TPS Transport Consultants Ltd
Stage 1 RSA Brief

Client	Avant Homes
Project	Thurnscoe Bridge Lane, Thurnscoe
TPS Reference	P2423
Date Prepared	27.06.25
Prepared By	JT

Copyright Statement

1. PROJECT SUMMARY

Unique Reference	P2423_20250627_Thurnscoe Bridge Lane, Thurnscoe_Stage 1 RSA
Prepared by	TPS Consultants
On behalf of	Avant

Scheme Title	Proposed access arrangement for residential development
Road Safety Audit	Stage 1

Prepared by	John Turner
Organisation	TPS Consultants
Date	27.06.25

I approve the RSA brief and instruct the RSA to take place on behalf of the Overseeing Organisation:	
Signed	
Name	Andrew Tunnacliffe
Organisation	Barnsley Metropolitan Borough Council
Date	

2. GENERAL DETAILS

Type of Scheme	Access arrangements for residential estate road from Thurnscoe Bridge Lane, Thurnscoe			
Select RSA Stage Highlight as appropriate >	1	2	3	4
Overseeing Organisation	BMBC			
Design Organisation	TPS Transport Consultants Ltd			
Police Contact Details	N/A at this stage			
RSA Team Membership (refer to RSA policy for team requirements – or speak to RSA team)	Haydn Vernals – Road Safety Audit Team Leader Sarah Vernals – Road safety Audit Team Member (CVs attached)			
Other Attendees	Nathan Copley - BMBC			
Terms of reference	RSA to GG119			

3. SCHEME DETAILS

Scheme Details	RSA to cover proposed access arrangement from Thurnscoe Bridge Lane, Barnsley.
Design Standards	Access designed in line with DMRB and through discussions with BMBC
Design Speed	30mph
Speed Limit	30mph
Traffic Data	No traffic data available
Pedestrian Desire Lines	In order to facilitate desire lines for pedestrians and cyclists, a refuge island 3m x 3m is provided on Thurnscoe Bridge Lane to provide for east/west movements to access the existing shared footway/cycleway
Collision Data	Collision data included in attached Transport Assessment
Previous RSA reports and audit responses	No previous RSA
List of drawing and supporting documents	RSA CVs Preliminary Access Arrangement Transport Assessment

Appendix A

Sevenairs CVs

Road Safety Audit CV — Sevenairs Consulting Ltd

Name: Haydn Vernals FCIHT FIHE CMILT MSoRSA

Profession: Traffic and Road Safety Engineering

Current Position: Director – Sevenairs Consulting Ltd

Specialisation: Traffic & Road Safety Engineering

Role on Audit: Team Leader

Professional Status

Sheffield Hallam University – Civil Engineering Construction and Highway Design

RoSPA 10 Day - Accident Investigation and Prevention

Road Safety Audit Certificate of Competency – Awarded Dec 2016

Employment

2017 to present	Sevenairs Consulting – Providing Road Safety related services to a variety of clients plus various longer-term roles with Kier (HE Area 7 Road Safety Team Leader), Sweco (Major HE Projects), NE Lincolnshire (Road Safety), Coventry CC (Road Safety and Covid-19), HS2 Ltd (Highways Technical Oversight) and TYPSA as Road Safety Specialist
2015 to 2017	Jacobs Manchester – Predominantly Smart Motorways and HE Major Projects
2012 to 2015	AECOM Leeds – Highways England, Regional and Local Authorities
2001 to 2012	Freelance Traffic & Road Safety Engineer – Strategic and Local Roads
1999 to 2001	WS Atkins – Highways Agency MAC Area 11
1988 to 1999	Sheffield City Council – Traffic Engineering and Major Projects

Experience

Chartered Transportation Professional with over three decades of experience covering a broad range of traffic, transportation and road safety commissions.

General Road Safety Engineering Experience

- Haydn is a Member of the Society of Road Safety Auditors with a background in road safety and traffic engineering. He has undertaken audits on highway schemes across the UK and holds a Road Safety Audit Certificate of Competency, is on the SoRSA committee and a CPD reviewer for both CIHT and SoRSA.
- Haydn has worked on collision investigation and prevention schemes, safety risk assessments, preliminary design of major schemes and extensive experience of traffic engineering on both the strategic and local roads networks for over three decades.
- Haydn's current roles are focused on operational safety, collision investigation, early-stage studies, road safety audit, walking, cycling & horse-riding assessment and staff development. Haydn brings a detailed knowledge of traffic and highway design on the motorway, trunk and local authority highway network, including aspects of geometric design, traffic signs, traffic signals, intelligent transport systems, vehicle restraint systems, carriageway construction methods and road safety techniques.
- Haydn has been previously involved in the geometric design of high-speed roads, including
    - Highways and traffic technical oversight on HS2 Phase 2b Lot 1 (2021-2022) specifically around the M56 J6 Proposals (value range £350-750M) for Manchester Airport HS2 Station.
    - Option development and costing of £150m worth of infrastructure improvements to the M621, A643 and key city centre roads on the south bank of the River Aire.
    - Junction/link design on the Birmingham Northern Relief Road (M6 Toll).

Road Safety Audit Experience

- Experience specifically related to audits of this type of work in last 12 months
    - Over 130 residential Road Safety Audits in the last 12 months, Stages 1-3, covering residential private access points, through small to large sized developments, to multi-development "new town" type sites.
    - A9 Tomatin to Moy Improvement, Highlands, **Transport Scotland** – Ongoing from May 2025, two reports to date – Acted as team member and part wrote reports. £150M provision of new dual carriageway, several new junctions and extensive works on the local access roads.
    - A63 Bramham, North Yorkshire, **National Highways** – RSA1 – Apr 2025 - Acted as team leader and wrote the report. Repurposed existing access for a new EV charging station and supporting food retail. Issues around wrong way collisions, signing and conspicuity.
    - A641 Corridor, Brighouse, Calderdale – RSA1 – Mar 2025 – Acted as team leader and wrote the reports. Active mode and bus priority scheme over four reports, major interventions to promote mode change, including new canal bridge, signal controlled junctions, off carriageway cycles etc.
    - Islay Woodhouse, Leicestershire – RSA1 – Feb 2025 - Acted as team leader and wrote the reports. New town south of East Midlands Airport, over four reports covering various elements, including a new A453 bypass route, improvements to existing junctions, cycling improvements etc.
    - Immingham Eastern Ro-Ro Terminal – RSA2 – Nov 2024 – Acted as team leader and wrote the report. New three berth terminal, customs and passport control, various issues raised around integration with the existing port facilities.
    - ORCS Pilot (On-street Residential Chargepoint Scheme), Sheffield – RSA2 – Oct 2024 – Acted as team leader and wrote the report. Six pilot sites for on street EV charging points, issues raised around accessibility and conspicuity.
    - Northallerton Link Road, North Yorkshire – RSA4 – Sep 2024 – Acted as team leader and wrote the report. Mile long link road, new issues raised around speed and surface water management.
    - Darnall-Attercliffe-City Centre, Transforming Cities, Sheffield – RSA2 – Aug/Sep 2024 – Acted as team leader and wrote the four reports. 6km of routes across several schemes, for active modes and bus priority. Kerbside routes, parallel crossings, traffic signals, major streetscape transformational works.
    - **HS2 Ph1** C2/C3 (TYPSA/EKFB) – Multiple locations over 19 reports in Warwickshire, Northamptonshire, Buckinghamshire and West Northamptonshire – RSA1 & RSA2 – Jul 2022 to current. Acted as team leader and wrote the reports. New highway works, permanent highway works, various issues relating to geometry, vehicle restraint, maintenance access, pedestrians etc.
    - **HS2 Ph1** N8/N9 (BBV) – Multiple locations over 18 reports between Staffordshire and Warwickshire – RSA1, RSA1/2 & RSA2 – Apr 2021 to Feb 2025 – Acted as team leader and wrote the reports. New highway works, construction access points and temporary highway works, issues relating to geometry, vehicle use and operational aspects.
    - 74 Road Safety Audits for Derbyshire County Council, Rotherham MBC, Sheffield City Council and Calderdale MBC – RSA Stages 1-3 – Apr 2022 to current. Public Realm, Bus Priority, Major Projects, Road Safety Improvements, Traffic Calming, Traffic Signals, Zebra Crossings, Parking & Active Mode Schemes. Various value works, up to multi-million pounds.
    - Eight Road Safety Audits on **Transport Scotland** Trunk Roads – RSA Stages 1-3 – Jul 2024 to current. A9 major project highlighted above, temp works, average speed cameras and development accesses.
- Completion of over 750 road safety audits in the last five years mostly as Team Leader
- Types of schemes audited as Team Leader/Member include:
    - Motorways and Trunk Roads
    - Local roads, level crossings, development site accesses
    - Roundabouts, Traffic signals and priority junctions
    - NMU facilities and public realm
- 113 Road Safety Audits completed to date in 2025 (106 as Team Leader)
- 217 Road Safety Audits completed in 2024 (175 as Team Leader)
- 160 Road Safety Audits completed in 2023 (138 as Team Leader)
- 113 Road Safety Audits completed in 2022 (88 as Team Leader)

- Experience specifically related to audits on trunk road projects beyond last 12 months
    - M42 Junction 10, **National Highways** – RSA1 – May 2024 – Acted as team leader and wrote report. New development access of the A5 with junction changes around the M42 Junction 10 roundabout. Issues raised around departures, landscaping, pedestrians, cycles, signs and lines.
    - A47 Major Improvements, Norfolk and Cambridgeshire (Tuddenham, Blofield, Thickthorn and Wansford) (**National Highways**) – 4x RSA2 – Aug/Sep 2022 – Acted as team leader and wrote the reports on these large multi-million improvement schemes. Works involve provision of new all purpose dual carriageways, grade separated junctions, roundabouts, local access roads and non-motorised user facilities. Extensive reports covering aspects of geometry, road restraint systems, NMU routing, tunnel emergency access, boundaries, visibility, etc
    - 75 Road Safety Audits for **Highways England** Area 7 – 2017-2018, including RSA Stages 1 to 4, and notably, two major trunk road improvements, one at A43 Towcester (circa £15m roundabout improvement) and another at A5 Old Stratford, a roundabout improvement.
    - A5-M1 Link Road, Northamptonshire (**Highways England**) – RSA3 – 2017 – Major new trunk road scheme and new motorway junction, two day audit acting as maintaining agent team member.
    - M6 J16-19 Smart Motorway (**Highways England**) – 2016 – 13 RSAs coving aspects of both the online and offline temporary traffic management for the project.
    - A1M Leeming to Barton Motorway (**Highways Agency**) – 2014 – Five RSAs for both mainline and local access road elements of this £400M project.

Full list of Road Safety Audits available on request

Road Safety Engineering Projects and Accident Studies

Last 2 years

- M1 south of J16, Northamptonshire – Safety Risk Assessment – Jun 2025 – Review of collision data linked to a Safety Risk Assessment for roadside advertising signs. 4 collisions over a 5yr period.
- A141 March, Cambridgeshire – Safety Risk Assessment – Jun 2025 – Review of collision data linked to a Safety Risk Assessment for traffic signal controlled junction. 14 collisions over a 10yr period.
- Bury, Cambridgeshire – Safety Risk Assessment – May 2025 – Review of collision data linked to a Safety Risk Assessment for highways works over a bridge structure for a utility company. 3 collisions over a 10yr period.
- Finham Park 2, Coventry – Collision Study – Sep 2024 – Study to support the development of measures for a new school site. 2km initial study scope, 197 collisions, filtered to focus on 23 secondary age casualties, various comparisons, statistical tests, conclusions and recommendations.
- A35/A31 Bare Regis – WCHAR – Mar 2024 – Collision analysis as part of a wider report for a service area site adjacent to the trunk road.
- A628 Penistone – Collision Analysis Study – Nov 2023 – Oversight study using CrashMap data to inform a local working group on potential road safety initiatives along the corridor, focused on pedestrian safety.
- A49 Lyde, Herefordshire – Safety Risk Assessment – Aug 2023 – Review of collisions as part of a GG104 report around a development access and on a trunk road with four departures to consider, three localised collisions and a view on approaches either side.

More than 2 years

- A6178 Sheffield Road, Rotherham – Safety Risk Assessment – Apr 2023 – Review of collisions as part of a GG104 report on use of narrow lanes on a major road to facilitate a cycle superhighway. Review looked at five/ten year timeframes and 16 collisions over an extended period to 1999, including five serious and one fatal.
- M56 J5-6 – HS2 Station – Aug 2021 - Review of collision data, specifically linked to weaving collisions, as current "assumption" contradicted issues highlighted in different report prepared by HV in 2015
- A18, Laceby, North East Lincs Council – Oct 2019 – Collision investigation and safety risk review to support the next stage of design in £1.8M safety scheme, with junction and verge works – 37 collisions over 5yrs
- A52 Safety Study Highways England Area 7 – Oct 2018 – Lead a team of two into an investigation of 423 collisions over 38km of the A52, identification of common themes, immediate interventions, speed limits and an asset review

- A1 Safety Study, Highways England Area 7 – Aug 2018 – Lead a team of three into an investigation of 504 collisions over 100km of the A1, identification of common themes, immediate interventions, long term aspirations and an asset review.
- Highways England Area 7 – Fatal Collision Reports – Mar-Nov 2017 – Package of reports to gather information pertaining to the highway and its environs and to review the collision history at 24 fatal collision sites in Area 7, including motorways, dual carriageways and single carriageways, a mix of casualty types, vehicles and collision types. Period of collision occurrence, Oct 2015 to Sep 2016

Formal Training (DMRB GG 119 or Equivalent)

RoSPA Road Safety Engineering Accident Investigation & Prevention (10 days) – Completed in 2013

Continual Professional Development (CPD) (DMRB GG 119 or Equivalent)

Upcoming CPD

- Jul 2025 – 5hrs – ITAI Crash Day, Ashbourne (ITAI) – Booked
- Jun 2025 – 8hrs – Day 2 Only – SoRSA Conference (CIHT/SoRSA) – Booked

Last 12 months (Current to Jun 2024) – **24hrs**

- Apr 2025 – 2hrs – Forensics Crash Scene Investigators Season 1 (Channel 5 TV)
- Feb 2025 – 6hrs – SoRSA East Midlands Workshop (CIHT/SoRSA)
- Feb 2025 – 1hr – Self-Reading – Review of updated GG104
- Jun 2024 – 10hrs – SoRSA Conference (CIHT/SoRSA)
- Jun 2024 – 5hrs – ITAI Crash Day, Ashbourne (ITAI)

Selected CPD beyond 12 months (Before Jun 2024)

- Feb 2024 – 6hrs – SoRSA East Midlands Workshop (CIHT/SoRSA)
- Feb 2024 – 2hrs – Self-Reading – Creating better streets: Inclusive and accessible places CIHT
- Feb 2024 – 3hrs – Self-Reading – Traffic Signs Manual – Chapter 6 – Traffic Signals
- Nov 2023 – 1hr – TRL Webinar, Speed we need a new narrative
- Nov 2023 – 1hr – Self-Reading – CYCLOPS Technical Guide
- Sep 2023 – 6hrs – SoRSA Scottish Workshop (CIHT/SoRSA)
- Jun 2023 – 12hrs – SoRSA Conference (CIHT/SoRSA)
- Feb 2023 – 4.0hrs – SoRSA East Midlands Workshop, including presentations on human issues, road safety audit process and workshops on problems and recommendations.
- Feb 2023 – 4.0hrs – Preparation and presentation to SoRSA East Midlands Workshop focused on Road Safety Audit and Human Issues, breaking down specific issues for various age groups
- Dec 2022 – 2.0hrs – Self-Reading – National Highways GG104 Hub (website and documents)
- Nov 2022 – 2.0hrs – Self-Reading – DfT Inclusive Mobility (Dec 2021)

CV Last Updated – 4th June 2025

Road Safety Audit CV — Sevenairs Consulting Ltd

Name: Sarah Vernals BAHonsQTS NPQH

Profession: Traffic and Road Safety Engineering

Current Position: Director – Sevenairs Consulting Ltd

Specialisation: Road Safety, Risk Assessment, Non-Motorised Modes and Child Safety

Role on Audit: Team Member

Professional Status

Leeds University – Bachelor of Arts in Education

RoSPA 10 Day - Accident Investigation and Prevention

Employment

2020 to present	Sevenairs Consulting – Providing Road Safety related services provided by Sevenairs to a variety of clients including local authorities, consultants and developers. Key workload includes Road Safety Audit, Safety Risk Assessment, WCHARs and collision analysis.
2024 to present	SEN Tutoring through a variety of end providers – Providing at home education for children between the ages of 5 and 16 with a mix of special educational needs, including complex family situations, autism, behaviour and long term serious illness.
2011 to 2023	Greenfield Primary (Barnsley MBC) – Assistant Head Teacher responsibility for inclusion, designated safeguarding lead, involvement in all aspects of school improvement. Line manager for SENDCo, family inclusion officer, looked after children designated teacher, Thrive Licenced Practitioner, behaviour lead, PSHCE coordinator, punctuality and attendance lead, performance management team leader, teaching student mentor, ECT mentor and Key Stage 1 coordinator
1999 to 2011	Altofts Junior School (Wakefield MDC) – Assistant Head Teacher, inclusion lead, SENDCo, gifted and talented coordinator, DT coordinator, performance management team leader and year 3 coordinator

Experience

Experienced Senior Leadership Professional with 24 years' experience in the educational field including risk assessment, child safeguarding and road safety education in the school environment. Begin within the road safety field in early 2020, supporting the collision study and safety risk assessment (GG104) workload with Sevenairs, before completing the RoSPA 10 Day Accident Investigation and Prevention training to facilitate her support for the Road Safety Audit (GG119) business stream.

General Road Safety Experience

- Sarah has worked on collision investigation data analysis since early 2020, feeding into transport assessments, safety risk assessments, and non-motorised studies on both the strategic and local roads networks.
- Sarah's current role with Sevenairs is focused mostly on supporting the road safety audit business stream, as a team member and writing reports, with work extending to safety risk assessments, walking, cycling and horse-riding assessment and review, and the collision analysis work associated with these.
- Sarah brings a strong background in child and vulnerable non-motorised users, through her two decades in senior leadership roles within primary education, is a parent of three children, has been a long-term carer for a parent in a wheelchair, is a keen cyclist and completes middle distance runs two to three times a week.

Road Safety Audit Experience

- Experience specifically related to audits of this type of work in last 12 months
    - Over 120 residential Road Safety Audits in the last 12 months, Stages 1-3, covering residential private access points, through small to large sized developments, to multi-development "new town" type sites.
    - A63 Bramham, North Yorkshire, **National Highways** – RSA1 – Apr 2025 - Acted as team member. Repurposed existing access for a new EV charging station and supporting food retail. Issues around wrong way collisions, signing and conspicuity.
    - A641 Corridor, Brighouse, Calderdale – RSA1 – Mar 2025 – Acted as team member. Active mode and bus priority scheme over four reports, major interventions to promote mode change, including new canal bridge, signal controlled junctions, off carriageway cycles etc.
    - Rosegarth Street, Boston – RSA1/2 – Jan 2025 – Acted as team member. Public realm S278 works linked to a larger off highway square.
    - Broad Street, Rotherham – RSA1 – Jan 2025 – Acted as team member. Bus priority and pedestrian signal controlled crossing.
    - Immingham Eastern Ro-Ro Terminal – RSA2 – Nov 2024 – Acted as team member. New three berth terminal, customs and passport control, various issues raised around integration with the existing port facilities.
    - ORCS Pilot (On-street Residential Chargepoint Scheme), Sheffield – RSA2 – Oct 2024 – Acted as team member. Six pilot sites for on street EV charging points, issues raised around accessibility and conspicuity.
    - Northallerton Link Road, North Yorkshire – RSA4 – Sep 2024 – Acted as team member. Mile long link road, new issues raised around speed and surface water management.
    - Darnall-Attercliffe-City Centre, Transforming Cities, Sheffield – RSA2 – Aug/Sep 2024 – Acted as team member. 6km of routes across several schemes, for active modes and bus priority. Kerbside routes, parallel crossings, traffic signals, major streetscape transformational works.
    - Spring Lane, Radcliffe, Bury – RSA1/RSA2 – Nov 2023/Sep 2024 – Acted as team member. Introduction of a CYCLOPS type junction for a new school development site.
    - M42 Junction 10, **National Highways** – RSA1 – May 2024 – Acted as team member. New development access of the A5 with junction changes around the M42 Junction 10 roundabout. Issues raised around departures, landscaping, pedestrians, cycles, signs and lines.
    - A63 Myton Moving Bridge Refurbishment, Hull (**National Highways**) – RSA3 – April 2024 – Acted as team member. The refurbishment of a swing bridge, changes to lane configuration and revised VRS.
    - **HS2 Ph1** N8/N9 (BBV) – RSA2 / RSA3 – Watling Street – Jan / Apr 2024 – Acted as team member. Works on former trunk road to bypass construction site for bridge over the HS2 mainline.
    - **HS2 Ph1** C2/C3 (TYPSA/EKFB) – Multiple locations over 12 reports in Warwickshire, Northamptonshire Buckinghamshire and West Northamptonshire – RSA1 & RSA2 – Aug 2023 to current. Acted as team member. New highway works, permanent highway works, various issues relating to geometry, vehicle restraint, maintenance access, pedestrians etc.
    - 70 Road Safety Audits for Derbyshire County Council, Rotherham MBC, Sheffield City Council and Calderdale MBC – RSA Stages 1-3 – May 2023 to current. Public Realm, Bus Priority, Major Projects, Road Safety Improvements, Traffic Calming, Traffic Signals, Zebra Crossings, Parking & Active Mode Schemes. Various value works, up to multi-million pounds.
- Types of schemes audited as Team Member include:
    - Trunk roads, local roads and development site accesses
    - Roundabouts, traffic signals and priority junctions
    - NMU facilities and public realm
    - Residential developments
- 106 Road Safety Audits completed to date in 2025 as Team Member
- 173 Road Safety Audits completed in 2024 as Team Member
- 124 Road Safety Audits completed in 2023 as Team Member
- 65 Road Safety Audits completed in 2022 as Team Member

Road Safety Projects and Accident Studies

Last 2 years

- Tilstock, Shropshire – Jun 2025 – Review of collision data linked to a WCHAR for a 70 home residential development planning application. 8 collisions over a 10yr period.
- A5 Grendon, Warwickshire – Sep 2024 – Review of collision data linked to a WCHAR for a 200 home residential development planning application. 14 collisions over a 5yr period.
- A49 Bayston Hill, Shropshire – Safety Risk Assessment – Sep 2023 – Review of collision data linked to a Safety Risk Assessment for Section Agreement works on a trunk road linked to a nearby residential development.

More than 2 years

- Flitwick, Bedfordshire – Safety Risk Assessment – Apr 2023 – Review of collision data linked to a Safety Risk Assessment for a residential development planning application.
- A5 Hockliffe, Bedfordshire – Safety Risk Assessment – Mar 2023 – Review of collision data linked to a Safety Risk Assessment for a Section Agreement on a residential access off a trunk road.
- Toddington – Safety Risk Assessment – January 2022 – Review of collision data linked to a Safety Risk Assessment for a planning application appeal linked to construction access routes through residential areas.
- M61 Junction 5 – Hulton Park Development – November 2021 – Supporting investigation of collisions at a motorway junction as part of a WCHAR document for a planning application.
- A1 Thornhaugh – Safety Risk Assessment – August 2021 – Review of collision data linked to a Safety Risk Assessment for a planning application for a new distribution centre adjacent to the A1 near Peterborough, review looking specifically into goods vehicle collisions.

Formal Training (DMRB GG 119 or Equivalent)

RoSPA Road Safety Engineering Accident Investigation & Prevention (10 days) – Completed over Christmas 2021

Continual Professional Development (CPD) (DMRB GG 119 or Equivalent)

Upcoming CPD

- Jul 2025 – 5.0hrs – ITAI Crash Day, Ashbourne (ITAI) – Booked
- Jun 2025 – 8.0hrs – Day 2 Only – SoRSA Conference (CIHT/SoRSA) – Booked

Last 12 months (Current to Jun 2024) – **23hrs**

- Apr 2025 – 2.0hrs – Forensics Crash Scene Investigators Season 1 (Channel 5 TV)
- Feb 2025 – 6.0hrs – SoRSA East Midlands Workshop (CIHT/SoRSA)
- Jun 2024 – 10.0hrs – SoRSA Conference (CIHT/SoRSA)
- Jun 2024 – 5.0hrs – ITAI Crash Day, Ashbourne (ITAI)

Beyond 12 months (Before Jun 2024)

- Feb 2024 – 6.0hrs – SoRSA East Midlands Workshop (CIHT/SoRSA)
- Feb 2024 – 3.0hrs – Self-Reading – Traffic Signs Manual – Chapter 6 – Traffic Signals
- Dec 2023 – 3.0hrs – Self-Reading – Think! – Review of educational resources (3-6, 7-12 & 13-16 age groups)
- Dec 2023 – 1.0hr – Self-Reading – Wales 20mph Impact Analysis - Agilysis
- Dec 2023 – 2.0hrs – Self-Reading – Older Drivers – Review of online resources (linked to ADI training)
- Nov 2023 – 1.0hr – TRL Webinar, Speed we need a new narrative
- Nov 2023 – 1.0hr – Self-Reading – CYCLOPS Technical Guide
- Nov 2023 – 2.0hrs – Crash Detectives Season 4 Ep 1-4 (BBC)
- Oct 2023 – 2.0hrs – Self-Reading – Buses in Urban Developments CIHT
- Oct 2023 – 2.0hrs – Self-Reading – Creating better streets: Inclusive and accessible places CIHT
- Feb 2023 to Current – 4.0hrs – Approved Driving Instructor Training (37hrs in car plus 10hrs reading)
- Dec 2021 – **10 days** – RoSPA Road Safety Engineering Accident Investigation & Prevention

CV Last Updated – 4th June 2025

Appendix B

Preliminary Access Arrangements

Standard Notes

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

Location Plan

Notes and Keys

Date	Rev	Description	Drawn	Chkd
21.01.25	D	Access amended in line with highways consultation response	JT	JT
30.10.24	C	Minor alterations to tie in with development	JT	JT
29.10.24	B	Pedestrian refuge island widened to 3m	JT	GB
08.04.24	A	Access widened to 6m instead of 5.5m	JT	GB

ADDRESS TPS Business Centre,
151-153 Wakefield Road,
Horbury, Wakefield, WF4 5HQ.
Tel: 01924 664638

www.tpsconsultants.co.uk

Project

Thurnscoe Bridge Lane,
Barnsley

Title

Proposed Right Turn Ghost Island Arrangement

Status

INFORMATION

Scale @ A1	Date Created	Drawn	Checked
As Shown	10/11/23	JT	CG

TPS Project Number	Revision
P2423	D

Drawing Number

D - 1001

Appendix C

Transport Assessment

TRANSPORT ASSESSMENT
THURNSCOE BRIDGE LANE, THURNSCOE
AVANT HOMES

OCTOBER 2024

Document Issue Record

Project Name:	Thurnscoe Bridge Lane
TPS Project Reference:	P2424
Document Reference:	P2423_20241030_Thurnscoe Bridge Lane, Thurnscoe_Transport Statement

Revision	Date	Author	Checked	Approved	Notes
1	29.10.24	ST	JT	JT	First draft issue for client review
2	30.10.24	ST	JT	JT	Finalised following client review

Notice

Contents

1. INTRODUCTION

INTRODUCTION

1.1 TPS Transport Consultants Ltd. (TPS) has been appointed by Avant Homes to prepare a Transport Assessment to support a planning application for a residential development of 296no. dwellings, on land at Thurnscoe Bridge Lane, Thurnscoe, Barnsley.

Site Location and Development Overview

1.2 The site is located to the west of Thurnscoe Bridge Lane, approximately 1.1km south of Thurnscoe and 1.5km north of Goldthorpe. The site is bound by residential development to the north, Thurnscoe Bridge Lane to the east, a scrap metal recycling facility to the south and agricultural land to the east. The site location is shown in **Figure 1.1** below, whilst the proposed site layout plan is attached at **Appendix A.**

Figure 1.1 – Site Location

Source: Google Maps

1.3 The proposals are for 296no. residential dwellings, comprising a mix of between 1no. and 4no. bedroom dwellings, of which 30no. dwellings will be affordable housing. Access to the site is to be taken via a new right turn ghost island junction from Thurnscoe Bridge Lane, to

the east of the site. The site is allocated in the Barnsley Local Plan, Ref: HS52 'Land west of Thurnscoe Bridge Lane and south of Derry Grove, Thurnscoe'. The site allocations document suggests an indicative number of dwellings of 308.

1.4 The Local Plan states: "*The development will be expected to provide off-site highway enhancements*". Further guidance on what off-site improvements should be delivered by the developer is sought from the highway authority through the consultation process. Any off-site mitigation should be commensurate with the scale of the development and require to make the development acceptable in planning terms, in line with the requirements of the NPPF.

1.5 As part of the access proposals on Thurnscoe Bridge Lane, a refuge island is to be provided to the south of the access, providing a crossing point to access the shared footway/cycleway to the east of Thurnscoe Bridge Lane and towards the bus stop immediately opposite the site. In addition, a footway will be provided from the site access, tying in with existing footway provision to the north of the site.

SCOPING NOTE RESPONSE

1.6 A pre-application has been undertaken with Barnsley Metropolitan Borough Council (BMBC) (Ref: 2024/ENQ/00177), which was supported by a Scoping Note prepared by TPS, which is attached at **Appendix B.** The full response from BMBC is attached at **Appendix C,** whilst a summary of the information relating to highways is set out below:

- *It appears that the development is to include some long stretches of straight road and as such speed reducing measures will be necessary. Vertical deflection should be avoided where possible in residential areas with horizontal deflection being the preferred method;*
- *A designer's checklist will be required to ensure that the access is designed in accordance with CD123 of DMRB. The access should incorporate pedestrian crossing facilities, including a pedestrian refuge island of 3m width, to accommodate cyclists joining the shared footway/cycleway to the east of Thurnscoe Bridge Lane;*
- *There is also no existing footway provision along the site frontage;*
- *A full Transport Assessment will be required as part of any application to come forward, the scope of which will need to be agreed; and*

- *The modelling undertaken as part of the TA should include all junctions with 30 two-way trips or more.*

1.7 This Transport Assessment and the design of the site, since the receipt of the pre-application response has taken into account the comments provided by BMBC.

REPORT STRUCTURE

1.8 Following this introductory section:

- **Section 2** describes the transport planning policy context within which the proposals will be assessed;
- **Section 3** details the accessibility of the development site by non-car modes;
- **Section 4** describes the existing highway network in the vicinity of the development and key routes to the site, with reference to historic road safety records;
- **Section 5** summarises the trip generation associated with the development proposals, and the anticipated trip distribution;
- **Section 6** considers the impact of the development at the site access junction and at other off-site junctions;
- **Section 7** considers the access, parking and servicing arrangements; and
- **Section 8** offers a summary and conclusion.

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2. POLICY REVIEW

INTRODUCTION

2.1 This section of the Transport Assessment identifies the policy context within which the development proposals have been assessed; it clearly demonstrates how the proposed development accords with the overarching principles set out in national and local planning policy.

NATIONAL POLICY CONTEXT

National Planning Policy Framework (NPPF – DCLG, December 2023)

2.2 The revised National Planning Policy Framework was published in December 2023 and sets out the government's planning policies for England and how these are expected to be applied. It continues to encourage development through the planning system, with a presumption in favour of sustainable development. Paragraph 114 states that "*in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*

- *Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- *Safe and suitable access to the site can be achieved for all users;*
- *The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and National Model Design Code; and*
- *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.*"

2.3 It goes on to state that "*Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe. (Paragraph 115)*." Paragraph 116 sets outs that 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*

2.4 Paragraph 117 suggests that "*all developments that will generate significant amounts of movements 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 impact of the proposal can be assessed.*"

2.5 This Transport Assessment will demonstrate that the development proposals take full advantage of existing facilities for sustainable travel, locally, and will not result in a significant traffic impact on the local road network, therefore, satisfying the requirements of NPPF.

LOCAL POLICY

Barnsley Local Plan (2019)

2.6 The Proposed Development site is allocated within the Barnsley Local Plan as HS52 "Land west of Thurnscoe Bridge Lane and south of Derry Grove, Thurnscoe", with an indicative capacity of 308no, dwellings. The Barnsley Local Plan was adopted in January 2019 and sets out the local planning policy for the future development of Barnsley up to 2033. The objectives of the Local Plan are:

- **Policy SD1 Presumption in Favour of Sustainable Development:** *When considering development proposals we will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. We will work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to*

secure development that improves the economic, social and environmental conditions in the area.

- **Policy T2 Accessibility Priorities:** *Working with city region partners and other stakeholders transport investment will be set out in Transport Strategy programmes focused on development-transport corridors as shown in the Accessibility Priorities diagram below to:*
    - *Improve sustainable transport and circulation in the Accessibility Improvement Zone (AIZ) area particularly between Principal Towns;*
    - *Implement transport network improvements as supported by evidence from modelling, feasibility studies, consultation, surveys, community engagement etc;*
    - *Facilitate sustainable transport links to and from existing and proposed employment, interchange, community and leisure and tourism facilities in the borough, including provision for car parking and enhancing the non car role of the transport corridor shown on the Accessibility Priorities diagram as 'potential enhanced road based public transport corridor';*
    - *Promote high quality public transport linking the AIZ to significant places of business, employment and national / international interchange in the Leeds - Sheffield City Region corridor including neighbouring Wakefield, Kirklees, Doncaster, Sheffield and Rotherham; and*
    - *Improve direct public transport and freight links to London, Manchester, other Core Cities, national / international interchanges and the Humber ports.*
- **Policy T3 New Development and Sustainable Travel:** *New developments will be expected to:*
    - *Be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists;*
    - *Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people set out in the relevant Supplementary Planning Document;*

- *Provide a transport statement or assessment in line with guidance set out in the National Planning Policy Framework and guidance including where appropriate regard for cross boundary local authority impacts; and*
- *Provide a travel plan statement or a travel plan in accordance with guidance set out in the National Planning Policy Framework including where appropriate regard for cross boundary local authority impacts. Travel plans will be secured through a planning obligation or a planning condition.*

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

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

- **Policy T5 Reducing the Impact of Road Travel:** *We will reduce the impact of road travel by:*
  - *Developing and implementing robust, evidence based air quality action plans to improve air quality; and*
  - *Working with our sub regional partners, fleet and freight operators to improve the efficiency of vehicles and goods delivery, and reduce exhaust emissions; and Implementing measures to ensure the current road system is used efficiently.*

SUMMARY

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

3. ACCESSIBILITY

INTRODUCTION

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

3.2 ATE are a statutory consultee on developments over 150 dwellings and, therefore, will be consulted on this application. In light of this, the Active Travel England 'Planning Application Assessment Toolkit' has been utilised and annotated to demonstrate the active travel merits of the development proposals. This can be seen at **Appendix D.**

ACTIVE TRAVEL OPTIONS

Pedestrian Facilities

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

Table 3.1: Walking Distances by Journey Type

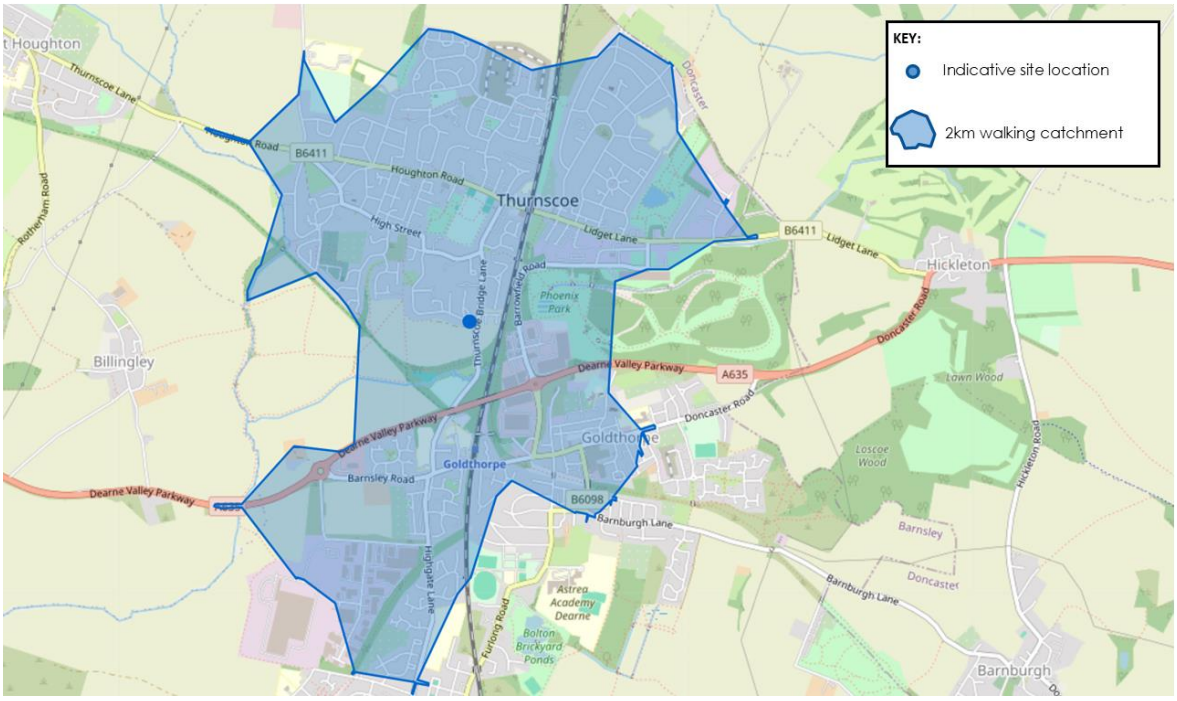
Criteria	Town Centres	Commuting / School	Elsewhere
Desirable	200m	500m	400m
Acceptable	400m	1000m	800m
Preferred Maximum	800m	2000m	1200m

(Source: IHT)

3.4 As **Table 3.1** shows, a 2km catchment is the preferred maximum walking distance for 'commuting / school'. A 2km walking catchment from the site encompasses a large suburban area of Barnsley, including parts of Thurnscoe, Goldthorpe and Bolton-upon-Dearne. The 2km walking catchment is illustrated in **Figure 3.1**, overleaf

3.5 Pedestrian access to the site will be taken via the site access from Thurnscoe Bridge Lane to the immediate west of the site, upon construction of a new priority T-junction. This junction will provide a footway from the site, connecting with the existing provision to the north of the site. A dedicated crossing point will be provided to the south of the access, in the form of a pedestrian refuge island with dropped kerbs and tactile paving, which has been designed to accommodate cyclists, owing to connecting with the existing shared footway/cycleway to the east of Thurnscoe Bridge Lane. To the north of the site access, there are continuous footways along both sides of Thurnscoe Bridge Lane, of varying width and featuring street lighting throughout.

Figure 3.1: 2km Walking Catchment



(Source: Open Street Maps)

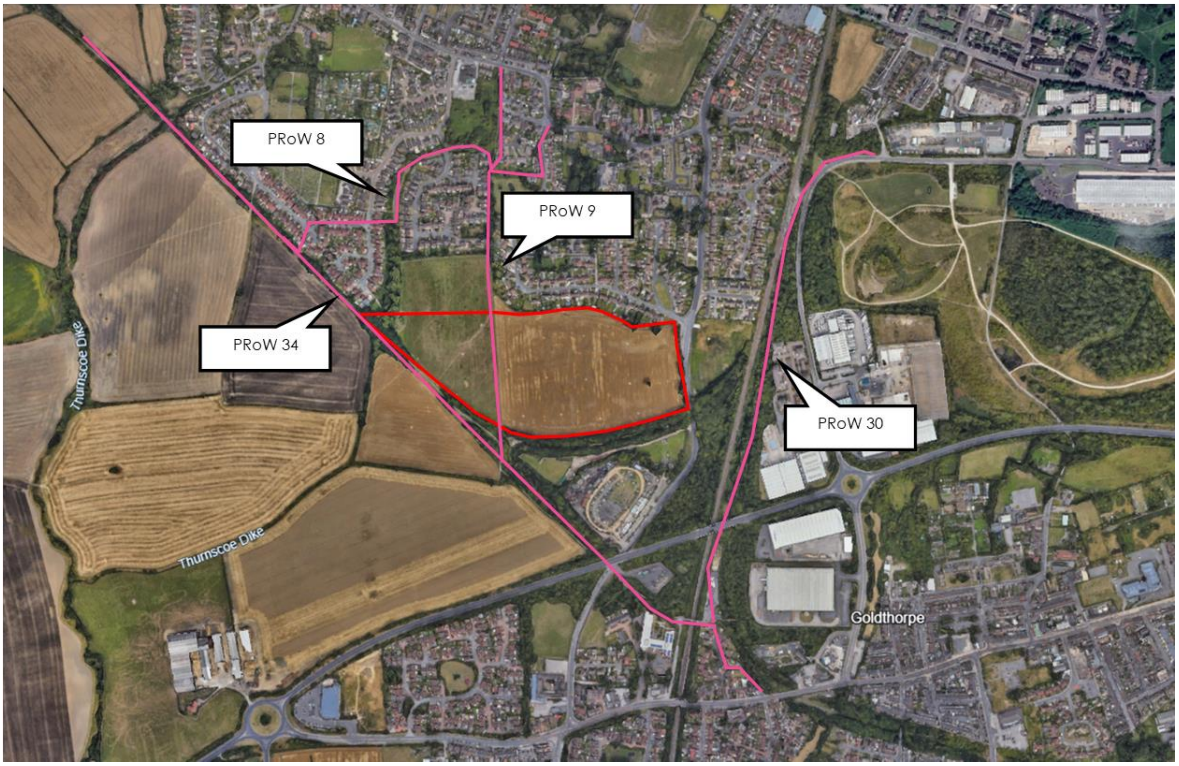
3.6 Throughout its length, Thurnscoe Bridge Lane forms the major through movement to various residential access roads, where there is such a junction dropped kerbs and tactile paving support continuous pedestrian movement north-south.

