Land at St. Mary's Street
Penistone, S36 6DT

Transport Assessment

sanderson associates
consulting engineers

Control Sheet

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Google Maps and OpenRouteServicehave been used to generate figures included in this report for illustrative purposes only.

The Crashmap database /Crashmap Pro Collision Analysis System v1.28 has been utilised to carry out a road traffic incident review.

Extract(s) of 'Providing for journeys on foot', Barnsley Council Cycle Map have been included in this report.

The TRICS database v7.11.4 has been used in this report to calculate traffic generations.

Traffic count data has been provided by Nationwide Data Collection.

Growth factors have been obtained from TEMPro v8.1 software.

Junctions 10 software has been used to carry out junction capacity analysis.

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Junctions 10 Output - St. Mary's Street / Site Access

1. Introduction

1.1 Sanderson Associates Consulting Engineers has been appointed to produce a Transport Assessment in relation to the proposals for the development of Coal Drops and adjacent land, Penistone, Sheffield. The location of the site in relation to the surrounding area is shown in **Figure 1**.

Figure 1 – Map of proposed site and surrounding area. [Google MyMaps]

1.2 In accordance with the **National Planning Policy Guidance (NPPG)** for the requirements of a Transport Assessment as outlined in 'Travel Plans, Transport Assessments and Statements,' published in March 2014, this report will investigate:

- → The local highway network and its highway safety record;
- → The existing use of the site;
- → The proposed development;
- → Accessibility of the site, in relation to local facilities by sustainable modes;
- → The predicted multimodal trip generations;
- → The impact of the development on the local highway network in terms of highway safety and capacity.

1.3 A Framework Travel Plan has been prepared alongside this Transport Assessment in support of the planning application and is provided under separate cover.

2. Planning Policy Context

2.1 National Planning Policy Framework

2.1.1 At national level, planning policy in England is set out by the National Planning Policy Framework (NPPF), which must be considered when making planning decisions.

2.1.2 Considering the planning policy context of the development, Paragraph 115 of the NPPF (last revised in December 2024) states that:

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

a) sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;

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

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach."

2.1.3 Paragraph 116 then states:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios."

2.1.4 In relation to paragraph 116, NPPF paragraph 117 goes on to say:

"Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

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

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

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

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

2.1.5 Finally, paragraph 118 states that:

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

2.1.6 In accordance with the above guidance, this Transport Assessment will assess the following aspects:

- → The road traffic accident record of the local highway network
- → Planned access arrangements to the proposed development
- → The operational characteristics of the proposed development
- → The impact of the proposed development may have on local road safety
- → The impact of the proposed development on traffic, including the prospective modal modal trip generations and junction modelling for the road network within the vicinity of the site.
- → The accessibility of the proposed development, including impacts on local facilities and provisions for access via sustainable transport modes

2.2 Local Planning Policy

2.2.1 Local Planning Policy is governed by **Barnsley Council Local Plan** (the plan) which was adopted in January 2019. The local plan *'sets out the council's strategic vision and priorities for housing, employment and commercial development, including transport infrastructure and protection of our local environment.'*

2.2.2 The Plan follows NPPF in terms of sustainable development, with section 1.7 stating:

"The Local Plan objectives seek to improve the economic prosperity and quality of life for all its residents and those who work here. The Local Plan will have 3 key roles in accordance with the Government's Framework (NPPF) namely economic, social and environmental, and will deliver sustainable development."

2.2.3 Section 3.33 of the plan also states:

"Promoting sustainable development and reducing the borough's impact on climate change are overarching principles of this Local Plan, in accordance with NPPF."

2.2.4 Guidance related to traffic and transportation is laid out in section 4.18 Transport Strategy, which states:

"A transport strategy has been developed for Barnsley, which identifies and prioritises interventions associated with sustainable development transport corridors within and beyond the borough. The interventions identified within the Barnsley Transport Strategy will be programmed to promote sustainable travel and parking options for residents, visitors and business to employment locations, attractions, interchanges and also reduce the adverse impact of travel on people and the environment."

2.2.5 Guidance relating to new developments is covered in the plan in Section 12 – Transport, which states:

12.48 The need for transport assessments and travel plans, for all forms of development will be determined in accordance with government guidance.

12.49 A transport assessment 'is a comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures (such as travel plans) will be taken to address the anticipated transport impacts of the scheme and to improve accessibility, and to encourage sustainable modes of travel.

12.50 When considering whether a transport assessment will be needed, we must take account of local circumstances. For example, if there are significant local transport difficulties, we may need to carry out an assessment for developments below the thresholds in the guidance. However, where a proposed development is expected to generate relatively low numbers of trips or traffic flows, with minor transport impacts, a less detailed transport statement may be sufficient."

2.2.6 Paragraph 12.51 lays out the requirements for Transport Assessment, stating:

"The contents of a transport assessment will depend on the size, nature and location of a development, but in all cases the transport mitigation plans or package of measures should focus on maximising sustainable accessibility to the development and should show:

- *Consideration of reducing the need to travel.*
- *How accessible the development is by all forms of transport.*
- *Whether the site access can deal with the predicted level of traffic.*
- *Measures to reduce the negative impacts of transport.*
- *What measures can be taken to encourage travel by walking, cycling and public transport.*
- *Mitigation measures avoiding unnecessary physical highway improvements and promoting innovative and sustainable transport solutions.*

Where appropriate, developers will be expected to use our multi modal transportation models to estimate the effects of new developments on the transport network and to confirm that submitted transport assessments are accurate."

2.2.7 Section 12 also sets out the requirement of an accompanying Travel Plan, with paragraph 12.53 stating:

"A travel plan will normally be required alongside planning applications that are likely to have significant transport implications, alongside a full transport assessment. A travel plan statement may be required on smaller scale developments which are expected to have minor travel impacts, particularly where specific concerns are raised in a transport statement or assessment."

2.2.8 In relation to the development of Penistone, Paragraph 5.53 states:

"Penistone is in an area of attractive countryside, close to the Peak Park and surrounded by Green Belt. Its close proximity to Sheffield, Huddersfield and Barnsley has made it attractive to people who wish to combine the benefits of living in a pleasant environment without having excessively long journeys to work. The unemployment rate in the town is lower than other parts of the borough due to the large number of commuters, but many residents still depend upon the limited number of employment opportunities in the town. The relative remoteness of the town from the remainder of the borough, particularly for people who rely on public transport make these employment opportunities even more important."

2.2.9 Also, paragraph 5.55 states:

"We want Penistone to be the main local focus for development in the borough's rural west, facilitating its renaissance as a market town and maximising its tourism role."

2.2.10 This guidance is considered to be in line with that of the NPPF, and therefore the scope of this Transport Assessment as set out in paragraph 2.1.6 is also considered to meet the requirements of the Plan.

2.3 Parking

2.3.1 Provisions for parking is covered in **Parking SPD** adopted November 2019. **Table 1** covers parking requirements for different categories of development, and details the maximum number of parking spaces to be provided for each type of land use relevant to this development.

Use	Maximum number of spaces recommended	Threshold above which standard applies
A1 Shops (non-food retail)	1 space per 14-20sqm	1000 m^2
A3 Restaurants and cafes and A4 Drinking Establishments (Licenced Restaurants and Public Houses)	1 space per 4 m^2 gross floor area for customers. Where there are fixed seating areas for diners 1 space per 3 diners can be considered. and 1 space per residential staff and 1 space per 3 non-residential staff on duty at the busiest time.	All Development
B1 Business (including offices)	1 space per 30sqm gross floor area	All development
B2 General Industry	1 space per 30-50sqm	2500sqm
C1 Hotels, boarding and guesthouses	1 space per unit and Communal parking facilities	All Development

2.3.2 Further guidance on the design of parking is detailed in section 5 of the SPD which states:

"5. Size of non-residential parking bays

5.1 Generally, parking bays should be 5m long and 2.5m wide, with a 6m aisle width and a 3m reversing area at the end of the aisle. Each bay must be clearly marked and defined using appropriate permanent marking material."

3. Existing Situation

3.1 Site and surrounding area

3.1.1 The site is situated within the market town of Penistone approximately 10km southwest of Barnsley.

3.1.2 The proposed development site is located west of the St. Mary's Street roundabout, and comprises of the Victorian railway Coal Drops, signal house and railway siding which previously formed part of the old Penistone to Woodhead trainline.

3.1.3 The northern boundary of the site comprises of the Trans Pennine Trail, which is a national coast to coast route for recreation and transport – for walkers, cyclists and (in parts) horse riders.

3.1.4 Vehicular access to the site is via an unnamed road off Stottercliffe road, off the roundabout junction with Bridge Street, Market Lane and St Mary's Street. Pedestrian access is via public footpaths to the west, north and east of the site, as shown in **Figure 2** with current access points indicated.

Figure 2 – The site in relation to the local area [Google MyMaps]

3.1.5 The site is currently predominantly undeveloped land cleared for development.

3.2 Local Highway Network

3.2.1 Stottercliffe Road (**Figure 3)** is a minor, predominantly residential road which joins the B6462 (St Mary's Street/ Bridge Street) at a roundabout junction at the south east corner of the site. It connects with the access road to the site highlighted in Figure 2. The road is subject to a 30mph speed limit, has footways to either side and is lit by street lighting up to the site access road.

Figure 3 – Stottercliffe road leading to site access [Google Maps]

3.2.2 Market Lane, as shown in **Figure 4** below, progresses southwest from the roundabout, is categorised as a cul-de-sac/ access road, and leads to residential properties, the entrance to the Tesco Superstore and Penistone Market car park. The speed limit is 30mph. The road is approx. 6.7m wide, with footways to either side of the road of approx. width 2.4m. There is street lighting along the extent of the road.

Figure 4 – Market Lane [Google Maps]

3.2.3 To the east of the site St. Mary's Street follows the B6462 for approx. 120m until it becomes Market Street, which progresses south becoming Penistone High Street. At this junction the B6462 continues east as B6462 Sheffield Road towards the villages of Oxspring and Thurgoland. The road is subject to a 30mph speed limit and is the main north to south road through Penistone.

3.2.4 To the north the B6462 Bridge Street, shown in **Figure 5**, passes underneath the viaduct of the Trans Pennine Trail and continues north for approx. 300m until the junction with A628 Barnsley Road, which links to Barnsley and Sheffield in the east, and the Peak District National Park in the west.

Figure 5 – B6462 Bridge Street northbound

3.3 Road Safety History

3.3.1 National guidance states that a transport assessment should include; "an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent 3-year period, or 5-year period if the proposed site has been identified as within a high accident area."

3.3.2 Whilst the local network is not considered to be a 'high accident area', the most recent 5-year period, covering accidents from January 2019 to December 2023, has been considered in order to provide a robust assessment.

3.3.3 Road traffic collision data has been obtained from CrashMap Pro which holds traffic accident data, and covers the area around the site. The incident plot diagram within the site vicinity is shown in **Figure 6** whilst the full dataset is attached at **Appendix A**:-

Figure 6 – Incident Plot Diagram [CrashMap Pro]

3.3.4 The incident plot covers the B6462, Stottercliffe Road and Market Lane in the vicinity of the site. In total, only one accident was recorded in this area over the specified 5-year period. The accident is summarised as follows:

→ Incident Reference 2019140851808 – Occurred on 27 June 2019 at 1:50pm. Conditions were dry during daylight hours and the incident was not within 20m of a junction. The incident involved 1 vehicle and 1 pedestrian, resulting in 1 slight casualty. The pedestrian was in the carriageway, crossing the road to the drivers nearside, and was struck by the nearside of the vehicle.

3.3.5 The incident in the area is typical of those which occur in an urban area and is considered to have occurred as a result of driver/pedestrian error as opposed to any highway problems in the local area.

3.3.6 It is not considered that this incident represents any existing trends that would raise highway safety concerns and, as such, the proposed development is unlikely to have a detrimental impact on highway safety.

3.4 Traffic Data

3.4.1 Nationwide Data Collection (NDC) were commissioned to undertake traffic surveys. A fully classified turning count and queue survey was undertaken on Wednesday 10 and Thursday 11 May 2023, as well as Saturday 13 May 2023, at the Bridge Street/ St. Mary's Street roundabout between 07:00 and 19:00.

3.4.2 The turning count survey indicates that the weekday AM peak period for the roundabout occurs between the hours of 08:30 – 09:30 on the Wednesday, and 08:45 - 09:45 on the Thursday , while the PM peak occurs between 16:15 – 17:15 on both days. The Saturday peak was identified as 10:45 – 11:45.

3.4.3 The resulting traffic flows are shown on **Figures 7, 8** and **9** below and overleaf with copies also attached at **Appendix B**.

Figure 7 – Wednesday Traffic Flow Diagram

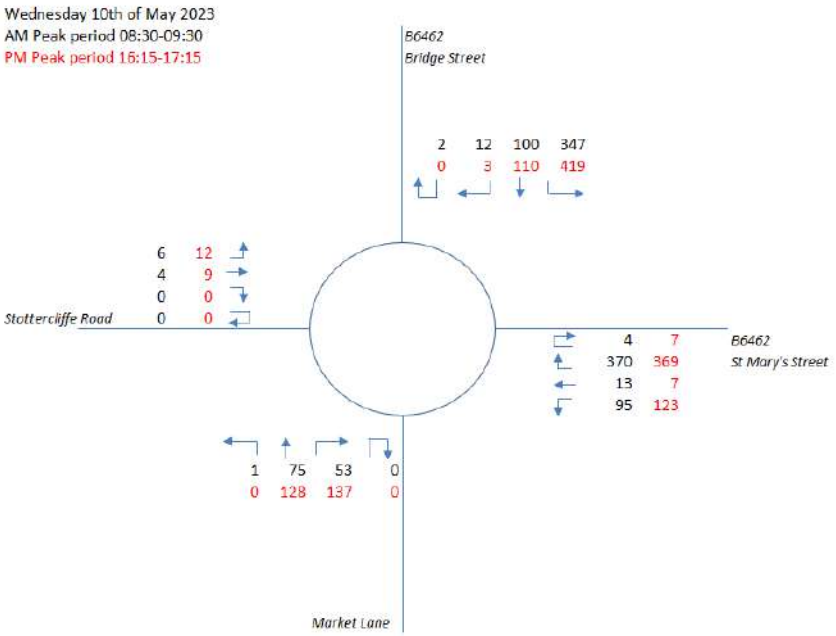


Figure 8 – Thursday Traffic Flow Diagram

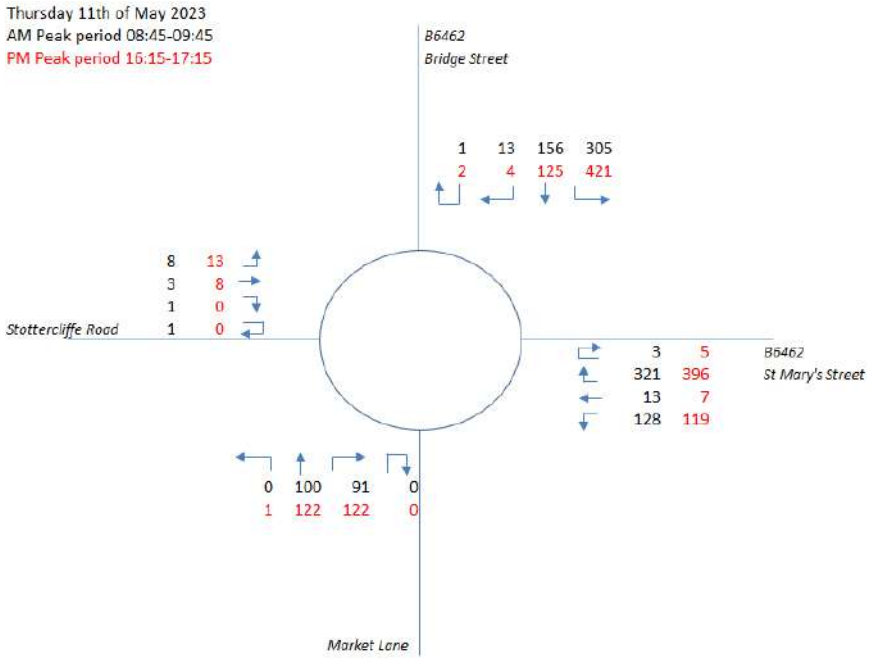
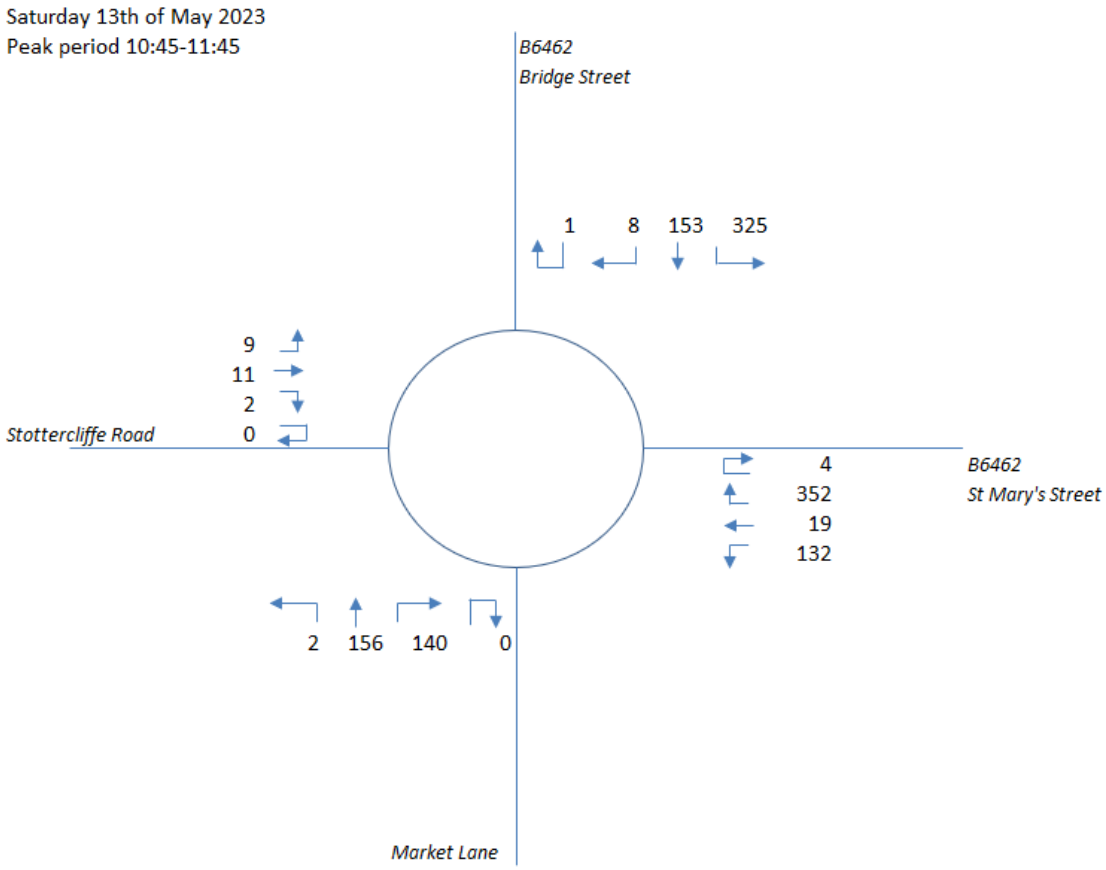


Figure 9 – Saturday Traffic Flow Diagram



4. Accessibility by Sustainable Transport Modes

4.1 Overview

4.1.1 This section of the Transport Assessment includes an assessment of the accessibility of the site by sustainable modes of transport.

4.1.2 This section considers the accessibility of the development by the following modes of transport:

- → Walking
- → Cycling
- → Public Transport (Bus and Train)

4.2 Accessibility by Walking

4.2.1 Walking is a sustainable mode of transport that can replace certain local car trips which contribute to congestion and pollution. As a mode of active travel, walking offers physical benefits and has also been linked to improvements in mental wellbeing.

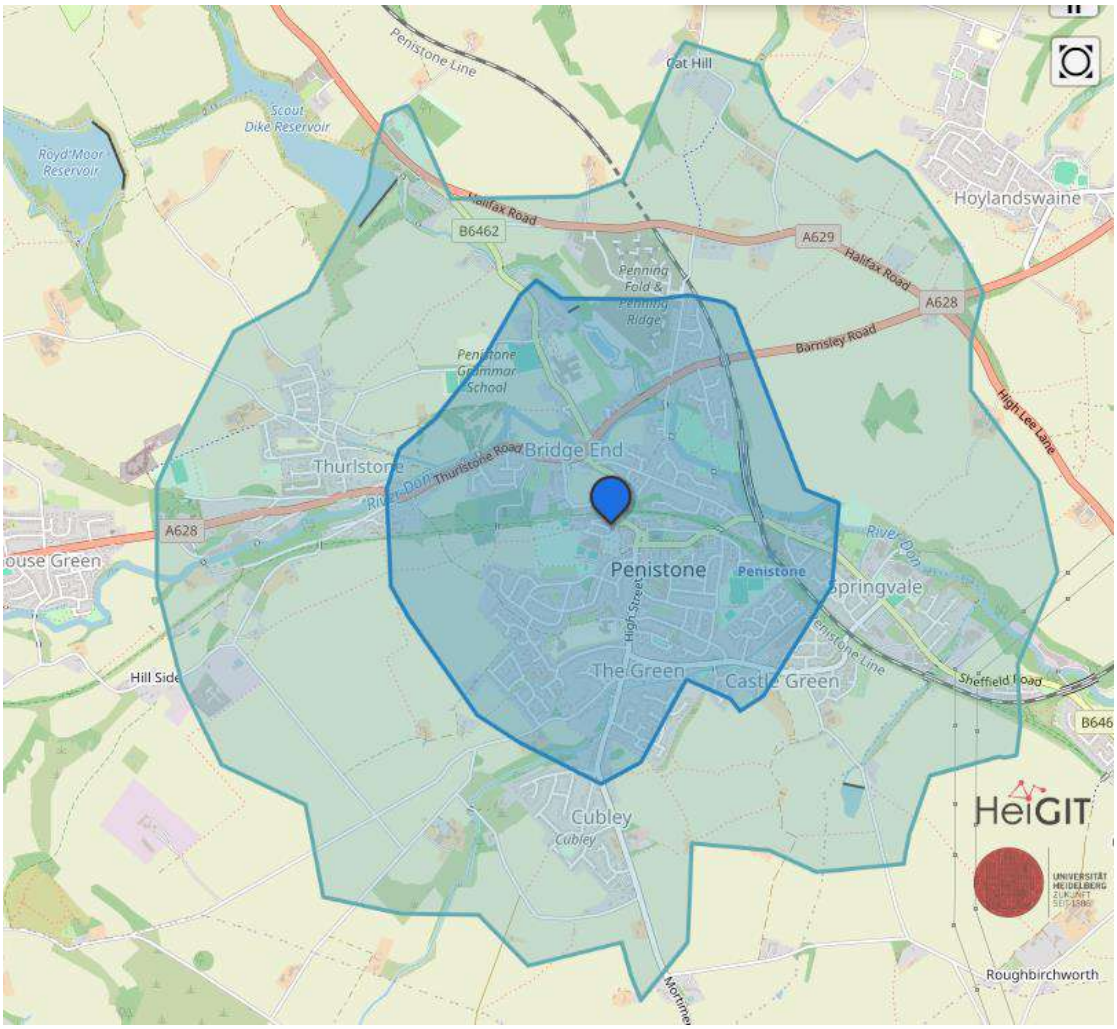
4.2.2 The length of a journey a person considers to be 'walkable' often depends on the purpose of that journey. The CIHT publication "Providing for Journeys on Foot" has produced guidelines on suggested acceptable walking distances for varying journey purposes, shown in **Table 1**.

