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Prepared on behalf of

Shrewsbury Hospital Trust and Mr Christopher Ward



Proposed Residential Development
Talbot Road, Penistone
Barnsley
South Yorkshire

Transport Statement

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Acknowledgements:

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

Traffic flow data has been obtained from Road Data Services Ltd.

Road traffic accident data has been obtained from the online resource www.crashmap.co.uk

Barnsley Council Interactive online map has been used to review PRoW.

TEMPro has been used to calculate local growth factors.

Junctions and LINSIG have been used for junction capacity assessment.

Maps and images have been used from ©2018 Google and National Geographic Society Map Maker.

Cycle map extract taken from Sustrans National Cycle Network Map

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1 Introduction

1.1 Sanderson Associates (Consulting Engineers) Ltd has been appointed by Mr & Mrs Ward and the Shrewsbury Hospital Trust to undertake a Transport Statement in support of outline planning application reference 2018/0466 for a proposed residential development on land off Talbot Road, Penistone, Barnsley, South Yorkshire. The site's location is shown on **Figure 1** at **Appendix A**.

1.2 An indicative layout plan has been prepared by Michael A Clynch which shows the disposition of a potential development of 39 dwellings and the principle of access for the main body of the site being taken from Talbot Road. It will be appreciated that further work is required in relation to the details of the specifics of this access arrangement, with appropriate design checks throughout.

1.3 For the purpose of this report the site was visited on Wednesday 17th October 2018 in order to observe the prevailing conditions and to take highway measurements.

1.4 This Transport Statement assesses the predicted impact of the proposals on the operating conditions of the local highway network and includes a junction access assessment. This Transport Statement is submitted to Barnsley Council in support of the planning application.

1.5 The Transport Statement concludes that the residual cumulative impacts of the development are not severe and that the development is acceptable in transport planning terms. Accordingly the development should be approved on transport grounds, subject to appropriate planning conditions.

2 Planning Policy Context

2.1 National Planning Policy

2.1.1 In July 2018 the National Planning Policy Framework (NPPF) was published, which sets out the Government's planning policies for England and how these are expected to be applied. The document replaces the first National Planning Policy Framework published in March 2012.

2.1.2 At NPPF paragraph 38 it states that;

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

2.1.3 In considering development proposals NPPF paragraph 108 states that;

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

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
b) safe and suitable access to the site can be achieved for all users; and
c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'

2.1.4 NPPF paragraph 109 states:

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

2.1.5 NPPF paragraph 110 states:

'Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and
e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.'

2.1.6 NPPF paragraph 111 states:

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

2.2 National Planning Practice Guidance

2.2.1 The National Planning Practice Guidance (NPPG) brings together National Planning Policy Framework. It was launched in March 2014 and coincided with the cancelling of the majority of Government Circulars which had previously given guidance on many aspects of planning.

2.2.2 In relation to Transport NPPG provides the following guidance:

- *Transport evidence bases in plan making and decision taking - March 2015*
- *Travel Plans, Transport Assessments and Statements - March 2014*

2.2.3 NPPG *Transport evidence bases in plan making and decision taking* sets out the key issues that local planning authorities should consider in developing the transport base to support the Local Plan, including:

- *assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms;*
- *assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;*
- *highlight and promote opportunities to reduce the need for travel where appropriate;*
- *identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate;*
- *consider the cumulative impacts of existing and proposed development on transport networks;*
- *assess the quality and capacity of transport infrastructure and its ability to meet forecast demands;*
- *identify the short, medium and long-term transport proposals across all modes.*

2.2.4 NPPG *Travel Plans, Transport Assessments and Statements* sets out the key principles that should be taken into account in preparing a Travel Plan and Transport Assessment. NPPG states that Travel Plans and Transport Assessments are important as they can positively contribute to:

- *encouraging sustainable travel;*
- *lessening traffic generation and its detrimental impacts;*
- *reducing carbon emissions and climate impacts;*
- *creating accessible, connected, inclusive communities;*
- *improving health outcomes and quality of life;*
- *improving road safety; and*
- *reducing the need for new development to increase existing road capacity or provide new roads.*

2.3 Barnsley LDF Core Strategy Adopted September 2011

2.3.1 The Core Strategy sets out the key elements of the planning framework for Barnsley. The Core Strategy will be replaced by the Barnsley Local Plan, which is currently out to consultation.

2.3.2 The Transport Strategy is set out at section 9.6 of the Core Strategy Core Policies. The relevant policies to this application are:

CSP 25 New Development and Sustainable Travel

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, and should not provide more than the maximum number of car parking spaces set out in a Supplementary Planning Document
- provide a transport statement or assessment in line with the thresholds and guidance set out in Department for Transport 'Guidance on Transport Assessments' as published March 2007 (or any subsequent version)
- provide a travel plan statement or a travel plan in accordance with the thresholds and guidance set out in Department for Transport 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process' as published April 2009 (or any subsequent version). Travel plans will be secured through a planning obligation or a planning condition

CSP 26 New Development and Highway Improvement

New development will be expected to be designed and built to provide safe, secure and convenient access for all road users.

If a development is not suitably served by the existing highway, or would create or add to highway safety problems or the efficiency of the highway for all road users, we will expect developers to take mitigating action or to make a financial

contribution to make sure the necessary improvements go ahead. Any contributions will be secured through a planning obligation or planning condition.

2.4 Barnsley LDF Parking Supplementary Planning Document Adopted March 2012

2.4.1 The Parking SPD supplements Core Strategy Policy CSP 25 New Development and Sustainable Travel by setting out the parking standards that the Council will apply to all new development.

2.4.2 For housing and flats, the maximum car parking spaces are 1 space for dwellings with 1 or 2 bedrooms and 2 spaces for dwellings with 3 or more bedrooms.

2.4.3 Minimum cycle parking standards for housing and flats is to be assessed individually.

2.5 Barnsley LDF Designing New Housing Development Supplementary Planning Document Adopted March 2012

2.5.1 This Document primarily supplements policy CSP 29 Design of the LDF Core Strategy and sets out the principles that will apply to the consideration of planning applications for new housing development.

2.5.2 Section 6 is concerned with Streets and the design and layout of new residential streets should reflect the principles of Manual for Streets, which are expanded upon in pages 75-82 of the South Yorkshire Residential Design Guide.

2.5.3 Section 7 is concerned with the design of residential parking and garages. Developments will be expected to meet the standards for parking design set out in the South Yorkshire Residential Design Guide considering cycle, motorcycle and car parking as an integral part of the design of residential development. Particular attention should be given to sections S2.5 On-street parking and B1.6 Off-street parking. Developments will also be expected to meet the technical requirements set out in annex 4B Street and parking geometry.

2.6 Barnsley Local Plan Publication Consultation 2016

2.6.1 The Barnsley Local Plan Publication Consultation provides local planning policy for the future development of Barnsley up to the year 2033. Transport Policies are contained at Section 12 and closely echo existing Core Strategy Policies. The Local Plan Transport Policies are:

Policy T1 Access Priorities

Policy T2 Safeguarding of Former Railway Lines

Policy T3 New Development and Sustainable Travel

Policy T4 New Development and Highway Improvement

Policy T5 Reducing the Impact of Road Travel

2.7 The Sheffield City Region Transport Strategy 2011-2026

2.7.1 *Sheffield City Region Transport Strategy 2011-2026* was published in April 2011 and, using policies in four categories, has the overall aim "to keep people and goods moving effectively" in the region. These policies aim to promote the following:

- To encourage active travel and develop high quality cycling and walking networks
- To provide information and travel advice for the users of all modes of transport, so that they can make informed travel choices
- To encourage safer road use and reduce casualties on our roads
- To improve safety and the perception of safety on public transport

2.8 South Yorkshire Residential Design Guide 2011

2.8.1 *South Yorkshire Residential Design Guide* dated 2011 provides guidance on the requirements of new development design.

2.8.2 Section N5.2 *Walkable neighbourhoods'* states that new developments should "consider the needs of disabled people first… the requirements of pedestrians and cyclists next, followed by other modes of transport as illustrated below:

- Pedestrians
- Cyclists
- Public transport
- Specialist service vehicles (i.e. emergency services, waste etc.)
- Other motor traffic."

2.8.3 Section N5.3 *Public Transport* states that "All new development should be accessible by public transport"

2.8.4 Section N5.4 *Cycling* requires that "design of new development should ensure it is possible to easily reach centres and other main destinations by cycle"

2.8.5 Section S2.5 *On-Street Parking* states that "there should be a general presumption in favour of some on street parking, in particular for visitor parking and to avoid footway parking"

2.8.6 Section B1.6 *Off-Street Parking* sets out the requirements for off-street parking for residential developments. Off-street parking must be integrated within the overall scheme so that it does not visually dominate the street or shared private areas and all off-street parking spaces, including garages, must be fit for purpose to count as a parking space.

2.8.7 Section 4B sets out *Street and Parking Geometry* parameters for new streets.

2.9 The Development in Planning Policy Context

2.9.1 The Transport Statement demonstrates that the development will not have an unacceptable impact on highway safety and the residual cumulative traffic impact is not severe. The development is therefore in accordance with the transport principles set out in NPPF and NPPG.

2.9.2 The development supports the general principles of Barnsley Council Core Strategy policies CPS25 and CPS26 and do not conflict with emerging Local Plan Policies.

2.9.3 The development can be designed to accommodate the requirements of Barnsley *Parking* and *New Housing Development* Supplementary Planning Documents and with consideration to the South Yorkshire Residential Design Guide.

2.9.4 The development does not conflict with the objectives of Sheffield City Region Transport Strategy.

3 Existing Situation

3.1 The Site and Surrounding Area

3.1.1 The site, which currently comprises grassed open land, is situated in Penistone approximately 10km west of Barnsley town centre.

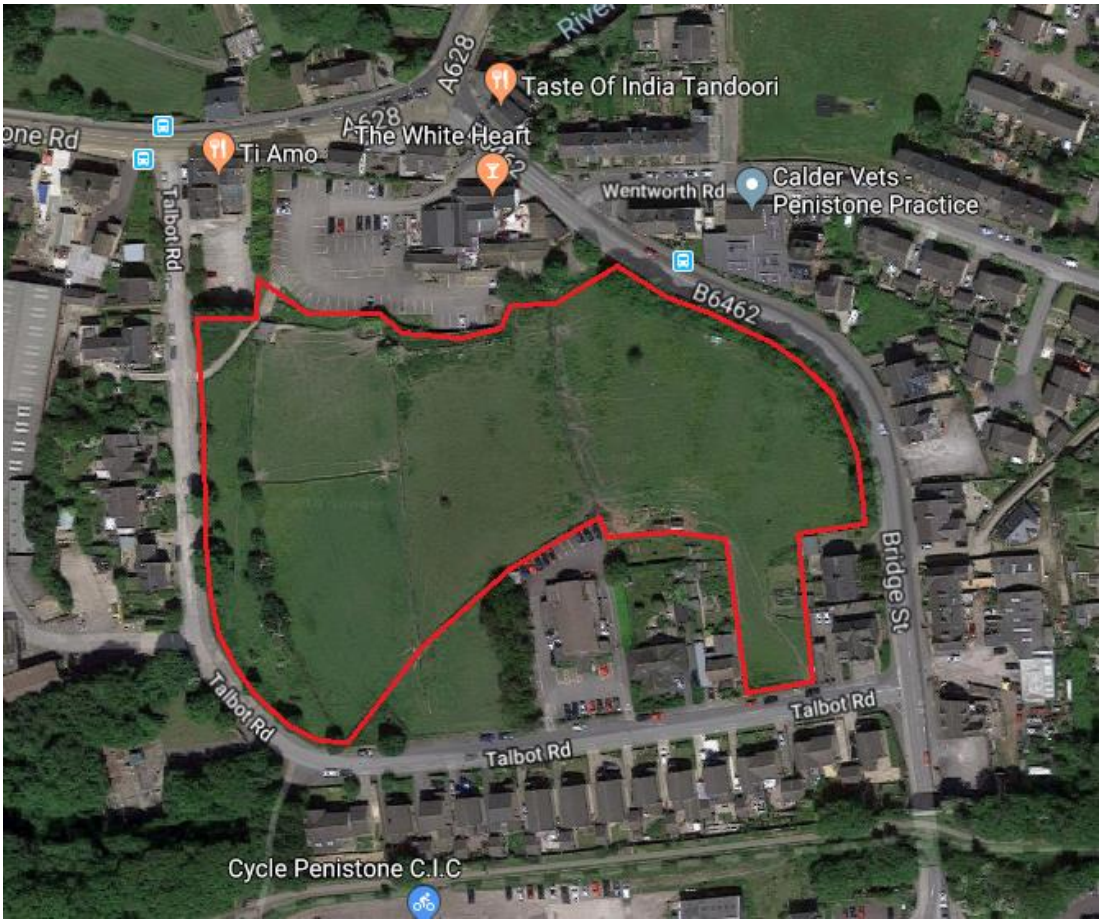


Figure 3.1.1 – Approximate extent of site (Imagery & map data ©2018 Google)

3.1.2 The site has a housing allocation as site "H25" in the Council's UDP, however given a number of constraints identified by the Council the number of units on the land, and hence the site's viability, is not promoted.

3.1.3 As can be seen above, the site boundaries are:

North: 'The White Heart' and 'Ti Amo' car parks

South: St Mary's Catholic Church and residential dwellings

East: Bridge Street

West: Talbot Road

3.2 Existing Highway Network

Talbot Road

3.2.1 Talbot Road circles the site from Thurlstone Road to the north to Bridge Street to the east. The section of the road running north-south is not adopted and has an approximate carriageway width of 7.7m and discontinuous footways of approximately 2.0m. However, where the road turns to run east-west it becomes an adopted fully constructed road to its junction with Bridge Street. The made up section has an approximate carriageway width of 5.5m with continuous footways of 2.0m on both sides of the road.

3.2.2 Talbot Road is subject to a 30mph speed limit and the majority is street-lit. It provides access to the industrial site operated by 'PG Wire' as well as the existing residential dwellings, the car park for 'Ti Amo' and the St Mary's Catholic Church.

Thurlstone Road

3.2.3 Talbot Road is the minor arm of a simple priority junction with Thurlstone Road which is the A628 principal road leading to Thurlstone and Millhouse Green to the west of Penistone.

3.2.4 In the vicinity of Talbot Road, it has a carriageway width of approximately 7.5m with continuous footways of varying widths on both sides of the road. Street-lighting is present along the road that is subject to a speed limit of 30mph.

Bridge Street

3.2.5 To the east, Talbot Road joins Bridge Street as the minor arm of a simple priority junction. Bridge Street provides continuous footways to Penistone town centre, to the south, with dropped crossings and tactile paving also present.

Bridge End Junction

3.2.6 To the north, Bridge Street joins the A628, Thurlstone Road and Barnsley Road, at a signalised junction known as Bridge End. The A628 Barnsley Road links to Barnsley and also the A629 which connects to Huddersfield and Sheffield.

3.3 Visibility

3.3.1 In accordance with Manual for Streets 2, the 30mph speed limit on the A628 Thurlstone Road requires visibility splays of 43m in both directions at a minor road distance of 2.4m.

3.3.2 To the east a visibility splay of 2.4m x approximately 75m is available and to the west the visibility splay is tangential at approximately 84m. These considerably exceed the requirements stated above.

3.4 Radar Speed Survey

3.4.1 In order to ensure that the visibility requirements stated above are suitable a radar speed survey was carried out during the site visit on 17th October 2018. As the visibility to the east is shorter, 100 westbound vehicle speeds were recorded during an off-peak period. Ensuring the vehicles were in free flow proved difficult due to the proximity to the signalised junction. However, it is considered that traffic speeds are very unlikely to increase when traffic flows are greater during peak periods.

3.4.2 A summary of the radar speed survey is given below with the full results included at **Appendix B**. A wet weather correction has been applied as conditions were dry during the survey.

Direction of travel	85th percentile wet weather speed (mph)
Westbound	22.8

Table 3.4.2 – Summary of radar speed survey

3.4.3 This indicates that vehicle speeds on Thurlstone Road are generally well below the 30mph speed limit therefore the visibility splays available exceed those required.

3.5 Traffic Counts

3.5.1 Road Data Services Ltd were commissioned to undertake fully classified traffic counts, on 6th November 2018, at the Talbot Road/ A628 Thurlstone Road priority junction and Bridge End signalised junction as indicated below.

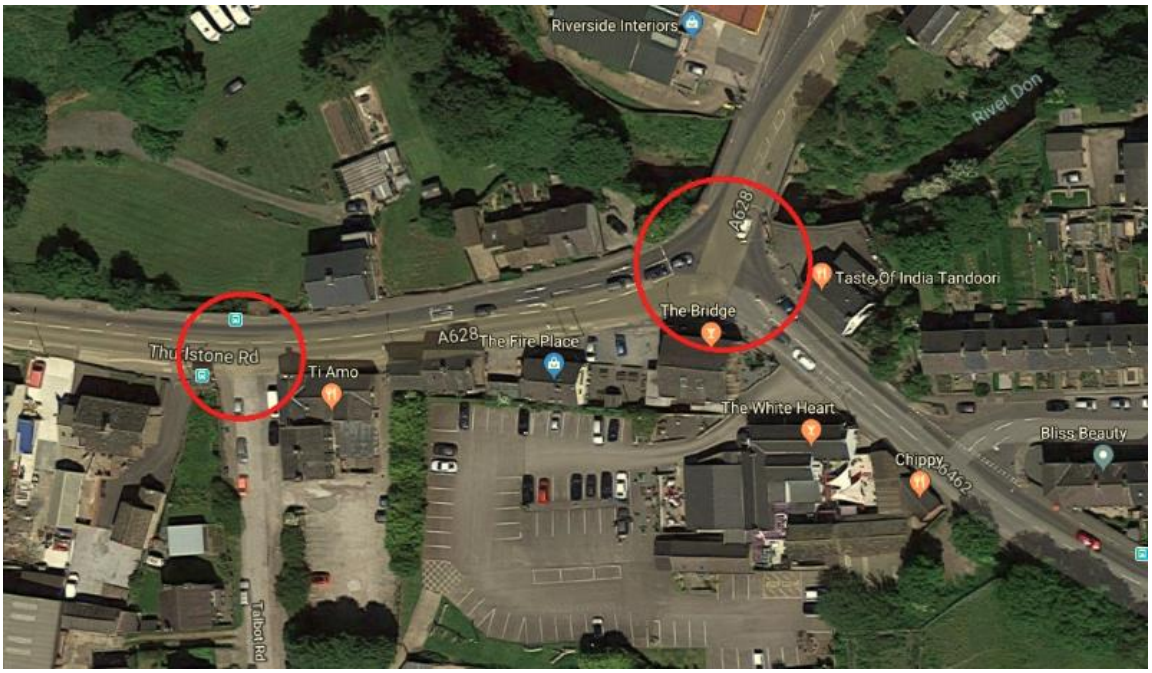


Figure 3.5.1 – Location of traffic counts (Imagery and Map data ©2018 Google)

3.5.2 The results of the traffic counts have been analysed on the overall network peak periods have been determined as 07:30 – 08:30 in the AM and 16:45 – 17:45 in the PM. The full dataset is included at **Appendix C** with the peak hour traffic flows shown on **Figure 2** at **Appendix A**.

3.6 Personal Injury Accident Data

3.6.1 Personal injury accident data on the local highway network has been obtained from the online service Crashmap. In the most recent five year period, two accidents have been recorded in the vicinity of the site, one serious and one slight in severity. The full reports of the incidents are included at **Appendix D** with a summary given overleaf.