3.7 Extending north, after a distance of 450m, Thurnscoe Bridge Lane extends onto Shepherd Lane, which in-turn forms the southern approach to mini-4 arm roundabout with the B6411 Houghton Road, John Street and Station Road. In order to facilitate pedestrian movements across this junction, dropped kerbs in conjunction with tactile paving and pedestrian refuge islands can be found across the north, western and southern arms of the junction. To the east, there is a signalised pedestrian crossing on Station Road to facilitate north-south pedestrian movements.

3.8 From this junction, residents can access various amenities within Thurnscoe, including Thurnscoe Railway Station, ASDA Supermarket, Home Bargains and various eateries.

3.9 There are a number of public rights of way in the vicinity of the site, an overview of which can be seen in **Figure 3.2** overleaf.

Figure 3.2: Public Rights of Way



(Source: BMBC)

3.10 From Thurnscoe Bridge Lane, several separate public right of ways (PRoW) can be accessed within a 500m walk of the site access, providing traffic-free routes for residents through the local area.

3.11 Notably, PRoW 9 run adjacent to the western site boundary, running broadly north-south, providing a traffic-free footpath towards Thurnscoe High Street (to the north), or alternatively connecting to PRoW 34 (to the south).

3.12 To the south of the site, PRoW 9 joins PRoW 34, running broadly east-west, providing a connection from the site between Little Houghton (via PRoW 16) and Goldthorpe train station. From Goldthorpe train station, PRoW 34 adjoins PRoW 30 which runs north-south between Goldthorpe and Thurnscoe train station. Where PROW 9 crosses the site it is proposed to provide a 3m wide route through the site, preserving this right of way. This will be provided adjacent the Public Open Space provided in the centre.

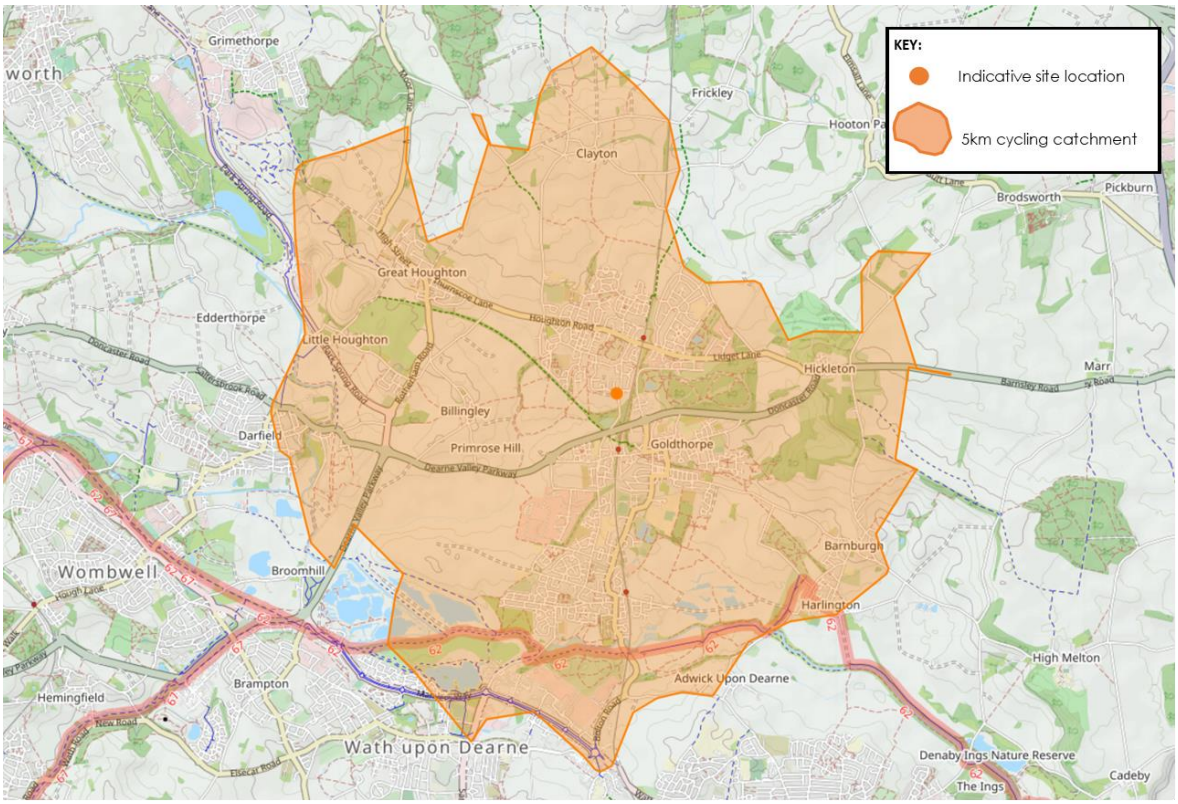
Cycle Access

3.13 Cycling can be a substitute for car trips, particularly those of up to 5km, with relevant guidance stating that "*cycling also has the potential to substitute for short car trips,*

particularly those under 5km, and to form part of a longer journey by public transport". Cycling, therefore, plays an important role in reducing the need to travel by car.

3.14 A 5km catchment of the site includes many suburbs of Barnsley, including Goldthorpe, Billingley, Clayton, Great Houghton, Adwick-upon-Dearn and Thurnscoe. **Figure 3.3** illustrates a 5km cycle isochrone from the site.

Figure 3.3: 5km Cycling Catchment



(Source: Open Cycle Map)

3.15 There is a shared cycle/footway to the east side of Thurnscoe Bridge Lane measuring 3m wide, which runs north-south for a distance of 1.1km, between Hall Farm Drive to the north, past the site to Nicholas Lane, to the south. This provides a segregated cycle route which prospective residents can make use of to access facilities in Thurnscoe to the north and Goldthorpe to the south.

3.16 The closest National Cycle Network (NCN) Route can be accessed approximately 4.5km south of the site, at Mexborough Road, giving access to the NCN 62. Broadly, NCN 62 runs between Lancashire and North Yorkshire for a route length of 335.9km. More locally, NCN 62 runs broadly east-west between the towns of Wombwell and Doncaster, before joining NCN 67 at Wombwell, providing routes towards Sheffield and Rotherham.

3.17 Additionally, many of the surrounding roads are subject to a 30mph speed limit, which helps to make them more cycle friendly. It is, therefore, considered that the site is well located for future residents to cycle for journeys to work and for leisure or to form part of a multi-modal journey combining cycling and rail.

PUBLIC TRANSPORT

Bus Services

3.18 The closest bus stops to site are located on Thurnscoe Bridge Lane, located to the immediate east of the site. The northbound and southbound stops comprise of a flagpole and timetable information, layby and a bus shelter. In order to facilitate access to the southbound bus stop, located to the east of Thurnscoe Bridge Lane, development proposals have incorporated a pedestrian crossing consisting of dropped kerbs, tactile paving and a refuge island. **Figure 3.5** illustrates the location of these bus stops, whilst **Table 3.2** summarises the bus services that can be accessed from the stops.

Figure 3.5: Bus Stop Locations

(Source: Google Maps)

Table 3.2: Bus Services

Service		Frequency		
		Weekday	Saturday	Sunday
Thurnscoe Bridge Lane				
226	Barnsley Interchange - Thurnscoe	30 mins	30 mins	60 mins

(Source: Public Transport Operator Websites)

3.19 Given the proximity of the high frequency 226 service, which provides direct access to Barnsley town centre within a 60 minute journey time, it is expected that the bus would represent a viable alternative to the private car for accessing employment and leisure opportunities.

Rail

3.20 The closest railway station is Thurnscoe, located approximately 900m north of the site (measured from the site access), and can be accessed in an approximate 10-minute walk or 3-minute cycle journey via Thurnscoe Bridge Lane. Thurnscoe is managed by Northern Trains and benefits from two platforms. Thurnscoe station benefits from 8 cycle storage spaces, located within the car park and, therefore, offers a realistic option for a combined cycle/rail journey.

3.21 It is anticipated that residents could also make use of National Rail services available from Goldthorpe, which is located approximately 1km south of the site and is accessible within a 12-minute walk or a 5-minute cycle journey from the site access. The station has completely step-free access throughout the station, making it DfT Category B accessible.

3.22 Both stations are situated on the Wakefield Line and, therefore, operate on the same schedule. **Table 3.3**, below, outlines the key destinations accessible from Thurnscoe and Goldthorpe railway stations.

Table 3.3: Thurnscoe and Goldthorpe railway station services

Destination	Frequency
Sheffield via Rotherham Central & Meadowhall	1 per hour
Leeds via Wakefield Westgate	1 per hour
York via Pontefract Baghill	1 per day

(Source: National Rail)

LOCAL AMENITIES

3.23 **Table 3.4**, below, provides a summary of local facilities which are available within the preferred maximum walking (2km) or cycling (5km) distances of the site, with approximate journey times. Measurements are taken from the site access, from Thurnscoe Bridge Lane.

Table 3.4: Local Facilities

Amenity	Distance	Walk Time	Cycle Time
Thurnscoe Library	700m	8 mins	2 min
Thurnscoe High Street & Station Road Retail Park	750m	9 mins	2 mins
High Gate Primary School	780m	11 mins	3 mins
Thurnscoe Skate Park & Hickleton Bowling Club	800m	9 mins	2 mins
Dearne Valley Group Medical Practice	820m	10 mins	3 mins
Thurnscoe Station	900m	10 mins	3 mins
Asda Supermarket (Thurnscoe)	1km	11 mins	3 mins
Goldthorpe Station	1.1km	15 mins	3 mins
Thurnscoe Post Office	1.2km	14 mins	3 mins
ALDI Supermarket	1.3km	18 mins	4 mins
Goldthorpe Surgery	1.6km	22 mins	5 mins
Goldthorpe Industrial Estate	1.7km	24 mins	5 mins
Gooseacre Primary Academy	1.8km	22 mins	5 mins
Asda Supermarket (Goldthorpe)	1.8km	24 mins	6 mins
The Hill Primary School & Hilltoppers Nursery	1.8km	24 mins	7 mins
Astrea Academy	2km	26 mins	7 mins

SUMMARY

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

4. EXISTING HIGHWAY NETWORK AND HIGHWAY SAFETY RECORD

INTRODUCTION

4.1 This section of the Transport Assessment describes the existing highway in the vicinity of the site, provides an overview of the historic road safety record and reviews the infrastructure that will facilitate and encourage staff and visitors to walk, cycle or use public transport, rather than to travel by car.

LOCAL HIGHWAY NETWORK

4.2 The site is to take vehicular access from Thurnscoe Bridge Lane, upon construction a new priority T-junction, which is to benefit from a 6m wide carriageway, and is bound by footways and street lighting on both sides. Within the vicinity of the site, Thurnscoe Bridge Lane runs in a broadly north-south alignment, is subject to a 30mph speed limit and forms the major arm of a number of priority T-junctions along its length, giving access to the other residential estates.

4.3 Extending north for approximately 450m, Thurnscoe Bridge Lane extends onto Shepherd Lane, which in-turn forms the southern approach to mini-4 arm roundabout with the B6411 Houghton Road, John Street and Station Road. From the roundabout, the B6411 Houghton Road extends west towards Great Houghton. At various points right-turn ghost islands support access onto Garden Street, School Street and Stortforth Drive for westbound vehicles, along the B6411.

4.4 Alternatively, from the roundabout, extending east onto Station Road, vehicles immediately form the western approach to a second 4-arm mini roundabout. Within the vicinity of the roundabout, signage indicates "20 Zone", in which the speed limit reduces to create a safer environment for both vehicles and pedestrians. From the roundabout, continuing east, extending onto the B6411 Station Road, signage indicates a "3.9m / 13'-0"" height on approach to Thurnscoe Railway Bridge. At this point, the B6411 Station Road extends onto the B6411 Lidget Lane after a distance of 245m, which in-turn provides a route towards the A635.

4.5 Back to the site access, running south, Thurnscoe Bridge Lane extends onto Nicholas Lane in which provision remains largely the same, being street lit throughout with an approximate

carriageway width of 8.5m, in addition to this a shared cycle/footway can be found running along the eastern side of the carriageway for its entire length.

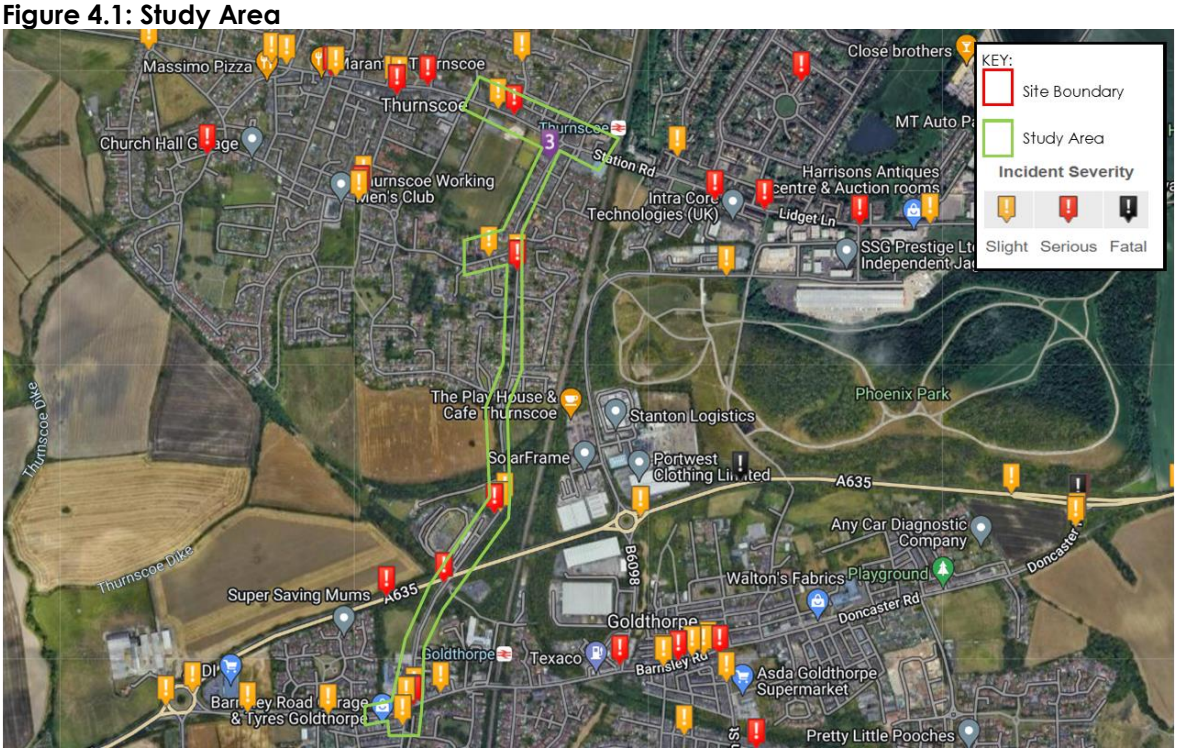
4.6 Continuing south, Nicholas Lane forms the northern approach to a signal controlled crossroads with Barnsley Road. For vehicles wishing to merge onto Barnsley Road(E), vehicles would simply turn left from the aforementioned junction at a dedicated give-way.

4.7 Within the vicinity of the crossroads, Barnsley Road runs broadly east-west with a carriageway width measuring approximately 10.5m, bound by footways and street lighting on both sides. Barnsley Road benefits from central hatching which separates opposing lanes of traffic, with right-turn ghost island staggered at various points supporting access onto residential roads, for eastbound vehicles.

ROAD SAFETY

4.8 Accident data for the most recent 5-year period (2018 - 2022) has been obtained from www.crashmap.co.uk for the highway network surrounding the site. Crashmap offers a definitive map of the official road collision statistics. The study area for accidents recorded within the vicinity of the site is shown in **Figure 4.1** whilst **Table 4.1** summarises the accidents by location, date and severity.

Figure 4.1: Study Area



(Source: Google Maps)

4.9 For ease of review, the study area has been broken down into distinct areas / junctions, as follows:

- Site Access / Thurnscoe Bridge Lane
- Thurnscoe Bridge Lane / High Street
- Shepherds Lane / Station Road Roundabout
- Nicholas Lane / Highgate Lane Crossroads

Table 4.1: Accident Summary

	2018	2019	2020	2021	2022	Total
Site Access / Thurnscoe Bridge Lane						
Slight	1	0	0	0	1	**2**
Serious	0	0	0	1	0	**1**
Fatal	0	0	0	0	0	**0**
Thurnscoe Bridge Lane / High Street						
Slight	0	1	0	1	0	**2**
Serious	0	0	1	0	0	**1**
Fatal	0	0	0	0	0	**0**
Shepherds Lane / Station Road Roundabout						
Slight	0	1	2	1	0	**4**
Serious	1	0	0	0	0	**1**
Fatal	0	0	0	0	0	**0**
Nicholas Lane / Highgate Lane Crossroads						
Slight	0	0	3	0	1	**4**
Serious	0	0	0	1	0	**1**
Fatal	0	0	0	0	0	**0**
TOTAL	**2**	**2**	**6**	**4**	**1**	**15**

(Source: Crashmap)

4.10 As can be seen from **Table 4.1**, a total of 15 accidents have been recorded across the highway network over the most recent five year period, of which 12 were slight, and 3 were serious. The highest number of accidents at any one location is 5 at the Shepherds Lane / Station Road roundabout, followed by the Nicholas Lane / Highgate Lane crossroads. At both locations, accidents are spread across the study junction, which suggest there are no locational patterns which would give rise to highway safety concerns that might be exacerbated by the proposals. Further details on each of the accidents by location is provided below.

Site Access / Thurnscoe Bridge Lane

4.11 Notably, as can be seen in **Figure 4.1**, no accidents have been recorded in the immediate vicinity of the Site Access / Thurnscoe Bridge Lane in the most recent five-year period, Continuing south, extending onto Nicholas Lane, there have been 3 accidents. Of the three accidents, two were classified as slight, and one as serious. It is understood the serious accident occurred in February 2021, involving one vehicle resulting in one casualty.

Thurnscoe Bridge Lane / High Street

4.12 Back to the site access, running north along Thurnscoe Bridge Lane, High Street forms the minor approach to a priority T-junction, where a total of three accidents have been recorded in the vicinity of Thurnscoe Bridge Lane / High Street junction in the most recent five-year period; all of which were categorised slight. This equates to an average of one accident per year, which is not considered an highway safety risk.

Shepherds Lane / Station Road

4.13 A total of five accidents have been recorded in the vicinity of the Shepherds Lane / Station Road roundabout in the most recent five-year period; of which 4 accidents were categorised as slight, and one was classified as serious. This equates to an average of one accident per year, it is also noted that there have been no accidents recorded in the vicinity of this junction since 2021.

4.14 It is understood that the serious accident occurred in July 2018, involving one vehicle, resulting in one casualty.

Nicholas Lane / Highgate Lane Crossroads Junction

4.15 A total of five accidents have been recorded in the vicinity of the Nicholas Lane / Highgate Lane crossroads junction in the most recent five-year period. Of which four were slight and one were serious. No fatalities have been recorded.

4.16 The serious accident was recorded in October 2021 and did not involve any vulnerable road users, but involved two vehicles resulting in one casualty.

SUMMARY

4.17 It is considered that the level of accidents recorded over the most recent 5-year period does not indicate that there is an existing road safety issue in the vicinity of the site that would be exacerbated by the proposed development.

5. DEVELOPMENT PROPOSALS

INTRODUCTION

5.1 This section of the Transport Assessment considers the development proposals, the access arrangements, parking and servicing.

DEVELOPMENT PROPOSALS

5.2 As can be seen from the site layout provided at **Appendix A**, vehicular access to the proposed development will be via a new priority T-junction on the eastern boundary of the site, from Thurnscoe Bridge Lane. As can be seen at **Appendix E**, the access benefits from a 6m carriageway width and 6m radii kerbs. It is proposed to provide a 3.3m wide right turn ghost island with a pedestrian refuge island comprising dropped kerbs and tactile paving located immediately south of the junction, to facilitate east-west movements between the site and the existing shared footway/cycleway.

5.3 Within the site, the carriageway width will be 5.5m and will be bound by 2m footways to both sides, or a 3m wide shared footway/cycleway to one side, tying in with the provision on Thurnscoe Bridge Lane and the PROW which runs through the site.

5.4 Speed reduction measures are provided on long straight sections of carriageway in the form of horizontal build outs, in line with the pre-application response which suggested these are preferred over vertical deflection.

PARKING

Car Parking

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

- 1-2 bed dwellings – 1 car parking space;
- 3+ bed dwellings – 2 car parking spaces;
- 1 visitor car parking space per 4 dwellings (subject to layout); and
- 1 secure cycle space per dwelling (in garage or separate secure covered area within plot).

5.6 As can be seen from the layout provided at **Appendix A**, parking is provided in line with local parking standards. With regard to cycle parking, where dwellings do not provide a garage, alternative storage will be provided in the form of a shed, in order to provide sufficient space(s) per dwelling.

SERVICING

General Servicing and Refuse Collection

5.7 It is anticipated that refuse collection will be undertaken by Barnsley Metropolitan Borough Council from the roadside within the development. Appropriate turning heads are provided to ensure that a refuse vehicle can satisfactorily manoeuvre within the proposed development. Swept path analysis of these turning heads is attached at **Appendix F.**

Fire Appliance Access

5.8 Manual for Streets (MfS) indicates that the access requirements for emergency vehicles are generally stipulated by the Fire Service. Table 13.1 of the *The Building* Regulations *2010 'Fire Safety' Approved Document B (2019 edition, incorporating the 2020 amendments) Section 13 'Vehicle Access'*, sets out that a minimum road width of 3.7m be provided and turning facilities should be provided in any cul-de-sac that is more that 20m long. Fire tenders and emergency vehicles will access the site via the site access junction on Thurnscoe Bridge Lane and can utilise turning heads provided through the site turn around.

6. TRIP GENERATION AND DISTRIBUTION

INTRODUCTION

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

TRIP GENERATION

6.2 In order to understand the trip generating potential of the development, vehicle trip rates have been derived from TRICS database. This is based on the site accommodating 296no. dwellings. The following parameters have been selected:

- Land Use: Residential – Houses, Privately Owned
- Range: 160 - 537 units
- Date Range: 01/01/15 – 15/05/23
- Location: Suburban Area / Edge of Town

6.3 **Table 6.1** summaries the vehicle trip rates, and resultant trip generation associated with the development proposals. Full TRICS outputs can be found at **Appendix G.**

Table 6.1: Proposed Development – Vehicle Trip Generation

	AM Peak Hour			PM Peak Hour		
	In	Out	2-way	In	Out	2-way
Trip Rates	0.131	0.380	0.511	0.352	0.162	0.514
Trip Generation	39	112	151	104	48	152

(Source: TRICS)

6.4 As can be seen in **Table 6.1**, the proposals are anticipated to generate 151 two-way vehicle trips in the AM peak hour and 152 two-way vehicle trips in the PM peak hour.

6.5 The site is located within the Barnsley 014 MSOA. 2011 Census Method of Travel to Work data has been obtained and is summarised in **Table 6.2,** to demonstrate to Active Travel England the likely mode split of trips to/from the site, based on the best information available at the time of writing this report.

Table 6.2: Barnsley 014 Modal Split

Mode	Percentage
Train	2.3%
Bus	7.2%
Motorcycle	1.0%
Driving a car/van	68.0%
Passenger in a car/van	10.1%
Bicycle	0.7%
On Foot	10.7%
Total	**100%**

(Source: Nomis)

6.6 On the basis that the proposed development is anticipated to generate 151 and 152 two-way vehicle trips in the AM and PM peak hours, respectively, and these account for 68% of overall trips to/from the site, it is possible to understand the level of trips associated with alternative modes of transport. The results are summarised in **Table 6.3** below.

Table 6.3: Trip Generation by Mode

Mode	AM			PM			Daily		
	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
Train	1	4	5	4	2	5	22	22	44
Bus	4	12	16	11	5	16	68	69	137
Motorcycle	1	2	2	2	1	2	10	10	19
Driving a car/van	39	112	151	104	48	152	648	652	1300
Passenger in a car/van	6	17	22	15	7	23	96	97	193
Bicycle	0	1	2	1	0	2	7	7	14
On Foot	6	18	24	16	8	24	102	103	205
Total	57	165	222	153	71	224	953	959	1912

(Source: Consultant Calculation)

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

TRIP DISTRIBUTION

6.8 Trips associated with the development have been assigned to the local highway network using a gravity model, based on Census 2011 'Location of usual residence and place of work' data for MSOA Barnsley 014, within which the site is located.

6.9 **Table 6.4** below, provides a summary of the gravity model, whilst the full calculations are provided at **Appendix H.**

Table 6.4: Summary of Trip Distribution

Route	%
Thurnscoe Bridge Lane (North)	45%
Thurnscoe Bridge Lane (South)	55%

(Source: Consultant Calculation)

6.10 Flow diagrams provided at **Appendix I** show the distribution in **Table 6.4,** represented graphically. This trip distribution has been applied to the predicted trip generation, set out in **Table 6.1** and can be seen on the flow diagram attached at **Appendix J**.

MATERIALITY

6.11 In order to understand the potential impact of the development proposals, an assessment of the uplift in movements as a consequence of the development has been undertaken and is presented in **Table 6.5**, below.

Table 6.5: Number of Development Trips by Junction

Junction	Trips	
	AM	PM
Site Access / Thurnscoe Bridge Lane	150	151
Thurnscoe Bridge Lane / Shepherd Lane / High Street	67	68
Shepherd Lane / Houghton Road / John Street	47	48
Station Road / Holly Bush Drive	39	40
Barnsley Road / Nicholas Lane / Highgate Lane	74	83

(Source: Consultant Calculation)

6.12 A threshold of an uplift of 30 or more two-way trips associated with the development proposals has been applied; beyond this, the uplift in traffic flows is not be considered to be material.

7. OPERATIONAL ASSESSMENTS

INTRODUCTION

7.1 This section of the Transport Assessment considers operational assessments of a number of junctions on the local road network, as well as the site access.

7.2 In order to demonstrate the impact of the development proposals on highway capacity, the following junctions have been assessed:

- Site Access / Thurnscoe Bridge Lane;
- Thurnscoe Bridge Lane / Shepherd Lane / High Street;
- Shepherd Lane / Houghton Road / John Street;
- Station Road / Holly Bush Drive; and
- Barnsley Road / Nicholas Lane / Highgate Lane.

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

BASE SURVEY DATA

7.4 Fully classified turning counts have been undertaken at the junctions identified above, in order to establish a base situation. It should be noted that the two-way flows past the point where the site access is proposed, are taken from ATCs undertaken between Thursday 25th April – Wednesday 1st May 2024. In order to establish the AM and PM peak hour flows along Thurnscoe Bridge Lane, the data for Friday 25th April has been utilised, as this was highest for the peak periods (08:00-09:00 and 16:00-17:00).

7.5 An analysis of the turning count data identifies that the network peak hours were 08:00-09:00 in the AM peak hour and 16:30-17:30 in the PM peak hour, across all junctions. The full traffic count data is included at **Appendix K,** and the surveyed peak hour flows are illustrated in figures provided at **Appendix L.**

NTM ADJUSTED TEMPRO GROWTH RATES

7.6 In line with industry standard methodology, the assessments consider a design year 5 years post submission of the planning application, i.e. 2029. To establish the likely traffic growth from the 2024 base traffic flows to a future year of 2029, the TEMPro 8.1 table "RTF 2018

Scenario 1" has been used. The growth factors obtained from Tempro are set out in **Table 7.1**, below.

Table 7.1: NTM Adjusted TEMPro Growth Rates

Amenity	AM	PM
Barnsley 014	1.0436	1.0444

(Source: TEMPro)

7.7 Flow diagrams are provided at **Appendix M,** which show traffic growthed to the design year. It should be noted that the traffic growth factors take account of traffic growth associated with Local Plan allocations and, therefore, there is likely to be some degree of double counting of the proposed development, given it is an allocated site. The predicted trip generation of the site has been added to the 2029 Base flows to establish the 2029 Base + Development flows which can be seen on the flow diagrams attached at **Appendix N.**

MODELLING SCENARIOS

7.8 The junctions will be assessed in the following scenarios:

- 2029 AM and PM Base; and
- 2029 AM and PM Base + Development.

OPERATIONAL ASSESSMENTS

7.9 Junctions modelling software has been used to assess the operation of four of the five junctions; the results are summarised for each junction in turn below. The Junctions software predicts the Ratio of Flow to Capacity (RFC) on each approach / turning movement and resultant queue length. An RFC value of less than 0.85 is generally accepted as indicating that a new junction is operating within theoretical capacity, in order to allow some headroom for future traffic growth. An RFC of up to 1.0 is generally accepted for the operation of existing junctions during peak periods. Where RFC values exceed 1.0, the results should be treated with caution as traffic queues and delays are affected exponentially. The full model outputs are provided at **Appendix O**.

Site Access / Thurnscoe Bridge Lane

7.10 The results of the assessments of the proposed site access / Thurnscoe Bridge Lane, are summarised in **Table 7.2** overleaf.

Table 7.2: Site Access / Thurnscoe Bridge Lane

	2029 Base + Dev			
	AM Peak		PM Peak	
	RFC	Q	RFC	Q
Site Access – Thurnscoe Bridge Lane North / Thurnscoe Bridge Lane South	0.45	0.31	0.71	0.42
Thurnscoe Bridge Lane North – Site Access / Thurnscoe Bridge Lane South	0.03	0.03	0.28	0.28

(Source: Junctions 8)

7.11 As can be seen in **Table 7.2,** the Site Access junction onto Thurnscoe Bridge Lane is predicted to operate within its practical capacity (RFC of less than 0.85) in both the AM and PM peak hours.

Thurnscoe Bridge Lane / Shepherd Lane / High Street

7.12 **Table 7.3,** below, summarises the results of the assessment of the Thurnscoe Bridge Lane / Shepherd Lane / High Street junction.

Table 6.3: Thurnscoe Bridge Lane / Shepherd Lane / High Street

	2029 Base				2029 Base + Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
High Street – Thurnscoe Bridge Lane / Shepherd Lane	0.39	0.64	0.32	0.47	0.42	0.71	0.37	0.58
Shepherd Lane – Thurnscoe Bridge Lane / High Street	0.05	0.08	0.09	0.18	0.06	0.09	0.10	0.19

(Source: Junctions 8)

7.13 As can be seen in **Table 7.3,** the junction of the Thurnscoe Bridge Lane / Shepherd Lane / High Street is predicted to operate within its practical capacity (RFC of less than 0.85) with or without the development trips, in the design year of 2029.

Shepherd Lane / Houghton Road / John Street Mini Roundabout

7.14 **Table 7.4,** overleaf, summarises the results of the assessment of the Shepherd Lane / Houghton Road / John Street mini roundabout junction.

Table 7.4: Shepherd Lane / Houghton Road / John Street Mini Roundabout

	2029 Base				2029 Base + Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
John Street	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Station Road	0.64	1.76	0.92	8.66	0.66	1.89	0.97	13.26
Shepherd Lane	0.67	1.99	0.90	6.76	0.74	2.77	0.93	8.53
Houghton Road	0.81	4.04	0.76	2.97	0.83	4.63	0.770	3.23

(Source: Junctions 8)

7.15 As can be seen in **Table 7.4,** the junction of the Shepherd Lane / Houghton Road / John Street mini roundabout junction is predicted to operate within its practical reserve capacity (RFC of less than 1.00) with the addition of development trips in 2029. It is recognised that the junction is operation close to capacity within 2029 PM peak period scenario, however, the maximum RFC is still less than 1.00

7.16 It should be noted that when RFC values approach 1.00, the results should be treated with caution as traffic queues and delays are affected exponentially. The main queueing at this junction occurs on the Station Road (eastern arm) of the junction. It should be noted that the modelling does not take into account the presence of the signalised pedestrian crossing between the two mini-roundabout junctions which acts to provide breaks in the flow of traffic, assisting with capacity at the junction.

Station Road / Holly Bush Drive Mini Roundabout

7.17 **Table 7.5,** below, summarises the results of the assessment of the Station Road / Holly Bush Drive mini roundabout junction.

Table 7.5: Station Road / Holly Bush Drive Mini Roundabout

	2029 Base				2029 Base + Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
Holly Bush Drive (N)	0.05	0.05	0.09	0.10	0.05	0.05	0.10	0.11
Station Road (E)	0.58	1.35	0.78	3.40	0.59	1.42	0.82	4.28
Holly Bush Drive (S)	0.07	0.08	0.23	0.29	0.07	0.08	0.24	0.31
Station Road (W)	0.67	2.01	0.61	1.51	0.71	2.42	0.62	1.63

(Source: Junctions 8)

7.18 As can be seen in **Table 6.5,** the mini roundabout junction of Station Road / Holly Bush Drive is predicted to operate within its practical capacity (RFC of less than 1.00) with or without the development trips, in the design year of 2029.

Barnsley Road / Nicholas Lane / Highgate Lane

7.19 **Table 7.6,** below, summarises the results of the assessment of the Barnsley Road / Nicholas Lane / Highgate Lane. In relation to signalised junctions, a Degree of Saturation (DoS) of 100% or more demonstrates that the arm of the junction is operating over capacity. The PRC over all lanes, if negative, demonstrates that the junction as a whole is operating over capacity.

Table 7.6: Barnsley Road / Nicholas Lane / Highgate Lane

	2029 Base				2029 Base + Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	DoS	MMQ	DoS	MMQ	DoS	MMQ	DoS	MMQ
Nicholas Lane	119.4%	57.8	130.8%	73.7	129.0%	84.3	120.9%	61.5
Barnsley Road (East) Left Ahead	105.8%	23.4	96.0%	16.5	99.2%	16.6	120.0%	47.9
Barnsley Road (East) Right	112.6%	14.2	105.8%	11.7	116.0%	16.1	76.7%	5.1
Highgate Lane	113.7%	40.9	138.7%	77.2	131.0%	67.9	127.1%	65.3
Barnsley Road (W) Left Ahead	68.3%	6.2	73.2%	8.5	66.6%	6.2	42.1%	3.5
Barnsley Road (W) Right	32.4%	2.1	31.4%	2.5	30.4%	6.1	68.1%	5.5
Total PRC over all lanes	**-32.7%**		**-54.1%**		**-45.6%**		**-41.2%**	

(Source: Linsig V3)

7.20 As can be seen in **Table 7.6** above, the junction is predicted to operate over capacity in the 2029 base scenario, with significant queuing experienced on all arms of the junction, except for Barnsley Road west. This queueing is made worse by the development, but only by adding vehicles to the back of existing queue. A mitigation proposal to demonstrate nil detriment impact at this junction would in reality have little impact on the operation of the junction.

SUMMARY

7.21 Capacity assessments have been undertaken for a number of off-site junctions where the development proposals were identified to increase peak hour flows by 30 or more two-way trips in either peak hour. The modelling results indicate that the majority of the junctions operate satisfactorily in both peak hours with the addition of the development traffic in both the current and design year and, therefore. There are two junctions where there are existing capacity constraints, which are made only marginally worse by the development and, therefore, it is not considered appropriate to offer any mitigation at this time.

8. SUMMARY & CONCLUSIONS

SUMMARY

8.1 TPS has prepared this Transport Statement to accompany a planning application for the development of 296no. dwellings on land to the west of Thurnscoe Bridge Lane. The following summarises the key points:

- The proposals are in keeping with both the local and national transport and the land use planning policy agenda;
- An analysis of contemporary accident data suggests that there are no accident trends that might be exacerbated by the addition of development related traffic;
- The site benefits from good connectivity with the facilities and amenities available in the local area, with opportunities for residents and visitors to arrive by non-car modes;
- An assessment of the likely vehicle trip generation indicates that the proposed dwellings would be anticipated to generate 151 two-way vehicle trips in the AM peak hour and 152 two-way vehicle trips in the PM peak hour.
- Operational assessments of the local highway network have been undertaken based on 2024 survey data, growthed to a future year of 2029 using NTM adjusted TEMPro Growth Rates;
- The operational assessments demonstrate that the local highway network has sufficient capacity to accommodate the predicted trip generation of the proposed development;
- Car parking has been provided at an appropriate ratio for the proposed development; and
- Refuse and servicing have been considered, with turning heads provided throughout, allowing vehicles to access and egress the site safely.

CONCLUSION

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

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REPORT APPENDICES

Appendix A

Proposed Site Layout Plan

ACCESS TO FUTURE DEVELOPMENT

PUBLIC OPEN SPACE (TO BE TERRACED)

PUBLIC OPEN SPACE

PUBLIC OPEN SPACE

PUBLIC OPEN SPACE

PUBLIC OPEN SPACE

PUBLIC OPEN SPACE

LAP

SW ATTENUATION

PUMP STATION

Miniature Rifle Range

Path (um)

Path (um)

Thurnscoe Dike

Thurnscoe Dike

Ward Dike

THURNSCOE BRIDGE LANE

DERRY GROVE

HALLGATE

TURNER

Derry House

Shelte

N

PLANNING KEY

PLANNING LAYOUT KEY:

- SITE BOUNDARY
- ASSOCIATED LAND
- ROAD
- ROAD MARKINGS
- DRIVES & PATHS
- 1.8m TIMBER SCREEN FENCE
- 1.2m POST & RAIL FENCE
- 1.8m TIMBER GATE
- 1.2m METAL RAILINGS
- 0.45m KNEE HIGH RAIL
- 1.8m SCREEN WALL & FENCE PANEL INFILL
- EASEMENT
- VISIBILITY SPLAY
- EVCP
- BIN STORAGE
- BIN COLLECTION POINT
- INDICATIVE LOCATION OF SHED
- PLOT NUMBERS
- PARKING SPACES
- S106 AFFORDABLE PLOTS
- BLOCK PAVING
- EXISTING TREES AND HEDGING TO BE RETAINED
- TREES AND HEDGING TO BE REMOVED

Schedule of Accommodation

Thurnscoe, Bridge Lane **18/10/2024**

S106 Affordable Housing

Name	Arrangement	Bed	NDSS	Storey	M4(2)	Number
Bramley	End	1	Y	2	M4(3)	6
Totley	End	1	Y	2	N	6
B2.1	End	2	Y	2	N	10
B3	End	3	Y	2.5	N	8
Total						**30**

Open Market Housing

Name	Arrangement	Bed	NDSS	Storey	M4(2)	Number
Denborough	End	1	Y	2	N	16
WAB	End	2	Y	1	M4(3)	10
Ferndale	End	2	Y	2	N	13
Eastbeck	End	2	Y	2.5	N	14
Ripley	End	2	Y	2	N	62
Oakwood	End	3	Y	2	Y	14
Leyburn	Det	3	Y	2	N	21
Cadeby	Det	3	Y	2	Y	9
Baildon	End	3	Y	2.5	N	40
Salbury	End	3	Y	2.5	N	38
Wentbridge	Det	4	Y	2	Y	10
Dalton	Det	4	Y	2.5	Y	12
Cookbury	Det	4	Y	2	N	7
Total						**266**
Overall Total						**296**

AVANT homes
Unit 5, Mariner Court, Pool Industrial Estate, Wakefield, WF9 3FL
Tel: 01924 258413 Fax: 01924 258406
www.avanthomes.org.uk

DATE: Oct 2024 | SCALE: 1:500 @ A0 | DRAWN BY: DR

DWG TITLE: Planning Layout

PROJECT: Thurnscoe Bridge Lane, Thurnscoe

DWG NO: WY-TBL-200 | REV: -

G:\15. Group Layouts\01 - Regional Layouts\04 - West Yorkshire\Thurnscoe - Thurnscoe Bridge Lane\2 - Architectural\2.1 - DWG\Thurnscoe Proposed Site Layout

Appendix B

TPS Scoping Note

TPS Transport Consultants Ltd
Technical Note

Client	Avant Homes
Project	Thurnscoe Bridge Lane, Thurnscoe
TPS Reference	P2423
Date Prepared	12/04/2024
Prepared By	JT
Checked By	GS

Copyright Statement

1. INTRODUCTION

1.1 TPS Transport Consultants Ltd (TPS) has been appointed by Avant Homes to prepare a Transport Assessment, Travel Plan and Preliminary Access Design in support of a forthcoming planning application for residential development, on land to the west of Thurnscoe Bridge Lane, Thurnscoe, Barnsley.

1.2 This Scoping Note has been prepared to agree the scope of the highways assessment. Feedback / discussion on the suggested scope from the local highway authority is welcomed.

Site Location and Access

1.3 The site is located to the west of Thurnscoe Bridge Lane, approximately 1.1km south of Thurnscoe and 1.5km north of Goldthorpe. The site is bound by residential development to the north, Thurnscoe Bridge Lane to the east, a scrap metal facility to the south and agricultural land to the east. The site location is shown in **Figure 1.1** below, whilst an indicative layout plan for the site is attached at **Appendix A.**

Figure 1 – Site Location

Source: Google Maps

1.4 The proposals are for up to 340 residential dwellings, with access to be taken via a new right turn ghost island junction from Thurnscoe Bridge Lane, to the east of the site. The site is allocated in the Barnsley Local Plan, Ref: HS52 'Land west of Thurnscoe Bridge Lane and south of Derry Grove, Thurnscoe'. The site allocations document suggests an indicative yield of 308 dwellings.

