00 - 09:00 | 32 | 145 | 0.144 | 32 | 145 | 0.355 | 32 | 145 | 0.499 |
| 09:00 - 10:00 | 32 | 145 | 0.140 | 32 | 145 | 0.177 | 32 | 145 | 0.317 |
| 10:00 - 11:00 | 32 | 145 | 0.129 | 32 | 145 | 0.152 | 32 | 145 | 0.281 |
| 11:00 - 12:00 | 32 | 145 | 0.135 | 32 | 145 | 0.133 | 32 | 145 | 0.268 |
| 12:00 - 13:00 | 32 | 145 | 0.151 | 32 | 145 | 0.141 | 32 | 145 | 0.292 |
| 13:00 - 14:00 | 32 | 145 | 0.149 | 32 | 145 | 0.147 | 32 | 145 | 0.296 |
| 14:00 - 15:00 | 32 | 145 | 0.163 | 32 | 145 | 0.182 | 32 | 145 | 0.345 |
| 15:00 - 16:00 | 32 | 145 | 0.254 | 32 | 145 | 0.173 | 32 | 145 | 0.427 |
| 16:00 - 17:00 | 32 | 145 | 0.261 | 32 | 145 | 0.167 | 32 | 145 | 0.428 |
| 17:00 - 18:00 | 32 | 145 | 0.323 | 32 | 145 | 0.158 | 32 | 145 | 0.481 |
| 18:00 - 19:00 | 32 | 145 | 0.270 | 32 | 145 | 0.144 | 32 | 145 | 0.414 |
| 19:00 - 20:00 | 1 | 97 | 0.062 | 1 | 97 | 0.052 | 1 | 97 | 0.114 |
| 20:00 - 21:00 | 1 | 97 | 0.031 | 1 | 97 | 0.021 | 1 | 97 | 0.052 |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 2.296 | | | 2.290 | | | 4.586 |

Parameter summary

| | |
|---|---|
| Trip rate parameter range selected: | 80 - 212 (units: ) |
| Survey date date range: | 01/01/16 - 28/06/24 |
| Number of weekdays (Monday-Friday): | 36 |
| Number of Saturdays: | 1 |
| Number of Sundays: | 1 |
| Surveys automatically removed from selection: | 11 |
| Surveys manually removed from selection: | 2 |

# Appendix F

## Gravity Model

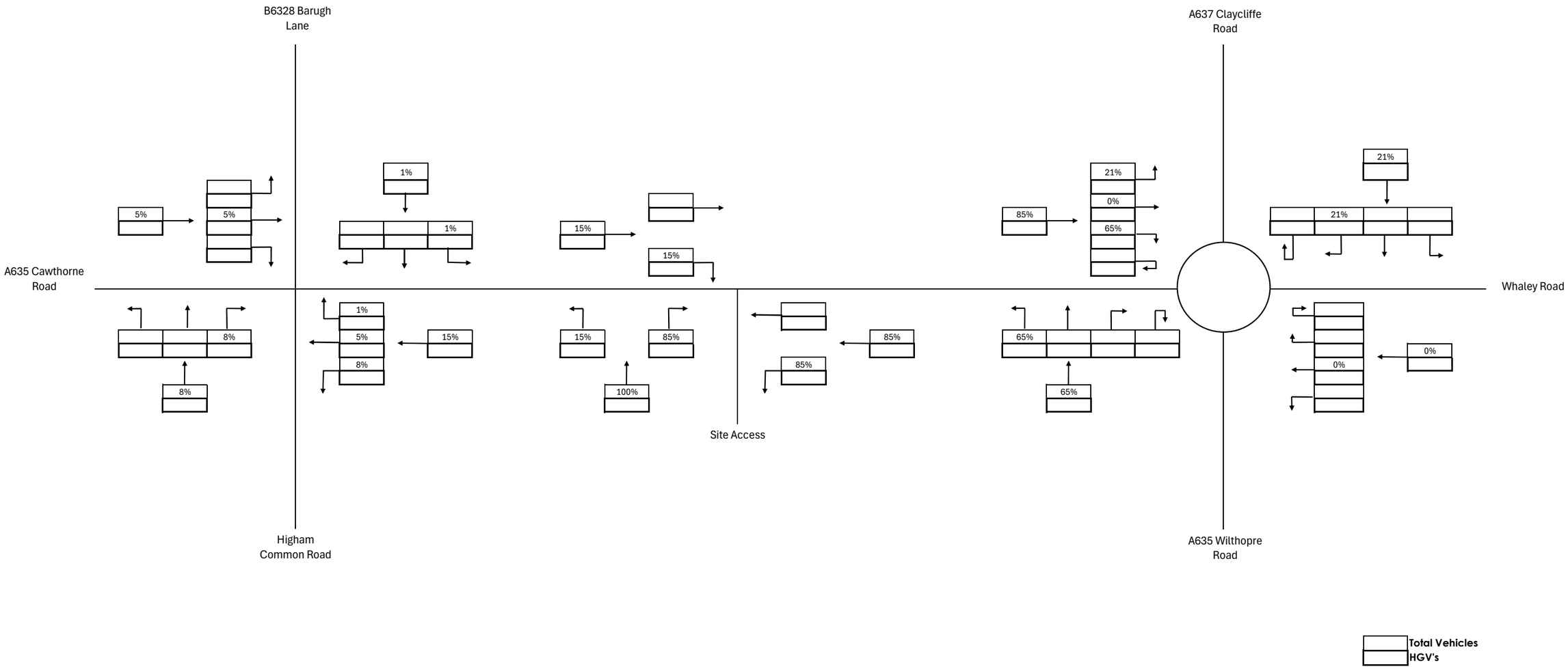
**149 Dwellings**

| Route | | % | AM | | | PM | | | AADT |
|---|---|---|---|---|---|---|---|---|---|
| | | | IN | OUT | 2-WAY | IN | OUT | 2-WAY | 24 HR |
| | | | 0.144 | 0.355 | 0.499 | 0.323 | 0.158 | 0.481 | - |
| | | | 21 | 53 | 74 | 48 | 24 | 72 | 666 |
| 1 | North at Roundabout | 21% | 4 | 11 | 15 | 10 | 5 | 15 | 138 |
| 2 | East at Roundabout | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | South at Roundabout | 65% | 14 | 34 | 48 | 31 | 16 | 47 | 431 |
| 4 | North at Crossroads | 1% | 0 | 1 | 1 | 1 | 0 | 1 | 8 |
| 5 | West at Crossroads | 5% | 1 | 3 | 4 | 2 | 1 | 4 | 34 |
| 6 | South at Crossroads | 8% | 2 | 4 | 6 | 4 | 2 | 6 | 55 |
| | | 100% | 21 | 53 | 74 | 48 | 24 | 72 | 666 |

| Junctions | | % | IN | OUT | 2-WAY | IN | OUT | 2-WAY | AADT |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Roundabout (to the east) | 85% | 18 | 45 | 63 | 41 | 21 | 62 | 569 |
| 2 | Crossroads (to the west) | 15% | 3 | 8 | 11 | 7 | 3 | 10 | 97 |

# Appendix G

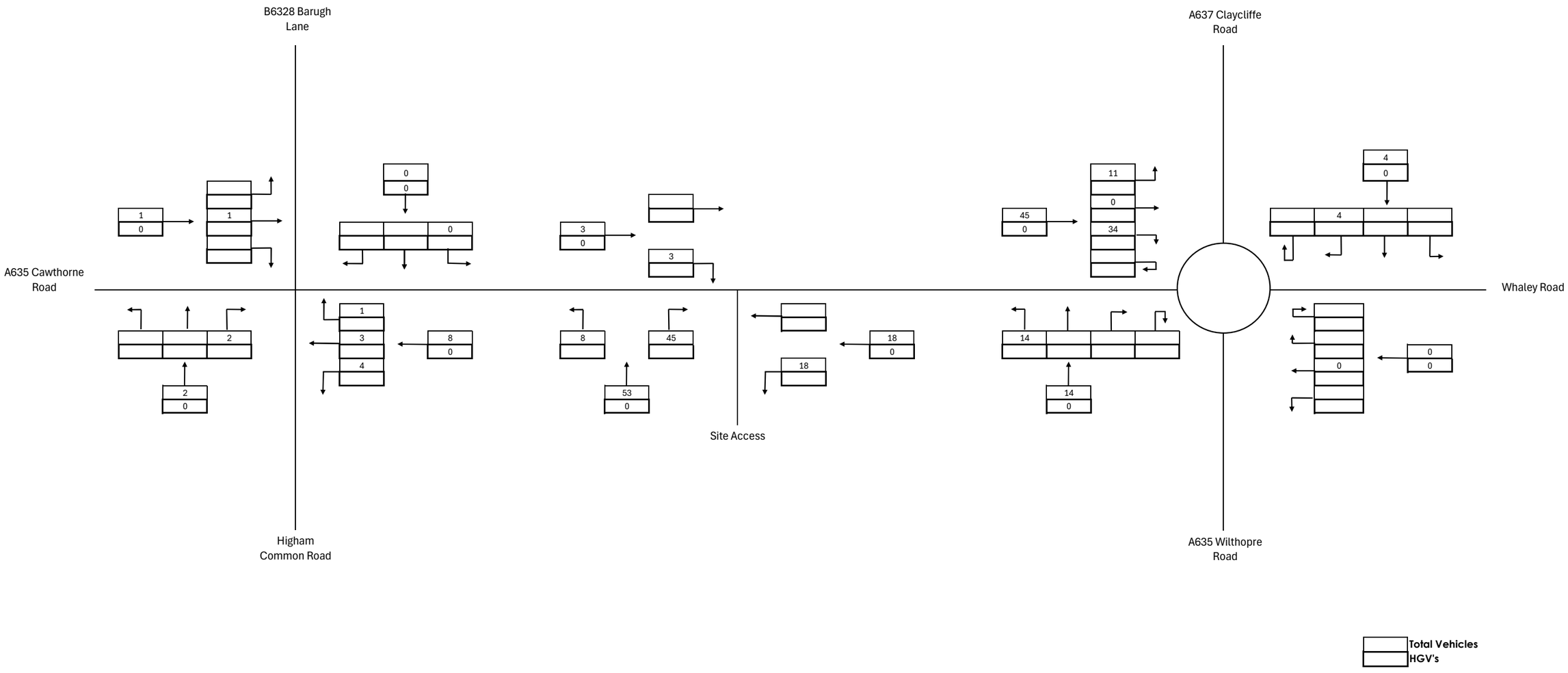
**Trip Distribution Flows**



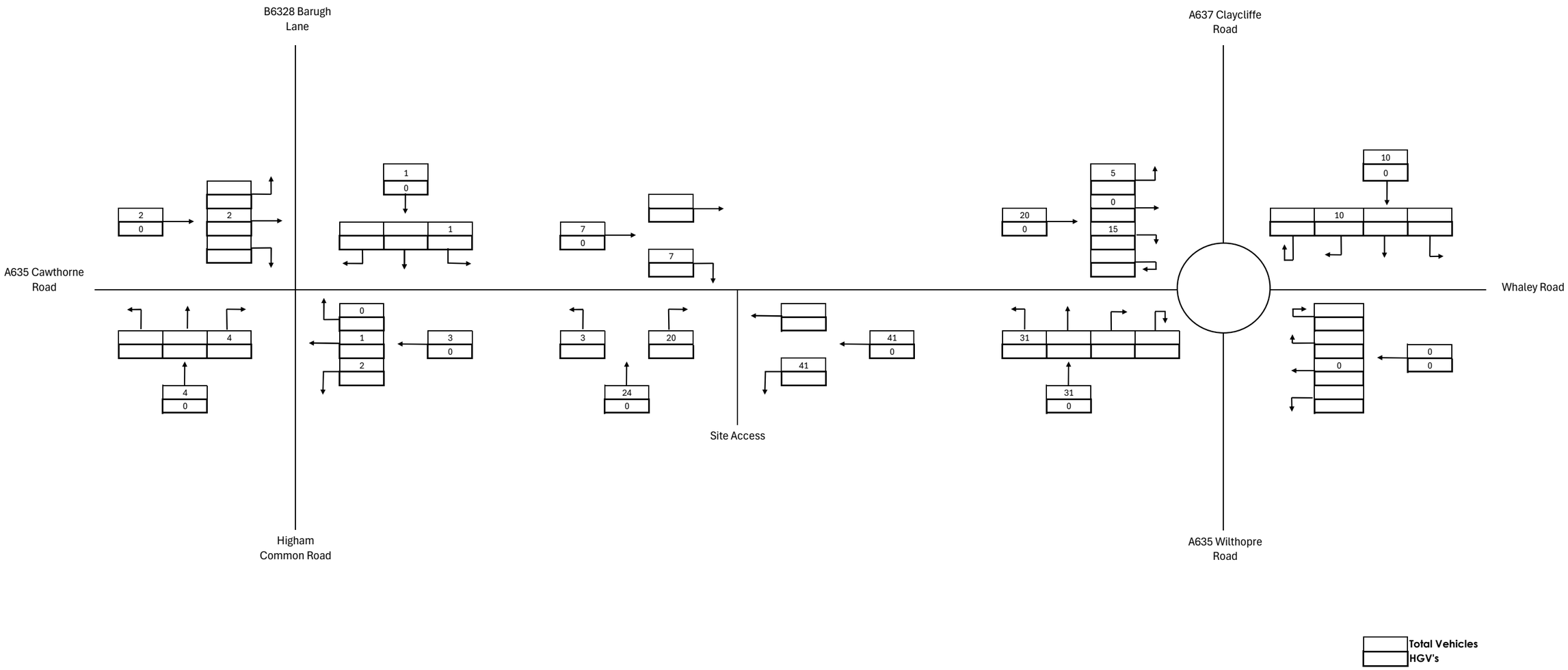

| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | Trip Distribution | TPS | P2636 | - | Design | JA | Approved | JA |

# Appendix H

**Trip Generation Flows**




| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | Trip Generation AM | TPS | P2636 | - | Design | JA | Approved | JA |




| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | Trip Generation PM | TPS | P2636 | - | Design | JA | Approved | JA |

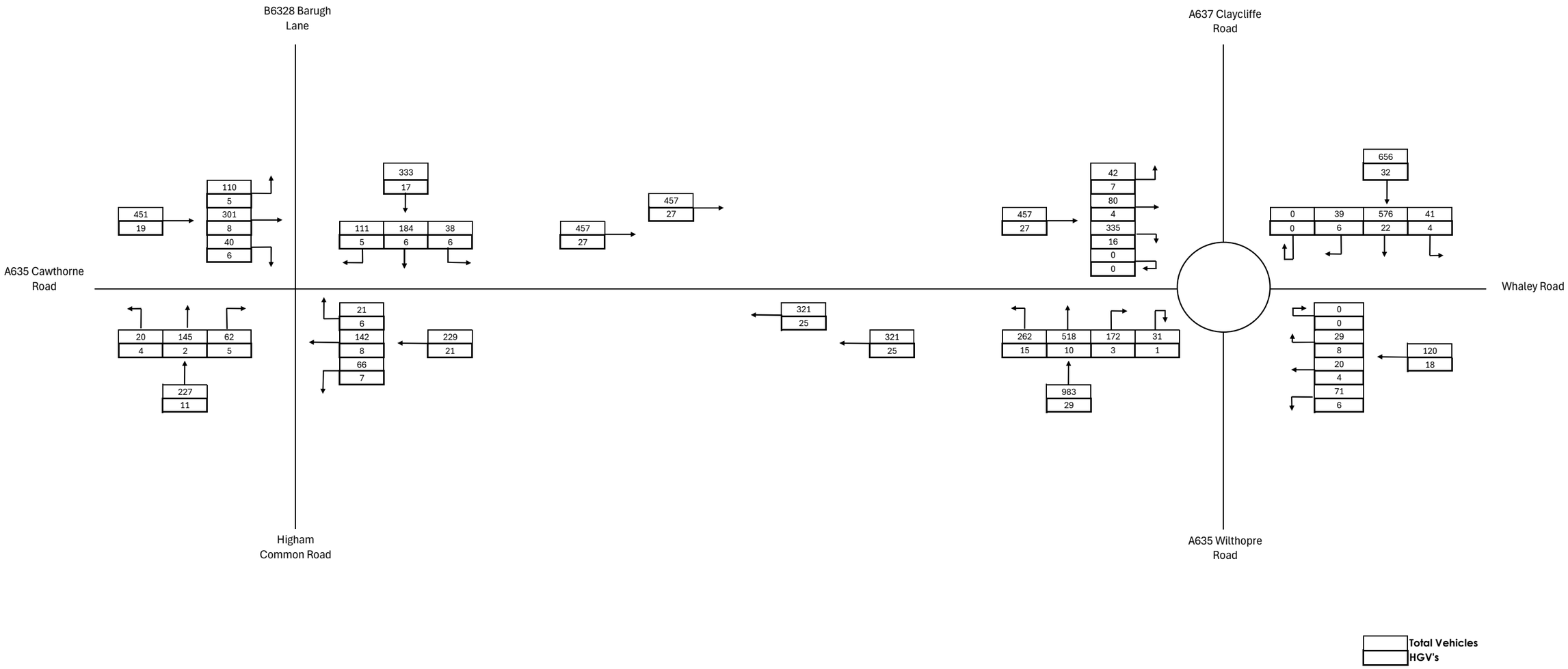
# Appendix I

## Count Data

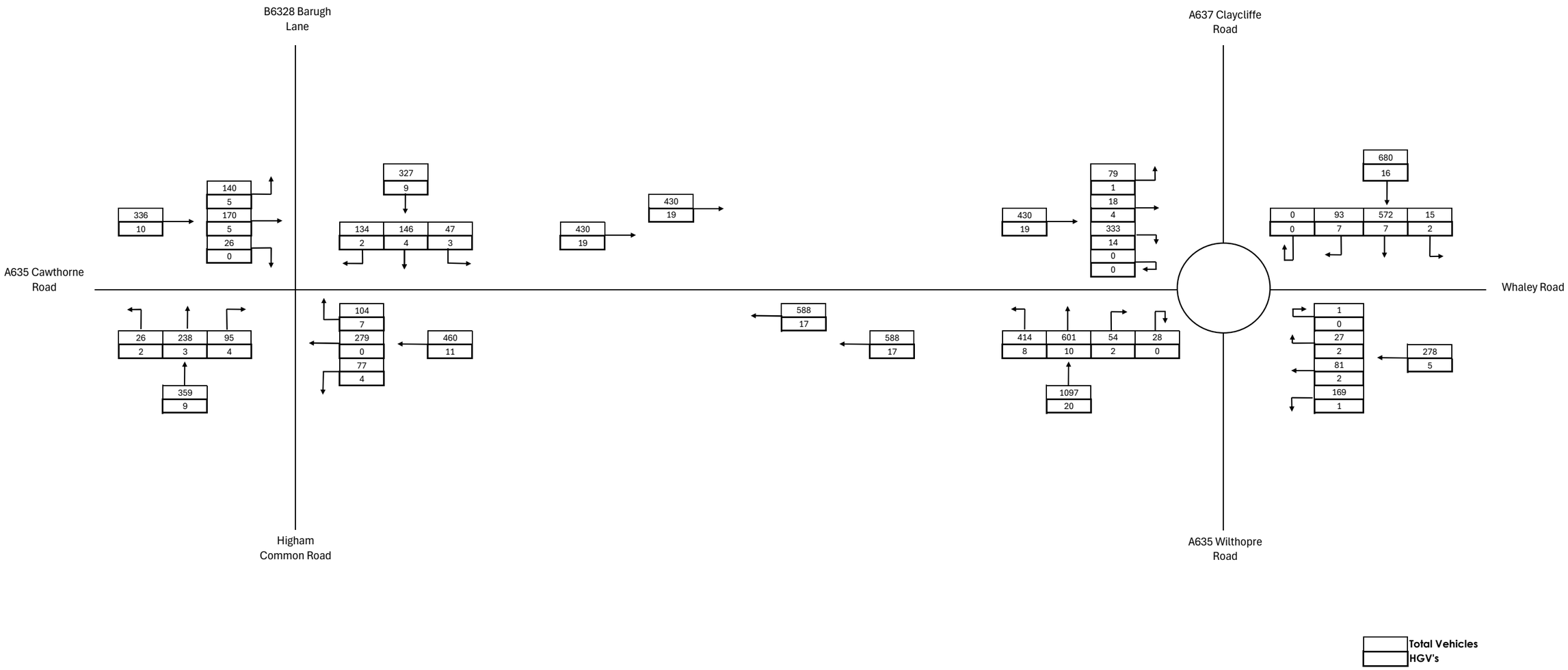
https://www.dropbox.com/scl/fi/7ztjgh2sgkio4sgp768zs/27865-Barnsley-MCC-Data.xlsx?rlkey=6kjmaoeenslc9cerm8ayed2cq&dl=0

# Appendix J

**2025 Base and CD Flows**



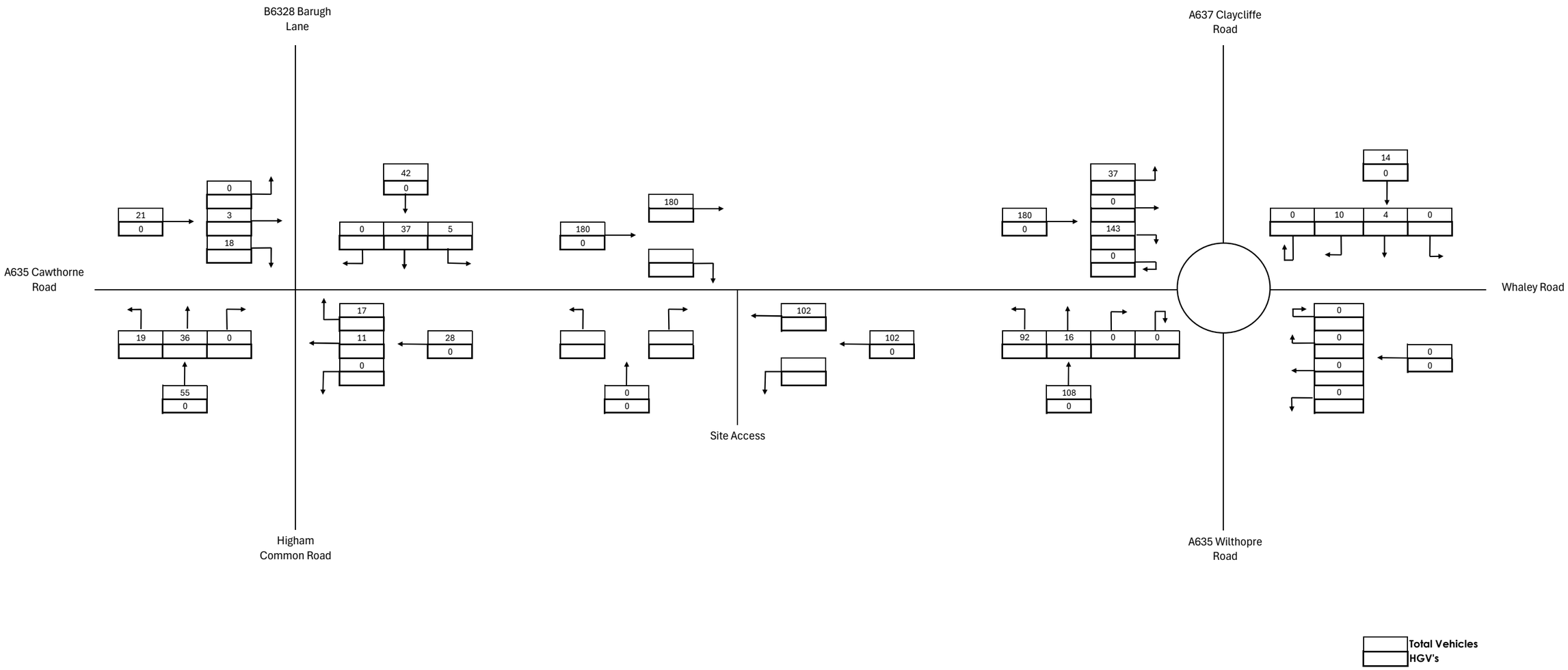

| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | 2025 Base AM | TPS | P2636 | - | Design | JA | Approved | JA |