Table 1 – Extract from Providing Journeys on Foot, Walking Distances [CIHT]

Suggested Acceptable Walking Distance			
	Town Centres (m)	Commuting/ Sight-seeing (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred Maximum	800	2000	1200

4.2.3 **Figure 10**, overleaf, identifies 1000m and 2000m walking isochrones centred on the site, providing an illustration of the areas that potential employees and visitors of the development may consider to be within walking distance, in line with the 'acceptable' and 'preferred maximum' walking distances for commuting, school and sight-seeing.

Figure 10 – Indicative Walking Isochrones (1km and 2km) [OpenRouteService]



4.2.4 The generated isochrones demonstrate that the site is walkable with the residential areas of Penistone, Thurlstone, Castle Green, Springvale, and Cubley within 1km walk of the site. The local settlements of Cat Hill and Hoylandswaine are within a 2km walk of the site.

4.2.5 Facilities and amenities within 1km walking distance of the site include:

- → Tesco Superstore
- → Penistone Market
- → Penistone Pharmacy
- → Penistone Railway Station
- → GPs and Dentists
- → A variety of bars, restaurants, cafes and shops
- → Cinema
- → Various service premises including hairdressers, opticians and garages
- → Fire station
- → Ambulance station

4.2.6 All residential areas of Penistone are within a 2km walk of the site, which is the 'acceptable' distance for both commuting and sight-seeing.

4.2.7 While there is a variety of local facilities and amenities sitting within the 'acceptable' distance of 1km, the quality and availability of pedestrian infrastructure must also be considered when determining the site accessibility.

4.2.8 St Mary's Street, Bridge Street and Market Lane all have footways present. St Mary's Street has pedestrian guard rails present, along the north of the carriageway up to the entrance to the Royal British Legion Club.

4.2.9 To allow for easier pedestrian crossing, dropped kerbs with tactile paving are present on both St. Mary's Street and Market Lane, and dropped kerbs are present at the crossings surrounding the roundabout on the Bridge Street and Stottercliffe Road.

4.2.10 The sites northern boundary forms part of the Trans Pennine Trail, a coast-to-coast walking route popular with hikers, cyclists and other tourists who visit the area. The https://www.transpennine trail.org.uk/ website promotes walking holidays along the route, which positions the site on a popular national trail route.

4.2.11 To the east of the site, the Trans Pennine Trail connects the site directly to Penistone Station. To the west the trail continues on towards the Peak District National Park.

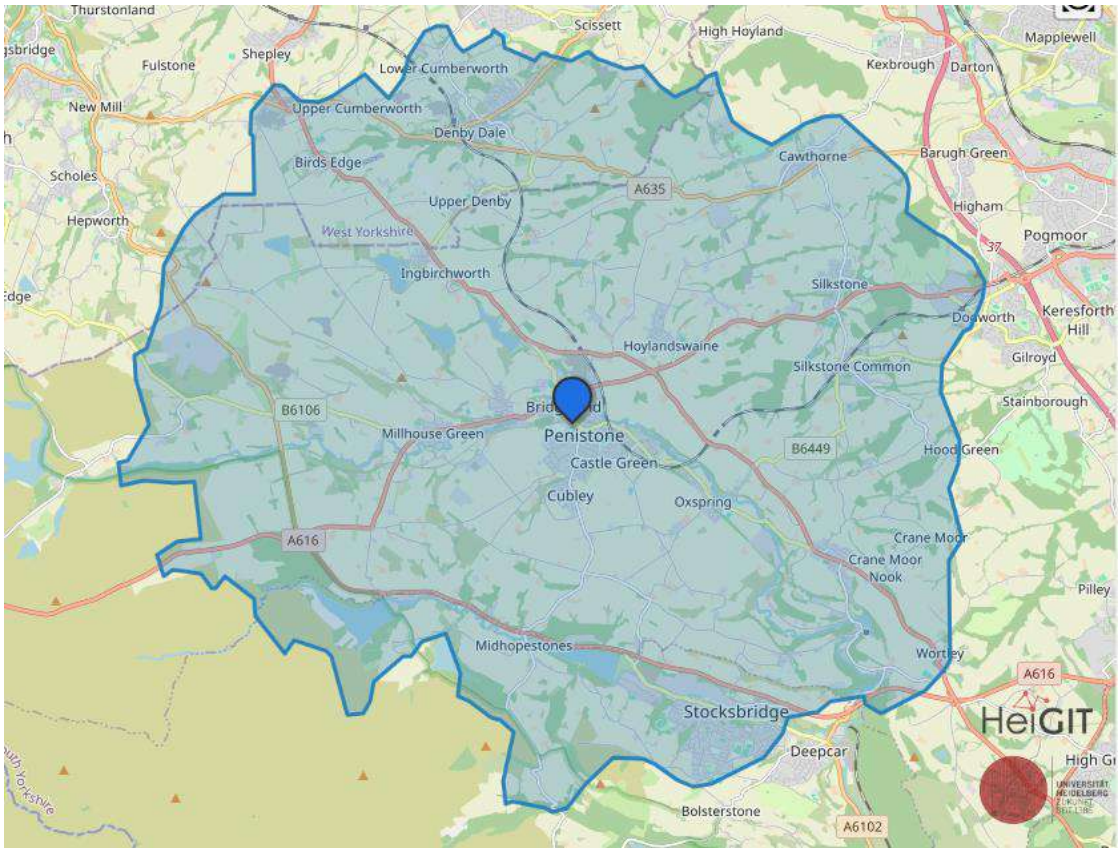
4.3 Accessibility by Cycling

4.3.1 As with walking, cycling is an active and sustainable mode of transport that can be used to replace private cars on certain journeys, which reduces congestion and pollution. A bicycle is generally a lot cheaper than a car to purchase and maintain, meaning cycling can also provide social equity benefits, such as allowing people without cars access to destinations they may otherwise be unable to reach.

4.3.2 CIHT's **Planning for Cycling (2014)** states that: *"The majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips. Electric bicycles extend the range that can be cycled comfortably, and combined cycle-rail or cycle-bus journeys offer an alternative to car travel for many longer trips."*

4.3.3 A 5-mile (~8km) journey by cycle is considered to be achievable by many people. **Figure 11,** overleaf, identifies destinations that lie within 8km of the site access.

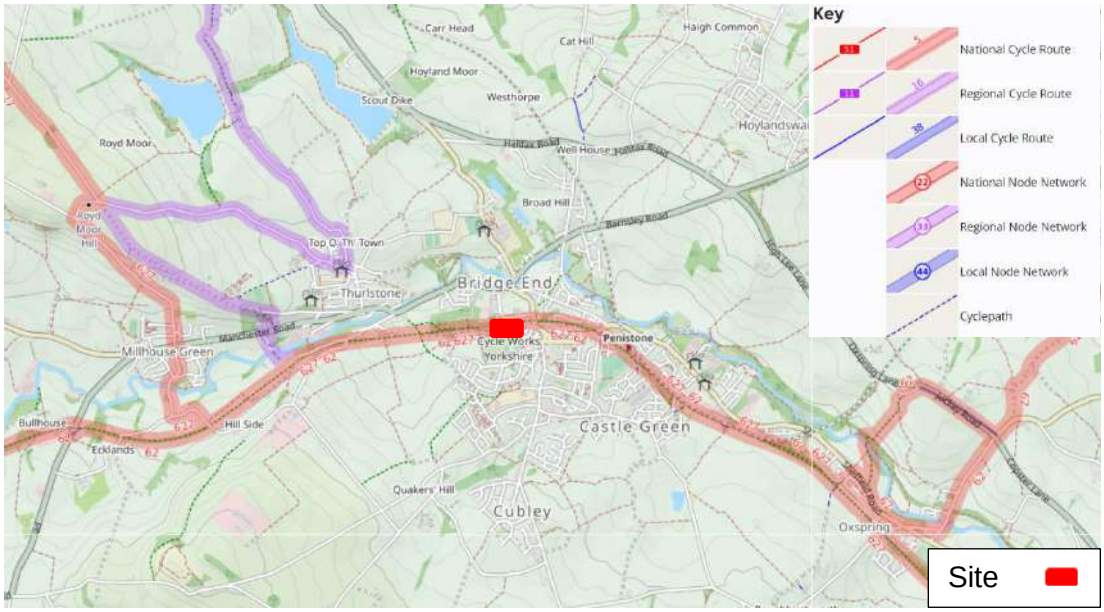
Figure 11 – Indicative Isochrone for Cycling (8km) [OpenRouteService]



4.3.4 Figure 11 shows that much of the local area and neighbouring villages are accessible by cycle including the settlements of Denby Dale, Ingbirchworth, Stocksbridge, Wortley and Silkstone.

4.3.5 As with walking, the quality and availability of cycling infrastructure is a key factor when considering accessibility by cycle. **Figure 12**, overleaf, shows a map detailing the cycling infrastructure available near the site.

Figure 12 – Cycle Infrastructure available near site [OpenCycleMap]



4.3.6 Cycle infrastructure is available in the local area with National Cycle Route access to the north of the site, providing access towards the Peak District National Park to the west and the Barnsley and Sheffield to the east. Cycle paths are also present, such as around Penistone Station to east of the site. In terms of road cycling, the roads in the area are generally considered appropriate for cycling.

4.4 Accessibility by Bus.

4.4.1 The Buses in Urban Developments Guidance (January 2018), published by CIHT outlines that, "the planning of development sites should consider the walking distance to bus stops and the corresponding bus catchment areas". The guidance also outlines the recommended maximum walking distance for different situations, which is shown in **Table 2**.

Table 2 – Recommended maximum walking distances to bus stops [CIHT]

Situation	Maximum Walking Distance
Core bus corridors with two or more high-frequency services	500m
Single high frequency routes (every 12 minutes or better)	400m
Less frequent routes	300m
Town/city centres	250m

4.4.2 The nearest bus stops to the site, shown in **Figure 13,** overleaf, are on Market Lane at the Tesco Superstore, and on Market Place/St. Mary's Street which are both within a 200m walk of the site.

Figure 13 – Location of bus stops nearest to the site [Google MyMaps]

4.4.3 Details of the facilities and services available at the stops are given in **Table 3**.

Table 3 – Nearby bus stop information

Bus Stop Location	Bus Stop Information		
Market Place/ St. Mary's Street, Penistone	Reference	→	37055128
	Direction of travel	→	North
	Distance from site	→	200m
	Facilities	→	Pole with flag, service information
	Services	→	20, 21, 21a, 23, 24, 24a, 25, 25a, 26, 29, 350
Market Lane adj Market Lane/Stottercliffe Road, Penistone	Reference	→	37027559
	Direction of travel	→	East/ West
	Distance from site	→	150m
	Facilities	→	Stop is outside Tesco Entrance
	Services	→	25, 25a, 26

4.4.4 The services through the bus stops are detailed in **Table 4**.

Table 4 - Summary of bus services

Number	Route	Approximate Peak Frequency		
		Mon – Sat Daytime	Mon- Sat Evening	Sunday
20	Millhouse Green - Barnsley Town Centre / Barnsley Town Centre – Millhouse Green	30 minutes	No service	No service
21	Market Place at Market Place / St Mary's Street - Barnsley Town Centre	60 minutes	No service	No service
21a	Crow Edge – Barnsley Town Centre / Millhouse Green - Barnsley Town Centre	2 services	3 services	1 service every 2 hours

Number	Route	Approximate Peak Frequency		
		Mon – Sat Daytime	Mon- Sat Evening	Sunday
23	Unsliven Road by Unsliven Road/Manchester Road - Millhouse Green	3 services (5 services Saturday)	No Service	No Service
24	Ingbirchworth - Market Place at Market Place/St Mary's Street	1 Service every 2 hours each way	1 service each way	No service
24a	Market Place at Market Place/St Mary's Street - Eldon Street at Barnsley Interchange	No service	2 services each way	1 service every 2 hours
25	Market Place at Market Place/St Mary's Street – Penistone circular	60 minutes	No service	No service
25a	Holmfirth - Market Place at Market Place/St Mary's Street	1 service each way	No service	No service
26	Penistone - Thurgoland	60 minutes	No service	No service
29	Holmfirth - Sheffield Centre	1 service every 3 hours	1 service every 3 hours	1 service every 2 hours
350	Market Place at Market Place/St Mary's Street – Holmfirth / Holmfirth - Market Place at Market Place/St Mary's Street	60 minutes	No service	No service

4.4.5 From the above it can be seen that the site has regular bus services to the local area (10 regular service buses per hour peak daytime frequency), including to Barnsley centre, Sheffield centre and Holmfirth where further connections by bus and rail can be made. Services are still present into the evening and on Sundays which may be appropriate for staff commuting to the site, or people visiting for leisure purposes.

4.5 Accessibility by rail

4.5.1 The local train station is Penistone station which is on the Penistone Line, which connects Huddersfield with Sheffield via Barnsley. The station is approx. 700m from the site. The station can be accessed a number of ways: a 10-minute walk or 4-minute cycle along the Pennine Way, an 8-minute bus journey (every 60 minutes), or a 2-minute drive in a car.

4.5.2 The station is a Category B accessible station, with a degree of step free access to all platforms. Level access to the Huddersfield platform. Access to the Sheffield platform is via barrow crossing. It is unstaffed however there is a 24-hour helpline in operation. There are 16 sheltered bicycle stands available with CCTV in operation.

4.5.3 Penistone station has hourly trains to Huddersfield via Honley, and Sheffield via Barnsley. This provides further options for commuters and visitors to site. Further connections can be made to Sheffield, Huddersfield, and Barnsley. Rail travel from these stations include links to Leeds, Manchester, Bradford, Nottingham, Derby, London, Liverpool and Edinburgh.

4.5.4 The site is considered to be well placed for rail transport due to the hourly service into Barnsley, Sheffield and Huddersfield.

4.6 Accessibility Summary

4.6.1 The site is considered to have good sustainable transport links. The whole of Penistone sits within 2km of the site, which is considered to be the preferred maximum walking distance when travelling for commuting, school, or sight-seeing. Large parts of Penistone are within 1km of the site.

4.6.2 Access to National Cycle Routes exists to the north of the site and cycle paths are also present close by. The roads in the local area are also generally considered acceptable for cycling. The Pennine Way coast-to-coast route passes through the site, and will be a pull factor to tourism and those travelling to the site for leisure purposes.

4.6.3 The site is served well by bus, with a peak service rate of 10 buses per hour. Regular services to Barnsley centre are also available, including in the evening which may be suitable for those commuting for work, or accessing the site for leisure.

4.6.4 Rail travel is also possible with regular services to Huddersfield, Barnsley and Sheffield, where connecting journeys can be made.

5. Proposed Development

5.1 Overview

5.1.1 The proposals comprise the redevelopment of the Grade 2 listed Victorian Coal Drops and signal house (Regency House), along with development of the adjacent brownfield area of land to the west. The development incorporates of a mix of uses: restaurant unit, retail units, office space, hybrid office/light industrial units; and a 1Bed Airbnb unit. A proposed site layout plan and lower ground floor plan of the proposed restaurant and retail units are attached at **Appendix C**.

5.1.2 The proposed development will preserve and revive Penistone's railway heritage; with the restoration of the Grade 2 listed coal drops and signal house, revival of the undeveloped railway sidings, and incorporation of the Trans Pennine Trail into the site the development seeks to improve the employment and tourism of the local area, while keeping the authenticity of the Coal Drops and railway.

5.1.3 The proposed development is summarised below with an extract provided in **Figure 14**, overleaf:

COAL DROP ARCHES - Conversion into retail and office spaces

- → Arch 2 – Retail – 28.9m^2 GIA
- → Arch 4 – Retail – 28.5m^2 GIA
- → Arch 5 + 6 – Retail / Office – 58.5m^2 GIA

COAL DROP PAVILION RESTAURANT and BASEMENT BAR

- → Basement Level Bar - 178 m^2 GIA (including entranceway within Arch 3)
- → Pavilion Restaurant – 211.5 m^2 GIA
- → TOTAL - 389.7 m^2 GIA

SIGNAL HOUSE

- → Conversion into 1 Bed Airbnb unit with 48.6m^2 GIA

INDUSTRIAL BLOCK

- → 4no hybrid business units – Office/ Light Industrial
- → GF - 85m^2
- → 1F – 42m^2
- → TOTAL – 127m^2 GIA

OFFICE BLOCK

- → GF - 415m^2
- → 1F – 415m^2
- → TOTAL – 830m^2 GIA

Figure 14 – Proposed Site Plan

5.1.4 **Table 5** below sets out the proposed planning Use Class for the various areas of the site:-

Table 5 – Proposed Land Usage for the Site

Aspect of the development	Land use and Site totals
Shops/ retail units	Land Use Class: A1 / E 'Shop' Number of units: 3 Total sqm: 115.9sqm
Bar / Restaurant	Land Use Class: A3 / E 'Café/ Restaurant' Total Gross Floor Area: 389.7sqm Total Gross Floor Area for customers: unknown – assuming 30% max
Industrial	Land Use Class: B1c / E Industrial/ Office Number of units: 4 Total Gross Floor Area: 508sqm
Offices	Land Use Class: B1a / E 'Office' Total Gross Floor Area: 830sqm
Airbnb	Land Use Class: C1 'Hotels, boarding and guest houses' Total number of beds: 1

5.2 Parking

5.2.1 The development proposes new car parking provision across the site, as shown in Figure 14, which aim to provide a range of spaces to serve the various uses proposed.

5.2.2 The plan proposes 31 car parking spaces, including 4 disabled spaces and 4 van loading spaces (1 each for the light industrial units). A dedicated parking space is proposed for the 1 Airbnb unit.

5.2.3 The maximum recommended number of spaces for parking detailed in the Parking SPD are shown in **Table 6**, overleaf:-

Table 6 – Recommended number of spaces

Use of site sqm	Maximum number of spaces recommended
A1 Shops – approx. 115sqm – less than 1000sqm threshold	N/A
A3 Restaurants and cafes and A4 Drinking Establishments (Licenced Restaurants and Public Houses) - approx. 116sqm	29
B2 Business (including offices) – approx. 1338sqm	27
C1 Hotels, boarding and guesthouses – 1 units	1
Total	**57**

5.2.4 Based on the requirements set out in the Parking SPD, the site does not exceed the recommended parking spaces. **Policy T3 New Development and Sustainable Travel** in the Barnsley Local Plan states:

"New development will be expected to:

Be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists;

Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people set out in the relevant Supplementary Planning Document;"

5.2.5 In addition, paragraph 12.54 of the Local Plan states:

"A travel plan is a long-term management strategy for an occupier or site that seeks to deliver sustainable transport objectives through positive action and is articulated in a document that is regularly reviewed. It involves developing a set of procedures, schemes and targets that encourage people to use sustainable forms of transport, and should:

- → *Be site specific.*
- → *Contain both measures addressing site design, infrastructure and new services, as well as marketing, promotion and awareness raising.*
- → *Provide a package of measures integrated into the design and use of the development.*
- → *Encourage walking, cycling and public transport use and facilitate disabled access.*
- → ***Restrict on-site car-parking spaces**."*

5.2.6 Cycle parking in the form of 14 cycle hoops spread throughout the site.

5.2.7 Section 4 of this document has already set out the excellent provision of sustainable transport methods that can be accessed from the site.

5.2.8 As the site is located within close proximity to Penistone Town Centre it is considered that the various uses on the site would effectively act as an extension to the Town Centre and would offer complementary and supporting premises.

5.2.9 It is therefore considered that car parking provision for this site is appropriate for the proposed uses of the site, and would not have a negative impact on the sustainable travel goals of the Barnsley Local Plan or the Penistone Neighbourhood Development Plan.

5.3 Access and servicing

5.3.1 The proposed development will require access by a refuse vehicle which will be via the un-named access road from the Bridge Street/Market Lane roundabout as indicated in Figure 14.

5.3.2 In terms of service access requirements, refuse bin stores for the proposed light industrial and office units are located along the northern boundary of the site. The refuse vehicle will reverse into the eastern access area with the assistance of team members on board. The vehicle swept path manoeuvre of a typical 11.22m long refuse vehicle is shown on **Drawing 153625-001** attached at **Appendix D**.