1.5 The Local Plan states: "*The development will be expected to provide off-site highway enhancements*". Further guidance on what off-site improvements should be delivered by the developer is sought from the highway authority. It should be noted that a pedestrian crossing is to be provided as part of the proposed site access, which will consist of dropped kerbs, tactile paving and pedestrian refuse island, to provide pedestrian access to the bus stop to the east of Thurnscoe Bridge Lane. In addition, a footway will be provided from the site access, north, tying in with existing footway provision to the north of the site.

1.6 This Scoping Note sets out the proposed scope of the Transport Assessment and provides some information to be agreed and included within the report, to support the application.

2. ACCESS BY SUSTAINABLE MODES

2.1 The Transport Assessment will provide a detailed review of pedestrian facilities, including walking routes to and from key local amenities and services, a review of local cycle infrastructure and the available public transport services, in the vicinity of the site.

2.2 The site will be designed to encourage and facilitate trips by active travel modes, particularly to/from facilities in the local village centre. The Transport Assessment will look to provide an overview of nearby facilities, which will help to facilitate trips on foot/by bike, rather than prospective residents relying on the private car.

2.3 Active Travel England will be a statutory consultee, given the development proposes over 150 dwellings and as such, w would look to provide a more detailed review in line with their developer checklist.

2.4 The site access has been designed to incorporate a pedestrian crossing, made up of dropped kerbs, tactile paving and a pedestrian refuge island in order to facilitate access to the bus stop located to the east of Thurnscoe Bridge Lane.

2.5 The existing public right of way which runs through the site, north-south, will be maintained as part of the proposals, provided through the proposed green corridor, as can be seen on the indicative site layout attached at **Appendix A.**

3. TRIP GENERATION AND DISTRIBUTION

Trip Generation

3.1 In order to understand the trip generating potential of the development, vehicle trip rates have been derived from TRICS database. This is based on the site accommodating 340 dwellings. Full TRICS outputs are attached at **Appendix B.** The following parameters have been selected:

- Land Use: Residential – Houses, Privately Owned
- Range: 160 - 537 units
- Date Range: 01/01/15 – 15/05/23
- Location: Suburban Area / Edge of Town

Table 1: Proposed Dwellings, Vehicle Trip Generation

	AM Peak Hour			PM Peak Hour		
	In	Out	2-way	In	Out	2-way
Trip Rates	0.131	0.380	0.511	0.352	0.162	0.514
Trip Gen	45	129	174	120	55	175

(Source: TRICS)

3.2 As can be seen above, the proposed development could be expected to generate 174 vehicle trips in the AM peak hour and 175 vehicle trips in the PM peak hour.

Trip Distribution and Materiality

3.3 Trips associated with the proposed development has been distributed and assigned to the local highway network using a gravity model based on 2011 Census data 'Location of usual residence and place of work' data for MSOA Barnsley 014, within which the site is situated.

3.4 The trip generation set out in **Table 1** has been distributed based on the gravity model, with the materiality at junctions on the local highway network demonstrated in **Table 2,** overleaf.

Table 2: Materiality

Direction from site access	Junction	AM Peak Hour	PM Peak Hour
North and South	Thurnscoe Bridge Lane / Site Access	174	175
North	Thurnscoe Bridge Lane / High Street	90	91
North	Thurnscoe Bridge Lane / Houghton Road / John Street / Station Road / Holly Bush Drive	63	64
South	Nicholas Lane / Barnsley Road / Highgate Lane	87	87

(Source: TRICS)

3.5 Taking into account the materiality demonstrated in **Table 2**, as part of the Transport Assessment we would undertake an operational assessment of the above junctions for the morning and evening peak hours. Beyond these junctions, traffic dissipates to a level which would not result in a material impact at any off-site junction. At the Nicholas Lane / Barnsley Road / Highgate Lane junction, 21 two-way trips continues east, 26 two-way trips continue west and 40 two-way trips continue south, which further disperse into the wider highway network. The LHA's judgement on the above is requested.

4. COMMITTED DEVELOPMENT AND ASSESSMENT SCENARIOS

4.1 Information relating to committed developments in the vicinity of the site which should be taken into account as part of the Transport Assessment, is requested from BMBC. This should include sites that have the potential to have an impact on the highway network, proposed for analysis as part of the junction modelling, as set out in Section 3.

4.2 Operational assessments will be undertaken for the following scenarios:

- 2024 Base;
- 2029 Base + Committed Development; and
- 2029 Base + Committed Development + Development.

4.3 Traffic growth factors have been be obtained from the Tempro database for the MSOA Barnsley 014, within which the site is situated, in order to growth traffic to a future year of 2029, 5 years post submission of the planning application. The proposed traffic growth factors, to be used as part of our assessment are set out below:

- AM Peak - 2024 – 2029 – **1.0436**; and
- PM Peak – 2024 – 2029 – **1.0444.**

5. ROAD SAFETY

5.1 The scope of the accident study area will reflect the junctions to be included within the operational assessments, set out in sections 3 and 4.

5.2 Accident data will be sourced from www.crashmap.co.uk for the latest five year period available, in order to understand if there are any collision trends which might be exacerbated by the proposals.

6. ACCESS ARRANGEMENTS AND PARKING

Access Arrangements

6.1 A potential site access arrangement drawing is attached at **Appendix** C; this shows a right turn ghost island priority T-junction from Thurnscoe Bridge Lane. The access has been designed in line with DMRB and has been positioned to minimise the impact on the bus stop and layby to the east of Thurnscoe Bridge Lane.

6.2 The access is to be 6m wide with 2m wide footways to both sides of the carriageway. There will be 6m kerb radii on entry and the right turn ghost island will have a width of 3.3m with running lanes of between 3.5m and 3.7m. In order to provide for pedestrians accessing the bus stop to the east of Thurnscoe Bridge Lane, a pedestrian crossing with central refuge, tactile paving and dropped kerbs will be provided to the south of the access. To the north, a footway will be provided connecting with existing provision.

Parking

6.3 Parking standards are set out in the Barnsley Local Plan Supplementary Parking Document 'Parking'. **Table 3** summarises the residential parking standards.

Table 7.1: Residential Parking Standards

Dwelling Type	Standard
2-bed	1 space
3-bed	2 spaces
4-bed	2 spaces
Visitors	1 visitor space per 4 dwellings subject to layout

(Source: Barnsley Local Plan Supplementary Parking Document 'Parking')

6.4 Car parking throughout the development will be provided in line with the above standards. Confirmation of the provision required for cycles is sought from BMBC.

6.5 Confirmation of the servicing vehicle to be used in swept path analysis of the layout is sought from BMBC. Swept path analysis will be submitted as part of the Transport Assessment for all turning heads within the site.

7. TRAVEL PLAN

7.1 Alongside the Transport Assessment, a Travel Plan will accompany the application; this will confirm Avant's approach to minimising the impacts of travel and transport and will reflect Travel Plans prepared by TPS to support other developments in Barnsley.

7.2 The Travel Plan will be structured as follows:

- Introduction – to include site location and development details, access arrangements and car parking;
- Aims and objectives;
- Policy context, illustrating compliance with both national and local policy;
- Site accessibility and connectivity with local amenities;
- Travel Plan measures; and
- Targets and monitoring mechanisms, including reporting to BMBC.

8. SUMMARY

8.1 This Scoping Note has been prepared to set out the intended scope of the Transport Assessment and Travel Plan that will accompany a planning application for residential development at Thurnscoe Bridge Lane, Thurnscoe, Barnsley, with a view to agreeing this with BMBC at the earliest opportunity.

8.2 In response to this Note, we would request feedback on:

- The scope of the accident study area;
- The trip generation of the site;
- The methodology for assessing the distribution of trips to/from the site;
- Confirmation of any committed developments to be included within our TA;
- Confirmation of the junctions to be assessed as part of the TA;
- Access arrangements;
- The approach to car parking / cycle parking provision;
- Servicing arrangements
- The suggested content for the Travel Plan.

8.3 We would welcome a response on the content of this Scoping Note, at the earliest convenience of the highway authority.

Appendix A

Indicative Site Layout Plan

N

BURNTWOOD CLOSE

GROVE GARDENS

HALLGATE

TURNESIC GROVE

Derry Grove

DERRY GROVE

Derry House

Shelter

45.4m

LB

43.6m

GREENSIDE

DRAINAGE EASEMENT ASSOCIATED WITH DRAINAGE DIVERSION WHICH WILL BE RE-ROUTED THROUGH THE PROPOSED DEVELOPMENT IN ACCORDANCE WITH YORKSHIRE WATERS REQUIREMENTS

EXISTING PUBLIC RIGHT OF WAY RETAINED THROUGH GREEN CORRIDOR

PUBLIC OPEN SPACE

TREES TO SITE FRONTAGE TO BE RETAINED AS INDICATED

REMOVAL OF TREES REQUIRED TO FACILITATE SITE ACCESS

VISIBILITY SPLAYS TO SITE ACCESS WILL BE DESIGNED IN ACCORDANCE WITH DETAILED TRANSPORT ASSESSMENT

TREES TO SITE FRONTAGE TO BE RETAINED AS INDICATED

Bridge Lane

EXISTING PUBLIC RIGHT OF WAY RETAINED THROUGH GREEN CORRIDOR

NOISE REPORT CURRENTLY BEING UNDERTAKEN AND PROPOSED MITIGATION METHODS AWAITED.

TREES AND EXISTING VEGETATION TO BE RETAINED ALONG SOUTHERN BOUNDARY

Path (um)

36.3m

SW ATTENUATION

Miniature Rifle Range

Thurnscoe Dike

FB

WB

Greyhound Stadium

Path (um)

36.6m

NICHOLAS LANE

Schedule of Accommodation
Bridge Lane, Thurnscoe 23.11.23

S106 Affordable Housing

Name	Bed	NDSS	Storey	Number
A1.1	1	Y	2	12
R2.1	2	Y	2	10
B3	3	Y	2.5	12
Total				**34**

Open Market Housing

Name	Bed	NDSS	Storey	Number
Askham	1	Y	2	52
Ferndale	2	Y	2	11
Ripley	2	Y	2	81
Oakwood	3	Y	2	17
Maltby	3	Y	2	23
Leyburn	3	Y	2	7
Baildon	3	Y	2.5	68
Salbury	3	Y	2.5	16
Wentbridge	4	Y	2	21
Cookbury	4	Y	2	10
Total				**306**

Overall Total	**340**

0 10m 20m 30m 40m 50m

REV	DATE	BY	AMENDMENTS

AVANT homes

Unit 2, Mariner Court, Peel Avenue, Dunkar, Wakefield, WF4 3FL.
Tel: 01924 248410. Fax: 01924 248448.
www.avanthomes.co.uk

DATE:	SCALE:	DRAWN BY:
Nov 2023	1:1000 @ A1	KW

DWG TITLE: Sketch Layout

PROJECT: Thurnscoe Bridge Lane, Thurnscoe

DWG No.	REV:
TH - SK01	-

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Appendix B

TRICS Output

Calculation Reference: AUDIT-640801-231019-1016

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	3 days
	HF	HERTFORDSHIRE	1 days
	KC	KENT	3 days
	SC	SURREY	1 days
	SP	SOUTHAMPTON	1 days
	WS	WEST SUSSEX	2 days
04	EAST ANGLIA		
	NF	NORFOLK	6 days
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days

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

Primary 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: No of Dwellings
Actual Range: 160 to 537 (units:)
Range Selected by User: 155 to 620 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 15/05/23

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	4 days
Tuesday	4 days
Wednesday	8 days
Thursday	5 days

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

Selected survey types:

Manual count	18 days
Directional ATC Count	3 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)	2
Edge of Town	19

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	17
Out of Town	3
No Sub Category	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	9 days - Selected
Servicing vehicles Excluded	34 days - Selected

Secondary Filtering selection:

Use Class:

C3	21 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	7 days
10,001 to 15,000	6 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days
25,001 to 50,000	2 days

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

Population within 5 miles:

5,001 to 25,000	5 days
25,001 to 50,000	1 days
50,001 to 75,000	3 days
75,001 to 100,000	2 days
125,001 to 250,000	7 days
250,001 to 500,000	3 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	4 days
1.1 to 1.5	15 days
1.6 to 2.0	2 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	16 days
No	5 days

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

PTAL Rating:

No PTAL Present	21 days

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

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 DY-03-A-01 MIXED HOUSES DERBY
RADBOURNE LANE
DERBY

Edge of Town
Residential Zone
Total No of Dwellings: 371
Survey date: TUESDAY *10/07/18* *Survey Type: MANUAL*

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

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

3 HC-03-A-24 MIXED HOUSES & FLATS HAMPSHIRE
STONEHAM LANE
EASTLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 243
Survey date: WEDNESDAY *10/11/21* *Survey Type: MANUAL*

4 HC-03-A-26 MIXED HOUSES & FLATS HAMPSHIRE
BOTLEY ROAD
WHITELEY

Edge of Town
Out of Town
Total No of Dwellings: 270
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

5 HC-03-A-29 MIXED HOUSES & FLATS HAMPSHIRE
CROW LANE
RINGWOOD
CROW
Edge of Town
Residential Zone
Total No of Dwellings: 195
Survey date: THURSDAY *30/06/22* *Survey Type: MANUAL*

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

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

7 KC-03-A-06 MIXED HOUSES & FLATS KENT
MARGATE ROAD
HERNE BAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 363
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total No of Dwellings: 288
Survey date: WEDNESDAY 27/09/17 Survey Type: MANUAL

9 KC-03-A-11 MIXED HOUSES & FLATS KENT
COLDHARBOUR ROAD
GRAVESEND

Edge of Town
No Sub Category
Total No of Dwellings: 375
Survey date: MONDAY 20/03/23 Survey Type: MANUAL

10 NF-03-A-23 MIXED HOUSES & FLATS NORFOLK
SILFIELD ROAD
WYMONDHAM

Edge of Town
Out of Town
Total No of Dwellings: 514
Survey date: WEDNESDAY 22/09/21 Survey Type: MANUAL

11 NF-03-A-31 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 321
Survey date: THURSDAY 22/09/22 Survey Type: DIRECTIONAL ATC COUNT

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

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

13 NF-03-A-38 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 537
Survey date: TUESDAY 20/09/22 Survey Type: MANUAL

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

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

15 NF-03-A-47 MIXED HOUSES & FLATS NORFOLK
BURGH ROAD
AYLSHAM

Edge of Town
Residential Zone
Total No of Dwellings: 300
Survey date: WEDNESDAY 21/09/22 Survey Type: DIRECTIONAL ATC COUNT

LIST OF SITES relevant to selection parameters (Cont.)

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

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

17 SF-03-A-09 MIXED HOUSES & FLATS SUFFOLK
FOXHALL ROAD
IPSWICH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 179
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

18 SP-03-A-02 MIXED HOUSES & FLATS SOUTHAMPTON
BARNFIELD WAY
NEAR SOUTHAMPTON
HEDGE END
Edge of Town
Out of Town
Total No of Dwellings: 250
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

19 ST-03-A-07 DETACHED & SEMI-DETACHED STAFFORDSHIRE
BEACONSIDE
STAFFORD
MARSTON GATE
Edge of Town
Residential Zone
Total No of Dwellings: 248
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

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

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

21 WS-03-A-13 MIXED HOUSES & FLATS WEST SUSSEX
LITTLEHAMPTON ROAD
WORTHING
WEST DURRINGTON
Edge of Town
Residential Zone
Total No of Dwellings: 197
Survey date: WEDNESDAY *23/06/21* *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
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	21	276	0.073	21	276	0.293	21	276	0.366
08:00 - 09:00	21	276	0.131	21	276	0.380	21	276	0.511
09:00 - 10:00	21	276	0.128	21	276	0.161	21	276	0.289
10:00 - 11:00	21	276	0.122	21	276	0.143	21	276	0.265
11:00 - 12:00	21	276	0.130	21	276	0.137	21	276	0.267
12:00 - 13:00	21	276	0.144	21	276	0.147	21	276	0.291
13:00 - 14:00	21	276	0.148	21	276	0.137	21	276	0.285
14:00 - 15:00	21	276	0.157	21	276	0.174	21	276	0.331
15:00 - 16:00	21	276	0.252	21	276	0.159	21	276	0.411
16:00 - 17:00	21	276	0.272	21	276	0.155	21	276	0.427
17:00 - 18:00	21	276	0.352	21	276	0.162	21	276	0.514
18:00 - 19:00	21	276	0.281	21	276	0.155	21	276	0.436
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.190			2.203			4.393

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

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

Parameter summary

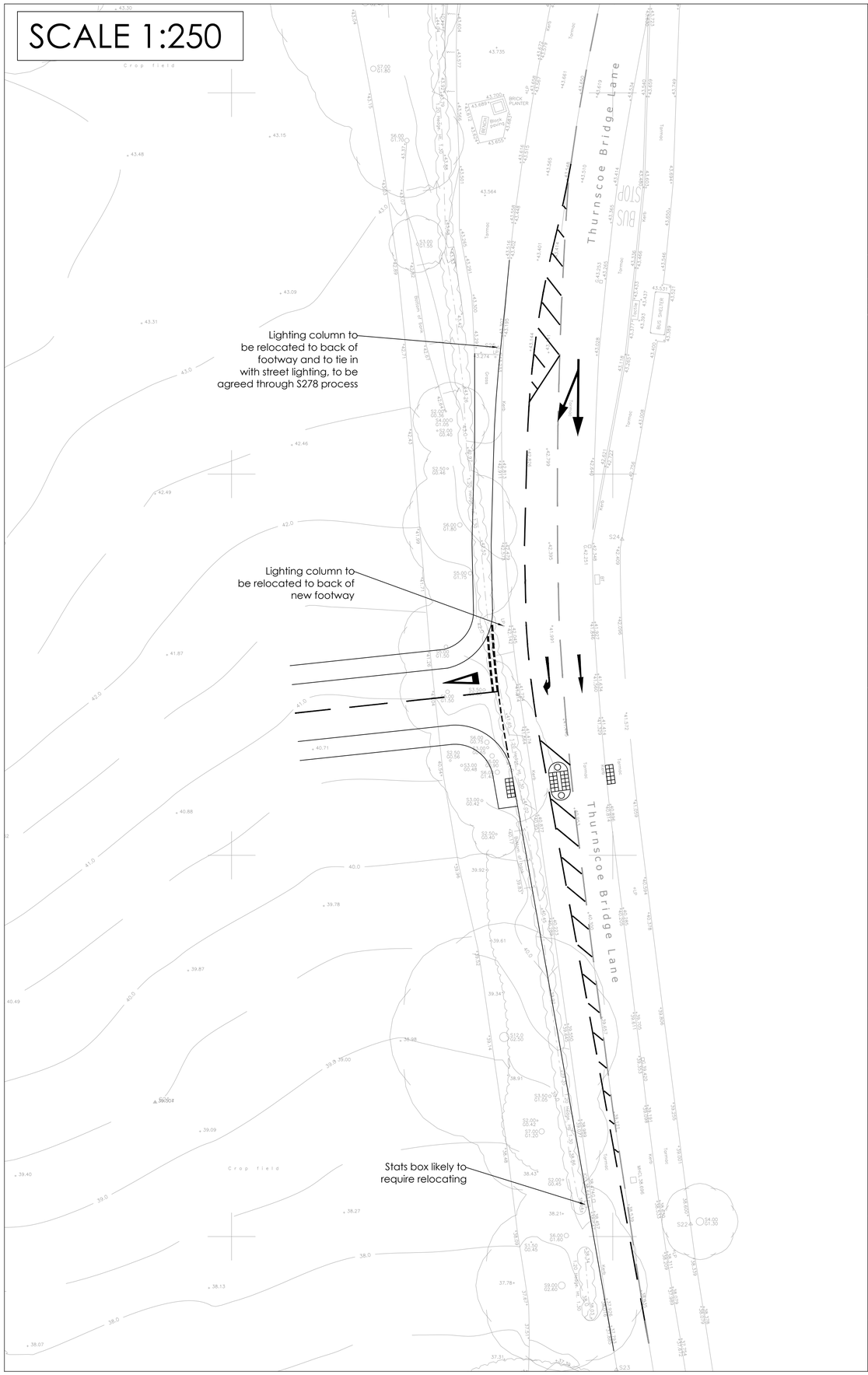
Trip rate parameter range selected:	160 - 537 (units:)
Survey date date range:	01/01/15 - 15/05/23
Number of weekdays (Monday-Friday):	21
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	22
Surveys manually removed from selection:	0

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.

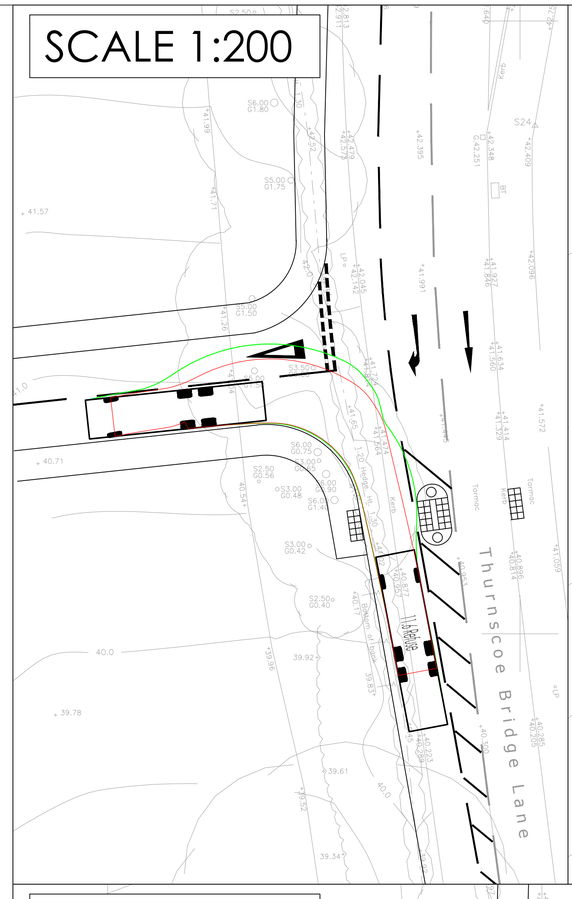
Appendix C

Site Access Arrangement

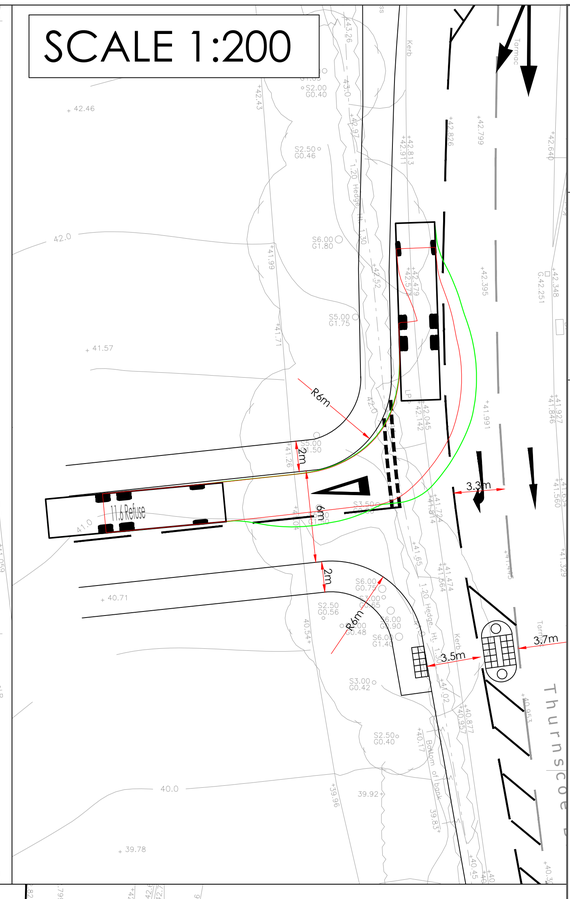
SCALE 1:250



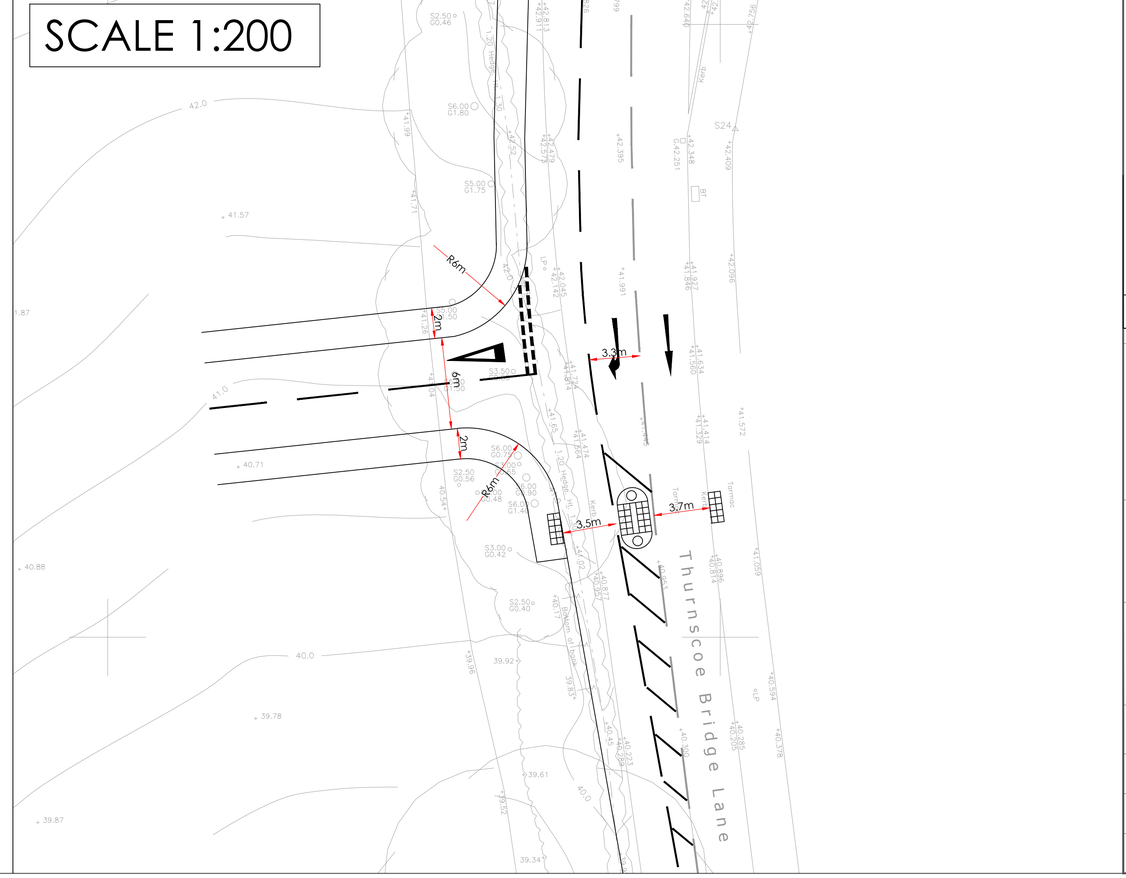
SCALE 1:200



SCALE 1:200



SCALE 1:200



Standard Notes

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

Location Plan

Notes and Keys

Date	Rev	Description	Drawn	Chkd
08.04.24	A	Access widened to 6m instead of 5.5m	JT	GB

ADDRESS
TPS Business Centre,
151-153 Wakefield Road,
Horbury, Wakefield, WF4 5HQ.
Tel: 01924 664638

www.tpsconsultants.co.uk

Project
Thurnscoe Bridge Lane,
Barnsley

Title
Proposed Right Turn
Ghost Island Arrangement

Status
INFORMATION

Scale @ A1	Date Created	Drawn	Checked
As Shown	10/11/23	JT	CG

TPS Project Number		Revision
P2423		A

Drawing Number
D - 1001

Appendix C

Pre-Application Response

BARNSLEY
Metropolitan Borough Council

Growth and Sustainability
Regeneration and Culture
Planning and Building Control

Ref: 2024\ENQ\00177
Date: 2nd July 2024
Enquiries: Jess Duffield
Direct 01226 772589
E-Mail: jessicaduffield@barnsley.gov.uk

Dear Miss Charlotte Hatton

RE: Pre-application enquiry at the Land at Thurnscoe Bridge Lane, Thurnscoe

Introduction
This pre-application enquiry seeks advice regarding a proposed residential development. The site is an allocated housing site (reference HS52) as defined in the adopted Local Plan.

The proposal does not include the entire allocation, with the most eastern (the land to the east of Thurnscoe Bridge Lane) and northern (the land to the south of Howell Gardens) sections of the allocation excluded from this proposal. Outline planning permission was refused at the eastern part of the allocation (ref: 2020/0422, decision date: 12/3/2021) for the following reasons:

- The proposed would result in piecemeal development of a larger housing allocation, prejudicing the ability to take a master planned approach to comprehensively address the constraints across the site allocation and deliver the wider policy aims. This piecemeal approach is contrary to Local Plan Policies HS52 and GD1 as well as policies HE6 and BIO1. In addition, the development proposed results in an unviable scheme that cannot appropriately mitigate its impact on infrastructure requirements, contrary to Local Plan Policy I1.
- In the opinion of the Local Planning Authority, the proposed access would result in vehicles overhanging the pavement when entering the site to the detriment of pedestrian safety. This is contrary to Local Plan Policy T4 New Development and Transport Safety.

The pre-application site area extends beyond the housing allocation boundary and includes a parcel of Green Belt land to the south -west to provide an attenuation basin and biodiversity offsetting. The overall pre-application site area extends to circa 12.9ha.

Site Description and Characteristics
The housing allocation site is located on the southern edge of Thurnscoe, to the west of Thurnscoe Bridge Lane. The site is currently arable fields. There is an established belt of trees which wraps around the southern and western boundary, with a public right of way (Path No: 34- green) running along the south-western and western corner. A separate public right of way (Path No: 9- blue) runs in a north-south direction through the centre of site between the two fields and connects with Path No: 34 to the south of the site, as shown on the map below:

Residential houses/gardens along Derry Grove adjoin the northern boundary of the site. Derry Grove consists of post-war semi-detached dwellings. Howell Gardens is further to the north and consists of 1990s/early 2000s development of detached houses, albeit this does immediately abut this pre-application site boundary (but does adjoin the allocation boundary).

There is an existing gated access into the site at the north-eastern corner, at the junction of Derry Grove/ Thurnscoe Bridge Lane. Large trees are located along the eastern boundary, though less densely than the tree belt to the south.

To the south of the tree belt is an existing rifle club and metal recycling use, in addition to a former dog race track. Thurnscoe Dike meanders around the development to the south and then along the southern boundary of the adjacent (proposed attenuation) field.

The proposal includes the triangle field to the south-west of the site, which is separated from the housing allocation by footpath No: 34 referred to above. The proposal suggests using the southern section of the field for the attenuation basis associated with the development, albeit this field does not form part of the allocation and is washed over by Green Belt. It is also suggested that this land is used for bio-diversity net gain.

As mentioned above, the triangular field to the east of Thurnscoe Bridge Lane, which forms part of housing allocation HS78, has been excluded from this pre-application proposal. Similarly, the northern part of the most western field has been excluded from the proposal, with the pre-application site boundary cutting across the centre of this field.

Planning History
No recorded planning history at enquiry site.

Planning permission refused at adjacent site:

2020/0422 - Outline application for residential development with all matters reserved apart from access, REFUSED, 12/3/2021

The Proposal
The proposal does not relate to the whole HS52 allocation which amounts to circa 13.8ha . Although the area hereby proposed is a of a similar size to the entire allocation, this is due to the addition of the south-western field. There is no information to justify or explain why the other parts of the allocation have been excluded.

The proposed development includes the erection of 340 dwellings, which consists of a mixture of 1, 2, 3 and 4 bedroom properties. The properties vary between terraces, semi-detached and detached. 34 of the dwellings are proposed as affordable dwellings, and these would be positioned within the central parts of the development.

The development would be accessed off Thurnscoe Bridge Lane, with an access proposed at the centre of the eastern boundary. This is the only proposed vehicular access. The proposed masterplan includes the provision of a future vehicular connection into the land to the north.

Public open space is proposed at the western corner of the site, and the existing PROW (Path No: 9) is shown to run through a central landscaped area. The majority of the trees at the site

frontage/along the eastern boundary are to be retained, though those closest to the proposed access would need to be removed. No outdoor areas of play are shown on the proposed site layout.

The existing PROW (between the two separate parcels of land) is excluded from the red line boundary, but the supporting information suggests that the applicant would look to upgrade this section of the bridleway to make it suitable for plant/machinery required to access the attenuation basin. The attenuation basin in positioned on the southern part of the adjacent field with the remainder of the field to be grassland.

The housing blocks are positioned in a fairly linear arrangement, with a street hierarchy clearly indicated by the different coloured road surfacing.

Planning Policy Considerations

Planning decisions should be made in accordance with the development plan unless material considerations indicate otherwise and the NPPF does not change the statutory status of the development plan as the starting point for decision making. The Local Plan was adopted in January 2019 and is also now accompanied by seven masterplan frameworks which apply to the largest site allocations (housing, employment and mixed-use sites). In addition, the Council has adopted a series of Supplementary Planning Documents and Neighbourhood Plans which provide supporting guidance and specific local policies and are a material consideration in the decision-making process.

National Planning Policy Framework (NPPF December 2023)

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. At the heart of the NPPF is a presumption in favour of sustainable development, with paragraph 7 stating that the purpose of the planning system is to contribute to the achievement of sustainable development, including the provision of homes, commercial development and supporting infrastructure in a sustainable manner. The document sets out the three overarching objectives to achieving sustainable design, which are interdependent: an economic, social and environmental objective.

The following sections of the NPPF are relevant to this pre-application proposal:

Section 5 - Delivering a Sufficient Supply of Homes
Section 8 – Promoting Healthy and Safe Communities
Section 9 – Promoting Sustainable Transport
Section 11- Making Effective Use of Land
Section 12- Achieving Well-designed and Beautiful Places
Section 13- Protecting Green Belt Land
Section 15 – Conserving and Enhancing the Natural Environment

Barnsley Local Plan- 2019

The following Local Plan policies are relevant to this pre-application proposal:

Policy SD1: Presumption in favour of sustainable development
Policy SD2: General Development
Policy H1: The number of new houses to be built
Policy H2: The distribution of new homes
Policy H6: Housing Mix and Efficient Use of Land
Policy H7: Affordable Housing
Policy T3: New Development and Sustainable Travel
Policy T4: New Development and Transport Safety
Policy D1: High Quality Design and Place Making
Policy CC1: Climate Change
Policy CC2: Sustainable Design and Construction
Policy POLL1: Pollution Control and Protection
Policy I1: Infrastructure and Planning Obligations
Policy BIO1: Biodiversity and Geodiversity
Policy I2: Educational and Community Facilities
Policy GI1: Green Infrastructure
Policy GB1: Protection of Green Belt
Policy HE6: Archaeology

Supplementary Planning Documents

The Council have adopted SPDs to provide further guidance about the implementation of specific planning policies in the Local Plan. The adopted SPDs should be treated as material considerations in decision-making and are afforded full weight. The following SPDs are relevant to this proposal:

Design of Housing Developments, July 2023
Residential Amenity and the Siting of Buildings, May 2019
Open Space provision on new housing developments, May 2019
Affordable Housing, July 2022
Biodiversity and Geodiversity, May 2019
Planning Obligations, November 2019
Sustainable Travel, July 2022
Section 278 Agreements, November 2019
Section 38 Agreements, November 2019
Parking, November 2019
Sustainable construction and climate change, July 2023
Trees & Hedgerows, May 2019
South Yorkshire Residential Design Guide, 2011

Assessment of the Proposal

Principle of Development
The majority of the pre-application site falls within a ‘housing allocation’ (ref: HS52) as defined in the adopted Local Plan.

Local Plan Policy H1 states that at least 21,546 new homes to are to be built during the plan period (2014 – 2033).

Local Plan Policy H2 states that 1969 new houses are to be developed within the Dearne area.

Paragraph 9.2 builds upon the policy requirements, stating that the supply of new housing sites is made up of Local Plan allocations and sites that already have planning permission. Paragraph 9.5 refers to the site specific polices.

Site Specific Policy - Site HS52 Land west of Thurnscoe Bridge Lane and south of Derry Grove, Thurnscoe Indicative number of dwellings 308:

The development will be subject to the production of a masterplan covering the entire site to ensure that development is brought forward in a comprehensive manner.

The development will be expected to:

- Ensure that the trees and hedgerows around the periphery of the site, in particular on the southern boundary are retained; and
- Provide off site highway enhancements.

Archaeological remains are known to be present on this site. The site area has been reduced to allow flexibility in the development to ensure the remains can be preserved in situ if necessary.

In summary, the principle of residential development at the allocation site is therefore acceptable, subject to according with other local plan policies and national policies, along with the relevant SPD guidance, with particular regard to the site-specific policy.

In terms of developing the land outside of the allocation site, including the land to the south-west, further assessment of this included below.

Planning Policy Comments
In accordance with site allocation Policy HS52, development of the site is subject to the production of a masterplan covering the entire site. The information submitted indicates that any subsequent application will be accompanied by a masterplan covering the whole site (mentioned at page 74 of supporting statement). However, it is not possible to establish through this pre application enquiry (which relates to on only part of the site allocation) whether the proposal will prejudice the ability to take a master planned approach to comprehensively address the constraints across the site allocation and deliver the wider policy aims.

This piecemeal approach is contrary to both the site allocation policy and Local Plan Policy GD1. There is a risk that the proposal will adversely affect the potential development of the wider allocation. Useful advice can be found in the planning practice guidance on masterplans, including that an implementation strategy may be required if the development is expected to be brought forward in a number of phases.

The enquiry does not acknowledge or address the archaeological remains known to be present on site and referred to in the site allocation policy.

The allocation policy also indicates that the existing trees and hedgerows around the periphery of the site, in particular on the southern boundary, should be retained and this needs to be explicitly demonstrated within supporting tree surveys and assessments.

The proposed 10% affordable housing is in compliance with Local Plan policy H7, but the suitability of the proposed house types will require detailed advice from Strategic Housing. Similarly, the suitability of the proposed housing mix and compliance with the first part of Local Plan policy H6 will require detailed advice from Strategic Housing.

The proposal will need to demonstrate that it achieves a density of 40 dwellings per hectare (dph) in accordance with Local Plan policy H6. The indicative number of dwellings on the entire allocation is set out in the Local Plan policy as 308 dwellings. This has taken into account the areas of the site where archaeological remains are known to be present, and that the policy indicates may need to be preserved in situ – i.e. areas that may not be capable of being developed. The pre-application

proposal suggests a higher number of houses (340 dwellings) on this circa 2/3 of the allocation. The increase in density therefore needs to be justified.

The proposal will need to demonstrate that it secures within the allocation 15% on site open space (with equipped play areas and formal recreation provision or a financial contribution to provide/enhance off site facilities) in accordance with Local Plan policy GS1 and the 'Open space provision on new housing' developments SPD.

The enquiry includes an area of land outside the allocation which is designated Green Belt and is proposed as a SUDs attenuation basin and a wider green area (suggested to be used for BNG off-setting). It is not clear why the attenuation basin has been positioned outside of the housing allocation and instead encroaches into the Green Belt. The applicant will need make the case for this development in the Green Belt and further explain why this cannot accommodated with the allocation boundary.

The intended use of the wider green area is not clear – BNG would be an appropriate use but public open space (to meet the needs of new residents in accordance with policy GS1 and the SPD Open space provision on new housing developments) would not.

The enquiry asks for confirmation of S106 requirements, but these would need to be calculated on the basis of the masterplan and then amounts apportioned to each part of the allocation if development is to proceed in parcels/phases.

On this basis the development cannot be supported in its current form.

Strategic Housing

Local Plan Policy H7 requires 10% affordable housing provision. The policy states that this provision will be sought unless it can be demonstrated through a viability assessment that the required figure would render the scheme unviable. The developer must show that arrangements have been put in place to keep the new homes affordable.

The Accommodation Schedule suggests S106 provision (34 units) plus 'additionality affordable housing' (66 units). It is noted that the application also seeks 100 PRS units. This conflicts with the Sketch Layout Plan which only references S106 and Open Market dwellings. Clarity on this is required.

The proposed tenure of affordable plots is not distinguished on the Sketch Layout Plan, the affordable units appear to be clustered however the tenure mix of affordable units may go some way to diluting this. The cul-de-sac (plots 321-330) are of particular concern.

The application proposes a mix of 1, 2 and 3 bed affordable units. Given that the scheme incorporates 31 x 4 beds, we would expect to see some larger affordable provision.

None of the affordable units are M4(2) or M4(3) standard which does not comply with section 6 of the Design of Housing Development SPD. Only the Oakwood and Wentbridge open market house types are M4(2) standard.

The applicant should refer to the Affordable Housing SPD and First Homes Technical Note with regards to affordable tenure split and design of affordable units.

Highways/Access

NPPF Paragraph 115 states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety or the residual cumulative impacts on the road network would be severe.

Local Plan Policy T3 states new developments will be expected to be located and designed to reduce the need to travel, be accessible to public transportation, meet the needs of pedestrians and cyclists and provide the minimum levels of parking. Applications must be supported by a transport statement/assessment and a travel plan.