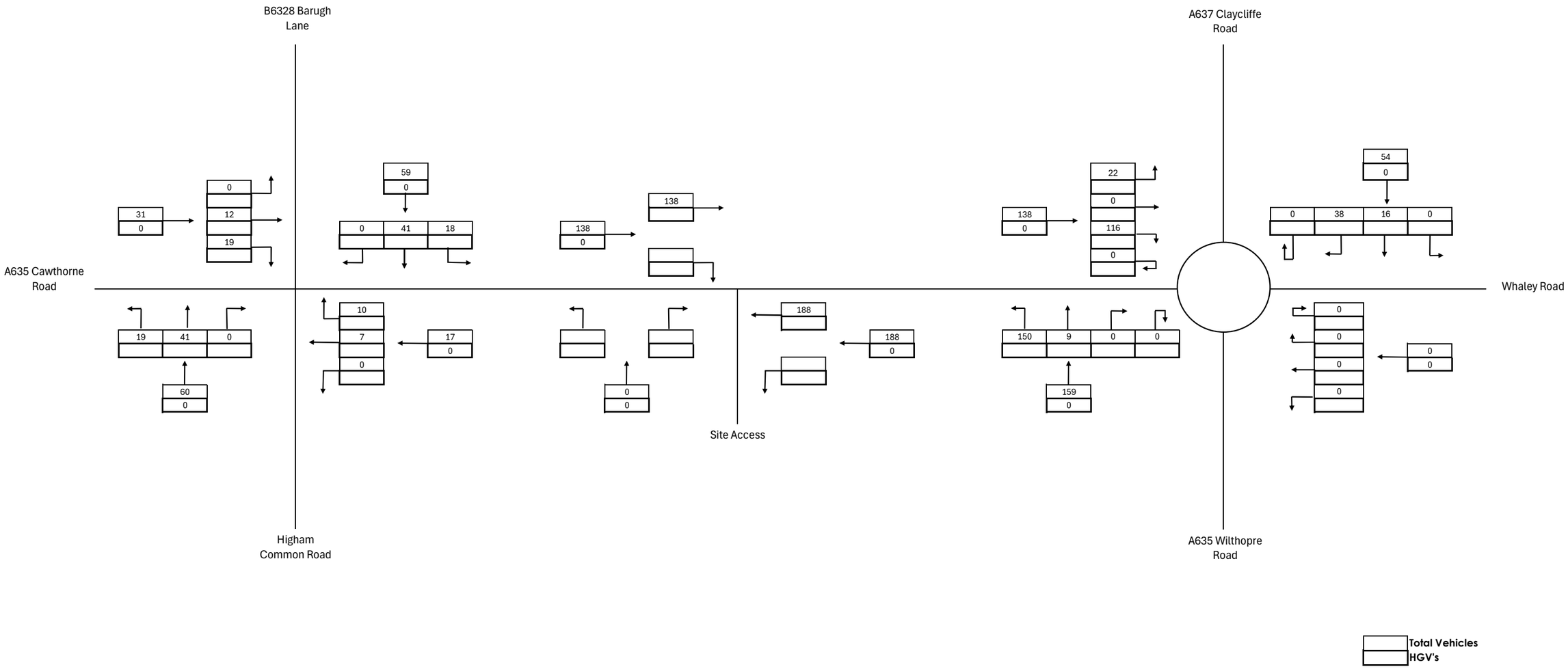

| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | 2025 Base PM | TPS | P2636 | - | Design | JA | Approved | JA |

# Appendix K

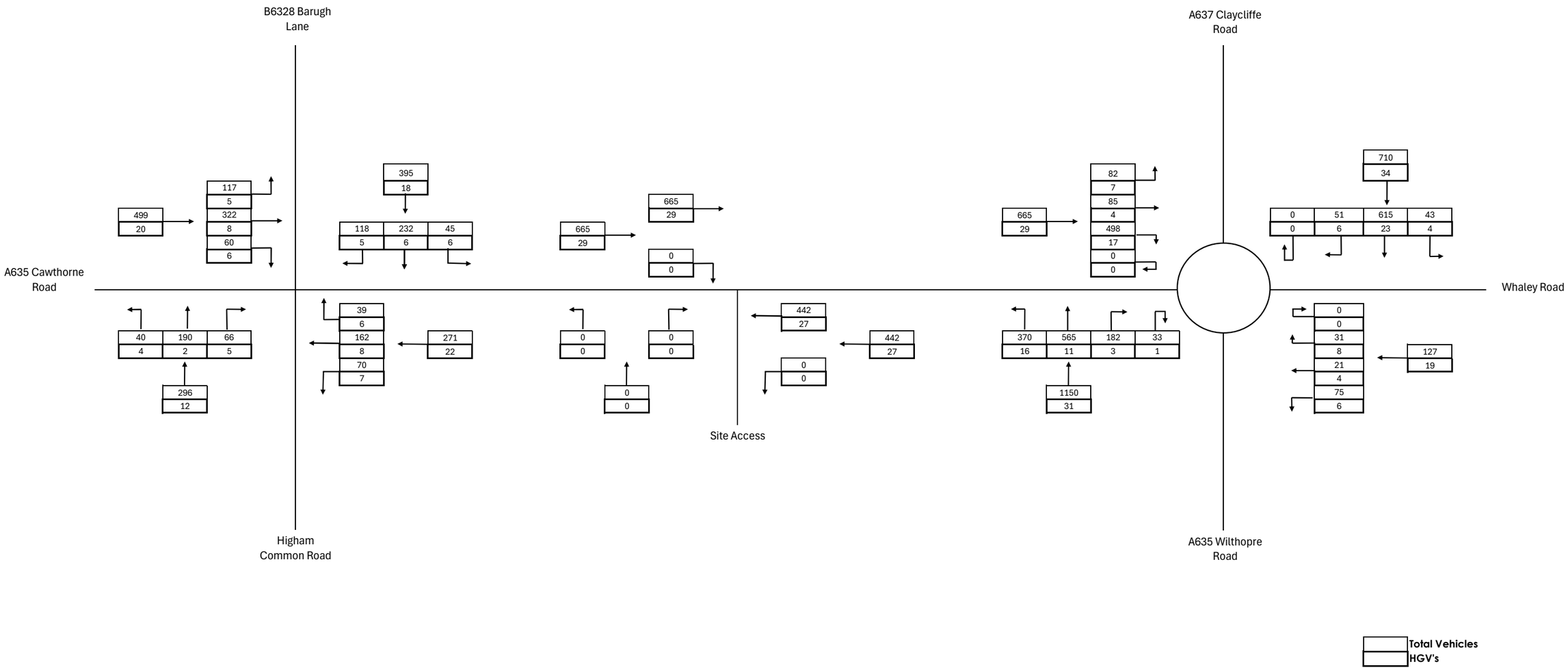
**Committed Development (CD), 2030 Base + CD and 2030 Base CD + Development Flows**



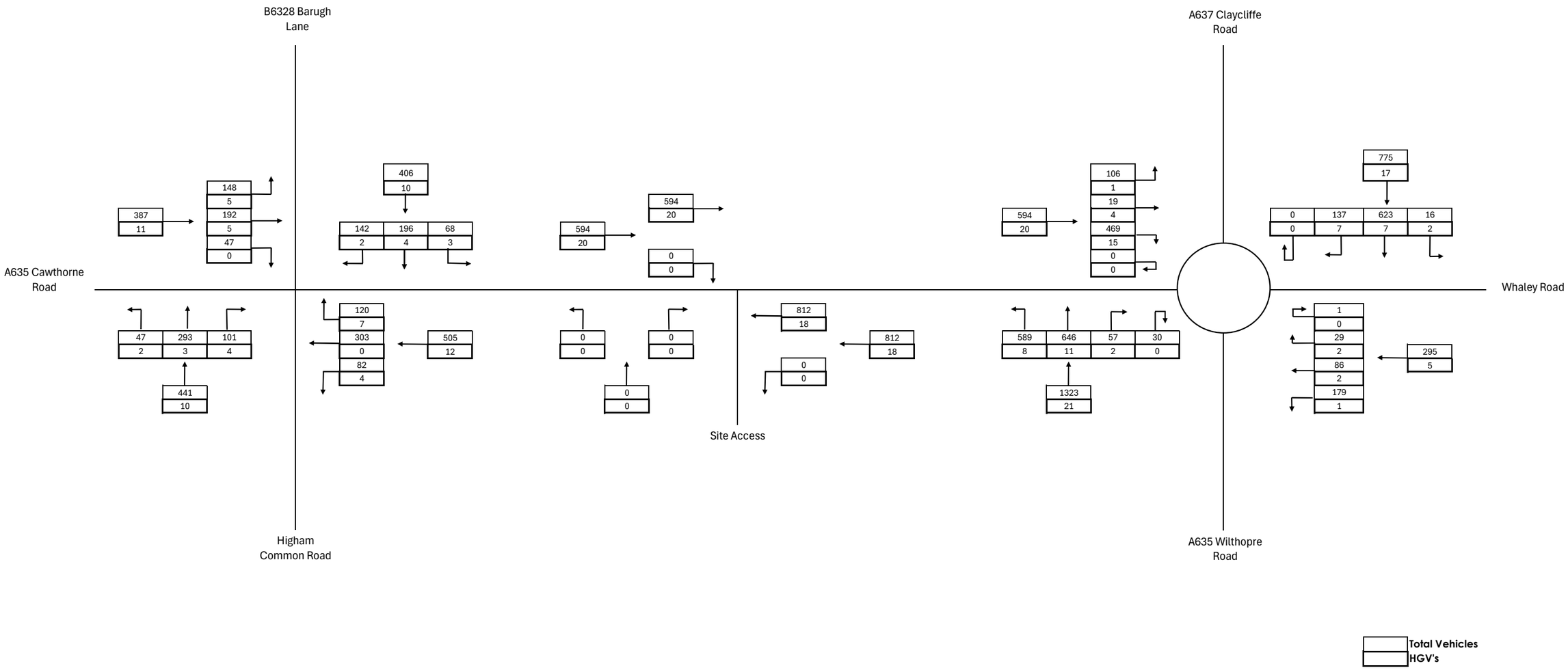

| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | Committed Development AM | TPS | P2636 | - | Design | JA | Approved | JA |



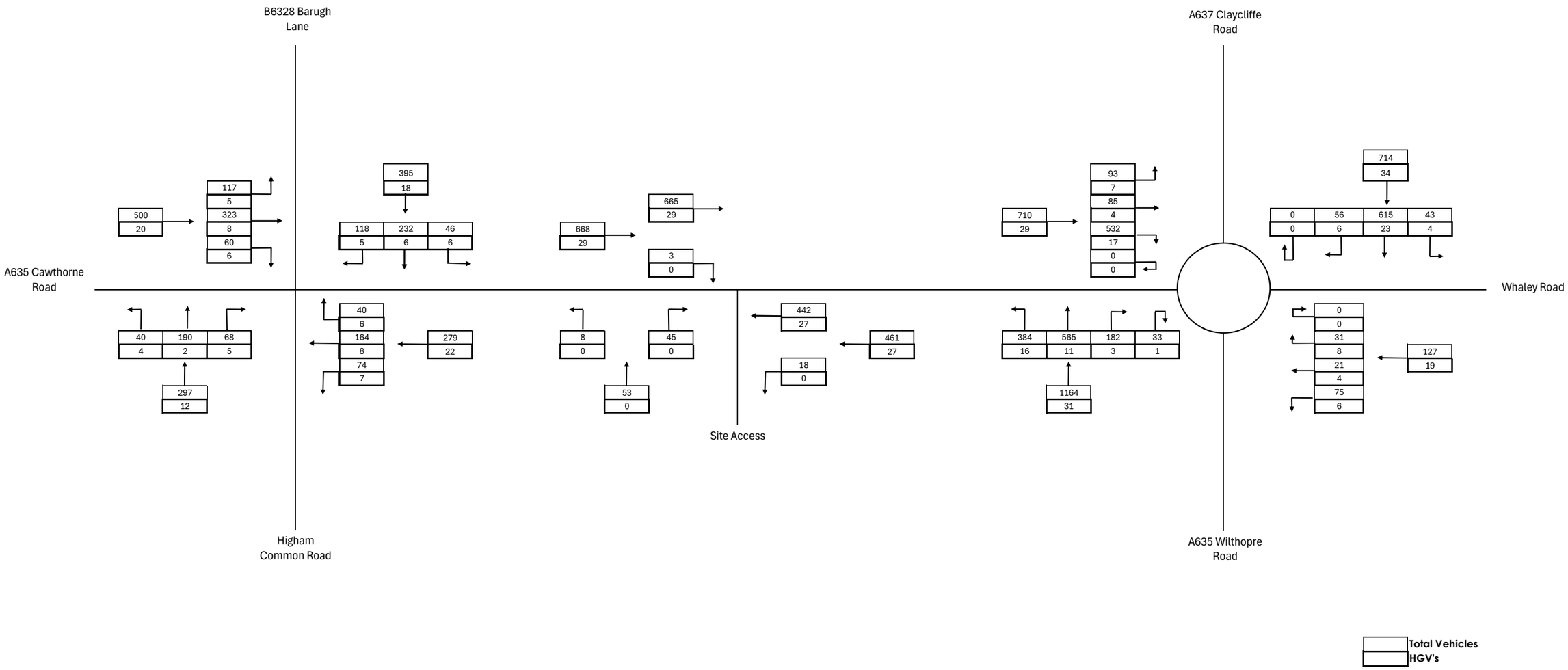

| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | Committed Development PM | TPS | P2636 | - | Design | JA | Approved | JA |



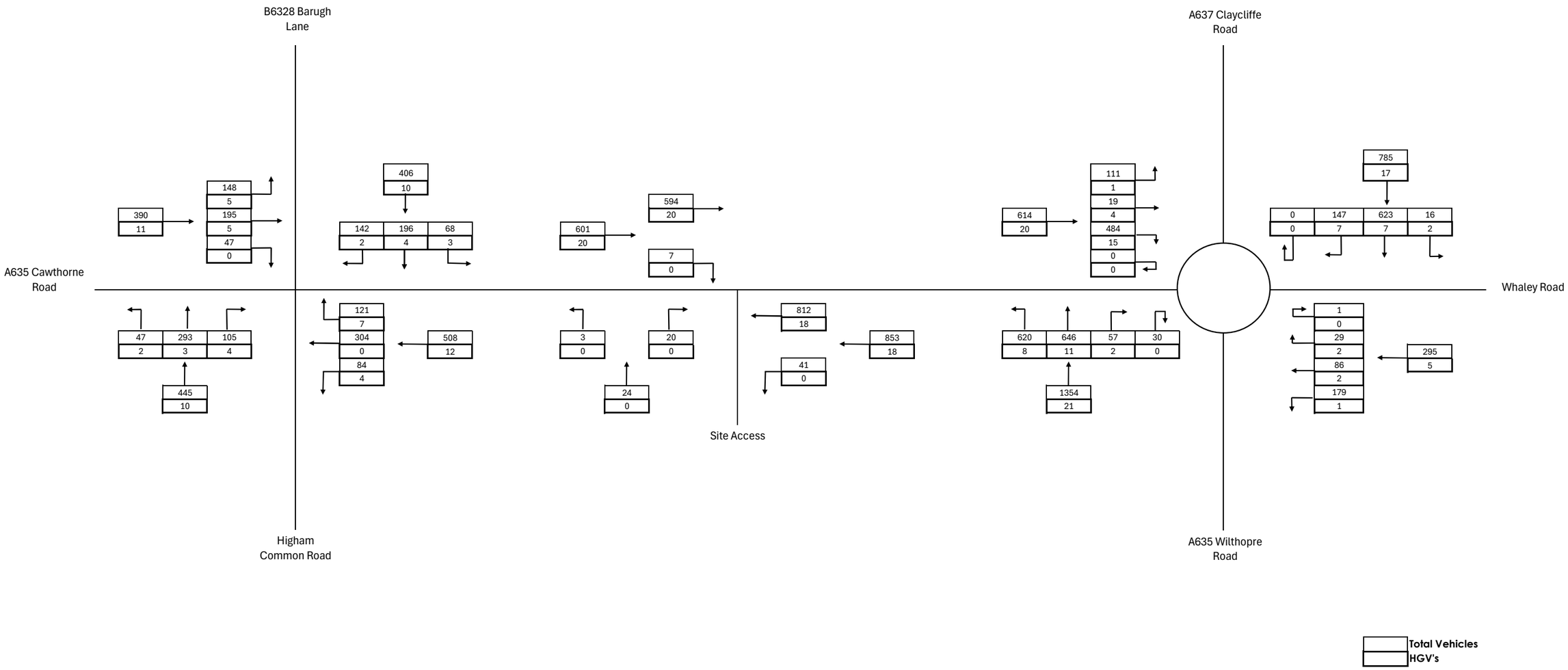

| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | 2030 Base + Committed Development AM | TPS | P2636 | - | Design | JA | Approved | JA |




| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | 2030 Base + Committed Development PM | TPS | P2636 | - | Design | JA | Approved | JA |




| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | 2030 Base + Committed Development + Development AM | TPS | P2636 | - | Design | JA | Approved | JA |




| Client: | Project: | Title: | | Number: | Revision: | Date | Aug-25 | Checked | JA |
|---|---|---|---|---|---|---|---|---|---|
| Avant Homes | Barugh Green, Barnsley | 2030 Base + Committed Development + Development PM | TPS | P2636 | - | Design | JA | Approved | JA |

# Appendix L

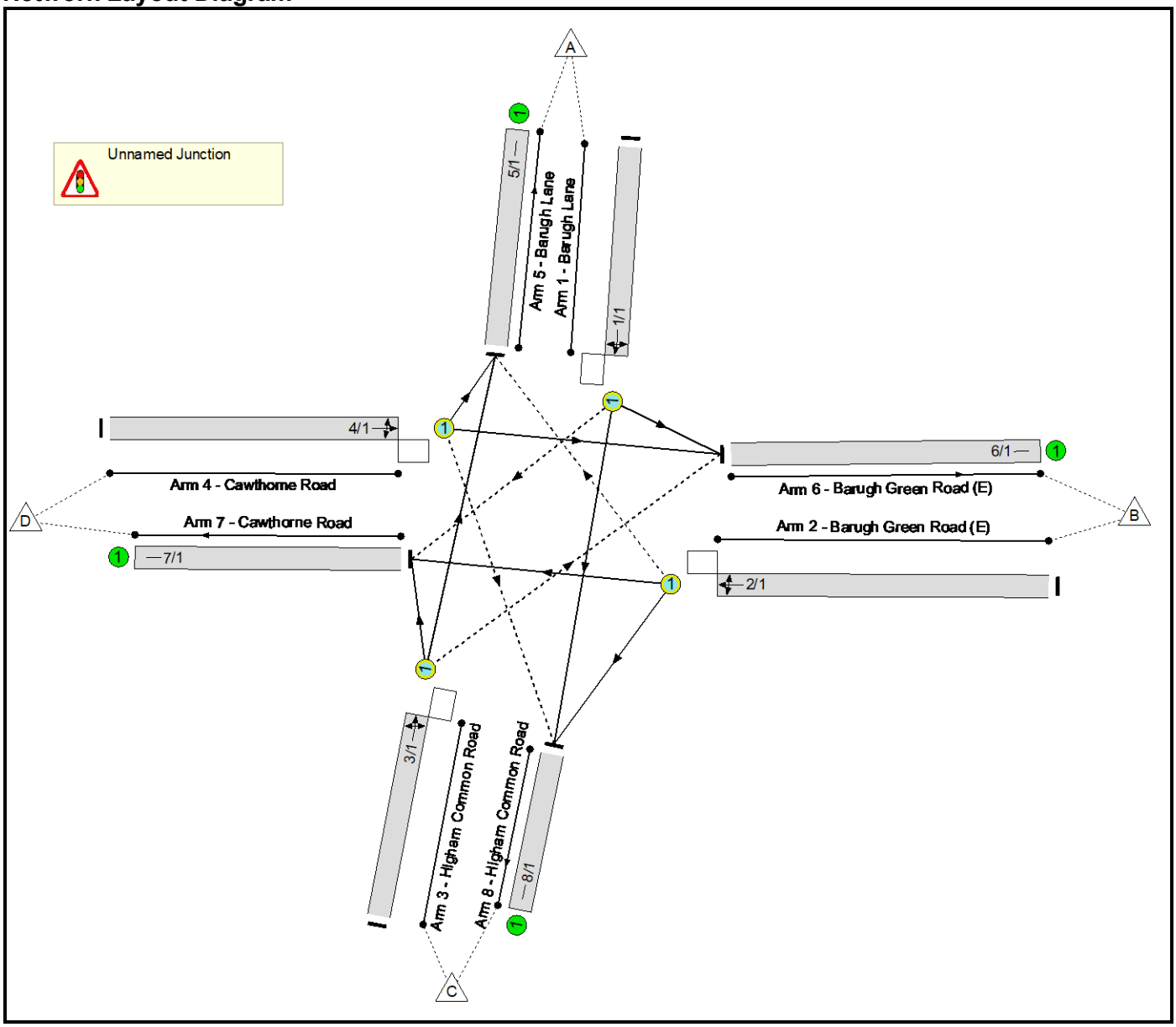
**Junction Modelling Output**

# Full Input Data And Results

## User and Project Details

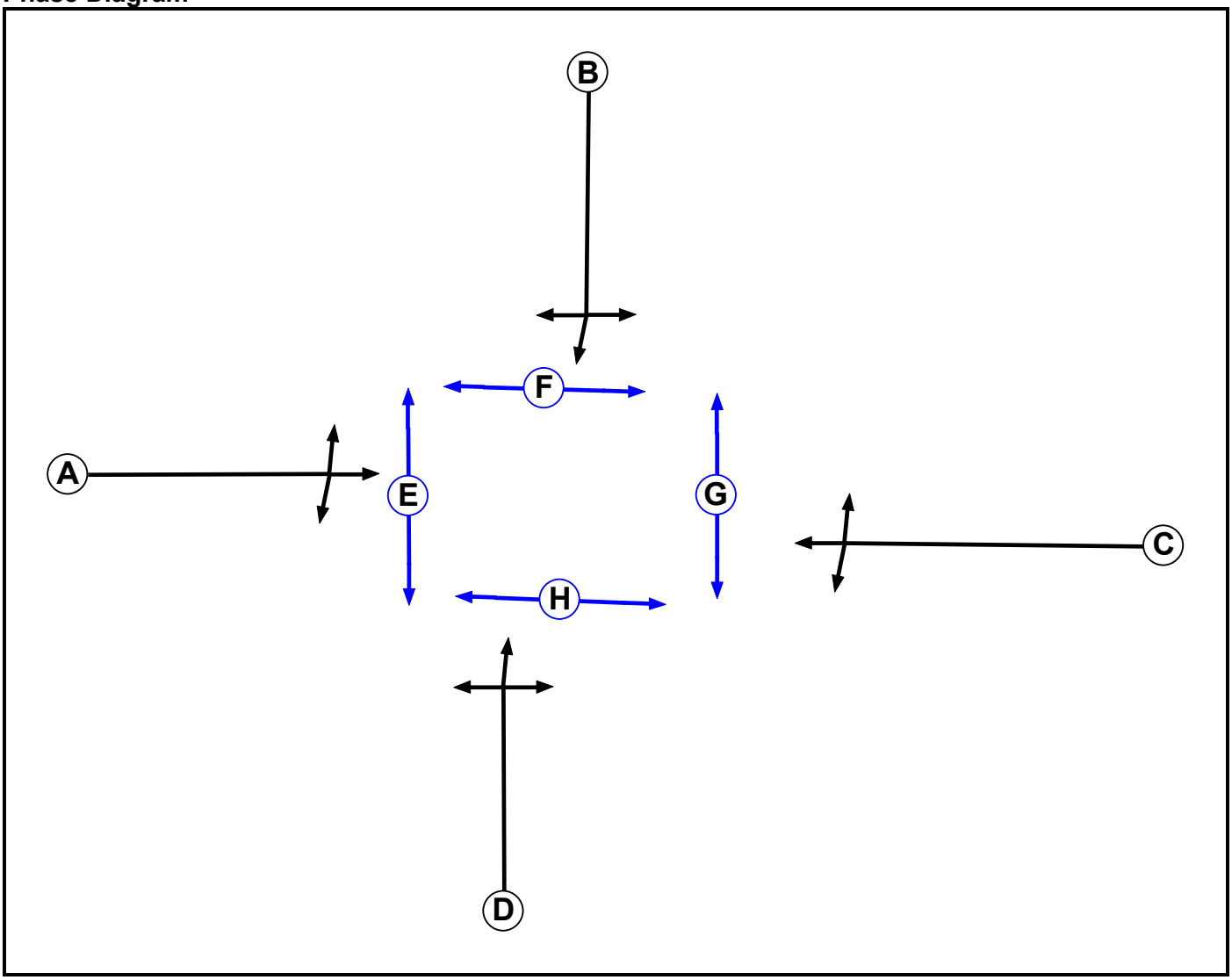
| | |
|---|---|
| **Project:** | **Barugh Green Road** |
| **Title:** | **Barugh Green Crossroads** |
| **Location:** | |
| **Client:** | Avant Homes |
| **Checked By:** | JT |
| **Checked By Date:** | JT |
| **Additional detail:** | |
| **File name:** | Barugh Green Road_Cawthorne Road.lsg3x |
| **Author:** | JT |
| **Company:** | TPS Consultants Ltd |
| **Address:** | |