5.3.3 The refuse vehicle will then head back towards the Bridge Street roundabout stopping kerbside to collect refuse from the restaurant and retail units. The lower ground floor layout plan attached at Appendix C shows the location of the refuse collection for this part of the site and also the link back to the access road. At this point any refuse will be collected from the Airbnb unit.

5.4 Pedestrian and Cycle Access

5.4.1 The site is served by adequate pedestrian footpaths and is well lit by street lighting, the Trans Pennie Trail passes through the site and is incorporated into the site design.

6. Vehicular Trip Generations

6.1 Overview

6.1.1 This section sets out the predicted impact on vehicle trips generated by the proposed development of the site.

6.1.2 This section estimates the multi-modal trip rates and potential level of person trip generation by all modes of travel resulting from the development proposals, indicating the level of demand from each type of traveller.

6.1.3 As the development proposal comprise a mix of uses, each land use has been assessed individually to predict trip generations. The resultant vehicle trip generations will then be combined to assess the whole site impact on the local road network.

6.1.4 Information contained in the TRICS database (v7.11.4), has been used to assess the potential multi-modal trips that the proposed development could generate. The search parameters used to filter surveys for each land use are shown in **Table 7**.

Table 7 – TRICS selection criteria (vehicular)

Land Use	Trip Rate Selection Criteria
Business B1	→ Land Use Category: 'Employment - Office; → Multimodal trip rate surveys; → Unit size: 500sqm to 5000sqm; → The region of Greater London was excluded; → All regions in Ireland were excluded; and, → Town centre sites were excluded.
Industrial B2	→ Land Use Category: 'Employment – Industrial Unit; → Multimodal trip rate surveys; → Unit size: 500sqm to 2000sqm; → The region of Greater London was excluded; and → All regions in Ireland were excluded;
Retail A1	→ Land Use Category: 'Shopping Centre – Local Shops'; → Multimodal trip rate surveys; → Unit size: 200sqm to 2500sqm; → The region of Greater London was excluded; and → All regions in Ireland were excluded;
Restaurant A3	→ Land Use Category: 'Hotel, Food & Drink – Restaurants'; → Multimodal trip rate surveys; → Unit size: 110sqm to 2400sqm; → The region of Greater London was excluded; and → All regions in Ireland were excluded;

6.2 Multi Modal Trips B1 use

6.2.1 The resultant multi-modal traffic generation for the proposed development is shown in **Table 8,** for the AM and PM peaks. A full copy of the TRICS outputs is included in **Appendix E.**

Table 8 – Predicted total trips by transport mode (830sqm) Land use B1

Time Period	Mode of Travel	Trip Rate	Modal Split	Generations
AM Peak 08:00-09:00	Pedestrians	0.317	10.6%	3
	Cyclists	0.12	4.0%	1
	Public Transport Users	0.196	6.6%	2
	Vehicle Occupants	2.346	78.8%	19
	Total People Trips	**2.978**	**100.0%**	**25**
PM Peak 17:00-18:00	Pedestrians	0.317	13.0%	3
	Cyclists	0.098	4.0%	1
	Public Transport Users	0.185	7.6%	2
	Vehicle Occupants	1.843	75.4%	15
	Total People Trips	**2.444**	**100.0%**	**20**

6.2.2 The results indicate that during the morning peak hour period, a total of 25 two-way people trips could be generated with 79% (19 trips) being made by vehicle occupants. A similar scenario could occur during the PM peak, with the TRICS data predicting 20 two-way people trips with 75% (15 trips) being made by vehicle occupants.

6.3 Vehicle Trips B1 use

6.3.1 The vehicle trips from the multi-modal data are summarised in **Table 9**.

Table 9 – Predicted total vehicle trips (1270sqm) Land use B1

Time Period	Trip Rates		Generations		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak 08:00-09:00	1.974	0.229	16	2	18
PM Peak 17:00-18:00	0.164	1.560	1	13	14

6.3.2 The predicted trips indicate that 18 vehicle trips could be generated during the AM peak and 14 vehicle trips could be generated during the PM peak.

6.3.3 This is considered to be low, and unlikely to be noticeable against daily fluctuations in peak hour traffic. It should also be noted that all of these trips would be completely new to the highway network given the former use of the site.

6.4 Multi-modal trips B2 use

6.4.1 The resultant multi-modal traffic generation for the proposed development is shown in **Table 10** for the AM and PM peaks. A full copy of the TRICS outputs is included in **Appendix F**.

Table 10 – Predicted total trips by transport mode (508sqm) Land use B2

Time Period	Mode of Travel	Trip Rate	Modal Split	Generations
AM Peak 08:00-09:00	Pedestrians	0.275	11.4%	1
	Cyclists	0.023	1.0%	1*
	Public Transport Users	0.137	5.7%	1
	Vehicle Occupants	2.07	85.8%	11
	Total People Trips	2.413	100.0%	12
PM Peak 17:00-18:00	Pedestrians	0.057	3.7%	1*
	Cyclists	0.023	1.5%	1*
	Public Transport Users	0.046	3.0%	1*
	Vehicle Occupants	1.326	85.9%	7
	Total People Trips	1.544	100.0%	8

*(Minimum of 1 trip generation)

6.4.2 The results indicate that during the morning peak hour period, a total of 12 two-way people trips could be generated with 86% (11 trips) being made by vehicle occupants. Less people trips could be generated during the PM peak, with the TRICS data predicting 8 two-way people trips with 86% (7 trips) being made by vehicle occupants.

6.5 Vehicle Trips B2 use

6.5.1 The vehicle trips from the multi-modal data are summarised in **Table 11**.

Table 11 – Predicted total vehicle trips (508sqm) Land use B2

Time Period	Trip Rates		Generations		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak 08:00-09:00	1.178	0.583	6	3	9
PM Peak 17:00-18:00	0.366	0.801	2	4	6

6.5.2 The predicted trips indicate that 9 vehicle trips could be generated during the AM peak and 6 vehicle trips could be generated during the PM peak.

6.5.3 This again is considered to be low, and likely would not be noticeable against daily fluctuations in peak hour traffic. It should also be noted that all of these trips would be completely new to the highway network given the former use of the site.

6.6 Multi-modal trips A1 use

6.6.1 The resultant multi-modal traffic generation for the proposed development is shown in **Table 12** for the AM and PM peaks. A full copy of the TRICS outputs is included in **Appendix G**.

Table 12 – Predicted total trips by transport mode (115.9sqm) Land use A1

Time Period	Mode of Travel	Trip Rate	Modal Split	Generations
AM Peak 08:00-09:00	Pedestrians	1.805	25.4%	2
	Cyclists	0.039	0.5%	1*
	Public Transport Users	0.549	7.7%	1
	Vehicle Occupants	4.708	66.3%	5
	Total People Trips	7.101	100.0%	8
PM Peak 17:00-18:00	Pedestrians	4.119	33.0%	5
	Cyclists	0.235	1.9%	1*
	Public Transport Users	0.863	6.9%	1
	Vehicle Occupants	7.258	58.2%	8
	Total People Trips	12.475	100.0%	14

*(Minimum of 1 trip generation)

6.6.2 The results indicate that during the morning peak hour period, a total of 8 two-way people trips could be generated with 66% (5 trips) being made by vehicle occupants. More people trips could be generated during the PM peak, with the TRICS data predicting 14 two-way people trips with 58% (8 trips) being made by vehicle occupants.

6.7 Vehicle Trips A1 use

6.7.1 The vehicle trips from the multi-modal data are summarised in **Table 13**.

Table 13 – Predicted total vehicle trips (115.9sqm) Land use A1

Time Period	Trip Rates		Generations		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak 08:00-09:00	2.236	1.687	3	2	5
PM Peak 17:00-18:00	2.903	3.648	3	4	8
SAT Peak 11:00-12:00	3.099	2.903	4	3	7

6.7.2 The predicted trips indicate that 5 vehicle trips could be generated during the AM peak, 8 vehicle trips could be generated during the PM peak, and 7 vehicle trips could be generated during the Saturday peak.

6.7.3 This again is considered to be low, and likely would not be noticeable against daily fluctuations in peak hour traffic. It should also be noted that all of these trips would be completely new to the highway network given the former use of the site.

6.8 Multi-modal trips A3 use

6.8.1 The resultant multi-modal traffic generation for the proposed development is shown in **Table 14** for the AM and PM peaks. A full copy of the TRICS outputs is included in **Appendix H**.

Table 14 – Predicted total trips by transport mode (389.7sqm) Land use A3

Time Period	Mode of Travel	Trip Rate	Modal Split	Generations
AM Peak 08:00-09:00	Pedestrians	0	0%	0
	Cyclists	0	0%	0
	Public Transport Users	0	0%	0
	Vehicle Occupants	0	0%	0
	Total People Trips	0	0%	0
PM Peak 17:00-18:00	Pedestrians	2.769	40.7%	11
	Cyclists	0	0.0%	0
	Public Transport Users	0.873	12.8%	3
	Vehicle Occupants	3.16	46.5%	12
	Total People Trips	6.801	100.0%	27

6.8.2 The results indicate that during the morning peak hour period, no trips are predicted. During the PM peak, the TRICS data predicting 27 two-way people trips with 47% (12 trips) being made by vehicle occupants.

6.9 Vehicle Trips A3 use

6.9.1 The vehicle trips from the multi-modal data are summarised in **Table 15**.

Table 15 – Predicted total vehicle trips (389.7sqm) Land use A3

Time Period	Trip Rates		Generations		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak 08:00-09:00	0.000	0.000	0	0	0
PM Peak 17:00-18:00	1.083	0.542	4	2	6
SAT Peak 11:00-12:00	0.661	0.073	3	0	3

6.9.2 The predicted trips indicate that 6 vehicle trips could be generated during the PM peak, and 3 vehicle trips could be generated during the Saturday peak.

6.9.3 This again is considered to be low, and likely would not be noticeable against daily fluctuations in peak hour traffic. It should also be noted that all of these trips would be completely new to the highway network given the former use of the site.

6.10 Summary

6.10.1 For the purpose of traffic impact assessment it is proposed to use the total vehicle trips for the whole development which are summarised in **Table 16**.

Table 16 – Total Development Vehicle Trip Generations

Time Period	Generations		
	Arrivals	Departures	Total
AM Peak 08:00-09:00	25	7	32
PM Peak 17:00-18:00	11	23	34
SAT Peak 11:00-12:00	6	4	10

6.10.2 The total predicted trips indicate that 32 vehicle trips could be generated during the AM peak, 34 vehicle trips could be generated during the PM peak, and 10 vehicle trips could be generated during the Saturday peak.

6.10.3 The total level of traffic is considered to be low, and likely would not be noticeable against daily fluctuations in peak hour traffic. It should also be noted that all of these trips would be completely new to the highway network given the former use of the site.

7. Traffic Impact Assessment

7.1 Base Traffic Flows

7.1.1 As previously summarised in section 3.4 base traffic flows have been obtained from a traffic survey at the B6462 Bridge Street/ St. Mary's Street junction and the traffic flow derived from these have been used as the 'base' information for the junction modelling.

7.2 Future Year Traffic Growth

7.2.1 It is proposed to assess an application year of 2025 and a design year of 2030. Accordingly, traffic growth factors have been generated utilising the latest version of TEMPro v8.1, adjusted against NRTP 2022 Core scenario of the Department for Transport's National Traffic Model Dataset. The growth factors are set out in Table 17 below:-

Table 17 – TEMPRo Factors

Base Year	Growthed Year	Growth Factor		
		AM	PM	SAT
2023	2025	1.0090	1.0093	1.0102
2023	2030	1.0639	1.0649	1.0674
TEMPro 8.1, NRTP 2022 Core – Reference, Minor Roads, Region Barnsley 024 MSOA				

7.3 Proposed Development Traffic and Assignment

7.3.1 As stated previously in section 6 of this report the traffic generation potential of the proposals has been forecast using TRICS Database (v7.11.2). These flows have then been assigned onto the network using existing turning proportions. **Figures 15** and **16** overleaf show the weekday and weekend traffic distributions used respectively with the resultant development traffic flows depicted in **Figures 17** and **18**.

Figure 15 – Weekday Traffic Distribution

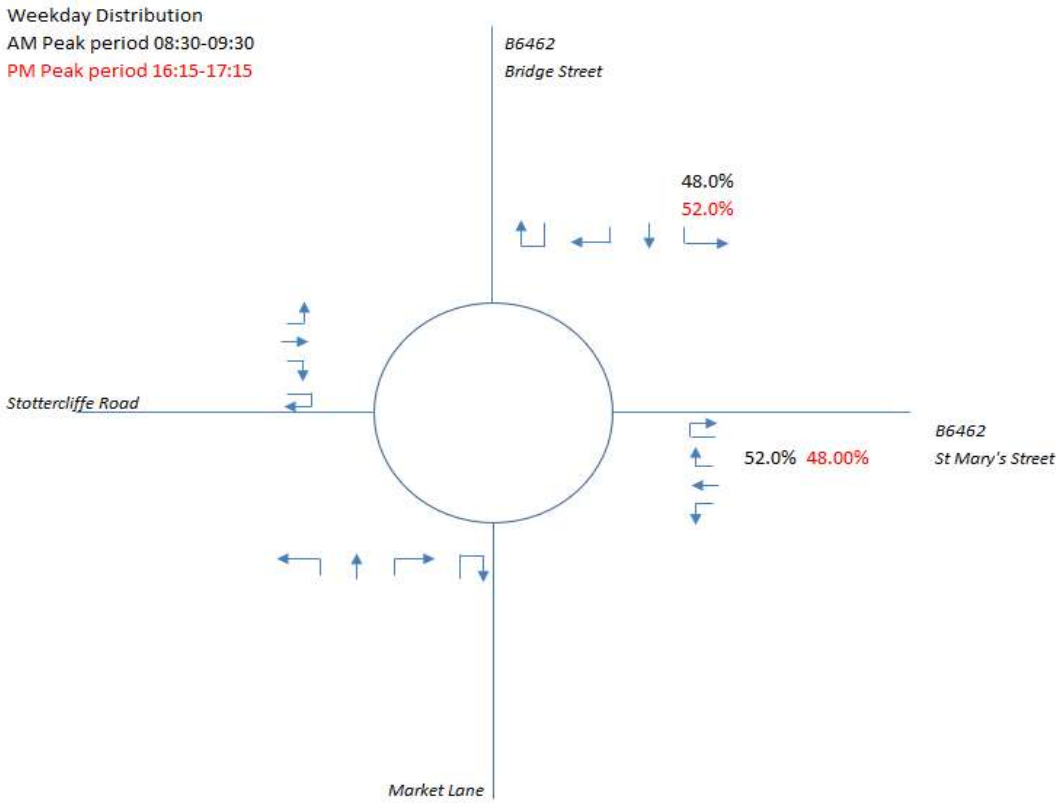


Figure 16– Saturday Traffic Distribution

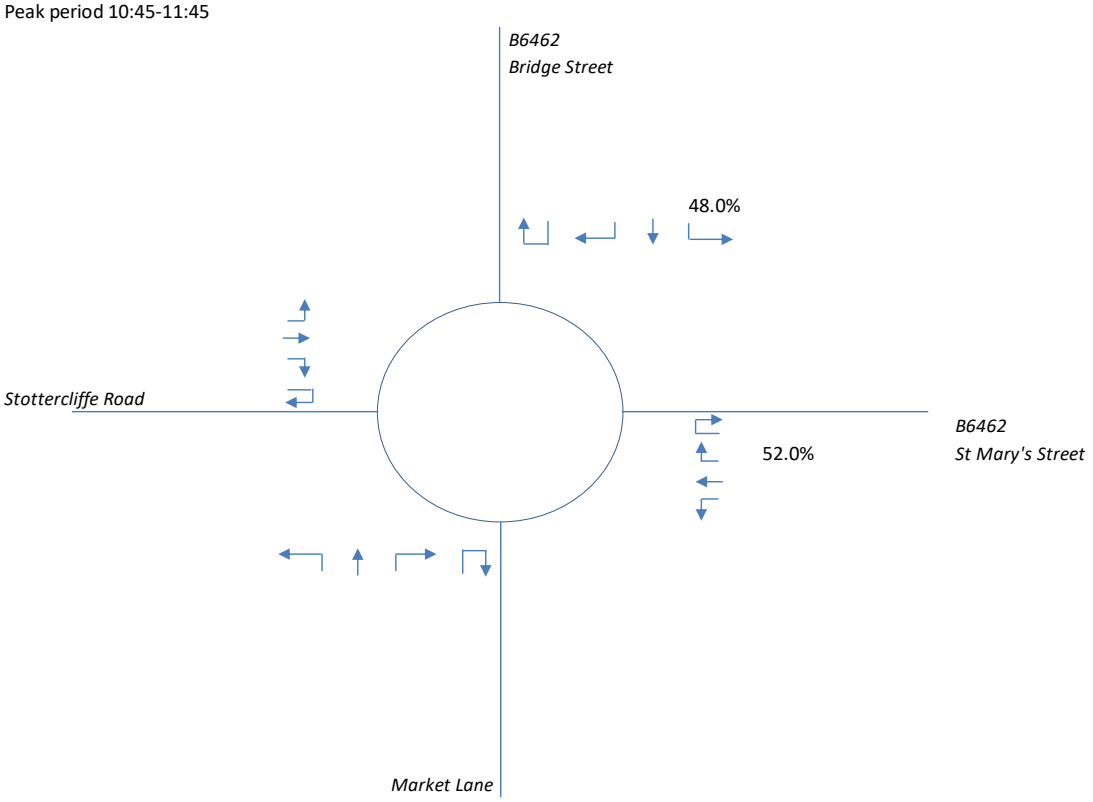


Figure 17 – Weekday Development Traffic Flows

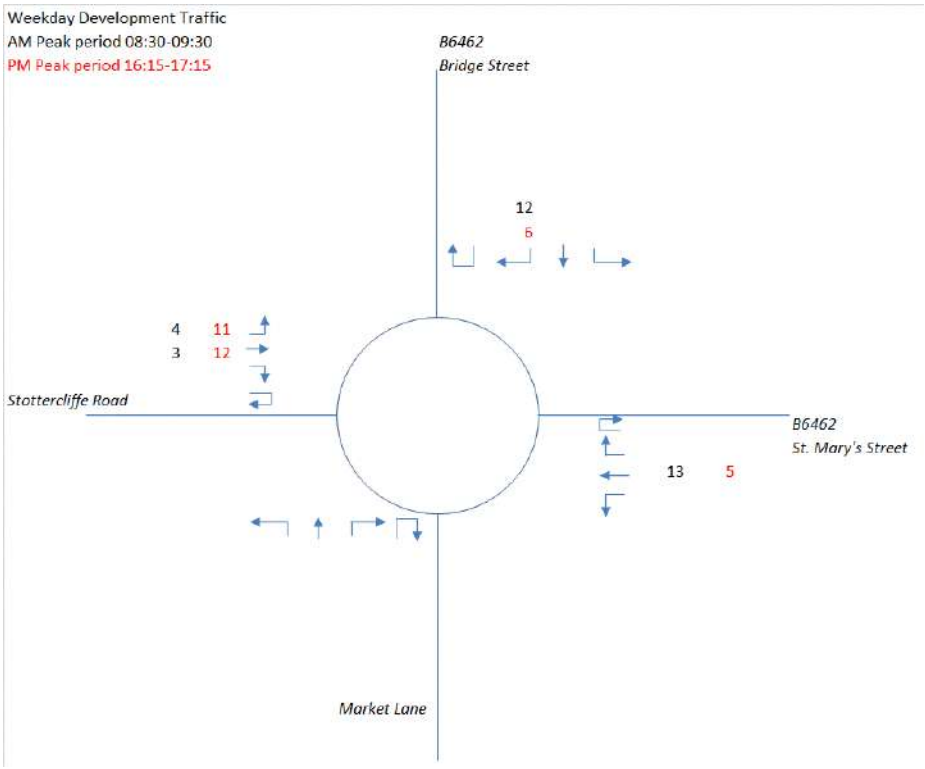
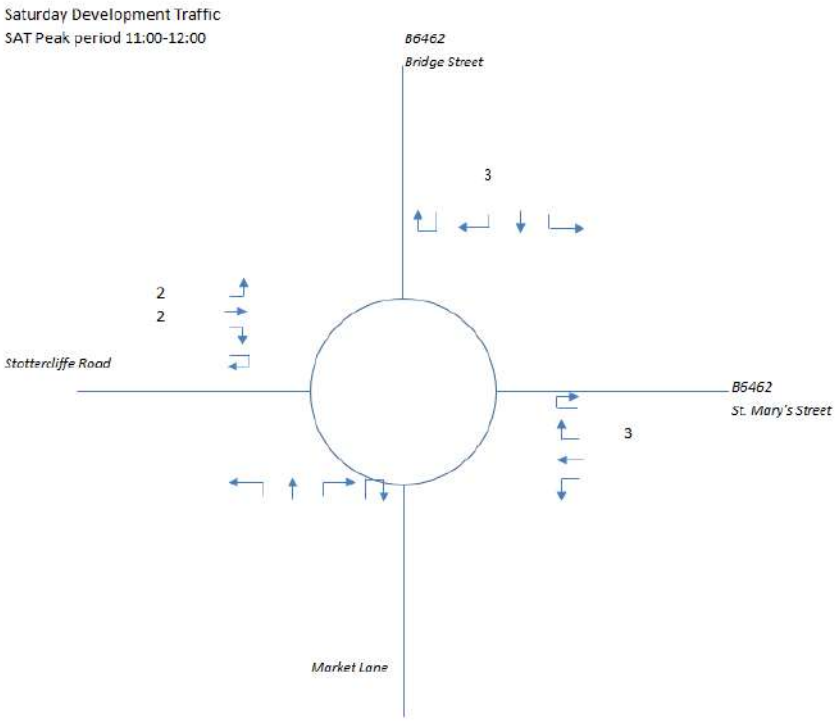


Figure 18 – Saturday Development Traffic Flows



7.3.2 As can be seen in Figure 15, the traffic entering and leaving the site via Stottercliffe Road in both the weekday and weekend scenarios will be roughly distributed 50/50 between the two main approaches of the roundabout, Bridge Street and St. Mary's Street.