Figure 3.6.1 – Accidents in the last five years (Crashmap.co.uk)

3.6.2 The serious incident (ref: 2017140197344) occurred on 26th June 2017 at 12:11pm in dry and fine conditions. From the information available it appears that a goods vehicle reversed from a roadside commercial premise into the path of a motorcycle.

3.6.3 The slight incident (ref: 201514B114415) occurred on 10th December 2015 at 8:15am in fine conditions but with a damp or wet road surface. The information provided suggests that a car collided with a child pedestrian that was crossing the carriageway, not at a crossing.

3.6.4 It is considered that there are no significant accident clusters or trends in the vicinity of the site that could be considered to be a cause for concern in relation to the proposals.

4 Development Proposals

4.1 Overview

4.1.1 An indicative layout has been prepared by Michael A Clynch to indicate the likely form of development of the site. At this stage unit numbers will be in the order of 39, but again this figure will be subject to the significant design constraints which apply to this site in principally relation to its topography. The proposed indicative layout is included at **Appendix E**.

4.2 Access

4.2.1 In line with the Council's recommendations for site H25 it is proposed that the initial section of Talbot Road will be reconstructed to adopted estate road standards and once the main body of the site is achieved will be aligned into the site as the main priority route. The remaining unmade section of Talbot will form a secondary side road and although dwellings will have a boundary to this route access is to be taken from the proposed internal road layout.

4.2.2 This arrangement is again shown indicatively on the layout prepared by Michael A Clynch, and will require a detailed design based on a topographical survey with vehicle turning movements verified by swept path analysis. Other alternatives taking access from Talbot Road may be considered, but the principle of access from this route, and the improvement of the initial section of Talbot Road, would still apply.

4.3 Parking

4.3.1 Parking standards are contained within Barnsley Council's Local Development Framework Supplementary Planning Document on Parking.

4.3.2 For houses and flats the maximum number of car parking spaces are 1 space for dwellings with 1 or 2 bedrooms and 2 spaces for dwellings with 3 or more bedrooms. Car parking within the site is to be provided in line with these standards.

4.3.3 Cycle parking for residential developments is to be assessed on an individual basis. However, space for storage of a cycle is to be provided within the curtilage of each dwelling which is considered adequate provision.

4.3.4 As the indicative layout is developed further parking provision for vehicles and cycles will be included in line with the above. In addition where appropriate the future provision of electric vehicle charging points within garages will be made.

4.4 Servicing

4.4.1 Emergency service and delivery vehicles will use the proposed estate road system with turning space provided within the site allowing these vehicles to manoeuvre. Again further details will be provided, together with swept path analysis as the indicative layout is developed as a Reserved Matters application.

5 Sustainable Travel Accessibility

5.1 Overview

5.1.1 With regards to sustainability, paragraph 38 of the NPPF states that:

'Decision-makers at every level should seek to approve applications for sustainable development.'

5.1.2 The Barnsley LDF Core Strategy requires new development to be sustainable:

'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'

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

5.2 Accessibility on Foot

5.2.1 Guidance identifies that walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips in journeys under 2km.

5.2.2 Guidance on walking accessibility is provided in the Department for Transport's document 'Building Sustainable Transport into New Developments' (2008) which gives the following advice:

"Walkable neighbourhoods are typically characterised as having a range of facilities within 10 minutes walking distance (around 800m). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating."

5.2.3 In relation to acceptable walking distances Manual for Streets, which is the latest national guidance on the design of residential roads, offers the following guidance in Section 4.4 "The Walkable Neighbourhood";

"4.4.1 Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPS13 states walking offers the greatest potential to replace short car trips, particularly those under 2km. Manual for Streets encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents". It is noted that PPS 13 has been superseded by NPPF but the general guidance offered in Manual for Streets remains relevant.

5.2.4 The Charted Institution of Highways and Transportation's Planning for Walking (2015) report acknowledges that; *"Academics have studied walkability without coming up with any generally accepted measure of what improves it, but factors considered important include the closeness and directness of routes to local services, the quality of footways and street crossings, perceived personal security and the good appearance of routes."*

5.2.5 To this end, the existing pedestrian infrastructure surrounding the site includes well defined and street-lit footways that provide direct links to amenities.

5.2.6 The figure overleaf identifies 800m and 2km walking radii from the site. It is noted that walking routes will not follow the simple radius of this plan and the plan is provided as an indication of where destinations lie and the general extent to which the local area can be accessed on foot.

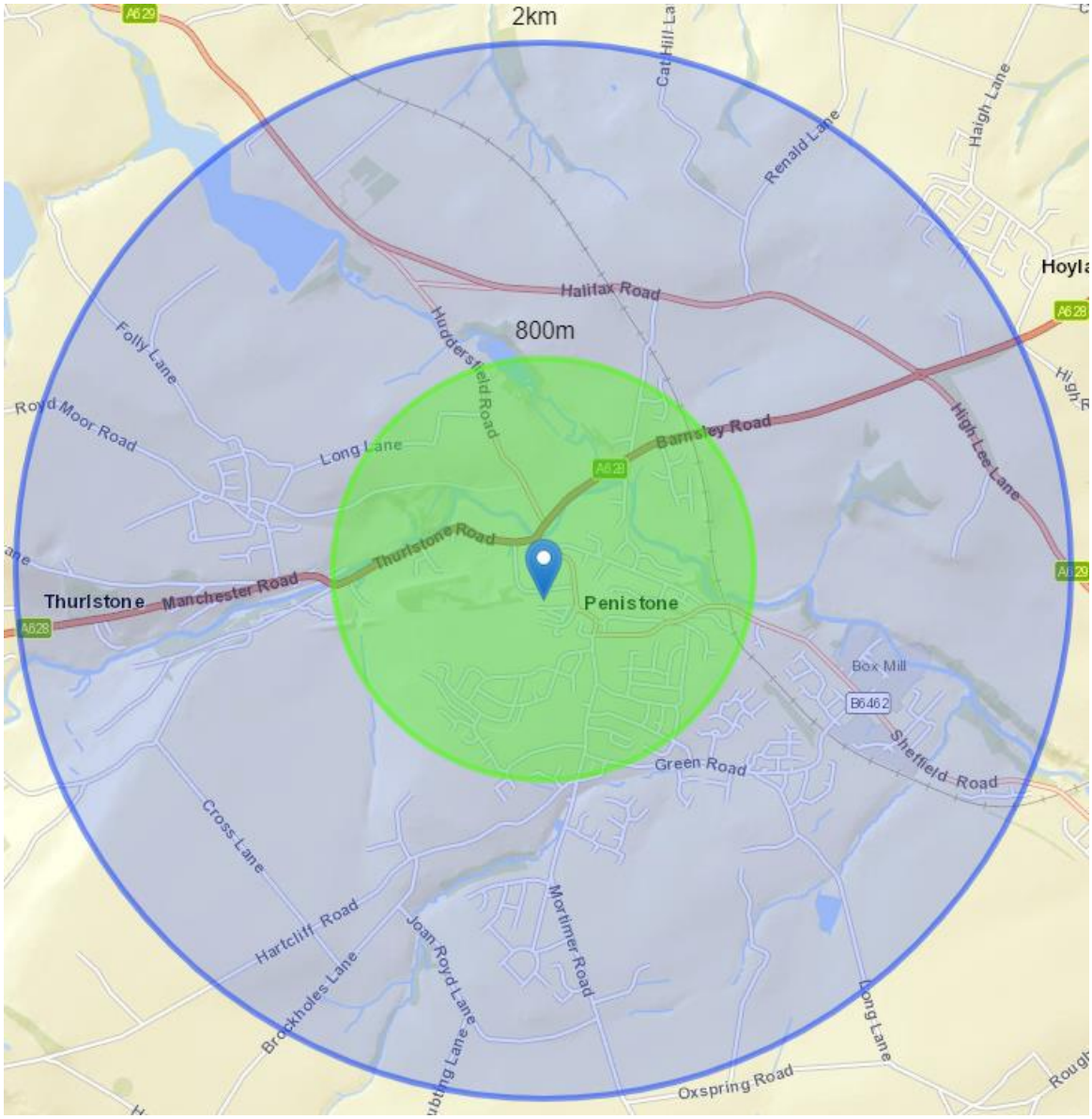


Figure 5.2.6 - Indicative Walking Radii (National Geographic Society Map Maker)

5.2.7 A summary of services and amenities that fall within the walking neighbourhood (800m) of the site are detailed as follows:

Transport

- Bus stops on Thurlstone Road and Bridge Street

Education

- Penistone Grammar School
- Busy Bees Nursery

Health

- Auckland Opticians
- Mydentist Penistone
- Scrivens Opticians
- Clarks Chemist
- Well Pharmacy
- Kingswell surgery
- Penistone Group Practice

Retail

- Tesco supermarket
- Harrington Butchers and Deli
- Paul Schofield Butchers
- Co-op food store
- Spar food store

Banking

- Natwest
- Yorkshire Building Society

Sport and Leisure

- Penistone Showground/playground/playing field
- Penistone Bowling Club
- Penistone Leisure Centre
- Penistone Paramount Cinema

Other

- Penistone Library
- Finesse Hair Salon
- Caroline's Hair Studio
- Morgan's Hair and Nail Salon
- Barber Shop
- Post Office
- Various food and drink establishments

5.2.8 Further services and amenities that fall within 2km of the site are detailed as follows:

- Penistone Train Station
- St John the Baptist Primary and Infant School
- Springvale Primary School
- Little Freddies Nursery
- Penistone Church Football Club

5.2.9 It is demonstrated that a great array of facilities are available within the walking neighbourhood of the site and accommodate most typical journey purposes.

5.3 Accessibility by Cycle

5.3.1 Guidance indicates that cycling has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer journey by public transport.

5.3.2 The figure overleaf indicates destinations that lie within a 5km radius of the application site. Again it is noted that cycling will not follow the simple radius shown on this plan and it is provided to give an indication of where destinations lie and the general extent to which the site is accessible by cycle.

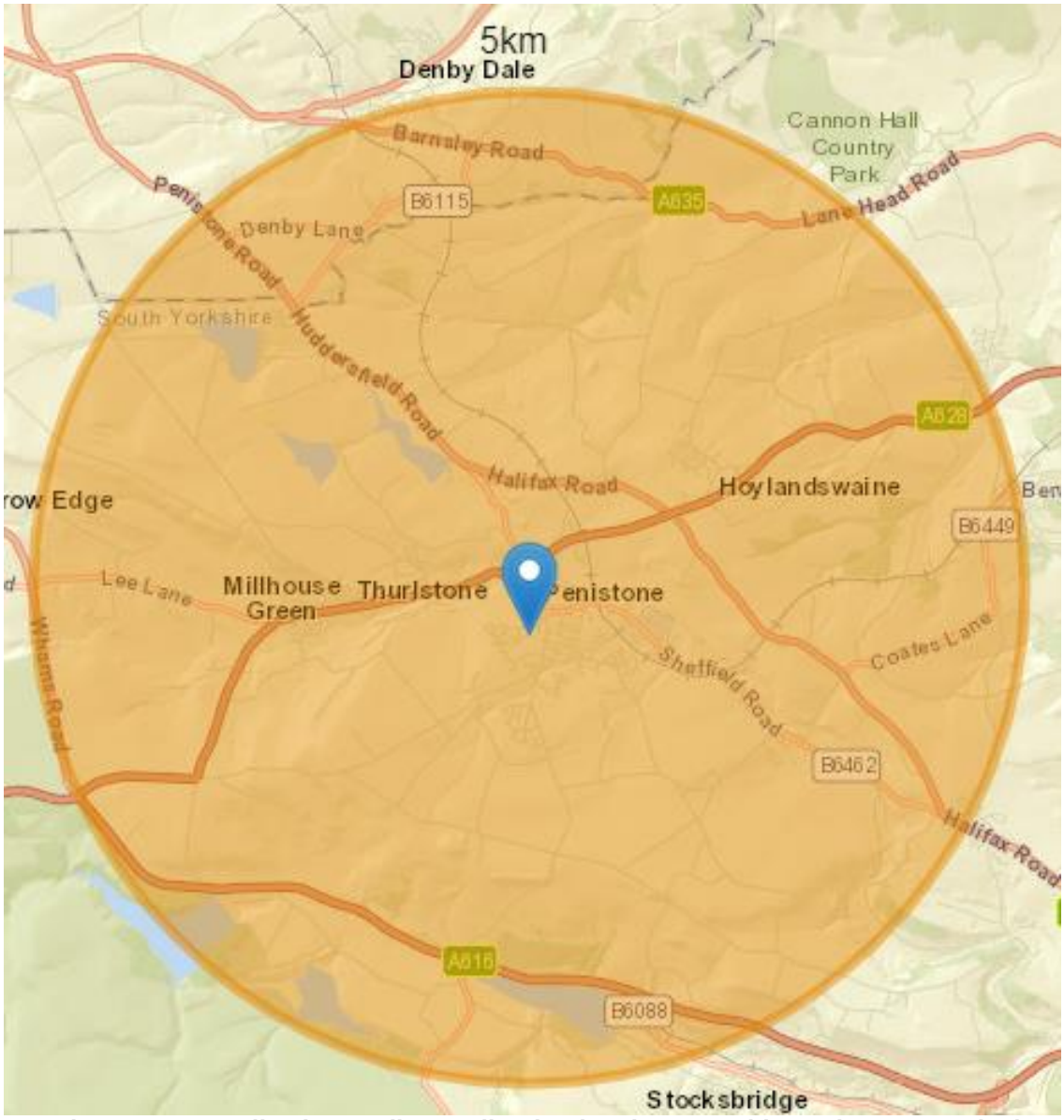


Figure 5.3.2 – Indicative Cycling Radius (National Geographic Society Map Maker)

5.3.3 Figure 5.3.2 shows that all of Penistone and a number of surrounding villages are located within 5km of the site. However, as with walking, it is considered that the quality of the available cycle infrastructure is an important factor when it comes to accessibility. The following extract from the Sustrans National Cycle Network Map details the cycle routes in the vicinity of the site;

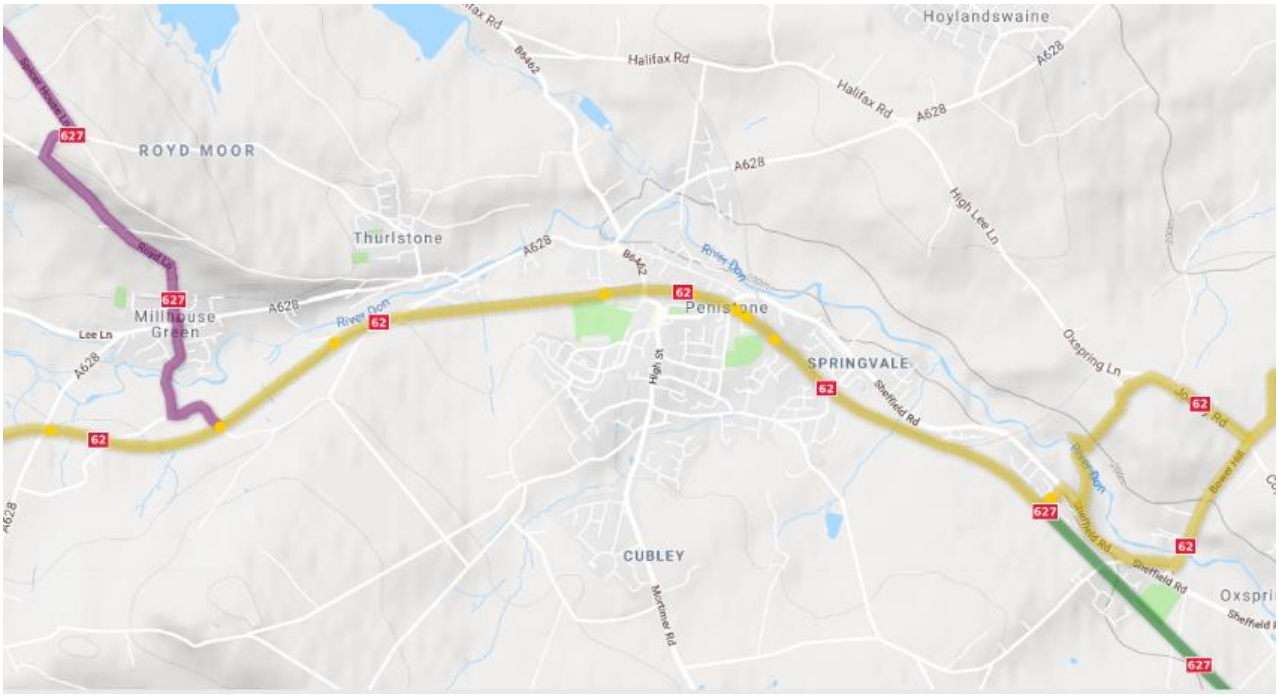


Figure 5.3.3 – Extract from Sustrans National Cycle Network Map

5.3.4 As can be seen above, National Cycle Network Route 62 runs through Penistone. It can be accessed within 400m of the site and forms part of the, predominantly traffic free, TransPennine Trail which also includes route 627.

5.3.5 As such, it is considered that cycling presents a realistic opportunity for sustainable travel for future residents and visitors.