## Network Layout Diagram



Full Input Data And Results

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|
| A | Traffic | | 7 | 7 |
| B | Traffic | | 7 | 7 |
| C | Traffic | | 7 | 7 |
| D | Traffic | | 7 | 7 |
| E | Pedestrian | | 7 | 7 |
| F | Pedestrian | | 7 | 7 |
| G | Pedestrian | | 7 | 7 |
| H | Pedestrian | | 7 | 7 |

Full Input Data And Results

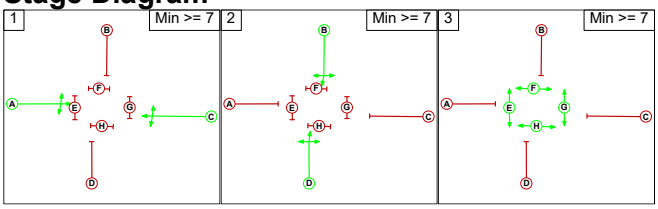
## Phase Intergreens Matrix

| Terminating Phase \ Starting Phase | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| A | | 6 | - | 6 | 6 | 6 | 6 | 6 |
| B | 6 | | 6 | - | 6 | 6 | 6 | 6 |
| C | - | 6 | | 6 | 6 | 6 | 6 | 6 |
| D | 6 | - | 6 | | 6 | 6 | 6 | 6 |
| E | 6 | 6 | 6 | 6 | | - | - | - |
| F | 6 | 6 | 6 | 6 | - | | - | - |
| G | 6 | 6 | 6 | 6 | - | - | | - |
| H | 6 | 6 | 6 | 6 | - | - | - | |

## Phases in Stage

| Stage No. | Phases in Stage |
|---|---|
| 1 | A C |
| 2 | B D |
| 3 | E F G H |

## Stage Diagram




## Phase Delays

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|---|---|---|---|---|---|
| There are no Phase Delays defined | | | | | |

## Prohibited Stage Change

| From Stage \ To Stage | 1 | 2 | 3 |
|---|---|---|---|
| 1 | | 6 | 6 |
| 2 | 6 | | 6 |
| 3 | 6 | 6 | |

Full Input Data And Results

## Give-Way Lane Input Data

| Junction: Unnamed Junction | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Lane** | **Movement** | **Max Flow when Giving Way (PCU/Hr)** | **Min Flow when Giving Way (PCU/Hr)** | **Opposing Lane** | **Opp. Lane Coeff.** | **Opp. Mvmnts.** | **Right Turn Storage (PCU)** | **Non-Blocking Storage (PCU)** | **RTF** | **Right Turn Move up (s)** | **Max Turns in Intergreen (PCU)** |
| 1/1 (Barugh Lane) | 7/1 (Right) | 1439 | 0 | 3/1 | 1.09 | To 5/1 (Ahead) To 7/1 (Left) | 2.00 | 2.00 | 0.50 | 2 | 2.00 |
| 2/1 (Barugh Green Road (E)) | 5/1 (Right) | 1439 | 0 | 4/1 | 1.09 | To 5/1 (Left) To 6/1 (Ahead) | 2.00 | 4.00 | 0.50 | 2 | 2.00 |
| 3/1 (Higham Common Road) | 6/1 (Right) | 1439 | 0 | 1/1 | 1.09 | To 6/1 (Left) To 8/1 (Ahead) | 2.00 | 2.00 | 0.50 | 2 | 2.00 |
| 4/1 (Cawthorne Road) | 8/1 (Right) | 1439 | 0 | 2/1 | 1.09 | To 7/1 (Ahead) To 8/1 (Left) | 2.00 | 3.00 | 0.50 | 2 | 2.00 |

Full Input Data And Results

## Lane Input Data

| Junction: Unnamed Junction | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns | Turning Radius (m) |
| 1/1 (Barugh Lane) | O | B | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 6 Left | 9.00 |
| | | | | | | | | | | | Arm 7 Right | 17.00 |
| | | | | | | | | | | | Arm 8 Ahead | Inf |
| 2/1 (Barugh Green Road (E)) | O | C | 2 | 3 | 60.0 | Geom | - | 4.30 | 0.00 | Y | Arm 5 Right | 15.00 |
| | | | | | | | | | | | Arm 7 Ahead | Inf |
| | | | | | | | | | | | Arm 8 Left | 12.00 |
| 3/1 (Higham Common Road) | O | D | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 5 Ahead | Inf |
| | | | | | | | | | | | Arm 6 Right | 15.00 |
| | | | | | | | | | | | Arm 7 Left | 10.00 |
| 4/1 (Cawthorne Road) | O | A | 2 | 3 | 60.0 | Geom | - | 4.50 | 0.00 | Y | Arm 5 Left | 10.00 |
| | | | | | | | | | | | Arm 6 Ahead | Inf |
| | | | | | | | | | | | Arm 8 Right | 16.00 |
| 5/1 (Barugh Lane) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (Barugh Green Road (E)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 7/1 (Cawthorne Road) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/1 (Higham Common Road) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2025 Base AM' | 07:45 | 08:45 | 01:00 | |
| 2: '2025 Base PM' | 16:15 | 17:15 | 01:00 | |
| 3: '2030 Base + CD AM' | 07:45 | 08:45 | 01:00 | |
| 4: '2030 Base + CD PM' | 16:15 | 17:15 | 01:00 | |
| 5: '2030 Base + CD + Dev AM' | 07:45 | 08:45 | 01:00 | |
| 6: '2030 Base + CD + Dev PM' | 16:15 | 17:15 | 01:00 | |

**Scenario 1: '2025 Base AM'** (FG1: '2025 Base AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 44 | 190 | 116 | 350 |
| | B | 27 | 0 | 73 | 150 | 250 |
| | C | 147 | 67 | 0 | 24 | 238 |
| | D | 115 | 309 | 46 | 0 | 470 |
| | Tot. | 289 | 420 | 309 | 290 | 1308 |

## Traffic Lane Flows

| Lane | Scenario 1: 2025 Base AM |
|---|---|
| **Junction: Unnamed Junction** | |
| 1/1 | 350 |
| 2/1 | 250 |
| 3/1 | 238 |
| 4/1 | 470 |
| 5/1 | 289 |
| 6/1 | 420 |
| 7/1 | 290 |
| 8/1 | 309 |

Full Input Data And Results

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 (Barugh Lane) | 3.50 | 0.00 | Y | Arm 6 Left | 9.00 | 12.6 % | 1871 | 1871 |
| | | | | Arm 7 Right | 17.00 | 33.1 % | | |
| | | | | Arm 8 Ahead | Inf | 54.3 % | | |
| 2/1 (Barugh Green Road (E)) | 4.30 | 0.00 | Y | Arm 5 Right | 15.00 | 10.8 % | 1953 | 1953 |
| | | | | Arm 7 Ahead | Inf | 60.0 % | | |
| | | | | Arm 8 Left | 12.00 | 29.2 % | | |
| 3/1 (Higham Common Road) | 3.00 | 0.00 | Y | Arm 5 Ahead | Inf | 61.8 % | 1836 | 1836 |
| | | | | Arm 6 Right | 15.00 | 28.2 % | | |
| | | | | Arm 7 Left | 10.00 | 10.1 % | | |
| 4/1 (Cawthorne Road) | 4.50 | 0.00 | Y | Arm 5 Left | 10.00 | 24.5 % | 1974 | 1974 |
| | | | | Arm 6 Ahead | Inf | 65.7 % | | |
| | | | | Arm 8 Right | 16.00 | 9.8 % | | |
| 5/1 (Barugh Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Barugh Green Road (E) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Cawthorne Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Higham Common Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 2: '2025 Base PM'** (FG2: '2025 Base PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 50 | 150 | 136 | 336 |
| | B | 111 | 0 | 81 | 279 | 471 |
| | C | 241 | 99 | 0 | 28 | 368 |
| | D | 145 | 175 | 26 | 0 | 346 |
| | Tot. | 497 | 324 | 257 | 443 | 1521 |

Full Input Data And Results

## Traffic Lane Flows

| Lane | Scenario 2: 2025 Base PM |
|---|---|
| **Junction: Unnamed Junction** | |
| 1/1 | 336 |
| 2/1 | 471 |
| 3/1 | 368 |
| 4/1 | 346 |
| 5/1 | 497 |
| 6/1 | 324 |
| 7/1 | 443 |
| 8/1 | 257 |

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 (Barugh Lane) | 3.50 | 0.00 | Y | Arm 6 Left | 9.00 | 14.9 % | 1853 | 1853 |
| | | | | Arm 7 Right | 17.00 | 40.5 % | | |
| | | | | Arm 8 Ahead | Inf | 44.6 % | | |
| 2/1 (Barugh Green Road (E)) | 4.30 | 0.00 | Y | Arm 5 Right | 15.00 | 23.6 % | 1957 | 1957 |
| | | | | Arm 7 Ahead | Inf | 59.2 % | | |
| | | | | Arm 8 Left | 12.00 | 17.2 % | | |
| 3/1 (Higham Common Road) | 3.00 | 0.00 | Y | Arm 5 Ahead | Inf | 65.5 % | 1844 | 1844 |
| | | | | Arm 6 Right | 15.00 | 26.9 % | | |
| | | | | Arm 7 Left | 10.00 | 7.6 % | | |
| 4/1 (Cawthorne Road) | 4.50 | 0.00 | Y | Arm 5 Left | 10.00 | 41.9 % | 1930 | 1930 |
| | | | | Arm 6 Ahead | Inf | 50.6 % | | |
| | | | | Arm 8 Right | 16.00 | 7.5 % | | |
| 5/1 (Barugh Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Barugh Green Road (E) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Cawthorne Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Higham Common Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

**Scenario 3: '2030 Base + CD AM '** (FG3: '2030 Base + CD AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 52 | 238 | 123 | 413 |
| | B | 46 | 0 | 77 | 170 | 293 |
| | C | 192 | 71 | 0 | 44 | 307 |
| | D | 122 | 331 | 67 | 0 | 520 |
| | Tot. | 360 | 454 | 382 | 337 | 1533 |

## Traffic Lane Flows

| Lane | Scenario 3: 2030 Base + CD AM |
|---|---|
| **Junction: Unnamed Junction** | |
| 1/1 | 413 |
| 2/1 | 293 |
| 3/1 | 307 |
| 4/1 | 520 |
| 5/1 | 360 |
| 6/1 | 454 |
| 7/1 | 337 |
| 8/1 | 382 |

Full Input Data And Results

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 (Barugh Lane) | 3.50 | 0.00 | Y | Arm 6 Left | 9.00 | 12.6 % | 1876 | 1876 |
| | | | | Arm 7 Right | 17.00 | 29.8 % | | |
| | | | | Arm 8 Ahead | Inf | 57.6 % | | |
| 2/1 (Barugh Green Road (E)) | 4.30 | 0.00 | Y | Arm 5 Right | 15.00 | 15.7 % | 1950 | 1950 |
| | | | | Arm 7 Ahead | Inf | 58.0 % | | |
| | | | | Arm 8 Left | 12.00 | 26.3 % | | |
| 3/1 (Higham Common Road) | 3.00 | 0.00 | Y | Arm 5 Ahead | Inf | 62.5 % | 1833 | 1833 |
| | | | | Arm 6 Right | 15.00 | 23.1 % | | |
| | | | | Arm 7 Left | 10.00 | 14.3 % | | |
| 4/1 (Cawthorne Road) | 4.50 | 0.00 | Y | Arm 5 Left | 10.00 | 23.5 % | 1972 | 1972 |
| | | | | Arm 6 Ahead | Inf | 63.7 % | | |
| | | | | Arm 8 Right | 16.00 | 12.9 % | | |
| 5/1 (Barugh Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Barugh Green Road (E) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Cawthorne Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Higham Common Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 4: '2030 Base + CD PM'** (FG4: '2030 Base + CD PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 71 | 200 | 144 | 415 |
| | B | 128 | 0 | 86 | 303 | 517 |
| | C | 297 | 105 | 0 | 49 | 451 |
| | D | 154 | 198 | 47 | 0 | 399 |
| | Tot. | 579 | 374 | 333 | 496 | 1782 |

Full Input Data And Results

## Traffic Lane Flows

| Lane | Scenario 4: 2030 Base + CD PM |
|---|---|
| **Junction: Unnamed Junction** | |
| 1/1 | 415 |
| 2/1 | 517 |
| 3/1 | 451 |
| 4/1 | 399 |
| 5/1 | 579 |
| 6/1 | 374 |
| 7/1 | 496 |
| 8/1 | 333 |

## Lane Saturation Flows

| **Junction: Unnamed Junction** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 (Barugh Lane) | 3.50 | 0.00 | Y | Arm 6 Left | 9.00 | 17.1 % | 1855 | 1855 |
| | | | | Arm 7 Right | 17.00 | 34.7 % | | |
| | | | | Arm 8 Ahead | Inf | 48.2 % | | |
| 2/1 (Barugh Green Road (E)) | 4.30 | 0.00 | Y | Arm 5 Right | 15.00 | 24.8 % | 1956 | 1956 |
| | | | | Arm 7 Ahead | Inf | 58.6 % | | |
| | | | | Arm 8 Left | 12.00 | 16.6 % | | |
| 3/1 (Higham Common Road) | 3.00 | 0.00 | Y | Arm 5 Ahead | Inf | 65.9 % | 1842 | 1842 |
| | | | | Arm 6 Right | 15.00 | 23.3 % | | |
| | | | | Arm 7 Left | 10.00 | 10.9 % | | |
| 4/1 (Cawthorne Road) | 4.50 | 0.00 | Y | Arm 5 Left | 10.00 | 38.6 % | 1932 | 1932 |
| | | | | Arm 6 Ahead | Inf | 49.6 % | | |
| | | | | Arm 8 Right | 16.00 | 11.8 % | | |
| 5/1 (Barugh Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Barugh Green Road (E) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Cawthorne Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Higham Common Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

**Scenario 5: '2030 Base + CD + D AM'** (FG5: '2030 Base + CD + Dev AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 52 | 238 | 123 | 413 |
| | B | 46 | 0 | 82 | 173 | 301 |
| | C | 192 | 73 | 0 | 44 | 309 |
| | D | 122 | 332 | 67 | 0 | 521 |
| | Tot. | 360 | 457 | 387 | 340 | 1544 |

## Traffic Lane Flows

| Lane | Scenario 5: 2030 Base + CD + D AM |
|---|---|
| **Junction: Unnamed Junction** | |
| 1/1 | 413 |
| 2/1 | 301 |
| 3/1 | 309 |
| 4/1 | 521 |
| 5/1 | 360 |
| 6/1 | 457 |
| 7/1 | 340 |
| 8/1 | 387 |

Full Input Data And Results

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 (Barugh Lane) | 3.50 | 0.00 | Y | Arm 6 Left | 9.00 | 12.6 % | 1876 | 1876 |
| | | | | Arm 7 Right | 17.00 | 29.8 % | | |
| | | | | Arm 8 Ahead | Inf | 57.6 % | | |
| 2/1 (Barugh Green Road (E)) | 4.30 | 0.00 | Y | Arm 5 Right | 15.00 | 15.3 % | 1949 | 1949 |
| | | | | Arm 7 Ahead | Inf | 57.5 % | | |
| | | | | Arm 8 Left | 12.00 | 27.2 % | | |
| 3/1 (Higham Common Road) | 3.00 | 0.00 | Y | Arm 5 Ahead | Inf | 62.1 % | 1833 | 1833 |
| | | | | Arm 6 Right | 15.00 | 23.6 % | | |
| | | | | Arm 7 Left | 10.00 | 14.2 % | | |
| 4/1 (Cawthorne Road) | 4.50 | 0.00 | Y | Arm 5 Left | 10.00 | 23.4 % | 1972 | 1972 |
| | | | | Arm 6 Ahead | Inf | 63.7 % | | |
| | | | | Arm 8 Right | 16.00 | 12.9 % | | |
| 5/1 (Barugh Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Barugh Green Road (E) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Cawthorne Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Higham Common Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 6: '2030 Base + CD + D PM'** (FG6: '2030 Base + CD + Dev PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 72 | 200 | 144 | 416 |
| | B | 128 | 0 | 88 | 304 | 520 |
| | C | 297 | 109 | 0 | 49 | 455 |
| | D | 154 | 200 | 47 | 0 | 401 |
| | Tot. | 579 | 381 | 335 | 497 | 1792 |

Full Input Data And Results

## Traffic Lane Flows

| Lane | Scenario 6: 2030 Base + CD + D PM |
|---|---|
| **Junction: Unnamed Junction** | |
| 1/1 | 416 |
| 2/1 | 520 |
| 3/1 | 455 |
| 4/1 | 401 |
| 5/1 | 579 |
| 6/1 | 381 |
| 7/1 | 497 |
| 8/1 | 335 |

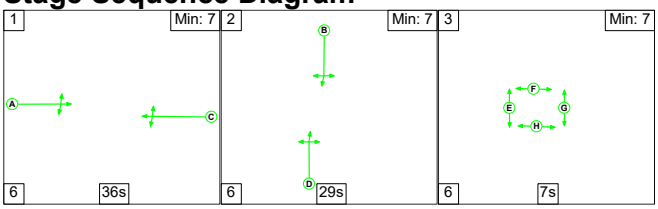
## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 (Barugh Lane) | 3.50 | 0.00 | Y | Arm 6 Left | 9.00 | 17.3 % | 1855 | 1855 |
| | | | | Arm 7 Right | 17.00 | 34.6 % | | |
| | | | | Arm 8 Ahead | Inf | 48.1 % | | |
| 2/1 (Barugh Green Road (E)) | 4.30 | 0.00 | Y | Arm 5 Right | 15.00 | 24.6 % | 1955 | 1955 |
| | | | | Arm 7 Ahead | Inf | 58.5 % | | |
| | | | | Arm 8 Left | 12.00 | 16.9 % | | |
| 3/1 (Higham Common Road) | 3.00 | 0.00 | Y | Arm 5 Ahead | Inf | 65.3 % | 1841 | 1841 |
| | | | | Arm 6 Right | 15.00 | 24.0 % | | |
| | | | | Arm 7 Left | 10.00 | 10.8 % | | |
| 4/1 (Cawthorne Road) | 4.50 | 0.00 | Y | Arm 5 Left | 10.00 | 38.4 % | 1932 | 1932 |
| | | | | Arm 6 Ahead | Inf | 49.9 % | | |
| | | | | Arm 8 Right | 16.00 | 11.7 % | | |
| 5/1 (Barugh Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (Barugh Green Road (E) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Cawthorne Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Higham Common Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

**Scenario 1: '2025 Base AM'** (FG1: '2025 Base AM', Plan 1: 'Network Control Plan 1')

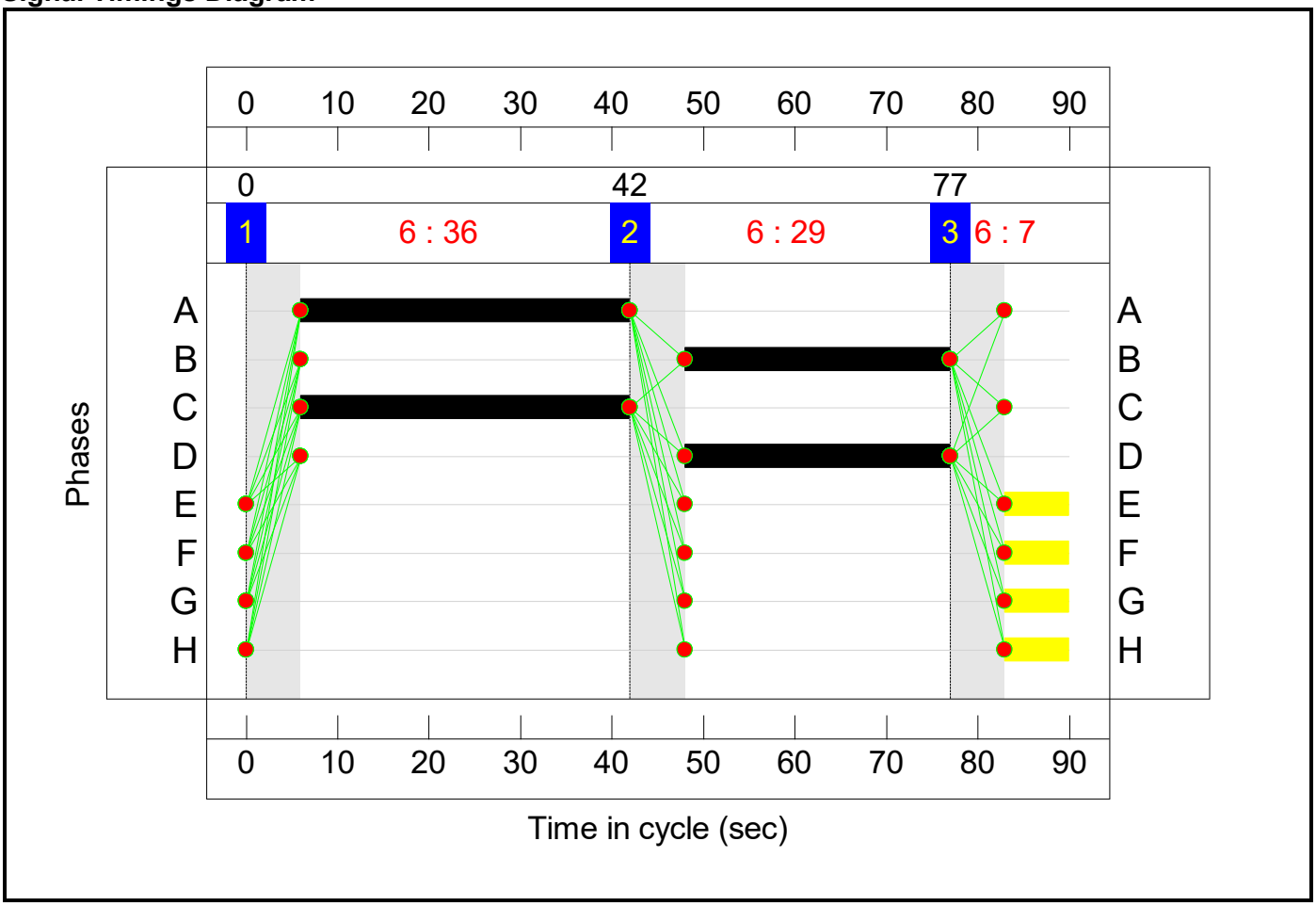
## Stage Sequence Diagram




## Stage Timings

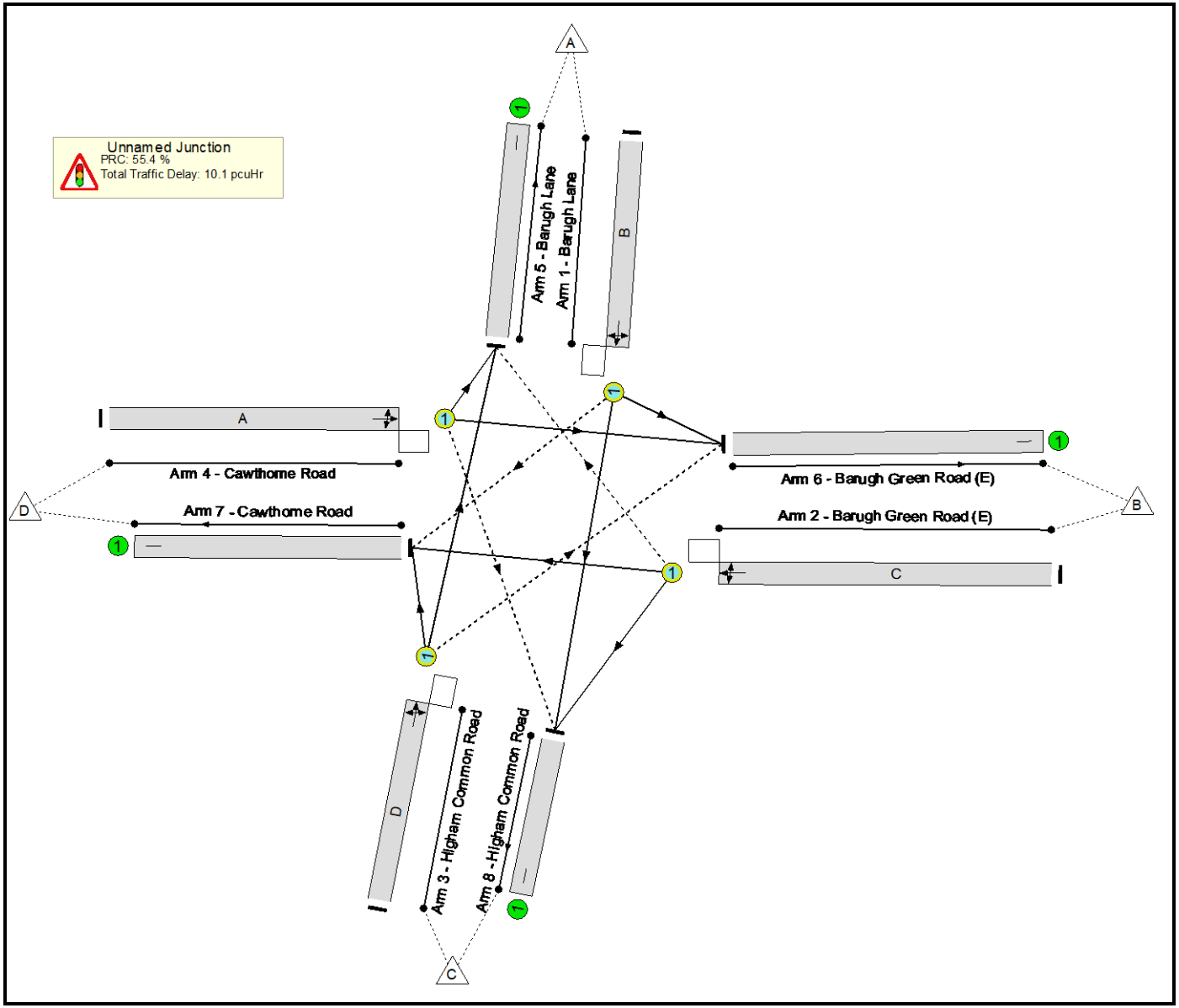
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 36 | 29 | 7 |
| Change Point | 0 | 42 | 77 |

## Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **57.9%** |
| **Unnamed Junction** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **57.9%** |
| 1/1 | Barugh Lane Left Right Ahead | O | N/A | N/A | B | | 1 | 29 | - | 350 | 1871 | 619 | 56.6% |
| 2/1 | Barugh Green Road (E) Right Ahead Left | O | N/A | N/A | C | | 1 | 36 | - | 250 | 1953 | 803 | 31.1% |
| 3/1 | Higham Common Road Ahead Right Left | O | N/A | N/A | D | | 1 | 29 | - | 238 | 1836 | 604 | 39.4% |
| 4/1 | Cawthorne Road Left Ahead Right | O | N/A | N/A | A | | 1 | 36 | - | 470 | 1974 | 812 | 57.9% |
| 5/1 | Barugh Lane | U | N/A | N/A | - | | - | - | - | 289 | Inf | Inf | 0.0% |
| 6/1 | Barugh Green Road (E) | U | N/A | N/A | - | | - | - | - | 420 | Inf | Inf | 0.0% |
| 7/1 | Cawthorne Road | U | N/A | N/A | - | | - | - | - | 290 | Inf | Inf | 0.0% |
| 8/1 | Higham Common Road | U | N/A | N/A | - | | - | - | - | 309 | Inf | Inf | 0.0% |

Full Input Data And Results

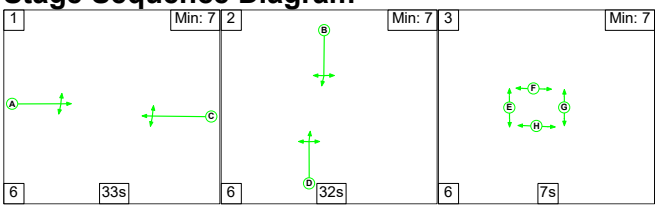
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **256** | **0** | **0** | **7.8** | **1.9** | **0.4** | **10.1** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **256** | **0** | **0** | **7.8** | **1.9** | **0.4** | **10.1** | **-** | **-** | **-** | **-** |
| 1/1 | 350 | 350 | 116 | 0 | 0 | 2.4 | 0.6 | 0.1 | 3.2 | 32.8 | 7.2 | 0.6 | 7.8 |
| 2/1 | 250 | 250 | 27 | 0 | 0 | 1.2 | 0.2 | 0.1 | 1.5 | 22.2 | 4.2 | 0.2 | 4.4 |
| 3/1 | 238 | 238 | 67 | 0 | 0 | 1.5 | 0.3 | 0.1 | 2.0 | 29.9 | 4.5 | 0.3 | 4.8 |
| 4/1 | 470 | 470 | 46 | 0 | 0 | 2.7 | 0.7 | 0.0 | 3.4 | 25.9 | 9.0 | 0.7 | 9.7 |
| 5/1 | 289 | 289 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 420 | 420 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 290 | 290 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 309 | 309 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

C1 PRC for Signalled Lanes (%): 55.4 Total Delay for Signalled Lanes (pcuHr): 10.09 Cycle Time (s): 90
PRC Over All Lanes (%): 55.4 Total Delay Over All Lanes(pcuHr): 10.09

Full Input Data And Results

**Scenario 2: '2025 Base PM'** (FG2: '2025 Base PM', Plan 1: 'Network Control Plan 1')

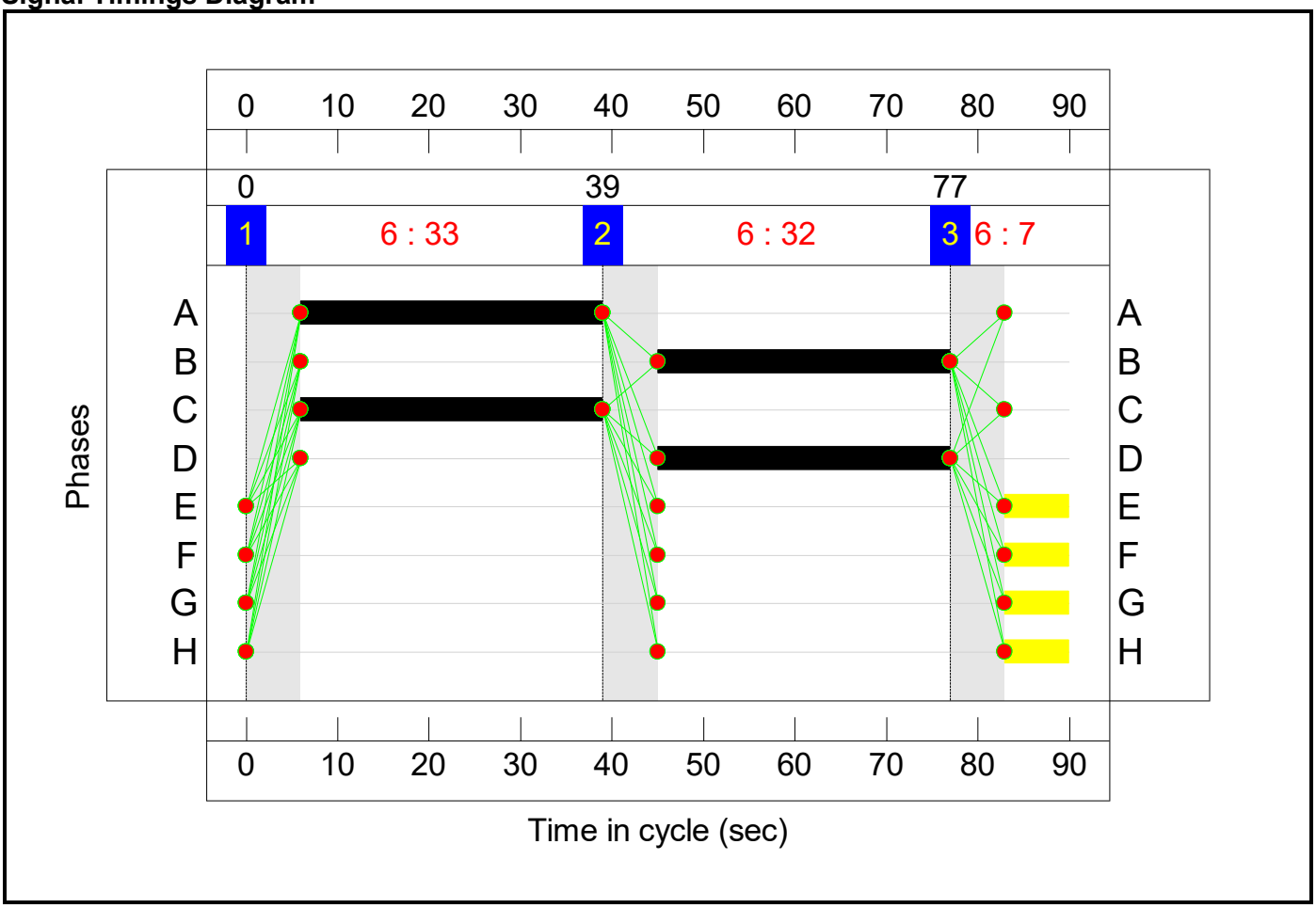
## Stage Sequence Diagram




## Stage Timings

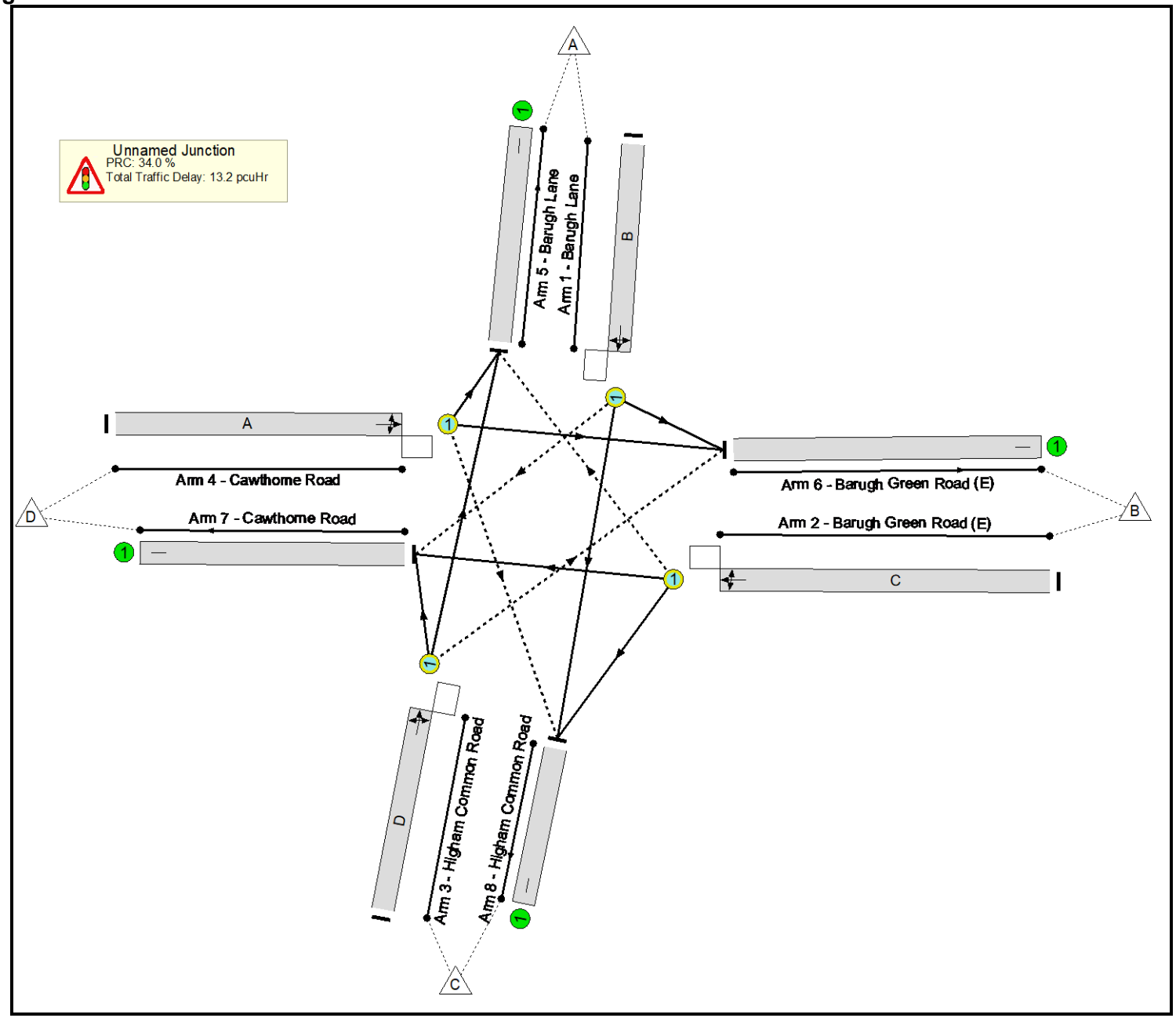
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 33 | 32 | 7 |
| Change Point | 0 | 39 | 77 |

## Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **67.2%** |
| **Unnamed Junction** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **67.2%** |
| 1/1 | Barugh Lane Left Right Ahead | O | N/A | N/A | B | | 1 | 32 | - | 336 | 1853 | 506 | 66.3% |
| 2/1 | Barugh Green Road (E) Right Ahead Left | O | N/A | N/A | C | | 1 | 33 | - | 471 | 1957 | 701 | 67.2% |
| 3/1 | Higham Common Road Ahead Right Left | O | N/A | N/A | D | | 1 | 32 | - | 368 | 1844 | 676 | 54.4% |
| 4/1 | Cawthorne Road Left Ahead Right | O | N/A | N/A | A | | 1 | 33 | - | 346 | 1930 | 729 | 47.5% |
| 5/1 | Barugh Lane | U | N/A | N/A | - | | - | - | - | 497 | Inf | Inf | 0.0% |
| 6/1 | Barugh Green Road (E) | U | N/A | N/A | - | | - | - | - | 324 | Inf | Inf | 0.0% |
| 7/1 | Cawthorne Road | U | N/A | N/A | - | | - | - | - | 443 | Inf | Inf | 0.0% |
| 8/1 | Higham Common Road | U | N/A | N/A | - | | - | - | - | 257 | Inf | Inf | 0.0% |

Full Input Data And Results

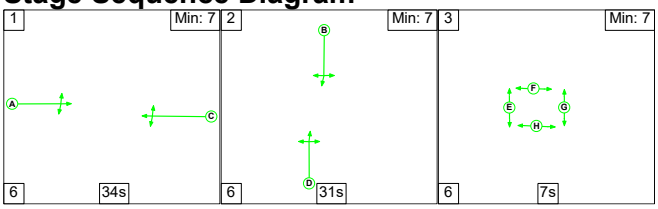
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **372** | **0** | **0** | **9.6** | **3.0** | **0.6** | **13.2** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **372** | **0** | **0** | **9.6** | **3.0** | **0.6** | **13.2** | **-** | **-** | **-** | **-** |
| 1/1 | 336 | 336 | 136 | 0 | 0 | 2.3 | 1.0 | 0.3 | 3.5 | 37.7 | 7.4 | 1.0 | 8.3 |
| 2/1 | 471 | 471 | 111 | 0 | 0 | 3.0 | 1.0 | 0.2 | 4.2 | 32.3 | 9.8 | 1.0 | 10.8 |
| 3/1 | 368 | 368 | 99 | 0 | 0 | 2.3 | 0.6 | 0.0 | 2.9 | 28.8 | 7.3 | 0.6 | 7.9 |
| 4/1 | 346 | 346 | 26 | 0 | 0 | 2.0 | 0.5 | 0.1 | 2.5 | 26.5 | 6.5 | 0.5 | 7.0 |
| 5/1 | 497 | 497 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 324 | 324 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 443 | 443 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 257 | 257 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

C1 PRC for Signalled Lanes (%): 34.0 Total Delay for Signalled Lanes (pcuHr): 13.24 Cycle Time (s): 90
PRC Over All Lanes (%): 34.0 Total Delay Over All Lanes(pcuHr): 13.24

Full Input Data And Results

**Scenario 3: '2030 Base + CD AM '** (FG3: '2030 Base + CD AM', Plan 1: 'Network Control Plan 1')

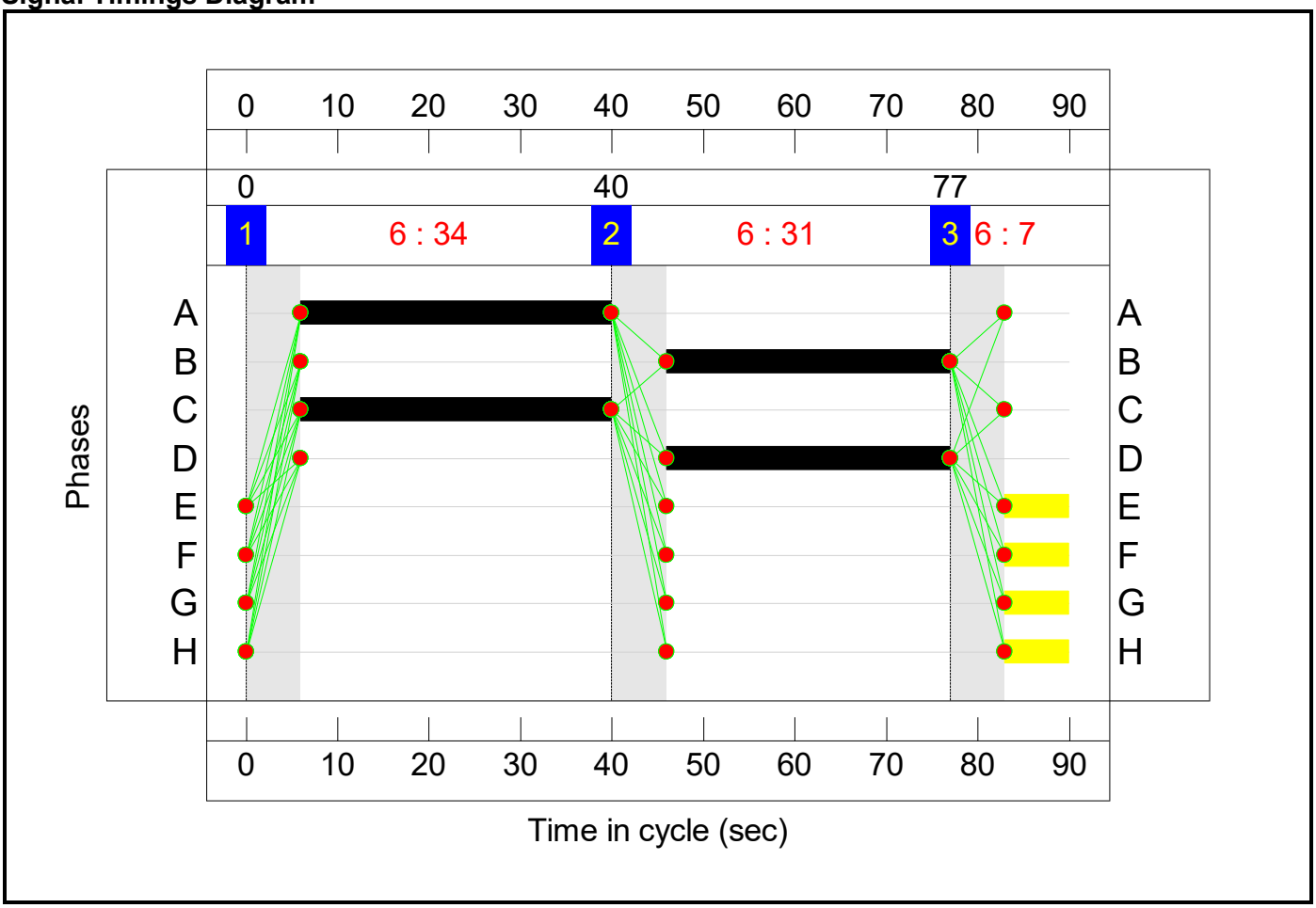
## Stage Sequence Diagram




## Stage Timings

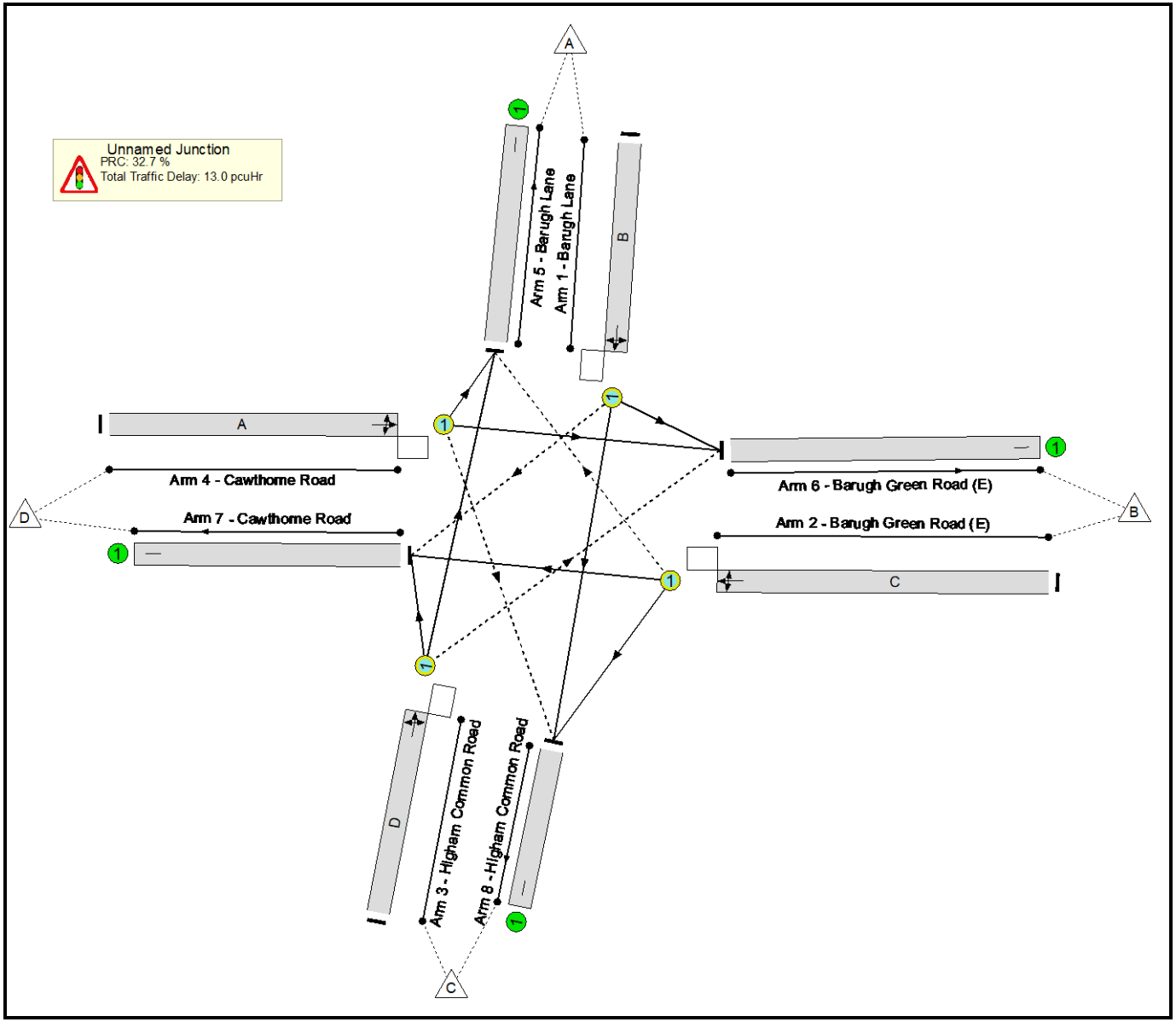
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 34 | 31 | 7 |
| Change Point | 0 | 40 | 77 |

## Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **67.8%** |
| **Unnamed Junction** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **67.8%** |
| 1/1 | Barugh Lane Left Right Ahead | O | N/A | N/A | B | | 1 | 31 | - | 413 | 1876 | 616 | 67.1% |
| 2/1 | Barugh Green Road (E) Right Ahead Left | O | N/A | N/A | C | | 1 | 34 | - | 293 | 1950 | 713 | 41.1% |
| 3/1 | Higham Common Road Ahead Right Left | O | N/A | N/A | D | | 1 | 31 | - | 307 | 1833 | 652 | 47.1% |
| 4/1 | Cawthorne Road Left Ahead Right | O | N/A | N/A | A | | 1 | 34 | - | 520 | 1972 | 767 | 67.8% |
| 5/1 | Barugh Lane | U | N/A | N/A | - | | - | - | - | 360 | Inf | Inf | 0.0% |
| 6/1 | Barugh Green Road (E) | U | N/A | N/A | - | | - | - | - | 454 | Inf | Inf | 0.0% |
| 7/1 | Cawthorne Road | U | N/A | N/A | - | | - | - | - | 337 | Inf | Inf | 0.0% |
| 8/1 | Higham Common Road | U | N/A | N/A | - | | - | - | - | 382 | Inf | Inf | 0.0% |

Full Input Data And Results

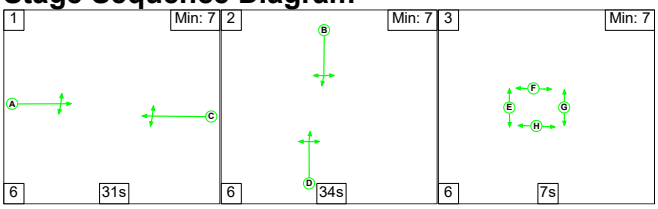
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **307** | **0** | **0** | **9.6** | **2.8** | **0.6** | **13.0** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **307** | **0** | **0** | **9.6** | **2.8** | **0.6** | **13.0** | **-** | **-** | **-** | **-** |
| 1/1 | 413 | 413 | 123 | 0 | 0 | 2.8 | 1.0 | 0.2 | 4.0 | 35.0 | 8.8 | 1.0 | 9.8 |
| 2/1 | 293 | 293 | 46 | 0 | 0 | 1.6 | 0.3 | 0.2 | 2.1 | 26.1 | 5.2 | 0.3 | 5.6 |
| 3/1 | 307 | 307 | 71 | 0 | 0 | 1.9 | 0.4 | 0.2 | 2.5 | 29.5 | 5.9 | 0.4 | 6.3 |
| 4/1 | 520 | 520 | 67 | 0 | 0 | 3.3 | 1.0 | 0.0 | 4.4 | 30.4 | 10.7 | 1.0 | 11.7 |
| 5/1 | 360 | 360 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 454 | 454 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 337 | 337 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 382 | 382 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

C1 PRC for Signalled Lanes (%): 32.7 Total Delay for Signalled Lanes (pcuHr): 13.04 Cycle Time (s): 90
PRC Over All Lanes (%): 32.7 Total Delay Over All Lanes(pcuHr): 13.04

Full Input Data And Results

**Scenario 4: '2030 Base + CD PM'** (FG4: '2030 Base + CD PM', Plan 1: 'Network Control Plan 1')

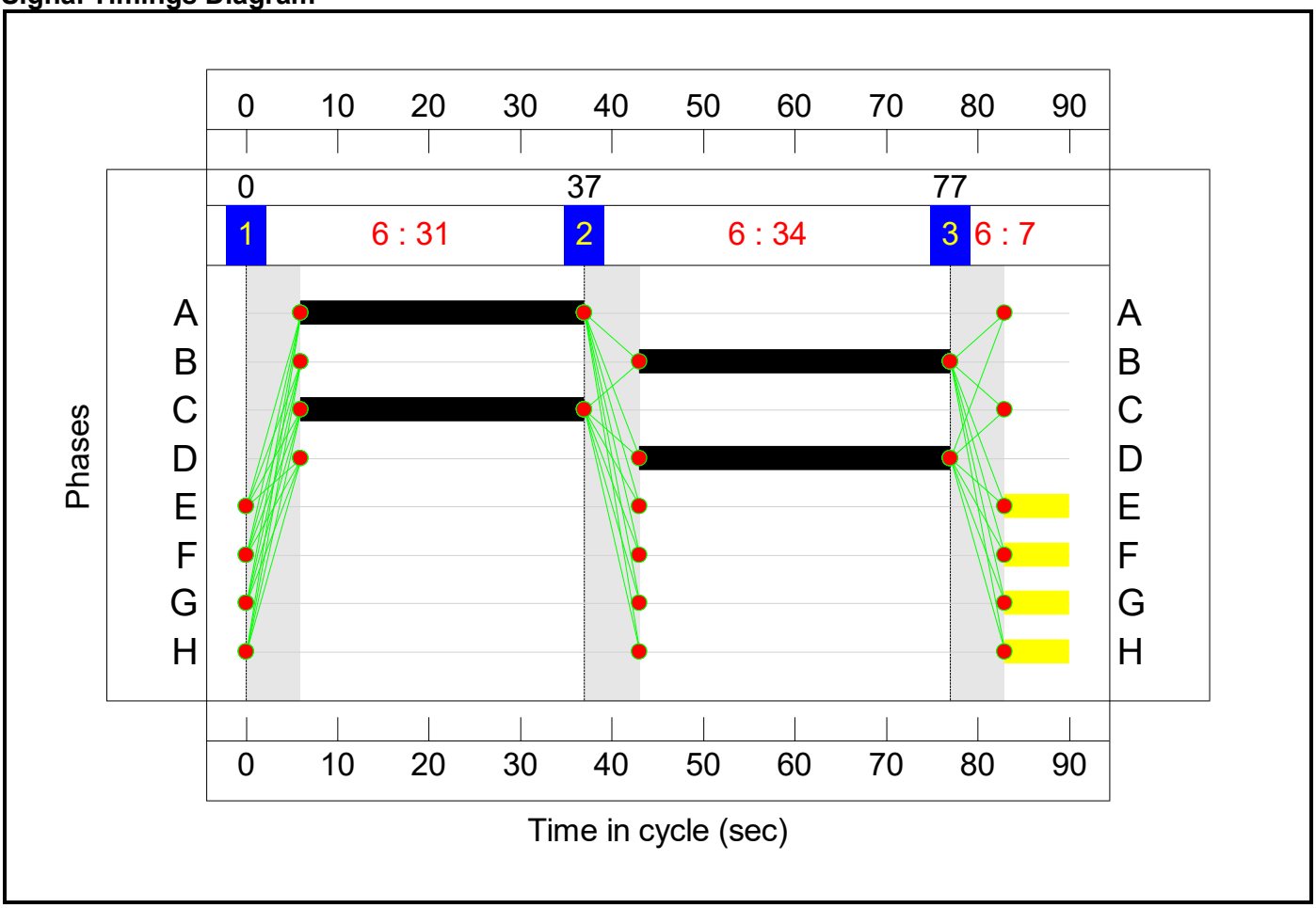
## Stage Sequence Diagram




## Stage Timings

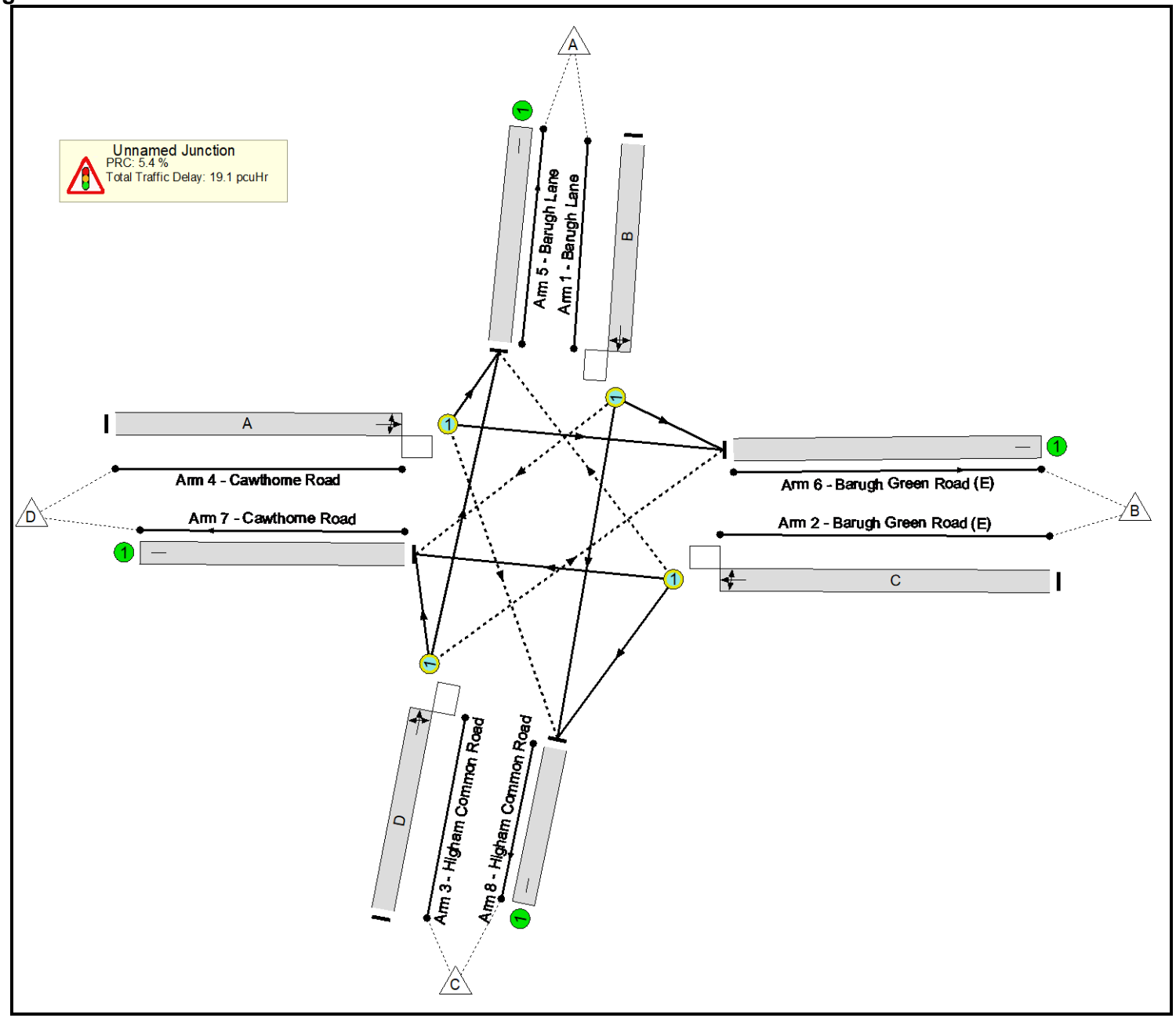
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 31 | 34 | 7 |
| Change Point | 0 | 37 | 77 |

## Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **85.4%** |
| **Unnamed Junction** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **85.4%** |
| 1/1 | Barugh Lane Left Right Ahead | O | N/A | N/A | B | | 1 | 34 | - | 415 | 1855 | 519 | 79.9% |
| 2/1 | Barugh Green Road (E) Right Ahead Left | O | N/A | N/A | C | | 1 | 31 | - | 517 | 1956 | 605 | 85.4% |
| 3/1 | Higham Common Road Ahead Right Left | O | N/A | N/A | D | | 1 | 34 | - | 451 | 1842 | 716 | 63.0% |
| 4/1 | Cawthorne Road Left Ahead Right | O | N/A | N/A | A | | 1 | 31 | - | 399 | 1932 | 687 | 58.1% |
| 5/1 | Barugh Lane | U | N/A | N/A | - | | - | - | - | 579 | Inf | Inf | 0.0% |
| 6/1 | Barugh Green Road (E) | U | N/A | N/A | - | | - | - | - | 374 | Inf | Inf | 0.0% |
| 7/1 | Cawthorne Road | U | N/A | N/A | - | | - | - | - | 496 | Inf | Inf | 0.0% |
| 8/1 | Higham Common Road | U | N/A | N/A | - | | - | - | - | 333 | Inf | Inf | 0.0% |

Full Input Data And Results

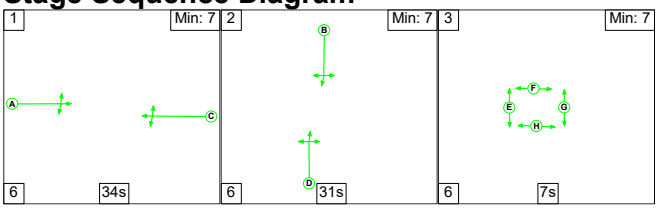
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **424** | **0** | **0** | **12.1** | **6.2** | **0.8** | **19.1** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **424** | **0** | **0** | **12.1** | **6.2** | **0.8** | **19.1** | **-** | **-** | **-** | **-** |
| 1/1 | 415 | 415 | 144 | 0 | 0 | 2.8 | 1.9 | 0.4 | 5.1 | 44.6 | 9.6 | 1.9 | 11.5 |
| 2/1 | 517 | 517 | 128 | 0 | 0 | 3.8 | 2.8 | 0.3 | 6.8 | 47.6 | 12.1 | 2.8 | 14.8 |
| 3/1 | 451 | 451 | 105 | 0 | 0 | 2.8 | 0.8 | 0.1 | 3.7 | 29.6 | 9.0 | 0.8 | 9.9 |
| 4/1 | 399 | 399 | 47 | 0 | 0 | 2.6 | 0.7 | 0.1 | 3.4 | 30.6 | 8.1 | 0.7 | 8.8 |
| 5/1 | 579 | 579 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 374 | 374 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 496 | 496 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 333 | 333 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

C1 PRC for Signalled Lanes (%): 5.4 Total Delay for Signalled Lanes (pcuHr): 19.08 Cycle Time (s): 90
PRC Over All Lanes (%): 5.4 Total Delay Over All Lanes(pcuHr): 19.08

Full Input Data And Results

**Scenario 5: '2030 Base + CD + D AM'** (FG5: '2030 Base + CD + Dev AM', Plan 1: 'Network Control Plan 1')

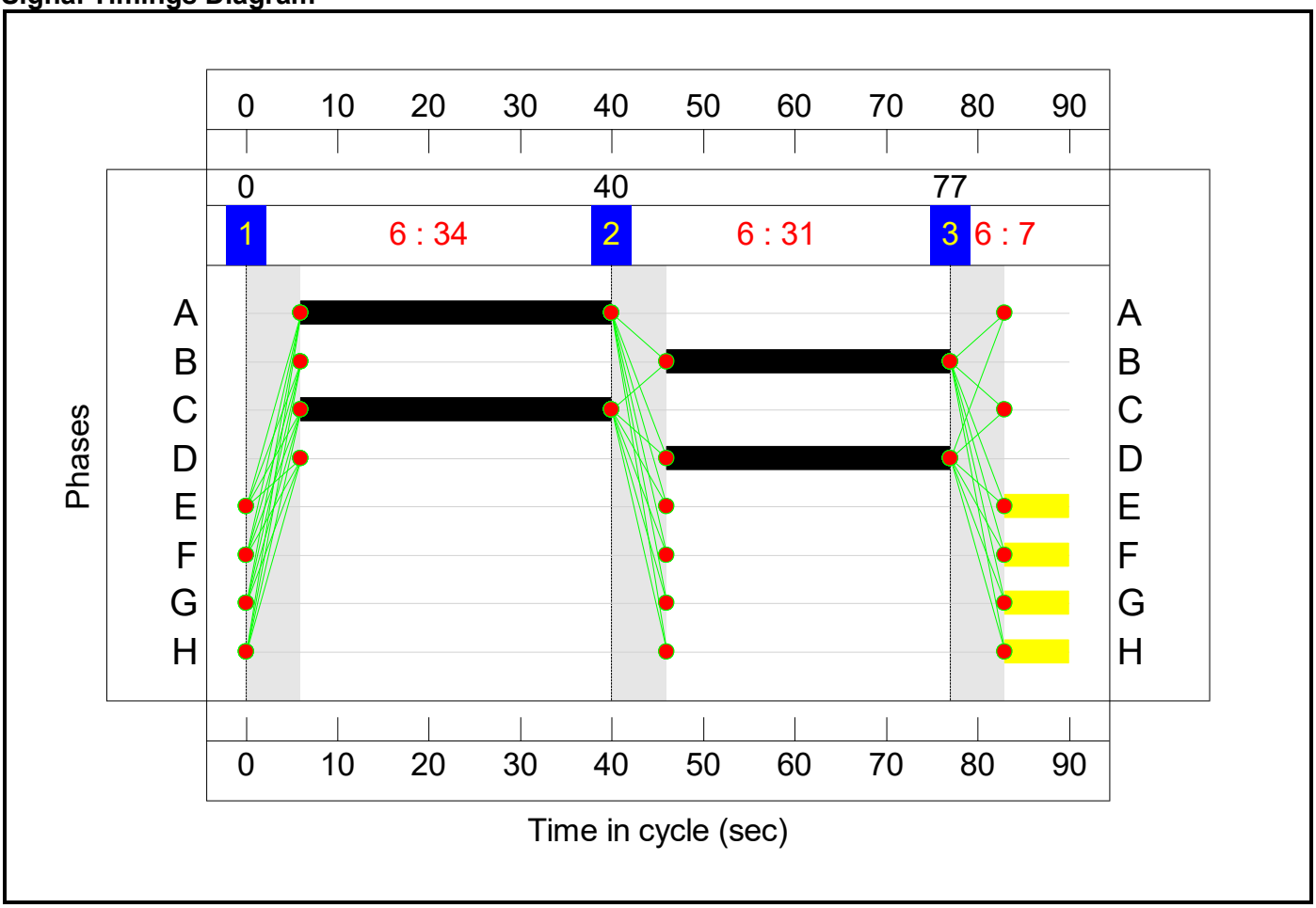
## Stage Sequence Diagram




## Stage Timings

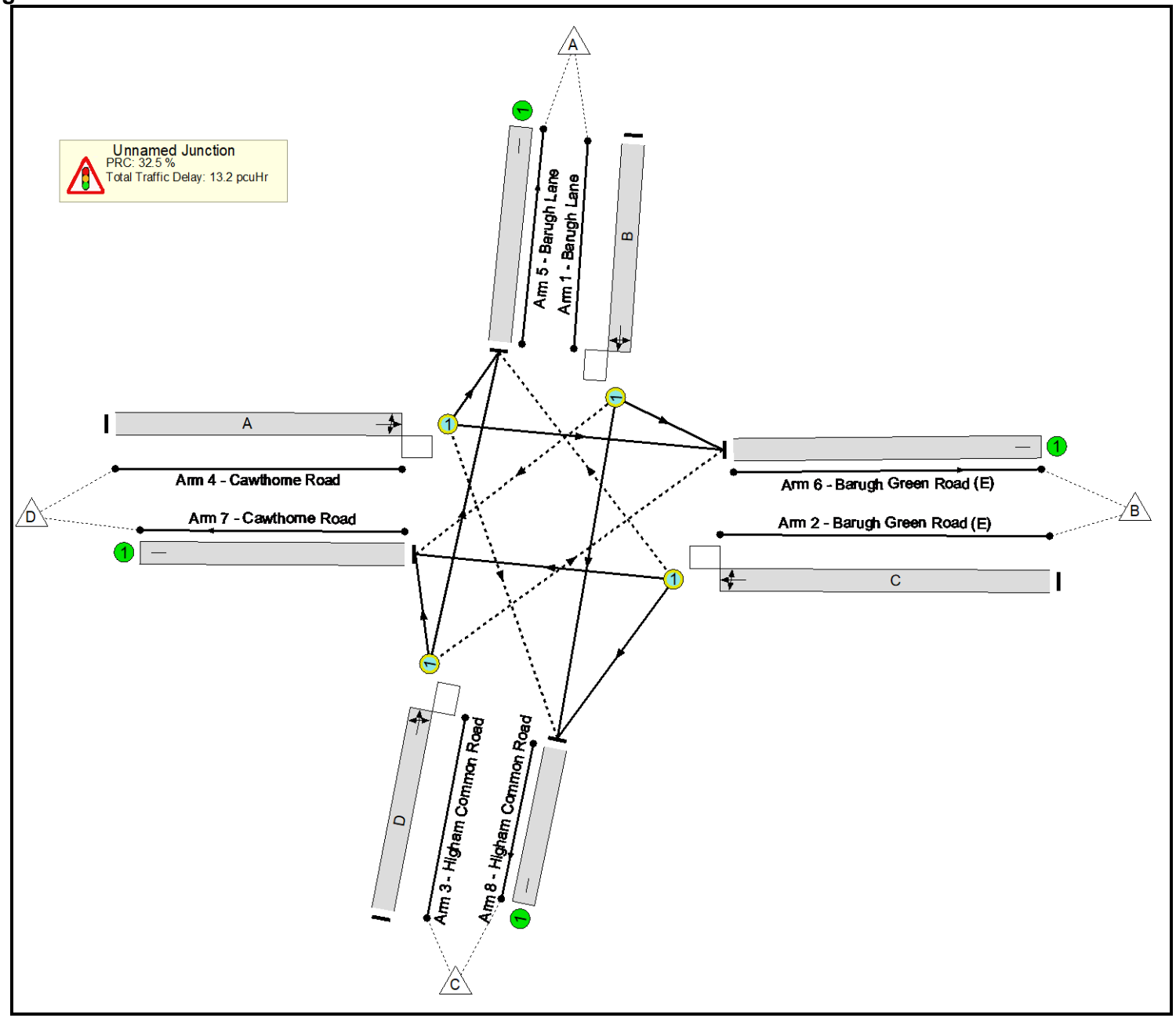
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 34 | 31 | 7 |
| Change Point | 0 | 40 | 77 |

## Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **67.9%** |
| **Unnamed Junction** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **67.9%** |
| 1/1 | Barugh Lane Left Right Ahead | O | N/A | N/A | B | | 1 | 31 | - | 413 | 1876 | 616 | 67.1% |
| 2/1 | Barugh Green Road (E) Right Ahead Left | O | N/A | N/A | C | | 1 | 34 | - | 301 | 1949 | 717 | 42.0% |
| 3/1 | Higham Common Road Ahead Right Left | O | N/A | N/A | D | | 1 | 31 | - | 309 | 1833 | 652 | 47.4% |
| 4/1 | Cawthorne Road Left Ahead Right | O | N/A | N/A | A | | 1 | 34 | - | 521 | 1972 | 767 | 67.9% |
| 5/1 | Barugh Lane | U | N/A | N/A | - | | - | - | - | 360 | Inf | Inf | 0.0% |
| 6/1 | Barugh Green Road (E) | U | N/A | N/A | - | | - | - | - | 457 | Inf | Inf | 0.0% |
| 7/1 | Cawthorne Road | U | N/A | N/A | - | | - | - | - | 340 | Inf | Inf | 0.0% |
| 8/1 | Higham Common Road | U | N/A | N/A | - | | - | - | - | 387 | Inf | Inf | 0.0% |

Full Input Data And Results

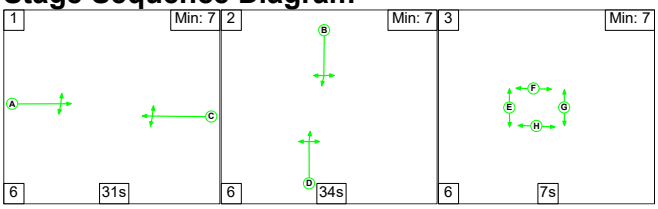
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **309** | **0** | **0** | **9.7** | **2.9** | **0.6** | **13.2** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **309** | **0** | **0** | **9.7** | **2.9** | **0.6** | **13.2** | **-** | **-** | **-** | **-** |
| 1/1 | 413 | 413 | 123 | 0 | 0 | 2.8 | 1.0 | 0.2 | 4.0 | 35.0 | 8.8 | 1.0 | 9.8 |
| 2/1 | 301 | 301 | 46 | 0 | 0 | 1.7 | 0.4 | 0.2 | 2.2 | 26.2 | 5.4 | 0.4 | 5.8 |
| 3/1 | 309 | 309 | 73 | 0 | 0 | 1.9 | 0.4 | 0.2 | 2.5 | 29.6 | 5.9 | 0.4 | 6.4 |
| 4/1 | 521 | 521 | 67 | 0 | 0 | 3.3 | 1.1 | 0.1 | 4.4 | 30.5 | 10.7 | 1.1 | 11.8 |
| 5/1 | 360 | 360 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 457 | 457 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 340 | 340 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 387 | 387 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