Local Plan Policy T4 states that new development will be expected to be designed and built to provide all transport users within and surrounding the development with safe, secure and convenient access and movement.

General comments regarding the technical requirements and design of residential streets are included at Appendix 1. The Highways DC Officer has provided site specific comments as follows:

It appears that the development is to include some long stretches of straight road and as such speed reducing measures will be necessary as detailed in the general comments above. Vertical deflection should be avoided where possible in residential areas with horizontal deflection being the preferred method.

It is noted that the applicant has provided an indicative layout sketch plan of the proposed development and new access to the serve the site. It is advised that a designers check list will be required to ensure that all aspects of the design are in accordance with the requirements as set out within CD123 of DMRB. The applicant is proposing a priority junction with a ghost right turn pocket, however there are no proposed pedestrian crossing points such as refuge islands. There is also no existing footway provision along the site frontage, with a shared footway/cycleway on the opposite side of Thurnscoe Bridge Lane, and whilst there is a bus stop opposite the site, residents would have restricted access to bus stops both to the north and south of the site on the same side as the development. It should be noted in the first instance, that it will be necessary to provide crossing points that can accommodate cyclists given that there is a shared footway/cycleway on the opposite site of the carriageway to the site. As such, pedestrian refuge islands should be a minimum width of 3m with the appropriate lining offset thereafter. Consideration should also be given as to the possible cycle links, such as 3m wide footway provision, that can be incorporated into the site design to provide seamless connectivity to the existing network provision.

Given the proposed number of dwellings, Active Travel England (ATE) will be a statutory consultee as part of the part of the planning process for any application that is forthcoming for the site, and it should be noted that ATE will make comments and recommendations in line with LTN120 which will be reviewed holistically between the authority and ATE. The applicant should be mindful of the importance of active travel and the need to drive this forward together.

Transport Assessment comments;
A full Transport Assessment will be required as part of any application to come forward, the scope of which will need to be agreed. The authorities Traffic Team should be made aware of any proposals to undertake a Road Safety Audit and given the opportunity to review the brief and comment. As "overseeing organisation" a member of our Traffic team is to be invited to attend any RSA as a representative of the authority in accordance with GG119.

STATs19 data in relation to personal injury collisions, should be used to inform the TA and this can be requested from traffic@barnsley.gov.uk.

The modelling undertaken as part of the Transport Assessment should include any committed development in the area. It will be necessary to ensure that all junctions with 30 two-way trips or more be included in the modelling for the TA. Whilst the LPA can provide comments with regards to

active travel and sustainable transport links, Active Travel England will provide their views at application stage which may result in further requirements within the site layout.

Urban Design

NPPF Paragraph 135 relates to high quality design and states that developments should function well and add to the overall quality of the area; are visually attractive; sympathetic to local character; maintain a strong sense of place whilst optimising the potential of the site and create places which are safe and inclusive and promote well-being.

NPPF Paragraph 139 states development that is not well designed should be refused, especially where it fails to reflect local design policies and government guidance on design, taking into account any local design guidance and supplementary planning documents such as design guides and codes.

Local Plan Policy D1 states that development is expected to be of high-quality design that should respect take advantage of and reinforce the distinctive, local character and features. Developments should contribute to place making; be of high quality; complement and enhance the character and setting of distinctive places and transform environments which lack distinctiveness. Proposals should provide an inclusive environment; clear connections and ensure ease of movement for all users whilst making use of high quality materials and architectural quality.

The Residential Amenity SPD and The Design of Housing Development SPD set out the relevant requirements in terms of separation distances; positioning of buildings and space standards to achieve adequate levels of residential amenity for both existing and future residents. These SPDs should be reviewed in detail to ensure that all requirements are achieved, which includes:

- A separation distance of at least 21m must be provided between back-to-back habitable room windows to ensure that there is no harmful overlooking;
- First floor level windows should be at least 10m from shared boundaries;
- The internal layout of the properties must achieve the internal space standards included in the South Yorkshire Residential Design Guide;
- 3 bedroom dwellings mist have at least 60sqm private outdoor amenity space;

The Council's Urban Design Officer has reviewed the pre-application submission and provided the following comments:

The principal sources of guidance are:

- SPD Design of Housing Development (2023)
- SPD Parking (2019)
- SPD Open Space Provision on New Housing Development (2019)
- SPD Affordable Housing (2022)
- South Yorkshire Residential Design Guide (2011)
- National Design Guide (2021)
- Building for A Healthy Life (2020)

Number of dwellings

The planning policy for site HS52 gives an indicative number of dwellings of 308. The red line boundary of the proposal differs to that given on the site allocation in the Local Plan, with omissions of land to the north west and the east. However the proposal is for a total of 340 dwellings. This concentration of greater housing numbers on a smaller space is discouraged as outlined below.

Overdominance of front of dwelling parking

Of the 340 dwellings only 57 have side of dwelling parking, the vast majority are in front of dwelling.

The attached plan (Appendix 2) shows areas where there is an overdominance of front of dwelling parking, and does not meet the guidance contained in the SPD 'Design of Housing Development.' This states, in section 11.4: *'The maximum number of front of dwelling parking spaces acceptable in a row is four. These should be used sparingly in a development and be separated from other parking spaces by a considerable width of soft landscaping, i.e. more than the width of a parking space.'* The point of this specified width of soft landscaping is to allow enough space for tree planting or at least significant shrub planting to break up the line of parking. The proposal includes 23 stetches of overdominance of front of dwelling parking.

On the sketch layout plan no separate pathways are shown from the dwellings to the roads, implying that all access for pedestrians and wheelie bins from house to road is through the driveways themselves. Any additional pathways should not reduce the width of soft landscaping separating the parking spaces.

In terms of parking standards, the SPD 'Parking' recommends one space for 2 bedroom dwellings, whilst the proposal is showing two spaces.

Visitor Parking
Six visitor parking spaces are shown on the sketch layout plan, which seems very low for the size of this development. The SPD 'Parking' states the recommendation '*1 visitor space per 4 dwellings subject to layout. Flexibility for visitor parking will be considered on a site by site basis.*' Visitor parking should be considered at an early stage of the design to ensure that the design quality of the development is not compromised.

Location of Public Open Space
The SPD 'Design of Housing Development' asks for open space to be located towards the centre of development (rather than towards the edges of a development). This has the advantage of making it accessible for all the dwellings of the development, well overlooked and visible from dwellings and it also helps to create a focal point of the development, enhancing the character of the development.

The proposed gateway location for the public open space by Thurnscoe Bridge Lane is welcomed, as this allows the retention of existing trees, in addition to the north-south strip of open space running by the retained public right of way. However a major part of the open space is tucked to the western end, at the back of the development, which is less accessible for the majority of the residents of this development. The accompanying letter from the applicant states, under the section 'Site Description and Context,' that on the western edge of the site there is a relatively steep slope that dips towards the western boundary. This is shown on the cross section drawing as cross section B-B. This raises the question whether this part of the site is undevelopable land and therefore does not count towards the 15% minimum requirement for public open space.

The attached plan (Appendix 3) shows a suggested more centrally located public open space. This land take would reduce the number of dwellings of the development by about 13 dwellings, moving the total number of dwellings partially closer to the local plan's indicative yield. It would create a focal point within the development, being highly visible from the main access road and help to break up the run of dwellings. In terms of Building for a Healthy Life this addition would help with the assessment of 'distinctive places', under the considerations of 'a memorable character' and 'easy to find your way around' (the latter in the way it will provide a legibility marker when navigating through the development).

Over the whole site there needs to be a balance between providing public open spaces for wildlife and for informal recreation.

External spacing standards

External spacing standards are set in the SPD 'Design of Housing Development' in section 4. In terms of rear garden sizes 2 bedroom dwellings need to be a minimum of 50sq m and 3 bedroom and above a minimum of 60 sqm.

Affordable Housing
The SPD 'Affordable Housing' states, in paragraph 7.5 '*Smaller clusters of affordable housing should be dispersed throughout a housing development to aid integration rather than congregated in specific areas such as at the end of cul-de-sacs.*' (emphasis added). The suggested centrally located open space 'opens up' more the affordable accommodation on the cul-de-sac of plots 321 to 330.

One bed house types
There are a large number of one bedroom dwellings are being provided (64) and these are either semi-detached or in terraces of three, with a dedicated rear garden space for each dwelling and the dwellings will meet the Nationally Described Space Standard. This is welcomed and considered as a positive aspect of the proposal.

M3 Housetype
The sketch layout contains some housetypes only labelled as 'M3', for example plots 145, 146, 79 and 80. However there are no M3's on the schedule and no layouts provided for such a housetype.

Accessibility Standards
The accompanying letter suggests, under the heading 'Overview of the pre-application scheme', that 13% of the dwellings are M4(2) compliant. However, the SPD 'Design of Housing Development' states, in paragraph 6.1…'*housing development should be built to the following accessible standards: 26% of all new dwellings should be built to M4(2) accessible and adaptable standard and 6% of new dwellings should be built to wheelchair accessible M4(3)(2)(b)2.'*

Boundary treatments
Timber screen fences are being shown on the sketch layout where rear garden boundaries are visible from roads. However, they need to be of higher quality in these locations- either brick or brick with timber infill. The SPD 'Design of Housing Development' states in paragraph 15.1 *'….higher quality boundary treatments will usually be required where they are visible from public vantage points. This is particularly so for front and side boundaries, which will be clearly visible from the street.'*

The typical street scenes show front garden boundary treatment in the form of hedges. This would be welcomed as it would help to reduce the visual impact of front of dwelling parking.

Additional information to be provided with an application:
- Building for a Healthy Life Assessment
- Typical Street Scenes
- Cross Sections (as the site slopes)
- An Opportunities and Constraints Plan, within the design and access statement, (to help explain the reasoning behind the proposed layout).

Education
The Education Officer has reviewed the proposal and provided the following comments:

The information provided has been reviewed against current pupil projections across the primary and secondary planning areas, in line with the 'Financial Contributions To Schools' SPD and note the following S106 contributions would be required. This has been calculated an indicative housing yield of 340 residential dwellings, less 64 one bedroomed dwellings (276 dwellings in total), as set out in the Accommodation Schedule attached to the application:

Children's Services - Total Contribution Required					
Number of Dwellings		Pupils per 100 houses	Pupil Yield	Cost Per Place	Total Amount
Primary	276	21	57.96 (58) Pupils	16,000	928,000
Secondary	276	15	41.4 (42) Pupils	16,000	672,000

Biodiversity/ Ecology

Biodiversity & Geodiversity Local Plan policy BIO1 and the SPDs Biodiversity & Geodiversity and Trees & Hedgerows should be complied with. Proposals should provide opportunities for wildlife, through native landscaping and integrated bat and bird boxes within the proposed dwellings in line with the Biodiversity & Geodiversity SPD.

The Ecologist has reviewed the pre-application proposal and provided the following comments:

The site is located within a SSSI Impact Risk Zone. However, the development does not fall into any categories where consultation with Natural England is required. The closest Local Wildlife Site (LWS), a non-statutory protected site within proximity of the site is Bolton on Dearne Wetlands LWS located 1.55 km south. There are also areas of deciduous woodland, a Section 41 Habitat of Principal Importance located on the western and southern boundaries of the site. These should be fully considered within the ecological appraisal.

The northern section of the site comprises allocated site HS52 - Site South of Bridge Lane. The sites policy states that the development will be expected to ensure that trees and hedgerows around the periphery of the site, in particular on the southern boundary are retained.

A Preliminary Ecological Appraisal (PEA) should be undertaken to consider the habitats on and adjacent to site, and their potential to support protected and notable species. There may be ponds within 500 m of the site, these should also be considered within the assessment.

If following the PEA, additional specialist surveys are required and it is anticipated that the proposal could result in an impact upon ecological features of value, an Ecological Impact Assessment (EcIA) should support the planning application. The EcIA should follow the most recent CIEEM guidelines.

A Preliminary Roost Assessment (PRA) of any trees to be impacted should be undertaken to assess their potential to support roosting bats. If any trees are deemed to have potential to support roosting bats, or a bat roost is located during the PRA, then a suite of bat activity surveys should be completed to fully assess use of the trees by bats, to inform a mitigation strategy and any potential Natural England licencing requirements. The survey/s should follow the most recent BCT guidelines. Bat activity surveys cannot be conditioned as part of a planning permission, as the LPA has a 'biodiversity duty' (S40 of the Natural Environment & Rural Communities Act 2006) and it must 'have regards to biodiversity' when making all its decisions.

The entirety of the site lies within the Dearne Valley Green Heart, a Nature Improvement Area and as such biodiversity enhancements over and above the minimum mitigation/compensation requirements should be provided. This should also be taken into account when undertaking the BNG assessment in that the entire area is located within an area of strategic significance.

Biodiversity Net Gain (BNG) became mandatory for the majority of major developments on the 12th February 2024. As the proposals are for a residential development of approximately 340 dwellings and therefore classed a major development, the application will be subject to the General Biodiversity Gain Condition (GBGC) and a minimum level of information will be required with the application, as per the statutory guidance. This will include the pre-development value of the onsite habitat on the date of application (or earlier, if necessary) using the statutory biodiversity metric. Reference should be made to the CIEEM document Biodiversity Net Gain Report and Audit Templates (2021) in regards to what information should be included in support of the metric calculation. Ideally the metric would also indicate how the 10% net gain will be achieved by using any landscape masterplans and consideration of off-site mitigation requirements, if necessary. The BNG assessment should also include tabulated copies of habitat condition assessments and an excel version of the statutory metric.

Due to the large area of land to be lost to development, breeding bird surveys should be undertaken to fully assess impacts to ground nesting birds and inform a mitigation strategy. Thurnscoe Dike and a second watercourse are located adjacent to the southern and western site boundaries, these features and their potential to support riparian species should be considered within the assessment.

Any hedgerows on site should be assessed for their value to the Hedgerow Regulations 1997, if they are to be affected by the proposal.

The mitigation hierarchy should be applied, avoiding or minimising damage to any existing habitats of value. Any proposed landscaping would aim to enhance biodiversity and assist in achieving net gains in biodiversity. External data should be gained from South Yorkshire Bat Group, South Yorkshire Badger Group and Barnsley Biological Records Centre (see: https://www.barnsley.gov.uk/services/parks-and-open-spaces/wildlife-conservation-and-biodiversity/).

The provision of BNG plans at an early stage in the planning process is welcomed. Initial comments on the information provided would be that wetland habitats located within the mitigation area to the south west should be created. This could include feature such as scrapes, ponds, reedbeds and infilling the treeline dividing the two sites to enable more functional habitat connectivity.

Trees

Policy GD1 states proposals for development will be approved if existing trees are to remain on site and are considered in order to avoid overshadowing.

Policy BIO1 states development will be expected to conserve and enhance the biodiversity and geological features by protecting ancient and veteran trees.

Section 5.3 of the Trees and Hedgerow SPD (May 2019) states where trees are situated in close proximity to a proposed development a full tree survey is required. The survey should specify any works or pruning that is needed. Section 5.4 states that the submitted site plan must clearly indicate which trees are to be retained and which are to be removed.

Section 6.1 states that the tree survey should inform the layout and design of the development and should ensure that higher category trees are retained. Plans which show the retention of high value trees too close to buildings or roads will not be approved.

The Forestry Officer has reviewed the pre-application proposal and provided the following comments:

The site is relatively unconstrained by trees with all but one (T14) being located on the boundaries. The indicative layout provided keeps all the trees (except those implicated by the site entrance) which is welcomed. With regards to the site access, this does implicate some more prominent trees and as such, an access with a lower impact on trees should be explored. If no alternative can be

found then this will need to be detailed in the arboricultural documents and the justification for the trees removals provided.

Given that some trees will be implicated in order to accommodate access into the site then as well as the tree survey, an arboricultural impact assessment will be required to deal with the tree removal and retention as well as any other issues identified. Tree protection measures will certainly be required as part of an arboricultural method statement along with details of any specialist construction techniques which may be needed. If agreeable to all parties the AMS could be provided as part of a pre-commencement condition otherwise it will need to be provided at the time of the application.

Conservation/ Archaeology
The Conservation officer has reviewed the pre-application enquiry and provided the following comments:

From a heritage setting perspective there would be no objection to the proposed development. The nearest designated (listed) assets are at Thurnscoe Hall whose setting will be unaffected. The housing site contributes nothing to the setting of Thurnscoe Hall and there is no intervisibility. However, it is noted that the allocation (HS52) was red flagged for archaeology as per the site specific policy. South Yorkshire Archaeology Service will need to be consulted and provide comment on this matter.

Drainage
The Council's Drainage Officer has reviewed the proposal and provided the following comments:

The Council has records of the Thurnscoe Dyke forming the southern boundary and a drain forming the western boundary of the site to indicated on the attached plan.

The majority of the site appears in Flood Zone 1 with a small area adjacent to the proposed Attenuation Pond in Flood Zone 3 on the Environment Agency Flooding maps.

Any balancing facility should be designed to accommodate a 1 in 30-year flow from the site and a 1 in 100-year flow retained within the site (including an allowance of 30% for climate change), without causing any flooding to buildings.

There are alternatives to conventional storage for the control of surface water run-off that are favoured by the authority where ground conditions are suitable. Sustainable Urban Drainage techniques (SUD's) tackle surface water run-off problems at source using features such as soakaways, permeable pavements, grassed swales, infiltration trenches, ponds and wetlands to attenuate flood peak flows, produce water quality improvements and environmental enhancements.

As the Site area is greater than 1 Ha then a flood risk assessment in accordance with NPPF is required to be submitted with any planning application

South Yorkshire Mining Advisory Service
The SYMAS Officer has provided the following comments:

According to SYMAS records, the area of the proposed housing site is not located within a Coal Authority referral area. Therefore, coal mining legacy risks in this area of the site are considered as low. The adjacent land (proposal drawing appears to show balancing pond) is in a referral area due to the presence of shallow coal; coal mine workings and opencast backfill. Therefore, coal mining legacy issues such as ground instability and fugitive gas migration could affect this part of the development.

Given the scale/nature of the proposals it is recommended that a phase one geo-environmental desk top study report is submitted with the future planning application. The report should, amongst other things, evaluate previous land use and the geology of the site and make recommendations regarding the need for any site investigation/mitigation.

Public Health
There are no initial objections from Public Health to this pre-application. Should a full application go ahead, Pubic Health would require a Health Impact Assessment to be conducted using the most recent Barnsley HIA for spatial planning framework and guidance.

Pollution Control
The Council's Pollution Control Officer has confirmed that there would be no overall objection to the proposal subject to conditions being attached to any future planning permission relating to the submission of a noise impact assessment; appropriate ventilation; submission of construction Environmental Management Plan and construction hours.

Sustainability
The comments from the Sustainability team have been attached at Appendix 4.

Environmental Impact Assessment (EIA)
As part of this pre-application, the local planning authority have undertaken an informal EIA screening. Based upon the submission documents, initial indicators would suggest that the development falls within Schedule 2 – 10 (b) (ii) development of more than 150 dwellings, as set out in The Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

The applicant is therefore advised to submit a formal screening opinion to determine whether the development would be subject to a full EIA prior to submitting a formal planning application.

Summary and Conclusions
To conclude, the principle of the proposed development is acceptable. The site is allocated within the adopted Local Plan for housing and therefore residential development is acceptable in principle at the land which lies within the HS52 allocation boundary.

However, development outside of the allocation boundary is not acceptable in principle and further justification to demonstrate why additional land has been included within the proposal would be required. Generally, development within the Green Belt is discouraged except in very special circumstances, and the encroachment upon the adjoining land for drainage purposes should be resisted.

The use of neighbouring land for bio-diversity net gain is considered to be acceptable subject to the comments provided by the Council's Ecologist being fully addressed. Nevertheless, land within the allocation should be utilised in the first instance.

As mentioned in both the Urban Design Officer and Policy Officer's comments, there are concerns regarding the overall density and number of dwellings proposed at the site. There are also significant concerns relating to the lack of allocation masterplan and the piecemeal approach to the development. The proposal is discordant with the adopted site specific policy in this regard, meaning the development would not be supported in its current form.

The proposed site layout should be amended to reflect the Urban Design Officer's comments. The current proposal includes too much frontage parking and poorly located public open space meaning the development fails to achieve the design standards set out in the adopted SPDs.

In terms of housing mix, Section 6: Accessibility of the Design of Housing Development SPD requires 6% of new dwellings to be built to wheelchair accessible M4(3) standard and a minimum of 26% all new dwellings to be built to M4(2) accessible and adaptable standard. No details regarding this type of accommodation has been provided within the enquiry submission.

The site specific policy makes reference to archaeological constraints which will likely further impact the number of dwellings at the site. No information regarding archaeology has been provided within this submission. Detailed advice should be sought via South Yorkshire Archelogy Service.

Any favourable planning permission would be subject to the signing of a S106 Agreement which would secure a financial contribution towards education as well as any other off-site contributions such as sustainable travel and off-site highways works.

Prior to submitting a formal planning application, it is encouraged that an EIA screening opinion is requested given that the proposal meets the threshold/criteria of schedule 2.

Should you wish to submit an application, the following documents/plans would be required to validate the application:

- Application Forms
- Planning Fee
- Planning Statement
- Affordable Housing Statement
- Location and Site Plans
- Proposed Floorplans and Elevations for house types
- Design and Access Statement
- Biodiversity Net Gain report/metric
- Tree Survey/ Arboricultural Impact Assessment
- Transport Assessment
- Highways plans
- Preliminary Ecological Appraisal (PEA) & relevant species surveys
- Flood Risk Assessment
- Drainage strategy and plans
- Geo-environmental assessment/ contaminated land assessment
- Energy/sustainability statement
- Health Impact Assessment
- Landscape and Visual Impact Assessment
- Planning & Community Consultation Statement
- Archaeology Report
- Environmental Statement (subject to outcome of screening opinion)

Further information regarding full planning applications can be found at the following website:

https://www.planningportal.co.uk/planning/planning-applications/consent-types/full-planning-consent

This advice is the informal opinion of the Case Officer and is not binding on the Council, who would ultimately determine any future planning application.

Jessica Duffield

Senior Planning Officer (Inner Area Team)

For and on behalf of
Development Management
Garry Hildersley
Head of Service for Planning, Policy and Building Control
www.barnsley.gov.uk/developmentmanagement

Appendix D

ATE Appraisal Toolkit

Criterion	Description	Common Shortfalls	Rating	Appraiser Comments	Local Policy & Guidance
1. Trip generation and assignment	Does the application appropriately forecast all day trips to, from and within the site by walking, wheeling and cycling?	Source data is not representative of the proposed development, is out-of-date or is confined to commuting journeys only. Forecasted trip generation is limited to motor vehicle traffic or peak hours only. Future year forecasts do not realise the potential of the development to support a greater number of walking, wheeling and cycling journeys or do not align with the national target (or any adopted local targets) that half of all journeys in towns and cities shall be walked, wheeled or cycled by 2030.	**Pass**	Section 6 of the Transport Assessment considers the all mode trip generation of the development based on trip rates obtained from the TRICS database and method of travel to work data, in the absence of an alternative source of information.	
2. Active travel route audit	Has an appropriate assessment on the design and accessibility of existing active travel routes in the locality of the site been presented?	Local pedestrian and cycling routes are only identified in application documents by their location, with no assessment provided on whether these are safe, direct, convenient and accessible for people of all abilities (paragraph 82 of the National Design Guide) or coherent, direct, safe, comfortable and attractive (core design principles in LTN 1/20). Applications that include new dwellings have not demonstrated how local schools and colleges will be accessed by active travel modes. Qualitative analysis to inform any necessary improvements to the design and accessibility of key routes does not include maps, photographs and comments nor has regard to the following guidance, tools and plans in the assessment of key routes: • Inclusive Mobility (Chapters 3, 4, 6, 7 and 15; and Sections 5.2, 5.7, 9.1, 9.3, 9.4 and 9.7 as appropriate); • PAS 6463: Design for the Mind (Sections 5.2.1, 5.2.3, 6.4, 7.6.2, 7.6.3, 7.7 and 11.12); • LTN 1/20: Cycle Infrastructure Design (including Appendix A: Cycling Level of Service Tool; and Appendix B: Junction Assessment Tool); • the government's Walking Route Audit Tool; and • any adopted or emerging Local Cycling and Walking Infrastructure Plans (LCWIPs).	**Pass**	A site visit has been undertaken and it is considered that the walking environment in the vicinity of the site, particularly to key amenities to the north. This demonstrated that there are fully surfaced, street lit and clean walking routes to facilities to the north of the site. They are of sufficient quality to facilitate the likely additional active travel movements from the development.	Policy T2
3. Pedestrian access to local amenities	Are most buildings within 800m from a range of amenities (such as primary schools, parks, play areas, food shops, cafes and community buildings) using well-designed routes?	Trip lengths to key amenities as presented in application documents are based on straight-line distances from site boundaries or main access points. There are few everyday amenities within the recommended distance from most buildings using safe and accessible routes for pedestrians. Footpaths/ways to local amenities do not conform to the National Design Guide standards of being safe, direct, convenient and accessible for people of all abilities, which includes but is not limited to routes that: • have a minimum width of 2m, with limited pinch points no less than 1.5m; • are step-free; • have a smooth, even surface; • have seating at regular intervals; • are uncluttered; • have good natural surveillance and clear lines of sight; • have street lighting; • have wayfinding; and • have crossing points suitable for the speed and traffic flow of the road(s).	**Pass**	Section 3 describes the existing infrastructure that will facilitate and encourage trips to the site by foot, bicycle or public transport. Figures are used to illustrate the accessibility of the site and the proximity of Thurnscoe and Goldthorpe. Within 800m of the site access, a variety of shops, parks & Thurnscoe Library can be accessed.	
4. Cycling accessibility	Are a range of local amenities, and town centres, railway stations, employment areas and the National Cycle Network as appropriate, accessible for cyclists using well-designed routes?	Cycle routes relied on by the development are not coherent, direct, safe, comfortable or attractive in line with the five core design principles and geometric requirements in LTN 1/20 (see Sections 4.2 and 5). This may be due to physical features, steps, steep gradients or surface quality; or the absence of ramps, lighting or appropriate crossing facilities. The development relies on shared use routes in full or intermittently, which conflicts with the clear position in paragraph 1.6.1 (2) of LTN 1/20 that cycles must be treated as vehicles and not as pedestrians. There is insufficient protection from motor traffic in accordance with the suitability and segregation standards in LTN 1/20 (see Figure 4.1 and Section 6) such that some potential cyclists would be excluded.	**Pass**	There is a shared cycle/footway to the east side of Thurnscoe Bridge Lane measuring approximately 3m wide, which provides a north-south route between Goldthorpe and Thurnscoe; facilitating routes towards key local destinations within the vicinity of the site such as Goldthorpe railway station, Thurnscoe railway station and Thurnscoe High Street.	Policy T3
5. Access to public transport	Are all buildings within 400m of a high-frequency bus stop or 800m of a rail/light rail station or tram stop, with appropriate facilities, using well-designed routes?	There are no public transport nodes with a regular service (this will differ between urban and rural areas) within the recommended distances. Local bus stops do not have good natural surveillance or do not provide seating, lighting, shelter, real-time passenger information and raised bus boarders or specialist kerbs. Local rail stations do not provide sufficient cycle parking, including spaces for non-standard cycles. Footpaths/ways to public transport nodes do not conform to the National Design Guide standards of being safe, direct, convenient and accessible for people of all abilities, which includes but is not limited to routes that: • have a minimum width of 2m, with limited pinch points no less than 1.5m; • are step-free; • have a smooth, even surface; • have seating at regular intervals; • are uncluttered; • have good natural surveillance and clear lines of sight; • have street lighting; • have wayfinding; and • have crossing points suitable for the speed and traffic flow of the road(s).	**Pass**	The closest bus stops to site are located on Thurnscoe Bridge Lane, located to the immediate east of the site access. The northbound and southbound stops comprise of a flagpole and timetable information and a bus shelter, benefitting from good natural surveillance and clear lines of sight. From these stops, residents can access the twice-hourly 226 service. The bus stops are not within 400m of all dwellings, however, they are within 800m walk distance of all dwellings.	Policy T3
6. Off-site transport infrastructure	Does the application include proposals to enhance local active travel and public transport infrastructure?	The application fails to identify necessary, directly related and proportionate improvements or contributions to: • footpaths/ways in line with the design standards identified in criteria 3 and 5; • cycling routes in line with LTN 1/20 standards identified in criteria 4; or • public transport infrastructure (where this is not provided on-site) that may include: new or extended services; seating, lighting, shelter, real-time passenger information and raised bus boarders or specialist kerbs at bus stops; and secure cycle parking with pumps and repair tools at rail stations and mobility hubs. The application fails to identify the mechanism to secure identified improvements and the trigger point(s) for delivery or payment. Proposed road/junction improvements do not prioritise pedestrian and cycling movements, including appropriate crossings.	**Pass**	The site access has been designed to incorporate a pedestrian crossing, made up of dropped kerbs, tactile paving and a pedestrian refuge island in order to facilitate access to the bus stop located to the east of Thurnscoe Bridge Lane. The site is also facilitate a connection into PRoW 9, which would facilitate a dedicated traffic-free route towards Thurnscoe High Street.	Policy T4
7. Site permeability	Does the development prioritise pedestrian and cycle movements within the site?	Opportunities have been missed to maximise accessibility for active travel modes, including: • the development does not provide or safeguard pedestrian and cycling connections to neighbouring sites including future phases of development; • routes for pedestrians and cyclists are not at least as direct – and preferably more direct – than the equivalent by car; • routes are not fully accessible or do not have adjacent accessible alternatives (e.g. ramps alongside steps or bound paths next to unbound paths); • inappropriate or infrequent crossings are proposed (see Inclusive Mobility Sections 4.10-4.11, PAS 6463 Section 7.6.2, LTN 1/20 Table 10-2, Manual for Streets Section 6.3 and Manual for Steets 2 Section 9.3); • pedestrians and cyclists are not prioritised at side road crossing points (see LTN 1/20 Figure 10.13); • priority junctions have radii that interrupts the pedestrian desire line (see Manual for Streets Sections 6.3-6.4 and Manual for Streets 2 Section 9.4); • there are red/zero scores when applying the Junction Assessment Tool in LTN 1/20; • signalised junctions do not have pedestrian aspects on some arms; • where cyclists would mix with motor vehicles, lane widths are between 3.2m and 3.9m (paragraph 7.2.5 of LTN 1/20 identifies that such widths allow motor vehicles to drive alongside a cyclist without a safety margin for their comfort and protection); • there are unsafe or poorly signed transitions for cyclists when moving between cycleways on and off the carriageway; or • cycleways within commercial sites are not continuous through to cycle parking areas. Shared use routes for pedestrians and cyclists are proposed and these do not meet the limited situations listed in paragraph 6.5.6 of LTN 1/20. Where shared use routes are acceptable, their widths are below 3m (<300 cyclists per hour) or below 4.5m elsewhere, contrary to LTN 1/20 Table 6-3.	**Pass**	There are proposed pedestrian/cycle connections from the site connecting with Thurnscoe Bridge Lane (to the east) and PRoW 9 (to the north) to increase the permebility of the site. The internal carriageway will be bound by 2m wide footways and street lighting to either side.	Policy T2

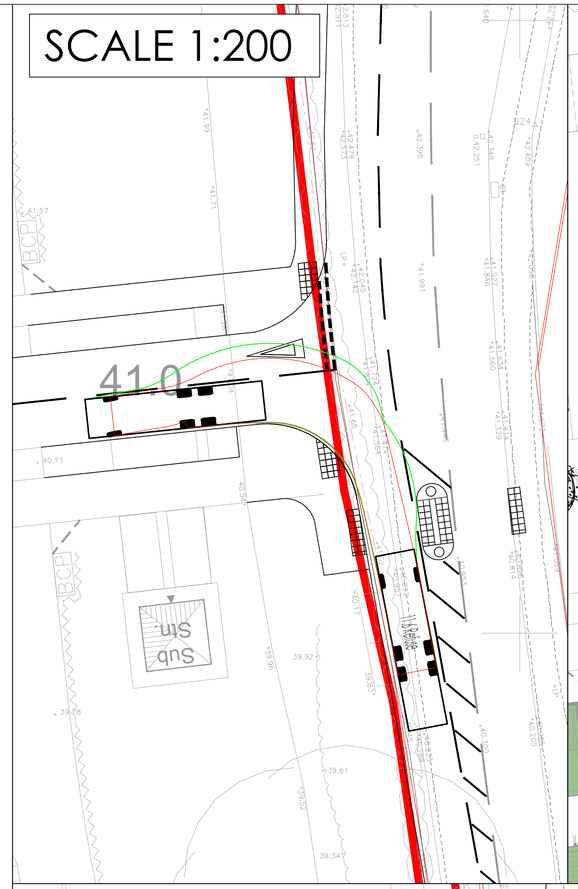
8. Placemaking	Does the development establish a strong sense of place, with well-designed streets, public spaces that feel safe and key amenities provided?	The design of streets does not encourage social interaction or create attractive, safe and accessible open spaces that would support an active life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

Appendix E

Proposed Site Access Arrangements

SCALE 1:250

SCALE 1:200



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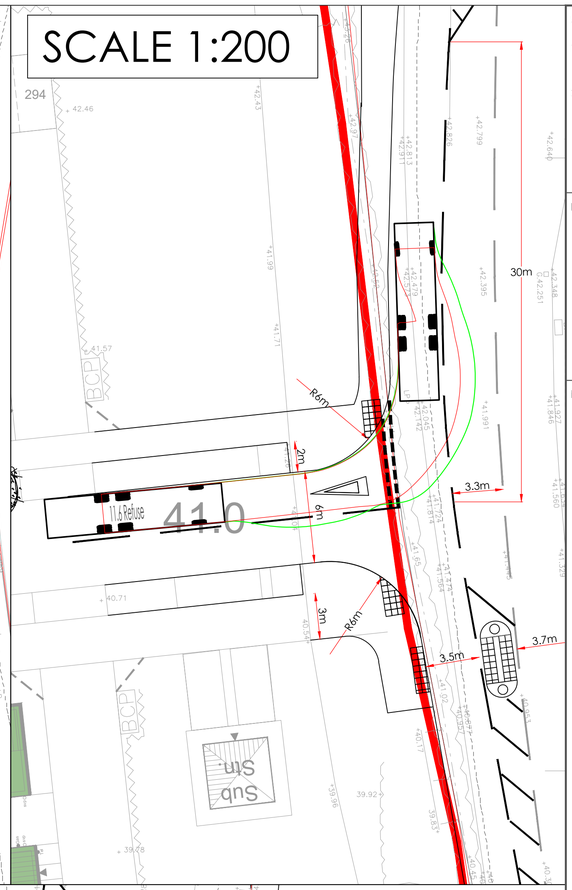

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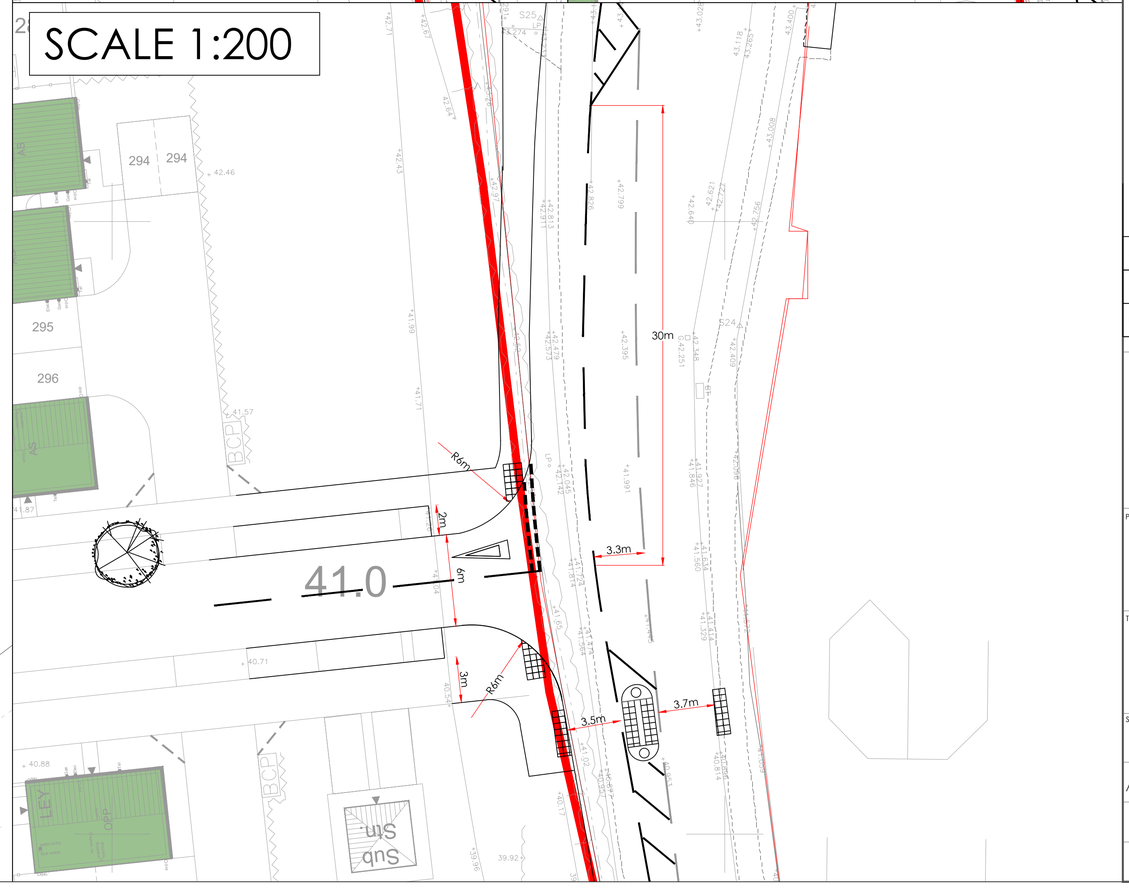


Standard Notes

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

Location Plan

Notes and Keys

Date	Rev	Description	Drawn	Chkd
30.10.24	C	Minor alterations to tie in with development	JT	JT
29.10.24	B	Pedestrian refuge island widened to 3m	JT	GB
08.04.24	A	Access widened to 6m instead of 5.5m	JT	GB

ADDRESS TPS Business Centre,
151-153 Wakefield Road,
Horbury, Wakefield, WF4 5HQ.
Tel.01924 664638

www.tpsconsultants.co.uk

Project

Thurnscoe Bridge Lane,
Barnsley

Title

Proposed Right Turn
Ghost Island Arrangement

Status

INFORMATION

Scale @ A1	Date Created	Drawn	Checked
As Shown	10/11/23	JT	CG

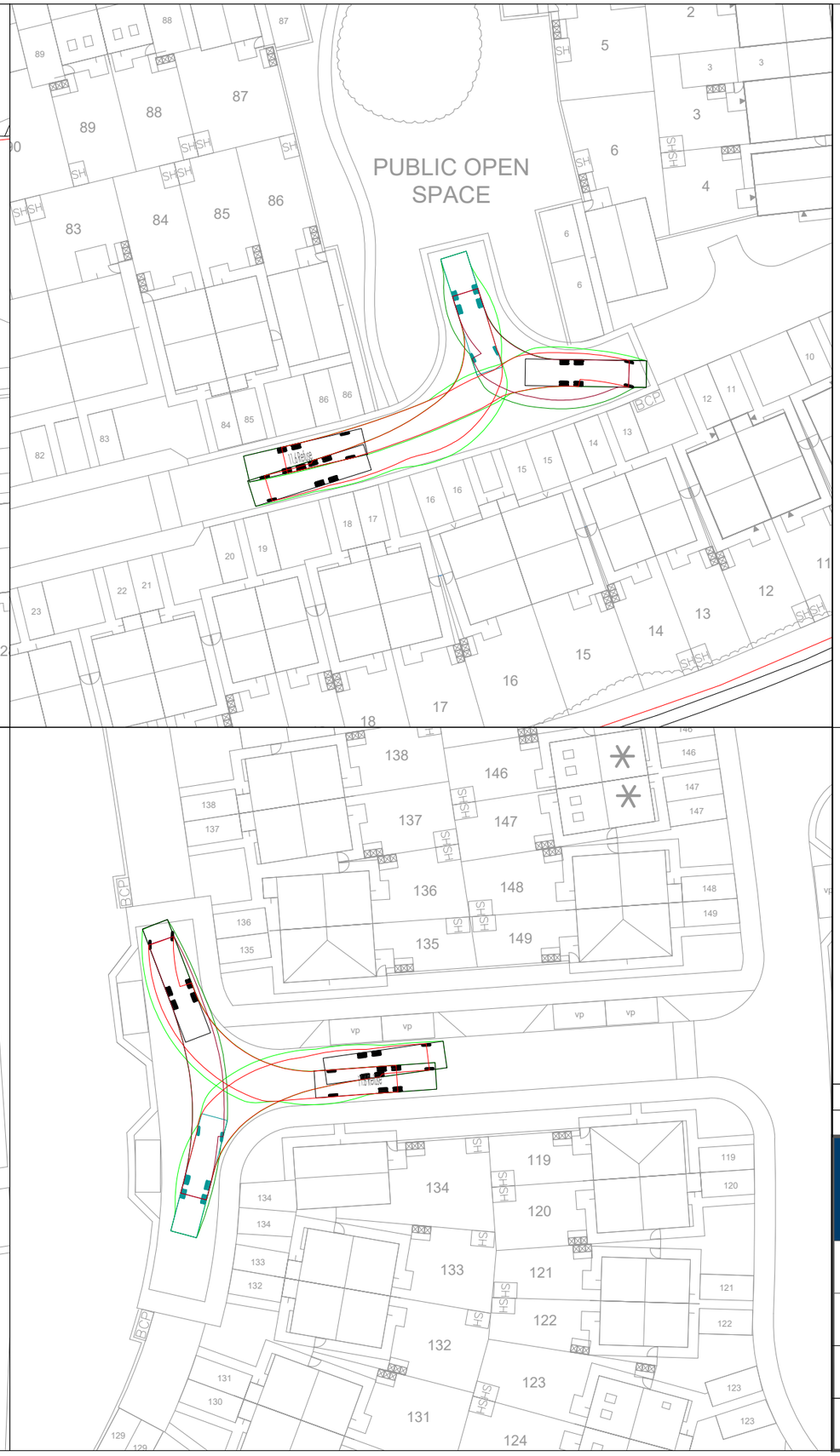
TPS Project Number		Revision
P2423		C

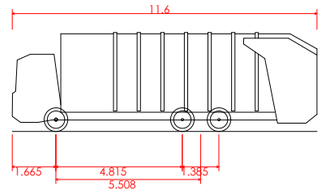
Drawing Number

D - 1001

Appendix F

Swept Path Analysis





11.6 Refuse

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

Date	Rev	Description	Drawn	Chkd
	---	----------	--	--

TPS Transport Consultants Ltd
Stonebridge Court
151-153 Wakefield Road
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WF4 5HQ

t: 01924 664638
e: info@tpsconsultants.co.uk

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Project

Thurnscoe Bridge Lane

Title

Swept Path Analysis - 11.6m Refuse Vehicle

Date	Designed by	Checked by
29/10/24	ST	JT

Drawing Number	Scale @ A3	Revision
P2423 - T - 1001	1:250	-

Appendix G

TRICS Output

Calculation Reference: AUDIT-640801-231019-1016

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	3 days
	HF	HERTFORDSHIRE	1 days
	KC	KENT	3 days
	SC	SURREY	1 days
	SP	SOUTHAMPTON	1 days
	WS	WEST SUSSEX	2 days
04	EAST ANGLIA		
	NF	NORFOLK	6 days
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days

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

Primary 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: No of Dwellings
Actual Range: 160 to 537 (units:)
Range Selected by User: 155 to 620 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 15/05/23

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	4 days
Tuesday	4 days
Wednesday	8 days
Thursday	5 days

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

Selected survey types:

Manual count	18 days
Directional ATC Count	3 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)	2
Edge of Town	19

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	17
Out of Town	3
No Sub Category	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	9 days - Selected
Servicing vehicles Excluded	34 days - Selected

Secondary Filtering selection:

Use Class:

C3	21 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	7 days
10,001 to 15,000	6 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days
25,001 to 50,000	2 days

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

Population within 5 miles:

5,001 to 25,000	5 days
25,001 to 50,000	1 days
50,001 to 75,000	3 days
75,001 to 100,000	2 days
125,001 to 250,000	7 days
250,001 to 500,000	3 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	4 days
1.1 to 1.5	15 days
1.6 to 2.0	2 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	16 days
No	5 days

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

PTAL Rating:

No PTAL Present	21 days

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

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 DY-03-A-01 MIXED HOUSES DERBY
RADBOURNE LANE
DERBY

Edge of Town
Residential Zone
Total No of Dwellings: 371
Survey date: TUESDAY *10/07/18* *Survey Type: MANUAL*

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

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

3 HC-03-A-24 MIXED HOUSES & FLATS HAMPSHIRE
STONEHAM LANE
EASTLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 243
Survey date: WEDNESDAY *10/11/21* *Survey Type: MANUAL*

4 HC-03-A-26 MIXED HOUSES & FLATS HAMPSHIRE
BOTLEY ROAD
WHITELEY

Edge of Town
Out of Town
Total No of Dwellings: 270
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

5 HC-03-A-29 MIXED HOUSES & FLATS HAMPSHIRE
CROW LANE
RINGWOOD
CROW
Edge of Town
Residential Zone
Total No of Dwellings: 195
Survey date: THURSDAY *30/06/22* *Survey Type: MANUAL*

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

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

7 KC-03-A-06 MIXED HOUSES & FLATS KENT
MARGATE ROAD
HERNE BAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 363
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total No of Dwellings: 288
Survey date: WEDNESDAY 27/09/17 Survey Type: MANUAL

9 KC-03-A-11 MIXED HOUSES & FLATS KENT
COLDHARBOUR ROAD
GRAVESEND

Edge of Town
No Sub Category
Total No of Dwellings: 375
Survey date: MONDAY 20/03/23 Survey Type: MANUAL

10 NF-03-A-23 MIXED HOUSES & FLATS NORFOLK
SILFIELD ROAD
WYMONDHAM

Edge of Town
Out of Town
Total No of Dwellings: 514
Survey date: WEDNESDAY 22/09/21 Survey Type: MANUAL

11 NF-03-A-31 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 321
Survey date: THURSDAY 22/09/22 Survey Type: DIRECTIONAL ATC COUNT

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

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

13 NF-03-A-38 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 537
Survey date: TUESDAY 20/09/22 Survey Type: MANUAL

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

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

15 NF-03-A-47 MIXED HOUSES & FLATS NORFOLK
BURGH ROAD
AYLSHAM

Edge of Town
Residential Zone
Total No of Dwellings: 300
Survey date: WEDNESDAY 21/09/22 Survey Type: DIRECTIONAL ATC COUNT

LIST OF SITES relevant to selection parameters (Cont.)