7.4 Junction Modelling

7.4.1 Detailed junction capacity assessment of the B6462 Bridge Street/ St. Mary's Lane roundabout has been undertaken using the 'Junctions 10' modelling software:

7.4.2 As part of the traffic counts vehicle queues were recorded, this data been reviewed and has shown minimal queues (circa less 1 vehicle on average over the peak hours). The base scenarios of the junction modelling also show this level of queuing and it is therefore considered that these models are validated.

7.4.3 The predicted RFC and Max Queue values are presented for the various scenarios in **Tables 18, 19, 20** and **21** below with a full copy of the modelling output for the various scenarios attached at **Appendix I.**

Table 18 – 2025 Base - St. Mary's Street / Site Access Results

2025 Base						
Arm	AM		PM		SAT	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
Arm 1	0.47	0.9	0.50	1	0.49	1
Arm 2	0.25	0.3	0.33	0.5	0.40	0.7
Arm 3	0.03	0.0	0.05	0.1	0.06	0.1
Arm 4	0.45	0.8	0.53	1.1	0.47	0.9

Table 19 – 2030 Base - St. Mary's Street / Site Access Results

2030 Base						
Arm	AM		PM		SAT	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
Arm 1	0.49	1.0	0.53	1.1	0.53	1.1
Arm 2	0.27	0.4	0.36	0.6	0.43	0.7
Arm 3	0.03	0.0	0.06	0.1	0.06	0.1
Arm 4	0.47	0.9	0.56	1.2	0.50	1.0

Table 20 – 2025 Base + Development - St. Mary's Street / Site Access Results

2025 Base + Dev						
Arm	AM		PM		SAT	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
Arm 1	0.48	0.9	0.51	1.0	0.50	1.0
Arm 2	0.26	0.3	0.34	0.5	0.40	0.7
Arm 3	0.05	0.0	0.10	0.1	0.07	0.1
Arm 4	0.46	0.8	0.54	1.1	0.48	0.9

Table 21 – 2030 Base + Development - St. Mary's Street / Site Access Results

2030 Base + Dev						
Arm	AM		PM		SAT	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
Arm 1	0.51	1.0	0.54	1.2	0.53	1.1
Arm 2	0.28	0.4	0.36	0.6	0.43	0.7
Arm 3	0.05	0.1	0.11	0.1	0.07	0.1
Arm 4	0.48	0.9	0.57	1.3	0.51	1.0

7.4.4 A Ratio to Flow Capacity (RFC) value of below 0.85, is the typically accepted threshold of practical reserve capacity for priority junctions and as can be seen from the results within Table 18 to 21 the junction in question is predicted to operate below this level in all base and with development scenarios.

8. Summary and Conclusions

8.1 Sanderson Associates Consulting Engineers has been appointed to produce a Transport Assessment in relation to the proposals for the development of Coal Drops and adjacent land, Penistone, Sheffield.

8.2 The proposals comprise the redevelopment of the Grade 2 listed Victorian Coal Drops and signal house (Regency House), along with development of the adjacent brownfield area of land to the west. The development incorporates of a mix of uses: restaurant unit, retail units, office space, hybrid office/light industrial units; a 1Bed Airbnb unit and small kiosk retail type units.

8.3 The proposed development will preserve and revive Penistone's railway heritage; with the restoration of the Grade 2 listed coal drops and signal house, revival of the undeveloped railway sidings, and incorporation of the Trans Pennine Trail into the site the development seeks to improve the employment and tourism of the local area, while keeping the authenticity of the Coal Drops and railway.

8.4 From undertaking a review of personal injury accidents in the vicinity of the site it can be concluded that the frequency of incidents within the study area is low and that these are likely to be due to human error as opposed to deficiencies in the local highway network. There are no accident trends in close proximity to the site which are likely to be adversely affected by the proposal.

8.5 It is considered that the site has a very good level of accessibility by active and sustainable transport modes, a number of amenities that staff are likely to need are within walking and cycling distance from the site.

8.6 It is considered that an appropriate level of parking for vehicle and cycles has been incorporated into the site layout and that access by appropriate vehicles, including a refuse collection vehicle, can safely and effectively be undertaken.

8.7 The assessment in section 6 of the Transport Assessment shows that the combined proposed development is estimated to generate 32 vehicle movements in the AM peak hour, 34 in the PM peak hour and 10 in the Saturday peak hour. This equates to approximately 1 vehicle every 2 minutes in the AM and PM with 1 vehicle every 6 minutes being generated in the Saturday peak period.

8.8 Using 2023 base traffic flows which have been growthed up to an application year of 2025 and a development year of 2030 this Transport Assessment has demonstrated that the traffic predicted to be generated by the proposed development can be accommodated on the highway network and that the adjacent roundabout junction will operate within acceptable capacity threshold in future years with the addition of development traffic.

8.9 It is, therefore, concluded that the proposed development will not have an unacceptable impact on highway safety and that residual cumulative impacts of the development are not severe in transport terms, consequently the planning application should be supported by the Local Authority on transport grounds.

Appendix A

Crashmap Reports

153625F - Crash Report - Old Coal Drops - Penistone

Area of Interest (AOI) Information

Area : 12,921.58 m²

Jul 31 2024 14:50:51 British Summer Time

Summary

Name	Count	Area(m²)	Length(m)
Crashes	1	N/A	N/A

Crashes

#	Carriageway_Hazards	Severity	Officer_Attended	Accident_DateTime	Year	Number_of_vehicles	Number_of_casualties	Easting
1	None	Slight	No officer attended crash scene	June 27, 2019	2019	1	1	424570

#	Northing	Highway_Authority	Road_Number	Weather_conditions	Road_Type	Road_surface	Speed_Limit	Light_conditions
1	403353	Barnsley	B6462	Fine without high winds	Single carriageway	Dry	30	Daylight: regardless of presence of streetlights

#	Junction_detail	Pedestrian_Crossing	Involved_pedalcycle	Involved_Motorcycle	Pedestrian_casualty	Child_casualty	Pedal_cycleuser_casualty	Motorcycle_user_casualty
1	Not at or within 20 metres of junction	No physical crossing facility within 50 metres	0	0	1	0	0	0

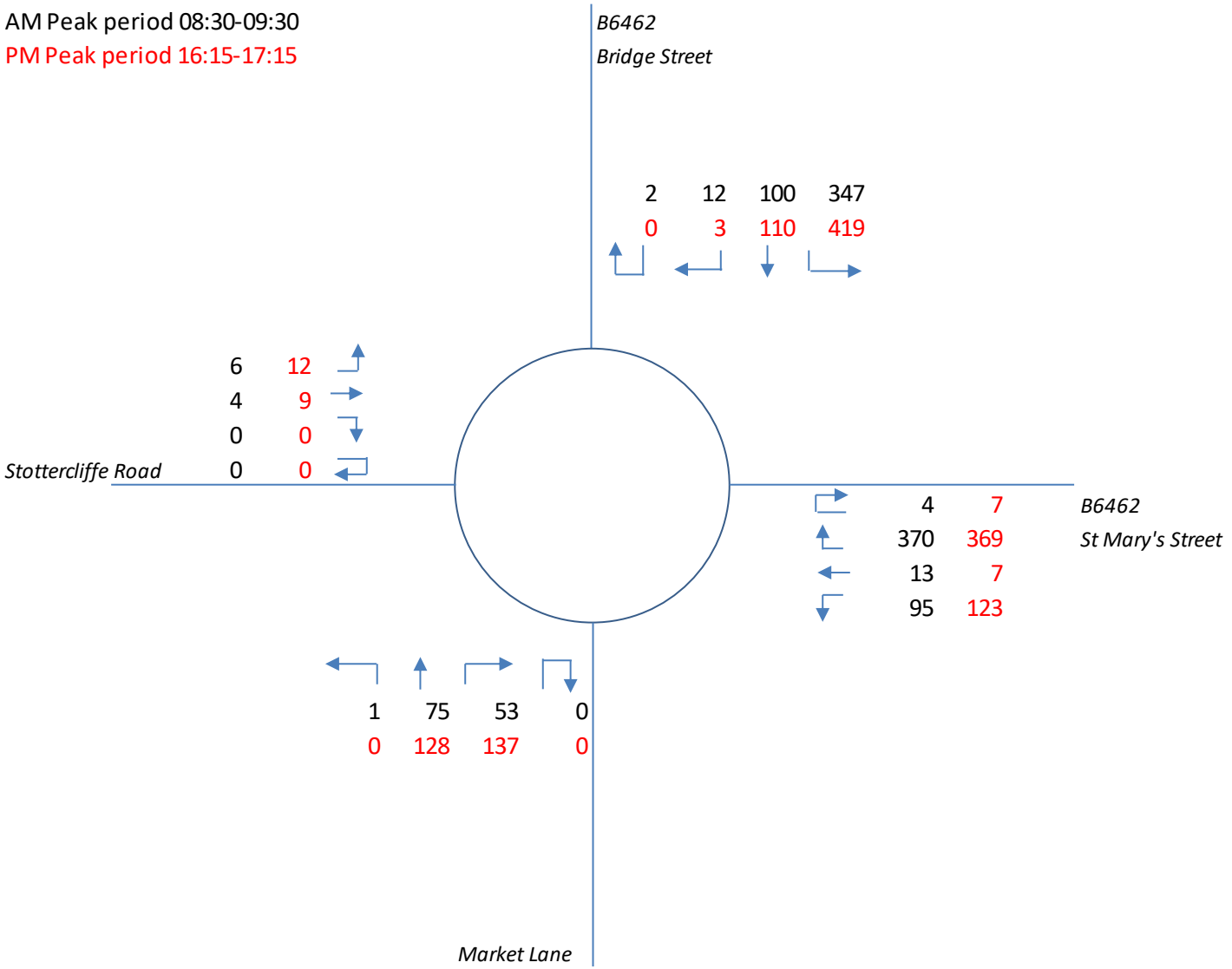
#	Involved_car	Involved_goodsvehicle	Involved_Bus	Involved_young_driver	Local_Authority_District	Junction_control	Is_Provisional	Is_Amended	Web_Link	Count
1	1	0	0	0	Barnsley	Not Applicable	No	No	https://www.crashmap.co.uk/reports/proreportservice?reportId=2019140851808	1

Report produced from CrashMap Pro

Appendix B

2023 Traffic Flow Diagrams

Wednesday 10th of May 2023
AM Peak period 08:30-09:30
PM Peak period 16:15-17:15



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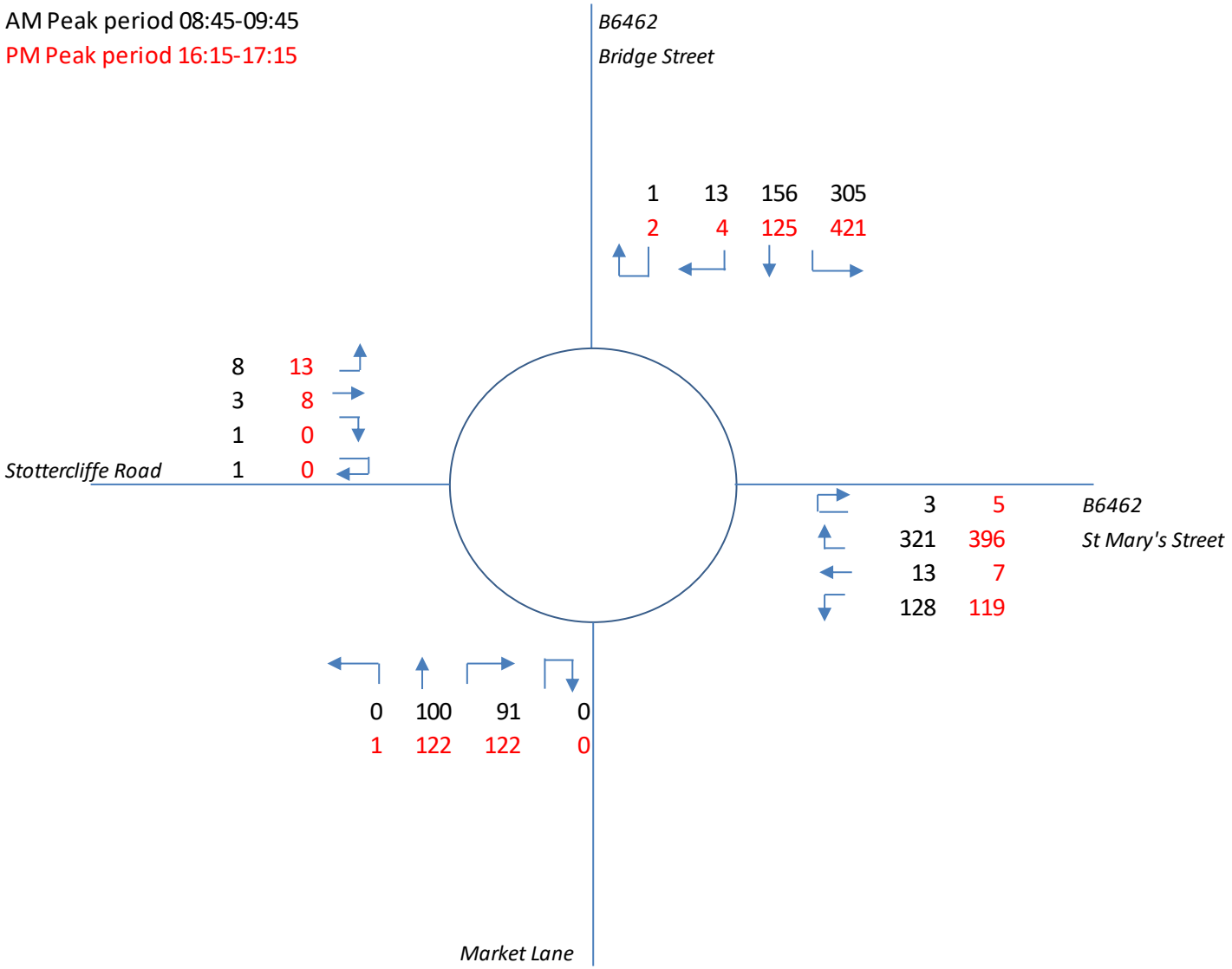
Stottercliffe Road, Penistone

Peak Hour Traffic Survey
Wednesday 10th of May 2023

Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: JB
Drawing Size: N/A	Checked by: KS
Date: 07/2023	Approved by: KS
	Drawing Number: Figure 1
	Rev.: -

Thursday 11th of May 2023
AM Peak period 08:45-09:45
PM Peak period 16:15-17:15



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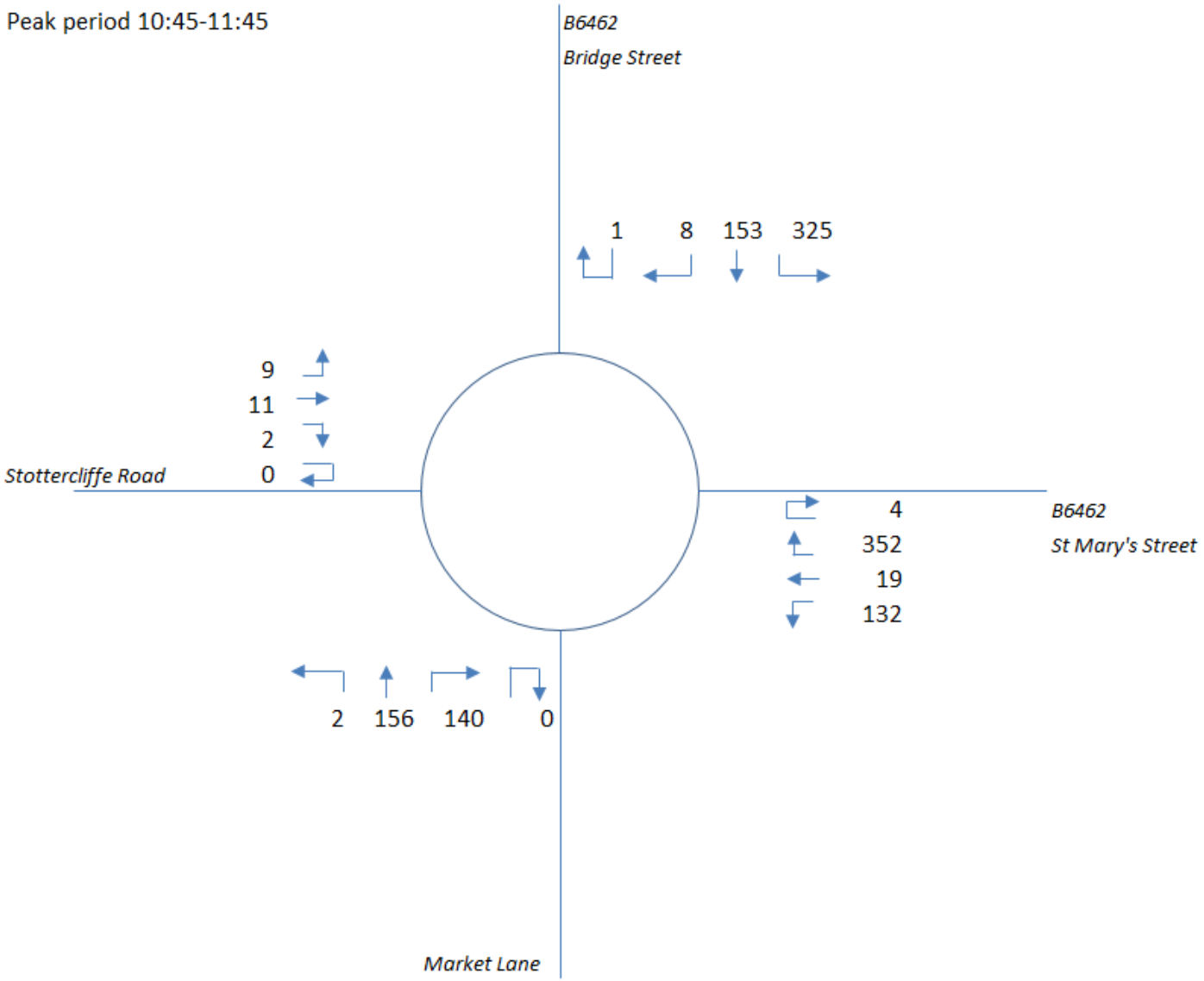
Stottercliffe Road, Penistone

Peak Hour Traffic Survey
Thursday 11th of May 2023

Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: JB
Drawing Size: N/A	Checked by: KS
Date: 07/2023	Approved by: KS
	Drawing Number: Figure 2
	Rev.: -

Saturday 13th of May 2023
Peak period 10:45-11:45



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Stottercliffe Road, Penistone

Peak Hour Traffic Survey
Saturday 13th of May 2023

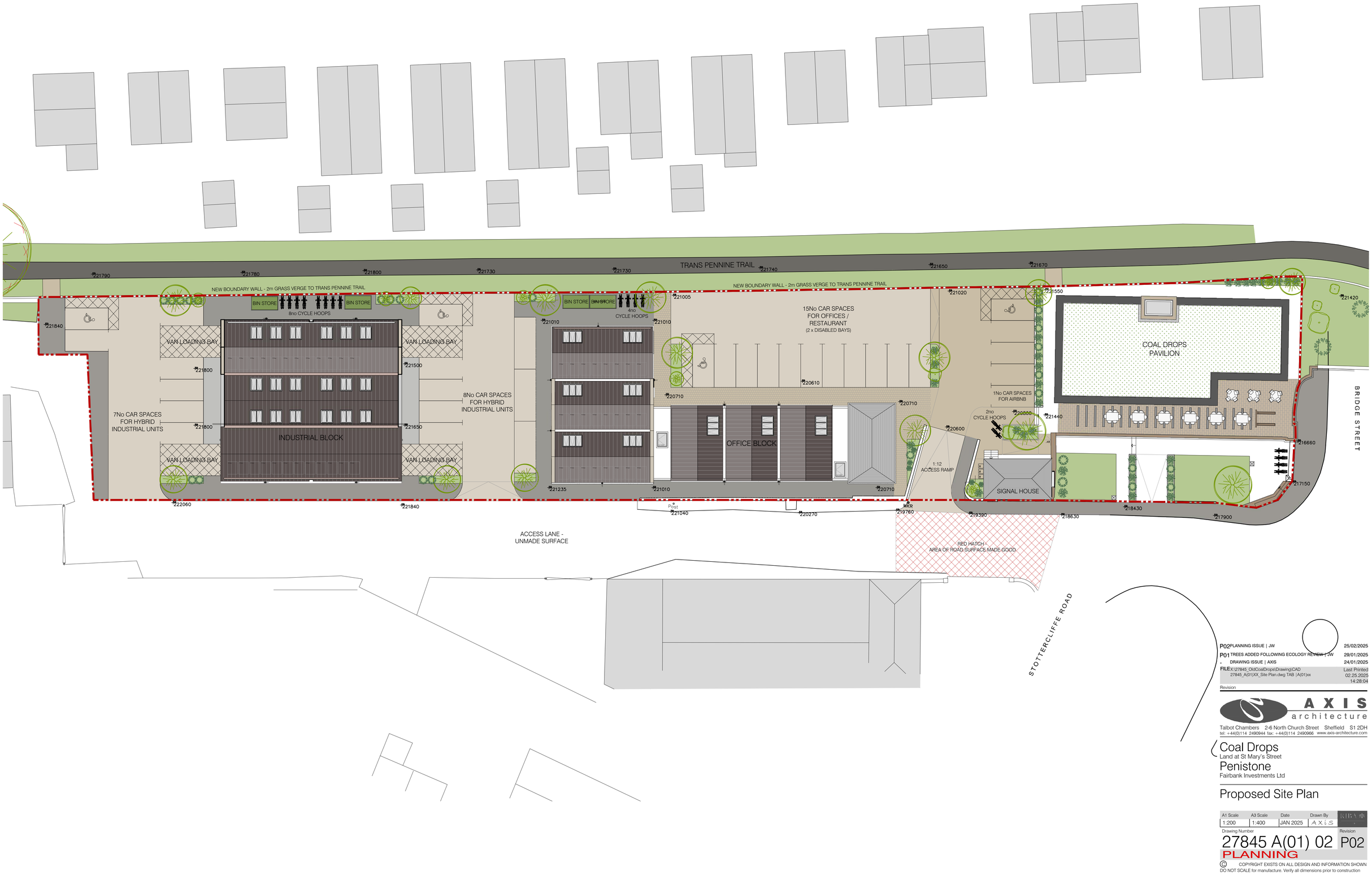
Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: JB
Drawing Size: N/A	Checked by: KS
Date: 07/2023	Approved by: KS
	Drawing Number: Figure 3
	Rev.: -

Appendix C

Proposed Site Layout Plan

Proposed Lower Ground Floor Plan



P02	PLANNING ISSUE | JW	25/02/2025
P01	TREES ADDED FOLLOWING ECOLOGY REVIEW | JW	29/01/2025
-	DRAWING ISSUE | AXIS	24/01/2025

FILE X:\27845_OldCoalDrops\Drawing\CAD 27845_A(01)XX_Site Plan.dwg TAB |A(01)xx — Last Printed 02.25.2025 14:28:04

Revision

AXIS architecture
Talbot Chambers 2-6 North Church Street Sheffield S1 2DH
tel: +44(0)114 2490944 fax: +44(0)114 2490966 www.axis-architecture.com

Coal Drops
Land at St Mary's Street
Penistone
Fairbank Investments Ltd

Proposed Site Plan

A1 Scale	A3 Scale	Date	Drawn By
1:200	1:400	JAN 2025	AXIS

Drawing Number: 27845 A(01) 02 — Revision: P02

PLANNING

N

CLEANING/
WASHING

KITCHEN

SERVERY

LIFT

STORE

RECEPTION

COCKTAIL
BAR

STORE

FEMALE
TOILETS

MALE
TOILETS

STORE/
RECEIVING

KITCHEN
STORE

BIN
STORE

RETAIL

RETAIL

RETAIL / OFFICE

ToW
221.74

221.48

ST08
218.60

ST06
217.54

G
218.59

G
218.34

217.59

217.56

217.42

MH
217.44

RS

LP

ToW
218.51

G
216.