C1 PRC for Signalled Lanes (%): 32.5 Total Delay for Signalled Lanes (pcuHr): 13.15 Cycle Time (s): 90
PRC Over All Lanes (%): 32.5 Total Delay Over All Lanes(pcuHr): 13.15

Full Input Data And Results

**Scenario 6: '2030 Base + CD + D PM'** (FG6: '2030 Base + CD + Dev PM', Plan 1: 'Network Control Plan 1')

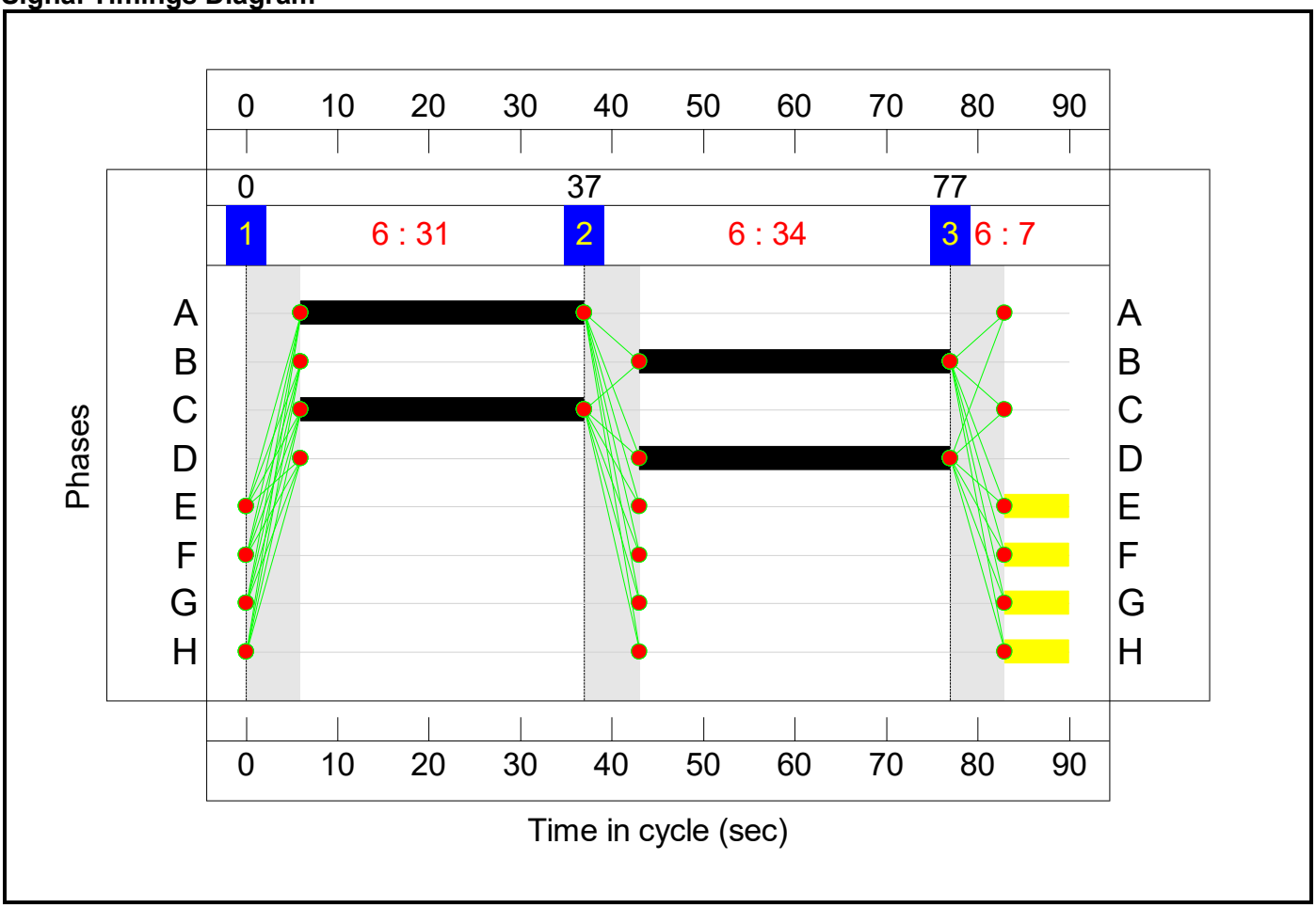
## Stage Sequence Diagram




## Stage Timings

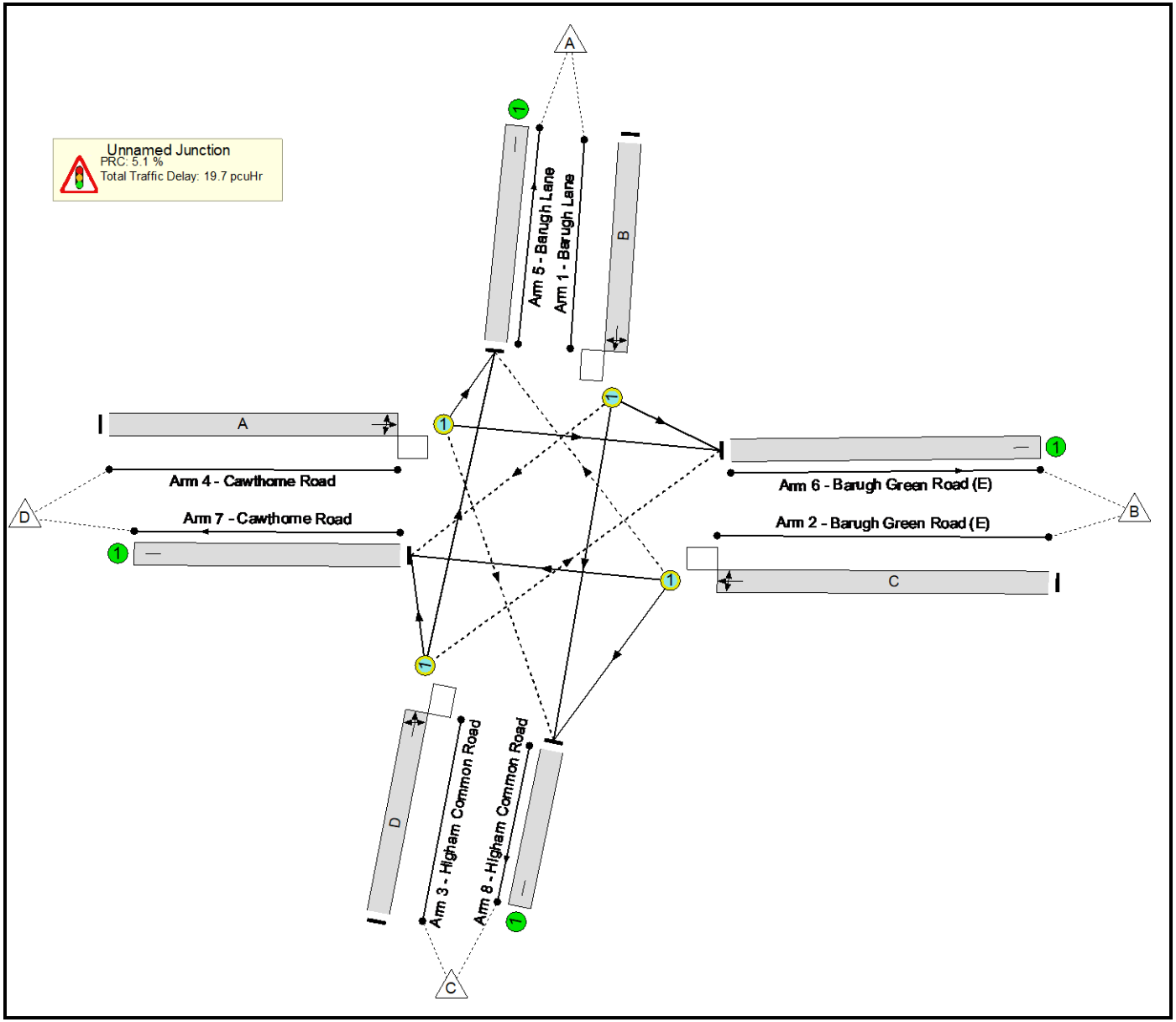
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 31 | 34 | 7 |
| Change Point | 0 | 37 | 77 |

## Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **85.7%** |
| **Unnamed Junction** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **85.7%** |
| 1/1 | Barugh Lane Left Right Ahead | O | N/A | N/A | B | | 1 | 34 | - | 416 | 1855 | 499 | 83.4% |
| 2/1 | Barugh Green Road (E) Right Ahead Left | O | N/A | N/A | C | | 1 | 31 | - | 520 | 1955 | 607 | 85.7% |
| 3/1 | Higham Common Road Ahead Right Left | O | N/A | N/A | D | | 1 | 34 | - | 455 | 1841 | 716 | 63.6% |
| 4/1 | Cawthorne Road Left Ahead Right | O | N/A | N/A | A | | 1 | 31 | - | 401 | 1932 | 687 | 58.4% |
| 5/1 | Barugh Lane | U | N/A | N/A | - | | - | - | - | 579 | Inf | Inf | 0.0% |
| 6/1 | Barugh Green Road (E) | U | N/A | N/A | - | | - | - | - | 381 | Inf | Inf | 0.0% |
| 7/1 | Cawthorne Road | U | N/A | N/A | - | | - | - | - | 497 | Inf | Inf | 0.0% |
| 8/1 | Higham Common Road | U | N/A | N/A | - | | - | - | - | 335 | Inf | Inf | 0.0% |

Full Input Data And Results

| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: Barugh Green Crossroads** | **-** | **-** | **428** | **0** | **0** | **12.2** | **6.7** | **0.8** | **19.7** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **428** | **0** | **0** | **12.2** | **6.7** | **0.8** | **19.7** | **-** | **-** | **-** | **-** |
| 1/1 | 416 | 416 | 144 | 0 | 0 | 2.9 | 2.4 | 0.4 | 5.6 | 48.8 | 9.7 | 2.4 | 12.1 |
| 2/1 | 520 | 520 | 128 | 0 | 0 | 3.9 | 2.8 | 0.3 | 6.9 | 47.9 | 12.1 | 2.8 | 14.9 |
| 3/1 | 455 | 455 | 109 | 0 | 0 | 2.8 | 0.9 | 0.1 | 3.8 | 29.8 | 9.2 | 0.9 | 10.1 |
| 4/1 | 401 | 401 | 47 | 0 | 0 | 2.6 | 0.7 | 0.1 | 3.4 | 30.7 | 8.1 | 0.7 | 8.8 |
| 5/1 | 579 | 579 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 381 | 381 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 497 | 497 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 335 | 335 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

C1 PRC for Signalled Lanes (%): 5.1 Total Delay for Signalled Lanes (pcuHr): 19.74 Cycle Time (s): 90
PRC Over All Lanes (%): 5.1 Total Delay Over All Lanes(pcuHr): 19.74

# Junctions 11

## PICADY 11 - Priority Intersection Module

Version: 11.0.0.2177
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**Filename:** J11 Barugh Green Road_Site Access.j11
**Path:** C:\Users\micro\Dropbox\Project Files & Management\TPS Project Files\P2636. Barugh Green, Barnsley\Technical\Junction Modelling\2025
**Report generation date:** 20/08/2025 10:27:00

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## »(Default Analysis Set) - 2030 | B + CD + D | AM
## »(Default Analysis Set) - 2030 | B + CD + D | PM

### Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (PCU) | Delay (s) | RFC | Set ID | Queue (PCU) | Delay (s) | RFC |
| | A1 - 2030 - B + CD + D | | | | | | | |
| Stream B-C | D4 | 0.0 | 6.88 | 0.02 | D5 | 0.0 | 8.29 | 0.01 |
| Stream B-A | | 0.2 | 12.58 | 0.15 | | 0.1 | 16.47 | 0.09 |
| Stream C-B | | 0.0 | 6.58 | 0.01 | | 0.0 | 8.27 | 0.02 |

*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 | Baurgh Green Road / Site Access |
| Location | Barugh Green, Barnsley |
| Site number | |
| Date | 18/07/2025 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | Avant Homes |
| Jobnumber | P2636 |
| Enumerator | TPS |
| 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 | Show lane queues in feet / metres | Show all PICADY stream intercepts | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) | Use simulation for HCM roundabouts | Use iterations for HCM roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|
| 5.75 | | | | | | 0.85 | 36.00 | 20.00 | | |

## Demand Set Summary

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D4 | 2030 | B + CD + D | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |
| D5 | 2030 | B + CD + D | PM | ONE HOUR | 17:00 | 18:30 | 15 | ✓ |

## Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|---|
| A1 | (Default Analysis Set) | ✓ | 100.000 | 100.000 |

# (Default Analysis Set) - 2030 | B + CD + D | AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Minor arm flare | B - Site Access - Minor arm geometry | Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed. |
| Warning | Minor arm visibility to right | B - Site Access - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | Two-way | Two-way | | 0.52 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 0.52 | A |

## Arms

### Arms

| Arm | Name | Description | Arm type |
|---|---|---|---|
| A | Barugh Green Road East | | Major |
| B | Site Access | | Minor |
| C | Barugh Green Road West | | Major |

### Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Has right-turn storage | Width for right-turn storage (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|---|---|---|---|---|---|---|---|
| C - Barugh Green Road West | 7.00 | | ✓ | 3.00 | 100.0 | | - |

*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 | 4.40 | 3.00 | 2.75 | 2.75 | ✓ | 1.00 | 120 | 120 |

### Slope / Intercept / Capacity

#### Priority Intersection Slopes and Intercepts

| Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|
| B-A | 604 | 0.105 | 0.266 | 0.167 | 0.380 |
| B-C | 688 | 0.101 | 0.255 | - | - |
| C-B | 687 | 0.255 | 0.255 | - | - |

*The slopes and intercepts shown above include custom intercept adjustments only.*

*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 | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D4 | 2030 | B + CD + D | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |

## Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A - Barugh Green Road East | | ONE HOUR | ✓ | 487 | 100.000 |
| B - Site Access | | ONE HOUR | ✓ | 53 | 100.000 |
| C - Barugh Green Road West | | ONE HOUR | ✓ | 696 | 100.000 |

# Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A - Barugh Green Road East | B - Site Access | C - Barugh Green Road West |
| From | A - Barugh Green Road East | 0 | 18 | 469 |
| | B - Site Access | 45 | 0 | 8 |
| | C - Barugh Green Road West | 693 | 3 | 0 |

# Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | |
|---|---|---|---|---|
| | | A - Barugh Green Road East | B - Site Access | C - Barugh Green Road West |
| From | A - Barugh Green Road East | 0 | 0 | 0 |
| | B - Site Access | 0 | 0 | 0 |
| | C - Barugh Green Road West | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| B-C | 0.02 | 6.88 | 0.0 | A | 7 | 11 |
| B-A | 0.15 | 12.58 | 0.2 | B | 41 | 62 |
| C-A | | | | | 636 | 954 |
| C-B | 0.01 | 6.58 | 0.0 | A | 3 | 4 |
| A-B | | | | | 17 | 25 |
| A-C | | | | | 430 | 646 |

## Main Results for each time segment

### 07:30 - 07:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 6 | 2 | 0.00 | 584 | 0.010 | 6 | 0.0 | 0.0 | 6.227 | A |
| B-A | 34 | 8 | 0.00 | 420 | 0.081 | 34 | 0.0 | 0.1 | 9.294 | A |
| C-A | 522 | 130 | 0.00 | | | 522 | | | | |
| C-B | 2 | 0.56 | 0.00 | 594 | 0.004 | 2 | 0.0 | 0.0 | 6.087 | A |
| A-B | 14 | 3 | 0.00 | | | 14 | | | | |
| A-C | 353 | 88 | 0.00 | | | 353 | | | | |

### 07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 7 | 2 | 0.00 | 563 | 0.013 | 7 | 0.0 | 0.0 | 6.480 | A |
| B-A | 40 | 10 | 0.00 | 385 | 0.105 | 40 | 0.1 | 0.1 | 10.445 | B |
| C-A | 623 | 156 | 0.00 | | | 623 | | | | |
| C-B | 3 | 0.67 | 0.00 | 575 | 0.005 | 3 | 0.0 | 0.0 | 6.284 | A |
| A-B | 16 | 4 | 0.00 | | | 16 | | | | |
| A-C | 422 | 105 | 0.00 | | | 422 | | | | |

### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 9 | 2 | 0.00 | 532 | 0.017 | 9 | 0.0 | 0.0 | 6.882 | A |
| B-A | 50 | 12 | 0.00 | 336 | 0.148 | 49 | 0.1 | 0.2 | 12.574 | B |
| C-A | 763 | 191 | 0.00 | | | 763 | | | | |
| C-B | 3 | 0.83 | 0.00 | 550 | 0.006 | 3 | 0.0 | 0.0 | 6.579 | A |
| A-B | 20 | 5 | 0.00 | | | 20 | | | | |
| A-C | 516 | 129 | 0.00 | | | 516 | | | | |

### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 9 | 2 | 0.00 | 532 | 0.017 | 9 | 0.0 | 0.0 | 6.884 | A |
| B-A | 50 | 12 | 0.00 | 336 | 0.148 | 50 | 0.2 | 0.2 | 12.582 | B |
| C-A | 763 | 191 | 0.00 | | | 763 | | | | |
| C-B | 3 | 0.83 | 0.00 | 550 | 0.006 | 3 | 0.0 | 0.0 | 6.579 | A |
| A-B | 20 | 5 | 0.00 | | | 20 | | | | |
| A-C | 516 | 129 | 0.00 | | | 516 | | | | |

### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 7 | 2 | 0.00 | 562 | 0.013 | 7 | 0.0 | 0.0 | 6.485 | A |
| B-A | 40 | 10 | 0.00 | 385 | 0.105 | 41 | 0.2 | 0.1 | 10.466 | B |
| C-A | 623 | 156 | 0.00 | | | 623 | | | | |
| C-B | 3 | 0.67 | 0.00 | 575 | 0.005 | 3 | 0.0 | 0.0 | 6.287 | A |
| A-B | 16 | 4 | 0.00 | | | 16 | | | | |
| A-C | 422 | 105 | 0.00 | | | 422 | | | | |

**08:45 - 09:00**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 6 | 2 | 0.00 | 584 | 0.010 | 6 | 0.0 | 0.0 | 6.230 | A |
| B-A | 34 | 8 | 0.00 | 421 | 0.081 | 34 | 0.1 | 0.1 | 9.318 | A |
| C-A | 522 | 130 | 0.00 | | | 522 | | | | |
| C-B | 2 | 0.56 | 0.00 | 594 | 0.004 | 2 | 0.0 | 0.0 | 6.090 | A |
| A-B | 14 | 3 | 0.00 | | | 14 | | | | |
| A-C | 353 | 88 | 0.00 | | | 353 | | | | |

# (Default Analysis Set) - 2030 | B + CD + D | PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Minor arm flare | B - Site Access - Minor arm geometry | Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed. |
| Warning | Minor arm visibility to right | B - Site Access - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | Two-way | Two-way | | 0.27 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 0.27 | A |

## Traffic Demand

### Demand Set Details

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D5 | 2030 | B + CD + D | PM | ONE HOUR | 17:00 | 18:30 | 15 | ✓ |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A - Barugh Green Road East | | ONE HOUR | ✓ | 871 | 100.000 |
| B - Site Access | | ONE HOUR | ✓ | 23 | 100.000 |
| C - Barugh Green Road West | | ONE HOUR | ✓ | 621 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | |
|---|---|---|---|---|
| | | A - Barugh Green Road East | B - Site Access | C - Barugh Green Road West |
| From | A - Barugh Green Road East | 0 | 41 | 830 |
| | B - Site Access | 20 | 0 | 3 |
| | C - Barugh Green Road West | 614 | 7 | 0 |

## Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | |
|---|---|---|---|---|
| | | A - Barugh Green Road East | B - Site Access | C - Barugh Green Road West |
| From | A - Barugh Green Road East | 0 | 0 | 0 |
| | B - Site Access | 0 | 0 | 0 |
| | C - Barugh Green Road West | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| B-C | 0.01 | 8.29 | 0.0 | A | 3 | 4 |
| B-A | 0.09 | 16.47 | 0.1 | C | 18 | 28 |
| C-A | | | | | 563 | 845 |
| C-B | 0.02 | 8.27 | 0.0 | A | 6 | 10 |
| A-B | | | | | 38 | 56 |
| A-C | | | | | 762 | 1142 |

## Main Results for each time segment

### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 2 | 0.56 | 0.00 | 517 | 0.004 | 2 | 0.0 | 0.0 | 6.987 | A |
| B-A | 15 | 4 | 0.00 | 356 | 0.042 | 15 | 0.0 | 0.0 | 10.554 | B |
| C-A | 462 | 116 | 0.00 | | | 462 | | | | |
| C-B | 5 | 1 | 0.00 | 520 | 0.010 | 5 | 0.0 | 0.0 | 6.993 | A |
| A-B | 31 | 8 | 0.00 | | | 31 | | | | |
| A-C | 625 | 156 | 0.00 | | | 625 | | | | |

### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 3 | 0.67 | 0.00 | 484 | 0.006 | 3 | 0.0 | 0.0 | 7.475 | A |
| B-A | 18 | 4 | 0.00 | 307 | 0.058 | 18 | 0.0 | 0.1 | 12.431 | B |
| C-A | 552 | 138 | 0.00 | | | 552 | | | | |
| C-B | 6 | 2 | 0.00 | 488 | 0.013 | 6 | 0.0 | 0.0 | 7.479 | A |
| A-B | 37 | 9 | 0.00 | | | 37 | | | | |
| A-C | 746 | 187 | 0.00 | | | 746 | | | | |

### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 3 | 0.83 | 0.00 | 437 | 0.008 | 3 | 0.0 | 0.0 | 8.291 | A |
| B-A | 22 | 6 | 0.00 | 241 | 0.092 | 22 | 0.1 | 0.1 | 16.451 | C |
| C-A | 676 | 169 | 0.00 | | | 676 | | | | |
| C-B | 8 | 2 | 0.00 | 443 | 0.017 | 8 | 0.0 | 0.0 | 8.274 | A |
| A-B | 45 | 11 | 0.00 | | | 45 | | | | |
| A-C | 914 | 228 | 0.00 | | | 914 | | | | |

### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 3 | 0.83 | 0.00 | 437 | 0.008 | 3 | 0.0 | 0.0 | 8.294 | A |
| B-A | 22 | 6 | 0.00 | 241 | 0.092 | 22 | 0.1 | 0.1 | 16.473 | C |
| C-A | 676 | 169 | 0.00 | | | 676 | | | | |
| C-B | 8 | 2 | 0.00 | 443 | 0.017 | 8 | 0.0 | 0.0 | 8.274 | A |
| A-B | 45 | 11 | 0.00 | | | 45 | | | | |
| A-C | 914 | 228 | 0.00 | | | 914 | | | | |

### 18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 3 | 0.67 | 0.00 | 484 | 0.006 | 3 | 0.0 | 0.0 | 7.482 | A |
| B-A | 18 | 4 | 0.00 | 307 | 0.058 | 18 | 0.1 | 0.1 | 12.451 | B |
| C-A | 552 | 138 | 0.00 | | | 552 | | | | |
| C-B | 6 | 2 | 0.00 | 488 | 0.013 | 6 | 0.0 | 0.0 | 7.479 | A |
| A-B | 37 | 9 | 0.00 | | | 37 | | | | |
| A-C | 746 | 187 | 0.00 | | | 746 | | | | |

### 18:15 - 18:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 2 | 0.56 | 0.00 | 517 | 0.004 | 2 | 0.0 | 0.0 | 6.993 | A |
| B-A | 15 | 4 | 0.00 | 356 | 0.042 | 15 | 0.1 | 0.0 | 10.568 | B |
| C-A | 462 | 116 | 0.00 | | | 462 | | | | |
| C-B | 5 | 1 | 0.00 | 520 | 0.010 | 5 | 0.0 | 0.0 | 6.996 | A |
| A-B | 31 | 8 | 0.00 | | | 31 | | | | |
| A-C | 625 | 156 | 0.00 | | | 625 | | | | |

# Junctions 11

## ARCADY 11 - Roundabout Module

Version: 11.0.0.2177
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**Filename:** J11 Barugh Green Road_Wilthorpe Road RBT.j11
**Path:** C:\Users\micro\Dropbox\Project Files & Management\TPS Project Files\P2636. Barugh Green, Barnsley\Technical\Junction Modelling\2025
**Report generation date:** 20/08/2025 10:41:06