5.4 Bus Accessibility

5.4.1 Existing bus stops are located on Thurlstone Road and Bridge Street within approximately 175m walking distance of the centre of the site. The location of these stops are indicated overleaf:

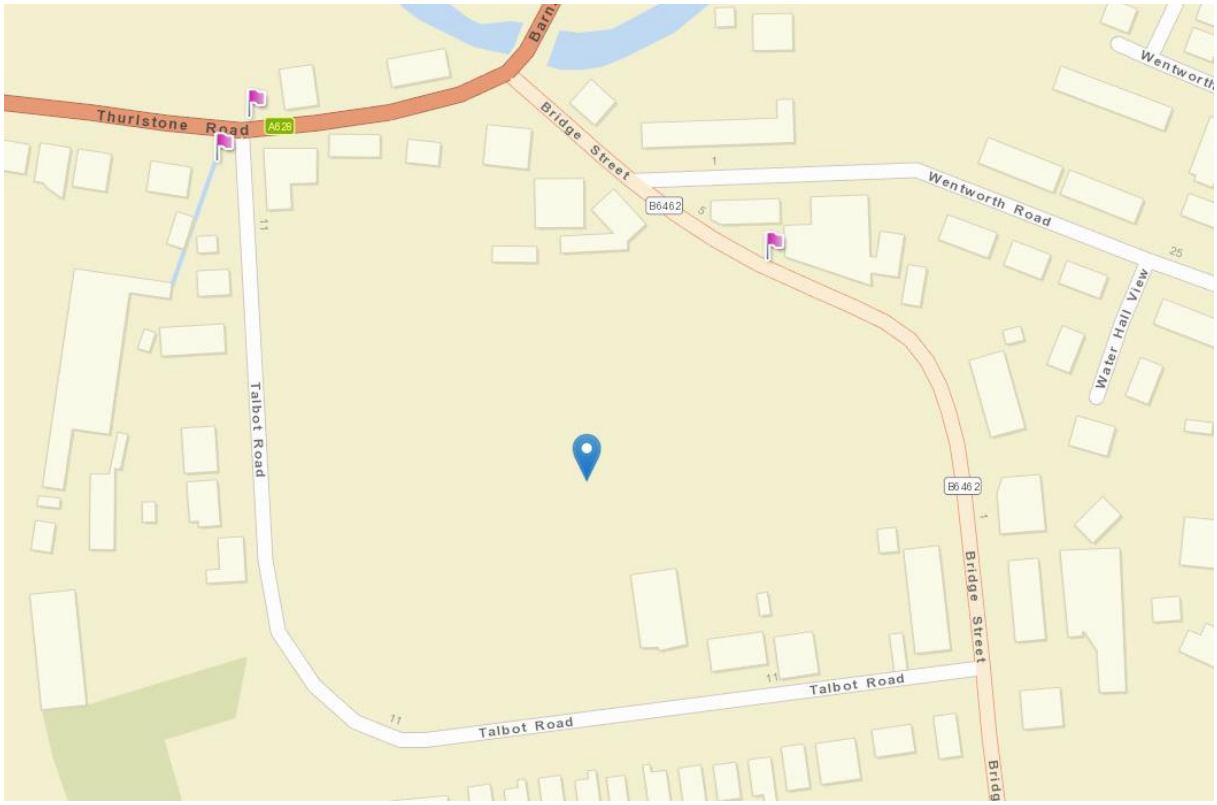


Figure 5.4.1 – Location of nearest bus stops (National Geographic Society Map Maker)

5.4.2 A description of these stops and the facilities provided is given below:

Thurlstone Road

Reference:	Talbot Road (37051022)
Distance to stop:	175m from centre of Site
Direction of travel:	Eastbound
Facilities:	Pole with flag and timetable information
Bus services:	21, 21a, 23, 25, 29

Reference:	Talbot Road (37055141)
Distance to stop:	170m from centre of Site
Direction of travel:	Westbound
Facilities:	Shelter with flag and timetable information
Bus services:	21, 21a, 23, 25, 29

Bridge Street

Reference:	Wentworth Road (37051018)
Distance to stop:	80m from centre of Site
Direction of travel:	Southbound
Facilities:	Pole with flag and timetable information
Bus services:	20, 21, 21a, 23, 24, 25, 29, 287, 350

5.4.3 A summary of the bus services that operate at these stops is as follows:

		Approximate Peak Frequency		
No	**Route**	**Mon - Sat Daytime**	**Mon - Sat Evening**	**Sunday**
20	Barnsley – Cubley	60 mins	No service	No Service
21	Barnsley – Crow Edge	60 mins	No service	No service
21a	Barnsley – Crow Edge	No service	60 mins	60 mins
23	Millhouse Green - Stocksbridge	120 mins	No service	No service
24	Barnsley - Ingbirchworth	120 mins	No service	No service
25	Penistone Local Link Circular	4 services M-F	No service	No service
29	Sheffield - Holmfirth	60 mins	90 mins	120 mins
287	Penistone - Huddersfield	3 services M only	No service	No service
350	Holmfirth - Penistone	4 services Th & S	No service	No service

Table 5.4.3 – Summary of Bus Services

5.4.4 It is demonstrated that there are a range of regular services within a walkable distance of the site that connect to a range of destinations including Barnsley Town Centre.

5.4.5 It is considered that the proximity of bus stops to the site, combined with the services available makes travel by bus a realistic alternative to travel by car.

5.5 Accessibility by Rail

5.5.1 The closest railway station to the site is Penistone Train Station which is located approximately 950m walking distance from the centre of the site. CCTV monitored parking for 16 bicycles is provided and cycles can be taken on trains free of charge. Ticket machines are available as well as waiting rooms. The location of the station can be seen below.



Figure 5.5.1 – Location of train station (National Geographic Society Map Maker)

5.5.2 The station lies on the line between Sheffield and Huddersfield with hourly services in each direction. These trains also stop at Barnsley and Meadowhall Shopping Centre as well as other local destinations on route.

5.6 Accessibility Summary

5.6.1 The site is located within walking and cycling distance of a range of amenities and is surrounded by a pedestrian and cycle infrastructure which will encourage the uptake of active travel. There are a wide variety of local facilities that can readily be accessed by sustainable active modes of travel. Finally, local public transport services are frequent and provide a connection between the site and Sheffield City Centre where additional public transport options are available.

6 Development Traffic Generations

6.1 The trip generations from the proposed development have been estimated using the TRICS database. The TRICS search parameters have been refined to closely match the location and characteristics of the development site. The search criteria is summarised below whilst the TRICS data can be found at **Appendix F**:

Land use:	Residential
Category:	Houses Privately Owned
Selected regions and areas:	Greater London and Ireland excluded
Parameter:	Number of units
Range:	20 to 60 units (average 37 units)
Date range:	01/01/2010 to 19/10/2017 (most up to date data)
Selected survey days:	Monday to Friday (26 surveys available)
Selected locations:	Suburban, Edge of Town and Neighbourhood sites only

6.2 Multimodal trip generations

6.2.1 The following table provides details of the weekday AM and PM peak hour multimodal trip rates per unit along with the corresponding modal percentage split and generated trips for the proposed 39 houses.

	Mode of Travel	Trip Rate	Modal Split %	Generations
AM Peak Period (08:00-09:00)	Pedestrians	0.255	25.0%	10
	Cyclists	0.029	2.8%	1
	Public Transport Users	0.033	3.2%	1
	Vehicle Occupants	0.703	68.9%	27
	Total People Trips	1.020	100.0%	39
PM Peak Period (17:00-18:00)	Pedestrians	0.178	19.7%	7
	Cyclists	0.027	3.0%	1
	Public Transport Users	0.023	2.5%	1
	Vehicle Occupants	0.672	74.3%	26
	Total People Trips	0.905	100.0%	35

Table 6.2.1 – Multimodal trip generations for the proposed development (39 houses)

6.2.2 The multimodal data identifies that the residential element of the development could expect to generate 31.0% of trips by walking, cycling and public transport modes in the weekday AM peak and 25.2% on a weekday PM peak period.

6.2.3 Actual peak hour demand from the residential development for walking, cycling and public transport is predicted to be at a level which is unlikely to have a detrimental impact on the existing infrastructure.

6.3 Vehicular trip generations

6.3.1 The following table provides details of the weekday AM and PM peak hour vehicular trip rates per unit along with the corresponding arrivals and departures for the proposed 39 houses.

	Arrivals	Departures	Arrivals	Departures
AM	0.155	0.386	6	15
PM	0.324	0.168	13	7

Table 6.3.1 – Vehicular trip generations for the proposed development (39 houses)

6.3.2 The predicted vehicle trips are 21 vehicle movements two-way in the AM and 20 in the PM peak hours. This equates to approximately one vehicle movement every 3 minutes in each peak hour.

6.4 Traffic distribution

6.4.1 Due to the location and access to the of the dwellings shown on the indicative layout, 37 of the houses will gain access via the Talbot Road/Thurlstone Road junction, and the remaining two located at the southeast corner of the site will access via the Talbot Road/Bridge Street junction. The trips generated are split below:

	37 houses		2 houses	
	Arrivals	Departures	Arrivals	Departures
AM	6	14	0	1
PM	12	6	1	1

Table 6.4.1 – Split vehicular trip generations for the proposed development

6.4.2 The predicted traffic flows generated by the 37 houses have been assigned to the network, via the Talbot Road/Thurlstone Road junction, in the same proportions as the existing flows at the junctions as recorded in the traffic counts.

6.4.3 These are shown on **Figures 3 and 4** at **Appendix A** in relation to distribution percentages and vehicle numbers respectively.

6.4.4 The predicted traffic generations for the 2 houses located at the southeast corner of the site will be distributed from Talbot Road towards the Bridge End junction, as a worst case scenario, and then assigned to the network in the same proportions as the existing flows at the junctions as recorded in the traffic counts.

7 Traffic Impact Assessment

7.1 To establish the likely growth in traffic flow the computer program TEMPRO with Dataset 7.2 has been utilised in conjunction with Data Set AF15 of the National Transport Model.

7.2 For the purpose of this assessment it is considered that appropriate future assessment years are a build year of 2019 and design year of 2024. The local growth factors for 2018 to 2019 and 2024 are summarised:

	2018 to 2019	2018 to 2024
Weekday AM	1.014738	1.098002
Weekday PM	1.014336	1.097173

Table 7.2 – Summary of growth factors for 2018 to 2019 and 2024

7.3 The growth factors have been applied to the 2018 surveyed traffic flows and the resulting 2019 and 2024 base flows are shown on **Figures 5 and 6** at **Appendix A**.

7.4 Committed Development

7.4.1 No committed development sites have been identified in the vicinity of the site.

8 Junction Modelling

8.1 Using the traffic flows identified previously, detailed capacity assessments have been undertaken of the Talbot Road/A628 Thurlstone Road and Bridge End signal junction in the base year of 2018, a build year of 2019 and a future design year of 2024.

8.2 Junctions Results – Talbot Road/A628 Thurlstone Road priority junction

8.2.1 The computer program Junctions has been used to model the Talbot Road/Thurlstone Road priority junction in order to assess capacity, queuing and delay levels at the base year and future year scenarios.

8.2.2 The results of this assessment are summarised as follows with the full output results included at **Appendix G**.

Arm A = Thurlstone Road (E)
Arm B = Talbot Road
Arm C = Thurlstone Road (W)

Movement	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
B-AC	0.05	0.1	0.02	0.0
C-AB	0.01	0.0	0.01	0.0

Table 8.2.2(a) – 2018 Base

Movement	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max RFC
B-AC	0.05	0.1	0.02	0.0
C-AB	0.01	0.0	0.01	0.0

Table 8.2.2(b) – 2019 Base

Movement	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max RFC
B-AC	0.09	0.1	0.09	0.1
C-AB	0.03	0.0	0.07	0.1

Table 8.2.2(c) – 2019 Base + Development

Movement	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max RFC
B-AC	0.10	0.1	0.04	0.0
C-AB	0.03	0.0	0.03	0.0

Table 8.2.2(d) – 2024 Base + Development

8.2.3 The capacity modelling undertaken shows that the junction is predicted to operate comfortably within its practical capacity in all scenarios, generally accepted as being represented by a RFC value not exceeding 0.850 RFC, with no material queuing. The junction assessment demonstrates that the development will not have a detrimental impact at this junction.

8.3 LinSig Results - Bridge End signal controlled junction

8.3.1 LinSig v3 has been used to assess Bridge End signalised junction. The controller specifications for the junction were obtained from Barnsley Metropolitan Borough Council and details of the junction operation abstracted from them.

Validating Base Model

8.3.2 As part of the traffic count at the junction, vehicle queues were recorded on all arms. The queues predicted in the LinSig model in the 2018 base scenarios are comparable to those recorded from the traffic count.

8.3.3 In addition, the pedestrian strikes were counted during the AM and PM peak periods. This shows that the pedestrian crossing phase is activated in 78% of cycles in the AM peak and 23% in the PM peak. Therefore, the AM scenarios run the pedestrian phase every cycle whereas in the PM the pedestrian phase has been run every fourth cycle.

Junction Modelling

8.3.4 The capacity threshold for a traffic signal controlled junction is a degree of saturation (DOS) of 90%. This threshold is consistent with established traffic signal practice. It should be noted that this represents the practical rather than the absolute limit for the junction. The practical limit of 90% retains 10% spare capacity whereas the absolute limit stands at 100%.

8.3.5 When an approach is operating with a degree of saturation greater than 100% the queue lengths grow at an exponential rate, however these will not necessarily be replicated on site.

8.3.6 For assessment purposes the following development scenarios have been assessed:

- 2018 Base Traffic, AM and PM peak periods
- 2018 Base + Development Traffic, AM and PM peak periods
- 2019 Base Traffic, AM and PM peak periods
- 2019 Base + Development Traffic, AM and PM peak periods
- 2024 Base Traffic, AM and PM peak periods
- 2024 Base + Development Traffic, AM and PM peak periods

8.3.7 The 2018 traffic count has been growthed to 2019 and 2024 within the LinSig model using the calculated TEMPro growth rates detailed in section 7.

8.3.8 The results of this assessment, with the junction optimised for green time, are summarised as follows with the output included at **Appendix H**.

		2018 AM Base		2018 AM Base + Dev		2018 PM Base		2018 PM Base + Dev	
Item	**Lane Description**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**
Network	-	**102.70%**	-	**102.90%**	-	**88.60%**	-	**89.30%**	-
Bridge End, Penistone	-	**102.70%**	-	**102.90%**	-	**88.60%**	-	**89.30%**	-
1/1	Bridge Street Left Right	102.70%	32.6	102.90%	33	88.60%	15.7	89.30%	16.2
2/1+2/2	A628 Thurlstone Road Right Left	74.0 : 74.0%	12.2	75.6 : 75.6%	12.8	38.1 : 38.1%	5	38.4 : 38.4%	5.1
3/1	A628 Barnsley Road Left Right	102.40%	28.8	102.40%	28.8	88.20%	24.3	88.80%	24.6
		Cycle Time 90 seconds PRC -14.2%		Cycle Time 90 seconds PRC -14.4%		Cycle Time 360 seconds PRC 1.6%		Cycle Time 360 seconds PRC 0.8%	

8.3.9 The above results show that, in the 2018 AM base without development traffic, Bridge Street and Barnsley Road operate over capacity with a maximum DOS of 102.7% and 102.4% with resulting queues of 32.6 and 28.8 respectively.

8.3.10 With the addition of development traffic, the DOS of Bridge Street increases marginally (by 0.2%) to 102.9%. The queue also slightly increases (by 0.4) to 33.0. The DOS and queue on Barnsley Road do not increase with the addition of the development traffic.

8.3.11 In the 2018 PM base, all arms operate within capacity. With the addition development traffic all arms continue to operate within capacity.

8.3.12 The queues on Thurlstone Road would not extend beyond the junction with Talbot Road, the development access road. Queues on Bridge Street would not cause obstructions at the junction with Talbot Road.

8.3.13 The development traffic represents a 0.8% increase on the 2018 AM base traffic flows (13 on 1708) and a 0.7% increase on the 2018 PM base traffic flows (12 on 1667). This is a negligible increase as is shown by the minor increases in DOS and queues with the addition of development traffic.

		2019 AM Base		2019 AM Base + Dev		2019 PM Base		2019 PM Base + Dev	
Item	**Lane Description**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**
Network	-	**104.30%**	-	**104.40%**	-	**89.80%**	-	**90.60%**	-
Bridge End, Penistone	-	**104.30%**	-	**104.40%**	-	**89.80%**	-	**90.60%**	-
1/1	Bridge Street Left Right	104.30%	36.3	104.40%	36.8	89.80%	16.5	90.60%	16.9
2/1+2/2	A628 Thurlstone Road Right Left	75.2 : 75.2%	12.5	76.7 : 76.7%	13	38.6 : 38.6%	5.2	38.9 : 38.9%	5.2
3/1	A628 Barnsley Road Left Right	103.90%	32	103.90%	32	89.50%	25.4	90.10%	26
		Cycle Time 90 seconds PRC -15.9%		Cycle Time 90 seconds PRC -16.0%		Cycle Time 360 seconds PRC 0.2%		Cycle Time 360 seconds PRC -0.7%	

8.3.14 The above results show that, in the 2019 AM base without development traffic, Bridge Street and Barnsley Road operate over capacity with a maximum DOS of 104.3% and 103.9% with resulting queues of 36.3 and 32.0 respectively.

8.3.15 With the addition of development traffic, the DOS of Bridge Street increases marginally (by 0.1%) to 104.4%. The queue also slightly increases by (0.5) to 36.8. The DOS and queue on Barnsley Road do not increase with the addition of the development traffic.

8.3.16 In the 2019 PM base, all arms operate within capacity. With the addition development traffic Bridge Street and Barnsley Road begin to operate just above practical capacity with a maximum DOS of 90.6% and 90.1% (equating to increases of 0.8 and 0.6) respectively. The resulting queues also marginally increase (by 0.4) to 16.9 and (by 0.6) to 26.0 respectively.

8.3.17 The resulting queue on Thurlstone Road would not be expected to continually extend beyond the junction with Talbot Road, the development access road. Queues on Bridge Street would not cause obstructions at the junction with Talbot Road.

8.3.18 Comparing the above figures to those for 2018, it can be seen that the increases caused by the addition of development traffic are less than those due to growth.

		2024 AM Base		2024 AM Base + Dev		2024 PM Base		2024 PM Base + Dev	
Item	**Lane Description**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**
Network	-	**112.90%**	-	**113.10%**	-	**97.10%**	-	**97.80%**	-
Bridge End, Penistone	-	**112.90%**	-	**113.10%**	-	**97.10%**	-	**97.80%**	-
1/1	Bridge Street Left Right	112.90%	62	113.10%	62.5	97.10%	22.6	97.80%	23.6
2/1+2/2	A628 Thurlstone Road Right Left	81.2 : 81.2%	14.6	82.8 : 82.8%	15.3	41.8 : 41.8%	6.4	42.1 : 42.1%	6.5
3/1	A628 Barnsley Road Left Right	112.30%	52.6	112.30%	52.6	96.80%	34.9	97.40%	36
		Cycle Time 90 seconds PRC -25.5%		Cycle Time 90 seconds PRC -25.7%		Cycle Time 360 seconds PRC -7.9%		Cycle Time 360 seconds PRC -8.7%	

8.3.19 The above results show that, in the 2024 AM base without development traffic, Bridge Street and Barnsley Road operate over capacity with a maximum DOS of 112.9% and 112.3% with resulting queues of 62.0 and 52.6 respectively.

8.3.20 With the addition of development traffic, the DOS of Bridge Street marginally increases (by 0.2%) to 113.1%. The queue also increases slightly (by 0.5) to 62.5. The DOS and queue on Barnsley Road do not increase with the addition of the development traffic.

8.3.21 In the 2024 PM base, Bridge Street and Barnsley Road all arms operate over practical capacity with a maximum DOS of 97.1% and 96.8% with resulting queues of 22.3 and 34.9 respectively.

8.3.22 With the addition development traffic, Bridge Street and Barnsley Road operate over practical capacity with a maximum DOS of 97.8% and 97.4% (equating to increases of 0.7% and 0.6%) respectively. The resulting queues also increase (by 1.0 and 1.1) to 23.6 and 36.0 respectively.

8.3.23 The resulting queue on Thurlstone Road would be expected to extend beyond the junction with Talbot Road, the development access road, by approximately 2 PCUs. This is a low level of queue and it should be noted that the provision of a simple KEEP CLEAR carriageway marking across the junction would safeguard access.

8.3.24 It should be noted that the predicted AM queues of 62.5 on Bridge Street is not considered realistic due to fact that that when an approach is operating with a degree of saturation greater than 100% the queue lengths grow at an exponential rate and are not replicated on site, and PM queues of 23.6 would not cause obstructions at the junction with Talbot Road.

8.3.25 Again, it can be seen that the increases caused by the addition of development traffic are minimal, whereas those due to background annual growth are considerable.

8.4 Summary

8.4.1 The capacity modelling undertaken at the Talbot Road/Thurlstone Road priority junction predicts it will operate comfortably within its practical capacity in all scenarios.

8.4.2 The modelling undertaken at Bridge End signal controlled junction shows that in the base scenario the junction is over capacity in the AM but operates within capacity in the PM. The development traffic represents increases in flows at the junction of 13 in the AM and 12 in the PM, this equates to 0.8% and 0.7% respectively. This is a negligible increase, particularly when compared to the expected increases due to background annual traffic growth.

8.4.3 Overall, it is considered that the proposed development traffic will not have a significant adverse impact on the operation of these junctions.

9 Summary and Conclusions

9.1 Sanderson Associates (Consulting Engineers) Ltd has been appointed by Mr & Mrs Ward and the Shrewsbury Hospital Trust to undertake a Transport Statement in support of outline planning application reference 2018/0466 for a proposed residential development on land off Talbot Road, Penistone, Barnsley, South Yorkshire.