215.82

216.32

219.63

Lower Ground Floor Plan 1:100

PRELIMINARY DRAWING ISSUE | By Initials DD/MM/YYYY

FILE:\27845_OldCoalDrops\Drawing\CAD
27845_A(02)XX_1_6730_1e1cfc86.sv$.dwg TAB |A(02)03

Last Printed
07.24.2024
13:14:00

Revision

AXIS architecture
Talbot Chambers 2-6 North Church Street Sheffield S1 2DH
tel: +44(0)114 2490944 fax: +44(0)114 2490966 www.axis-architecture.com

Old Coal Drops
Land at St Mary's Street
Penistone
Fairbank Investments Ltd

Proposed Coal Drops
Lower Ground Floor

A1 Scale	A3 Scale	Date	Drawn By	RIBA
1:50	1:100	JUNE 24	AXIS	

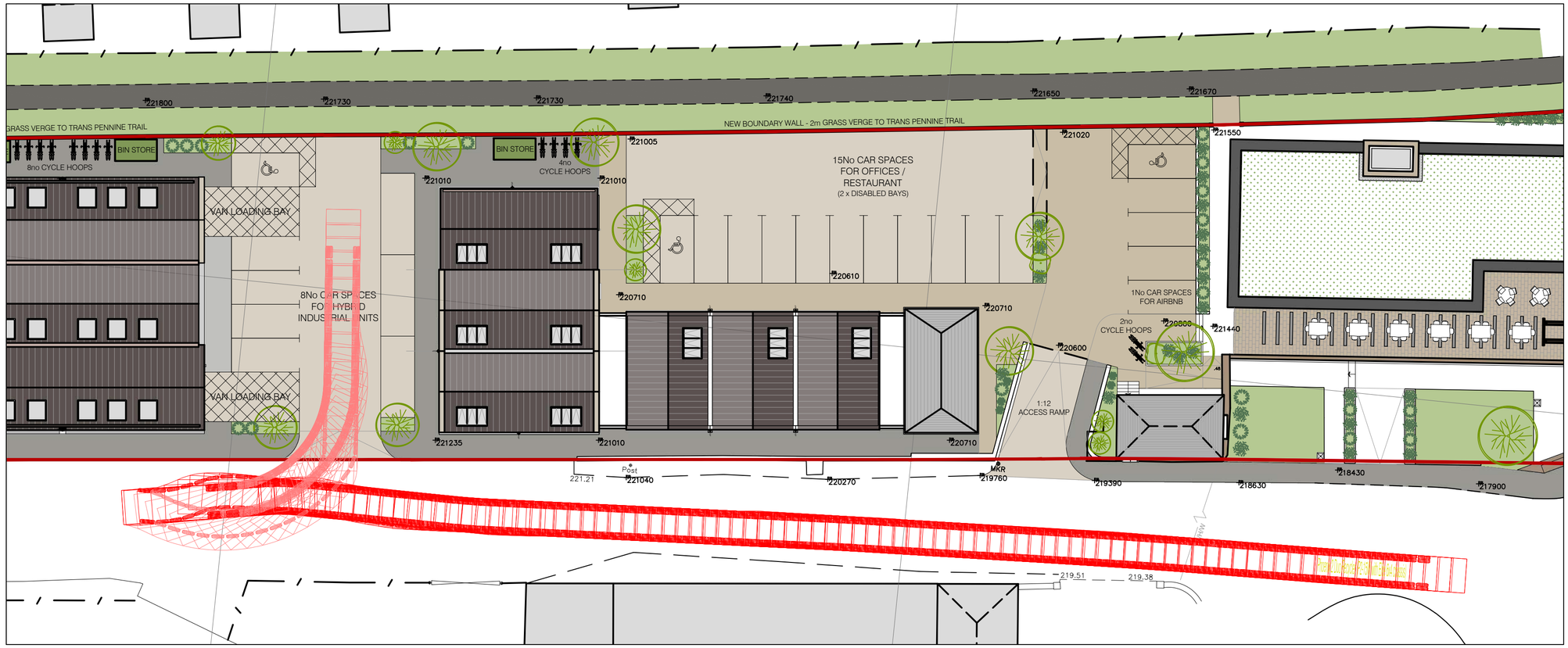
Drawing Number
27845 A(02) 01

Revision
-

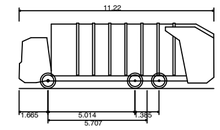
PROPOSED

Appendix D

Drawing 153625-001 – Refuse Vehicle Swept Path Analysis



- Sanderson Associates Consulting Engineers ("the consultant"), has not checked or verified, and shall have no liability whatsoever for any inaccuracies which may be attributable to any data, reports, base plan(s) and drawings provided by the client, or purchased by the consultant on the client's behalf, that may have been utilised within this drawing.
- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
- The consultant accepts no liability for any vehicle specification errors within the vehicle track software used and / or it's vehicle libraries.



Phoenix 2 Duo Recycler (P2-15W with Elite 6x4 chassis)

Overall Length	11.220m
Overall Width	2.530m
Overall Body Height	3.756m
Min Body Ground Clearance	0.309m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	11.550m

Rev	Amendment	Drawn	Date	Checked

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F 01924 844081 www.sandersonassociates.co.uk

Client

Fairfield Business Park Ltd

Project Title

Land at St. Mary's Street
Penistone

Drawing Title

Swept Path Analysis of
Large Refuse Vehicle

Scale	1:250	Drawn By	AA
Drawing Size	A2	Checked By	KS
Date	February 2025	Approved By	KS
	Drawing Number: 153625-001		Rev

FILE REF:

Appendix E

TRICs Output – B1

Sanderson Associates (Consulting Engineers) Ltd Jubilee Way Wakefield Licence No: 109307

Calculation Reference: AUDIT-109307-250219-0216

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	WS	WEST SUSSEX	1 days
04	EAST ANGLIA		
	NF	NORFOLK	2 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
06	WEST MIDLANDS		
	WK	WARWICKSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	AK	WAKEFIELD	1 days
	NY	NORTH YORKSHIRE	1 days
09	NORTH		
	CU	CUMBERLAND	1 days
	IM	ISLE OF MAN	1 days

Primary Filtering selection:

Parameter:	Gross floor area
Actual Range:	500 to 1590 (units: sqm)
Range Selected by User:	500 to 1600 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 24/05/24

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	2 days
Thursday	1 days
Friday	3 days

Selected survey types:

Manual count	10 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	7
Edge of Town	3

Selected Location Sub Categories:

Industrial Zone	2
Commercial Zone	2
Residential Zone	1
Built-Up Zone	2
No Sub Category	3

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	9 days - Selected
Servicing vehicles Excluded	4 days - Selected

Secondary Filtering selection:

Use Class:

Not Known	10 days

Filter by Site Operations Breakdown:
All Surveys Included

Population within 500m Range:
All Surveys Included
Population within 1 mile:

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

Population within 5 miles:

25,001 to 50,000	3 days
75,001 to 100,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	3 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	3 days

Secondary Filtering selection (Cont.):

Travel Plan:

No	10 days

PTAL Rating:

No PTAL Present	10 days

LIST OF SITES relevant to selection parameters

1 AK-02-A-01 OFFICES WAKEFIELD
PIONEER WAY
CASTLEFORD
WHITWOOD
Edge of Town
No Sub Category
Total Gross floor area: 1230 sqm
Survey date: TUESDAY 23/05/17 *Survey Type: MANUAL*

2 CU-02-A-02 OFFICE CUMBERLAND
PORT ROAD
CARLISLE

Edge of Town Centre
Industrial Zone
Total Gross floor area: 925 sqm
Survey date: FRIDAY 24/06/16 *Survey Type: MANUAL*

3 DY-02-A-02 REAL ESTATE DEVELOPERS DERBY
PRIME PARKWAY
DERBY

Edge of Town Centre
No Sub Category
Total Gross floor area: 594 sqm
Survey date: THURSDAY 21/10/21 *Survey Type: MANUAL*

4 IM-02-A-02 OFFICES ISLE OF MAN
HOPE STREET
DOUGLAS

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2400 sqm
Survey date: FRIDAY 24/05/24 *Survey Type: MANUAL*

5 NF-02-A-02 FINANCIAL PLANNERS NORFOLK
NORTH QUAY
GREAT YARMOUTH

Edge of Town Centre
Commercial Zone
Total Gross floor area: 894 sqm
Survey date: MONDAY 11/09/17 *Survey Type: MANUAL*

6 NF-02-A-04 BUILDING CONSULTANT NORFOLK
WHITING ROAD
NORWICH

Edge of Town
Commercial Zone
Total Gross floor area: 500 sqm
Survey date: WEDNESDAY 13/11/19 *Survey Type: MANUAL*

7 NY-02-A-03 DISTRICT COUNCIL OFFICES NORTH YORKSHIRE
STATION ROAD
RICHMOND

Edge of Town Centre
No Sub Category
Total Gross floor area: 1590 sqm
Survey date: FRIDAY 06/05/22 *Survey Type: MANUAL*

8 WK-02-A-02 OFFICES WARWICKSHIRE
WHITEHALL ROAD
RUGBY

Edge of Town Centre
Residential Zone
Total Gross floor area: 540 sqm
Survey date: MONDAY 14/11/22 *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 WK-02-A-03 ENGINEERING CONSULTANTS WARWICKSHIRE
BUDBROOKE ROAD
WARWICK

Edge of Town
Industrial Zone
Total Gross floor area: 796 sqm
Survey date: WEDNESDAY 23/11/22 Survey Type: MANUAL

10 WS-02-A-05 SOCIAL HOUSING COMPANY WEST SUSSEX
NORTH STREET
WORTHING

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 830 sqm
Survey date: TUESDAY 17/05/22 Survey Type: MANUAL

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
GM-02-A-10	COVID

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.61

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	10	917	0.785	10	917	0.065	10	917	0.850
08:00 - 09:00	10	917	1.974	10	917	0.229	10	917	2.203
09:00 - 10:00	10	917	0.742	10	917	0.295	10	917	1.037
10:00 - 11:00	10	917	0.327	10	917	0.207	10	917	0.534
11:00 - 12:00	10	917	0.196	10	917	0.284	10	917	0.480
12:00 - 13:00	10	917	0.382	10	917	0.742	10	917	1.124
13:00 - 14:00	10	917	0.709	10	917	0.480	10	917	1.189
14:00 - 15:00	10	917	0.207	10	917	0.284	10	917	0.491
15:00 - 16:00	10	917	0.207	10	917	0.469	10	917	0.676
16:00 - 17:00	10	917	0.164	10	917	1.015	10	917	1.179
17:00 - 18:00	10	917	0.164	10	917	1.560	10	917	1.724
18:00 - 19:00	9	882	0.050	9	882	0.315	9	882	0.365
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			5.907			5.945			11.852

Parameter summary

Trip rate parameter range selected:	500 - 1590 (units: sqm)
Survey date date range:	01/01/16 - 24/05/24
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	1

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	10	917	0.011	10	917	0.000	10	917	0.011
08:00 - 09:00	10	917	0.120	10	917	0.000	10	917	0.120
09:00 - 10:00	10	917	0.022	10	917	0.000	10	917	0.022
10:00 - 11:00	10	917	0.011	10	917	0.011	10	917	0.022
11:00 - 12:00	10	917	0.000	10	917	0.000	10	917	0.000
12:00 - 13:00	10	917	0.000	10	917	0.022	10	917	0.022
13:00 - 14:00	10	917	0.044	10	917	0.044	10	917	0.088
14:00 - 15:00	10	917	0.022	10	917	0.022	10	917	0.044
15:00 - 16:00	10	917	0.000	10	917	0.033	10	917	0.033
16:00 - 17:00	10	917	0.000	10	917	0.000	10	917	0.000
17:00 - 18:00	10	917	0.000	10	917	0.098	10	917	0.098
18:00 - 19:00	9	882	0.000	9	882	0.000	9	882	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.230			0.230			0.460

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	10	917	0.840	10	917	0.076	10	917	0.916
08:00 - 09:00	10	917	2.171	10	917	0.175	10	917	2.346
09:00 - 10:00	10	917	0.775	10	917	0.338	10	917	1.113
10:00 - 11:00	10	917	0.360	10	917	0.229	10	917	0.589
11:00 - 12:00	10	917	0.207	10	917	0.316	10	917	0.523
12:00 - 13:00	10	917	0.425	10	917	0.829	10	917	1.254
13:00 - 14:00	10	917	0.796	10	917	0.524	10	917	1.320
14:00 - 15:00	10	917	0.262	10	917	0.316	10	917	0.578
15:00 - 16:00	10	917	0.196	10	917	0.513	10	917	0.709
16:00 - 17:00	10	917	0.164	10	917	1.047	10	917	1.211
17:00 - 18:00	10	917	0.109	10	917	1.734	10	917	1.843
18:00 - 19:00	9	882	0.076	9	882	0.378	9	882	0.454
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			6.381			6.475			12.856

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	10	917	0.076	10	917	0.000	10	917	0.076
08:00 - 09:00	10	917	0.295	10	917	0.022	10	917	0.317
09:00 - 10:00	10	917	0.207	10	917	0.098	10	917	0.305
10:00 - 11:00	10	917	0.196	10	917	0.305	10	917	0.501
11:00 - 12:00	10	917	0.142	10	917	0.153	10	917	0.295
12:00 - 13:00	10	917	0.425	10	917	0.600	10	917	1.025
13:00 - 14:00	10	917	0.633	10	917	0.458	10	917	1.091
14:00 - 15:00	10	917	0.109	10	917	0.131	10	917	0.240
15:00 - 16:00	10	917	0.076	10	917	0.120	10	917	0.196
16:00 - 17:00	10	917	0.076	10	917	0.218	10	917	0.294
17:00 - 18:00	10	917	0.044	10	917	0.273	10	917	0.317
18:00 - 19:00	9	882	0.013	9	882	0.000	9	882	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.292			2.378			4.670

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	10	917	0.065	10	917	0.000	10	917	0.065
08:00 - 09:00	10	917	0.196	10	917	0.000	10	917	0.196
09:00 - 10:00	10	917	0.131	10	917	0.033	10	917	0.164
10:00 - 11:00	10	917	0.055	10	917	0.000	10	917	0.055
11:00 - 12:00	10	917	0.000	10	917	0.000	10	917	0.000
12:00 - 13:00	10	917	0.033	10	917	0.044	10	917	0.077
13:00 - 14:00	10	917	0.076	10	917	0.022	10	917	0.098
14:00 - 15:00	10	917	0.022	10	917	0.044	10	917	0.066
15:00 - 16:00	10	917	0.011	10	917	0.065	10	917	0.076
16:00 - 17:00	10	917	0.000	10	917	0.153	10	917	0.153
17:00 - 18:00	10	917	0.000	10	917	0.185	10	917	0.185
18:00 - 19:00	9	882	0.000	9	882	0.000	9	882	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.589			0.546			1.135

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.61

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	10	917	0.993	10	917	0.076	10	917	1.069
08:00 - 09:00	10	917	2.782	10	917	0.196	10	917	2.978
09:00 - 10:00	10	917	1.135	10	917	0.469	10	917	1.604
10:00 - 11:00	10	917	0.622	10	917	0.545	10	917	1.167
11:00 - 12:00	10	917	0.349	10	917	0.469	10	917	0.818
12:00 - 13:00	10	917	0.884	10	917	1.494	10	917	2.378
13:00 - 14:00	10	917	1.549	10	917	1.047	10	917	2.596
14:00 - 15:00	10	917	0.415	10	917	0.513	10	917	0.928
15:00 - 16:00	10	917	0.284	10	917	0.731	10	917	1.015
16:00 - 17:00	10	917	0.240	10	917	1.418	10	917	1.658
17:00 - 18:00	10	917	0.153	10	917	2.291	10	917	2.444
18:00 - 19:00	9	882	0.088	9	882	0.378	9	882	0.466
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			9.494			9.627			19.121

Appendix F

TRICs Output – B2

Sanderson Associates (Consulting Engineers) Ltd Jubilee Way Wakefield Licence No: 109307

Calculation Reference: AUDIT-109307-250219-0202

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	2 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	AK	WAKEFIELD	1 days
	NY	NORTH YORKSHIRE	1 days

Primary Filtering selection:

Parameter:	Gross floor area
Actual Range:	1138 to 1776 (units: sqm)
Range Selected by User:	552 to 2000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 30/04/24

Selected survey days:

Monday	2 days
Tuesday	2 days
Friday	2 days

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	1
Edge of Town	4

Selected Location Sub Categories:

Industrial Zone	3
Development Zone	1
Residential Zone	1
No Sub Category	1

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	4 days - Selected
Servicing vehicles Excluded	2 days - Selected

Secondary Filtering selection:

Use Class:

Not Known	6 days

Filter by Site Operations Breakdown:
All Surveys Included

Population within 500m Range:
All Surveys Included
Population within 1 mile:

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

Population within 5 miles:

5,001 to 25,000	2 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	2 days

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	2 days

Travel Plan:

No	6 days

PTAL Rating:

No PTAL Present	6 days

LIST OF SITES relevant to selection parameters

1 AK-02-D-01 INDUSTRIAL ESTATE WAKEFIELD
CARR WOOD ROAD
CASTLEFORD

Edge of Town
Development Zone
Total Gross floor area: 1776 sqm
Survey date: MONDAY *22/05/17* *Survey Type: MANUAL*

2 LN-02-D-04 INDUSTRIAL ESTATE LINCOLNSHIRE
TATTERSHALL WAY
LOUTH

Edge of Town
Industrial Zone
Total Gross floor area: 1506 sqm
Survey date: MONDAY *22/04/24* *Survey Type: MANUAL*

3 LN-02-D-06 INDUSTRIAL ESTATE LINCOLNSHIRE
RICHMOND ROAD
LOUTH

Edge of Town
Industrial Zone
Total Gross floor area: 1470 sqm
Survey date: TUESDAY *30/04/24* *Survey Type: MANUAL*

4 NY-02-D-04 INDUSTRIAL ESTATE NORTH YORKSHIRE
GRIMBALD CRAG CLOSE
KNARESBOROUGH

Edge of Town
Industrial Zone
Total Gross floor area: 1660 sqm
Survey date: FRIDAY *30/06/23* *Survey Type: MANUAL*

5 WM-02-D-03 INDUSTRIAL ESTATE WEST MIDLANDS
JUNCTION ROAD
STOURBRIDGE
AUDNAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1138 sqm
Survey date: TUESDAY *28/11/17* *Survey Type: MANUAL*

6 WM-02-D-04 INDUSTRIAL ESTATE WEST MIDLANDS
HORNCHURCH CLOSE
COVENTRY

Edge of Town Centre
No Sub Category
Total Gross floor area: 1320 sqm
Survey date: FRIDAY *18/11/22* *Survey Type: MANUAL*