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**»(Default Analysis Set) - 2025 | B | AM**
**»(Default Analysis Set) - 2025 | B | PM**
**»(Default Analysis Set) - 2030 | B + CD | AM**
**»(Default Analysis Set) - 2030 | B + CD | PM**
**»(Default Analysis Set) - 2030 | B + CD + D | AM**
**»(Default Analysis Set) - 2030 | B + CD + D | PM**

### Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (PCU) | Delay (s) | RFC | Set ID | Queue (PCU) | Delay (s) | RFC |
| | A1 - 2025 - B | | | | | | | |
| 1 - Claycliffe Road | D4 | 1.9 | 9.30 | 0.66 | D5 | 1.5 | 7.07 | 0.60 |
| 2 - Whaley Road | | 0.2 | 4.74 | 0.17 | | 0.5 | 6.20 | 0.35 |
| 3 - Wilthorpe Road | | 1.6 | 5.09 | 0.61 | | 2.4 | 7.09 | 0.71 |
| 4 - Barugh Green Road | | 0.8 | 5.10 | 0.43 | | 0.6 | 4.64 | 0.39 |
| | A1 - 2030 - B + CD | | | | | | | |
| 1 - Claycliffe Road | D6 | 3.9 | 17.68 | 0.80 | D7 | 2.8 | 11.82 | 0.74 |
| 2 - Whaley Road | | 0.3 | 6.01 | 0.21 | | 0.8 | 9.06 | 0.45 |
| 3 - Wilthorpe Road | | 2.5 | 7.06 | 0.72 | | 6.3 | 16.12 | 0.87 |
| 4 - Barugh Green Road | | 1.7 | 8.29 | 0.64 | | 1.2 | 6.44 | 0.55 |
| | A1 - 2030 - B + CD + D | | | | | | | |
| 1 - Claycliffe Road | D8 | 4.5 | 20.50 | 0.83 | D9 | 3.0 | 12.71 | 0.76 |
| 2 - Whaley Road | | 0.3 | 6.29 | 0.22 | | 0.9 | 9.47 | 0.47 |
| 3 - Wilthorpe Road | | 2.6 | 7.33 | 0.73 | | 7.8 | 19.55 | 0.90 |
| 4 - Barugh Green Road | | 2.1 | 9.35 | 0.68 | | 1.3 | 6.70 | 0.57 |

*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** | Barugh Green Road / Wilthorpe Road |
| **Location** | Barugh Green, Barnsley |
| **Site number** | |
| **Date** | 18/07/2025 |
| **Version** | |
| **Status** | (new file) |
| **Identifier** | |
| **Client** | Avant Homes |
| **Jobnumber** | P2636 |
| **Enumerator** | JT |
| **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 | Show lane queues in feet / metres | Show all PICADY stream intercepts | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) | Use simulation for HCM roundabouts | Use iterations for HCM roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|
| 5.75 | | | | | | 0.85 | 36.00 | 20.00 | | |

## Demand Set Summary

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| **D4** | 2025 | B | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |
| **D5** | 2025 | B | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |
| **D6** | 2030 | B + CD | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |
| **D7** | 2030 | B + CD | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |
| **D8** | 2030 | B + CD + D | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |
| **D9** | 2030 | B + CD + D | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

## Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|---|
| **A1** | (Default Analysis Set) | ✓ | 100.000 | 100.000 |

# (Default Analysis Set) - 2025 | B | AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | 4 - Barugh Green Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | Standard Roundabout | | 1, 2, 3, 4 | 6.32 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 6.32 | A |

## Arms

### Arms

| Arm | Name | Description | No give-way line |
|---|---|---|---|
| 1 | Claycliffe Road | | |
| 2 | Whaley Road | | |
| 3 | Wilthorpe Road | | |
| 4 | Barugh Green Road | | |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Entry only | Exit only |
|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 3.90 | 5.90 | 12.0 | 12.5 | 35.0 | 19.0 | | |
| 2 - Whaley Road | 4.70 | 5.60 | 9.0 | 15.0 | 35.0 | 25.0 | | |
| 3 - Wilthorpe Road | 3.00 | 7.50 | 25.0 | 74.0 | 35.0 | 19.0 | | |
| 4 - Barugh Green Road | 3.70 | 8.00 | 45.0 | 10.0 | 35.0 | 65.0 | | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Final slope | Final intercept (PCU/hr) |
|---|---|---|
| 1 - Claycliffe Road | 0.632 | 1591 |
| 2 - Whaley Road | 0.638 | 1632 |
| 3 - Wilthorpe Road | 0.716 | 1905 |
| 4 - Barugh Green Road | 0.611 | 1758 |

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

## Traffic Demand

### Demand Set Details

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D4 | 2025 | B | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - Claycliffe Road | | ONE HOUR | ✓ | 688 | 100.000 |
| 2 - Whaley Road | | ONE HOUR | ✓ | 138 | 100.000 |
| 3 - Wilthorpe Road | | ONE HOUR | ✓ | 1012 | 100.000 |
| 4 - Barugh Green Road | | ONE HOUR | ✓ | 484 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 45 | 598 | 45 |
| | 2 - Whaley Road | 37 | 0 | 77 | 24 |
| | 3 - Wilthorpe Road | 528 | 175 | 32 | 277 |
| | 4 - Barugh Green Road | 49 | 84 | 351 | 0 |

## Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 0 | 0 | 0 |
| | 2 - Whaley Road | 0 | 0 | 0 | 0 |
| | 3 - Wilthorpe Road | 0 | 0 | 0 | 0 |
| | 4 - Barugh Green Road | 0 | 0 | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 0.66 | 9.30 | 1.9 | A | 631 | 947 |
| 2 - Whaley Road | 0.17 | 4.74 | 0.2 | A | 127 | 190 |
| 3 - Wilthorpe Road | 0.61 | 5.09 | 1.6 | A | 929 | 1393 |
| 4 - Barugh Green Road | 0.43 | 5.10 | 0.8 | A | 444 | 666 |

### Main Results for each time segment

#### 07:30 - 07:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 518 | 129 | 482 | 1286 | 0.403 | 515 | 461 | 0.0 | 0.7 | 4.652 | A |
| 2 - Whaley Road | 104 | 26 | 769 | 1142 | 0.091 | 103 | 228 | 0.0 | 0.1 | 3.467 | A |
| 3 - Wilthorpe Road | 762 | 190 | 79 | 1848 | 0.412 | 759 | 793 | 0.0 | 0.7 | 3.297 | A |
| 4 - Barugh Green Road | 364 | 91 | 579 | 1404 | 0.260 | 363 | 259 | 0.0 | 0.3 | 3.453 | A |

### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 618 | 155 | 576 | 1226 | 0.504 | 617 | 551 | 0.7 | 1.0 | 5.895 | A |
| 2 - Whaley Road | 124 | 31 | 921 | 1045 | 0.119 | 124 | 273 | 0.1 | 0.1 | 3.909 | A |
| 3 - Wilthorpe Road | 910 | 227 | 95 | 1837 | 0.495 | 909 | 949 | 0.7 | 1.0 | 3.872 | A |
| 4 - Barugh Green Road | 435 | 109 | 693 | 1334 | 0.326 | 435 | 311 | 0.3 | 0.5 | 3.998 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 758 | 189 | 705 | 1145 | 0.662 | 754 | 675 | 1.0 | 1.9 | 9.123 | A |
| 2 - Whaley Road | 152 | 38 | 1125 | 914 | 0.166 | 152 | 334 | 0.1 | 0.2 | 4.720 | A |
| 3 - Wilthorpe Road | 1114 | 279 | 116 | 1822 | 0.612 | 1112 | 1161 | 1.0 | 1.6 | 5.054 | A |
| 4 - Barugh Green Road | 533 | 133 | 848 | 1240 | 0.430 | 532 | 380 | 0.5 | 0.7 | 5.079 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 758 | 189 | 707 | 1144 | 0.662 | 757 | 676 | 1.9 | 1.9 | 9.305 | A |
| 2 - Whaley Road | 152 | 38 | 1130 | 912 | 0.167 | 152 | 335 | 0.2 | 0.2 | 4.738 | A |
| 3 - Wilthorpe Road | 1114 | 279 | 117 | 1822 | 0.612 | 1114 | 1165 | 1.6 | 1.6 | 5.088 | A |
| 4 - Barugh Green Road | 533 | 133 | 850 | 1239 | 0.430 | 533 | 381 | 0.7 | 0.8 | 5.100 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 618 | 155 | 579 | 1225 | 0.505 | 622 | 553 | 1.9 | 1.0 | 6.004 | A |
| 2 - Whaley Road | 124 | 31 | 927 | 1041 | 0.119 | 124 | 274 | 0.2 | 0.1 | 3.929 | A |
| 3 - Wilthorpe Road | 910 | 227 | 96 | 1837 | 0.495 | 912 | 955 | 1.6 | 1.0 | 3.904 | A |
| 4 - Barugh Green Road | 435 | 109 | 696 | 1333 | 0.326 | 436 | 312 | 0.8 | 0.5 | 4.019 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 518 | 129 | 484 | 1285 | 0.403 | 519 | 463 | 1.0 | 0.7 | 4.711 | A |
| 2 - Whaley Road | 104 | 26 | 774 | 1138 | 0.091 | 104 | 229 | 0.1 | 0.1 | 3.480 | A |
| 3 - Wilthorpe Road | 762 | 190 | 80 | 1848 | 0.412 | 763 | 798 | 1.0 | 0.7 | 3.323 | A |
| 4 - Barugh Green Road | 364 | 91 | 582 | 1402 | 0.260 | 365 | 261 | 0.5 | 0.4 | 3.471 | A |

# (Default Analysis Set) - 2025 | B | PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | 4 - Barugh Green Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | Standard Roundabout | | 1, 2, 3, 4 | 6.55 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 6.55 | A |

## Traffic Demand

### Demand Set Details

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D5 | 2025 | B | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - Claycliffe Road | | ONE HOUR | ✓ | 696 | 100.000 |
| 2 - Whaley Road | | ONE HOUR | ✓ | 283 | 100.000 |
| 3 - Wilthorpe Road | | ONE HOUR | ✓ | 1117 | 100.000 |
| 4 - Barugh Green Road | | ONE HOUR | ✓ | 449 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 17 | 579 | 100 |
| | 2 - Whaley Road | 29 | 1 | 170 | 83 |
| | 3 - Wilthorpe Road | 611 | 56 | 28 | 422 |
| | 4 - Barugh Green Road | 80 | 22 | 347 | 0 |

## Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 0 | 0 | 0 |
| | 2 - Whaley Road | 0 | 0 | 0 | 0 |
| | 3 - Wilthorpe Road | 0 | 0 | 0 | 0 |
| | 4 - Barugh Green Road | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 0.60 | 7.07 | 1.5 | A | 639 | 958 |
| 2 - Whaley Road | 0.35 | 6.20 | 0.5 | A | 260 | 390 |
| 3 - Wilthorpe Road | 0.71 | 7.09 | 2.4 | A | 1025 | 1537 |
| 4 - Barugh Green Road | 0.39 | 4.64 | 0.6 | A | 412 | 618 |

## Main Results for each time segment

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 524 | 131 | 341 | 1376 | 0.381 | 522 | 540 | 0.0 | 0.6 | 4.203 | A |
| 2 - Whaley Road | 213 | 53 | 790 | 1128 | 0.189 | 212 | 72 | 0.0 | 0.2 | 3.925 | A |
| 3 - Wilthorpe Road | 841 | 210 | 160 | 1791 | 0.470 | 837 | 843 | 0.0 | 0.9 | 3.761 | A |
| 4 - Barugh Green Road | 338 | 85 | 544 | 1426 | 0.237 | 337 | 454 | 0.0 | 0.3 | 3.303 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 626 | 156 | 408 | 1333 | 0.469 | 625 | 646 | 0.6 | 0.9 | 5.074 | A |
| 2 - Whaley Road | 254 | 64 | 946 | 1029 | 0.247 | 254 | 86 | 0.2 | 0.3 | 4.645 | A |
| 3 - Wilthorpe Road | 1004 | 251 | 191 | 1768 | 0.568 | 1002 | 1009 | 0.9 | 1.3 | 4.690 | A |
| 4 - Barugh Green Road | 404 | 101 | 651 | 1360 | 0.297 | 403 | 543 | 0.3 | 0.4 | 3.758 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 766 | 192 | 499 | 1275 | 0.601 | 764 | 790 | 0.9 | 1.5 | 7.002 | A |
| 2 - Whaley Road | 312 | 78 | 1157 | 894 | 0.349 | 311 | 105 | 0.3 | 0.5 | 6.165 | A |
| 3 - Wilthorpe Road | 1230 | 307 | 234 | 1738 | 0.708 | 1226 | 1234 | 1.3 | 2.4 | 6.969 | A |
| 4 - Barugh Green Road | 494 | 124 | 796 | 1272 | 0.389 | 494 | 664 | 0.4 | 0.6 | 4.620 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 766 | 192 | 500 | 1275 | 0.601 | 766 | 793 | 1.5 | 1.5 | 7.075 | A |
| 2 - Whaley Road | 312 | 78 | 1160 | 892 | 0.349 | 312 | 106 | 0.5 | 0.5 | 6.203 | A |
| 3 - Wilthorpe Road | 1230 | 307 | 235 | 1737 | 0.708 | 1230 | 1237 | 2.4 | 2.4 | 7.087 | A |
| 4 - Barugh Green Road | 494 | 124 | 798 | 1270 | 0.389 | 494 | 666 | 0.6 | 0.6 | 4.639 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 626 | 156 | 409 | 1332 | 0.470 | 628 | 650 | 1.5 | 0.9 | 5.129 | A |
| 2 - Whaley Road | 254 | 64 | 951 | 1026 | 0.248 | 255 | 87 | 0.5 | 0.3 | 4.678 | A |
| 3 - Wilthorpe Road | 1004 | 251 | 192 | 1768 | 0.568 | 1008 | 1014 | 2.4 | 1.3 | 4.769 | A |
| 4 - Barugh Green Road | 404 | 101 | 654 | 1358 | 0.297 | 404 | 546 | 0.6 | 0.4 | 3.777 | A |

### 17:15 - 17:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 524 | 131 | 342 | 1374 | 0.381 | 525 | 543 | 0.9 | 0.6 | 4.245 | A |
| 2 - Whaley Road | 213 | 53 | 795 | 1125 | 0.189 | 213 | 72 | 0.3 | 0.2 | 3.951 | A |
| 3 - Wilthorpe Road | 841 | 210 | 161 | 1790 | 0.470 | 843 | 848 | 1.3 | 0.9 | 3.805 | A |
| 4 - Barugh Green Road | 338 | 85 | 547 | 1424 | 0.237 | 338 | 456 | 0.4 | 0.3 | 3.317 | A |

# (Default Analysis Set) - 2030 | B + CD | AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | 4 - Barugh Green Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | Standard Roundabout | | 1, 2, 3, 4 | 10.17 | B |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 10.17 | B |

## Traffic Demand

### Demand Set Details

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D6 | 2030 | B + CD | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - Claycliffe Road | | ONE HOUR | ✓ | 742 | 100.000 |
| 2 - Whaley Road | | ONE HOUR | ✓ | 145 | 100.000 |
| 3 - Wilthorpe Road | | ONE HOUR | ✓ | 1181 | 100.000 |
| 4 - Barugh Green Road | | ONE HOUR | ✓ | 693 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 47 | 638 | 57 |
| | 2 - Whaley Road | 39 | 0 | 81 | 25 |
| | 3 - Wilthorpe Road | 576 | 185 | 34 | 386 |
| | 4 - Barugh Green Road | 89 | 89 | 515 | 0 |

## Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 0 | 0 | 0 |
| | 2 - Whaley Road | 0 | 0 | 0 | 0 |
| | 3 - Wilthorpe Road | 0 | 0 | 0 | 0 |
| | 4 - Barugh Green Road | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 0.80 | 17.68 | 3.9 | C | 681 | 1021 |
| 2 - Whaley Road | 0.21 | 6.01 | 0.3 | A | 133 | 200 |
| 3 - Wilthorpe Road | 0.72 | 7.06 | 2.5 | A | 1084 | 1626 |
| 4 - Barugh Green Road | 0.64 | 8.29 | 1.7 | A | 636 | 954 |

## Main Results for each time segment

### 07:30 - 07:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 559 | 140 | 617 | 1201 | 0.465 | 555 | 528 | 0.0 | 0.9 | 5.547 | A |
| 2 - Whaley Road | 109 | 27 | 931 | 1038 | 0.105 | 109 | 241 | 0.0 | 0.1 | 3.872 | A |
| 3 - Wilthorpe Road | 889 | 222 | 91 | 1840 | 0.483 | 885 | 949 | 0.0 | 0.9 | 3.757 | A |
| 4 - Barugh Green Road | 522 | 130 | 625 | 1376 | 0.379 | 519 | 351 | 0.0 | 0.6 | 4.191 | A |

### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 667 | 167 | 738 | 1124 | 0.593 | 665 | 632 | 0.9 | 1.4 | 7.799 | A |
| 2 - Whaley Road | 130 | 33 | 1115 | 921 | 0.142 | 130 | 288 | 0.1 | 0.2 | 4.552 | A |
| 3 - Wilthorpe Road | 1062 | 265 | 109 | 1828 | 0.581 | 1060 | 1137 | 0.9 | 1.4 | 4.680 | A |
| 4 - Barugh Green Road | 623 | 156 | 749 | 1301 | 0.479 | 622 | 420 | 0.6 | 0.9 | 5.293 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 817 | 204 | 903 | 1020 | 0.801 | 808 | 772 | 1.4 | 3.7 | 16.299 | C |
| 2 - Whaley Road | 160 | 40 | 1359 | 765 | 0.209 | 159 | 352 | 0.2 | 0.3 | 5.936 | A |
| 3 - Wilthorpe Road | 1300 | 325 | 132 | 1810 | 0.718 | 1296 | 1386 | 1.4 | 2.5 | 6.934 | A |
| 4 - Barugh Green Road | 763 | 191 | 915 | 1199 | 0.636 | 760 | 513 | 0.9 | 1.7 | 8.141 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 817 | 204 | 906 | 1018 | 0.802 | 816 | 775 | 3.7 | 3.9 | 17.679 | C |
| 2 - Whaley Road | 160 | 40 | 1369 | 759 | 0.210 | 160 | 353 | 0.3 | 0.3 | 6.008 | A |
| 3 - Wilthorpe Road | 1300 | 325 | 133 | 1810 | 0.718 | 1300 | 1395 | 2.5 | 2.5 | 7.058 | A |
| 4 - Barugh Green Road | 763 | 191 | 918 | 1197 | 0.637 | 763 | 515 | 1.7 | 1.7 | 8.289 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 667 | 167 | 743 | 1121 | 0.595 | 677 | 636 | 3.9 | 1.5 | 8.266 | A |
| 2 - Whaley Road | 130 | 33 | 1130 | 911 | 0.143 | 131 | 290 | 0.3 | 0.2 | 4.614 | A |
| 3 - Wilthorpe Road | 1062 | 265 | 110 | 1827 | 0.581 | 1066 | 1151 | 2.5 | 1.4 | 4.762 | A |
| 4 - Barugh Green Road | 623 | 156 | 753 | 1298 | 0.480 | 626 | 423 | 1.7 | 0.9 | 5.383 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 559 | 140 | 621 | 1198 | 0.466 | 561 | 531 | 1.5 | 0.9 | 5.671 | A |
| 2 - Whaley Road | 109 | 27 | 940 | 1033 | 0.106 | 109 | 242 | 0.2 | 0.1 | 3.899 | A |
| 3 - Wilthorpe Road | 889 | 222 | 91 | 1840 | 0.483 | 891 | 958 | 1.4 | 0.9 | 3.803 | A |
| 4 - Barugh Green Road | 522 | 130 | 629 | 1374 | 0.380 | 523 | 353 | 0.9 | 0.6 | 4.238 | A |

# (Default Analysis Set) - 2030 | B + CD | PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | 4 - Barugh Green Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | Standard Roundabout | | 1, 2, 3, 4 | 12.36 | B |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 12.36 | B |

## Traffic Demand

### Demand Set Details

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D7 | 2030 | B + CD | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - Claycliffe Road | | ONE HOUR | ✓ | 792 | 100.000 |
| 2 - Whaley Road | | ONE HOUR | ✓ | 300 | 100.000 |
| 3 - Wilthorpe Road | | ONE HOUR | ✓ | 1343 | 100.000 |
| 4 - Barugh Green Road | | ONE HOUR | ✓ | 614 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 18 | 630 | 144 |
| | 2 - Whaley Road | 31 | 1 | 180 | 88 |
| | 3 - Wilthorpe Road | 657 | 59 | 30 | 597 |
| | 4 - Barugh Green Road | 107 | 23 | 484 | 0 |

## Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 0 | 0 | 0 |
| | 2 - Whaley Road | 0 | 0 | 0 | 0 |
| | 3 - Wilthorpe Road | 0 | 0 | 0 | 0 |
| | 4 - Barugh Green Road | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 0.74 | 11.82 | 2.8 | B | 727 | 1090 |
| 2 - Whaley Road | 0.45 | 9.06 | 0.8 | A | 275 | 413 |
| 3 - Wilthorpe Road | 0.87 | 16.12 | 6.3 | C | 1232 | 1849 |
| 4 - Barugh Green Road | 0.55 | 6.44 | 1.2 | A | 563 | 845 |

## Main Results for each time segment

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 596 | 149 | 447 | 1308 | 0.456 | 593 | 595 | 0.0 | 0.8 | 5.012 | A |
| 2 - Whaley Road | 226 | 56 | 965 | 1017 | 0.222 | 225 | 76 | 0.0 | 0.3 | 4.539 | A |
| 3 - Wilthorpe Road | 1011 | 253 | 198 | 1764 | 0.573 | 1006 | 992 | 0.0 | 1.3 | 4.717 | A |
| 4 - Barugh Green Road | 462 | 116 | 583 | 1402 | 0.330 | 460 | 621 | 0.0 | 0.5 | 3.815 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 712 | 178 | 536 | 1252 | 0.569 | 710 | 713 | 0.8 | 1.3 | 6.619 | A |
| 2 - Whaley Road | 270 | 67 | 1155 | 895 | 0.301 | 269 | 91 | 0.3 | 0.4 | 5.746 | A |
| 3 - Wilthorpe Road | 1207 | 302 | 237 | 1736 | 0.696 | 1204 | 1188 | 1.3 | 2.2 | 6.721 | A |
| 4 - Barugh Green Road | 552 | 138 | 697 | 1332 | 0.414 | 551 | 743 | 0.5 | 0.7 | 4.606 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 872 | 218 | 655 | 1177 | 0.741 | 866 | 867 | 1.3 | 2.7 | 11.380 | B |
| 2 - Whaley Road | 330 | 83 | 1411 | 732 | 0.451 | 329 | 110 | 0.4 | 0.8 | 8.892 | A |
| 3 - Wilthorpe Road | 1479 | 370 | 289 | 1698 | 0.871 | 1464 | 1450 | 2.2 | 6.0 | 14.488 | B |
| 4 - Barugh Green Road | 676 | 169 | 848 | 1240 | 0.545 | 674 | 905 | 0.7 | 1.2 | 6.342 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 872 | 218 | 657 | 1175 | 0.742 | 872 | 875 | 2.7 | 2.8 | 11.825 | B |
| 2 - Whaley Road | 330 | 83 | 1418 | 728 | 0.454 | 330 | 111 | 0.8 | 0.8 | 9.057 | A |
| 3 - Wilthorpe Road | 1479 | 370 | 291 | 1697 | 0.871 | 1477 | 1457 | 6.0 | 6.3 | 16.117 | C |
| 4 - Barugh Green Road | 676 | 169 | 856 | 1235 | 0.547 | 676 | 912 | 1.2 | 1.2 | 6.439 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 712 | 178 | 539 | 1250 | 0.570 | 718 | 723 | 2.8 | 1.3 | 6.839 | A |
| 2 - Whaley Road | 270 | 67 | 1165 | 889 | 0.303 | 271 | 92 | 0.8 | 0.4 | 5.846 | A |
| 3 - Wilthorpe Road | 1207 | 302 | 239 | 1734 | 0.696 | 1223 | 1198 | 6.3 | 2.3 | 7.259 | A |
| 4 - Barugh Green Road | 552 | 138 | 708 | 1325 | 0.417 | 554 | 754 | 1.2 | 0.7 | 4.680 | A |