9.2 An indicative layout plan has been prepared by Michael A Clynch which shows the disposition of a potential development of 39 dwellings and the principle of access for the main body of the site being taken from Talbot Road, in line with the Council's recommendations. It will be appreciated that further work is required in relation to the details of the specifics of this access arrangement, with appropriate design checks throughout.

9.3 The site is located within walking and cycling distance of a wide range of amenities and facilities, and is surrounded by a pedestrian and cycle infrastructure, which will encourage the uptake of active travel. Furthermore, local public transport services are frequent and provide a connection between the site and Sheffield City Centre where additional public transport options are available.

9.4 The final development will provide car and cycle parking in line with the requirements contained within Barnsley Council's Local Development Framework Supplementary Planning Document on Parking.

9.5 Multimodal data identifies that the residential element of the development could expect to generate 31.0% of trips by walking, cycling and public transport modes in the weekday AM peak and 25.2% on a weekday PM peak period. Actual peak hour demand from the residential development for walking, cycling and public transport is predicted to be at a level which is unlikely to have a detrimental impact on the existing infrastructure.

9.6 The predicted vehicle trips are 21 vehicle movements two-way in the AM and 20 in the PM peak hours. This equates to approximately one vehicle movement every 3 minutes in the peak hours.

9.7 Junctions has been used to assess the Talbot Road/Thurlstone Road junction. Development traffic flows have been assigned at the junction and assessments undertaken at a base year of 2018, a design year of 2019 and a future year of 2024 including network traffic growth and development traffic. The modelling undertaken shows that the junction is predicted to operate comfortably within its practical capacity in all scenarios with no material queuing. Therefore, the development is not expected to have a detrimental impact at this junction.

9.8 LinSig v3 has been used to assess Bridge End signalised junction. Development traffic flows have been assigned at the junction and assessments undertaken at a base year of 2018, a design year of 2019 and a future year of 2024 including network traffic growth and development traffic. Overall, it is considered that the proposed development will not have a significant adverse impact on the operation of the junction.

9.8.1 The NPPF is the most appropriate planning policy with respect to this development, with NPPF paragraph 108 the most relevant. This states;

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

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
b) safe and suitable access to the site can be achieved for all users; and
c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'

9.9 In this instance the site is in a very sustainable location with easy access to public transport facilities by bus and rail. A safe suitable access to Thurlstone Road can be provided via an improved Talbot Road, which is in line with the Council's

requirements. Finally for the scale of development proposed the traffic impact of the proposed development will not add any significant material adverse impact to the local highway network.

9.10 As such the development is therefore in accordance with the transport principles set out in NPPF and NPPG. In addition the development supports the general principles of Barnsley Council Core Strategy policies CPS25 and CPS26 and does not conflict with emerging Local Plan Policies, or the objectives of the Sheffield City Region Transport Strategy.

9.11 Finally the indicative layout of the proposed development can be refined to accommodate the requirements of Barnsley *Parking* and *New Housing Development* Supplementary Planning Documents, with consideration to the requirements of the South Yorkshire Residential Design Guide.

9.12 It is therefore concluded that there are no highway, traffic or transportation reasons why the development should not be approved, and the Council is requested to confirm these findings.

APPENDIX A

Figure 1 – Site Location Plan

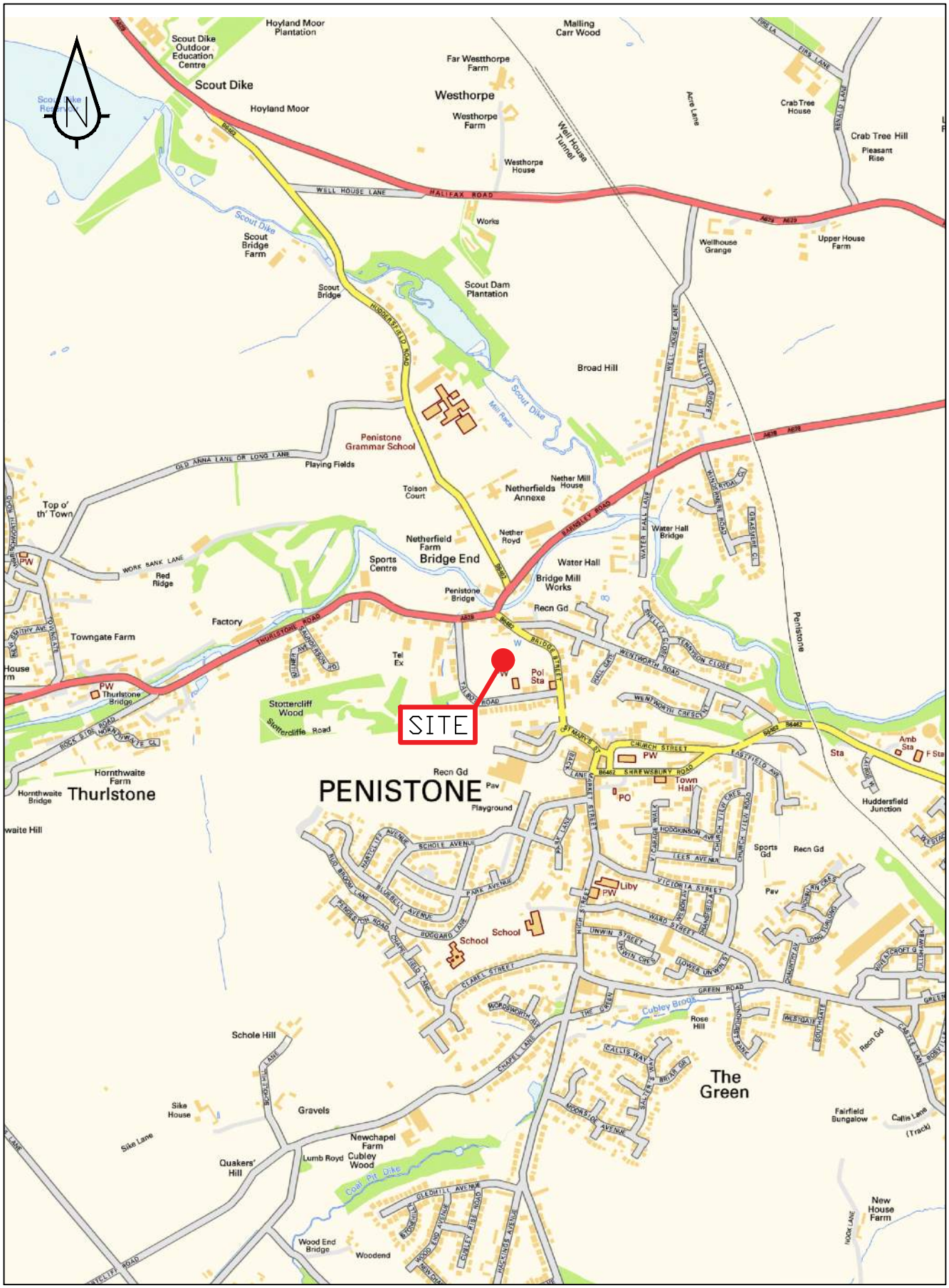
Figure 2 – 2018 Base Traffic Flows

Figure 3 – Development Traffic Distribution

Figure 4 – Development Traffic Flows

Figure 5 – 2019 Base Traffic Flows

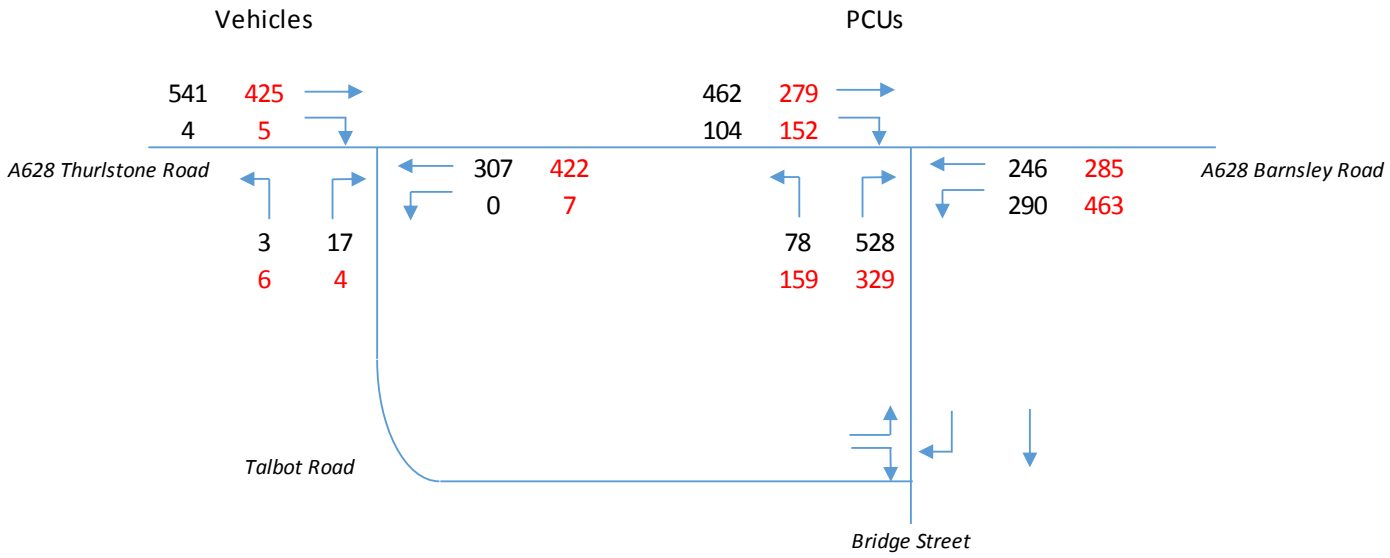
Figure 6 – 2024 Base Traffic Flows



sanderson associates (consulting engineers) ltd Highways | Traffic | Transportation | Water T 01924 844080 mail@sandersonassociates.co.uk F 01924 844081 www.sandersonassociates.co.uk	Site Location Plan Proposed Residential Development Talbot Road, Penistone Barnsley	Drawn: CH Checked: RIG Approved: RIG	Scale: NTS Date: November 2018 Drawing Number: Figure 1 Size: A4

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AM 07:30-08:30
PM 16:45-17:45



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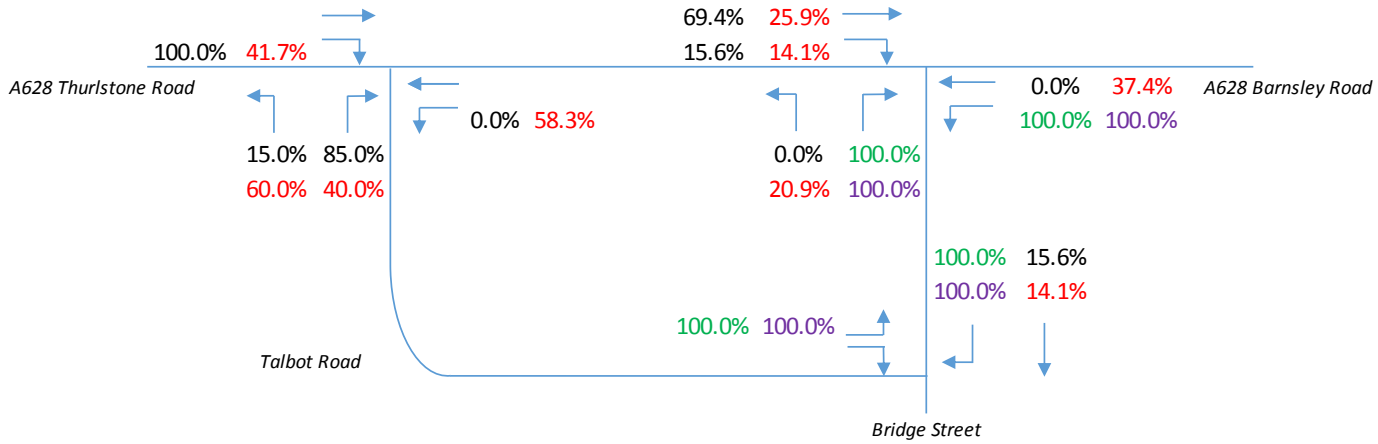
Proposed Residential Development
Talbot Road
Penistone
Barnsley

2018 Base Traffic Flows

Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: CH
Drawing Size: A3	Checked by: RIG
Date: November 2018	Approved by: RIG
	Drawing Number: Figure 2 — Rev.

37 houses 2 houses
AM AM
PM PM



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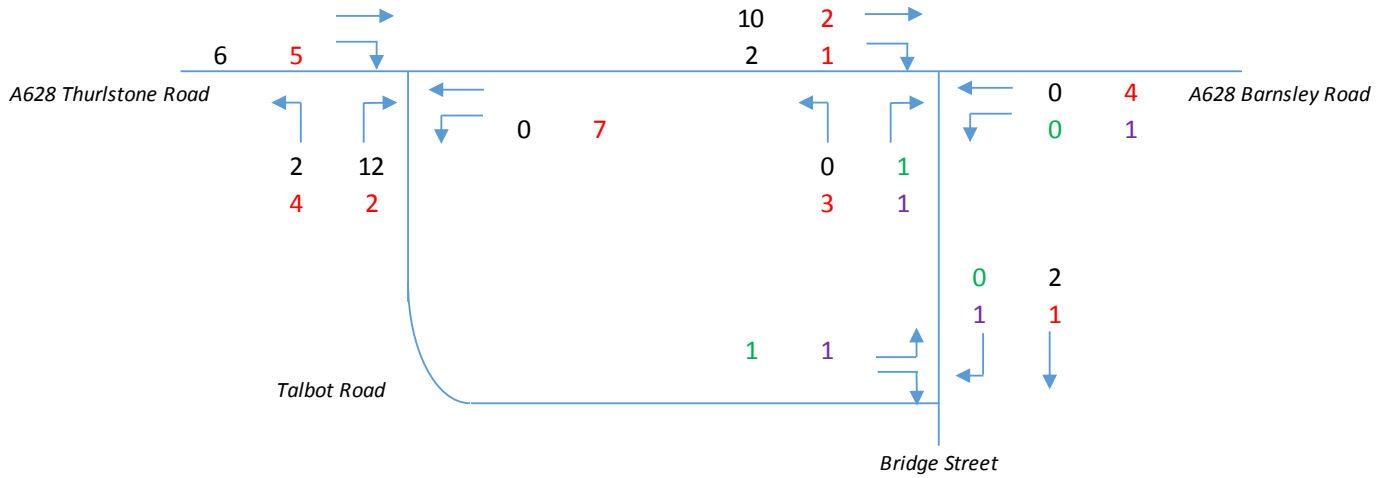
Development Traffic Distribution

Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: CH
Drawing Size: A3	Checked by: RIG
Date: November 2018	Approved by: RIG
Drawing Number: Figure 3	Rev.

37 houses AM PM

2 houses AM PM



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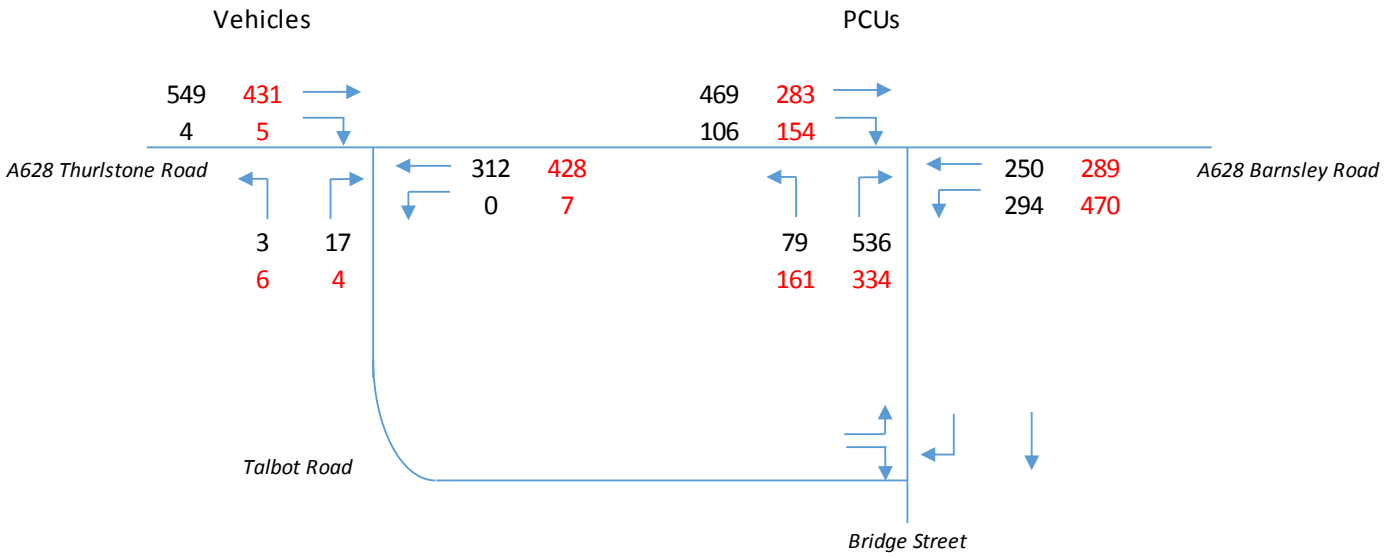
Proposed Residential Development
Talbot Road
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Barnsley

Development Traffic Flows

Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: CH
Drawing Size: A3	Checked by: RIG
Date: November 2018	Approved by: RIG
Drawing Number: Figure 4	Rev.

AM 07:30-08:30
PM 16:45-17:45



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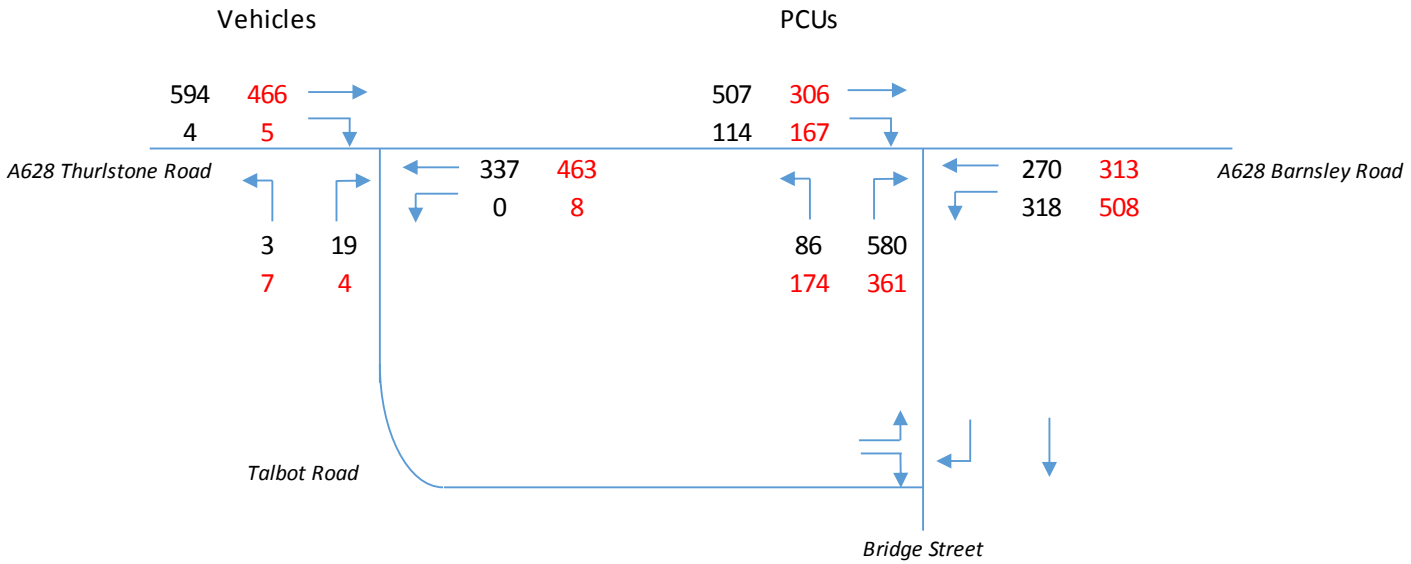
Proposed Residential Development
Talbot Road
Penistone
Barnsley

2019 Base Traffic Flows

Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: CH
Drawing Size: A3	Checked by: RIG
Date: November 2018	Approved by: RIG
	Drawing Number: Figure 5 / Rev.