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

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

17 SF-03-A-09 MIXED HOUSES & FLATS SUFFOLK
FOXHALL ROAD
IPSWICH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 179
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

18 SP-03-A-02 MIXED HOUSES & FLATS SOUTHAMPTON
BARNFIELD WAY
NEAR SOUTHAMPTON
HEDGE END
Edge of Town
Out of Town
Total No of Dwellings: 250
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

19 ST-03-A-07 DETACHED & SEMI-DETACHED STAFFORDSHIRE
BEACONSIDE
STAFFORD
MARSTON GATE
Edge of Town
Residential Zone
Total No of Dwellings: 248
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

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

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

21 WS-03-A-13 MIXED HOUSES & FLATS WEST SUSSEX
LITTLEHAMPTON ROAD
WORTHING
WEST DURRINGTON
Edge of Town
Residential Zone
Total No of Dwellings: 197
Survey date: WEDNESDAY *23/06/21* *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
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	21	276	0.073	21	276	0.293	21	276	0.366
08:00 - 09:00	21	276	0.131	21	276	0.380	21	276	0.511
09:00 - 10:00	21	276	0.128	21	276	0.161	21	276	0.289
10:00 - 11:00	21	276	0.122	21	276	0.143	21	276	0.265
11:00 - 12:00	21	276	0.130	21	276	0.137	21	276	0.267
12:00 - 13:00	21	276	0.144	21	276	0.147	21	276	0.291
13:00 - 14:00	21	276	0.148	21	276	0.137	21	276	0.285
14:00 - 15:00	21	276	0.157	21	276	0.174	21	276	0.331
15:00 - 16:00	21	276	0.252	21	276	0.159	21	276	0.411
16:00 - 17:00	21	276	0.272	21	276	0.155	21	276	0.427
17:00 - 18:00	21	276	0.352	21	276	0.162	21	276	0.514
18:00 - 19:00	21	276	0.281	21	276	0.155	21	276	0.436
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.190			2.203			4.393

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

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

Parameter summary

Trip rate parameter range selected:	160 - 537 (units:)
Survey date date range:	01/01/15 - 15/05/23
Number of weekdays (Monday-Friday):	21
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	22
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.

Appendix H

Gravity Model

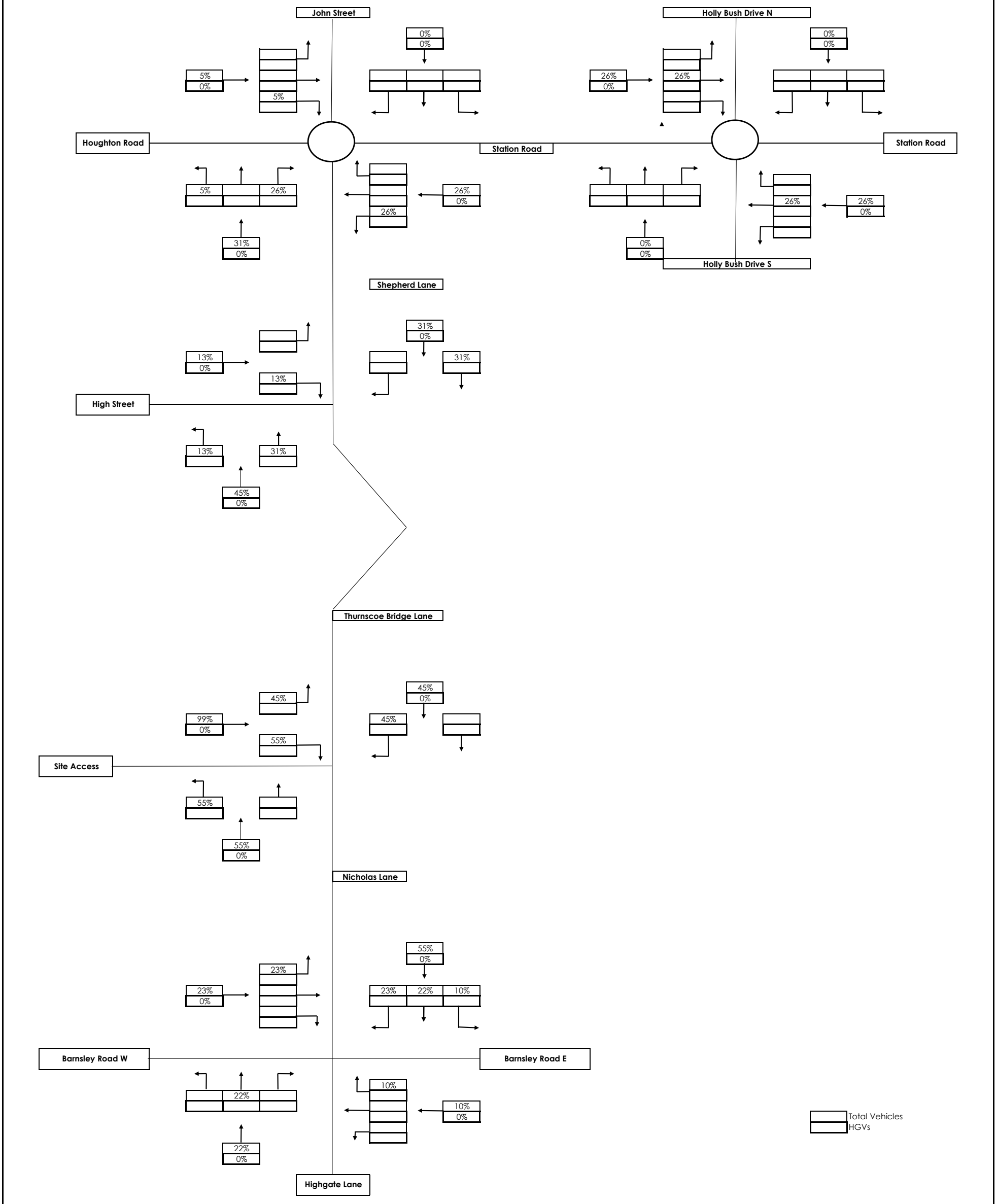
WF01BEW - Location of usual residence and place of work (OA level)

population	All usual residents ages 16 and over in employment the week before the census
units	Persons
date	2011

place of work : 2011 super output area - middle layer	**currently E02001522 : Barnsley 014**			
E02001522 : Barnsley 014	419	17%	Thurnscoe	
E02001579 : Rotherham 002	323	13%	Wath upon Dearne	TBL S - Highgate Lane S - Thurnscoe Road S - High Street W - Dearne Road S
E02001578 : Rotherham 001	99	4%	Wath upon Dearne	TBL S - Highgate Lane S - Thurnscoe Road S - High Street W - Dearne Road S
E02001533 : Barnsley 025	33	1%	Bolton upon Dearne	TBL S - Highgate Lane S
E02001521 : Barnsley 013	87	4%	Barnsley	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001523 : Barnsley 015	59	2%	Ardsley	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001528 : Barnsley 020	41	2%	Darfield	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001520 : Barnsley 012	40	2%	Highham	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001594 : Rotherham 017	37	2%	Rotherham	TBL S - Barnsley Road W - A635 W - A6195 S
E02001534 : Barnsley 026	31	1%	Wombwell	TBL S - Barnsley Road W - A635 W - A6195 S
E02001530 : Barnsley 022	241	10%	Goldthorpe	TBL S - Barnsley Road E
E01007373 : Barnsley 014B	172	7%	Windsor Street	TBL N - Station Road E - Windsor Street N
E01007377 : Barnsley 014E	27	1%	Deightonby Street	TBL N - Station Road E - Windsor Street N
E02001558 : Doncaster 020	49	2%	Redhouse Industrial Estate	TBL N - Station Road E - A635 E - Red Hill Lane N
E02002481 : Wakefield 044	30	1%	South Elmsall	TBL N - Station Road E - A635 E - Red Hill Lane N
E02001560 : Doncaster 022	72	3%	Doncaster	TBL N - Station Road E - A635 E - A638 S
E02001566 : Doncaster 028	40	2%	Doncaster	TBL N - Station Road E - A635 E - A638 S
E01007372 : Barnsley 014A	11	0%	Emerald Green Grove	TBL N - Houghton Road W - School St N
E01007374 : Barnsley 014C	10	0%	Rectory Lane	TBL N - Houghton Road W - Rectory Lane S
E01007378 : Barnsley 014F	104	4%	Gooseacre Primary Academy	TBL N - Houghton Road W - Merrill Road N
E01007375 : Barnsley 014D	95	4%	High Street	TBL N - High Street W
E02001569 : Doncaster 031	23	1%	Mexborough	TBL S - Highgate Lane S - Thurnscoe Road S - High Street W - Dearne Road S
E02006843 : Sheffield 073	22	1%	Sheffield	TBL S - Barnsley Road W - A635 W - A6195 S
E02001514 : Barnsley 006	21	1%	Grimethorpe	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001515 : Barnsley 007	20	1%	Athersley	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001531 : Barnsley 023	20	1%	Aldham House Lane	TBL S - Barnsley Road W - A635 W - A6195 S
E02001628 : Sheffield 018	20	1%	NE Sheffield	TBL S - Barnsley Road W - A635 W - A6195 S
E02001536 : Barnsley 028	19	1%	Hoyland Common	TBL S - Barnsley Road W - A635 W - A6195 S
E02001580 : Rotherham 003	19	1%	Swinton	TBL S - Highgate Lane S - Thurnscoe Road S - High Street W - Dearne Road S
E02001595 : Rotherham 018	18	1%	Hellaby	TBL N - Station Road E - A635 E - A638 S
E02001593 : Rotherham 016	17	1%	Rotherham	TBL S - Barnsley Road W - A635 W - A6195 S
E02001632 : Sheffield 022	17	1%	Sheffield	TBL S - Barnsley Road W - A635 W - A6195 S
E02001510 : Barnsley 002	16	1%	Carlton	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001518 : Barnsley 010	16	1%	Greenfoot Lane	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001519 : Barnsley 011	16	1%	Lundwood	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001542 : Doncaster 004	15	1%	Thorne	TBL N - Station Road E - A635 E - A638 S
E02001545 : Doncaster 007	15	1%	Hatfield	TBL N - Station Road E - A635 E - A638 S
E02001513 : Barnsley 005	14	1%	Darton	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001553 : Doncaster 015	14	1%	Doncaster	TBL S - Barnsley Road W - A635 W - Doncaster Road W
E02001585 : Rotherham 008	14	1%	Rawmarsh	TBL S - Barnsley Road W - A635 W - A6195 S
E02001602 : Rotherham 025	14	1%	Rotherham	TBL S - Barnsley Road W - A635 W - A6195 S
E02001538 : Barnsley 030	12	0%	Hoyland	TBL S - Highgate Lane S - Thurnscoe Road S - High Street W - Dearne Road S
E02001568 : Doncaster 030	12	0%	Conisborough	TBL S - Highgate Lane S - Thurnscoe Road S - High Street W - Dearne Road S
E02002461 : Wakefield 024	12	0%	Featherstone	TBL N - High Street W

Appendix I

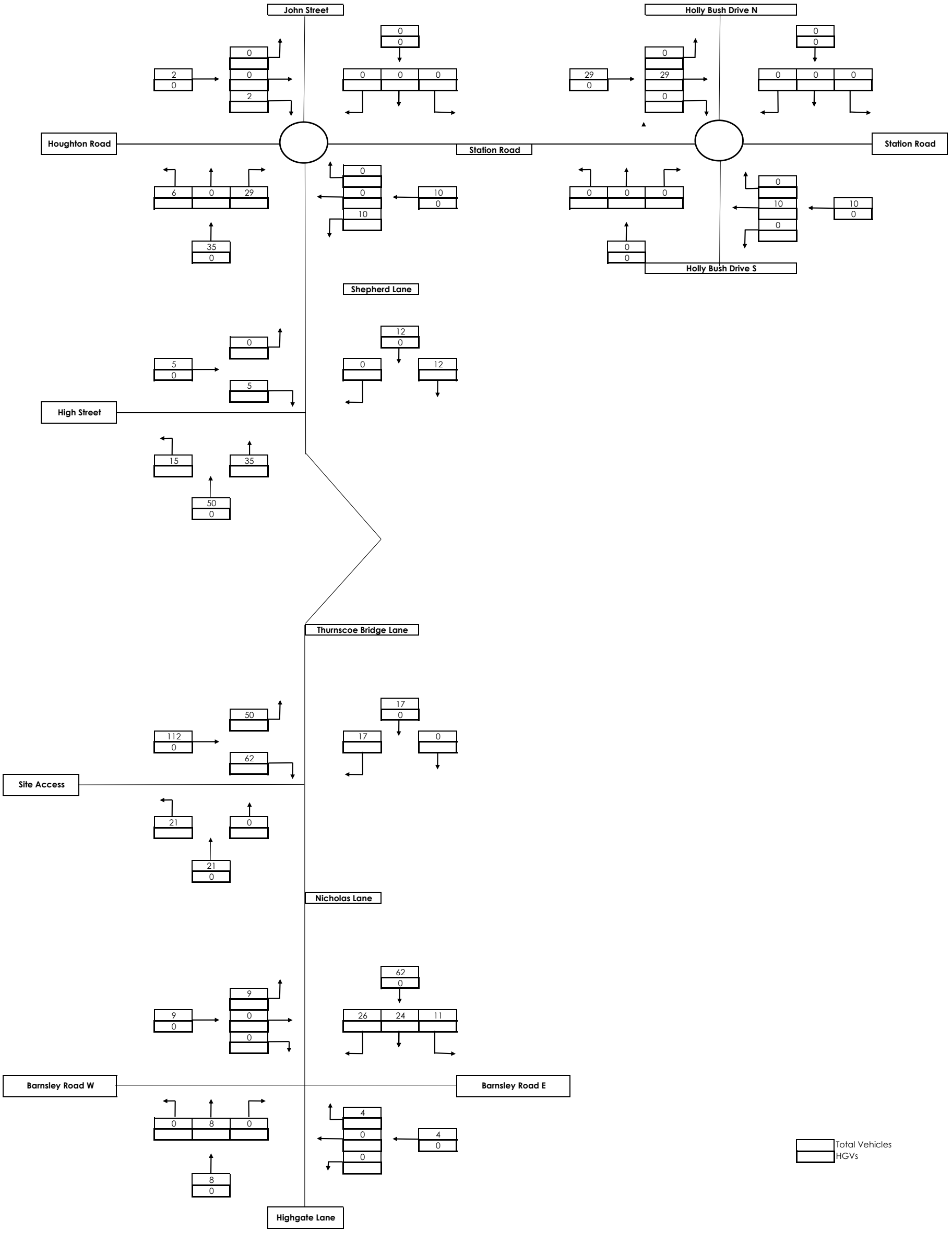
Trip Distribution



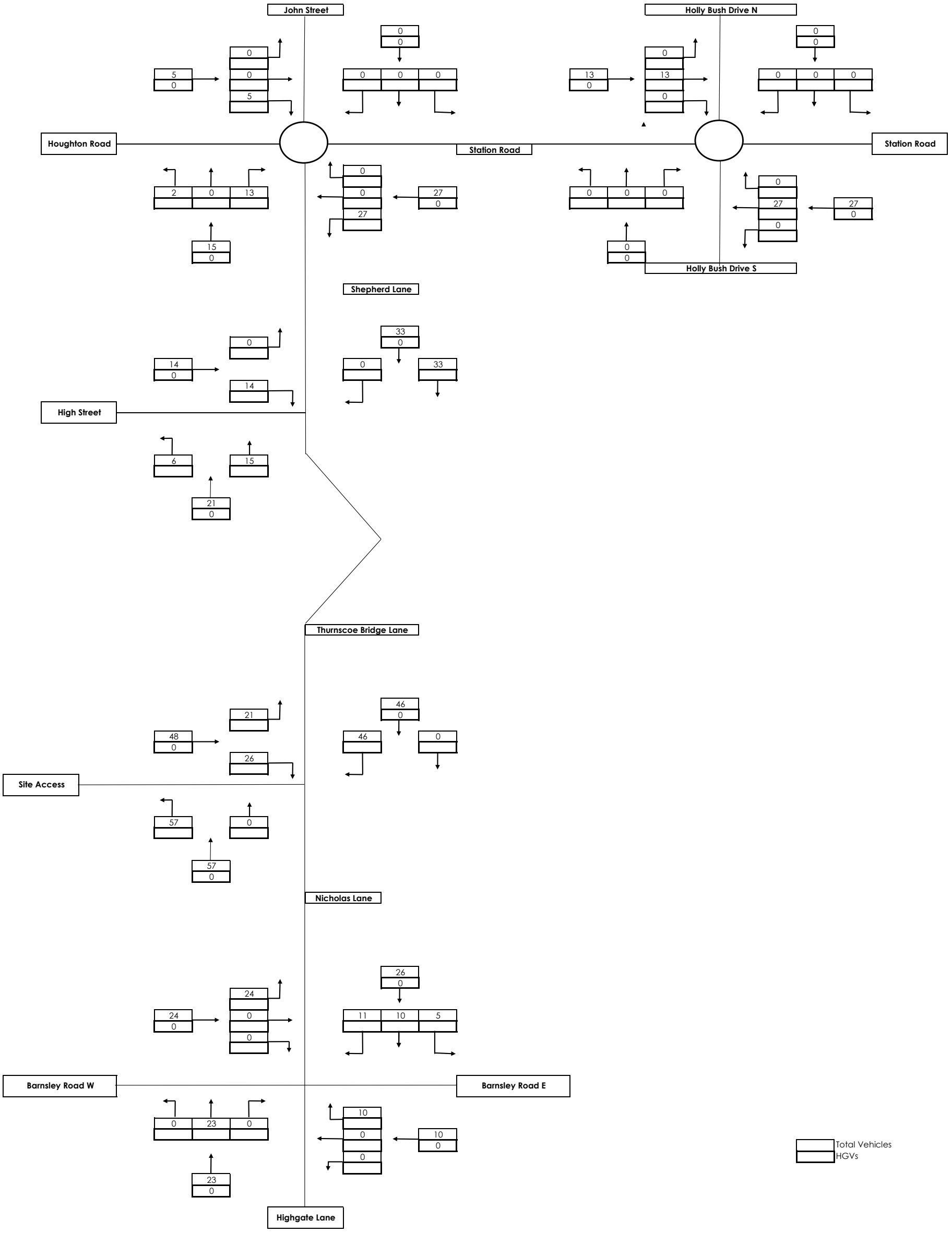
TPS	**Number:** Figure 5	**Title** Trip Distribution	**Revision:**	**Design** ST	**Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	

Appendix J

Trip Generation



TPS	**Number:** Figure 6	**Title** Trip Generation AM Peak Hour (340 Dwellings)	**Revision:**	**Design** ST	**Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	



TPS	**Number:** Figure 7	**Title** Trip Generation PM Peak Hour (340 Dwellings)	**Revision:**	**Design** ST	**Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	

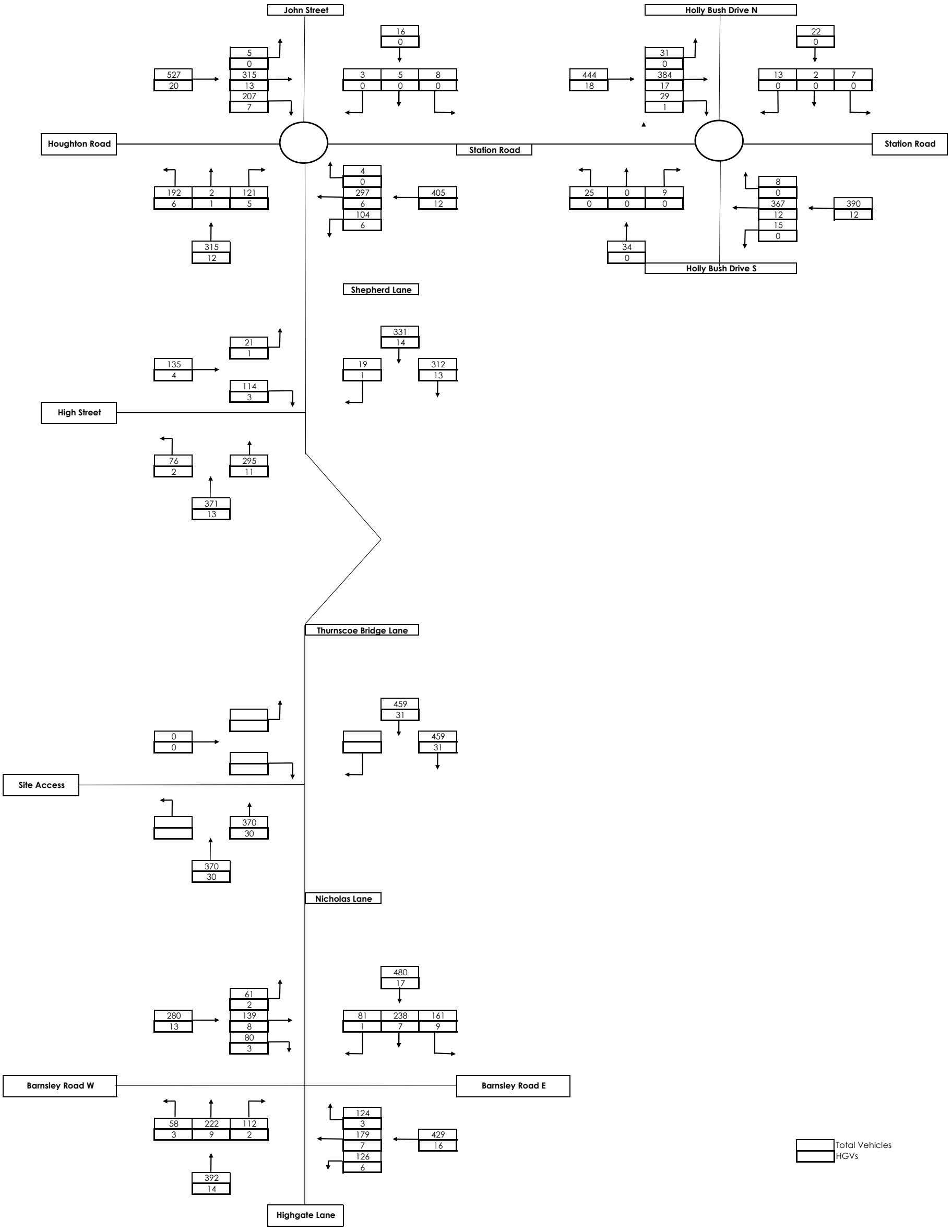
Appendix K

Traffic Count Data

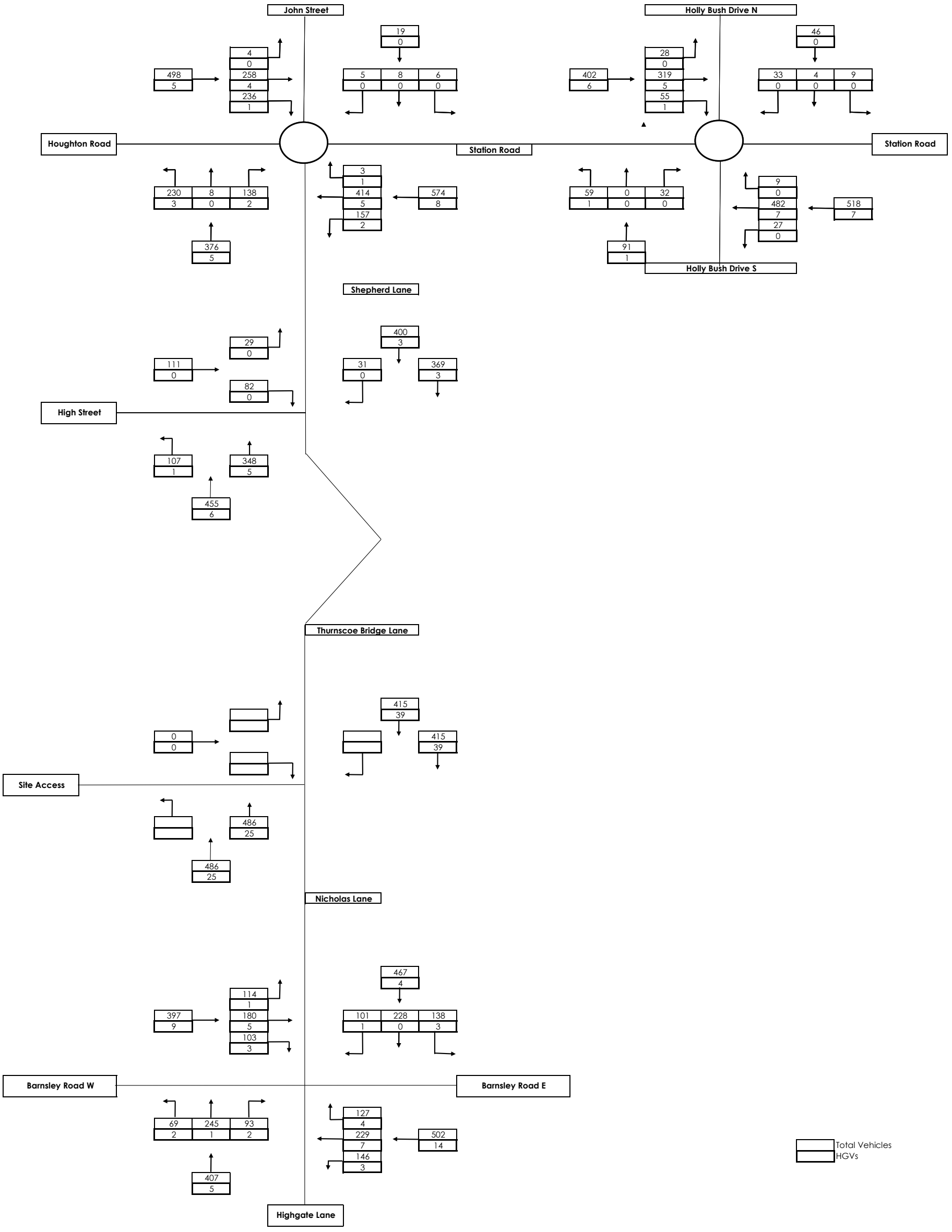
https://www.dropbox.com/scl/fo/tp4htrpfkvpl9zpo5wp5w/AJjB00a9BQx5O-Wb1QyQefQ?rlkey=29o16xz0piy3tpe573820g5s8&dl=0

Appendix L

Surveyed Peak Hour Flows



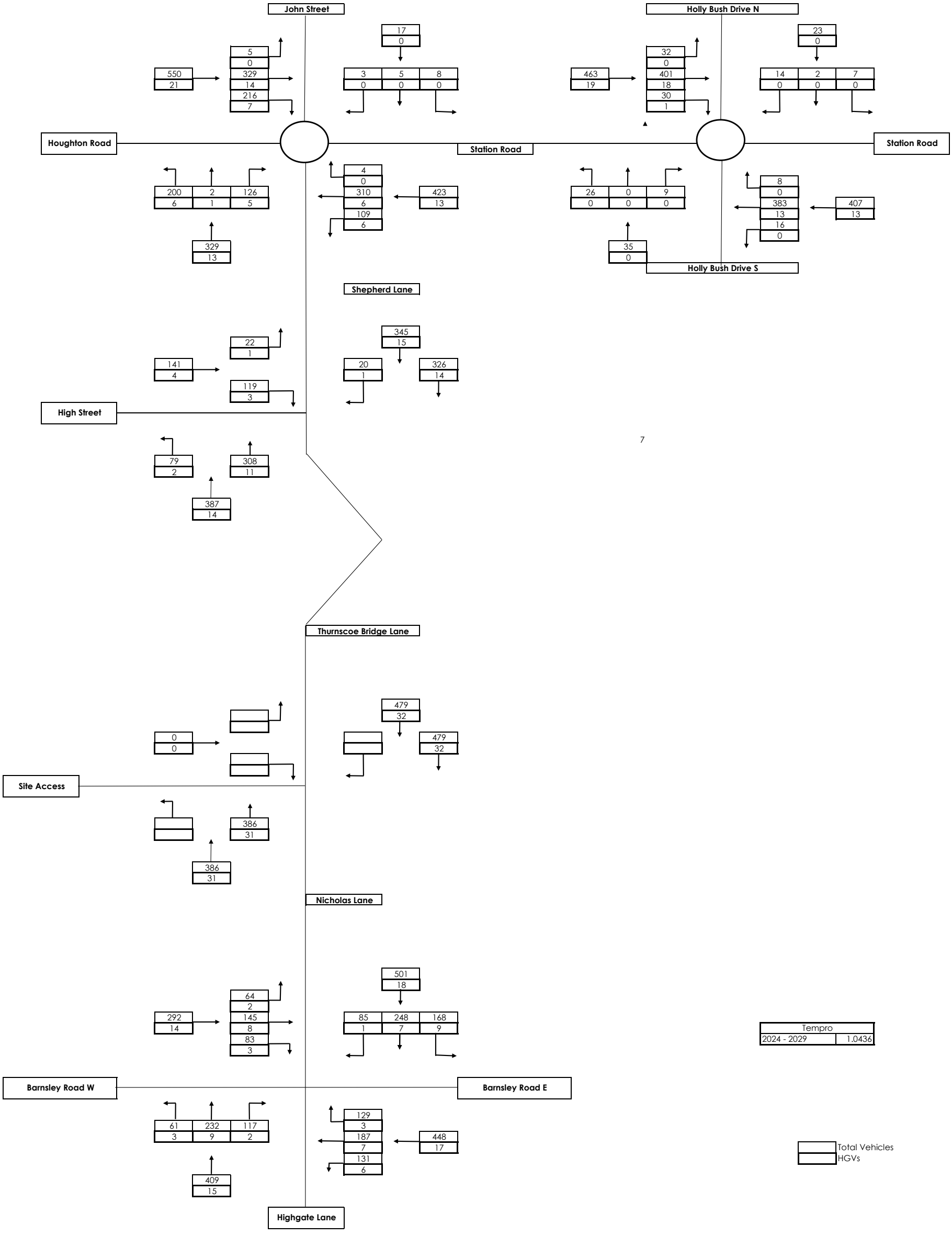
TPS	**Number:** Figure 1	**Title** 2024 Base AM Peak Hour (08:00-09:00)	**Revision:**	**Design** ST	**Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	



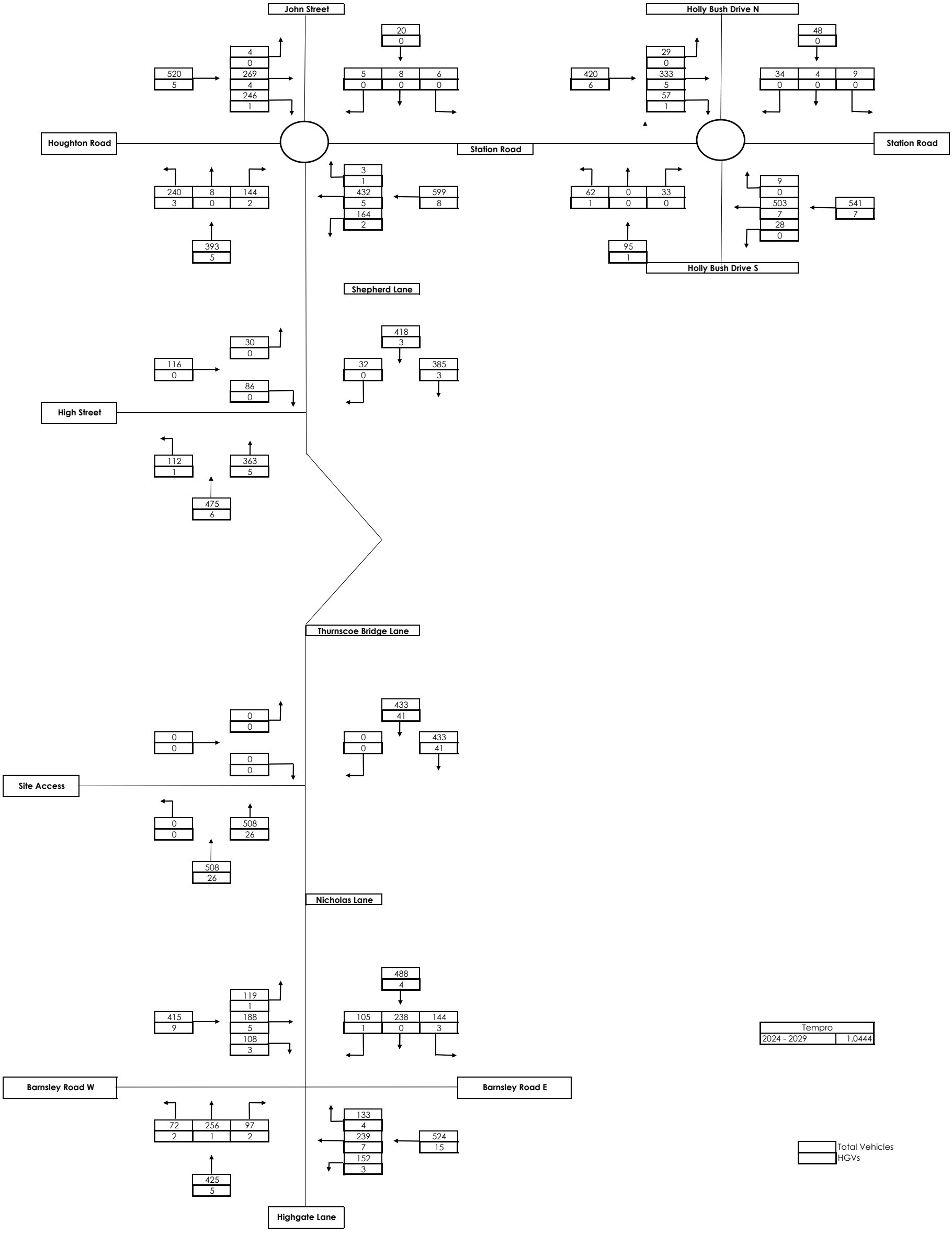
TPS	**Number:** Figure 2	**Title** 2024 Base PM Peak Hour (16:30-17:30)	**Revision:**	**Design** ST	**Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	

Appendix M

2029 Base Flows



TPS	**Number:** Figure 3	**Title** 2029 Base AM Peak Hour (08:00-09:00)	**Revision:**	**Design** ST	**Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	