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.27

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	1458	0.103	4	1458	0.051	4	1458	0.154
06:00 - 07:00	4	1458	0.274	4	1458	0.154	4	1458	0.428
07:00 - 08:00	6	1457	0.709	6	1457	0.229	6	1457	0.938
08:00 - 09:00	6	1457	1.178	6	1457	0.583	6	1457	1.761
09:00 - 10:00	6	1457	0.846	6	1457	0.720	6	1457	1.566
10:00 - 11:00	6	1457	0.812	6	1457	0.629	6	1457	1.441
11:00 - 12:00	6	1457	0.801	6	1457	0.858	6	1457	1.659
12:00 - 13:00	6	1457	0.869	6	1457	0.949	6	1457	1.818
13:00 - 14:00	6	1457	0.869	6	1457	1.075	6	1457	1.944
14:00 - 15:00	6	1457	0.858	6	1457	0.869	6	1457	1.727
15:00 - 16:00	6	1457	0.766	6	1457	0.812	6	1457	1.578
16:00 - 17:00	6	1457	0.595	6	1457	1.132	6	1457	1.727
17:00 - 18:00	6	1457	0.366	6	1457	0.801	6	1457	1.167
18:00 - 19:00	6	1457	0.080	6	1457	0.274	6	1457	0.354
19:00 - 20:00	4	1458	0.103	4	1458	0.172	4	1458	0.275
20:00 - 21:00	4	1458	0.000	4	1458	0.069	4	1458	0.069
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			9.229			9.377			18.606

Parameter summary

Trip rate parameter range selected:	1138 - 1776 (units: sqm)
Survey date date range:	01/01/16 - 30/04/24
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	1458	0.017	4	1458	0.000	4	1458	0.017
06:00 - 07:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
07:00 - 08:00	6	1457	0.023	6	1457	0.000	6	1457	0.023
08:00 - 09:00	6	1457	0.023	6	1457	0.000	6	1457	0.023
09:00 - 10:00	6	1457	0.023	6	1457	0.000	6	1457	0.023
10:00 - 11:00	6	1457	0.000	6	1457	0.000	6	1457	0.000
11:00 - 12:00	6	1457	0.011	6	1457	0.011	6	1457	0.022
12:00 - 13:00	6	1457	0.000	6	1457	0.000	6	1457	0.000
13:00 - 14:00	6	1457	0.000	6	1457	0.000	6	1457	0.000
14:00 - 15:00	6	1457	0.000	6	1457	0.023	6	1457	0.023
15:00 - 16:00	6	1457	0.000	6	1457	0.023	6	1457	0.023
16:00 - 17:00	6	1457	0.000	6	1457	0.011	6	1457	0.011
17:00 - 18:00	6	1457	0.000	6	1457	0.023	6	1457	0.023
18:00 - 19:00	6	1457	0.000	6	1457	0.000	6	1457	0.000
19:00 - 20:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
20:00 - 21:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.097			0.091			0.188

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	1458	0.103	4	1458	0.051	4	1458	0.154
06:00 - 07:00	4	1458	0.309	4	1458	0.154	4	1458	0.463
07:00 - 08:00	6	1457	0.755	6	1457	0.240	6	1457	0.995
08:00 - 09:00	6	1457	1.395	6	1457	0.675	6	1457	2.070
09:00 - 10:00	6	1457	0.938	6	1457	0.812	6	1457	1.750
10:00 - 11:00	6	1457	0.949	6	1457	0.789	6	1457	1.738
11:00 - 12:00	6	1457	0.926	6	1457	0.949	6	1457	1.875
12:00 - 13:00	6	1457	0.961	6	1457	1.121	6	1457	2.082
13:00 - 14:00	6	1457	0.984	6	1457	1.189	6	1457	2.173
14:00 - 15:00	6	1457	1.029	6	1457	0.984	6	1457	2.013
15:00 - 16:00	6	1457	0.892	6	1457	0.926	6	1457	1.818
16:00 - 17:00	6	1457	0.698	6	1457	1.269	6	1457	1.967
17:00 - 18:00	6	1457	0.400	6	1457	0.926	6	1457	1.326
18:00 - 19:00	6	1457	0.103	6	1457	0.297	6	1457	0.400
19:00 - 20:00	4	1458	0.103	4	1458	0.206	4	1458	0.309
20:00 - 21:00	4	1458	0.000	4	1458	0.069	4	1458	0.069
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			10.545			10.657			21.202

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	1458	0.000	4	1458	0.000	4	1458	0.000
06:00 - 07:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
07:00 - 08:00	6	1457	0.034	6	1457	0.046	6	1457	0.080
08:00 - 09:00	6	1457	0.172	6	1457	0.103	6	1457	0.275
09:00 - 10:00	6	1457	0.069	6	1457	0.080	6	1457	0.149
10:00 - 11:00	6	1457	0.069	6	1457	0.069	6	1457	0.138
11:00 - 12:00	6	1457	0.103	6	1457	0.103	6	1457	0.206
12:00 - 13:00	6	1457	0.069	6	1457	0.114	6	1457	0.183
13:00 - 14:00	6	1457	0.160	6	1457	0.114	6	1457	0.274
14:00 - 15:00	6	1457	0.149	6	1457	0.057	6	1457	0.206
15:00 - 16:00	6	1457	0.046	6	1457	0.011	6	1457	0.057
16:00 - 17:00	6	1457	0.114	6	1457	0.034	6	1457	0.148
17:00 - 18:00	6	1457	0.000	6	1457	0.057	6	1457	0.057
18:00 - 19:00	6	1457	0.011	6	1457	0.034	6	1457	0.045
19:00 - 20:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
20:00 - 21:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.996			0.822			1.818

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	1458	0.000	4	1458	0.000	4	1458	0.000
06:00 - 07:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
07:00 - 08:00	6	1457	0.069	6	1457	0.000	6	1457	0.069
08:00 - 09:00	6	1457	0.046	6	1457	0.000	6	1457	0.046
09:00 - 10:00	6	1457	0.000	6	1457	0.000	6	1457	0.000
10:00 - 11:00	6	1457	0.011	6	1457	0.000	6	1457	0.011
11:00 - 12:00	6	1457	0.023	6	1457	0.000	6	1457	0.023
12:00 - 13:00	6	1457	0.011	6	1457	0.011	6	1457	0.022
13:00 - 14:00	6	1457	0.011	6	1457	0.000	6	1457	0.011
14:00 - 15:00	6	1457	0.034	6	1457	0.000	6	1457	0.034
15:00 - 16:00	6	1457	0.000	6	1457	0.034	6	1457	0.034
16:00 - 17:00	6	1457	0.023	6	1457	0.046	6	1457	0.069
17:00 - 18:00	6	1457	0.000	6	1457	0.137	6	1457	0.137
18:00 - 19:00	6	1457	0.000	6	1457	0.000	6	1457	0.000
19:00 - 20:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
20:00 - 21:00	4	1458	0.000	4	1458	0.000	4	1458	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.228			0.228			0.456

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.27

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	1458	0.120	4	1458	0.051	4	1458	0.171
06:00 - 07:00	4	1458	0.309	4	1458	0.154	4	1458	0.463
07:00 - 08:00	6	1457	0.881	6	1457	0.286	6	1457	1.167
08:00 - 09:00	6	1457	1.635	6	1457	0.778	6	1457	2.413
09:00 - 10:00	6	1457	1.029	6	1457	0.892	6	1457	1.921
10:00 - 11:00	6	1457	1.029	6	1457	0.858	6	1457	1.887
11:00 - 12:00	6	1457	1.064	6	1457	1.064	6	1457	2.128
12:00 - 13:00	6	1457	1.041	6	1457	1.247	6	1457	2.288
13:00 - 14:00	6	1457	1.155	6	1457	1.304	6	1457	2.459
14:00 - 15:00	6	1457	1.212	6	1457	1.064	6	1457	2.276
15:00 - 16:00	6	1457	0.938	6	1457	0.995	6	1457	1.933
16:00 - 17:00	6	1457	0.835	6	1457	1.361	6	1457	2.196
17:00 - 18:00	6	1457	0.400	6	1457	1.144	6	1457	1.544
18:00 - 19:00	6	1457	0.114	6	1457	0.332	6	1457	0.446
19:00 - 20:00	4	1458	0.103	4	1458	0.206	4	1458	0.309
20:00 - 21:00	4	1458	0.000	4	1458	0.069	4	1458	0.069
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			11.865			11.805			23.670

Appendix G

TRICs Output – A1

Sanderson Associates (Consulting Engineers) Ltd Jubilee Way Wakefield Licence No: 109307

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

07	YORKSHIRE & NORTH LINCOLNSHIRE		
	DR	DONCASTER	1 days
	SE	SHEFFIELD	1 days
09	NORTH		
	CU	CUMBERLAND	1 days

Primary Filtering selection:

Parameter:	Gross floor area
Actual Range:	200 to 1645 (units: sqm)
Range Selected by User:	200 to 2500 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 18/06/24

Selected survey days:

Tuesday	1 days
Thursday	1 days
Friday	1 days

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Neighbourhood Centre (PPS6 Local Centre)	2

Selected Location Sub Categories:

Residential Zone	3

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	1 days - Selected
Servicing vehicles Excluded	2 days - Selected

Secondary Filtering selection:

Use Class:

n/a	3 days

Population within 500m Range:
All Surveys Included

Population within 1 mile:

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

Population within 5 miles:

100,001 to 125,000	1 days
125,001 to 250,000	1 days
500,001 or More	1 days

Car ownership within 5 miles:

1.1 to 1.5	3 days

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	3 days

Travel Plan:

No	3 days

PTAL Rating:

No PTAL Present	3 days

LIST OF SITES relevant to selection parameters

1 CU-01-I-02 LOCAL SHOPS CUMBERLAND
WIGTON ROAD
CARLISLE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 704 sqm
Survey date: TUESDAY *18/06/24* *Survey Type: MANUAL*

2 DR-01-I-01 LOCAL SHOPS DONCASTER
EVERINGHAM ROAD
DONCASTER
CANTLEY
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1645 sqm
Survey date: FRIDAY *17/09/21* *Survey Type: MANUAL*

3 SE-01-I-01 LOCAL SHOPS SHEFFIELD
TYLER STREET
SHEFFIELD

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 200 sqm
Survey date: THURSDAY *22/06/23* *Survey Type: MANUAL*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.82

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	2	452	0.111	2	452	0.111	2	452	0.222
06:00 - 07:00	3	850	0.824	3	850	0.588	3	850	1.412
07:00 - 08:00	3	850	0.392	3	850	0.314	3	850	0.706
08:00 - 09:00	3	850	2.236	3	850	1.687	3	850	3.923
09:00 - 10:00	3	850	2.982	3	850	2.746	3	850	5.728
10:00 - 11:00	3	850	3.021	3	850	2.982	3	850	6.003
11:00 - 12:00	3	850	3.099	3	850	2.903	3	850	6.002
12:00 - 13:00	3	850	2.707	3	850	2.707	3	850	5.414
13:00 - 14:00	3	850	3.295	3	850	3.295	3	850	6.590
14:00 - 15:00	3	850	2.393	3	850	2.668	3	850	5.061
15:00 - 16:00	3	850	2.432	3	850	2.511	3	850	4.943
16:00 - 17:00	3	850	2.942	3	850	2.628	3	850	5.570
17:00 - 18:00	3	850	2.903	3	850	3.648	3	850	6.551
18:00 - 19:00	3	850	2.982	3	850	3.217	3	850	6.199
19:00 - 20:00	3	850	2.550	3	850	2.628	3	850	5.178
20:00 - 21:00	3	850	1.334	3	850	1.373	3	850	2.707
21:00 - 22:00	3	850	1.138	3	850	1.255	3	850	2.393
22:00 - 23:00	2	452	0.774	2	452	0.996	2	452	1.770
23:00 - 24:00	1	704	0.426	1	704	0.568	1	704	0.994
Total Rates:			38.541			38.825			77.366

Parameter summary

Trip rate parameter range selected:	200 - 1645 (units: sqm)
Survey date date range:	01/01/16 - 18/06/24
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	3	850	0.000	3	850	0.000	3	850	0.000
07:00 - 08:00	3	850	0.039	3	850	0.000	3	850	0.039
08:00 - 09:00	3	850	0.039	3	850	0.000	3	850	0.039
09:00 - 10:00	3	850	0.000	3	850	0.039	3	850	0.039
10:00 - 11:00	3	850	0.078	3	850	0.000	3	850	0.078
11:00 - 12:00	3	850	0.000	3	850	0.078	3	850	0.078
12:00 - 13:00	3	850	0.078	3	850	0.039	3	850	0.117
13:00 - 14:00	3	850	0.000	3	850	0.000	3	850	0.000
14:00 - 15:00	3	850	0.000	3	850	0.000	3	850	0.000
15:00 - 16:00	3	850	0.000	3	850	0.000	3	850	0.000
16:00 - 17:00	3	850	0.157	3	850	0.118	3	850	0.275
17:00 - 18:00	3	850	0.078	3	850	0.157	3	850	0.235
18:00 - 19:00	3	850	0.039	3	850	0.039	3	850	0.078
19:00 - 20:00	3	850	0.078	3	850	0.078	3	850	0.156
20:00 - 21:00	3	850	0.157	3	850	0.118	3	850	0.275
21:00 - 22:00	3	850	0.078	3	850	0.078	3	850	0.156
22:00 - 23:00	2	452	0.111	2	452	0.221	2	452	0.332
23:00 - 24:00	1	704	0.000	1	704	0.000	1	704	0.000
Total Rates:			0.932			0.965			1.897

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	2	452	0.221	2	452	0.221	2	452	0.442
06:00 - 07:00	3	850	0.942	3	850	0.628	3	850	1.570
07:00 - 08:00	3	850	0.432	3	850	0.432	3	850	0.864
08:00 - 09:00	3	850	2.707	3	850	2.001	3	850	4.708
09:00 - 10:00	3	850	3.570	3	850	3.335	3	850	6.905
10:00 - 11:00	3	850	3.295	3	850	3.295	3	850	6.590
11:00 - 12:00	3	850	3.335	3	850	3.178	3	850	6.513
12:00 - 13:00	3	850	2.825	3	850	2.864	3	850	5.689
13:00 - 14:00	3	850	3.688	3	850	3.531	3	850	7.219
14:00 - 15:00	3	850	2.589	3	850	3.138	3	850	5.727
15:00 - 16:00	3	850	2.903	3	850	2.825	3	850	5.728
16:00 - 17:00	3	850	3.335	3	850	3.060	3	850	6.395
17:00 - 18:00	3	850	3.256	3	850	4.002	3	850	7.258
18:00 - 19:00	3	850	3.295	3	850	3.492	3	850	6.787
19:00 - 20:00	3	850	2.982	3	850	2.982	3	850	5.964
20:00 - 21:00	3	850	1.608	3	850	1.726	3	850	3.334
21:00 - 22:00	3	850	1.177	3	850	1.373	3	850	2.550
22:00 - 23:00	2	452	0.996	2	452	1.106	2	452	2.102
23:00 - 24:00	1	704	0.426	1	704	0.852	1	704	1.278
Total Rates:			43.582			44.041			87.623

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	3	850	0.118	3	850	0.039	3	850	0.157
07:00 - 08:00	3	850	0.471	3	850	0.353	3	850	0.824
08:00 - 09:00	3	850	0.824	3	850	0.981	3	850	1.805
09:00 - 10:00	3	850	0.785	3	850	0.981	3	850	1.766
10:00 - 11:00	3	850	1.138	3	850	1.255	3	850	2.393
11:00 - 12:00	3	850	1.648	3	850	1.334	3	850	2.982
12:00 - 13:00	3	850	2.079	3	850	2.197	3	850	4.276
13:00 - 14:00	3	850	1.255	3	850	1.412	3	850	2.667
14:00 - 15:00	3	850	1.648	3	850	1.491	3	850	3.139
15:00 - 16:00	3	850	1.412	3	850	1.530	3	850	2.942
16:00 - 17:00	3	850	1.177	3	850	1.138	3	850	2.315
17:00 - 18:00	3	850	2.275	3	850	1.844	3	850	4.119
18:00 - 19:00	3	850	1.726	3	850	1.648	3	850	3.374
19:00 - 20:00	3	850	2.158	3	850	2.118	3	850	4.276
20:00 - 21:00	3	850	1.255	3	850	1.648	3	850	2.903
21:00 - 22:00	3	850	0.510	3	850	0.745	3	850	1.255
22:00 - 23:00	2	452	0.221	2	452	0.221	2	452	0.442
23:00 - 24:00	1	704	0.000	1	704	0.000	1	704	0.000
Total Rates:			20.700			20.935			41.635

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	3	850	0.000	3	850	0.000	3	850	0.000
07:00 - 08:00	3	850	0.118	3	850	0.078	3	850	0.196
08:00 - 09:00	3	850	0.353	3	850	0.196	3	850	0.549
09:00 - 10:00	3	850	0.392	3	850	0.078	3	850	0.470
10:00 - 11:00	3	850	0.353	3	850	0.392	3	850	0.745
11:00 - 12:00	3	850	0.353	3	850	0.314	3	850	0.667
12:00 - 13:00	3	850	0.392	3	850	0.392	3	850	0.784
13:00 - 14:00	3	850	0.275	3	850	0.353	3	850	0.628
14:00 - 15:00	3	850	0.510	3	850	0.392	3	850	0.902
15:00 - 16:00	3	850	0.588	3	850	0.471	3	850	1.059
16:00 - 17:00	3	850	0.196	3	850	0.392	3	850	0.588
17:00 - 18:00	3	850	0.353	3	850	0.510	3	850	0.863
18:00 - 19:00	3	850	0.196	3	850	0.275	3	850	0.471
19:00 - 20:00	3	850	0.196	3	850	0.275	3	850	0.471
20:00 - 21:00	3	850	0.157	3	850	0.157	3	850	0.314
21:00 - 22:00	3	850	0.000	3	850	0.000	3	850	0.000
22:00 - 23:00	2	452	0.000	2	452	0.000	2	452	0.000
23:00 - 24:00	1	704	0.000	1	704	0.000	1	704	0.000
Total Rates:			4.432			4.275			8.707

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.82

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	2	452	0.221	2	452	0.221	2	452	0.442
06:00 - 07:00	3	850	1.059	3	850	0.667	3	850	1.726
07:00 - 08:00	3	850	1.059	3	850	0.863	3	850	1.922
08:00 - 09:00	3	850	3.923	3	850	3.178	3	850	7.101
09:00 - 10:00	3	850	4.747	3	850	4.433	3	850	9.180
10:00 - 11:00	3	850	4.865	3	850	4.943	3	850	9.808
11:00 - 12:00	3	850	5.335	3	850	4.904	3	850	10.239
12:00 - 13:00	3	850	5.375	3	850	5.492	3	850	10.867
13:00 - 14:00	3	850	5.218	3	850	5.296	3	850	10.514
14:00 - 15:00	3	850	4.747	3	850	5.022	3	850	9.769
15:00 - 16:00	3	850	4.904	3	850	4.825	3	850	9.729
16:00 - 17:00	3	850	4.865	3	850	4.708	3	850	9.573
17:00 - 18:00	3	850	5.963	3	850	6.512	3	850	12.475
18:00 - 19:00	3	850	5.257	3	850	5.453	3	850	10.710
19:00 - 20:00	3	850	5.414	3	850	5.453	3	850	10.867
20:00 - 21:00	3	850	3.178	3	850	3.648	3	850	6.826
21:00 - 22:00	3	850	1.765	3	850	2.197	3	850	3.962
22:00 - 23:00	2	452	1.327	2	452	1.549	2	452	2.876
23:00 - 24:00	1	704	0.426	1	704	0.852	1	704	1.278
Total Rates:			69.648			70.216			139.864

Appendix H

TRICs Output – A3

Sanderson Associates (Consulting Engineers) Ltd Jubilee Way Wakefield Licence No: 109307

Calculation Reference: AUDIT-109307-250219-0213

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : B - RESTAURANTS
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

03	SOUTH WEST		
	DC	DORSET	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
	LN	LINCOLNSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
	WM	WEST MIDLANDS	1 days

Primary Filtering selection:

Parameter:	Gross floor area
Actual Range:	110 to 1136 (units: sqm)
Range Selected by User:	110 to 2400 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 23/06/23

Selected survey days:

Tuesday	2 days
Wednesday	1 days
Thursday	2 days
Friday	2 days

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

Selected Locations:

Town Centre	5
Edge of Town Centre	2

Selected Location Sub Categories:

Development Zone	1
Built-Up Zone	1
High Street	5

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	5 days - Selected
Servicing vehicles Excluded	2 days - Selected

Secondary Filtering selection:

Use Class:

E(b)	7 days

Population within 500m Range:
All Surveys Included
Population within 1 mile:

15,001 to 20,000	1 days
20,001 to 25,000	3 days
25,001 to 50,000	3 days

Population within 5 miles:

25,001 to 50,000	1 days
75,001 to 100,000	2 days
125,001 to 250,000	2 days
250,001 to 500,000	2 days

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	4 days
1.1 to 1.5	2 days

Travel Plan:

No	7 days

PTAL Rating:

No PTAL Present	7 days

LIST OF SITES relevant to selection parameters

1 CA-06-B-02 WILDWOOD CAMBRIDGESHIRE
BRIDGE STREET
CAMBRIDGE

Town Centre
High Street
Total Gross floor area: 370 sqm
Survey date: FRIDAY *23/06/23* *Survey Type: MANUAL*

2 DC-06-B-02 PREZZO DORSET
HIGH WEST STREET
DORCHESTER

Town Centre
High Street
Total Gross floor area: 525 sqm
Survey date: FRIDAY *16/09/16* *Survey Type: MANUAL*

3 DY-06-B-04 FRENCH RESTAURANT DERBY
FRIAR GATE
DERBY

Town Centre
High Street
Total Gross floor area: 180 sqm
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

4 LN-06-B-01 PREZZO LINCOLNSHIRE
BRAYFORD WHARF NORTH
LINCOLN
BRAYFORD WHARF
Edge of Town Centre
Development Zone
Total Gross floor area: 1136 sqm
Survey date: TUESDAY *10/10/17* *Survey Type: MANUAL*

5 SH-06-B-01 THE BEEFY BOYS SHROPSHIRE
HIGH STREET
SHREWSBURY

Town Centre
High Street
Total Gross floor area: 110 sqm
Survey date: THURSDAY *15/06/23* *Survey Type: MANUAL*

6 SH-06-B-02 ASK ITALIAN SHROPSHIRE
HIGH STREET
SHREWSBURY

Town Centre
High Street
Total Gross floor area: 402 sqm
Survey date: TUESDAY *20/06/23* *Survey Type: MANUAL*