AM 07:30-08:30
PM 16:45-17:45



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Proposed Residential Development
Talbot Road
Penistone
Barnsley

2024 Base Traffic Flows

Rev	Amendment	Drawn	Date	Checked

Scale: NTS	Draw by: CH
Drawing Size: A3	Checked by: RIG
Date: November 2018	Approved by: RIG
Drawing Number: Figure 6	Rev.

APPENDIX B

Radar Speed Survey Results

sanderson associates (consulting engineers) ltd

Speed Meter Reading - Results

Location Thurlstone Road, Penistone (Talbot Road, Penistone)
Direction of Travel Westbound (from signals)

Job Number 9801
Date of Survey 17/10/18
Start Time 14:05
Finish Time 14:49

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

Number of Readings = 100
Mean Speed = 22.02
Standard Deviation = 3.2254668
85 Percentile Speed = 25.245467
85 Percentile Wet Weather Speed = 22.760467 **<<<<**

Dual C'way Y/N? N
Single C'way Y/N? Y
Wet Road Surface Y/N? N

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

APPENDIX C

Traffic Count Data

Penistone - Manual Traffic Survey, Tuesday 6th November 2018

Produced by Road Data Services Ltd

Junction: (1) A628 / Talbot Road

Approach: A628 (East)

	Left to Talbot Road								W/B to A628 (West)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	0	0	0	0	0	**0**	0	0	58	18	3	1	0	**80**
0745 - 0800	0	0	0	0	0	0	0	**0**	0	0	46	17	2	3	1	**69**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**104**	**35**	**5**	**4**	**1**	**149**
0800 - 0815	0	0	0	0	0	0	0	**0**	0	0	54	11	2	0	0	**67**
0815 - 0830	0	0	0	0	0	0	0	**0**	0	1	68	14	3	4	1	**91**
0830 - 0845	0	0	0	0	0	0	0	**0**	0	0	68	14	2	1	1	**86**
0845 - 0900	0	0	0	1	0	0	0	**1**	0	0	44	8	5	3	0	**60**
Hourly Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**234**	**47**	**12**	**8**	**2**	**304**
0900 - 0915	0	0	0	1	0	0	0	**1**	0	0	46	4	5	2	0	**57**
0915 - 0930	0	0	0	0	0	0	0	**0**	0	0	48	3	6	3	1	**61**
Hourly Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**94**	**7**	**11**	**5**	**1**	**118**
Session Total	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**1**	**432**	**89**	**28**	**17**	**4**	**571**
1530 - 1545	0	0	0	0	0	0	0	**0**	0	0	67	14	1	2	0	**84**
1545 - 1600	0	0	1	0	0	0	0	**1**	0	0	90	7	2	0	0	**99**
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**157**	**21**	**3**	**2**	**0**	**183**
1600 - 1615	0	0	0	2	0	0	0	**2**	0	0	78	14	2	0	0	**94**
1615 - 1630	0	0	2	0	0	0	0	**2**	0	1	90	11	3	0	0	**105**
1630 - 1645	0	0	0	0	1	0	0	**1**	0	0	89	15	2	0	0	**106**
1645 - 1700	0	0	1	0	0	0	0	**1**	0	1	90	14	4	2	1	**112**
Hourly Total	**0**	**0**	**3**	**2**	**1**	**0**	**0**	**6**	**0**	**2**	**347**	**54**	**11**	**2**	**1**	**417**
1700 - 1715	0	0	3	1	0	0	0	**4**	0	0	95	7	2	2	0	**106**
1715 - 1730	0	0	0	1	0	0	0	**1**	0	0	83	13	4	1	0	**101**
1730 - 1745	0	0	2	0	0	0	0	**2**	0	0	88	13	0	2	0	**103**
1745 - 1800	0	0	1	0	0	0	0	**1**	0	0	125	7	2	0	0	**134**
Hourly Total	**0**	**0**	**6**	**2**	**0**	**0**	**0**	**8**	**0**	**0**	**391**	**40**	**8**	**5**	**0**	**444**
1800 - 1815	0	0	1	0	0	0	0	**1**	0	0	93	6	0	0	1	**100**
1815 - 1830	0	0	3	0	0	0	0	**3**	0	0	83	4	1	0	0	**88**
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**176**	**10**	**1**	**0**	**1**	**188**
Session Total	**0**	**0**	**14**	**4**	**1**	**0**	**0**	**19**	**0**	**2**	**1071**	**125**	**23**	**9**	**2**	**1232**

Penistone - Manual Traffic Survey, Tuesday 6th November 2018

Produced by Road Data Services Ltd

Junction: (1) A628 / Talbot Road

Approach: Talbot Road

	Left to A628 (West)								Right to A628 (East)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	1	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**
0745 - 0800	0	0	7	2	0	0	0	**9**	0	0	0	0	0	0	0	**0**
Hourly Total	**0**	**0**	**8**	**2**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0800 - 0815	0	0	4	1	0	0	0	**5**	0	0	1	0	0	0	0	**1**
0815 - 0830	0	0	2	0	0	0	0	**2**	0	0	2	0	0	0	0	**2**
0830 - 0845	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**
0845 - 0900	0	0	0	0	0	0	0	**0**	0	0	0	1	0	0	0	**1**
Hourly Total	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**7**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**4**
0900 - 0915	0	0	0	0	0	0	0	**0**	0	0	0	3	0	0	0	**3**
0915 - 0930	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**
Session Total	**0**	**0**	**14**	**3**	**0**	**0**	**0**	**17**	**0**	**0**	**3**	**4**	**0**	**0**	**0**	**7**
1530 - 1545	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**
1545 - 1600	0	0	1	0	0	0	0	**1**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**
1600 - 1615	0	0	1	0	0	0	0	**1**	0	0	4	0	0	0	0	**4**
1615 - 1630	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**
1630 - 1645	0	0	1	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**
1645 - 1700	0	0	0	0	0	0	0	**0**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**5**
1700 - 1715	0	0	1	0	0	0	0	**1**	0	0	3	0	0	0	0	**3**
1715 - 1730	0	0	0	0	0	0	0	**0**	0	0	1	0	0	0	0	**1**
1730 - 1745	0	0	2	1	0	0	0	**3**	0	0	1	0	0	0	0	**1**
1745 - 1800	0	0	0	0	0	0	0	**0**	0	0	1	1	0	0	0	**2**
Hourly Total	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**4**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**7**
1800 - 1815	0	0	1	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**
1815 - 1830	0	0	0	0	0	0	0	**0**	0	0	1	1	0	0	0	**2**
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**
Session Total	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**8**	**0**	**0**	**13**	**2**	**0**	**0**	**0**	**15**

Penistone - Manual Traffic Survey, Tuesday 6th November 2018

Produced by Road Data Services Ltd

Junction: (1) A628 / Talbot Road

Approach: A628 (West)

	E/B to A628 (East)								Right to Talbot Road							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	114	15	7	1	0	**137**	0	0	0	0	0	0	0	**0**
0745 - 0800	0	0	121	12	5	2	0	**140**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**235**	**27**	**12**	**3**	**0**	**277**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**
0800 - 0815	0	0	145	13	5	0	1	**164**	0	0	2	1	0	0	0	**3**
0815 - 0830	0	0	79	13	4	4	0	**100**	0	0	0	0	0	0	0	**0**
0830 - 0845	0	0	95	15	2	1	0	**113**	0	0	0	0	0	0	0	**0**
0845 - 0900	0	0	109	17	3	4	2	**135**	0	0	0	0	0	0	0	**0**
Hourly Total	**0**	**0**	**428**	**58**	**14**	**9**	**3**	**512**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**3**
0900 - 0915	0	0	88	11	2	1	0	**102**	0	0	1	0	0	0	0	**1**
0915 - 0930	0	0	75	9	4	2	0	**90**	0	0	0	0	0	0	0	**0**
Hourly Total	**0**	**0**	**163**	**20**	**6**	**3**	**0**	**192**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**
Session Total	**0**	**0**	**826**	**105**	**32**	**15**	**3**	**981**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**5**
1530 - 1545	1	1	102	17	4	3	1	**129**	0	0	0	0	0	0	0	**0**
1545 - 1600	1	0	84	13	3	2	1	**104**	0	0	1	0	0	0	0	**1**
Hourly Total	**2**	**1**	**186**	**30**	**7**	**5**	**2**	**233**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**
1600 - 1615	0	0	70	15	6	0	0	**91**	0	0	0	0	0	0	0	**0**
1615 - 1630	0	1	66	17	1	0	0	**85**	0	0	0	0	0	0	0	**0**
1630 - 1645	0	0	88	17	2	1	1	**109**	0	0	1	0	0	0	0	**1**
1645 - 1700	0	0	94	12	1	3	0	**110**	0	0	0	1	0	0	0	**1**
Hourly Total	**0**	**1**	**318**	**61**	**10**	**4**	**1**	**395**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**
1700 - 1715	1	1	100	6	3	0	1	**112**	0	0	2	1	0	0	0	**3**
1715 - 1730	0	0	82	11	0	0	1	**94**	0	0	1	0	0	0	0	**1**
1730 - 1745	0	0	90	9	1	1	0	**101**	0	0	0	0	0	0	0	**0**
1745 - 1800	0	0	73	13	0	0	0	**86**	0	0	0	0	0	0	0	**0**
Hourly Total	**1**	**1**	**345**	**39**	**4**	**1**	**2**	**393**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**4**
1800 - 1815	0	0	72	8	1	0	0	**81**	0	0	0	0	0	0	0	**0**
1815 - 1830	0	0	52	3	1	0	1	**57**	0	0	3	1	0	0	0	**4**
Hourly Total	**0**	**0**	**124**	**11**	**2**	**0**	**1**	**138**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**4**
Session Total	**3**	**3**	**973**	**141**	**23**	**10**	**6**	**1159**	**0**	**0**	**8**	**3**	**0**	**0**	**0**	**11**

Penistone - Manual Traffic Survey, Tuesday 6th November 2018

Produced by Road Data Services Ltd

Junction: (2) Barnsley Road / B6462 / A628

Approach: Barnsley Road

	Left to B6462								Right to A628							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	40	5	1	1	0	**47**	0	0	44	15	1	1	0	**61**
0745 - 0800	0	0	64	9	2	0	0	**75**	0	0	36	15	2	3	1	**57**
Hourly Total	**0**	**0**	**104**	**14**	**3**	**1**	**0**	**122**	**0**	**0**	**80**	**30**	**3**	**4**	**1**	**118**
0800 - 0815	0	0	66	5	1	1	1	**74**	0	0	43	9	1	0	0	**53**
0815 - 0830	0	0	71	11	4	0	0	**86**	0	1	43	11	1	4	1	**61**
0830 - 0845	0	0	58	10	2	1	0	**71**	0	0	31	12	2	1	1	**47**
0845 - 0900	0	0	90	15	2	0	1	**108**	0	0	29	7	5	3	0	**44**
Hourly Total	**0**	**0**	**285**	**41**	**9**	**2**	**2**	**339**	**0**	**1**	**146**	**39**	**9**	**8**	**2**	**205**
0900 - 0915	0	0	72	2	3	0	0	**77**	0	0	25	3	4	2	0	**34**
0915 - 0930	0	0	65	10	5	2	0	**82**	0	0	27	3	4	3	0	**37**
Hourly Total	**0**	**0**	**137**	**12**	**8**	**2**	**0**	**159**	**0**	**0**	**52**	**6**	**8**	**5**	**0**	**71**
Session Total	**0**	**0**	**526**	**67**	**20**	**5**	**2**	**620**	**0**	**1**	**278**	**75**	**20**	**17**	**3**	**394**
1530 - 1545	0	1	55	8	2	1	1	**68**	0	0	42	11	1	2	0	**56**
1545 - 1600	1	0	81	10	3	0	1	**96**	0	0	50	5	1	0	0	**56**
Hourly Total	**1**	**1**	**136**	**18**	**5**	**1**	**2**	**164**	**0**	**0**	**92**	**16**	**2**	**2**	**0**	**112**
1600 - 1615	0	0	96	16	4	0	1	**117**	0	0	44	10	1	0	0	**55**
1615 - 1630	0	0	91	6	2	0	0	**99**	0	0	54	7	3	0	0	**64**
1630 - 1645	0	0	99	9	1	0	1	**110**	0	0	48	9	2	0	0	**59**
1645 - 1700	0	0	105	8	2	0	1	**116**	0	0	55	9	3	2	0	**69**
Hourly Total	**0**	**0**	**391**	**39**	**9**	**0**	**3**	**442**	**0**	**0**	**201**	**35**	**9**	**2**	**0**	**247**
1700 - 1715	0	0	76	5	0	0	1	**82**	0	0	54	5	2	2	0	**63**
1715 - 1730	0	0	122	7	1	0	0	**130**	0	0	46	12	3	1	0	**62**
1730 - 1745	0	1	116	13	0	0	1	**131**	0	0	65	11	0	2	0	**78**
1745 - 1800	0	0	82	12	1	0	0	**95**	0	0	82	4	2	0	0	**88**
Hourly Total	**0**	**1**	**396**	**37**	**2**	**0**	**2**	**438**	**0**	**0**	**247**	**32**	**7**	**5**	**0**	**291**
1800 - 1815	0	1	100	7	0	0	1	**109**	0	0	59	5	0	0	0	**64**
1815 - 1830	0	0	80	4	0	0	0	**84**	0	0	53	4	1	0	0	**58**
Hourly Total	**0**	**1**	**180**	**11**	**0**	**0**	**1**	**193**	**0**	**0**	**112**	**9**	**1**	**0**	**0**	**122**
Session Total	**1**	**3**	**1103**	**105**	**16**	**1**	**8**	**1237**	**0**	**0**	**652**	**92**	**19**	**9**	**0**	**772**

Penistone - Manual Traffic Survey, Tuesday 6th November 2018

Produced by Road Data Services Ltd

Junction: (2) Barnsley Road / B6462 / A628

Approach: B6462

	W/B to A628								Right to Barnsley Road							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	14	3	2	0	0	**19**	1	0	123	11	0	0	2	**137**
0745 - 0800	0	0	10	2	0	0	0	**12**	1	0	127	8	2	0	1	**139**
Hourly Total	**0**	**0**	**24**	**5**	**2**	**0**	**0**	**31**	**2**	**0**	**250**	**19**	**2**	**0**	**3**	**276**
0800 - 0815	0	0	11	2	1	0	0	**14**	0	1	118	9	3	0	2	**133**
0815 - 0830	0	0	25	3	2	0	0	**30**	0	1	98	8	2	1	1	**111**
0830 - 0845	0	0	37	2	0	0	0	**39**	1	1	96	7	2	0	1	**108**
0845 - 0900	0	0	15	2	0	0	0	**17**	0	0	66	7	2	3	0	**78**
Hourly Total	**0**	**0**	**88**	**9**	**3**	**0**	**0**	**100**	**1**	**3**	**378**	**31**	**9**	**4**	**4**	**430**
0900 - 0915	0	0	21	2	1	0	0	**24**	0	0	77	9	2	1	0	**89**
0915 - 0930	0	0	21	0	2	0	1	**24**	0	0	77	11	3	0	2	**93**
Hourly Total	**0**	**0**	**42**	**2**	**3**	**0**	**1**	**48**	**0**	**0**	**154**	**20**	**5**	**1**	**2**	**182**
Session Total	**0**	**0**	**154**	**16**	**8**	**0**	**1**	**179**	**3**	**3**	**782**	**70**	**16**	**5**	**9**	**888**
1530 - 1545	0	0	25	3	0	0	0	**28**	0	0	56	10	6	3	0	**75**
1545 - 1600	0	0	41	2	1	0	0	**44**	0	0	84	13	2	0	0	**99**
Hourly Total	**0**	**0**	**66**	**5**	**1**	**0**	**0**	**72**	**0**	**0**	**140**	**23**	**8**	**3**	**0**	**174**
1600 - 1615	0	0	34	6	1	0	0	**41**	0	2	84	4	1	1	0	**92**
1615 - 1630	0	1	38	4	0	0	0	**43**	0	0	62	7	3	0	1	**73**
1630 - 1645	0	0	41	6	1	0	0	**48**	0	0	61	4	3	0	1	**69**
1645 - 1700	0	1	36	5	1	0	1	**44**	0	0	51	6	2	1	0	**60**
Hourly Total	**0**	**2**	**149**	**21**	**3**	**0**	**1**	**176**	**0**	**2**	**258**	**21**	**9**	**2**	**2**	**294**
1700 - 1715	0	0	44	3	0	0	0	**47**	0	0	92	9	0	0	2	**103**
1715 - 1730	0	0	37	2	1	0	0	**40**	0	0	73	11	1	0	2	**87**
1730 - 1745	0	0	25	2	0	0	0	**27**	0	0	64	5	2	0	0	**71**
1745 - 1800	0	0	44	3	0	0	0	**47**	0	0	59	5	0	0	0	**64**
Hourly Total	**0**	**0**	**150**	**10**	**1**	**0**	**0**	**161**	**0**	**0**	**288**	**30**	**3**	**0**	**4**	**325**
1800 - 1815	0	0	35	1	0	0	1	**37**	0	1	76	7	0	0	0	**84**
1815 - 1830	0	0	33	0	0	0	0	**33**	0	0	69	6	1	0	1	**77**
Hourly Total	**0**	**0**	**68**	**1**	**0**	**0**	**1**	**70**	**0**	**1**	**145**	**13**	**1**	**0**	**1**	**161**
Session Total	**0**	**2**	**433**	**37**	**5**	**0**	**2**	**479**	**0**	**3**	**831**	**87**	**21**	**5**	**7**	**954**