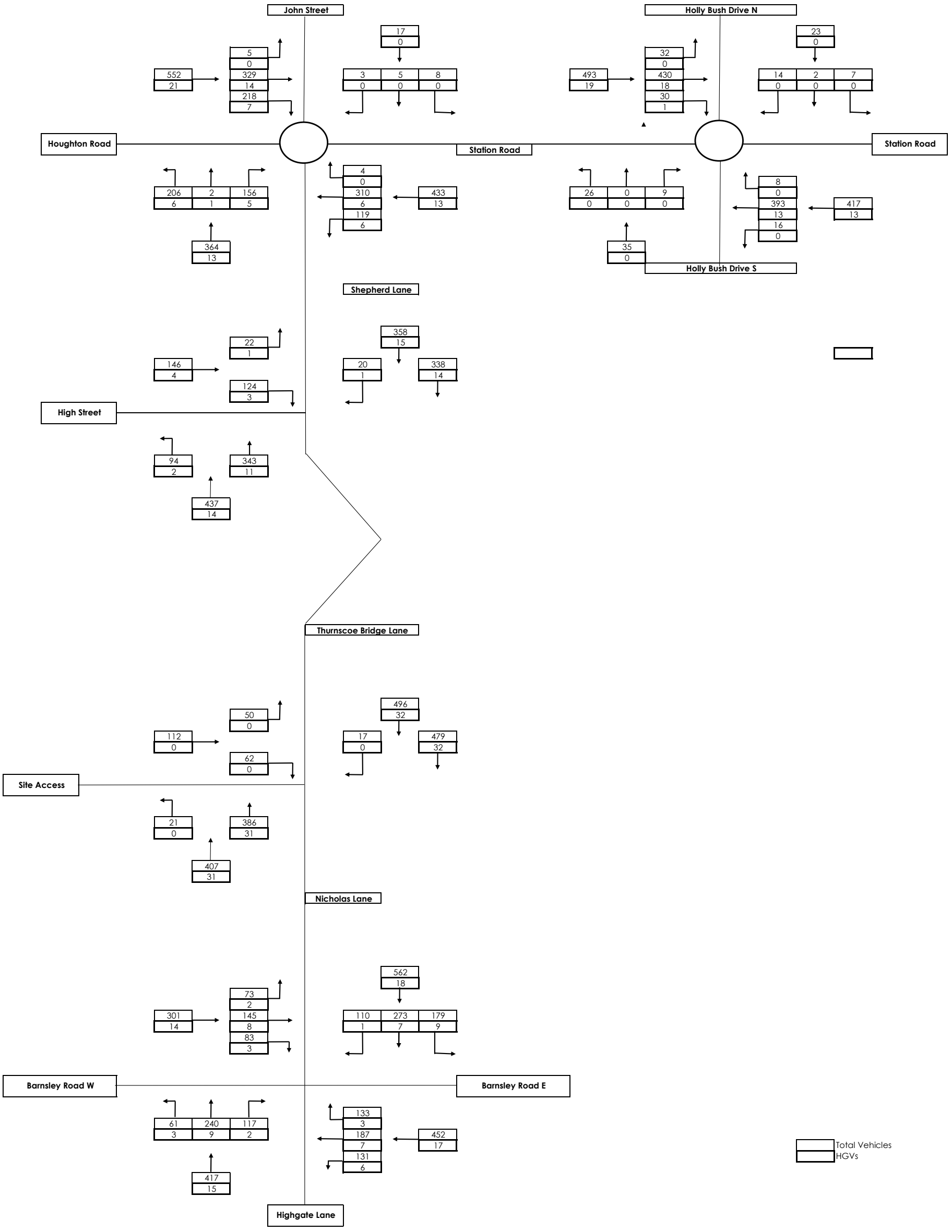
Tempro	
2024 - 2029	1.0444

Total Vehicles
HGVs

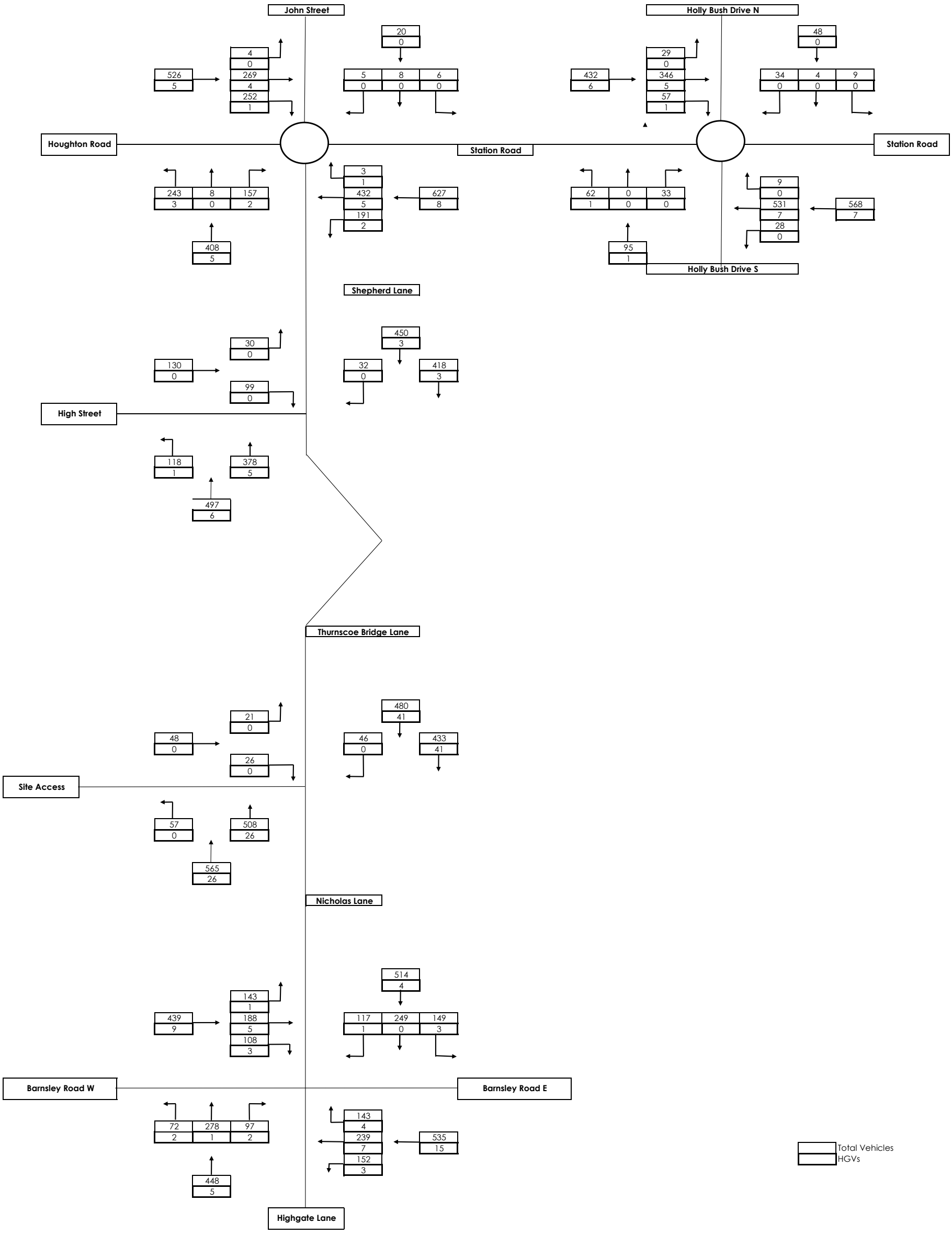
Number:	Title	Revision:	Design	Checked
Figure 4	2029 Base PM Peak Hour (16:30-17:30)		ST	JT
Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	

Appendix N

2029 Base + Development



TPS	**Number:** Figure 8	**Title** 2029 Base AM + Development	**Revision:**	**Design** ST / **Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24



TPS	**Number:** Figure 9	**Title** 2029 Base PM + Development	**Revision:**	**Design** ST	**Checked** JT
	Project: Thurnscoe Bridge Lane, Thurnscoe	**Client:** Avant Homes	**Date**	Oct-24	

Appendix O

Junction Modelling Outputs

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: 1 - Site Access_Thurnscoe Bridge Lane.arc8
Path: C:\Users\micro\Dropbox\Project Files\TPS Project Files\P2423. Thurnscoe Bridge Lane, Thurnscoe\Technical\Junction Modelling
Report generation date: 28/10/2024 11:25:29

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2029 Base + Dev					
Stream B-AC	0.45	13.38	0.31	0.71	18.37	0.42
Stream C-AB	0.03	6.27	0.03	0.28	7.87	0.22
Stream C-A	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-

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

"D1 - 2029 Base + Dev, AM " model duration: 08:00 - 09:30
"D2 - 2029 Base + Dev, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.6.541 at 28/10/2024 11:25:27

File summary

Title	Site Access
Location	Thurnscoe Bridge Lane
Site Number	
Date	16/05/2024
Version	
Status	(new file)
Identifier	
Client	Avant Homes
Jobnumber	P2423
Enumerator	JT
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2029 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base + Dev, AM	2029 Base + Dev	AM		ONE HOUR	08:00	09:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C		12.44	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
TBL South	A	TBL South		Major
Site Access	B	Site Access		Minor
TBL (North)	C	TBL (North)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
TBL (North)	7.20		0.00	✓	3.30	120.00	✓	5.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Site Access	One lane	3.00										45	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	511.887	0.088	0.223	0.141	0.319
1	B-C	649.118	0.094	0.238	-	-
1	C-B	720.490	0.265	0.265	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
TBL South	ONE HOUR	✓	438.00	100.000
Site Access	ONE HOUR	✓	112.00	100.000
TBL (North)	ONE HOUR	✓	528.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	0.000	21.000	417.000
	Site Access	62.000	0.000	50.000
	TBL (North)	511.000	17.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	0.00	0.05	0.95
	Site Access	0.55	0.00	0.45
	TBL (North)	0.97	0.03	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	TBL (North)	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	TBL (North)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B-AC	0.31	13.38	0.45	B	102.77	154.16	29.47	11.47	0.33	29.48	11.47
C-AB	0.03	6.27	0.03	A	15.60	23.40	2.36	6.04	0.03	2.36	6.04
C-A	-	-	-	-	468.90	703.35	-	-	-	-	-
A-B	-	-	-	-	19.27	28.90	-	-	-	-	-
A-C	-	-	-	-	382.65	573.97	-	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	84.32	21.08	83.41	0.00	448.90	0.188	0.00	0.23	9.825	A
C-AB	12.80	3.20	12.72	0.00	633.24	0.020	0.00	0.02	5.801	A
C-A	384.71	96.18	384.71	0.00	-	-	-	-	-	-
A-B	15.81	3.95	15.81	0.00	-	-	-	-	-	-
A-C	313.94	78.48	313.94	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	100.69	25.17	100.38	0.00	425.43	0.237	0.23	0.31	11.066	B
C-AB	15.28	3.82	15.26	0.00	616.31	0.025	0.02	0.03	5.989	A
C-A	459.38	114.84	459.38	0.00	-	-	-	-	-	-
A-B	18.88	4.72	18.88	0.00	-	-	-	-	-	-
A-C	374.87	93.72	374.87	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	123.31	30.83	122.74	0.00	392.39	0.314	0.31	0.45	13.320	B
C-AB	18.72	4.68	18.69	0.00	592.90	0.032	0.03	0.03	6.269	A
C-A	562.62	140.66	562.62	0.00	-	-	-	-	-	-
A-B	23.12	5.78	23.12	0.00	-	-	-	-	-	-
A-C	459.13	114.78	459.13	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	123.31	30.83	123.30	0.00	392.38	0.314	0.45	0.45	13.376	B
C-AB	18.72	4.68	18.72	0.00	592.90	0.032	0.03	0.03	6.269	A
C-A	562.62	140.66	562.62	0.00	-	-	-	-	-	-
A-B	23.12	5.78	23.12	0.00	-	-	-	-	-	-
A-C	459.13	114.78	459.13	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	100.69	25.17	101.24	0.00	425.42	0.237	0.45	0.31	11.123	B
C-AB	15.28	3.82	15.31	0.00	616.31	0.025	0.03	0.03	5.989	A
C-A	459.38	114.84	459.38	0.00	-	-	-	-	-	-
A-B	18.88	4.72	18.88	0.00	-	-	-	-	-	-
A-C	374.87	93.72	374.87	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	84.32	21.08	84.64	0.00	448.88	0.188	0.31	0.23	9.892	A
C-AB	12.80	3.20	12.82	0.00	633.24	0.020	0.03	0.02	5.804	A
C-A	384.71	96.18	384.71	0.00	-	-	-	-	-	-
A-B	15.81	3.95	15.81	0.00	-	-	-	-	-	-
A-C	313.94	78.48	313.94	0.00	-	-	-	-	-	-

Queueing Delay Results for each time segment

Queueing Delay results: (08:00-08:15)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	3.27	0.22	9.825	A	A
C-AB	0.31	0.02	5.801	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (08:15-08:30)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	4.44	0.30	11.066	B	B
C-AB	0.38	0.03	5.989	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (08:30-08:45)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	6.46	0.43	13.320	B	B
C-AB	0.49	0.03	6.269	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (08:45-09:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	6.78	0.45	13.376	B	B
C-AB	0.49	0.03	6.269	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (09:00-09:15)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	4.90	0.33	11.123	B	B
C-AB	0.38	0.03	5.989	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (09:15-09:30)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	3.62	0.24	9.892	A	A
C-AB	0.31	0.02	5.804	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

(Default Analysis Set) - 2029 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base + Dev, PM	2029 Base + Dev	PM		ONE HOUR	16:45	18:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C		13.33	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
TBL South	A	TBL South		Major
Site Access	B	Site Access		Minor
TBL (North)	C	TBL (North)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
TBL (North)	7.20		0.00	✓	3.30	120.00	✓	5.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Site Access	One lane	3.00										45	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	511.887	0.088	0.223	0.141	0.319
1	B-C	649.118	0.094	0.238	-	-
1	C-B	720.490	0.265	0.265	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
TBL South	ONE HOUR	✓	453.00	100.000
Site Access	ONE HOUR	✓	129.00	100.000
TBL (North)	ONE HOUR	✓	502.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	0.000	32.000	421.000
	Site Access	99.000	0.000	30.000
	TBL (North)	383.000	119.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	0.00	0.07	0.93
	Site Access	0.77	0.00	0.23
	TBL (North)	0.76	0.24	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	TBL (North)	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		TBL South	Site Access	TBL (North)
From	TBL South	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	TBL (North)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B-AC	0.42	18.37	0.71	C	118.37	177.56	43.52	14.71	0.48	43.53	14.71
C-AB	0.22	7.87	0.28	A	109.22	163.83	19.85	7.27	0.22	19.86	7.27
C-A	-	-	-	-	351.43	527.14	-	-	-	-	-
A-B	-	-	-	-	29.36	44.05	-	-	-	-	-
A-C	-	-	-	-	386.32	579.48	-	-	-	-	-

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	97.12	24.28	95.87	0.00	402.90	0.241	0.00	0.31	11.680	B
C-AB	89.59	22.40	88.93	0.00	630.27	0.142	0.00	0.16	6.641	A
C-A	288.34	72.09	288.34	0.00	-	-	-	-	-	-
A-B	24.09	6.02	24.09	0.00	-	-	-	-	-	-
A-C	316.95	79.24	316.95	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	115.97	28.99	115.47	0.00	375.72	0.309	0.31	0.44	13.804	B
C-AB	106.99	26.75	106.81	0.00	612.78	0.175	0.16	0.21	7.113	A
C-A	344.30	86.07	344.30	0.00	-	-	-	-	-	-
A-B	28.77	7.19	28.77	0.00	-	-	-	-	-	-
A-C	378.47	94.62	378.47	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	142.03	35.51	140.97	0.00	337.88	0.420	0.44	0.70	18.181	C
C-AB	131.07	32.77	130.78	0.00	588.68	0.223	0.21	0.28	7.857	A
C-A	421.64	105.41	421.64	0.00	-	-	-	-	-	-
A-B	35.23	8.81	35.23	0.00	-	-	-	-	-	-
A-C	463.53	115.88	463.53	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	142.03	35.51	141.99	0.00	337.79	0.420	0.70	0.71	18.373	C
C-AB	131.07	32.77	131.07	0.00	588.68	0.223	0.28	0.28	7.866	A
C-A	421.64	105.41	421.64	0.00	-	-	-	-	-	-
A-B	35.23	8.81	35.23	0.00	-	-	-	-	-	-
A-C	463.53	115.88	463.53	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	115.97	28.99	117.00	0.00	375.58	0.309	0.71	0.46	13.978	B
C-AB	106.99	26.75	107.27	0.00	612.78	0.175	0.28	0.21	7.127	A
C-A	344.30	86.07	344.30	0.00	-	-	-	-	-	-
A-B	28.77	7.19	28.77	0.00	-	-	-	-	-	-
A-C	378.47	94.62	378.47	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	97.12	24.28	97.65	0.00	402.65	0.241	0.46	0.32	11.823	B
C-AB	89.59	22.40	89.78	0.00	630.27	0.142	0.21	0.17	6.662	A
C-A	288.34	72.09	288.34	0.00	-	-	-	-	-	-
A-B	24.09	6.02	24.09	0.00	-	-	-	-	-	-
A-C	316.95	79.24	316.95	0.00	-	-	-	-	-	-

Queueing Delay Results for each time segment

Queueing Delay results: (16:45-17:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	4.44	0.30	11.680	B	B
C-AB	2.44	0.16	6.641	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:00-17:15)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	6.30	0.42	13.804	B	B
C-AB	3.15	0.21	7.113	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:15-17:30)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	9.93	0.66	18.181	C	B
C-AB	4.25	0.28	7.857	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:30-17:45)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	10.63	0.71	18.373	C	B
C-AB	4.30	0.29	7.866	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:45-18:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	7.19	0.48	13.978	B	B
C-AB	3.21	0.21	7.127	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (18:00-18:15)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	5.03	0.34	11.823	B	B
C-AB	2.51	0.17	6.662	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]

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Filename: 2 - TBL_Shepherd Lane_High Street.arc8
Path: C:\Users\micro\Dropbox\Project Files\TPS Project Files\P2423. Thurnscoe Bridge Lane, Thurnscoe\Technical\Junction Modelling
Report generation date: 28/10/2024 11:33:20

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)	Queue (PCU)	Delay (s)	RFC	Junction Delay (s)
	A1 - 2029 Base							
Stream B-AC	0.64	14.51	0.39	12.69	0.47	13.34	0.32	10.56
Stream C-AB	0.08	5.17	0.05		0.18	5.18	0.09	
Stream C-A	-	-	-		-	-	-	
Stream A-B	-	-	-		-	-	-	
Stream A-C	-	-	-		-	-	-	
	A1 - 2029 Base + Dev							
Stream B-AC	0.71	15.64	0.42	13.62	0.58	14.84	0.37	11.64
Stream C-AB	0.09	5.18	0.06		0.19	5.09	0.10	
Stream C-A	-	-	-		-	-	-	
Stream A-B	-	-	-		-	-	-	
Stream A-C	-	-	-		-	-	-	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - 2029 Base, AM" model duration: 08:00 - 09:30
"D2 - 2029 Base, PM" model duration: 16:15 - 17:45
"D3 - 2029 Base + Dev, AM" model duration: 08:00 - 09:30
"D4 - 2029 Base + Dev, PM " model duration: 16:15 - 17:45

Run using Junctions 8.0.6.541 at 28/10/2024 11:33:19

File summary

Title	TBL / Shepherd Lane / High Street
Location	Thurnscoe
Site Number	
Date	16/05/2024
Version	
Status	(new file)
Identifier	
Client	Avant Homes
Jobnumber	P2423
Enumerator	JT
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2029 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base + Dev, PM	2029 Base + Dev	PM		ONE HOUR	16:15	17:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C		11.64	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
TBL (South)	A	TBL (South)		Major
High Street	B	High Street		Minor
Shepherd Lane	C	Shepherd Lane		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Shepherd Lane	8.50		0.00		2.20	60.00	✓	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

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
High Street	One lane	3.50										35	27

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	527.336	0.086	0.216	0.136	0.309
1	B-C	673.018	0.092	0.232	-	-
1	C-B	608.710	0.210	0.210	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
TBL (South)	ONE HOUR	✓	502.00	100.000
High Street	ONE HOUR	✓	129.00	100.000
Shepherd Lane	ONE HOUR	✓	453.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		TBL (South)	High Street	Shepherd Lane
From	TBL (South)	0.000	119.000	383.000
	High Street	99.000	0.000	30.000
	Shepherd Lane	421.000	32.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		TBL (South)	High Street	Shepherd Lane
From	TBL (South)	0.00	0.24	0.76
	High Street	0.77	0.00	0.23
	Shepherd Lane	0.93	0.07	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		TBL (South)	High Street	Shepherd Lane
From	TBL (South)	1.000	1.000	1.000
	High Street	1.000	1.000	1.000
	Shepherd Lane	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		TBL (South)	High Street	Shepherd Lane
From	TBL (South)	0.0	0.0	0.0
	High Street	0.0	0.0	0.0
	Shepherd Lane	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B-AC	0.37	14.84	0.58	B	118.37	177.56	36.91	12.47	0.41	36.92	12.48
C-AB	0.10	5.09	0.19	A	57.93	86.89	12.06	8.33	0.13	12.06	8.33
C-A	-	-	-	-	357.75	536.63	-	-	-	-	-
A-B	-	-	-	-	109.20	163.79	-	-	-	-	-
A-C	-	-	-	-	351.45	527.17	-	-	-	-	-

Main Results for each time segment

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	97.12	24.28	96.00	0.00	439.35	0.221	0.00	0.28	10.452	B
C-AB	40.00	10.00	39.67	0.00	747.28	0.054	0.00	0.08	5.087	A
C-A	301.04	75.26	301.04	0.00	-	-	-	-	-	-
A-B	89.59	22.40	89.59	0.00	-	-	-	-	-	-
A-C	288.34	72.09	288.34	0.00	-	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	115.97	28.99	115.57	0.00	416.40	0.279	0.28	0.38	11.952	B
C-AB	55.12	13.78	54.97	0.00	782.38	0.070	0.08	0.12	4.951	A
C-A	352.11	88.03	352.11	0.00	-	-	-	-	-	-
A-B	106.98	26.74	106.98	0.00	-	-	-	-	-	-
A-C	344.31	86.08	344.31	0.00	-	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	142.03	35.51	141.26	0.00	384.49	0.369	0.38	0.57	14.754	B
C-AB	78.44	19.61	78.16	0.00	825.10	0.095	0.12	0.19	4.823	A
C-A	420.33	105.08	420.33	0.00	-	-	-	-	-	-
A-B	131.02	32.76	131.02	0.00	-	-	-	-	-	-
A-C	421.69	105.42	421.69	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	142.03	35.51	142.00	0.00	384.44	0.369	0.57	0.58	14.844	B
C-AB	78.55	19.64	78.54	0.00	825.23	0.095	0.19	0.19	4.827	A
C-A	420.21	105.05	420.21	0.00	-	-	-	-	-	-
A-B	131.02	32.76	131.02	0.00	-	-	-	-	-	-
A-C	421.69	105.42	421.69	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	115.97	28.99	116.71	0.00	416.32	0.279	0.58	0.39	12.047	B
C-AB	55.26	13.82	55.53	0.00	782.59	0.071	0.19	0.13	4.955	A
C-A	351.98	87.99	351.98	0.00	-	-	-	-	-	-
A-B	106.98	26.74	106.98	0.00	-	-	-	-	-	-
A-C	344.31	86.08	344.31	0.00	-	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-AC	97.12	24.28	97.54	0.00	439.25	0.221	0.39	0.29	10.549	B
C-AB	40.18	10.04	40.34	0.00	747.44	0.054	0.13	0.09	5.093	A
C-A	300.86	75.22	300.86	0.00	-	-	-	-	-	-
A-B	89.59	22.40	89.59	0.00	-	-	-	-	-	-
A-C	288.34	72.09	288.34	0.00	-	-	-	-	-	-

Queueing Delay Results for each time segment

Queueing Delay results: (16:15-16:30)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	3.99	0.27	10.452	B	B
C-AB	1.23	0.08	5.087	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (16:30-16:45)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	5.50	0.37	11.952	B	B
C-AB	1.84	0.12	4.951	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (16:45-17:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	8.18	0.55	14.754	B	B
C-AB	2.89	0.19	4.823	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:00-17:15)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	8.64	0.58	14.844	B	B
C-AB	2.93	0.20	4.827	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:15-17:30)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	6.14	0.41	12.047	B	B
C-AB	1.89	0.13	4.955	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:30-17:45)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-AC	4.47	0.30	10.549	B	B
C-AB	1.28	0.09	5.093	A	A
C-A	-	-	-	-	-
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: 3 - Shepherd Ln_Houghton Rd_John St Mini RBT.arc8
Path: C:\Users\micro\Dropbox\Project Files\TPS Project Files\P2423. Thurnscoe Bridge Lane, Thurnscoe\Technical\Junction Modelling
Report generation date: 28/10/2024 11:40:31

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2029 Base					
John Street	0.05	9.56	0.04	0.05	9.16	0.05
Station Road	1.76	13.51	0.64	8.66	50.02	0.92
Shepherd Lane	1.99	19.73	0.67	6.76	59.91	0.90
Houghton Road	4.04	24.20	0.81	2.97	19.15	0.76
	A1 - 2029 Base + Dev					
John Street	0.05	10.07	0.05	0.05	9.42	0.05
Station Road	1.89	14.15	0.66	13.26	71.80	0.97
Shepherd Lane	2.77	25.05	0.74	8.53	72.24	0.93
Houghton Road	4.63	27.88	0.83	3.23	20.68	0.77

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

"D1 - 2029 Base, AM" model duration: 08:00 - 09:30
"D2 - 2029 Base, PM" model duration: 16:45 - 18:15
"D3 - 2029 Base + Dev, AM" model duration: 08:00 - 09:30
"D4 - 2029 Base + Dev, PM " model duration: 16:45 - 18:15

Run using Junctions 8.0.6.541 at 28/10/2024 11:40:29

File summary

Title	(untitled)
Location	
Site Number	
Date	16/05/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	micro
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2029 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base + Dev, PM	2029 Base + Dev	PM		ONE HOUR	16:45	18:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	1,2,3,4	54.20	F

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Name	Arm	Name	Description
John Street	1	John Street	
Station Road	2	Station Road	
Shepherd Lane	3	Shepherd Lane	
Houghton Road	4	Houghton Road	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
John Street	0.00	99999.00		0.00
Station Road	0.00	99999.00		0.00
Shepherd Lane	0.00	99999.00		0.00
Houghton Road	0.00	99999.00		0.00

Mini Roundabout Geometry

Name	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
John Street	4.00	4.00	4.00	0.00	12.00	5.00	0.00	
Station Road	4.00	4.00	5.50	2.00	13.00	7.00	0.00	
Shepherd Lane	3.60	3.60	3.60	0.00	14.00	9.00	0.00	
Houghton Road	4.10	4.10	4.10	0.00	14.00	11.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
John Street		(calculated)	(calculated)	0.554	819.040
Station Road		(calculated)	(calculated)	0.577	891.413
Shepherd Lane		(calculated)	(calculated)	0.536	746.553
Houghton Road		(calculated)	(calculated)	0.565	860.172

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
John Street	ONE HOUR	✓	19.00	100.000
Station Road	ONE HOUR	✓	634.00	100.000
Shepherd Lane	ONE HOUR	✓	413.00	100.000
Houghton Road	ONE HOUR	✓	530.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		John Street	Station Road	Shepherd Lane	Houghton Road
From	John Street	0.000	6.000	8.000	5.000
	Station Road	4.000	0.000	193.000	437.000
	Shepherd Lane	8.000	159.000	0.000	246.000
	Houghton Road	4.000	273.000	253.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		John Street	Station Road	Shepherd Lane	Houghton Road
From	John Street	0.00	0.32	0.42	0.26
	Station Road	0.01	0.00	0.30	0.69
	Shepherd Lane	0.02	0.38	0.00	0.60
	Houghton Road	0.01	0.52	0.48	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		John Street	Station Road	Shepherd Lane	Houghton Road
From	John Street	1.000	1.000	1.000	1.000
	Station Road	1.000	1.000	1.000	1.000
	Shepherd Lane	1.000	1.000	1.000	1.000
	Houghton Road	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		John Street	Station Road	Shepherd Lane	Houghton Road
From	John Street	0.0	0.0	0.0	0.0
	Station Road	0.0	0.0	0.0	0.0
	Shepherd Lane	0.0	0.0	0.0	0.0
	Houghton Road	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
John Street	0.05	9.42	0.05	A	17.43	26.15	3.54	8.12	0.04	3.54	8.12
Station Road	0.97	71.80	13.26	F	581.77	872.65	455.23	31.30	5.06	455.34	31.31
Shepherd Lane	0.93	72.24	8.53	F	378.98	568.46	313.86	33.13	3.49	313.95	33.14
Houghton Road	0.77	20.68	3.23	C	486.34	729.51	168.77	13.88	1.88	168.82	13.88

Main Results for each time segment

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
John Street	14.30	3.58	14.20	11.89	509.92	0.00	536.38	303.79	0.027	0.00	0.03	6.892	A
Station Road	477.31	119.33	471.15	325.85	198.27	0.00	777.03	566.17	0.614	0.00	1.54	11.550	B
Shepherd Lane	310.93	77.73	306.26	337.96	331.46	0.00	568.77	492.45	0.547	0.00	1.17	13.489	B
Houghton Road	399.01	99.75	395.00	510.91	126.81	0.00	788.47	745.56	0.506	0.00	1.00	9.060	A

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
John Street	17.08	4.27	17.04	14.26	612.15	0.00	479.72	303.79	0.036	0.03	0.04	7.781	A
Station Road	569.95	142.49	564.65	391.13	238.06	0.00	754.07	566.17	0.756	1.54	2.87	18.499	C
Shepherd Lane	371.28	92.82	367.41	405.46	397.24	0.00	533.49	492.45	0.696	1.17	2.13	21.178	C
Houghton Road	476.46	119.11	474.28	612.53	152.13	0.00	774.16	745.56	0.615	1.00	1.55	11.914	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
John Street	20.92	5.23	20.85	17.03	741.16	0.00	408.20	303.78	0.051	0.04	0.05	9.293	A
Station Road	698.05	174.51	668.52	472.09	289.92	0.00	724.15	566.17	0.964	2.87	10.25	48.824	E
Shepherd Lane	454.72	113.68	436.55	487.94	470.50	0.00	494.20	492.45	0.920	2.13	6.68	51.068	F
Houghton Road	583.54	145.89	577.45	726.31	180.74	0.00	757.98	745.56	0.770	1.55	3.07	19.298	C

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
John Street	20.92	5.23	20.92	17.39	750.73	0.00	402.90	303.78	0.052	0.05	0.05	9.424	A
Station Road	698.05	174.51	685.99	479.07	292.57	0.00	722.62	566.17	0.966	10.25	13.26	71.801	F
Shepherd Lane	454.72	113.68	447.30	495.89	482.67	0.00	487.67	492.45	0.932	6.68	8.53	72.243	F
Houghton Road	583.54	145.89	582.92	744.77	185.20	0.00	755.46	745.56	0.772	3.07	3.23	20.681	C

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
John Street	17.08	4.27	17.15	15.12	630.73	0.00	469.41	303.79	0.036	0.05	0.04	7.960	A
Station Road	569.95	142.49	609.25	405.77	242.11	0.00	751.73	566.17	0.758	13.26	3.44	30.395	D
Shepherd Lane	371.28	92.82	394.21	423.06	428.29	0.00	516.83	492.45	0.718	8.53	2.80	33.428	D
Houghton Road	476.46	119.11	482.61	659.26	163.25	0.00	767.87	745.56	0.620	3.23	1.69	12.876	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
John Street	14.30	3.58	14.34	12.23	520.59	0.00	530.47	303.79	0.027	0.04	0.03	6.977	A
Station Road	477.31	119.33	484.44	333.43	201.51	0.00	775.16	566.17	0.616	3.44	1.66	12.668	B
Shepherd Lane	310.93	77.73	317.03	345.20	340.75	0.00	563.79	492.45	0.552	2.80	1.27	14.928	B
Houghton Road	399.01	99.75	401.57	526.53	131.25	0.00	785.96	745.56	0.508	1.69	1.05	9.426	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
John Street	0.40	0.03	6.892	A	A
Station Road	21.32	1.42	11.550	B	B
Shepherd Lane	16.14	1.08	13.489	B	B
Houghton Road	14.20	0.95	9.060	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
John Street	0.54	0.04	7.781	A	A
Station Road	38.89	2.59	18.499	C	B
Shepherd Lane	29.07	1.94	21.178	C	C
Houghton Road	21.98	1.47	11.914	B	B

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
John Street	0.78	0.05	9.293	A	A
Station Road	112.85	7.52	48.824	E	D
Shepherd Lane	76.88	5.13	51.068	F	D
Houghton Road	41.30	2.75	19.298	C	B

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
John Street	0.81	0.05	9.424	A	A
Station Road	178.38	11.89	71.801	F	E
Shepherd Lane	115.76	7.72	72.243	F	E
Houghton Road	47.50	3.17	20.681	C	C

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
John Street	0.59	0.04	7.960	A	A
Station Road	76.96	5.13	30.395	D	C
Shepherd Lane	55.27	3.68	33.428	D	C
Houghton Road	27.24	1.82	12.876	B	B

Queueing Delay results: (18:00-18:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
John Street	0.43	0.03	6.977	A	A
Station Road	26.83	1.79	12.668	B	B
Shepherd Lane	20.74	1.38	14.928	B	B
Houghton Road	16.56	1.10	9.426	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

Filename: 4 - Station Rd_Holly Bank Drive Mini RBT.arc8
Path: C:\Users\micro\Dropbox\Project Files\TPS Project Files\P2423. Thurnscoe Bridge Lane, Thurnscoe\Technical\Junction Modelling
Report generation date: 28/10/2024 11:46:24

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2029 Base					
Holly Bank Dr (N)	0.05	7.18	0.05	0.10	7.30	0.09
Station Road (E)	1.35	10.62	0.58	3.40	21.12	0.78
Holly Bank Drive (S)	0.08	7.06	0.07	0.29	10.05	0.23
Station Road (W)	2.01	13.93	0.67	1.51	11.77	0.61
	A1 - 2029 Base + Dev					
Holly Bank Dr (N)	0.05	7.44	0.05	0.11	7.42	0.10
Station Road (E)	1.42	10.97	0.59	4.28	25.54	0.82
Holly Bank Drive (S)	0.08	7.15	0.07	0.31	10.56	0.24
Station Road (W)	2.42	15.87	0.71	1.63	12.35	0.62

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

"D1 - 2029 Base, AM " model duration: 08:00 - 09:30
"D2 - 2029 Base, PM" model duration: 16:15 - 17:45
"D3 - 2029 Base + Dev, AM" model duration: 08:00 - 09:30
"D4 - 2029 Base + Dev, PM" model duration: 16:15 - 17:45

Run using Junctions 8.0.6.541 at 28/10/2024 11:46:18

File summary

Title	Station Road / Holly Bank Drive
Location	Thurnscoe
Site Number	
Date	16/05/2024
Version	
Status	(new file)
Identifier	
Client	Avant
Jobnumber	P2423
Enumerator	JT
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2029 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base, AM	2029 Base	AM		ONE HOUR	08:00	09:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	1,2,3,4	12.07	B

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Name	Arm	Name	Description
Holly Bank Dr (N)	1	Holly Bank Dr (N)	
Station Road (E)	2	Station Road (E)	
Holly Bank Drive (S)	3	Holly Bank Drive (S)	
Station Road (W)	4	Station Road (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Holly Bank Dr (N)	0.00	99999.00		0.00
Station Road (E)	0.00	99999.00		0.00
Holly Bank Drive (S)	0.00	99999.00		0.00
Station Road (W)	0.00	99999.00		0.00

Mini Roundabout Geometry

Name	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
Holly Bank Dr (N)	3.60	3.60	3.60	0.00	13.00	13.00	0.00	
Station Road (E)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Holly Bank Drive (S)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Station Road (W)	3.80	3.80	3.80	0.00	13.00	11.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Holly Bank Dr (N)		(calculated)	(calculated)	0.551	805.211
Station Road (E)		(calculated)	(calculated)	0.568	830.599
Holly Bank Drive (S)		(calculated)	(calculated)	0.568	809.299
Station Road (W)		(calculated)	(calculated)	0.550	798.852

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Holly Bank Dr (N)	ONE HOUR	✓	23.00	100.000
Station Road (E)	ONE HOUR	✓	420.00	100.000
Holly Bank Drive (S)	ONE HOUR	✓	35.00	100.000
Station Road (W)	ONE HOUR	✓	482.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.000	7.000	2.000	14.000
	Station Road (E)	8.000	0.000	16.000	396.000
	Holly Bank Drive (S)	0.000	9.000	0.000	26.000
	Station Road (W)	32.000	419.000	31.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.00	0.30	0.09	0.61
	Station Road (E)	0.02	0.00	0.04	0.94
	Holly Bank Drive (S)	0.00	0.26	0.00	0.74
	Station Road (W)	0.07	0.87	0.06	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	1.000	1.000	1.000	1.000
	Station Road (E)	1.000	1.000	1.000	1.000
	Holly Bank Drive (S)	1.000	1.000	1.000	1.000
	Station Road (W)	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.0	0.0	0.0	0.0
	Station Road (E)	0.0	0.0	0.0	0.0
	Holly Bank Drive (S)	0.0	0.0	0.0	0.0
	Station Road (W)	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Holly Bank Dr (N)	0.05	7.18	0.05	A	21.11	31.66	3.47	6.57	0.04	3.47	6.57
Station Road (E)	0.58	10.62	1.35	B	385.40	578.10	84.70	8.79	0.94	84.71	8.79
Holly Bank Drive (S)	0.07	7.06	0.08	A	32.12	48.17	5.20	6.48	0.06	5.20	6.48
Station Road (W)	0.67	13.93	2.01	B	442.29	663.44	119.45	10.80	1.33	119.48	10.81

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	17.32	4.33	17.20	29.85	342.41	0.00	616.40	375.30	0.028	0.00	0.03	6.008	A
Station Road (E)	316.20	79.05	313.67	324.52	35.09	0.00	810.68	655.12	0.390	0.00	0.63	7.208	A
Holly Bank Drive (S)	26.35	6.59	26.18	36.57	312.19	0.00	632.06	321.84	0.042	0.00	0.04	5.940	A
Station Road (W)	362.87	90.72	359.55	325.67	12.71	0.00	791.86	746.43	0.458	0.00	0.83	8.267	A

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	20.68	5.17	20.64	35.85	411.30	0.00	578.41	375.30	0.036	0.03	0.04	6.453	A
Station Road (E)	377.57	94.39	376.63	389.80	42.14	0.00	806.68	655.12	0.468	0.63	0.87	8.353	A
Holly Bank Drive (S)	31.46	7.87	31.42	43.92	374.85	0.00	596.48	321.84	0.053	0.04	0.06	6.370	A
Station Road (W)	433.31	108.33	431.89	391.02	15.25	0.00	790.46	746.43	0.548	0.83	1.19	9.998	A

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	25.32	6.33	25.27	43.80	502.41	0.00	528.17	375.30	0.048	0.04	0.05	7.158	A
Station Road (E)	462.43	115.61	460.57	476.18	51.51	0.00	801.36	655.12	0.577	0.87	1.33	10.505	B
Holly Bank Drive (S)	38.54	9.63	38.46	53.67	458.41	0.00	549.05	321.84	0.070	0.06	0.07	7.050	A
Station Road (W)	530.69	132.67	527.55	478.21	18.66	0.00	788.58	746.43	0.673	1.19	1.97	13.623	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	25.32	6.33	25.32	44.03	505.21	0.00	526.63	375.30	0.048	0.05	0.05	7.180	A
Station Road (E)	462.43	115.61	462.36	478.80	51.74	0.00	801.23	655.12	0.577	1.33	1.35	10.616	B
Holly Bank Drive (S)	38.54	9.63	38.53	53.94	460.16	0.00	548.05	321.84	0.070	0.07	0.08	7.064	A
Station Road (W)	530.69	132.67	530.53	479.98	18.72	0.00	788.55	746.43	0.673	1.97	2.01	13.927	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	20.68	5.17	20.73	36.20	415.53	0.00	576.08	375.30	0.036	0.05	0.04	6.484	A
Station Road (E)	377.57	94.39	379.38	393.77	42.49	0.00	806.48	655.12	0.468	1.35	0.90	8.464	A
Holly Bank Drive (S)	31.46	7.87	31.54	44.32	377.54	0.00	594.96	321.84	0.053	0.08	0.06	6.389	A
Station Road (W)	433.31	108.33	436.39	393.74	15.34	0.00	790.41	746.43	0.548	2.01	1.24	10.257	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	17.32	4.33	17.35	30.23	347.00	0.00	613.87	375.30	0.028	0.04	0.03	6.034	A
Station Road (E)	316.20	79.05	317.19	328.84	35.51	0.00	810.44	655.12	0.390	0.90	0.65	7.315	A
Holly Bank Drive (S)	26.35	6.59	26.40	37.03	315.66	0.00	630.09	321.84	0.042	0.06	0.04	5.963	A
Station Road (W)	362.87	90.72	364.40	329.23	12.83	0.00	791.79	746.43	0.458	1.24	0.86	8.454	A

Queueing Delay Results for each time segment

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.42	0.03	6.008	A	A
Station Road (E)	9.06	0.60	7.208	A	A
Holly Bank Drive (S)	0.63	0.04	5.940	A	A
Station Road (W)	11.85	0.79	8.267	A	A

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.54	0.04	6.453	A	A
Station Road (E)	12.55	0.84	8.353	A	A
Holly Bank Drive (S)	0.81	0.05	6.370	A	A
Station Road (W)	17.03	1.14	9.998	A	A

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.73	0.05	7.158	A	A
Station Road (E)	18.97	1.26	10.505	B	B
Holly Bank Drive (S)	1.10	0.07	7.050	A	A
Station Road (W)	27.58	1.84	13.623	B	B

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.75	0.05	7.180	A	A
Station Road (E)	20.10	1.34	10.616	B	B
Holly Bank Drive (S)	1.13	0.08	7.064	A	A
Station Road (W)	29.94	2.00	13.927	B	B

Queueing Delay results: (09:00-09:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.57	0.04	6.484	A	A
Station Road (E)	13.99	0.93	8.464	A	A
Holly Bank Drive (S)	0.86	0.06	6.389	A	A
Station Road (W)	19.65	1.31	10.257	B	B

Queueing Delay results: (09:15-09:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.45	0.03	6.034	A	A
Station Road (E)	10.03	0.67	7.315	A	A
Holly Bank Drive (S)	0.67	0.04	5.963	A	A
Station Road (W)	13.41	0.89	8.454	A	A

(Default Analysis Set) - 2029 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base, PM	2029 Base	PM		ONE HOUR	16:15	17:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	1,2,3,4	16.02	C