### 17:15 - 17:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 596 | 149 | 450 | 1306 | 0.457 | 598 | 601 | 1.3 | 0.8 | 5.099 | A |
| 2 - Whaley Road | 226 | 56 | 972 | 1012 | 0.223 | 226 | 76 | 0.4 | 0.3 | 4.586 | A |
| 3 - Wilthorpe Road | 1011 | 253 | 199 | 1762 | 0.574 | 1015 | 1000 | 2.3 | 1.4 | 4.840 | A |
| 4 - Barugh Green Road | 462 | 116 | 588 | 1399 | 0.330 | 463 | 626 | 0.7 | 0.5 | 3.852 | A |

# (Default Analysis Set) - 2030 | B + CD + D | AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | 4 - Barugh Green Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | Standard Roundabout | | 1, 2, 3, 4 | 11.29 | B |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 11.29 | B |

## Traffic Demand

### Demand Set Details

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D8 | 2030 | B + CD + D | AM | ONE HOUR | 07:30 | 09:00 | 15 | ✓ |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - Claycliffe Road | | ONE HOUR | ✓ | 747 | 100.000 |
| 2 - Whaley Road | | ONE HOUR | ✓ | 145 | 100.000 |
| 3 - Wilthorpe Road | | ONE HOUR | ✓ | 1195 | 100.000 |
| 4 - Barugh Green Road | | ONE HOUR | ✓ | 738 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 47 | 638 | 62 |
| | 2 - Whaley Road | 39 | 0 | 81 | 25 |
| | 3 - Wilthorpe Road | 576 | 185 | 34 | 400 |
| | 4 - Barugh Green Road | 100 | 89 | 549 | 0 |

## Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 0 | 0 | 0 |
| | 2 - Whaley Road | 0 | 0 | 0 | 0 |
| | 3 - Wilthorpe Road | 0 | 0 | 0 | 0 |
| | 4 - Barugh Green Road | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 0.83 | 20.50 | 4.5 | C | 685 | 1028 |
| 2 - Whaley Road | 0.22 | 6.29 | 0.3 | A | 133 | 200 |
| 3 - Wilthorpe Road | 0.73 | 7.33 | 2.6 | A | 1097 | 1645 |
| 4 - Barugh Green Road | 0.68 | 9.35 | 2.1 | A | 677 | 1016 |

## Main Results for each time segment

### 07:30 - 07:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 562 | 141 | 642 | 1185 | 0.475 | 559 | 536 | 0.0 | 0.9 | 5.719 | A |
| 2 - Whaley Road | 109 | 27 | 960 | 1019 | 0.107 | 109 | 241 | 0.0 | 0.1 | 3.951 | A |
| 3 - Wilthorpe Road | 900 | 225 | 94 | 1838 | 0.490 | 896 | 975 | 0.0 | 1.0 | 3.806 | A |
| 4 - Barugh Green Road | 556 | 139 | 625 | 1376 | 0.404 | 553 | 365 | 0.0 | 0.7 | 4.360 | A |

### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 672 | 168 | 769 | 1105 | 0.608 | 669 | 642 | 0.9 | 1.5 | 8.214 | A |
| 2 - Whaley Road | 130 | 33 | 1150 | 899 | 0.145 | 130 | 288 | 0.1 | 0.2 | 4.684 | A |
| 3 - Wilthorpe Road | 1074 | 269 | 113 | 1824 | 0.589 | 1072 | 1167 | 1.0 | 1.4 | 4.776 | A |
| 4 - Barugh Green Road | 663 | 166 | 748 | 1301 | 0.510 | 662 | 437 | 0.7 | 1.0 | 5.624 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 822 | 206 | 939 | 997 | 0.825 | 812 | 784 | 1.5 | 4.2 | 18.426 | C |
| 2 - Whaley Road | 160 | 40 | 1399 | 739 | 0.216 | 159 | 352 | 0.2 | 0.3 | 6.201 | A |
| 3 - Wilthorpe Road | 1316 | 329 | 138 | 1807 | 0.728 | 1311 | 1421 | 1.4 | 2.6 | 7.194 | A |
| 4 - Barugh Green Road | 813 | 203 | 915 | 1199 | 0.678 | 809 | 534 | 1.0 | 2.0 | 9.126 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 822 | 206 | 943 | 994 | 0.827 | 821 | 787 | 4.2 | 4.5 | 20.504 | C |
| 2 - Whaley Road | 160 | 40 | 1412 | 732 | 0.218 | 160 | 353 | 0.3 | 0.3 | 6.293 | A |
| 3 - Wilthorpe Road | 1316 | 329 | 139 | 1806 | 0.729 | 1316 | 1432 | 2.6 | 2.6 | 7.333 | A |
| 4 - Barugh Green Road | 813 | 203 | 918 | 1197 | 0.679 | 812 | 536 | 2.0 | 2.1 | 9.351 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 672 | 168 | 775 | 1101 | 0.610 | 683 | 646 | 4.5 | 1.6 | 8.840 | A |
| 2 - Whaley Road | 130 | 33 | 1167 | 887 | 0.147 | 131 | 291 | 0.3 | 0.2 | 4.761 | A |
| 3 - Wilthorpe Road | 1074 | 269 | 114 | 1823 | 0.589 | 1079 | 1184 | 2.6 | 1.5 | 4.867 | A |
| 4 - Barugh Green Road | 663 | 166 | 753 | 1298 | 0.511 | 668 | 440 | 2.1 | 1.1 | 5.749 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 562 | 141 | 647 | 1182 | 0.476 | 565 | 539 | 1.6 | 0.9 | 5.863 | A |
| 2 - Whaley Road | 109 | 27 | 970 | 1014 | 0.108 | 109 | 242 | 0.2 | 0.1 | 3.983 | A |
| 3 - Wilthorpe Road | 900 | 225 | 95 | 1837 | 0.490 | 902 | 984 | 1.5 | 1.0 | 3.856 | A |
| 4 - Barugh Green Road | 556 | 139 | 629 | 1373 | 0.405 | 557 | 368 | 1.1 | 0.7 | 4.417 | A |

# (Default Analysis Set) - 2030 | B + CD + D | PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | 4 - Barugh Green Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | Standard Roundabout | | 1, 2, 3, 4 | 14.19 | B |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 14.19 | B |

## Traffic Demand

### Demand Set Details

| ID | Year | Scenario | Time period | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|---|
| D9 | 2030 | B + CD + D | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - Claycliffe Road | | ONE HOUR | ✓ | 802 | 100.000 |
| 2 - Whaley Road | | ONE HOUR | ✓ | 300 | 100.000 |
| 3 - Wilthorpe Road | | ONE HOUR | ✓ | 1374 | 100.000 |
| 4 - Barugh Green Road | | ONE HOUR | ✓ | 634 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 18 | 630 | 154 |
| | 2 - Whaley Road | 31 | 1 | 180 | 88 |
| | 3 - Wilthorpe Road | 657 | 59 | 30 | 628 |
| | 4 - Barugh Green Road | 112 | 23 | 499 | 0 |

## Vehicle Mix

| HV data entry mode | PCU Factor for a HV (PCU) |
|---|---|
| HV Percentages | 2.00 |

### Heavy Vehicle %

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - Claycliffe Road | 2 - Whaley Road | 3 - Wilthorpe Road | 4 - Barugh Green Road |
| From | 1 - Claycliffe Road | 0 | 0 | 0 | 0 |
| | 2 - Whaley Road | 0 | 0 | 0 | 0 |
| | 3 - Wilthorpe Road | 0 | 0 | 0 | 0 |
| | 4 - Barugh Green Road | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 0.76 | 12.71 | 3.0 | B | 736 | 1104 |
| 2 - Whaley Road | 0.47 | 9.47 | 0.9 | A | 275 | 413 |
| 3 - Wilthorpe Road | 0.90 | 19.55 | 7.8 | C | 1261 | 1891 |
| 4 - Barugh Green Road | 0.57 | 6.70 | 1.3 | A | 582 | 873 |

## Main Results for each time segment

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 604 | 151 | 459 | 1301 | 0.464 | 600 | 599 | 0.0 | 0.9 | 5.115 | A |
| 2 - Whaley Road | 226 | 56 | 983 | 1005 | 0.225 | 225 | 76 | 0.0 | 0.3 | 4.608 | A |
| 3 - Wilthorpe Road | 1034 | 259 | 205 | 1758 | 0.588 | 1029 | 1003 | 0.0 | 1.4 | 4.898 | A |
| 4 - Barugh Green Road | 477 | 119 | 583 | 1402 | 0.340 | 475 | 651 | 0.0 | 0.5 | 3.876 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 721 | 180 | 549 | 1244 | 0.580 | 719 | 717 | 0.9 | 1.4 | 6.835 | A |
| 2 - Whaley Road | 270 | 67 | 1178 | 881 | 0.306 | 269 | 91 | 0.3 | 0.4 | 5.878 | A |
| 3 - Wilthorpe Road | 1235 | 309 | 246 | 1729 | 0.714 | 1231 | 1201 | 1.4 | 2.4 | 7.165 | A |
| 4 - Barugh Green Road | 570 | 142 | 697 | 1332 | 0.428 | 569 | 780 | 0.5 | 0.7 | 4.712 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 883 | 221 | 671 | 1167 | 0.757 | 877 | 871 | 1.4 | 3.0 | 12.146 | B |
| 2 - Whaley Road | 330 | 83 | 1437 | 715 | 0.462 | 329 | 110 | 0.4 | 0.8 | 9.278 | A |
| 3 - Wilthorpe Road | 1513 | 378 | 300 | 1691 | 0.895 | 1494 | 1466 | 2.4 | 7.2 | 16.853 | C |
| 4 - Barugh Green Road | 698 | 175 | 846 | 1241 | 0.562 | 696 | 947 | 0.7 | 1.3 | 6.580 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 883 | 221 | 674 | 1165 | 0.758 | 883 | 880 | 3.0 | 3.0 | 12.707 | B |
| 2 - Whaley Road | 330 | 83 | 1445 | 710 | 0.465 | 330 | 111 | 0.8 | 0.9 | 9.474 | A |
| 3 - Wilthorpe Road | 1513 | 378 | 302 | 1689 | 0.896 | 1510 | 1474 | 7.2 | 7.8 | 19.548 | C |
| 4 - Barugh Green Road | 698 | 175 | 855 | 1235 | 0.565 | 698 | 957 | 1.3 | 1.3 | 6.696 | A |

### 17:00 - 17:15

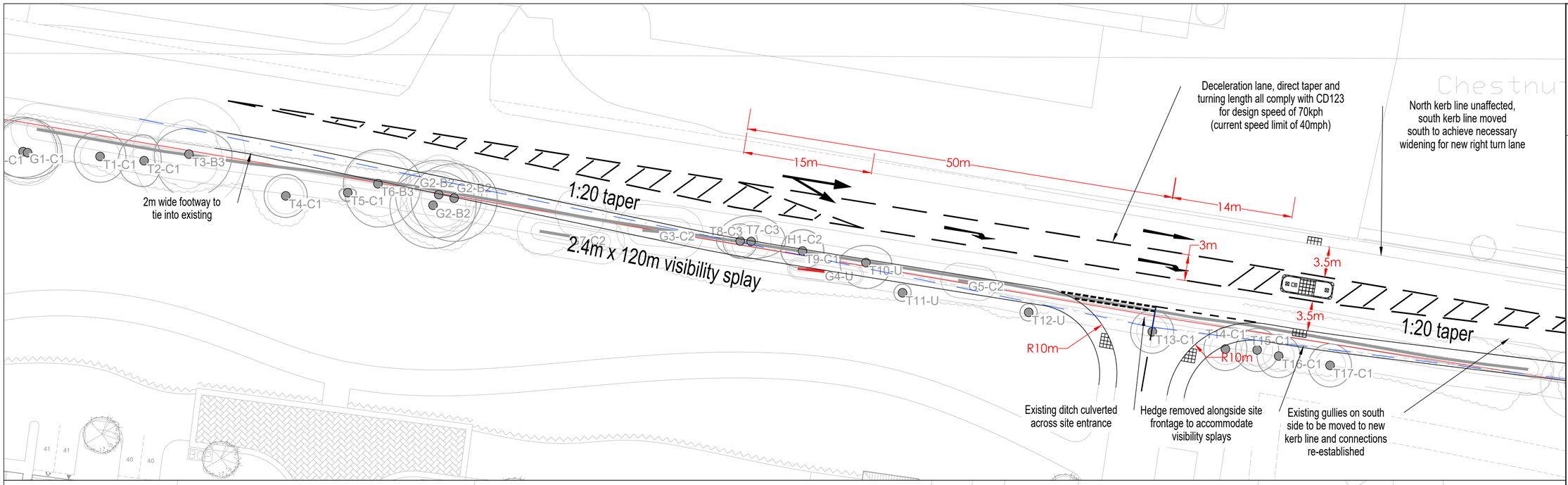
| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 721 | 180 | 553 | 1241 | 0.581 | 727 | 730 | 3.0 | 1.4 | 7.097 | A |
| 2 - Whaley Road | 270 | 67 | 1189 | 874 | 0.309 | 271 | 92 | 0.9 | 0.5 | 5.993 | A |
| 3 - Wilthorpe Road | 1235 | 309 | 248 | 1728 | 0.715 | 1256 | 1212 | 7.8 | 2.6 | 7.956 | A |
| 4 - Barugh Green Road | 570 | 142 | 711 | 1324 | 0.431 | 572 | 793 | 1.3 | 0.8 | 4.802 | A |

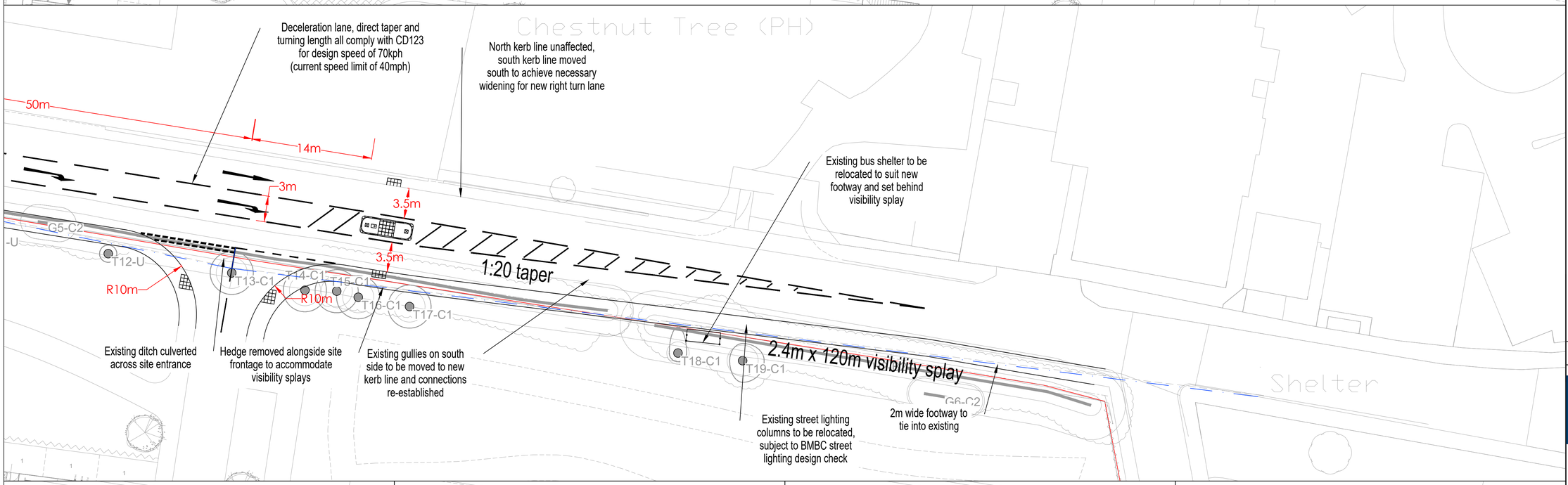
### 17:15 - 17:30

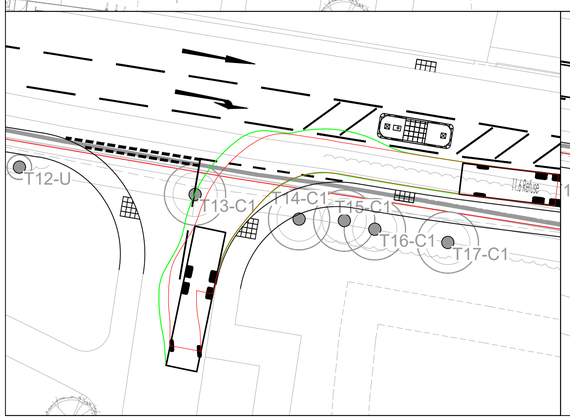
| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - Claycliffe Road | 604 | 151 | 462 | 1299 | 0.465 | 606 | 605 | 1.4 | 0.9 | 5.210 | A |
| 2 - Whaley Road | 226 | 56 | 991 | 1000 | 0.226 | 226 | 76 | 0.5 | 0.3 | 4.659 | A |
| 3 - Wilthorpe Road | 1034 | 259 | 207 | 1757 | 0.589 | 1039 | 1011 | 2.6 | 1.5 | 5.045 | A |
| 4 - Barugh Green Road | 477 | 119 | 588 | 1399 | 0.341 | 478 | 658 | 0.8 | 0.5 | 3.917 | A |

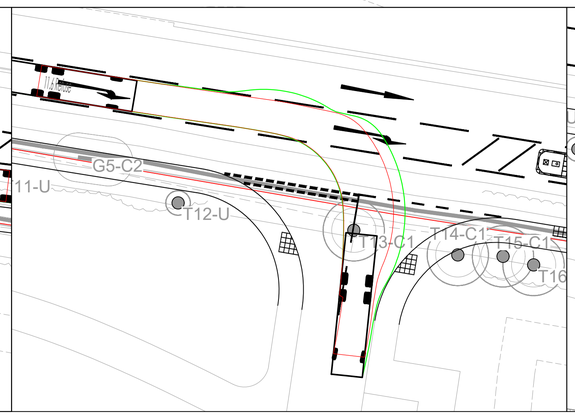
# Appendix M

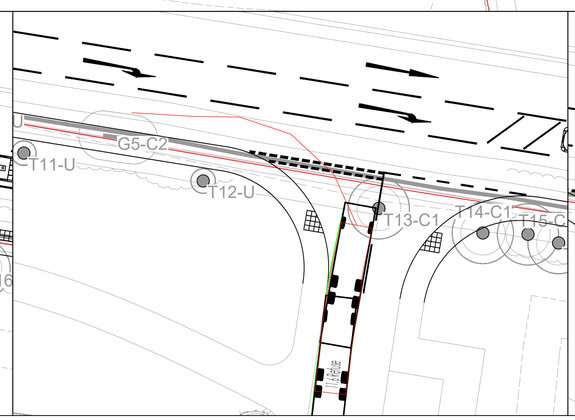
**Proposed Site Access Arrangements / Visibility Splays**

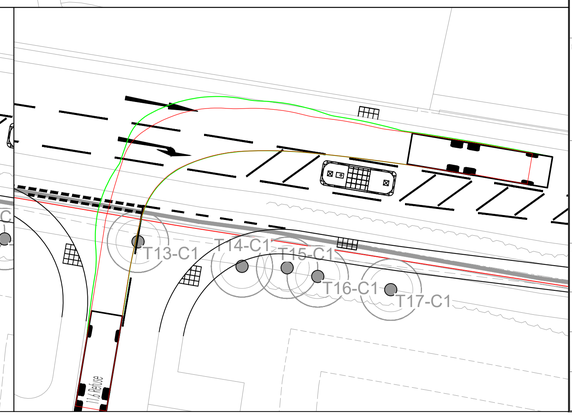



Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and specification.
2. This drawing should not be scaled.

Location Plan

Notes and Keys

| Date | Rev | Description | Drawn | Chkd |
|---|---|---|---|---|
| 17.12.24 | A | Site layout plan updated to final layout | JA | JT |

TPS

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Project
Proposed residential development, Avant Homes, Barugh Green Road, Barnsley

Title
Proposed right turn ghost island general arrangement drawing

Status
INFORMATION

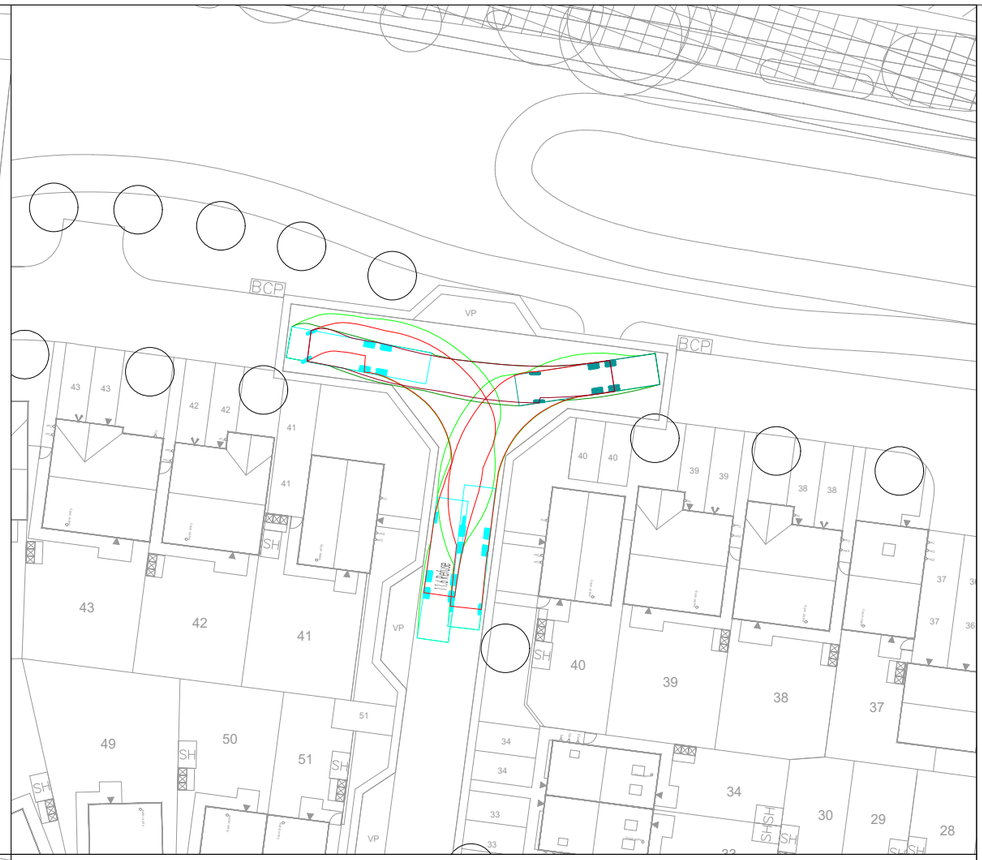
| Scale @ A1 | Date Created | Drawn | Checked |
|---|---|---|---|
| 1:250 | 17.05.24 | JT | JT |

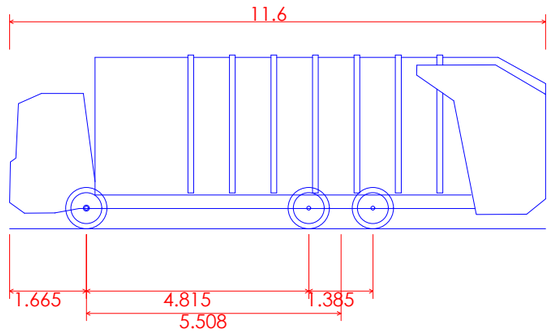
| TPS Project Number | | Revision |
|---|---|---|
| P2636 | | B |

Drawing Number
D - 1001

# Appendix N

**Swept Path Analysis**






| | |
|---|---|
| 11.6 Refuse | |
| Overall Length | 11.600m |
| Overall Width | 2.550m |
| Overall Body Height | 3.760m |
| Min Body Ground Clearance | 0.312m |
| Track Width | 2.550m |
| Lock to lock time | 4.00s |
| Kerb to Kerb Turning Radius | 10.150m |

| Date | Rev | Description | Drawn | Chkd |
|---|---|---|---|---|
| 28.08.25 | D | Revised site layout | JA | JA |
| 20.08.25 | C | Revised site layout | JA | JT |
| 06.06.25 | B | Revised site layout | JA | CG |
| 17.12.24 | A | Updated in line with final layout | JA | JT |

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Project
Barugh Green, Barnsley

Title
Swept Path Analysis - 11.6m Refuse Vehicle

| Date | Designed by | Checked by |
|---|---|---|
| 28/08/25 | JA | JT |

| Drawing Number | Scale @ A3 | Revision |
|---|---|---|
| P2636 - T - 1001 | 1:500 | D |