Penistone - Manual Traffic Survey, Tuesday 6th November 2018

Produced by Road Data Services Ltd

Junction: (2) Barnsley Road / B6462 / A628

Approach: A628

	Left to Barnsley Road								E/B to B6462							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0730 - 0745	0	0	97	14	5	1	0	**117**	0	0	17	1	2	0	0	**20**
0745 - 0800	0	0	97	10	3	2	0	**112**	0	0	25	2	2	0	0	**29**
Hourly Total	**0**	**0**	**194**	**24**	**8**	**3**	**0**	**229**	**0**	**0**	**42**	**3**	**4**	**0**	**0**	**49**
0800 - 0815	0	0	125	11	3	0	0	**139**	0	0	22	3	2	0	1	**28**
0815 - 0830	0	0	60	9	4	4	0	**77**	0	0	19	4	0	0	0	**23**
0830 - 0845	0	0	64	11	1	1	0	**77**	0	0	31	4	1	0	0	**36**
0845 - 0900	0	0	75	14	2	4	1	**96**	0	0	34	3	1	0	1	**39**
Hourly Total	**0**	**0**	**324**	**45**	**10**	**9**	**1**	**389**	**0**	**0**	**106**	**14**	**4**	**0**	**2**	**126**
0900 - 0915	0	0	53	9	1	1	0	**64**	0	0	36	2	1	0	0	**39**
0915 - 0930	0	0	37	8	2	2	0	**49**	0	0	38	1	2	0	0	**41**
Hourly Total	**0**	**0**	**90**	**17**	**3**	**3**	**0**	**113**	**0**	**0**	**74**	**3**	**3**	**0**	**0**	**80**
Session Total	**0**	**0**	**608**	**86**	**21**	**15**	**1**	**731**	**0**	**0**	**222**	**20**	**11**	**0**	**2**	**255**
1530 - 1545	0	1	51	14	4	3	0	**73**	1	0	51	3	0	0	1	**56**
1545 - 1600	0	0	49	12	3	1	0	**65**	1	0	36	1	0	1	1	**40**
Hourly Total	**0**	**1**	**100**	**26**	**7**	**4**	**0**	**138**	**2**	**0**	**87**	**4**	**0**	**1**	**2**	**96**
1600 - 1615	0	0	50	11	1	0	0	**62**	0	0	20	4	5	0	0	**29**
1615 - 1630	0	1	45	11	1	0	0	**58**	0	0	21	6	0	0	0	**27**
1630 - 1645	0	0	54	13	1	1	0	**69**	0	0	35	4	1	0	1	**41**
1645 - 1700	0	0	56	11	1	3	0	**71**	0	0	38	2	0	0	0	**40**
Hourly Total	**0**	**1**	**205**	**46**	**4**	**4**	**0**	**260**	**0**	**0**	**114**	**16**	**6**	**0**	**1**	**137**
1700 - 1715	1	1	69	5	2	0	0	**78**	0	0	33	2	1	0	1	**37**
1715 - 1730	0	0	49	8	0	0	1	**58**	0	0	34	3	0	0	0	**37**
1730 - 1745	0	0	59	4	1	1	0	**65**	0	0	31	5	0	0	0	**36**
1745 - 1800	0	0	47	9	0	0	0	**56**	0	0	26	4	0	0	0	**30**
Hourly Total	**1**	**1**	**224**	**26**	**3**	**1**	**1**	**257**	**0**	**0**	**124**	**14**	**1**	**0**	**1**	**140**
1800 - 1815	0	0	52	6	0	0	0	**58**	0	0	20	2	1	0	0	**23**
1815 - 1830	0	0	40	2	1	0	0	**43**	0	0	15	2	0	0	1	**18**
Hourly Total	**0**	**0**	**92**	**8**	**1**	**0**	**0**	**101**	**0**	**0**	**35**	**4**	**1**	**0**	**1**	**41**
Session Total	**1**	**3**	**621**	**106**	**15**	**9**	**1**	**756**	**2**	**0**	**360**	**38**	**8**	**1**	**5**	**414**

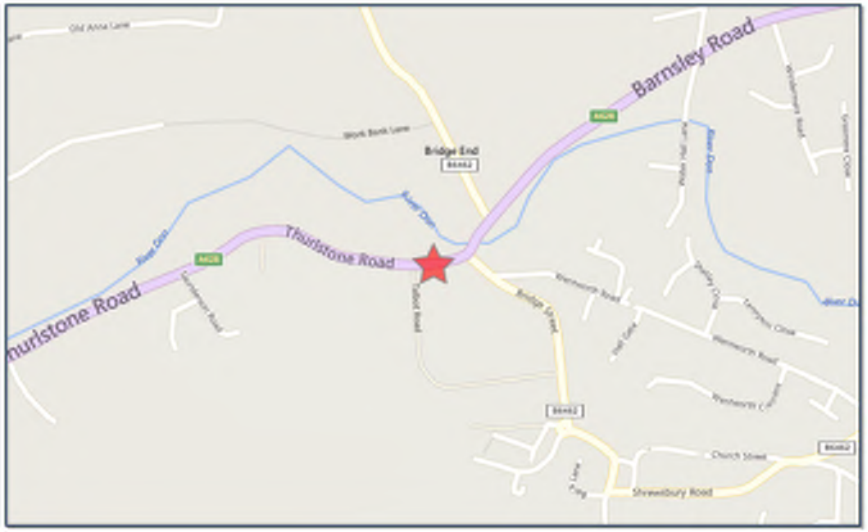
APPENDIX D

Crashmap Reports

crashmap.co.uk

Crash Date:	Thursday, December 10, 2015	**Time of Crash:**	8:15:00 AM	**Crash Reference:**	**201514B114415**

Highest Injury Severity:	Slight	**Road Number:**	A628	**Number of Casualties:**	1
Highway Authority:	Barnsley			**Number of Vehicles:**	1
Local Authority:	Barnsley			**OS Grid Reference:**	424299 403638
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

powered by INSIGHTwarehouse

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

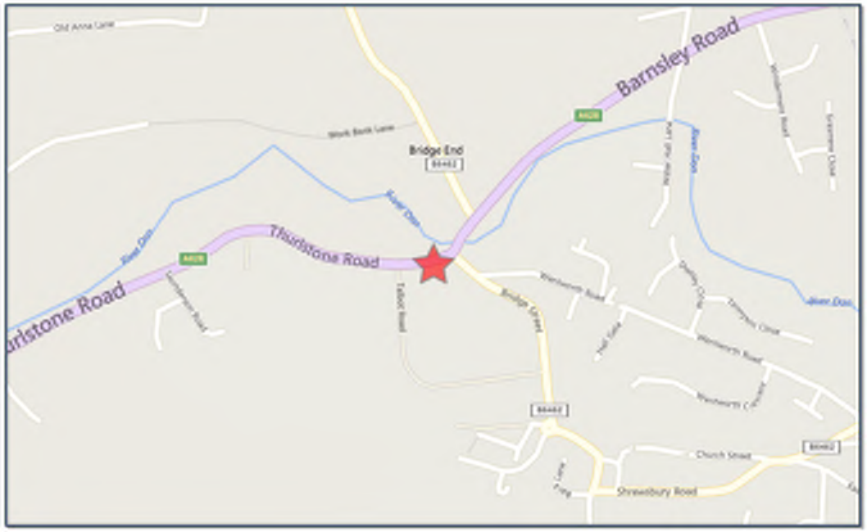
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Male	11 - 15	In carriageway, crossing elsewhere	Crossing from driver's nearside

crashmap.co.uk

2017 data is provisional and is subject to change

Crash Date:	Monday, June 26, 2017	**Time of Crash:**	12:11:00 PM	**Crash Reference:**	**2017140197344**

Highest Injury Severity:	Serious	**Road Number:**	A628	**Number of Casualties:**	1
Highway Authority:	Barnsley			**Number of Vehicles:**	2
Local Authority:	Barnsley Metropolitan Borough			**OS Grid Reference:**	424322 403637
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Unknown				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

powered by INSIGHTwarehouse

2017 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Van or goods vehicle 3.5 tonnes mgw and under	-1	Male	55-64	Vehicle is reversing	Unknown	Journey as part of work	None	None
2	Motorcycle over 500cc	-1	Male	65-74	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Male	65-74	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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APPENDIX E

Indicative Site Layout Plan prepared by Michael A Clynch



Michael A. Clynch
Architect, Town Planner, Property Consultant
DIP.ARCH. DIP. T.P. A.R.I.B.A. F.R.S.A.

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Sheffield S36 7GF

Tel: 01226 766308

HOUSING - TALBOT ST. PENISTONE . LAYOUT 1:500 SCALE. DRG A1. 3/2018
MINOR ACCESS CHANGES 11/2018 AMENDED

APPENDIX F

TRICS Data

Calculation Reference: AUDIT-109307-181009-1058

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	1 days
	KC	KENT	1 days
	WS	WEST SUSSEX	2 days
03	SOUTH WEST		
	DC	DORSET	1 days
	DV	DEVON	1 days
	SM	SOMERSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	1 days
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	3 days
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
	GM	GREATER MANCHESTER	1 days
09	NORTH		
	DH	DURHAM	1 days
10	WALES		
	PS	POWYS	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days
	HI	HIGHLAND	1 days
	PK	PERTH & KINROSS	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Number of dwellings
Actual Range:	21 to 57 (units:)
Range Selected by User:	20 to 60 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 19/10/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	7 days
Tuesday	3 days
Wednesday	7 days
Thursday	7 days
Friday	2 days

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

Selected survey types:

Manual count	26 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	16
Edge of Town	7
Neighbourhood Centre (PPS6 Local Centre)	3

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

Selected Location Sub Categories:

Residential Zone	24
Village	2

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

Secondary Filtering selection:

Use Class:

C1	1 days
C3	25 days

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

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	4 days
5,001 to 10,000	6 days
10,001 to 15,000	3 days
15,001 to 20,000	5 days
20,001 to 25,000	3 days
25,001 to 50,000	4 days

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

Secondary Filtering selection (Cont.):

Population within 5 miles:

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

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	6 days
1.1 to 1.5	19 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	3 days
No	23 days

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

PTAL Rating:

No PTAL Present	26 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CA-03-A-05 DETACHED HOUSES CAMBRIDGESHIRE
EASTFIELD ROAD
PETERBOROUGH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 28
Survey date: MONDAY *17/10/16* *Survey Type: MANUAL*

2 CH-03-A-09 TERRACED HOUSES CHESHIRE
GREYSTOKE ROAD
MACCLESFIELD
HURDSFIELD
Edge of Town
Residential Zone
Total Number of dwellings: 24
Survey date: MONDAY *24/11/14* *Survey Type: MANUAL*

3 DC-03-A-08 BUNGALOWS DORSET
HURSTDENE ROAD
BOURNEMOUTH
CASTLE LANE WEST
Edge of Town
Residential Zone
Total Number of dwellings: 28
Survey date: MONDAY *24/03/14* *Survey Type: MANUAL*

4 DH-03-A-01 SEMI DETACHED DURHAM
GREENFIELDS ROAD
BISHOP AUCKLAND

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 50
Survey date: TUESDAY *28/03/17* *Survey Type: MANUAL*

5 DV-03-A-01 TERRACED HOUSES DEVON
BRONSHILL ROAD
TORQUAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 37
Survey date: WEDNESDAY *30/09/15* *Survey Type: MANUAL*

6 ES-03-A-02 PRIVATE HOUSING EAST SUSSEX
SOUTH COAST ROAD
PEACEHAVEN

Edge of Town
Residential Zone
Total Number of dwellings: 37
Survey date: FRIDAY *18/11/11* *Survey Type: MANUAL*

7 FA-03-A-01 SEMI-DETACHED/TERRACED FALKIRK
MANDELA AVENUE
FALKIRK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 37
Survey date: THURSDAY *30/05/13* *Survey Type: MANUAL*

8 GM-03-A-10 DETACHED/SEMI GREATER MANCHESTER
BUTT HILL DRIVE
MANCHESTER
PRESTWICH
Edge of Town
Residential Zone
Total Number of dwellings: 29
Survey date: WEDNESDAY *12/10/11* *Survey Type: MANUAL*

9 HC-03-A-17 HOUSES & FLATS HAMPSHIRE
CANADA WAY
LIPHOOK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 36
Survey date: THURSDAY *12/11/15* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 HI-03-A-14 SEMI-DETACHED & TERRACED HIGHLAND
KING BRUDE ROAD
INVERNESS
SCORGUIE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 40
Survey date: WEDNESDAY 23/03/16 Survey Type: MANUAL

11 KC-03-A-03 MIXED HOUSES & FLATS KENT
HYTHE ROAD
ASHFORD
WILLESBOROUGH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 51
Survey date: THURSDAY 14/07/16 Survey Type: MANUAL

12 LN-03-A-03 SEMI DETACHED LINCOLNSHIRE
ROOKERY LANE
LINCOLN
BOULTHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 22
Survey date: TUESDAY 18/09/12 Survey Type: MANUAL

13 NF-03-A-01 SEMI DET. & BUNGALOWS NORFOLK
YARMOUTH ROAD
CAISTER-ON-SEA

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 27
Survey date: TUESDAY 16/10/12 Survey Type: MANUAL

14 NY-03-A-08 TERRACED HOUSES NORTH YORKSHIRE
NICHOLAS STREET
YORK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 21
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

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

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

16 NY-03-A-11 PRIVATE HOUSING NORTH YORKSHIRE
HORSEFAIR
BOROUGHBRIDGE

Edge of Town
Residential Zone
Total Number of dwellings: 23
Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

17 PK-03-A-01 DETAC. & BUNGALOWS PERTH & KINROSS
TULLYLUMB TERRACE
PERTH
GORNHILL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 36
Survey date: WEDNESDAY 11/05/11 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

18 PS-03-A-02 DETACHED/SEMI-DETACHED POWYS
GUNROG ROAD
WELSHPOOL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 28
Survey date: MONDAY *11/05/15* *Survey Type: MANUAL*

19 SF-03-A-06 DETACHED & SEMI-DETACHED SUFFOLK
BURY ROAD
KENTFORD

Neighbourhood Centre (PPS6 Local Centre)
Village
Total Number of dwellings: 38
Survey date: FRIDAY *22/09/17* *Survey Type: MANUAL*

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

21 SM-03-A-01 DETACHED & SEMI SOMERSET
WEMBDON ROAD
BRIDGWATER
NORTHFIELD
Edge of Town
Residential Zone
Total Number of dwellings: 33
Survey date: THURSDAY *24/09/15* *Survey Type: MANUAL*

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

23 WL-03-A-02 SEMI DETACHED WILTSHIRE
HEADLANDS GROVE
SWINDON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 27
Survey date: THURSDAY *22/09/16* *Survey Type: MANUAL*

24 WM-03-A-04 TERRACED HOUSES WEST MIDLANDS
OSBORNE ROAD
COVENTRY
EARLSDON
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Number of dwellings: 39
Survey date: MONDAY *21/11/16* *Survey Type: MANUAL*

25 WS-03-A-05 TERRACED & FLATS WEST SUSSEX
UPPER SHOREHAM ROAD
SHOREHAM BY SEA

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 48
Survey date: WEDNESDAY *18/04/12* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

26	WS-03-A-07	BUNGALOWS	WEST SUSSEX
	EMMS LANE		
	NEAR HORSHAM		
	BROOKS GREEN		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total Number of dwellings:	57	
	Survey date: THURSDAY	*19/10/17*	*Survey Type: MANUAL*

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	26	37	0.078	26	37	0.268	26	37	0.346
08:00 - 09:00	26	37	0.155	26	37	0.368	26	37	0.523
09:00 - 10:00	26	37	0.136	26	37	0.167	26	37	0.303
10:00 - 11:00	26	37	0.129	26	37	0.136	26	37	0.265
11:00 - 12:00	26	37	0.154	26	37	0.154	26	37	0.308
12:00 - 13:00	26	37	0.157	26	37	0.153	26	37	0.310
13:00 - 14:00	26	37	0.156	26	37	0.179	26	37	0.335
14:00 - 15:00	26	37	0.155	26	37	0.197	26	37	0.352
15:00 - 16:00	26	37	0.214	26	37	0.152	26	37	0.366
16:00 - 17:00	26	37	0.300	26	37	0.165	26	37	0.465
17:00 - 18:00	26	37	0.324	26	37	0.168	26	37	0.492
18:00 - 19:00	26	37	0.212	26	37	0.121	26	37	0.333
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.170			2.228			4.398

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	21 - 57 (units:)
Survey date date range:	01/01/10 - 19/10/17
Number of weekdays (Monday-Friday):	26
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	26	37	0.007	26	37	0.027	26	37	0.034
08:00 - 09:00	26	37	0.001	26	37	0.028	26	37	0.029
09:00 - 10:00	26	37	0.002	26	37	0.012	26	37	0.014
10:00 - 11:00	26	37	0.007	26	37	0.007	26	37	0.014
11:00 - 12:00	26	37	0.002	26	37	0.005	26	37	0.007
12:00 - 13:00	26	37	0.007	26	37	0.008	26	37	0.015
13:00 - 14:00	26	37	0.004	26	37	0.004	26	37	0.008
14:00 - 15:00	26	37	0.006	26	37	0.005	26	37	0.011
15:00 - 16:00	26	37	0.025	26	37	0.002	26	37	0.027
16:00 - 17:00	26	37	0.022	26	37	0.005	26	37	0.027
17:00 - 18:00	26	37	0.025	26	37	0.007	26	37	0.032
18:00 - 19:00	26	37	0.012	26	37	0.006	26	37	0.018
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.120			0.116			0.236

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	26	37	0.091	26	37	0.353	26	37	0.444
08:00 - 09:00	26	37	0.173	26	37	0.530	26	37	0.703
09:00 - 10:00	26	37	0.159	26	37	0.212	26	37	0.371
10:00 - 11:00	26	37	0.155	26	37	0.195	26	37	0.350
11:00 - 12:00	26	37	0.190	26	37	0.187	26	37	0.377
12:00 - 13:00	26	37	0.200	26	37	0.199	26	37	0.399
13:00 - 14:00	26	37	0.194	26	37	0.233	26	37	0.427
14:00 - 15:00	26	37	0.196	26	37	0.241	26	37	0.437
15:00 - 16:00	26	37	0.339	26	37	0.198	26	37	0.537
16:00 - 17:00	26	37	0.425	26	37	0.222	26	37	0.647
17:00 - 18:00	26	37	0.453	26	37	0.219	26	37	0.672
18:00 - 19:00	26	37	0.283	26	37	0.153	26	37	0.436
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.858			2.942			5.800

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	26	37	0.022	26	37	0.067	26	37	0.089
08:00 - 09:00	26	37	0.058	26	37	0.197	26	37	0.255
09:00 - 10:00	26	37	0.058	26	37	0.064	26	37	0.122
10:00 - 11:00	26	37	0.050	26	37	0.071	26	37	0.121
11:00 - 12:00	26	37	0.054	26	37	0.053	26	37	0.107
12:00 - 13:00	26	37	0.055	26	37	0.050	26	37	0.105
13:00 - 14:00	26	37	0.064	26	37	0.063	26	37	0.127
14:00 - 15:00	26	37	0.050	26	37	0.059	26	37	0.109
15:00 - 16:00	26	37	0.157	26	37	0.100	26	37	0.257
16:00 - 17:00	26	37	0.132	26	37	0.076	26	37	0.208
17:00 - 18:00	26	37	0.109	26	37	0.069	26	37	0.178
18:00 - 19:00	26	37	0.078	26	37	0.039	26	37	0.117
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.887			0.908			1.795

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	26	37	0.001	26	37	0.025	26	37	0.026
08:00 - 09:00	26	37	0.002	26	37	0.031	26	37	0.033
09:00 - 10:00	26	37	0.003	26	37	0.012	26	37	0.015
10:00 - 11:00	26	37	0.005	26	37	0.012	26	37	0.017
11:00 - 12:00	26	37	0.009	26	37	0.006	26	37	0.015
12:00 - 13:00	26	37	0.012	26	37	0.015	26	37	0.027
13:00 - 14:00	26	37	0.006	26	37	0.001	26	37	0.007
14:00 - 15:00	26	37	0.015	26	37	0.006	26	37	0.021
15:00 - 16:00	26	37	0.019	26	37	0.007	26	37	0.026
16:00 - 17:00	26	37	0.022	26	37	0.009	26	37	0.031
17:00 - 18:00	26	37	0.018	26	37	0.005	26	37	0.023
18:00 - 19:00	26	37	0.022	26	37	0.001	26	37	0.023
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.134			0.130			0.264