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Name	Arm	Name	Description
Holly Bank Dr (N)	1	Holly Bank Dr (N)	
Station Road (E)	2	Station Road (E)	
Holly Bank Drive (S)	3	Holly Bank Drive (S)	
Station Road (W)	4	Station Road (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Holly Bank Dr (N)	0.00	99999.00		0.00
Station Road (E)	0.00	99999.00		0.00
Holly Bank Drive (S)	0.00	99999.00		0.00
Station Road (W)	0.00	99999.00		0.00

Mini Roundabout Geometry

Name	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
Holly Bank Dr (N)	3.60	3.60	3.60	0.00	13.00	13.00	0.00	
Station Road (E)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Holly Bank Drive (S)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Station Road (W)	3.80	3.80	3.80	0.00	13.00	11.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Holly Bank Dr (N)		(calculated)	(calculated)	0.551	805.211
Station Road (E)		(calculated)	(calculated)	0.568	830.599
Holly Bank Drive (S)		(calculated)	(calculated)	0.568	809.299
Station Road (W)		(calculated)	(calculated)	0.550	798.852

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Holly Bank Dr (N)	ONE HOUR	✓	47.00	100.000
Station Road (E)	ONE HOUR	✓	547.00	100.000
Holly Bank Drive (S)	ONE HOUR	✓	96.00	100.000
Station Road (W)	ONE HOUR	✓	425.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.000	9.000	4.000	34.000
	Station Road (E)	9.000	0.000	28.000	510.000
	Holly Bank Drive (S)	0.000	33.000	0.000	63.000
	Station Road (W)	29.000	338.000	58.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.00	0.19	0.09	0.72
	Station Road (E)	0.02	0.00	0.05	0.93
	Holly Bank Drive (S)	0.00	0.34	0.00	0.66
	Station Road (W)	0.07	0.80	0.14	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	1.000	1.000	1.000	1.000
	Station Road (E)	1.000	1.000	1.000	1.000
	Holly Bank Drive (S)	1.000	1.000	1.000	1.000
	Station Road (W)	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.0	0.0	0.0	0.0
	Station Road (E)	0.0	0.0	0.0	0.0
	Holly Bank Drive (S)	0.0	0.0	0.0	0.0
	Station Road (W)	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Holly Bank Dr (N)	0.09	7.30	0.10	A	43.13	64.69	7.18	6.66	0.08	7.18	6.66
Station Road (E)	0.78	21.12	3.40	C	501.94	752.91	177.98	14.18	1.98	178.02	14.19
Holly Bank Drive (S)	0.23	10.05	0.29	B	88.09	132.14	18.77	8.52	0.21	18.77	8.52
Station Road (W)	0.61	11.77	1.51	B	389.99	584.98	93.36	9.58	1.04	93.38	9.58

Main Results for each time segment

Main results: (16:15-16:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	35.38	8.85	35.15	28.35	320.23	0.00	628.63	366.89	0.056	0.00	0.06	6.061	A
Station Road (E)	411.81	102.95	407.55	283.67	71.71	0.00	789.89	605.60	0.521	0.00	1.07	9.316	A
Holly Bank Drive (S)	72.27	18.07	71.70	67.15	412.11	0.00	575.33	332.40	0.126	0.00	0.14	7.141	A
Station Road (W)	319.96	79.99	317.23	452.46	31.35	0.00	781.59	730.48	0.409	0.00	0.68	7.708	A

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	42.25	10.56	42.18	34.05	384.61	0.00	593.13	366.89	0.071	0.06	0.08	6.534	A
Station Road (E)	491.74	122.94	489.45	340.69	86.10	0.00	781.72	605.60	0.629	1.07	1.64	12.217	B
Holly Bank Drive (S)	86.30	21.58	86.10	80.64	494.91	0.00	528.32	332.40	0.163	0.14	0.19	8.137	A
Station Road (W)	382.07	95.52	381.01	543.36	37.65	0.00	778.13	730.48	0.491	0.68	0.95	9.041	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	51.75	12.94	51.64	41.59	470.20	0.00	545.93	366.89	0.095	0.08	0.10	7.280	A
Station Road (E)	602.26	150.56	595.77	416.52	105.31	0.00	770.81	605.60	0.781	1.64	3.26	19.843	C
Holly Bank Drive (S)	105.70	26.42	105.32	98.46	602.63	0.00	467.17	332.40	0.226	0.19	0.29	9.939	A
Station Road (W)	467.93	116.98	465.78	661.94	46.01	0.00	773.53	730.48	0.605	0.95	1.48	11.613	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	51.75	12.94	51.75	41.82	472.25	0.00	544.80	366.89	0.095	0.10	0.10	7.300	A
Station Road (E)	602.26	150.56	601.69	418.31	105.68	0.00	770.60	605.60	0.782	3.26	3.40	21.123	C
Holly Bank Drive (S)	105.70	26.42	105.68	99.05	608.32	0.00	463.94	332.40	0.228	0.29	0.29	10.048	B
Station Road (W)	467.93	116.98	467.84	667.77	46.23	0.00	773.41	730.48	0.605	1.48	1.51	11.772	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	42.25	10.56	42.36	34.41	387.74	0.00	591.40	366.89	0.071	0.10	0.08	6.557	A
Station Road (E)	491.74	122.94	498.32	343.43	86.68	0.00	781.39	605.60	0.629	3.40	1.76	12.998	B
Holly Bank Drive (S)	86.30	21.58	86.67	81.54	503.46	0.00	523.47	332.40	0.165	0.29	0.20	8.248	A
Station Road (W)	382.07	95.52	384.16	552.14	37.99	0.00	777.94	730.48	0.491	1.51	0.98	9.190	A

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	35.38	8.85	35.45	28.73	324.09	0.00	626.50	366.89	0.056	0.08	0.06	6.093	A
Station Road (E)	411.81	102.95	414.39	287.06	72.48	0.00	789.45	605.60	0.522	1.76	1.11	9.663	A
Holly Bank Drive (S)	72.27	18.07	72.49	68.05	418.82	0.00	571.52	332.40	0.126	0.20	0.15	7.216	A
Station Road (W)	319.96	79.99	321.08	459.57	31.74	0.00	781.38	730.48	0.409	0.98	0.70	7.841	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:15-16:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.86	0.06	6.061	A	A
Station Road (E)	15.04	1.00	9.316	A	A
Holly Bank Drive (S)	2.06	0.14	7.141	A	A
Station Road (W)	9.78	0.65	7.708	A	A

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.12	0.07	6.534	A	A
Station Road (E)	23.20	1.55	12.217	B	B
Holly Bank Drive (S)	2.83	0.19	8.137	A	A
Station Road (W)	13.68	0.91	9.041	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.52	0.10	7.280	A	A
Station Road (E)	43.65	2.91	19.843	C	B
Holly Bank Drive (S)	4.19	0.28	9.939	A	A
Station Road (W)	21.07	1.40	11.613	B	B

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.56	0.10	7.300	A	A
Station Road (E)	50.19	3.35	21.123	C	C
Holly Bank Drive (S)	4.37	0.29	10.048	B	B
Station Road (W)	22.48	1.50	11.772	B	B

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.19	0.08	6.557	A	A
Station Road (E)	28.35	1.89	12.998	B	B
Holly Bank Drive (S)	3.08	0.21	8.248	A	A
Station Road (W)	15.43	1.03	9.190	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.92	0.06	6.093	A	A
Station Road (E)	17.54	1.17	9.663	A	A
Holly Bank Drive (S)	2.25	0.15	7.216	A	A
Station Road (W)	10.91	0.73	7.841	A	A

(Default Analysis Set) - 2029 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base + Dev, AM	2029 Base + Dev	AM		ONE HOUR	08:00	09:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	1,2,3,4	13.26	B

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Name	Arm	Name	Description
Holly Bank Dr (N)	1	Holly Bank Dr (N)	
Station Road (E)	2	Station Road (E)	
Holly Bank Drive (S)	3	Holly Bank Drive (S)	
Station Road (W)	4	Station Road (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Holly Bank Dr (N)	0.00	99999.00		0.00
Station Road (E)	0.00	99999.00		0.00
Holly Bank Drive (S)	0.00	99999.00		0.00
Station Road (W)	0.00	99999.00		0.00

Mini Roundabout Geometry

Name	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
Holly Bank Dr (N)	3.60	3.60	3.60	0.00	13.00	13.00	0.00	
Station Road (E)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Holly Bank Drive (S)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Station Road (W)	3.80	3.80	3.80	0.00	13.00	11.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Holly Bank Dr (N)		(calculated)	(calculated)	0.551	805.211
Station Road (E)		(calculated)	(calculated)	0.568	830.599
Holly Bank Drive (S)		(calculated)	(calculated)	0.568	809.299
Station Road (W)		(calculated)	(calculated)	0.550	798.852

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Holly Bank Dr (N)	ONE HOUR	✓	23.00	100.000
Station Road (E)	ONE HOUR	✓	430.00	100.000
Holly Bank Drive (S)	ONE HOUR	✓	35.00	100.000
Station Road (W)	ONE HOUR	✓	511.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.000	7.000	2.000	14.000
	Station Road (E)	8.000	0.000	16.000	406.000
	Holly Bank Drive (S)	0.000	9.000	0.000	26.000
	Station Road (W)	32.000	448.000	31.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.00	0.30	0.09	0.61
	Station Road (E)	0.02	0.00	0.04	0.94
	Holly Bank Drive (S)	0.00	0.26	0.00	0.74
	Station Road (W)	0.06	0.88	0.06	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	1.000	1.000	1.000	1.000
	Station Road (E)	1.000	1.000	1.000	1.000
	Holly Bank Drive (S)	1.000	1.000	1.000	1.000
	Station Road (W)	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.0	0.0	0.0	0.0
	Station Road (E)	0.0	0.0	0.0	0.0
	Holly Bank Drive (S)	0.0	0.0	0.0	0.0
	Station Road (W)	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Holly Bank Dr (N)	0.05	7.44	0.05	A	21.11	31.66	3.57	6.76	0.04	3.57	6.76
Station Road (E)	0.59	10.97	1.42	B	394.58	591.86	88.84	9.01	0.99	88.86	9.01
Holly Bank Drive (S)	0.07	7.15	0.08	A	32.12	48.17	5.26	6.54	0.06	5.26	6.55
Station Road (W)	0.71	15.87	2.42	C	468.90	703.35	138.71	11.83	1.54	138.75	11.84

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	17.32	4.33	17.20	29.83	363.87	0.00	604.57	373.75	0.029	0.00	0.03	6.127	A
Station Road (E)	323.73	80.93	321.10	345.99	35.08	0.00	810.68	657.27	0.399	0.00	0.66	7.316	A
Holly Bank Drive (S)	26.35	6.59	26.18	36.56	319.62	0.00	627.84	320.87	0.042	0.00	0.04	5.982	A
Station Road (W)	384.71	96.18	381.00	333.09	12.70	0.00	791.86	746.71	0.486	0.00	0.93	8.685	A

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	20.68	5.17	20.64	35.83	437.10	0.00	564.19	373.75	0.037	0.03	0.04	6.622	A
Station Road (E)	386.56	96.64	385.57	415.62	42.13	0.00	806.68	657.27	0.479	0.66	0.90	8.528	A
Holly Bank Drive (S)	31.46	7.87	31.42	43.91	383.79	0.00	591.41	320.87	0.053	0.04	0.06	6.428	A
Station Road (W)	459.38	114.84	457.68	399.95	15.25	0.00	790.46	746.71	0.581	0.93	1.35	10.760	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	25.32	6.33	25.27	43.75	533.51	0.00	511.03	373.75	0.050	0.04	0.05	7.411	A
Station Road (E)	473.44	118.36	471.44	507.31	51.47	0.00	801.38	657.27	0.591	0.90	1.40	10.844	B
Holly Bank Drive (S)	38.54	9.63	38.46	53.63	469.28	0.00	542.88	320.87	0.071	0.06	0.08	7.137	A
Station Road (W)	562.62	140.66	558.60	489.07	18.66	0.00	788.58	746.71	0.713	1.35	2.36	15.377	C

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	25.32	6.33	25.32	44.02	537.06	0.00	509.06	373.75	0.050	0.05	0.05	7.441	A
Station Road (E)	473.44	118.36	473.36	510.65	51.73	0.00	801.23	657.27	0.591	1.40	1.42	10.973	B
Holly Bank Drive (S)	38.54	9.63	38.53	53.93	471.16	0.00	541.81	320.87	0.071	0.08	0.08	7.152	A
Station Road (W)	562.62	140.66	562.37	490.98	18.72	0.00	788.55	746.71	0.713	2.36	2.42	15.866	C

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	20.68	5.17	20.73	36.24	442.44	0.00	561.24	373.75	0.037	0.05	0.04	6.662	A
Station Road (E)	386.56	96.64	388.51	420.64	42.53	0.00	806.45	657.27	0.479	1.42	0.94	8.653	A
Holly Bank Drive (S)	31.46	7.87	31.54	44.37	386.67	0.00	589.77	320.87	0.053	0.08	0.06	6.449	A
Station Road (W)	459.38	114.84	463.35	402.87	15.34	0.00	790.41	746.71	0.581	2.42	1.43	11.138	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	17.32	4.33	17.35	30.25	369.14	0.00	601.66	373.75	0.029	0.04	0.03	6.163	A
Station Road (E)	323.73	80.93	324.78	350.97	35.52	0.00	810.43	657.27	0.399	0.94	0.67	7.428	A
Holly Bank Drive (S)	26.35	6.59	26.40	37.04	323.25	0.00	625.78	320.87	0.042	0.06	0.04	6.006	A
Station Road (W)	384.71	96.18	386.56	336.82	12.83	0.00	791.79	746.71	0.486	1.43	0.96	8.924	A

Queueing Delay Results for each time segment

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.43	0.03	6.127	A	A
Station Road (E)	9.41	0.63	7.316	A	A
Holly Bank Drive (S)	0.63	0.04	5.982	A	A
Station Road (W)	13.16	0.88	8.685	A	A

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.56	0.04	6.622	A	A
Station Road (E)	13.10	0.87	8.528	A	A
Holly Bank Drive (S)	0.82	0.05	6.428	A	A
Station Road (W)	19.31	1.29	10.760	B	B

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.76	0.05	7.411	A	A
Station Road (E)	20.00	1.33	10.844	B	B
Holly Bank Drive (S)	1.11	0.07	7.137	A	A
Station Road (W)	32.57	2.17	15.377	C	B

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.78	0.05	7.441	A	A
Station Road (E)	21.24	1.42	10.973	B	B
Holly Bank Drive (S)	1.14	0.08	7.152	A	A
Station Road (W)	35.91	2.39	15.866	C	B

Queueing Delay results: (09:00-09:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.59	0.04	6.662	A	A
Station Road (E)	14.66	0.98	8.653	A	A
Holly Bank Drive (S)	0.87	0.06	6.449	A	A
Station Road (W)	22.70	1.51	11.138	B	B

Queueing Delay results: (09:15-09:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.46	0.03	6.163	A	A
Station Road (E)	10.44	0.70	7.428	A	A
Holly Bank Drive (S)	0.68	0.05	6.006	A	A
Station Road (W)	15.06	1.00	8.924	A	A

(Default Analysis Set) - 2029 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 Base + Dev, PM	2029 Base + Dev	PM		ONE HOUR	16:15	17:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	1,2,3,4	18.56	C

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Name	Arm	Name	Description
Holly Bank Dr (N)	1	Holly Bank Dr (N)	
Station Road (E)	2	Station Road (E)	
Holly Bank Drive (S)	3	Holly Bank Drive (S)	
Station Road (W)	4	Station Road (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Holly Bank Dr (N)	0.00	99999.00		0.00
Station Road (E)	0.00	99999.00		0.00
Holly Bank Drive (S)	0.00	99999.00		0.00
Station Road (W)	0.00	99999.00		0.00

Mini Roundabout Geometry

Name	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
Holly Bank Dr (N)	3.60	3.60	3.60	0.00	13.00	13.00	0.00	
Station Road (E)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Holly Bank Drive (S)	3.70	3.70	3.70	0.00	12.00	14.00	0.00	
Station Road (W)	3.80	3.80	3.80	0.00	13.00	11.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Holly Bank Dr (N)		(calculated)	(calculated)	0.551	805.211
Station Road (E)		(calculated)	(calculated)	0.568	830.599
Holly Bank Drive (S)		(calculated)	(calculated)	0.568	809.299
Station Road (W)		(calculated)	(calculated)	0.550	798.852

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Holly Bank Dr (N)	ONE HOUR	✓	47.00	100.000
Station Road (E)	ONE HOUR	✓	575.00	100.000
Holly Bank Drive (S)	ONE HOUR	✓	96.00	100.000
Station Road (W)	ONE HOUR	✓	438.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.000	9.000	4.000	34.000
	Station Road (E)	9.000	0.000	28.000	538.000
	Holly Bank Drive (S)	0.000	33.000	0.000	63.000
	Station Road (W)	29.000	351.000	58.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.00	0.19	0.09	0.72
	Station Road (E)	0.02	0.00	0.05	0.94
	Holly Bank Drive (S)	0.00	0.34	0.00	0.66
	Station Road (W)	0.07	0.80	0.13	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	1.000	1.000	1.000	1.000
	Station Road (E)	1.000	1.000	1.000	1.000
	Holly Bank Drive (S)	1.000	1.000	1.000	1.000
	Station Road (W)	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Holly Bank Dr (N)	Station Road (E)	Holly Bank Drive (S)	Station Road (W)
From	Holly Bank Dr (N)	0.0	0.0	0.0	0.0
	Station Road (E)	0.0	0.0	0.0	0.0
	Holly Bank Drive (S)	0.0	0.0	0.0	0.0
	Station Road (W)	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Holly Bank Dr (N)	0.10	7.42	0.11	A	43.13	64.69	7.27	6.74	0.08	7.27	6.74
Station Road (E)	0.82	25.54	4.28	D	527.63	791.45	211.58	16.04	2.35	211.64	16.04
Holly Bank Drive (S)	0.24	10.56	0.31	B	88.09	132.14	19.49	8.85	0.22	19.49	8.85
Station Road (W)	0.62	12.35	1.63	B	401.92	602.87	99.61	9.91	1.11	99.63	9.92

Main Results for each time segment

Main results: (16:15-16:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	35.38	8.85	35.15	28.34	329.88	0.00	623.31	366.09	0.057	0.00	0.06	6.117	A
Station Road (E)	432.89	108.22	428.16	293.32	71.70	0.00	789.89	607.60	0.548	0.00	1.18	9.829	A
Holly Bank Drive (S)	72.27	18.07	71.69	67.13	432.73	0.00	563.62	330.79	0.128	0.00	0.15	7.307	A
Station Road (W)	329.75	82.44	326.87	473.08	31.35	0.00	781.60	731.03	0.422	0.00	0.72	7.868	A

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	42.25	10.56	42.18	34.04	396.21	0.00	586.73	366.09	0.072	0.06	0.08	6.611	A
Station Road (E)	516.91	129.23	514.15	352.30	86.10	0.00	781.72	607.60	0.661	1.18	1.87	13.309	B
Holly Bank Drive (S)	86.30	21.58	86.09	80.62	519.63	0.00	514.29	330.79	0.168	0.15	0.20	8.402	A
Station Road (W)	393.75	98.44	392.61	568.07	37.64	0.00	778.13	731.03	0.506	0.72	1.00	9.308	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	51.75	12.94	51.63	41.55	484.28	0.00	538.17	366.09	0.096	0.08	0.11	7.397	A
Station Road (E)	633.09	158.27	624.43	430.63	105.29	0.00	770.82	607.60	0.821	1.87	4.04	23.282	C
Holly Bank Drive (S)	105.70	26.42	105.29	98.34	631.38	0.00	450.85	330.79	0.234	0.20	0.30	10.405	B
Station Road (W)	482.25	120.56	479.86	690.70	45.97	0.00	773.55	731.03	0.623	1.00	1.60	12.151	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	51.75	12.94	51.75	41.82	486.54	0.00	536.92	366.09	0.096	0.11	0.11	7.419	A
Station Road (E)	633.09	158.27	632.11	432.61	105.68	0.00	770.60	607.60	0.822	4.04	4.28	25.541	D
Holly Bank Drive (S)	105.70	26.42	105.68	99.03	638.76	0.00	446.66	330.79	0.237	0.30	0.31	10.557	B
Station Road (W)	482.25	120.56	482.14	698.22	46.22	0.00	773.41	731.03	0.624	1.60	1.63	12.346	B

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	42.25	10.56	42.36	34.46	399.66	0.00	584.83	366.09	0.072	0.11	0.08	6.639	A
Station Road (E)	516.91	129.23	525.89	355.32	86.70	0.00	781.38	607.60	0.662	4.28	2.04	14.546	B
Holly Bank Drive (S)	86.30	21.58	86.70	81.66	530.93	0.00	507.87	330.79	0.170	0.31	0.21	8.557	A
Station Road (W)	393.75	98.44	396.08	579.60	38.04	0.00	777.92	731.03	0.506	1.63	1.05	9.486	A

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

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Holly Bank Dr (N)	35.38	8.85	35.45	28.74	333.98	0.00	621.05	366.09	0.057	0.08	0.06	6.150	A
Station Road (E)	432.89	108.22	436.07	296.94	72.49	0.00	789.44	607.60	0.548	2.04	1.24	10.278	B
Holly Bank Drive (S)	72.27	18.07	72.50	68.08	440.48	0.00	559.23	330.79	0.129	0.21	0.15	7.398	A
Station Road (W)	329.75	82.44	330.97	481.23	31.75	0.00	781.38	731.03	0.422	1.05	0.74	8.014	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:15-16:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.87	0.06	6.117	A	A
Station Road (E)	16.63	1.11	9.829	A	A
Holly Bank Drive (S)	2.11	0.14	7.307	A	A
Station Road (W)	10.28	0.69	7.868	A	A

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.13	0.08	6.611	A	A
Station Road (E)	26.35	1.76	13.309	B	B
Holly Bank Drive (S)	2.91	0.19	8.402	A	A
Station Road (W)	14.49	0.97	9.308	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.55	0.10	7.397	A	A
Station Road (E)	52.75	3.52	23.282	C	C
Holly Bank Drive (S)	4.37	0.29	10.405	B	B
Station Road (W)	22.63	1.51	12.151	B	B

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.59	0.11	7.419	A	A
Station Road (E)	62.74	4.18	25.541	D	C
Holly Bank Drive (S)	4.58	0.31	10.557	B	B
Station Road (W)	24.25	1.62	12.346	B	B

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	1.20	0.08	6.639	A	A
Station Road (E)	33.45	2.23	14.546	B	B
Holly Bank Drive (S)	3.20	0.21	8.557	A	A
Station Road (W)	16.44	1.10	9.486	A	A

Queueing Delay results: (17:30-17:45)

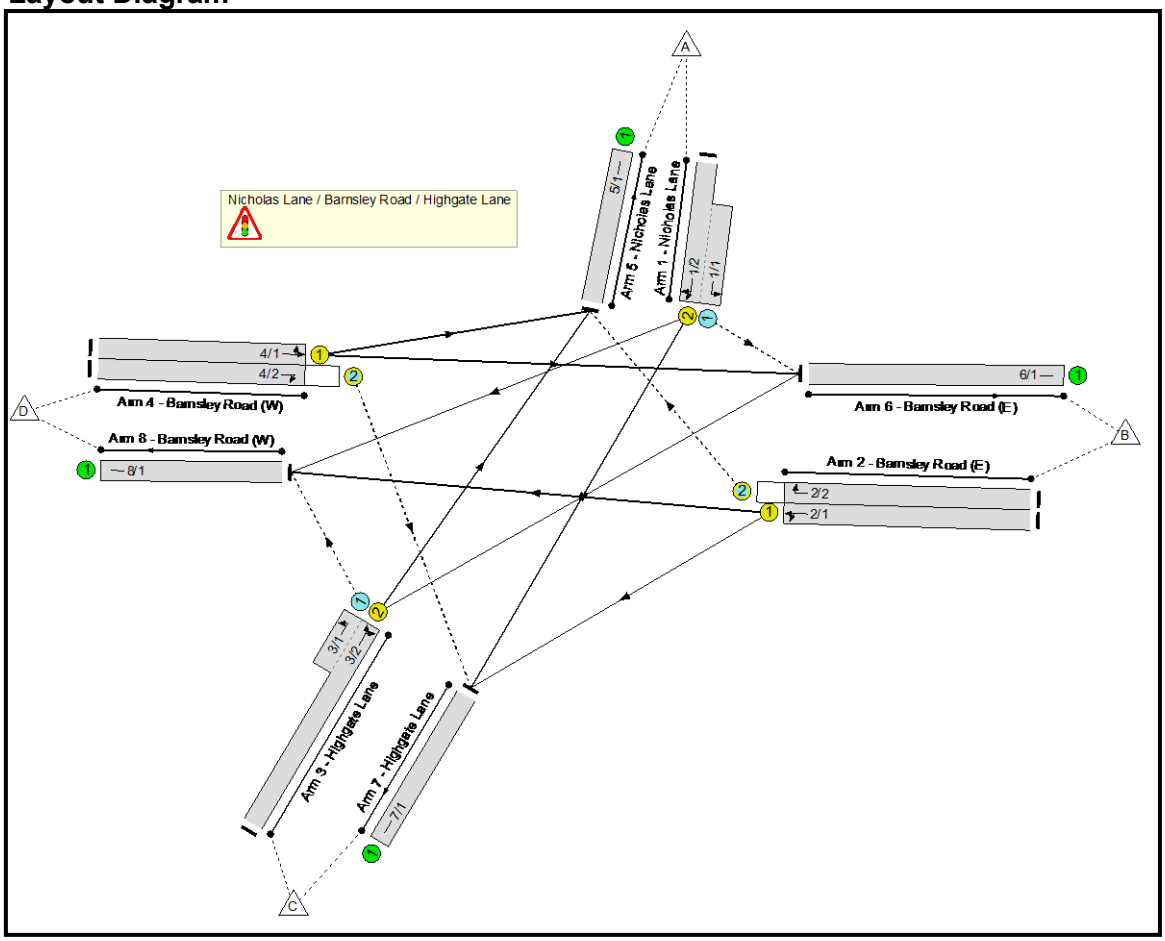
Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Holly Bank Dr (N)	0.93	0.06	6.150	A	A
Station Road (E)	19.67	1.31	10.278	B	B
Holly Bank Drive (S)	2.31	0.15	7.398	A	A
Station Road (W)	11.51	0.77	8.014	A	A

Full Input Data And Results

User and Project Details

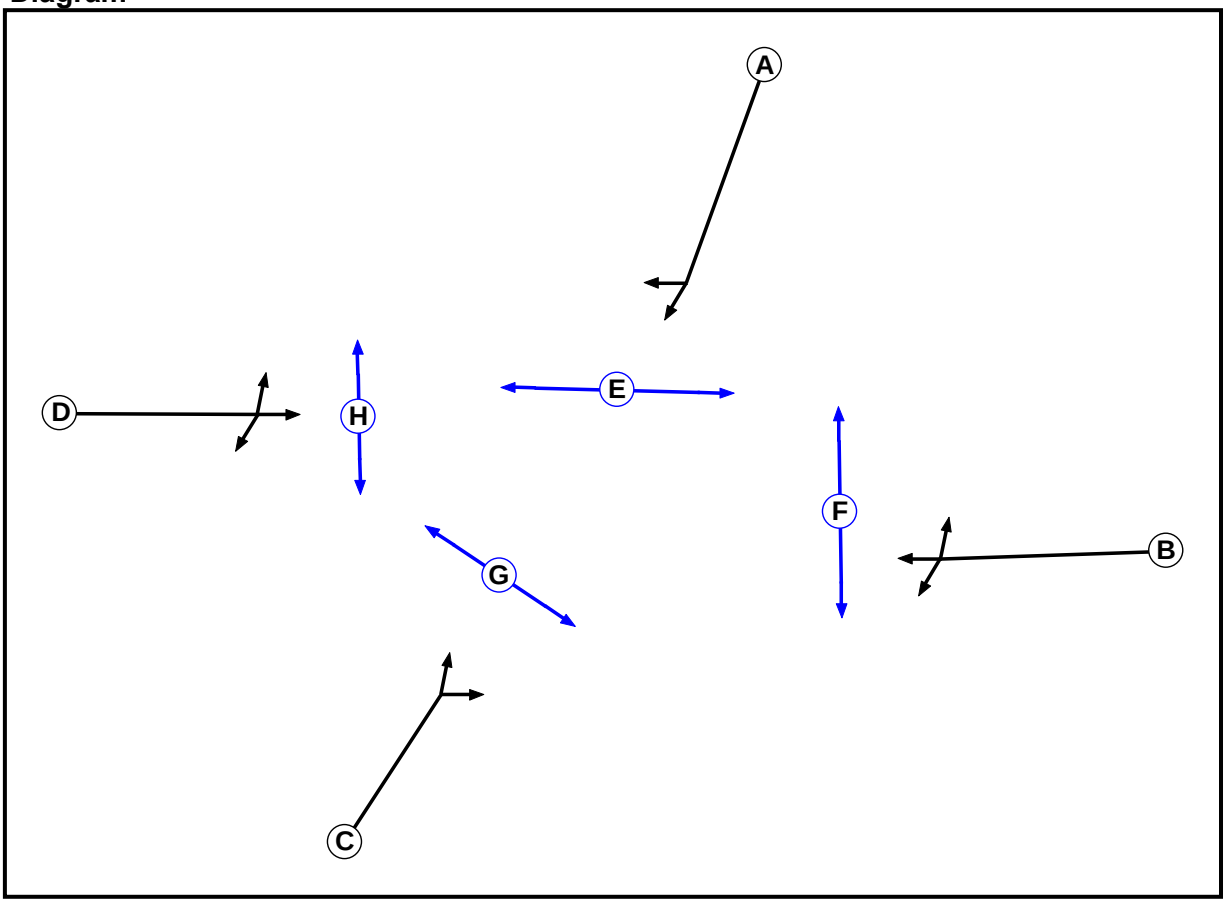
Project:	**Thurnscoe Bridge Lane**
Title:	**Barnsley Road / Nicholas Lane / Highgate Lane**
Location:	Barnsley
Client:	Avant Homes
Model Purpose:	For Planning
Flow Details:	Based on 2024 Traffic Survey Data
Checked By:	JT
Checked By Date:	16.05.24
Additional detail:	
File name:	5 - Barnsley Road_Nicholas Lane_Highgate Lane.lsg3x
Author:	JT
Company:	TPS
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

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

Full Input Data And Results

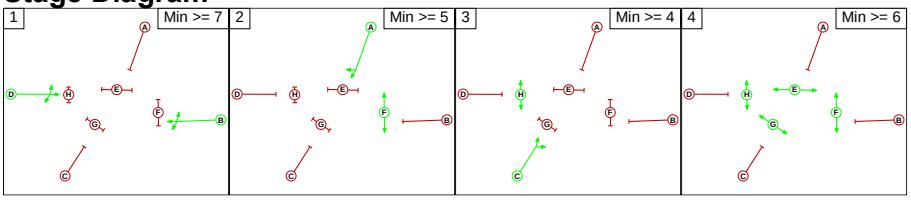
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H
A		5	5	5	5	-	10	11
B	5		8	-	8	5	10	11
C	8	7		6	9	10	5	-
D	10	-	6		11	12	8	5
E	11	11	11	11		-	-	-
F	-	11	11	11	-		-	-
G	10	10	10	10	-	-		-
H	11	11	-	11	-	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage \ To Stage	1	2	3	4
1		12	11	12
2	11		11	11
3	11	11		10
4	11	11	11	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Nicholas Lane / Barnsley Road / Highgate Lane											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Nicholas Lane)	6/1 (Left)	1439	0	4/1	1.09	To 6/1 (Ahead)	-	-	-	-	-
				3/2	1.09	To 6/1 (Right)					
2/2 (Barnsley Road (E))	5/1 (Right)	1439	0	4/1	1.09	All	2.00	-	0.50	2	2.00
3/1 (Highgate Lane)	8/1 (Left)	1439	0	1/2	1.09	To 8/1 (Right)	-	-	-	-	-
				2/1	1.09	To 8/1 (Ahead)					
4/2 (Barnsley Road (W))	7/1 (Right)	1439	0	3/1	1.09	All	2.50	-	0.50	3	2.00

Full Input Data And Results

Lane Input Data

Junction: Nicholas Lane / Barnsley Road / Highgate Lane												
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 (Nicholas Lane)	O		2	3	7.3	Geom	-	3.00	0.00	Y	Arm 6 Left	15.00
1/2 (Nicholas Lane)	U	A	2	3	60.0	Geom	-	3.10	0.00	N	Arm 7 Ahead	42.00
											Arm 8 Right	21.00
2/1 (Barnsley Road (E))	U	B	2	3	34.8	Geom	-	3.15	0.00	Y	Arm 7 Left	22.00
											Arm 8 Ahead	Inf
2/2 (Barnsley Road (E))	O	B	2	3	34.8	Geom	-	3.10	0.00	Y	Arm 5 Right	10.00
3/1 (Highgate Lane)	O		2	3	4.5	Geom	-	5.00	0.00	Y	Arm 8 Left	18.00
3/2 (Highgate Lane)	U	C	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Ahead	64.00
											Arm 6 Right	14.00
4/1 (Barnsley Road (W))	U	D	2	3	28.5	Geom	-	3.10	0.00	Y	Arm 5 Left	Inf
											Arm 6 Ahead	Inf
4/2 (Barnsley Road (W))	O	D	2	3	28.5	Geom	-	3.10	0.00	Y	Arm 7 Right	7.20
5/1 (Nicholas Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Barnsley Road (E))	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Highgate Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Barnsley Road (W))	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2024 Base AM'	08:00	09:00	01:00	
2: '2024 Base PM'	16:30	17:30	01:00	
3: '2029 Base AM'	08:00	09:00	01:00	
4: '2029 Base PM'	16:30	17:30	01:00	
5: '2029 Base + Dev AM'	08:00	09:00	01:00	
6: '2029 Base + Dev PM'	16:30	17:30	01:00	

Scenario 1: '2029 Base AM' (FG3: '2029 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
Origin		A	B	C	D	Tot.
	A	0	177	255	86	518
	B	132	0	137	194	463
	C	241	119	0	64	424
	D	66	153	86	0	305
	Tot.	439	449	478	344	1710

Traffic Lane Flows

Lane	Scenario 1: 2029 Base AM
Junction: Nicholas Lane / Barnsley Road / Highgate Lane	
1/1 (short)	177
1/2 (with short)	518(In) 341(Out)
2/1	331
2/2	132
3/1 (short)	64
3/2 (with short)	424(In) 360(Out)
4/1	219
4/2	86
5/1	439
6/1	449
7/1	478
8/1	344

Full Input Data And Results

Lane Saturation Flows

Junction: Nicholas Lane / Barnsley Road / Highgate Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Nicholas Lane)	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
1/2 (Nicholas Lane)	3.10	0.00	N	Arm 7 Ahead	42.00	74.8 %	1977	1977
				Arm 8 Right	21.00	25.2 %		
2/1 (Barnsley Road (E))	3.15	0.00	Y	Arm 7 Left	22.00	41.4 %	1877	1877
				Arm 8 Ahead	Inf	58.6 %		
2/2 (Barnsley Road (E))	3.10	0.00	Y	Arm 5 Right	10.00	100.0 %	1674	1674
3/1 (Highgate Lane)	5.00	0.00	Y	Arm 8 Left	18.00	100.0 %	1952	1952
3/2 (Highgate Lane)	4.00	0.00	Y	Arm 5 Ahead	64.00	66.9 %	1917	1917
				Arm 6 Right	14.00	33.1 %		
4/1 (Barnsley Road (W))	3.10	0.00	Y	Arm 5 Left	Inf	30.1 %	1925	1925
				Arm 6 Ahead	Inf	69.9 %		
4/2 (Barnsley Road (W))	3.10	0.00	Y	Arm 7 Right	7.20	100.0 %	1593	1593
5/1 (Nicholas Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barnsley Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Highgate Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Barnsley Road (W) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2029 Base PM' (FG4: '2029 Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	147	238	106	491
	B	137	0	155	246	538
	C	257	99	0	74	430
	D	120	193	111	0	424
	Tot.	514	439	504	426	1883

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2029 Base PM
Junction: Nicholas Lane / Barnsley Road / Highgate Lane	
1/1 (short)	147
1/2 (with short)	491(In) 344(Out)
2/1	401
2/2	137
3/1 (short)	74
3/2 (with short)	430(In) 356(Out)
4/1	313
4/2	111
5/1	514
6/1	439
7/1	504
8/1	426

Full Input Data And Results

Lane Saturation Flows

Junction: Nicholas Lane / Barnsley Road / Highgate Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Nicholas Lane)	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
1/2 (Nicholas Lane)	3.10	0.00	N	Arm 7 Ahead	42.00	69.2 %	1973	1973
				Arm 8 Right	21.00	30.8 %		
2/1 (Barnsley Road (E))	3.15	0.00	Y	Arm 7 Left	22.00	38.7 %	1880	1880
				Arm 8 Ahead	Inf	61.3 %		
2/2 (Barnsley Road (E))	3.10	0.00	Y	Arm 5 Right	10.00	100.0 %	1674	1674
3/1 (Highgate Lane)	5.00	0.00	Y	Arm 8 Left	18.00	100.0 %	1952	1952
3/2 (Highgate Lane)	4.00	0.00	Y	Arm 5 Ahead	64.00	72.2 %	1925	1925
				Arm 6 Right	14.00	27.8 %		
4/1 (Barnsley Road (W))	3.10	0.00	Y	Arm 5 Left	Inf	38.3 %	1925	1925
				Arm 6 Ahead	Inf	61.7 %		
4/2 (Barnsley Road (W))	3.10	0.00	Y	Arm 7 Right	7.20	100.0 %	1593	1593
5/1 (Nicholas Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barnsley Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Highgate Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Barnsley Road (W) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2029 Base + Dev AM' (FG5: '2029 Base + Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	188	280	111	579
	B	136	0	137	194	467
	C	249	119	0	64	432
	D	75	153	86	0	314
	Tot.	460	460	503	369	1792

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2029 Base + Dev AM
Junction: Nicholas Lane / Barnsley Road / Highgate Lane	
1/1 (short)	188
1/2 (with short)	579(In) 391(Out)
2/1	331
2/2	136
3/1 (short)	64
3/2 (with short)	432(In) 368(Out)
4/1	228
4/2	86
5/1	460
6/1	460
7/1	503
8/1	369

Full Input Data And Results

Lane Saturation Flows

Junction: Nicholas Lane / Barnsley Road / Highgate Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Nicholas Lane)	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
1/2 (Nicholas Lane)	3.10	0.00	N	Arm 7 Ahead	42.00	71.6 %	1974	1974
				Arm 8 Right	21.00	28.4 %		
2/1 (Barnsley Road (E))	3.15	0.00	Y	Arm 7 Left	22.00	41.4 %	1877	1877
				Arm 8 Ahead	Inf	58.6 %		
2/2 (Barnsley Road (E))	3.10	0.00	Y	Arm 5 Right	10.00	100.0 %	1674	1674
3/1 (Highgate Lane)	5.00	0.00	Y	Arm 8 Left	18.00	100.0 %	1952	1952
3/2 (Highgate Lane)	4.00	0.00	Y	Arm 5 Ahead	64.00	67.7 %	1918	1918
				Arm 6 Right	14.00	32.3 %		
4/1 (Barnsley Road (W))	3.10	0.00	Y	Arm 5 Left	Inf	32.9 %	1925	1925
				Arm 6 Ahead	Inf	67.1 %		
4/2 (Barnsley Road (W))	3.10	0.00	Y	Arm 7 Right	7.20	100.0 %	1593	1593
5/1 (Nicholas Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barnsley Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Highgate Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Barnsley Road (W) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2029 Base + Dev PM' (FG6: '2029 Base + Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	152	249	118	519
	B	147	0	155	246	548
	C	279	99	0	74	452
	D	144	0	193	111	448
	Tot.	570	251	597	549	1967

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2029 Base + Dev PM
Junction: Nicholas Lane / Barnsley Road / Highgate Lane	
1/1 (short)	152
1/2 (with short)	519(In) 367(Out)
2/1	401
2/2	147
3/1 (short)	74
3/2 (with short)	452(In) 378(Out)
4/1	144
4/2	193
5/1	570
6/1	251
7/1	597
8/1	438

Full Input Data And Results

Lane Saturation Flows

Junction: Nicholas Lane / Barnsley Road / Highgate Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Nicholas Lane)	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
1/2 (Nicholas Lane)	3.10	0.00	N	Arm 7 Ahead	42.00	67.8 %	1972	1972
				Arm 8 Right	21.00	32.2 %		
2/1 (Barnsley Road (E))	3.15	0.00	Y	Arm 7 Left	22.00	38.7 %	1880	1880
				Arm 8 Ahead	Inf	61.3 %		
2/2 (Barnsley Road (E))	3.10	0.00	Y	Arm 5 Right	10.00	100.0 %	1674	1674
3/1 (Highgate Lane)	5.00	0.00	Y	Arm 8 Left	18.00	100.0 %	1952	1952
3/2 (Highgate Lane)	4.00	0.00	Y	Arm 5 Ahead	64.00	73.8 %	1928	1928
				Arm 6 Right	14.00	26.2 %		
4/1 (Barnsley Road (W))	3.10	0.00	Y	Arm 5 Left	Inf	100.0 %	1925	1925
				Arm 6 Ahead	Inf	0.0 %		
4/2 (Barnsley Road (W))	3.10	0.00	Y	Arm 7 Right	7.20	100.0 %	1593	1593
5/1 (Nicholas Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barnsley Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Highgate Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Barnsley Road (W) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2024 Base AM' (FG1: '2024 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	170	245	82	497
	B	127	0	132	186	445
	C	231	114	0	61	406
	D	63	147	83	0	293
	Tot.	421	431	460	329	1641