7 WM-06-B-05 AKBARS WEST MIDLANDS
THE BUTTS
COVENTRY

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 600 sqm
Survey date: THURSDAY *17/11/16* *Survey Type: MANUAL*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 4.13

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.190	1	525	0.000	1	525	0.190
11:00 - 12:00	6	454	0.661	6	454	0.073	6	454	0.734
12:00 - 13:00	6	454	1.579	6	454	0.257	6	454	1.836
13:00 - 14:00	6	454	1.799	6	454	1.065	6	454	2.864
14:00 - 15:00	6	454	0.771	6	454	1.322	6	454	2.093
15:00 - 16:00	6	454	0.404	6	454	0.661	6	454	1.065
16:00 - 17:00	7	475	0.181	7	475	0.241	7	475	0.422
17:00 - 18:00	7	475	1.083	7	475	0.542	7	475	1.625
18:00 - 19:00	7	475	2.257	7	475	1.294	7	475	3.551
19:00 - 20:00	7	475	2.046	7	475	1.745	7	475	3.791
20:00 - 21:00	7	475	0.542	7	475	1.745	7	475	2.287
21:00 - 22:00	7	475	0.241	7	475	1.204	7	475	1.445
22:00 - 23:00	5	562	0.107	5	562	1.210	5	562	1.317
23:00 - 24:00	3	754	0.044	3	754	0.265	3	754	0.309
Total Rates:			11.905			11.624			23.529

Parameter summary

Trip rate parameter range selected:	110 - 1136 (units: sqm)
Survey date date range:	01/01/16 - 23/06/23
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.000	1	525	0.000	1	525	0.000
11:00 - 12:00	6	454	0.000	6	454	0.000	6	454	0.000
12:00 - 13:00	6	454	0.037	6	454	0.000	6	454	0.037
13:00 - 14:00	6	454	0.037	6	454	0.000	6	454	0.037
14:00 - 15:00	6	454	0.037	6	454	0.073	6	454	0.110
15:00 - 16:00	6	454	0.000	6	454	0.000	6	454	0.000
16:00 - 17:00	7	475	0.000	7	475	0.030	7	475	0.030
17:00 - 18:00	7	475	0.000	7	475	0.000	7	475	0.000
18:00 - 19:00	7	475	0.060	7	475	0.000	7	475	0.060
19:00 - 20:00	7	475	0.030	7	475	0.090	7	475	0.120
20:00 - 21:00	7	475	0.060	7	475	0.030	7	475	0.090
21:00 - 22:00	7	475	0.000	7	475	0.030	7	475	0.030
22:00 - 23:00	5	562	0.000	5	562	0.000	5	562	0.000
23:00 - 24:00	3	754	0.000	3	754	0.000	3	754	0.000
Total Rates:			0.261			0.253			0.514

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.190	1	525	0.000	1	525	0.190
11:00 - 12:00	6	454	0.955	6	454	0.073	6	454	1.028
12:00 - 13:00	6	454	2.901	6	454	0.404	6	454	3.305
13:00 - 14:00	6	454	3.489	6	454	2.057	6	454	5.546
14:00 - 15:00	6	454	1.689	6	454	2.644	6	454	4.333
15:00 - 16:00	6	454	0.661	6	454	1.322	6	454	1.983
16:00 - 17:00	7	475	0.391	7	475	0.451	7	475	0.842
17:00 - 18:00	7	475	2.227	7	475	0.933	7	475	3.160
18:00 - 19:00	7	475	4.333	7	475	2.438	7	475	6.771
19:00 - 20:00	7	475	3.942	7	475	3.611	7	475	7.553
20:00 - 21:00	7	475	1.113	7	475	3.280	7	475	4.393
21:00 - 22:00	7	475	0.391	7	475	2.167	7	475	2.558
22:00 - 23:00	5	562	0.142	5	562	2.312	5	562	2.454
23:00 - 24:00	3	754	0.088	3	754	0.487	3	754	0.575
Total Rates:			22.512			22.179			44.691

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.381	1	525	0.000	1	525	0.381
11:00 - 12:00	6	454	0.477	6	454	0.331	6	454	0.808
12:00 - 13:00	6	454	2.681	6	454	0.698	6	454	3.379
13:00 - 14:00	6	454	2.240	6	454	1.873	6	454	4.113
14:00 - 15:00	6	454	1.469	6	454	2.938	6	454	4.407
15:00 - 16:00	6	454	1.102	6	454	1.763	6	454	2.865
16:00 - 17:00	7	475	1.023	7	475	1.264	7	475	2.287
17:00 - 18:00	7	475	1.776	7	475	0.993	7	475	2.769
18:00 - 19:00	7	475	2.799	7	475	1.384	7	475	4.183
19:00 - 20:00	7	475	3.160	7	475	2.137	7	475	5.297
20:00 - 21:00	7	475	1.535	7	475	1.776	7	475	3.311
21:00 - 22:00	7	475	0.361	7	475	1.956	7	475	2.317
22:00 - 23:00	5	562	0.107	5	562	1.814	5	562	1.921
23:00 - 24:00	3	754	0.044	3	754	0.133	3	754	0.177
Total Rates:			19.155			19.060			38.215

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.190	1	525	0.000	1	525	0.190
11:00 - 12:00	6	454	0.331	6	454	0.037	6	454	0.368
12:00 - 13:00	6	454	0.992	6	454	0.184	6	454	1.176
13:00 - 14:00	6	454	0.771	6	454	0.477	6	454	1.248
14:00 - 15:00	6	454	0.588	6	454	0.992	6	454	1.580
15:00 - 16:00	6	454	0.147	6	454	0.404	6	454	0.551
16:00 - 17:00	7	475	0.181	7	475	0.301	7	475	0.482
17:00 - 18:00	7	475	0.542	7	475	0.331	7	475	0.873
18:00 - 19:00	7	475	1.324	7	475	0.451	7	475	1.775
19:00 - 20:00	7	475	1.354	7	475	0.782	7	475	2.136
20:00 - 21:00	7	475	0.481	7	475	0.662	7	475	1.143
21:00 - 22:00	7	475	0.030	7	475	1.204	7	475	1.234
22:00 - 23:00	5	562	0.000	5	562	0.854	5	562	0.854
23:00 - 24:00	3	754	0.000	3	754	0.177	3	754	0.177
Total Rates:			6.931			6.856			13.787

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 4.13

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.762	1	525	0.000	1	525	0.762
11:00 - 12:00	6	454	1.763	6	454	0.441	6	454	2.204
12:00 - 13:00	6	454	6.610	6	454	1.285	6	454	7.895
13:00 - 14:00	6	454	6.537	6	454	4.407	6	454	10.944
14:00 - 15:00	6	454	3.783	6	454	6.647	6	454	10.430
15:00 - 16:00	6	454	1.910	6	454	3.489	6	454	5.399
16:00 - 17:00	7	475	1.595	7	475	2.046	7	475	3.641
17:00 - 18:00	7	475	4.544	7	475	2.257	7	475	6.801
18:00 - 19:00	7	475	8.516	7	475	4.273	7	475	12.789
19:00 - 20:00	7	475	8.486	7	475	6.621	7	475	15.107
20:00 - 21:00	7	475	3.190	7	475	5.748	7	475	8.938
21:00 - 22:00	7	475	0.782	7	475	5.357	7	475	6.139
22:00 - 23:00	5	562	0.249	5	562	4.980	5	562	5.229
23:00 - 24:00	3	754	0.133	3	754	0.796	3	754	0.929
Total Rates:			48.860			48.347			97.207

Appendix I

Junctions 10 Output - St. Mary's Street / Site Access

Junctions 10

ARCADY 10 - Roundabout Module

Filename: St Marys Roundabout.j10
Path: V:\153000\153625F_Stottercliffe Road, Penistone\07 Design and other outputs\Traffic programs\Junctions
Report generation date: 19/02/2025 13:22:26

»2025 Base, AM
»2025 Base, PM
»2025 Base, SAT
»2030 Base, AM
»2030 Base, PM
»2030 Base , SAT
»2025 Base + Dev, AM
»2025 Base + Dev, PM
»2025 Base + Dev, SAT
»2030 Base + Dev , AM
»2030 Base + Dev, PM
»2030 Base + Dev, SAT

Summary of junction performance

	AM					PM					SAT				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2025 Base														
Arm 1	D4	0.9	6.11	0.47	A	D5	1.0	6.25	0.50	A	D6	1.0	6.25	0.49	A
Arm 2		0.3	5.80	0.25	A		0.5	6.59	0.33	A		0.7	7.20	0.40	A
Arm 3		0.0	8.22	0.03	A		0.1	8.16	0.05	A		0.1	8.27	0.06	A
Arm 4		0.8	5.52	0.45	A		1.1	6.52	0.53	A		0.9	6.00	0.47	A
	2030 Base														
Arm 1	D7	1.0	6.48	0.49	A	D8	1.1	6.68	0.53	A	D9	1.1	6.69	0.53	A
Arm 2		0.4	6.01	0.27	A		0.6	6.94	0.36	A		0.7	7.67	0.43	A
Arm 3		0.0	8.48	0.03	A		0.1	8.53	0.06	A		0.1	8.67	0.06	A
Arm 4		0.9	5.80	0.47	A		1.2	7.01	0.56	A		1.0	6.38	0.50	A
	2025 Base + Dev														
Arm 1	D13	0.9	6.32	0.48	A	D14	1.0	6.35	0.51	A	D15	1.0	6.31	0.50	A
Arm 2		0.3	5.92	0.26	A		0.5	6.66	0.34	A		0.7	7.25	0.40	A
Arm 3		0.0	7.96	0.05	A		0.1	8.66	0.10	A		0.1	8.36	0.07	A
Arm 4		0.8	5.64	0.46	A		1.1	6.69	0.54	A		0.9	6.04	0.48	A
	2030 Base + Dev														
Arm 1	D16	1.0	6.72	0.51	A	D17	1.2	6.79	0.54	A	D18	1.1	6.75	0.53	A
Arm 2		0.4	6.15	0.28	A		0.6	7.02	0.36	A		0.7	7.72	0.43	A
Arm 3		0.1	8.22	0.05	A		0.1	9.07	0.11	A		0.1	8.76	0.07	A
Arm 4		0.9	5.94	0.48	A		1.3	7.20	0.57	A		1.0	6.43	0.51	A

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	Stottercliffe Road
Location	Penistone
Site number	153625
Date	12/09/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	FAIRHURST\dwatson
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	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	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2023 Base	AM	Thursday 11.05.2023	ONE HOUR	08:30	10:00	15			
D2	2023 Base	PM	Thursday 11.05.2023	ONE HOUR	16:00	17:30	15			
D3	2023 Base	SAT	Saturday 13.05.2023	ONE HOUR	10:30	12:00	15			
D4	2025 Base	AM		ONE HOUR	08:30	10:00	15	✓	Simple	D1*1.0090
D5	2025 Base	PM		ONE HOUR	16:00	17:30	15	✓	Simple	D2*1.00933085
D6	2025 Base	SAT		ONE HOUR	10:30	12:00	15	✓	Simple	D3*1.0102
D7	2030 Base	AM		ONE HOUR	08:30	10:00	15	✓	Simple	D1*1.06389
D8	2030 Base	PM		ONE HOUR	16:00	17:30	15	✓	Simple	D2*1.06490
D9	2030 Base	SAT		ONE HOUR	10:30	12:00	15	✓	Simple	D3*1.0674
D10	Development	AM		ONE HOUR	08:30	10:00	15			
D11	Development	PM		ONE HOUR	16:00	17:30	15			
D12	Development	SAT		ONE HOUR	10:30	12:00	15			
D13	2025 Base + Dev	AM		ONE HOUR	08:30	10:00	15	✓	Simple	D4+D10
D14	2025 Base + Dev	PM		ONE HOUR	16:00	17:30	15	✓	Simple	D5+D11
D15	2025 Base + Dev	SAT		ONE HOUR	10:30	12:00	15	✓	Simple	D6+D12
D16	2030 Base + Dev	AM		ONE HOUR	08:30	10:00	15	✓	Simple	D7+D10
D17	2030 Base + Dev	PM		ONE HOUR	16:00	17:30	15	✓	Simple	D8+D11
D18	2030 Base + Dev	SAT		ONE HOUR	10:30	12:00	15	✓	Simple	D9+D12

Analysis Set Details

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

2025 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	5.84	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.84	A

Arms

Arms

Arm	Name	Description	No give-way line
1	St Marys Street		
2	Market Lane		
3	Stottercliffe Road		
4	Bridge Street		

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	3.80	4.60	4.0	20.0	24.0	39.0		
2	3.60	4.20	3.0	7.0	24.0	41.0		
3	2.40	4.60	2.0	9.0	24.0	42.0		
4	3.40	4.40	10.0	20.0	24.0	29.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.562	1259
2	0.488	1047
3	0.443	786
4	0.574	1264

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2025 Base	AM	ONE HOUR	08:30	10:00	15	✓	Simple	D1*1.0090

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	469	100.000
2		ONE HOUR	✓	193	100.000
3		ONE HOUR	✓	13	100.000
4		ONE HOUR	✓	479	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	3	129	13	324
	2	92	0	0	101
	3	3	1	1	8
	4	308	157	13	1

Vehicle Mix

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

Heavy Vehicle %

		To			
		1	2	3	4
From	1	0	1	0	6
	2	2	0	0	1
	3	0	0	0	25
	4	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.47	6.11	0.9	A	431	646
2	0.25	5.80	0.3	A	177	265
3	0.03	8.22	0.0	A	12	18
4	0.45	5.52	0.8	A	440	660

Main Results for each time segment

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	353	88	130	1139	0.310	351	304	0.0	0.4	4.561	A
2	145	36	266	896	0.162	144	215	0.0	0.2	4.782	A
3	10	2	390	526	0.019	10	20	0.0	0.0	6.980	A
4	361	90	75	1200	0.301	359	325	0.0	0.4	4.271	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	422	105	156	1125	0.375	421	364	0.4	0.6	5.110	A
2	173	43	319	870	0.199	173	258	0.2	0.2	5.167	A
3	12	3	467	495	0.024	12	24	0.0	0.0	7.454	A
4	431	108	90	1192	0.362	430	390	0.4	0.6	4.725	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	517	129	191	1106	0.467	515	446	0.6	0.9	6.082	A
2	212	53	390	834	0.255	212	316	0.2	0.3	5.786	A
3	14	4	572	453	0.032	14	30	0.0	0.0	8.211	A
4	528	132	110	1180	0.447	527	477	0.6	0.8	5.501	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	517	129	191	1106	0.467	517	447	0.9	0.9	6.106	A
2	212	53	391	833	0.255	212	317	0.3	0.3	5.796	A
3	14	4	573	452	0.032	14	30	0.0	0.0	8.219	A
4	528	132	110	1180	0.447	528	478	0.8	0.8	5.517	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	422	105	156	1125	0.375	423	365	0.9	0.6	5.135	A
2	173	43	320	869	0.199	174	259	0.3	0.3	5.179	A
3	12	3	469	494	0.024	12	25	0.0	0.0	7.466	A
4	431	108	90	1192	0.362	432	391	0.8	0.6	4.745	A

09:45 - 10:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	353	88	131	1139	0.310	354	306	0.6	0.5	4.592	A
2	145	36	268	895	0.162	145	217	0.3	0.2	4.801	A
3	10	2	393	524	0.019	10	21	0.0	0.0	6.995	A
4	361	90	75	1200	0.301	361	327	0.6	0.4	4.295	A

2025 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.45	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2025 Base	PM	ONE HOUR	16:00	17:30	15	✓	Simple	D2*1.00933085

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	532	100.000
2		ONE HOUR	✓	247	100.000
3		ONE HOUR	✓	21	100.000
4		ONE HOUR	✓	557	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	5	120	7	400
	2	123	0	1	123
	3	8	0	0	13
	4	425	126	4	2

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.50	6.25	1.0	A	488	732
2	0.33	6.59	0.5	A	227	340
3	0.05	8.16	0.1	A	19	29
4	0.53	6.52	1.1	A	511	767

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	400	100	99	1187	0.337	398	420	0.0	0.5	4.555	A
2	186	47	313	891	0.209	185	184	0.0	0.3	5.090	A
3	16	4	489	567	0.028	16	9	0.0	0.0	6.527	A
4	419	105	102	1193	0.352	417	403	0.0	0.5	4.628	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	478	120	119	1176	0.407	477	504	0.5	0.7	5.148	A
2	222	56	375	861	0.258	222	221	0.3	0.3	5.635	A
3	19	5	586	524	0.036	19	11	0.0	0.0	7.132	A
4	501	125	122	1181	0.424	500	483	0.5	0.7	5.279	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	586	146	145	1161	0.504	584	616	0.7	1.0	6.225	A
2	272	68	459	819	0.332	272	271	0.3	0.5	6.571	A
3	23	6	717	465	0.050	23	13	0.0	0.1	8.149	A
4	613	153	150	1166	0.526	612	591	0.7	1.1	6.483	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	586	146	146	1161	0.504	586	618	1.0	1.0	6.254	A
2	272	68	460	818	0.333	272	271	0.5	0.5	6.590	A
3	23	6	719	464	0.050	23	13	0.1	0.1	8.163	A
4	613	153	150	1166	0.526	613	592	1.1	1.1	6.519	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	478	120	119	1176	0.407	479	506	1.0	0.7	5.179	A
2	222	56	377	860	0.259	223	222	0.5	0.4	5.656	A
3	19	5	589	523	0.036	19	11	0.1	0.0	7.152	A
4	501	125	123	1181	0.424	502	485	1.1	0.7	5.314	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	400	100	100	1187	0.338	401	423	0.7	0.5	4.587	A
2	186	47	315	890	0.209	187	186	0.4	0.3	5.116	A
3	16	4	493	566	0.028	16	9	0.0	0.0	6.549	A
4	419	105	103	1192	0.352	420	406	0.7	0.5	4.666	A

2025 Base, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.40	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.40	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2025 Base	SAT	ONE HOUR	10:30	12:00	15	✓	Simple	D3*1.0102

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	512	100.000
2		ONE HOUR	✓	301	100.000
3		ONE HOUR	✓	23	100.000
4		ONE HOUR	✓	492	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	4	133	19	356
	2	141	0	2	158
	3	11	2	1	9
	4	328	155	8	1

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.49	6.25	1.0	A	470	705
2	0.40	7.20	0.7	A	276	414
3	0.06	8.27	0.1	A	21	32
4	0.47	6.00	0.9	A	451	677

Main Results for each time segment

10:30 - 10:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	386	96	125	1172	0.329	384	363	0.0	0.5	4.554	A
2	227	57	291	899	0.252	225	217	0.0	0.3	5.331	A
3	17	4	494	565	0.031	17	23	0.0	0.0	6.575	A
4	370	93	119	1174	0.316	369	392	0.0	0.5	4.462	A

10:45 - 11:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	460	115	150	1158	0.397	460	435	0.5	0.7	5.148	A
2	271	68	349	871	0.311	270	260	0.3	0.4	5.992	A
3	21	5	592	521	0.040	21	27	0.0	0.0	7.200	A
4	442	111	143	1160	0.381	442	470	0.5	0.6	5.005	A

11:00 - 11:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	564	141	183	1140	0.495	563	533	0.7	1.0	6.222	A
2	331	83	427	832	0.398	331	319	0.4	0.7	7.170	A
3	26	6	725	461	0.055	26	33	0.0	0.1	8.258	A
4	542	135	175	1142	0.474	541	575	0.6	0.9	5.973	A

11:15 - 11:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	564	141	184	1140	0.495	564	534	1.0	1.0	6.251	A
2	331	83	428	831	0.399	331	319	0.7	0.7	7.199	A
3	26	6	726	461	0.056	26	33	0.1	0.1	8.273	A
4	542	135	176	1142	0.474	542	576	0.9	0.9	5.996	A

11:30 - 11:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	460	115	150	1158	0.398	462	437	1.0	0.7	5.179	A
2	271	68	351	870	0.311	271	261	0.7	0.5	6.025	A
3	21	5	595	520	0.040	21	27	0.1	0.0	7.219	A
4	442	111	144	1160	0.381	443	472	0.9	0.6	5.031	A

11:45 - 12:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	386	96	126	1172	0.329	386	366	0.7	0.5	4.586	A
2	227	57	293	898	0.252	227	219	0.5	0.3	5.369	A
3	17	4	498	563	0.031	18	23	0.0	0.0	6.600	A
4	370	93	120	1173	0.316	371	395	0.6	0.5	4.491	A

2030 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.15	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.15	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2030 Base	AM	ONE HOUR	08:30	10:00	15	✓	Simple	D1*1.06389

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	495	100.000
2		ONE HOUR	✓	203	100.000
3		ONE HOUR	✓	14	100.000
4		ONE HOUR	✓	505	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	3	136	14	342
	2	97	0	0	106
	3	3	1	1	9
	4	324	166	14	1

Vehicle Mix

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

Heavy Vehicle %

		To			
		1	2	3	4
From	1	0	1	0	6
	2	2	0	0	1
	3	0	0	0	25
	4	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.49	6.48	1.0	A	454	681
2	0.27	6.01	0.4	A	186	280
3	0.03	8.48	0.0	A	13	19
4	0.47	5.80	0.9	A	464	696