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	26	37	0.121	26	37	0.472	26	37	0.593
08:00 - 09:00	26	37	0.233	26	37	0.787	26	37	1.020
09:00 - 10:00	26	37	0.222	26	37	0.299	26	37	0.521
10:00 - 11:00	26	37	0.218	26	37	0.285	26	37	0.503
11:00 - 12:00	26	37	0.256	26	37	0.252	26	37	0.508
12:00 - 13:00	26	37	0.274	26	37	0.272	26	37	0.546
13:00 - 14:00	26	37	0.268	26	37	0.301	26	37	0.569
14:00 - 15:00	26	37	0.267	26	37	0.311	26	37	0.578
15:00 - 16:00	26	37	0.540	26	37	0.308	26	37	0.848
16:00 - 17:00	26	37	0.600	26	37	0.313	26	37	0.913
17:00 - 18:00	26	37	0.605	26	37	0.300	26	37	0.905
18:00 - 19:00	26	37	0.395	26	37	0.199	26	37	0.594
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.999			4.099			8.098

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

APPENDIX G

Junctions Results – Talbot Road/Thurlstone Road

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: Talbot Road-Thulstone Road.j9
Path: J:\9000\9800\9801_TalbotRoadPenistone\engineering\Traffic_Programs\Junctions
Report generation date: 15/11/2018 12:50:57

»2018 Base, AM
»2018 Base, PM
»2019 Base, AM
»2019 Base, PM
»2024 Base, AM
»2024 Base, PM
»2019 Base + Dev, AM
»2019 Base + Dev, PM
»2024 Base + Dev, AM
»2024 Base + Dev, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2018 Base							
Stream B-AC	0.1	9.03	0.05	A	0.0	7.47	0.02	A
Stream C-AB	0.0	4.32	0.01	A	0.0	4.72	0.01	A
	2019 Base							
Stream B-AC	0.1	9.10	0.05	A	0.0	7.52	0.02	A
Stream C-AB	0.0	4.30	0.01	A	0.0	4.71	0.01	A
	2024 Base							
Stream B-AC	0.1	9.53	0.06	A	0.0	7.78	0.03	A
Stream C-AB	0.0	4.21	0.01	A	0.0	4.63	0.02	A
	2019 Base + Dev							
Stream B-AC	0.1	9.54	0.09	A	0.1	14.86	0.09	B
Stream C-AB	0.0	4.35	0.03	A	0.1	3.86	0.07	A
	2024 Base + Dev							
Stream B-AC	0.1	10.01	0.10	B	0.0	7.83	0.04	A
Stream C-AB	0.0	4.26	0.03	A	0.0	4.68	0.03	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	(untitled)
Location	
Site number	
Date	14/11/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SANDERSONASSOC\carly.hoyle
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2018 Base	PM	ONE HOUR	16:45	18:15	15	✓		
D3	2019 Base	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.014738
D4	2019 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.014336
D5	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.098002
D6	2024 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.097173
D7	Development	AM	ONE HOUR	07:45	09:15	15			
D8	Development	PM	ONE HOUR	16:45	18:15	15			
D9	2019 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D3+D7
D10	2019 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D6
D11	2024 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D7
D12	2024 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8

Analysis Set Details

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

2018 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Thurlstone Road (E)		Major
B	Talbot Road		Minor
C	Thurlstone Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.53			90.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.88	84	75

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	590	0.100	0.254	0.160	0.362
1	B-C	730	0.104	0.264	-	-
1	C-B	626	0.226	0.226	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	307	100.000
B		ONE HOUR	✓	20	100.000
C		ONE HOUR	✓	545	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	0	307
	B	17	0	3
	C	541	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.05	9.03	0.1	A	18	28
C-AB	0.01	4.32	0.0	A	9	13
C-A					492	737
A-B					0	0
A-C					282	423

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	480	0.031	15	0.0	0.0	7.732	A
C-AB	6	1	842	0.007	6	0.0	0.0	4.307	A
C-A	404	101			404				
A-B	0	0			0				
A-C	231	58			231				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	18	4	455	0.039	18	0.0	0.0	8.229	A
C-AB	8	2	886	0.009	8	0.0	0.0	4.091	A
C-A	482	120			482				
A-B	0	0			0				
A-C	276	69			276				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	22	6	421	0.052	22	0.0	0.1	9.030	A
C-AB	12	3	950	0.012	12	0.0	0.0	3.828	A
C-A	588	147			588				
A-B	0	0			0				
A-C	338	85			338				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	22	6	421	0.052	22	0.1	0.1	9.032	A
C-AB	12	3	950	0.012	12	0.0	0.0	3.835	A
C-A	588	147			588				
A-B	0	0			0				
A-C	338	85			338				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	18	4	455	0.039	18	0.1	0.0	8.231	A
C-AB	8	2	886	0.009	8	0.0	0.0	4.107	A
C-A	482	120			482				
A-B	0	0			0				
A-C	276	69			276				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	480	0.031	15	0.0	0.0	7.738	A
C-AB	6	1	842	0.007	6	0.0	0.0	4.317	A
C-A	404	101			404				
A-B	0	0			0				
A-C	231	58			231				

2018 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Base	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	429	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	430	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	7	422
	B	4	0	6
	C	425	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.02	7.47	0.0	A	9	14
C-AB	0.01	4.72	0.0	A	9	14
C-A					385	578
A-B					6	10
A-C					387	581

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	549	0.014	7	0.0	0.0	6.643	A
C-AB	6	2	770	0.008	6	0.0	0.0	4.717	A
C-A	317	79			317				
A-B	5	1			5				
A-C	318	79			318				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	9	2	526	0.017	9	0.0	0.0	6.964	A
C-AB	9	2	801	0.011	9	0.0	0.0	4.542	A
C-A	378	94			378				
A-B	6	2			6				
A-C	379	95			379				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	493	0.022	11	0.0	0.0	7.472	A
C-AB	12	3	845	0.015	12	0.0	0.0	4.318	A
C-A	461	115			461				
A-B	8	2			8				
A-C	465	116			465				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	493	0.022	11	0.0	0.0	7.472	A
C-AB	12	3	845	0.015	12	0.0	0.0	4.323	A
C-A	461	115			461				
A-B	8	2			8				
A-C	465	116			465				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	9	2	526	0.017	9	0.0	0.0	6.968	A
C-AB	9	2	801	0.011	9	0.0	0.0	4.550	A
C-A	378	94			378				
A-B	6	2			6				
A-C	379	95			379				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	549	0.014	8	0.0	0.0	6.643	A
C-AB	6	2	770	0.008	6	0.0	0.0	4.721	A
C-A	317	79			317				
A-B	5	1			5				
A-C	318	79			318				

2019 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2019 Base	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.014738

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	312	100.000
B		ONE HOUR	✓	20	100.000
C		ONE HOUR	✓	553	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	0	312
	B	17	0	3
	C	549	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.05	9.10	0.1	A	19	28
C-AB	0.01	4.30	0.0	A	9	13
C-A					499	748
A-B					0	0
A-C					286	429

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	479	0.032	15	0.0	0.0	7.767	A
C-AB	6	1	845	0.007	6	0.0	0.0	4.290	A
C-A	410	103			410				
A-B	0	0			0				
A-C	235	59			235				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	18	5	453	0.040	18	0.0	0.0	8.277	A
C-AB	8	2	891	0.009	8	0.0	0.0	4.073	A
C-A	489	122			489				
A-B	0	0			0				
A-C	280	70			280				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	22	6	418	0.053	22	0.0	0.1	9.101	A
C-AB	12	3	955	0.013	12	0.0	0.0	3.809	A
C-A	597	149			597				
A-B	0	0			0				
A-C	343	86			343				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	22	6	418	0.053	22	0.1	0.1	9.103	A
C-AB	12	3	955	0.013	12	0.0	0.0	3.818	A
C-A	597	149			597				
A-B	0	0			0				
A-C	343	86			343				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	18	5	453	0.040	18	0.1	0.0	8.280	A
C-AB	8	2	891	0.009	8	0.0	0.0	4.089	A
C-A	489	122			489				
A-B	0	0			0				
A-C	280	70			280				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	479	0.032	15	0.0	0.0	7.772	A
C-AB	6	1	845	0.007	6	0.0	0.0	4.299	A
C-A	410	103			410				
A-B	0	0			0				
A-C	235	59			235				

2019 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2019 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.014336

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	435	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	436	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	7	428
	B	4	0	6
	C	431	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.02	7.52	0.0	A	9	14
C-AB	0.01	4.71	0.0	A	9	14
C-A					391	586
A-B					7	10
A-C					393	589

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	548	0.014	8	0.0	0.0	6.665	A
C-AB	7	2	772	0.009	7	0.0	0.0	4.704	A
C-A	322	80			322				
A-B	5	1			5				
A-C	322	81			322				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	9	2	524	0.017	9	0.0	0.0	6.994	A
C-AB	9	2	803	0.011	9	0.0	0.0	4.527	A
C-A	383	96			383				
A-B	6	2			6				
A-C	385	96			385				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	490	0.023	11	0.0	0.0	7.516	A
C-AB	13	3	849	0.015	13	0.0	0.0	4.301	A
C-A	468	117			468				
A-B	8	2			8				
A-C	471	118			471				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	11	3	490	0.023	11	0.0	0.0	7.516	A
C-AB	13	3	849	0.015	13	0.0	0.0	4.306	A
C-A	468	117			468				
A-B	8	2			8				
A-C	471	118			471				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	9	2	524	0.017	9	0.0	0.0	6.995	A
C-AB	9	2	803	0.011	9	0.0	0.0	4.536	A
C-A	383	96			383				
A-B	6	2			6				
A-C	385	96			385				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	548	0.014	8	0.0	0.0	6.668	A
C-AB	7	2	772	0.009	7	0.0	0.0	4.710	A
C-A	322	80			322				
A-B	5	1			5				
A-C	322	81			322				

2024 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2024 Base	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.098002

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	337	100.000
B		ONE HOUR	✓	22	100.000
C		ONE HOUR	✓	598	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	0	337
	B	19	0	3
	C	594	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.06	9.53	0.1	A	20	30
C-AB	0.01	4.21	0.0	A	10	15
C-A					539	808
A-B					0	0
A-C					309	464

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	468	0.035	16	0.0	0.0	7.972	A
C-AB	7	2	864	0.008	7	0.0	0.0	4.198	A
C-A	444	111			444				
A-B	0	0			0				
A-C	254	63			254				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	20	5	440	0.045	20	0.0	0.0	8.558	A
C-AB	10	2	914	0.010	10	0.0	0.0	3.973	A
C-A	528	132			528				
A-B	0	0			0				
A-C	303	76			303				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	402	0.060	24	0.0	0.1	9.529	A
C-AB	14	4	985	0.015	14	0.0	0.0	3.701	A
C-A	644	161			644				
A-B	0	0			0				
A-C	371	93			371				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	402	0.060	24	0.1	0.1	9.531	A
C-AB	14	4	985	0.015	14	0.0	0.0	3.707	A
C-A	644	161			644				
A-B	0	0			0				
A-C	371	93			371				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	20	5	440	0.045	20	0.1	0.0	8.565	A
C-AB	10	2	914	0.010	10	0.0	0.0	3.990	A
C-A	528	132			528				
A-B	0	0			0				
A-C	303	76			303				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	17	4	468	0.035	17	0.0	0.0	7.978	A
C-AB	7	2	864	0.008	7	0.0	0.0	4.207	A
C-A	444	111			444				
A-B	0	0			0				
A-C	254	63			254				

2024 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2024 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.097173

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	471	100.000
B		ONE HOUR	✓	11	100.000
C		ONE HOUR	✓	472	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	8	463
	B	4	0	7
	C	466	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.03	7.78	0.0	A	10	15
C-AB	0.02	4.63	0.0	A	11	16
C-A					422	633
A-B					7	11
A-C					425	637

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	538	0.015	8	0.0	0.0	6.799	A
C-AB	7	2	785	0.010	7	0.0	0.0	4.629	A
C-A	348	87			348				
A-B	6	1			6				
A-C	349	87			349				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	10	2	512	0.019	10	0.0	0.0	7.174	A
C-AB	10	3	820	0.012	10	0.0	0.0	4.443	A
C-A	414	104			414				
A-B	7	2			7				
A-C	416	104			416				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	12	3	475	0.025	12	0.0	0.0	7.779	A
C-AB	15	4	870	0.017	15	0.0	0.0	4.206	A
C-A	505	126			505				
A-B	8	2			8				
A-C	510	127			510				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	12	3	475	0.025	12	0.0	0.0	7.779	A
C-AB	15	4	870	0.017	15	0.0	0.0	4.210	A
C-A	505	126			505				
A-B	8	2			8				
A-C	510	127			510				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	10	2	512	0.019	10	0.0	0.0	7.175	A
C-AB	10	3	820	0.012	10	0.0	0.0	4.452	A
C-A	414	103			414				
A-B	7	2			7				
A-C	416	104			416				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	538	0.015	8	0.0	0.0	6.803	A
C-AB	7	2	785	0.010	8	0.0	0.0	4.634	A
C-A	348	87			348				
A-B	6	1			6				
A-C	349	87			349				

2019 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2019 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D3+D7

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	312	100.000
B		ONE HOUR	✓	34	100.000
C		ONE HOUR	✓	559	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	0	312
	B	29	0	5
	C	549	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	6
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.09	9.54	0.1	A	31	47
C-AB	0.03	4.35	0.0	A	22	33
C-A					491	737
A-B					0	0
A-C					286	429

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	26	6	477	0.054	26	0.0	0.1	7.979	A
C-AB	15	4	845	0.018	15	0.0	0.0	4.336	A
C-A	406	102			406				
A-B	0	0			0				
A-C	235	59			235				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	31	8	451	0.068	31	0.1	0.1	8.570	A
C-AB	20	5	891	0.023	20	0.0	0.0	4.130	A
C-A	482	121			482				
A-B	0	0			0				
A-C	280	70			280				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	38	9	415	0.091	38	0.1	0.1	9.539	A
C-AB	30	8	955	0.032	30	0.0	0.0	3.884	A
C-A	585	146			585				
A-B	0	0			0				
A-C	343	86			343				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	38	9	415	0.091	38	0.1	0.1	9.543	A
C-AB	30	8	955	0.032	30	0.0	0.0	3.892	A
C-A	585	146			585				
A-B	0	0			0				
A-C	343	86			343				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	31	8	451	0.068	31	0.1	0.1	8.578	A
C-AB	20	5	891	0.023	20	0.0	0.0	4.148	A
C-A	482	121			482				
A-B	0	0			0				
A-C	280	70			280				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	26	6	477	0.054	26	0.1	0.1	7.989	A
C-AB	15	4	845	0.018	15	0.0	0.0	4.347	A
C-A	406	101			406				
A-B	0	0			0				
A-C	235	59			235				

2019 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D10	2019 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D6

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	906	100.000
B		ONE HOUR	✓	21	100.000
C		ONE HOUR	✓	908	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	15	891
	B	8	0	13
	C	897	11	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.09	14.86	0.1	B	19	29
C-AB	0.07	3.86	0.1	A	49	74
C-A					784	1175
A-B					14	20
A-C					818	1226

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	16	4	409	0.039	16	0.0	0.0	9.151	A
C-AB	27	7	962	0.028	27	0.0	0.0	3.850	A
C-A	657	164			657				
A-B	11	3			11				
A-C	671	168			671				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	19	5	352	0.054	19	0.0	0.1	10.797	B
C-AB	42	11	1041	0.041	42	0.0	0.1	3.600	A
C-A	774	193			774				
A-B	13	3			13				
A-C	801	200			801				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	23	6	266	0.088	23	0.1	0.1	14.838	B
C-AB	79	20	1159	0.068	79	0.1	0.1	3.331	A
C-A	920	230			920				
A-B	16	4			16				
A-C	981	245			981				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	23	6	266	0.088	23	0.1	0.1	14.859	B
C-AB	79	20	1159	0.068	79	0.1	0.1	3.337	A
C-A	920	230			920				
A-B	16	4			16				
A-C	981	245			981				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	19	5	352	0.054	19	0.1	0.1	10.813	B
C-AB	42	11	1041	0.041	43	0.1	0.1	3.612	A
C-A	774	193			774				
A-B	13	3			13				
A-C	801	200			801				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	16	4	409	0.039	16	0.1	0.0	9.162	A
C-AB	27	7	962	0.028	27	0.1	0.0	3.856	A
C-A	657	164			657				
A-B	11	3			11				
A-C	671	168			671				

2024 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2024 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D7

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	337	100.000
B		ONE HOUR	✓	36	100.000
C		ONE HOUR	✓	604	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	0	337
	B	31	0	5
	C	594	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	10.01	0.1	B	33	49
C-AB	0.03	4.26	0.0	A	24	36
C-A					530	795
A-B					0	0
A-C					309	464

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	27	7	466	0.058	27	0.0	0.1	8.196	A
C-AB	16	4	864	0.019	16	0.0	0.0	4.245	A
C-A	439	110			439				
A-B	0	0			0				
A-C	254	63			254				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	32	8	438	0.074	32	0.1	0.1	8.873	A
C-AB	23	6	914	0.025	22	0.0	0.0	4.031	A
C-A	521	130			521				
A-B	0	0			0				
A-C	303	76			303				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	40	10	399	0.099	39	0.1	0.1	10.007	B
C-AB	34	9	985	0.035	34	0.0	0.0	3.778	A
C-A	631	158			631				
A-B	0	0			0				
A-C	371	93			371				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	40	10	399	0.099	40	0.1	0.1	10.014	B
C-AB	34	9	985	0.035	34	0.0	0.0	3.784	A
C-A	631	158			631				
A-B	0	0			0				
A-C	371	93			371				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	32	8	438	0.074	32	0.1	0.1	8.880	A
C-AB	23	6	914	0.025	23	0.0	0.0	4.050	A
C-A	521	130			521				
A-B	0	0			0				
A-C	303	76			303				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	27	7	466	0.058	27	0.1	0.1	8.209	A
C-AB	16	4	864	0.019	16	0.0	0.0	4.256	A
C-A	439	110			439				
A-B	0	0			0				
A-C	254	63			254				

2024 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2024 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	478	100.000
B		ONE HOUR	✓	17	100.000
C		ONE HOUR	✓	477	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	15	463
	B	6	0	11
	C	466	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.04	7.83	0.0	A	16	23
C-AB	0.03	4.68	0.0	A	21	31
C-A					417	625
A-B					13	20
A-C					425	637

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	541	0.024	13	0.0	0.0	6.813	A
C-AB	14	4	784	0.018	14	0.0	0.0	4.676	A
C-A	345	86			345				
A-B	11	3			11				
A-C	349	87			349				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	515	0.030	15	0.0	0.0	7.202	A
C-AB	19	5	819	0.024	19	0.0	0.0	4.500	A
C-A	409	102			409				
A-B	13	3			13				
A-C	416	104			416				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	19	5	478	0.039	19	0.0	0.0	7.834	A
C-AB	28	7	869	0.033	28	0.0	0.0	4.280	A
C-A	497	124			497				
A-B	16	4			16				
A-C	510	127			510				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	19	5	478	0.039	19	0.0	0.0	7.834	A
C-AB	28	7	869	0.033	28	0.0	0.0	4.286	A
C-A	497	124			497				
A-B	16	4			16				
A-C	510	127			510				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	15	4	515	0.030	15	0.0	0.0	7.206	A
C-AB	19	5	819	0.024	19	0.0	0.0	4.510	A
C-A	409	102			409				
A-B	13	3			13				
A-C	416	104			416				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	13	3	541	0.024	13	0.0	0.0	6.816	A
C-AB	14	4	784	0.018	14	0.0	0.0	4.683	A
C-A	345	86			345				
A-B	11	3			11				
A-C	349	87			349				

APPENDIX H

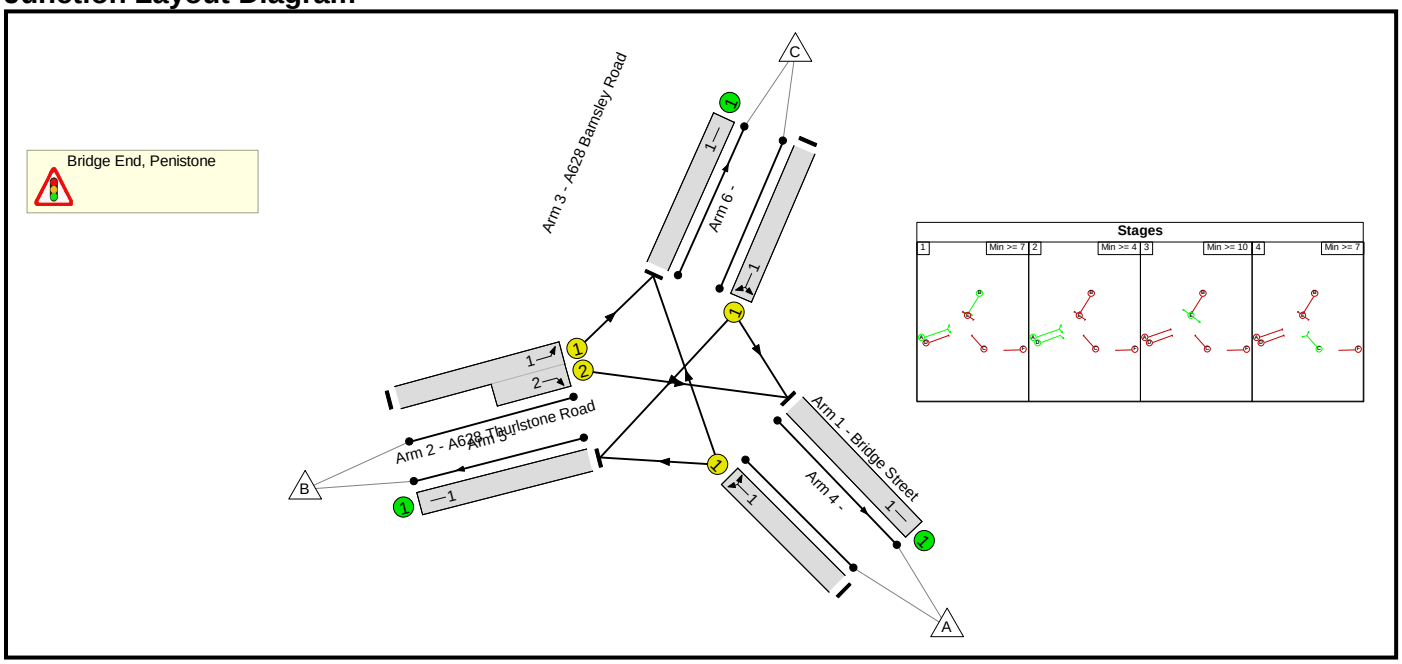
LinSig Results – Bridge End Junction

9801 Talbot Road, Penistone

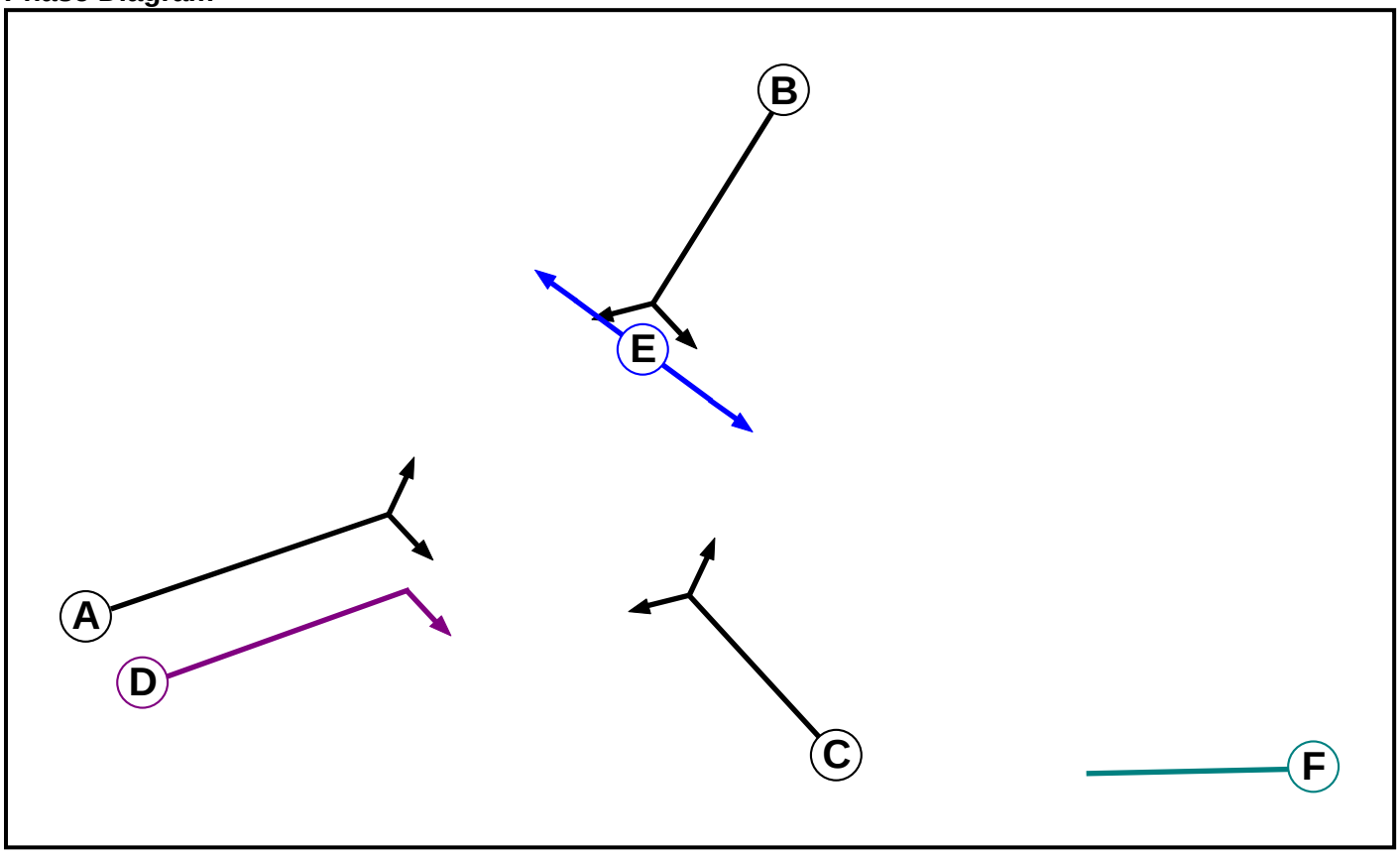
User and Project Details

Project:	**Talbot Road, Penistone**
Title:	
Location:	
Site Ref(s):	9801
Additional detail:	
File name:	Bridge End Junction, Penistone - CH.lsg3x
Author:	Sanderson Associates
Company:	
Address:	

Junction Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Ind. Arrow	A	4	4
E	Pedestrian		10	10
F	Dummy		3	3

9801 Talbot Road, Penistone

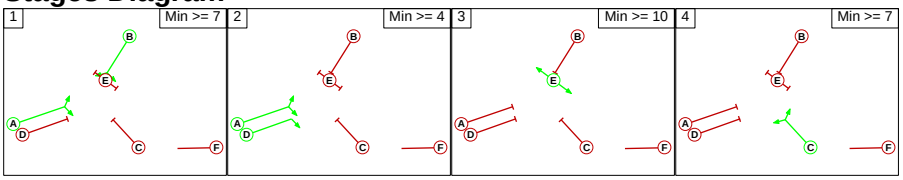
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F
A		-	6	-	6	3
B	-		6	6	5	3
C	7	7		6	8	3
D	-	5	5		6	3
E	8	8	8	8		3
F	2	2	2	2	2	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	A D
3	E
4	C

Stages Diagram



Phase Delays

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

Prohibited Stage Changes

From Stage \ To Stage	1	2	3	4
1		6	6	6
2	5		6	6
3	8	8		8
4	7	X	8	

Lane Input Data

Junction: Bridge End, Penistone												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Bridge Street)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Left	27.00
											Arm 6 Right	Inf
2/1 (A628 Thurlstone Road)	U	A	2	3	60.0	Geom	-	2.80	0.00	Y	Arm 6 Left	Inf
2/2 (A628 Thurlstone Road)	U	A D	2	3	5.0	Geom	-	2.90	0.00	Y	Arm 4 Right	20.00
3/1 (A628 Barnsley Road)	U	B	2	3	60.0	Geom	-	3.90	0.00	Y	Arm 4 Left	38.00
											Arm 5 Right	Inf
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 AM Base '	07:30	08:30	01:00	
2: '2018 PM Base '	16:45	17:45	01:00	
3: '2019 AM Base '	07:30	08:30	01:00	F1*1.014738
4: '2019 PM Base '	16:45	17:45	01:00	F2*1.014336
5: '2024 AM Base '	07:30	08:30	01:00	F1*1.098002
6: '2024 PM Base '	16:45	17:45	01:00	F2*1.097173
7: 'AM Development Flows '	07:30	08:30	01:00	
8: 'PM Development Flows '	16:45	17:45	01:00	
9: '2018 AM Base + Dev'	07:30	08:30	01:00	F1 + F7
10: '2018 PM Base + Dev'	16:45	17:45	01:00	F2 + F8
11: '2019 AM Base + Dev '	07:30	08:30	01:00	F3+F7
12: '2019 PM Base + Dev '	16:45	17:45	01:00	F4+F8
13: '2024 AM Base + Dev '	07:30	08:30	01:00	F5+F7
14: '2024 PM Base + Dev '	16:45	17:45	01:00	F6+F8

Link Results

Scenario 1: '2018 AM Base ' (FG1: '2018 AM Base ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**102.7%**	**15.3**	**48.8**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**102.7%**	**15.3**	**48.8**	-
1/1	Bridge Street Left Right	U	C		1	26	-	606	590	102.7%	6.2	23.2	32.6
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	1	33	4	566	624+141	74.0 : 74.0%	3.6	5.0	12.2
3/1	A628 Barnsley Road Left Right	U	B		1	23	-	536	523	102.4%	5.5	20.6	28.8

C1 PRC for Signalled Lanes (%): -14.2 Total Delay for Signalled Lanes (pcuHr): 48.79 Cycle Time (s): 90
PRC Over All Lanes (%): -14.2 Total Delay Over All Lanes(pcuHr): 48.79

Scenario 2: '2018 PM Base ' (FG2: '2018 PM Base ', Plan 4: '1 in 4 peds')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**88.6%**	**10.4**	**17.7**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**88.6%**	**10.4**	**17.7**	-
1/1	Bridge Street Left Right	U	C		4	98	-	488	551	88.6%	4.2	7.7	15.7
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	4	192	16	431	732+399	38.1 : 38.1%	1.3	1.6	5.0
3/1	A628 Barnsley Road Left Right	U	B		4	152	-	748	848	88.2%	4.9	8.4	24.3

C1 PRC for Signalled Lanes (%): 1.6 Total Delay for Signalled Lanes (pcuHr): 17.72 Cycle Time (s): 360
PRC Over All Lanes (%): 1.6 Total Delay Over All Lanes(pcuHr): 17.72

Scenario 3: '2019 AM Base ' (FG3: '2019 AM Base ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**104.3%**	**16.3**	**55.9**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**104.3%**	**16.3**	**55.9**	-
1/1	Bridge Street Left Right	U	C		1	26	-	615	590	104.3%	6.7	26.9	36.3
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	1	33	4	575	624+141	75.2 : 75.2%	3.7	5.2	12.5
3/1	A628 Barnsley Road Left Right	U	B		1	23	-	544	523	103.9%	5.9	23.8	32.0

C1 PRC for Signalled Lanes (%): -15.9 Total Delay for Signalled Lanes (pcuHr): 55.89 Cycle Time (s): 90
PRC Over All Lanes (%): -15.9 Total Delay Over All Lanes(pcuHr): 55.89

Scenario 4: '2019 PM Base ' (FG4: '2019 PM Base ', Plan 4: '1 in 4 peds')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**89.8%**	**10.7**	**18.8**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**89.8%**	**10.7**	**18.8**	-
1/1	Bridge Street Left Right	U	C		4	98	-	495	551	89.8%	4.3	8.1	16.5
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	4	192	16	437	732+399	38.6 : 38.6%	1.3	1.7	5.2
3/1	A628 Barnsley Road Left Right	U	B		4	152	-	759	848	89.5%	5.1	9.0	25.4

C1 PRC for Signalled Lanes (%): 0.2 Total Delay for Signalled Lanes (pcuHr): 18.79 Cycle Time (s): 360
PRC Over All Lanes (%): 0.2 Total Delay Over All Lanes(pcuHr): 18.79

Scenario 5: '2024 AM Base ' (FG5: '2024 AM Base ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**112.9%**	**22.3**	**102.7**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**112.9%**	**22.3**	**102.7**	-
1/1	Bridge Street Left Right	U	C		1	26	-	666	590	112.9%	9.9	51.9	62.0
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	1	33	4	621	624+140	81.2 : 81.2%	4.1	6.2	14.6
3/1	A628 Barnsley Road Left Right	U	B		1	23	-	588	523	112.3%	8.2	44.6	52.6

C1 PRC for Signalled Lanes (%): -25.5 Total Delay for Signalled Lanes (pcuHr): 102.73 Cycle Time (s): 90
PRC Over All Lanes (%): -25.5 Total Delay Over All Lanes(pcuHr): 102.73

Scenario 6: '2024 PM Base ' (FG6: '2024 PM Base ', Plan 4: '1 in 4 peds')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**97.1%**	**12.1**	**29.8**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**97.1%**	**12.1**	**29.8**	-
1/1	Bridge Street Left Right	U	C		4	98	-	535	551	97.1%	4.8	13.0	22.6
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	4	192	16	473	732+399	41.8 : 41.8%	1.5	1.9	6.4
3/1	A628 Barnsley Road Left Right	U	B		4	152	-	821	848	96.8%	5.8	14.9	34.9

C1 PRC for Signalled Lanes (%): -7.9 Total Delay for Signalled Lanes (pcuHr): 29.78 Cycle Time (s): 360
PRC Over All Lanes (%): -7.9 Total Delay Over All Lanes(pcuHr): 29.78

Scenario 7: '2018 AM Base + Dev' (FG9: '2018 AM Base + Dev', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**102.9%**	**15.4**	**49.4**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**102.9%**	**15.4**	**49.4**	-
1/1	Bridge Street Left Right	U	C		1	26	-	607	590	102.9%	6.2	23.6	33.0
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	1	33	4	578	624+140	75.6 : 75.6%	3.7	5.3	12.8
3/1	A628 Barnsley Road Left Right	U	B		1	23	-	536	523	102.4%	5.5	20.6	28.8

C1 PRC for Signalled Lanes (%): -14.4 Total Delay for Signalled Lanes (pcuHr): 49.42 Cycle Time (s): 90
PRC Over All Lanes (%): -14.4 Total Delay Over All Lanes(pcuHr): 49.42

Scenario 8: '2018 PM Base + Dev ' (FG10: '2018 PM Base + Dev', Plan 4: '1 in 4 peds')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**89.3%**	**10.6**	**18.3**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**89.3%**	**10.6**	**18.3**	-
1/1	Bridge Street Left Right	U	C		4	98	-	492	551	89.3%	4.2	8.0	16.2
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	4	192	16	434	732+399	38.4 : 38.4%	1.3	1.6	5.1
3/1	A628 Barnsley Road Left Right	U	B		4	152	-	753	848	88.8%	5.0	8.7	24.6

C1 PRC for Signalled Lanes (%): 0.8 Total Delay for Signalled Lanes (pcuHr): 18.25 Cycle Time (s): 360
PRC Over All Lanes (%): 0.8 Total Delay Over All Lanes(pcuHr): 18.25

Scenario 9: '2019 AM Base + Dev ' (FG11: '2019 AM Base + Dev ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**104.4%**	**16.5**	**56.6**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**104.4%**	**16.5**	**56.6**	-
1/1	Bridge Street Left Right	U	C		1	26	-	616	590	104.4%	6.8	27.4	36.8
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	1	33	4	587	624+141	76.7 : 76.7%	3.8	5.4	13.0
3/1	A628 Barnsley Road Left Right	U	B		1	23	-	544	523	103.9%	5.9	23.8	32.0

C1 PRC for Signalled Lanes (%): -16.0 Total Delay for Signalled Lanes (pcuHr): 56.57 Cycle Time (s): 90
PRC Over All Lanes (%): -16.0 Total Delay Over All Lanes(pcuHr): 56.57

Scenario 10: '2019 PM Base + Dev ' (FG12: '2019 PM Base + Dev ', Plan 4: '1 in 4 peds')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**90.6%**	**10.8**	**19.4**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**90.6%**	**10.8**	**19.4**	-
1/1	Bridge Street Left Right	U	C		4	98	-	499	551	90.6%	4.3	8.5	16.9
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	4	192	16	440	733+398	38.9 : 38.9%	1.4	1.7	5.2
3/1	A628 Barnsley Road Left Right	U	B		4	152	-	764	848	90.1%	5.1	9.3	26.0

C1 PRC for Signalled Lanes (%): -0.7 Total Delay for Signalled Lanes (pcuHr): 19.41 Cycle Time (s): 360
PRC Over All Lanes (%): -0.7 Total Delay Over All Lanes(pcuHr): 19.41

Scenario 11: '2024 AM Base +Dev ' (FG13: '2024 AM Base + Dev ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**113.1%**	**22.4**	**103.6**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**113.1%**	**22.4**	**103.6**	-
1/1	Bridge Street Left Right	U	C		1	26	-	667	590	113.1%	9.9	52.5	62.5
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	1	33	4	633	625+140	82.8 : 82.8%	4.3	6.6	15.3
3/1	A628 Barnsley Road Left Right	U	B		1	23	-	588	523	112.3%	8.2	44.6	52.6

C1 PRC for Signalled Lanes (%): -25.7 PRC Over All Lanes (%): -25.7 Total Delay for Signalled Lanes (pcuHr): 103.60 Total Delay Over All Lanes(pcuHr): 103.60 Cycle Time (s): 90

Scenario 12: '2024 PM Base +Dev' (FG14: '2024 PM Base + Dev ', Plan 4: '1 in 4 peds')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	**97.8%**	**12.3**	**31.5**	-
Bridge End, Penistone	-	-	-		-	-	-	-	-	**97.8%**	**12.3**	**31.5**	-
1/1	Bridge Street Left Right	U	C		4	98	-	539	551	97.8%	4.9	13.8	23.6
2/1+2/2	A628 Thurlstone Road Right Left	U	A	D	4	192	16	476	732+399	42.1 : 42.1%	1.5	1.9	6.5
3/1	A628 Barnsley Road Left Right	U	B		4	152	-	826	848	97.4%	5.9	15.8	36.0

C1 PRC for Signalled Lanes (%): -8.7 PRC Over All Lanes (%): -8.7 Total Delay for Signalled Lanes (pcuHr): 31.49 Total Delay Over All Lanes(pcuHr): 31.49 Cycle Time (s): 360