Main Results for each time segment

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	372	93	137	1135	0.328	371	320	0.0	0.5	4.697	A
2	153	38	280	889	0.172	152	227	0.0	0.2	4.881	A
3	10	3	411	517	0.020	10	22	0.0	0.0	7.104	A
4	380	95	79	1198	0.318	379	343	0.0	0.5	4.384	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	445	111	164	1121	0.397	444	384	0.5	0.7	5.315	A
2	183	46	336	861	0.212	182	272	0.2	0.3	5.305	A
3	12	3	493	485	0.026	12	26	0.0	0.0	7.625	A
4	454	114	95	1189	0.382	454	411	0.5	0.6	4.892	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	545	136	201	1101	0.495	543	470	0.7	1.0	6.446	A
2	224	56	411	823	0.272	223	333	0.3	0.4	6.000	A
3	15	4	603	440	0.035	15	32	0.0	0.0	8.465	A
4	556	139	116	1177	0.473	555	503	0.6	0.9	5.782	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	545	136	201	1100	0.495	545	471	1.0	1.0	6.476	A
2	224	56	412	822	0.272	224	334	0.4	0.4	6.012	A
3	15	4	604	440	0.035	15	32	0.0	0.0	8.475	A
4	556	139	116	1177	0.473	556	504	0.9	0.9	5.804	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	445	111	165	1120	0.397	446	385	1.0	0.7	5.350	A
2	183	46	338	860	0.212	183	273	0.4	0.3	5.321	A
3	12	3	495	484	0.026	12	26	0.0	0.0	7.641	A
4	454	114	95	1189	0.382	455	412	0.9	0.6	4.915	A

09:45 - 10:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	372	93	138	1135	0.328	373	323	0.7	0.5	4.732	A
2	153	38	282	888	0.172	153	229	0.3	0.2	4.903	A
3	10	3	414	516	0.020	10	22	0.0	0.0	7.121	A
4	380	95	79	1198	0.318	381	345	0.6	0.5	4.411	A

2030 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.89	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2030 Base	PM	ONE HOUR	16:00	17:30	15	✓	Simple	D2*1.06490

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	561	100.000
2		ONE HOUR	✓	261	100.000
3		ONE HOUR	✓	22	100.000
4		ONE HOUR	✓	588	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	5	127	7	422
	2	130	0	1	130
	3	9	0	0	14
	4	448	133	4	2

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.53	6.68	1.1	A	515	772
2	0.36	6.94	0.6	A	239	359
3	0.06	8.53	0.1	A	21	31
4	0.56	7.01	1.2	A	539	809

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	423	106	104	1184	0.357	420	443	0.0	0.6	4.701	A
2	196	49	330	883	0.222	195	195	0.0	0.3	5.227	A
3	17	4	516	555	0.030	17	10	0.0	0.0	6.683	A
4	443	111	108	1190	0.372	440	425	0.0	0.6	4.789	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	505	126	125	1172	0.430	504	531	0.6	0.7	5.376	A
2	235	59	396	850	0.276	234	233	0.3	0.4	5.838	A
3	20	5	618	509	0.039	20	11	0.0	0.0	7.358	A
4	528	132	129	1178	0.449	528	509	0.6	0.8	5.532	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	618	154	153	1157	0.534	616	650	0.7	1.1	6.641	A
2	287	72	484	806	0.356	287	285	0.4	0.5	6.916	A
3	25	6	757	447	0.055	25	14	0.0	0.1	8.512	A
4	647	162	158	1161	0.557	645	623	0.8	1.2	6.957	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	618	154	154	1157	0.534	618	652	1.1	1.1	6.680	A
2	287	72	485	806	0.356	287	286	0.5	0.6	6.940	A
3	25	6	759	447	0.055	25	14	0.1	0.1	8.530	A
4	647	162	158	1161	0.558	647	625	1.2	1.2	7.007	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	505	126	126	1172	0.430	506	534	1.1	0.8	5.418	A
2	235	59	398	849	0.276	235	234	0.6	0.4	5.868	A
3	20	5	621	508	0.040	20	12	0.1	0.0	7.381	A
4	528	132	130	1177	0.449	530	512	1.2	0.8	5.577	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	423	106	105	1183	0.357	423	447	0.8	0.6	4.740	A
2	196	49	333	882	0.223	197	196	0.4	0.3	5.258	A
3	17	4	520	553	0.030	17	10	0.0	0.0	6.708	A
4	443	111	108	1189	0.372	443	428	0.8	0.6	4.834	A

2030 Base , SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.83	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.83	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2030 Base	SAT	ONE HOUR	10:30	12:00	15	✓	Simple	D3*1.0674

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	541	100.000
2		ONE HOUR	✓	318	100.000
3		ONE HOUR	✓	25	100.000
4		ONE HOUR	✓	520	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	4	141	20	376
	2	149	0	2	167
	3	12	2	1	10
	4	347	163	9	1

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.53	6.69	1.1	A	497	745
2	0.43	7.67	0.7	A	292	438
3	0.06	8.67	0.1	A	23	34
4	0.50	6.38	1.0	A	477	715

Main Results for each time segment

10:30 - 10:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	407	102	132	1168	0.349	405	384	0.0	0.5	4.705	A
2	239	60	308	891	0.269	238	229	0.0	0.4	5.500	A
3	18	5	522	552	0.033	18	24	0.0	0.0	6.741	A
4	391	98	126	1170	0.335	389	414	0.0	0.5	4.602	A

10:45 - 11:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	487	122	158	1154	0.422	486	460	0.5	0.7	5.383	A
2	286	71	369	861	0.332	285	275	0.4	0.5	6.252	A
3	22	6	626	506	0.044	22	29	0.0	0.0	7.441	A
4	467	117	151	1156	0.404	467	496	0.5	0.7	5.218	A

11:00 - 11:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	596	149	193	1134	0.525	594	563	0.7	1.1	6.649	A
2	350	88	451	820	0.427	349	336	0.5	0.7	7.632	A
3	27	7	765	443	0.061	27	35	0.0	0.1	8.650	A
4	572	143	185	1137	0.504	571	607	0.7	1.0	6.345	A

11:15 - 11:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	596	149	194	1134	0.525	596	564	1.1	1.1	6.689	A
2	350	88	452	819	0.427	350	337	0.7	0.7	7.671	A
3	27	7	767	442	0.061	27	35	0.1	0.1	8.669	A
4	572	143	186	1136	0.504	572	609	1.0	1.0	6.382	A

11:30 - 11:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	487	122	159	1153	0.422	488	462	1.1	0.7	5.423	A
2	286	71	371	860	0.333	287	276	0.7	0.5	6.291	A
3	22	6	629	504	0.044	22	29	0.1	0.0	7.467	A
4	467	117	152	1155	0.405	469	499	1.0	0.7	5.252	A

11:45 - 12:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	407	102	133	1168	0.349	408	386	0.7	0.5	4.744	A
2	239	60	310	890	0.269	240	231	0.5	0.4	5.545	A
3	18	5	526	550	0.034	19	24	0.0	0.0	6.770	A
4	391	98	127	1169	0.335	392	417	0.7	0.5	4.637	A

2025 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.01	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.01	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2025 Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓	Simple	D4+D10

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	482	100.000
2		ONE HOUR	✓	193	100.000
3		ONE HOUR	✓	20	100.000
4		ONE HOUR	✓	491	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	3	129	26	324
	2	92	0	0	101
	3	6	1	1	12
	4	308	157	25	1

Vehicle Mix

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

Heavy Vehicle %

		To			
		1	2	3	4
From	1	0	1	0	6
	2	2	0	0	1
	3	0	0	0	17
	4	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.48	6.32	0.9	A	442	664
2	0.26	5.92	0.3	A	177	265
3	0.05	7.96	0.0	A	18	28
4	0.46	5.64	0.8	A	451	676

Main Results for each time segment

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	363	91	139	1135	0.320	361	306	0.0	0.5	4.638	A
2	145	36	285	887	0.164	144	215	0.0	0.2	4.840	A
3	15	4	390	551	0.027	15	39	0.0	0.0	6.713	A
4	370	92	77	1200	0.308	368	328	0.0	0.4	4.321	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	433	108	167	1120	0.387	433	367	0.5	0.6	5.231	A
2	173	43	341	859	0.202	173	258	0.2	0.3	5.248	A
3	18	5	467	519	0.035	18	47	0.0	0.0	7.190	A
4	442	110	92	1191	0.371	441	393	0.4	0.6	4.800	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	531	133	204	1100	0.482	530	449	0.6	0.9	6.296	A
2	212	53	418	820	0.259	212	316	0.3	0.3	5.911	A
3	22	6	572	475	0.047	22	57	0.0	0.0	7.949	A
4	541	135	113	1179	0.459	540	481	0.6	0.8	5.625	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	531	133	204	1100	0.483	531	450	0.9	0.9	6.323	A
2	212	53	419	820	0.259	212	317	0.3	0.3	5.922	A
3	22	6	573	474	0.047	22	58	0.0	0.0	7.959	A
4	541	135	113	1179	0.459	541	482	0.8	0.8	5.644	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	433	108	167	1120	0.387	435	368	0.9	0.6	5.259	A
2	173	43	343	858	0.202	174	259	0.3	0.3	5.263	A
3	18	5	469	518	0.035	18	47	0.0	0.0	7.205	A
4	442	110	93	1190	0.371	443	395	0.8	0.6	4.821	A

09:45 - 10:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	363	91	140	1135	0.320	364	308	0.6	0.5	4.673	A
2	145	36	287	886	0.164	145	217	0.3	0.2	4.859	A
3	15	4	393	550	0.028	15	39	0.0	0.0	6.733	A
4	370	92	78	1199	0.308	370	330	0.6	0.4	4.346	A

2025 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.62	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.62	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2025 Base + Dev	PM	ONE HOUR	16:00	17:30	15	✓	Simple	D5+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	537	100.000
2		ONE HOUR	✓	247	100.000
3		ONE HOUR	✓	44	100.000
4		ONE HOUR	✓	563	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	5	120	12	400
	2	123	0	1	123
	3	20	0	0	24
	4	425	126	10	2

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.51	6.35	1.0	A	493	739
2	0.34	6.66	0.5	A	227	340
3	0.10	8.66	0.1	A	41	61
4	0.54	6.69	1.1	A	517	775

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	404	101	104	1185	0.341	402	429	0.0	0.5	4.589	A
2	186	47	321	887	0.210	185	184	0.0	0.3	5.119	A
3	33	8	489	567	0.059	33	17	0.0	0.1	6.736	A
4	424	106	111	1188	0.357	422	411	0.0	0.6	4.686	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	483	121	124	1173	0.411	482	514	0.5	0.7	5.202	A
2	222	56	385	856	0.260	222	221	0.3	0.3	5.677	A
3	40	10	586	524	0.076	40	21	0.1	0.1	7.437	A
4	506	127	133	1175	0.431	505	493	0.6	0.7	5.367	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	591	148	152	1158	0.511	590	630	0.7	1.0	6.322	A
2	272	68	471	813	0.335	272	271	0.3	0.5	6.642	A
3	49	12	717	465	0.105	49	25	0.1	0.1	8.640	A
4	620	155	163	1158	0.535	619	603	0.7	1.1	6.649	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	591	148	152	1158	0.511	591	631	1.0	1.0	6.354	A
2	272	68	472	813	0.335	272	271	0.5	0.5	6.662	A
3	49	12	719	464	0.105	49	25	0.1	0.1	8.660	A
4	620	155	163	1158	0.535	620	604	1.1	1.1	6.688	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	483	121	125	1173	0.412	484	517	1.0	0.7	5.237	A
2	222	56	387	855	0.260	223	222	0.5	0.4	5.702	A
3	40	10	589	523	0.076	40	21	0.1	0.1	7.461	A
4	506	127	134	1175	0.431	508	495	1.1	0.8	5.407	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	404	101	104	1184	0.341	405	432	0.7	0.5	4.623	A
2	186	47	323	886	0.210	187	186	0.4	0.3	5.146	A
3	33	8	493	566	0.059	33	17	0.1	0.1	6.766	A
4	424	106	112	1187	0.357	425	414	0.8	0.6	4.727	A

2025 Base + Dev, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.46	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.46	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2025 Base + Dev	SAT	ONE HOUR	10:30	12:00	15	✓	Simple	D6+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	515	100.000
2		ONE HOUR	✓	301	100.000
3		ONE HOUR	✓	27	100.000
4		ONE HOUR	✓	495	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	4	133	22	356
	2	141	0	2	158
	3	13	2	1	11
	4	328	155	11	1

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.50	6.31	1.0	A	473	709
2	0.40	7.25	0.7	A	276	414
3	0.07	8.36	0.1	A	25	37
4	0.48	6.04	0.9	A	454	681

Main Results for each time segment

10:30 - 10:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	388	97	127	1171	0.331	386	365	0.0	0.5	4.574	A
2	227	57	296	897	0.253	225	217	0.0	0.3	5.348	A
3	21	5	494	565	0.036	20	27	0.0	0.0	6.611	A
4	373	93	121	1173	0.318	371	393	0.0	0.5	4.478	A

10:45 - 11:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	463	116	152	1157	0.400	462	437	0.5	0.7	5.177	A
2	271	68	355	868	0.312	270	260	0.3	0.4	6.019	A
3	24	6	592	521	0.047	24	33	0.0	0.0	7.253	A
4	445	111	145	1159	0.384	444	471	0.5	0.6	5.030	A

11:00 - 11:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	567	142	186	1138	0.498	566	535	0.7	1.0	6.277	A
2	331	83	434	829	0.400	331	319	0.4	0.7	7.216	A
3	30	7	725	461	0.065	30	40	0.0	0.1	8.343	A
4	545	136	177	1141	0.478	544	577	0.6	0.9	6.017	A

11:15 - 11:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	567	142	187	1138	0.498	567	536	1.0	1.0	6.306	A
2	331	83	435	828	0.400	331	319	0.7	0.7	7.245	A
3	30	7	726	461	0.065	30	40	0.1	0.1	8.358	A
4	545	136	178	1141	0.478	545	578	0.9	0.9	6.040	A

11:30 - 11:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	463	116	153	1157	0.400	464	439	1.0	0.7	5.208	A
2	271	68	356	867	0.312	271	261	0.7	0.5	6.050	A
3	24	6	595	520	0.047	25	33	0.1	0.0	7.272	A
4	445	111	146	1159	0.384	446	474	0.9	0.6	5.059	A

11:45 - 12:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	388	97	128	1171	0.331	389	367	0.7	0.5	4.608	A
2	227	57	298	896	0.253	227	219	0.5	0.3	5.387	A
3	21	5	498	563	0.036	21	27	0.0	0.0	6.637	A
4	373	93	122	1172	0.318	373	396	0.6	0.5	4.510	A

2030 Base + Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.34	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2030 Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓	Simple	D7+D10

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	508	100.000
2		ONE HOUR	✓	203	100.000
3		ONE HOUR	✓	21	100.000
4		ONE HOUR	✓	517	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	3	136	27	342
	2	97	0	0	106
	3	6	1	1	13
	4	324	166	26	1

Vehicle Mix

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

Heavy Vehicle %

		To			
		1	2	3	4
From	1	0	1	0	6
	2	2	0	0	1
	3	0	0	0	17
	4	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.51	6.72	1.0	A	466	699
2	0.28	6.15	0.4	A	186	280
3	0.05	8.22	0.1	A	19	29
4	0.48	5.94	0.9	A	475	712

Main Results for each time segment

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	382	96	146	1132	0.338	380	323	0.0	0.5	4.779	A
2	153	38	299	880	0.174	152	227	0.0	0.2	4.941	A
3	16	4	411	541	0.029	16	40	0.0	0.0	6.844	A
4	389	97	81	1197	0.325	388	346	0.0	0.5	4.440	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	456	114	175	1116	0.409	456	387	0.5	0.7	5.447	A
2	183	46	359	850	0.215	182	272	0.2	0.3	5.391	A
3	19	5	493	507	0.037	19	48	0.0	0.0	7.368	A
4	465	116	97	1188	0.392	464	414	0.5	0.6	4.972	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	559	140	214	1095	0.511	558	473	0.7	1.0	6.685	A
2	224	56	439	810	0.276	223	333	0.3	0.4	6.135	A
3	23	6	603	461	0.050	23	59	0.0	0.1	8.213	A
4	570	142	119	1175	0.485	568	507	0.6	0.9	5.922	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	559	140	215	1094	0.511	559	474	1.0	1.0	6.722	A
2	224	56	440	809	0.276	224	334	0.4	0.4	6.148	A
3	23	6	604	461	0.050	23	59	0.1	0.1	8.225	A
4	570	142	119	1175	0.485	570	508	0.9	0.9	5.944	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	456	114	176	1115	0.409	458	388	1.0	0.7	5.484	A
2	183	46	360	849	0.215	183	273	0.4	0.3	5.408	A
3	19	5	495	506	0.037	19	48	0.1	0.0	7.383	A
4	465	116	98	1188	0.392	466	416	0.9	0.6	4.999	A

09:45 - 10:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	382	96	147	1131	0.338	383	325	0.7	0.5	4.817	A
2	153	38	301	879	0.174	153	229	0.3	0.2	4.964	A
3	16	4	414	540	0.029	16	41	0.0	0.0	6.867	A
4	389	97	82	1197	0.325	390	348	0.6	0.5	4.467	A

2030 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	7.07	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.07	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D17	2030 Base + Dev	PM	ONE HOUR	16:00	17:30	15	✓	Simple	D8+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	566	100.000
2		ONE HOUR	✓	261	100.000
3		ONE HOUR	✓	45	100.000
4		ONE HOUR	✓	594	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	5	127	12	422
	2	130	0	1	130
	3	21	0	0	25
	4	448	133	10	2

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.54	6.79	1.2	A	520	779
2	0.36	7.02	0.6	A	239	359
3	0.11	9.07	0.1	A	42	62
4	0.57	7.20	1.3	A	545	817

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	426	107	109	1182	0.361	424	452	0.0	0.6	4.739	A
2	196	49	338	879	0.223	195	195	0.0	0.3	5.258	A
3	34	9	516	555	0.062	34	18	0.0	0.1	6.903	A
4	447	112	117	1185	0.377	445	433	0.0	0.6	4.849	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	509	127	131	1170	0.435	508	542	0.6	0.8	5.436	A
2	235	59	406	846	0.277	234	233	0.3	0.4	5.884	A
3	41	10	618	509	0.080	41	21	0.1	0.1	7.681	A
4	534	133	140	1172	0.456	533	519	0.6	0.8	5.629	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	623	156	160	1153	0.540	622	663	0.8	1.2	6.751	A
2	287	72	496	801	0.359	287	285	0.4	0.6	6.995	A
3	50	12	757	447	0.112	50	26	0.1	0.1	9.053	A
4	654	163	171	1154	0.567	652	635	0.8	1.3	7.149	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	623	156	160	1153	0.541	623	665	1.2	1.2	6.794	A
2	287	72	497	800	0.359	287	286	0.6	0.6	7.020	A
3	50	12	759	447	0.112	50	26	0.1	0.1	9.075	A
4	654	163	171	1154	0.567	654	637	1.3	1.3	7.203	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	509	127	131	1169	0.435	511	545	1.2	0.8	5.477	A
2	235	59	407	845	0.278	235	234	0.6	0.4	5.915	A
3	41	10	621	508	0.080	41	21	0.1	0.1	7.709	A
4	534	133	140	1171	0.456	536	522	1.3	0.8	5.682	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	426	107	110	1181	0.361	427	456	0.8	0.6	4.779	A
2	196	49	341	878	0.224	197	196	0.4	0.3	5.292	A
3	34	9	520	553	0.062	34	18	0.1	0.1	6.936	A
4	447	112	118	1184	0.378	448	436	0.8	0.6	4.897	A

2030 Base + Dev, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D13 - 2025 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	St. Mary's Street - Bridge Street Roundabout	Standard Roundabout		1, 2, 3, 4	6.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.89	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D18	2030 Base + Dev	SAT	ONE HOUR	10:30	12:00	15	✓	Simple	D9+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	544	100.000
2		ONE HOUR	✓	318	100.000
3		ONE HOUR	✓	29	100.000
4		ONE HOUR	✓	523	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	4	141	23	376
	2	149	0	2	167
	3	14	2	1	12
	4	347	163	12	1

Vehicle Mix

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

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.53	6.75	1.1	A	499	749
2	0.43	7.72	0.7	A	292	438
3	0.07	8.76	0.1	A	26	39
4	0.51	6.43	1.0	A	480	720

Main Results for each time segment

10:30 - 10:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	410	102	134	1167	0.351	408	385	0.0	0.5	4.726	A
2	239	60	312	889	0.269	238	229	0.0	0.4	5.519	A
3	21	5	522	552	0.039	21	28	0.0	0.0	6.779	A
4	394	98	128	1169	0.337	392	415	0.0	0.5	4.618	A

10:45 - 11:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	489	122	161	1152	0.425	488	462	0.5	0.7	5.415	A
2	286	71	374	858	0.333	285	275	0.4	0.5	6.280	A
3	26	6	626	506	0.051	26	34	0.0	0.1	7.497	A
4	470	118	153	1155	0.407	469	498	0.5	0.7	5.246	A

11:00 - 11:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	599	150	197	1132	0.529	598	565	0.7	1.1	6.712	A
2	350	88	458	817	0.429	349	336	0.5	0.7	7.684	A
3	31	8	765	443	0.071	31	42	0.1	0.1	8.740	A
4	576	144	187	1136	0.507	574	609	0.7	1.0	6.399	A

11:15 - 11:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	599	150	197	1132	0.529	599	566	1.1	1.1	6.752	A
2	350	88	459	816	0.429	350	337	0.7	0.7	7.725	A
3	31	8	767	442	0.071	31	42	0.1	0.1	8.762	A
4	576	144	188	1135	0.507	576	611	1.0	1.0	6.432	A

11:30 - 11:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	489	122	161	1152	0.425	491	464	1.1	0.7	5.457	A
2	286	71	376	857	0.334	287	276	0.7	0.5	6.323	A
3	26	6	629	504	0.051	26	34	0.1	0.1	7.524	A
4	470	118	154	1154	0.407	471	500	1.0	0.7	5.282	A

11:45 - 12:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	410	102	135	1167	0.351	410	388	0.7	0.5	4.765	A
2	239	60	315	888	0.270	240	231	0.5	0.4	5.561	A
3	21	5	526	550	0.039	22	29	0.1	0.0	6.809	A
4	394	98	129	1169	0.337	394	419	0.7	0.5	4.654	A

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