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2024 Base AM
Junction: Nicholas Lane / Barnsley Road / Highgate Lane	
1/1 (short)	170
1/2 (with short)	497(In) 327(Out)
2/1	318
2/2	127
3/1 (short)	61
3/2 (with short)	406(In) 345(Out)
4/1	210
4/2	83
5/1	421
6/1	431
7/1	460
8/1	329

Full Input Data And Results

Lane Saturation Flows

Junction: Nicholas Lane / Barnsley Road / Highgate Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Nicholas Lane)	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
1/2 (Nicholas Lane)	3.10	0.00	N	Arm 7 Ahead	42.00	74.9 %	1977	1977
				Arm 8 Right	21.00	25.1 %		
2/1 (Barnsley Road (E))	3.15	0.00	Y	Arm 7 Left	22.00	41.5 %	1877	1877
				Arm 8 Ahead	Inf	58.5 %		
2/2 (Barnsley Road (E))	3.10	0.00	Y	Arm 5 Right	10.00	100.0 %	1674	1674
3/1 (Highgate Lane)	5.00	0.00	Y	Arm 8 Left	18.00	100.0 %	1952	1952
3/2 (Highgate Lane)	4.00	0.00	Y	Arm 5 Ahead	64.00	67.0 %	1917	1917
				Arm 6 Right	14.00	33.0 %		
4/1 (Barnsley Road (W))	3.10	0.00	Y	Arm 5 Left	Inf	30.0 %	1925	1925
				Arm 6 Ahead	Inf	70.0 %		
4/2 (Barnsley Road (W))	3.10	0.00	Y	Arm 7 Right	7.20	100.0 %	1593	1593
5/1 (Nicholas Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barnsley Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Highgate Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Barnsley Road (W) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2024 Base PM' (FG2: '2024 Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	141	228	102	471
	B	131	0	147	236	514
	C	246	95	0	71	412
	D	115	185	106	0	406
	Tot.	492	421	481	409	1803

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2024 Base PM
Junction: Nicholas Lane / Barnsley Road / Highgate Lane	
1/1 (short)	141
1/2 (with short)	471(In) 330(Out)
2/1	383
2/2	131
3/1 (short)	71
3/2 (with short)	412(In) 341(Out)
4/1	300
4/2	106
5/1	492
6/1	421
7/1	481
8/1	409

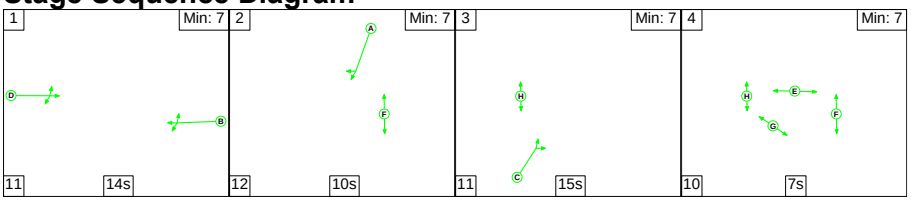
Full Input Data And Results

Lane Saturation Flows

Junction: Nicholas Lane / Barnsley Road / Highgate Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Nicholas Lane)	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
1/2 (Nicholas Lane)	3.10	0.00	N	Arm 7 Ahead	42.00	69.1 %	1973	1973
				Arm 8 Right	21.00	30.9 %		
2/1 (Barnsley Road (E))	3.15	0.00	Y	Arm 7 Left	22.00	38.4 %	1881	1881
				Arm 8 Ahead	Inf	61.6 %		
2/2 (Barnsley Road (E))	3.10	0.00	Y	Arm 5 Right	10.00	100.0 %	1674	1674
3/1 (Highgate Lane)	5.00	0.00	Y	Arm 8 Left	18.00	100.0 %	1952	1952
3/2 (Highgate Lane)	4.00	0.00	Y	Arm 5 Ahead	64.00	72.1 %	1925	1925
				Arm 6 Right	14.00	27.9 %		
4/1 (Barnsley Road (W))	3.10	0.00	Y	Arm 5 Left	Inf	38.3 %	1925	1925
				Arm 6 Ahead	Inf	61.7 %		
4/2 (Barnsley Road (W))	3.10	0.00	Y	Arm 7 Right	7.20	100.0 %	1593	1593
5/1 (Nicholas Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barnsley Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Highgate Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Barnsley Road (W) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2029 Base AM' (FG3: '2029 Base AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

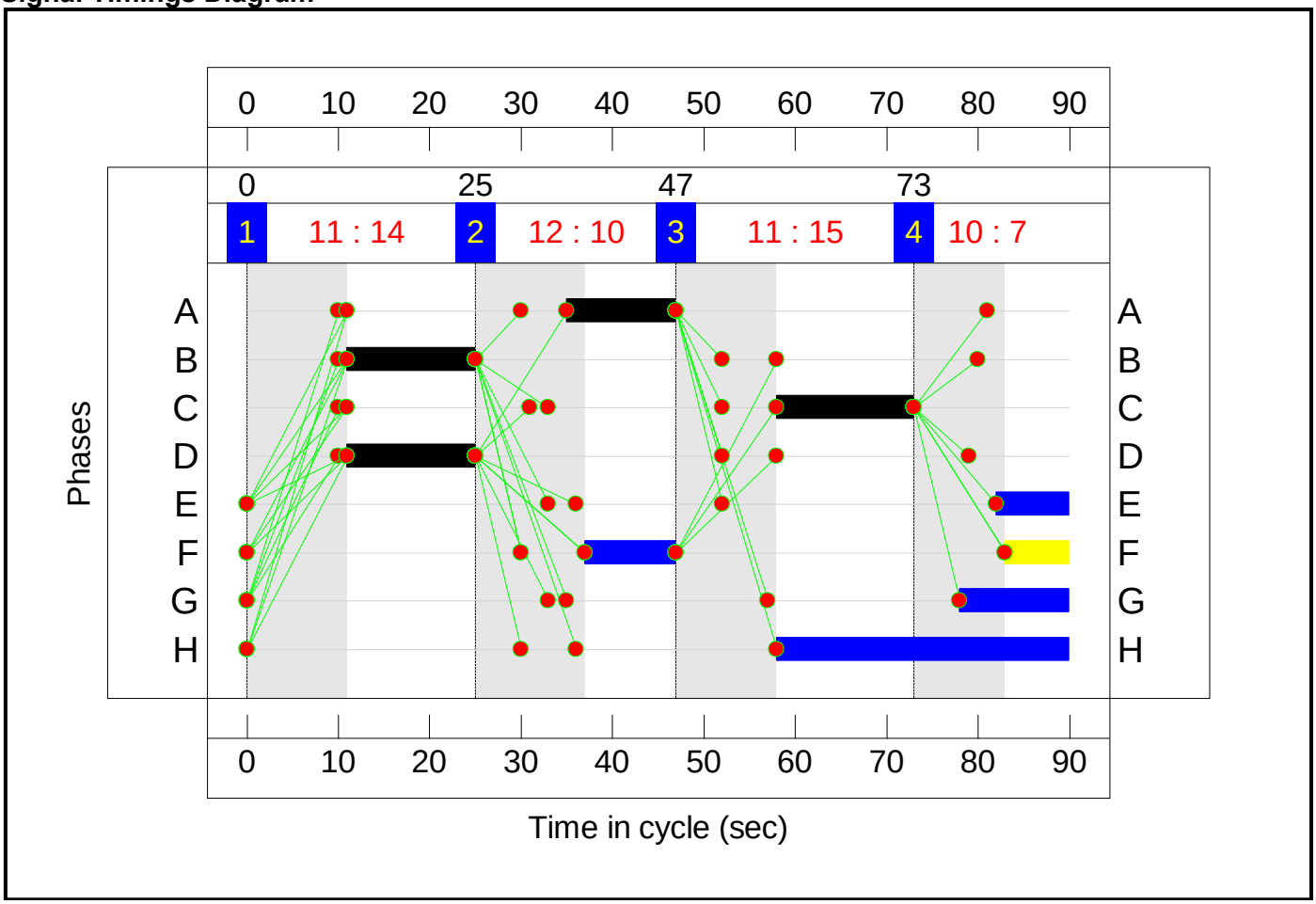


Stage Timings

Stage	1	2	3	4
Duration	14	10	15	7
Change Point	0	25	47	73

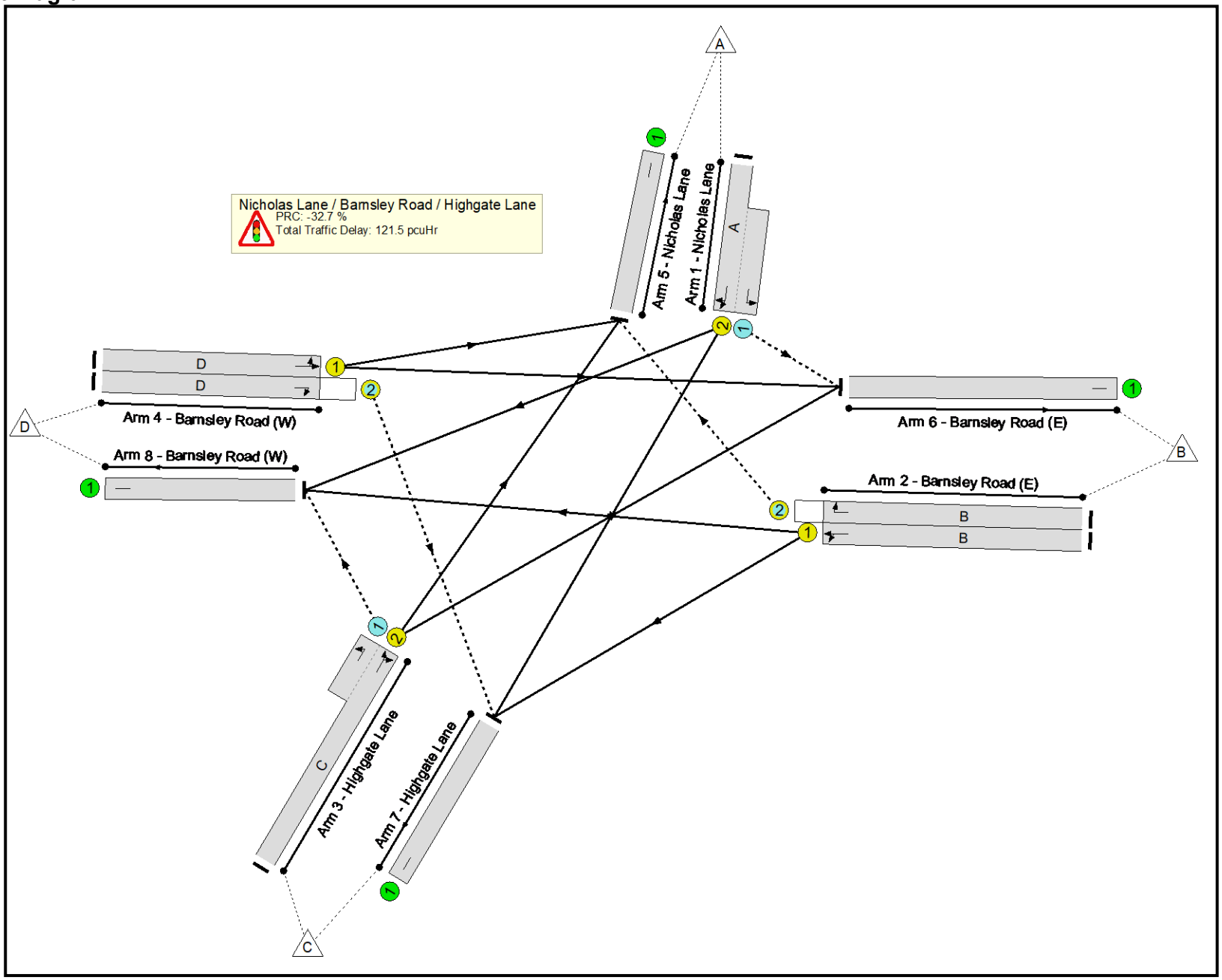
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.4%**
Nicholas Lane / Barnsley Road / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.4%**
1/2+1/1	Nicholas Lane Left Ahead Right	U+O	N/A	N/A	A -		1	12	-	518	1977:1741	286+148	119.4 : 119.4%
2/1	Barnsley Road (E) Left Ahead	U	N/A	N/A	B		1	14	-	331	1877	313	105.8%
2/2	Barnsley Road (E) Right	O	N/A	N/A	B		1	14	-	132	1674	117	112.6%
3/2+3/1	Highgate Lane Ahead Right Left	U+O	N/A	N/A	C -		1	15	-	424	1917:1952	317+56	113.7 : 113.7%
4/1	Barnsley Road (W) Left Ahead	U	N/A	N/A	D		1	14	-	219	1925	321	68.3%
4/2	Barnsley Road (W) Right	O	N/A	N/A	D		1	14	-	86	1593	266	32.4%
5/1	Nicholas Lane	U	N/A	N/A	-		-	-	-	439	Inf	Inf	0.0%
6/1	Barnsley Road (E)	U	N/A	N/A	-		-	-	-	449	Inf	Inf	0.0%
7/1	Highgate Lane	U	N/A	N/A	-		-	-	-	478	Inf	Inf	0.0%
8/1	Barnsley Road (W)	U	N/A	N/A	-		-	-	-	344	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	**-**	**-**	**203**	**191**	**50**	**20.6**	**100.6**	**0.3**	**121.5**	**-**	**-**	**-**	**-**
Nicholas Lane / Barnsley Road / Highgate Lane	**-**	**-**	**203**	**191**	**50**	**20.6**	**100.6**	**0.3**	**121.5**	**-**	**-**	**-**	**-**
1/2+1/1	518	463	46	131	0	6.1	45.0	-	51.1	354.8	12.8	45.0	57.8
2/1	331	313	-	-	-	4.3	14.7	-	19.0	206.3	8.7	14.7	23.4
2/2	132	117	67	0	50	2.0	10.5	0.3	12.8	348.6	3.7	10.5	14.2
3/2+3/1	424	381	4	60	0	5.3	29.1	-	34.4	292.4	11.8	29.1	40.9
4/1	219	219	-	-	-	2.1	1.1	-	3.2	52.6	5.1	1.1	6.2
4/2	86	86	86	0	0	0.8	0.2	0.0	1.0	43.3	1.9	0.2	2.1
5/1	395	395	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	429	429	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

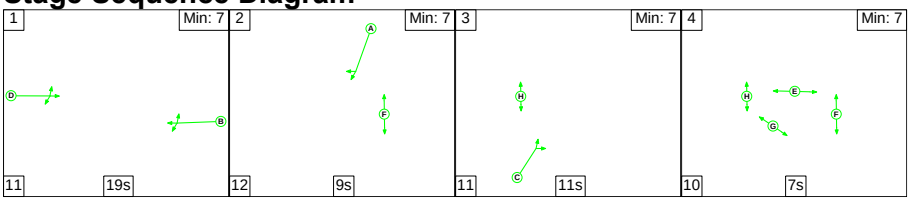
C1 PRC for Signalled Lanes (%): -32.7 Total Delay for Signalled Lanes (pcuHr): 121.48 Cycle Time (s): 90

PRC Over All Lanes (%): -32.7 Total Delay Over All Lanes(pcuHr): 121.48

Full Input Data And Results

Scenario 2: '2029 Base PM' (FG4: '2029 Base PM', Plan 1: 'Network Control Plan 1')

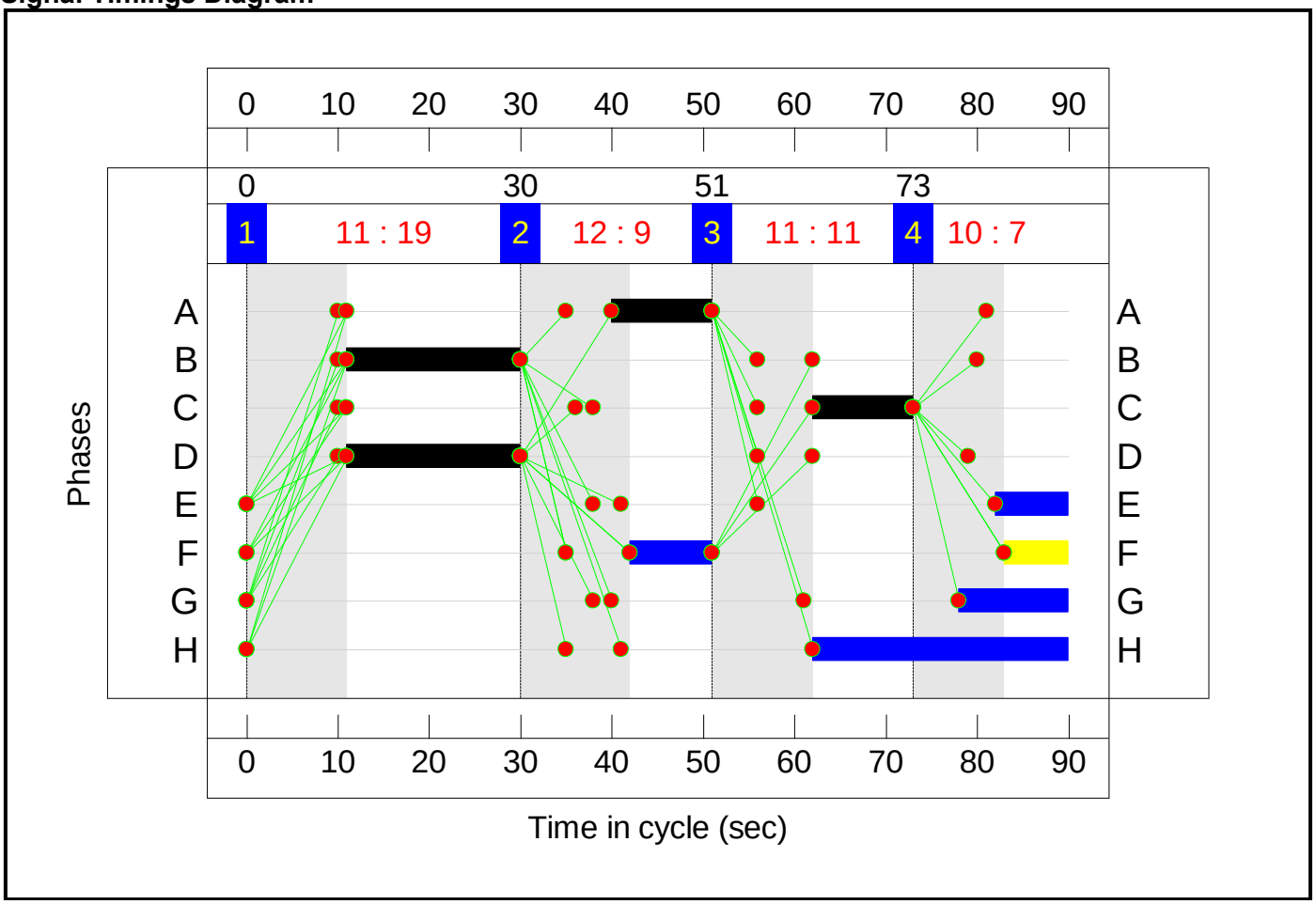
Stage Sequence Diagram



Stage Timings

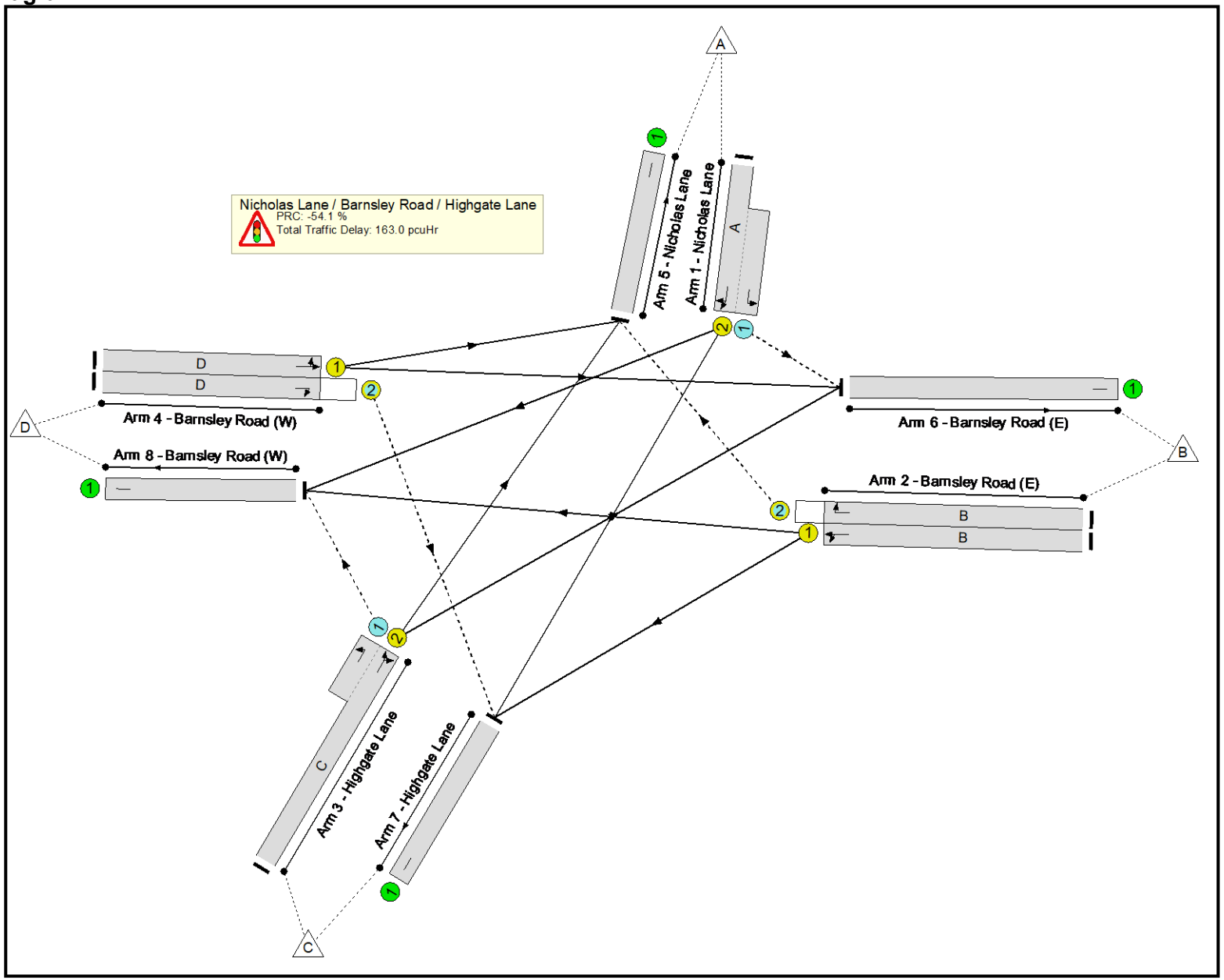
Stage	1	2	3	4
Duration	19	9	11	7
Change Point	0	30	51	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**138.7%**
Nicholas Lane / Barnsley Road / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**138.7%**
1/2+1/1	Nicholas Lane Left Ahead Right	U+O	N/A	N/A	A -		1	11	-	491	1973:1741	263+112	130.8 : 130.8%
2/1	Barnsley Road (E) Left Ahead	U	N/A	N/A	B		1	19	-	401	1880	418	96.0%
2/2	Barnsley Road (E) Right	O	N/A	N/A	B		1	19	-	137	1674	129	105.8%
3/2+3/1	Highgate Lane Ahead Right Left	U+O	N/A	N/A	C -		1	11	-	430	1925:1952	257+53	138.7 : 138.7%
4/1	Barnsley Road (W) Left Ahead	U	N/A	N/A	D		1	19	-	313	1925	428	73.2%
4/2	Barnsley Road (W) Right	O	N/A	N/A	D		1	19	-	111	1593	354	31.4%
5/1	Nicholas Lane	U	N/A	N/A	-		-	-	-	514	Inf	Inf	0.0%
6/1	Barnsley Road (E)	U	N/A	N/A	-		-	-	-	439	Inf	Inf	0.0%
7/1	Highgate Lane	U	N/A	N/A	-		-	-	-	504	Inf	Inf	0.0%
8/1	Barnsley Road (W)	U	N/A	N/A	-		-	-	-	426	Inf	Inf	0.0%

Full Input Data And Results

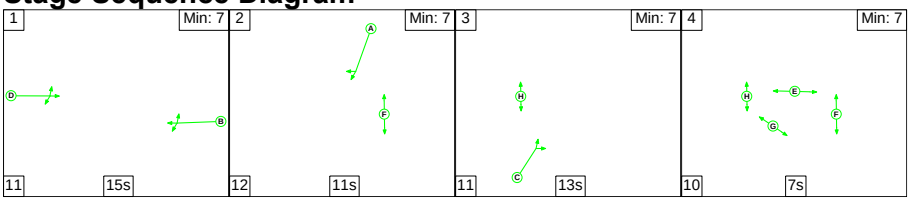
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	**-**	**-**	**220**	**162**	**56**	**24.8**	**137.8**	**0.4**	**163.0**	**-**	**-**	**-**	**-**
Nicholas Lane / Barnsley Road / Highgate Lane	**-**	**-**	**220**	**162**	**56**	**24.8**	**137.8**	**0.4**	**163.0**	**-**	**-**	**-**	**-**
1/2+1/1	491	407	35	109	0	7.1	59.8	-	66.9	490.6	13.8	59.8	73.7
2/1	401	401	-	-	-	3.9	6.7	-	10.5	94.4	9.8	6.7	16.5
2/2	137	129	74	0	56	1.6	8.0	0.4	10.0	263.5	3.6	8.0	11.7
3/2+3/1	430	310	0	53	0	8.5	61.7	-	70.2	588.0	15.5	61.7	77.2
4/1	313	313	-	-	-	2.8	1.3	-	4.2	47.8	7.2	1.3	8.5
4/2	111	111	111	0	0	0.9	0.2	0.0	1.1	36.9	2.3	0.2	2.5
5/1	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	448	448	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	380	380	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -54.1 Total Delay for Signalled Lanes (pcuHr): 162.99 Cycle Time (s): 90
PRC Over All Lanes (%): -54.1 Total Delay Over All Lanes(pcuHr): 162.99

Full Input Data And Results

Scenario 3: '2029 Base + Dev AM' (FG5: '2029 Base + Dev AM', Plan 1: 'Network Control Plan 1')

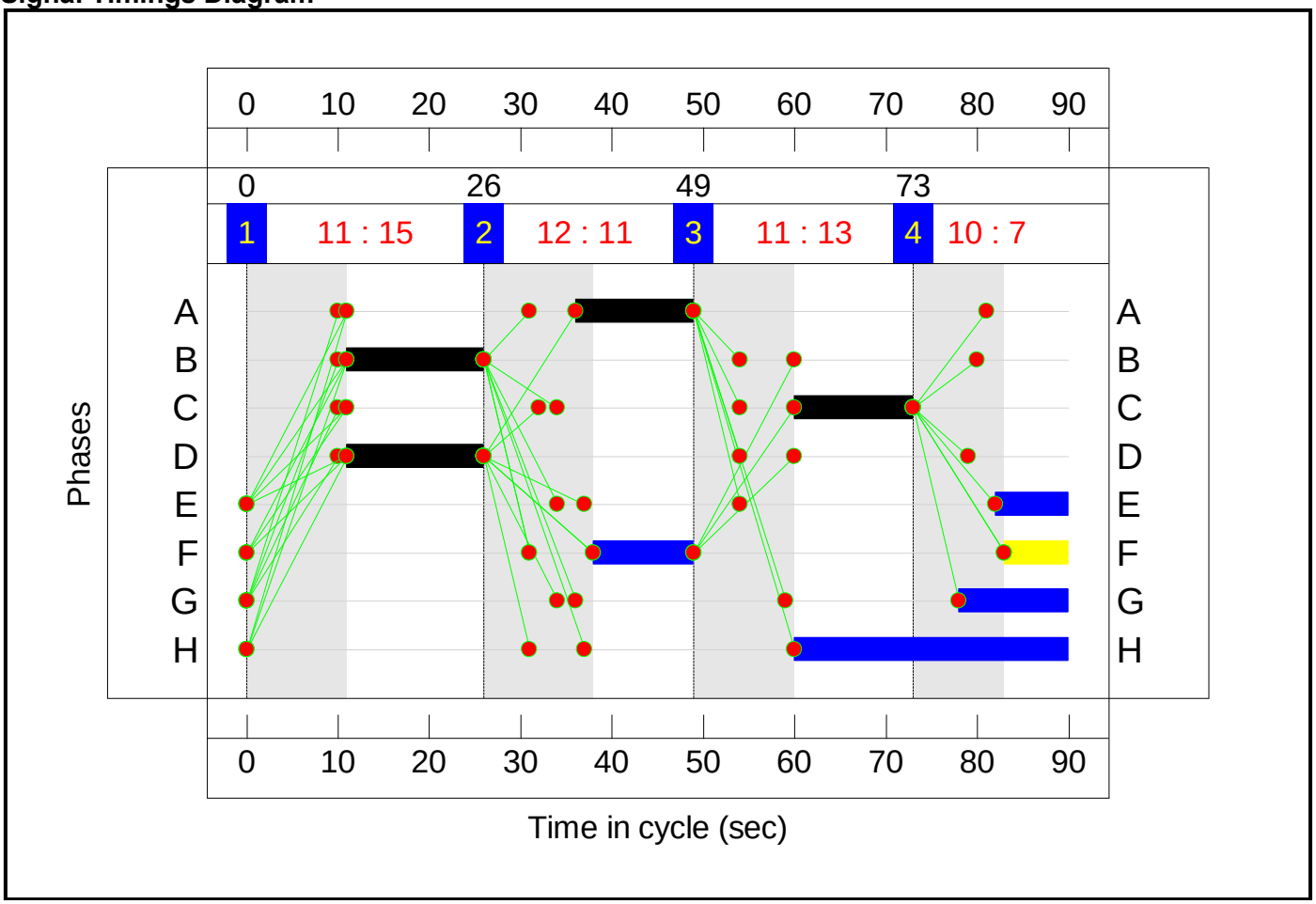
Stage Sequence Diagram



Stage Timings

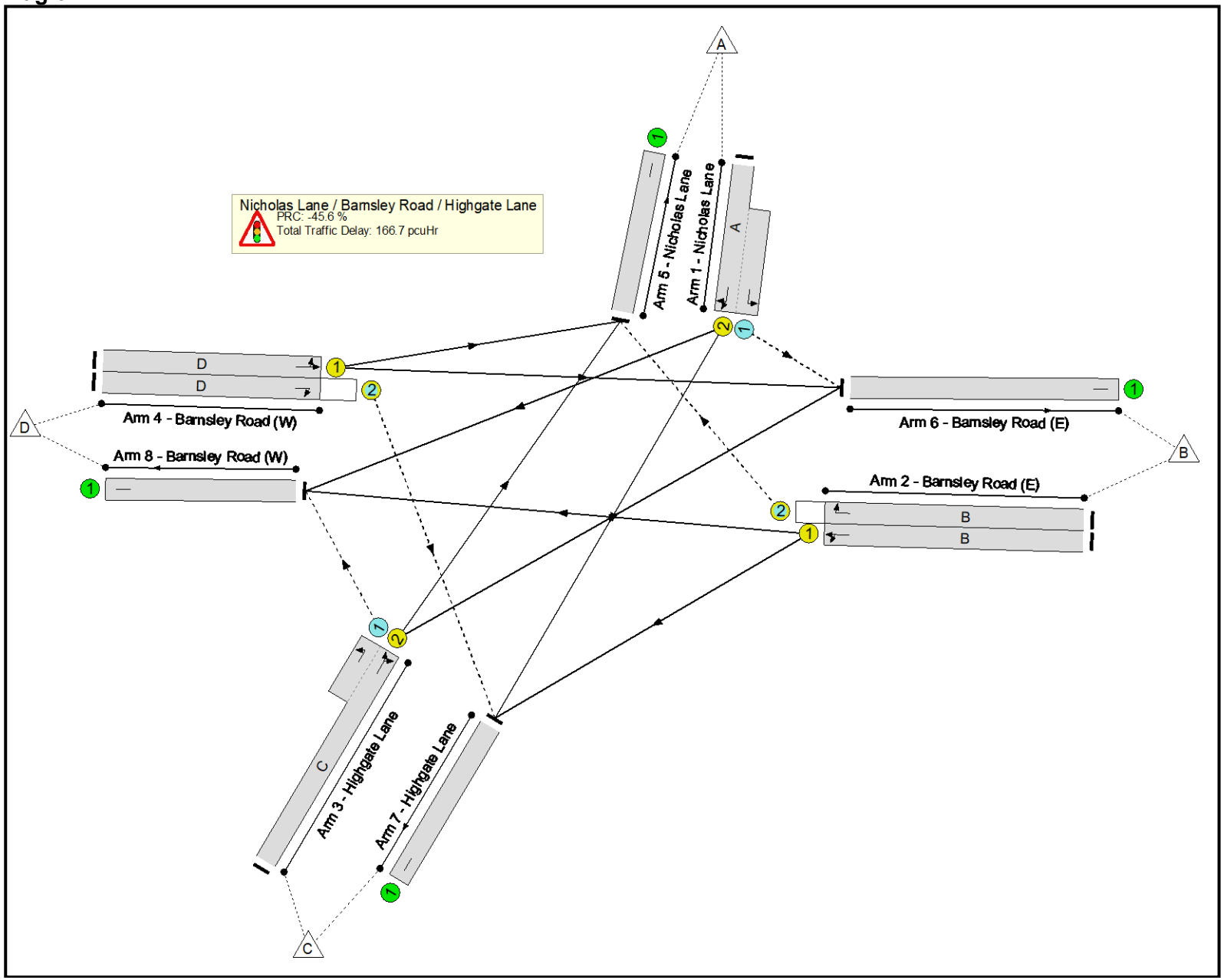
Stage	1	2	3	4
Duration	15	11	13	7
Change Point	0	26	49	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**131.0%**
Nicholas Lane / Barnsley Road / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**131.0%**
1/2+1/1	Nicholas Lane Left Ahead Right	U+O	N/A	N/A	A -		1	13	-	579	1974:1741	303+146	129.0 : 129.0%
2/1	Barnsley Road (E) Left Ahead	U	N/A	N/A	B		1	15	-	331	1877	334	99.2%
2/2	Barnsley Road (E) Right	O	N/A	N/A	B		1	15	-	136	1674	117	116.0%
3/2+3/1	Highgate Lane Ahead Right Left	U+O	N/A	N/A	C -		1	13	-	432	1918:1952	281+49	131.0 : 131.0%
4/1	Barnsley Road (W) Left Ahead	U	N/A	N/A	D		1	15	-	228	1925	342	66.6%
4/2	Barnsley Road (W) Right	O	N/A	N/A	D		1	15	-	86	1593	283	30.4%
5/1	Nicholas Lane	U	N/A	N/A	-		-	-	-	460	Inf	Inf	0.0%
6/1	Barnsley Road (E)	U	N/A	N/A	-		-	-	-	460	Inf	Inf	0.0%
7/1	Highgate Lane	U	N/A	N/A	-		-	-	-	503	Inf	Inf	0.0%
8/1	Barnsley Road (W)	U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	**-**	**-**	**222**	**160**	**38**	**24.2**	**142.3**	**0.3**	**166.7**	**-**	**-**	**-**	**-**
Nicholas Lane / Barnsley Road / Highgate Lane	**-**	**-**	**222**	**160**	**38**	**24.2**	**142.3**	**0.3**	**166.7**	**-**	**-**	**-**	**-**
1/2+1/1	579	468	57	108	0	8.2	67.2	-	75.4	469.1	17.1	67.2	84.3
2/1	331	331	-	-	-	3.4	8.4	-	11.8	128.8	8.2	8.4	16.6
2/2	136	117	79	0	38	2.2	12.2	0.3	14.6	387.1	3.9	12.2	16.1
3/2+3/1	432	333	0	53	0	7.5	53.2	-	60.7	505.4	14.7	53.2	67.9
4/1	228	228	-	-	-	2.2	1.0	-	3.2	50.0	5.3	1.0	6.2
4/2	86	86	86	0	0	0.8	0.2	0.0	1.0	41.5	1.9	0.2	2.1
5/1	382	382	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	440	440	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	333	333	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -45.6
PRC Over All Lanes (%): -45.6

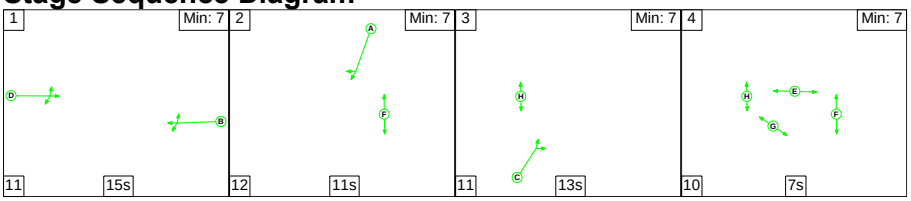
Total Delay for Signalled Lanes (pcuHr): 166.72
Total Delay Over All Lanes(pcuHr): 166.72

Cycle Time (s): 90

Full Input Data And Results

Scenario 4: '2029 Base + Dev PM' (FG6: '2029 Base + Dev PM', Plan 1: 'Network Control Plan 1')

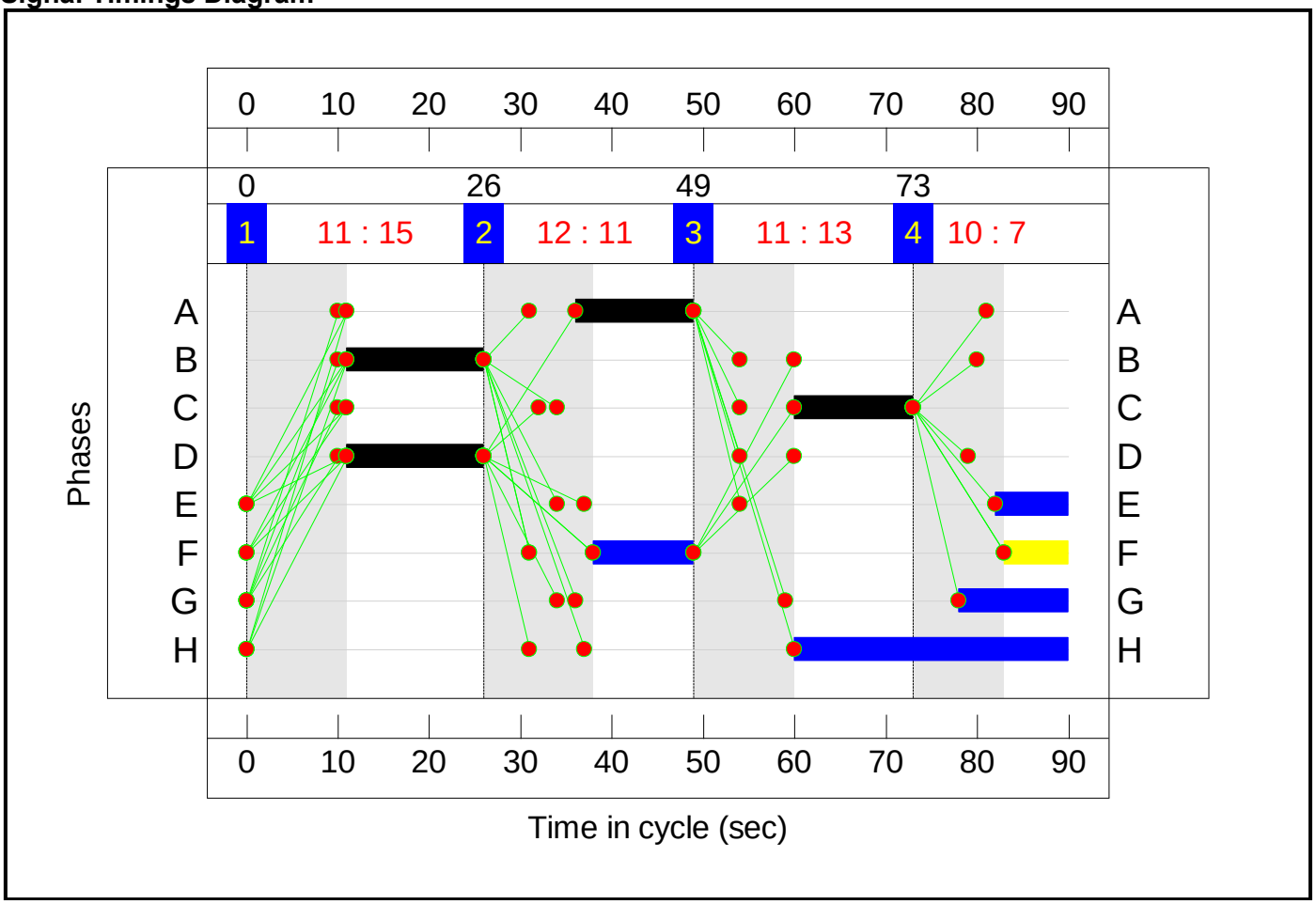
Stage Sequence Diagram



Stage Timings

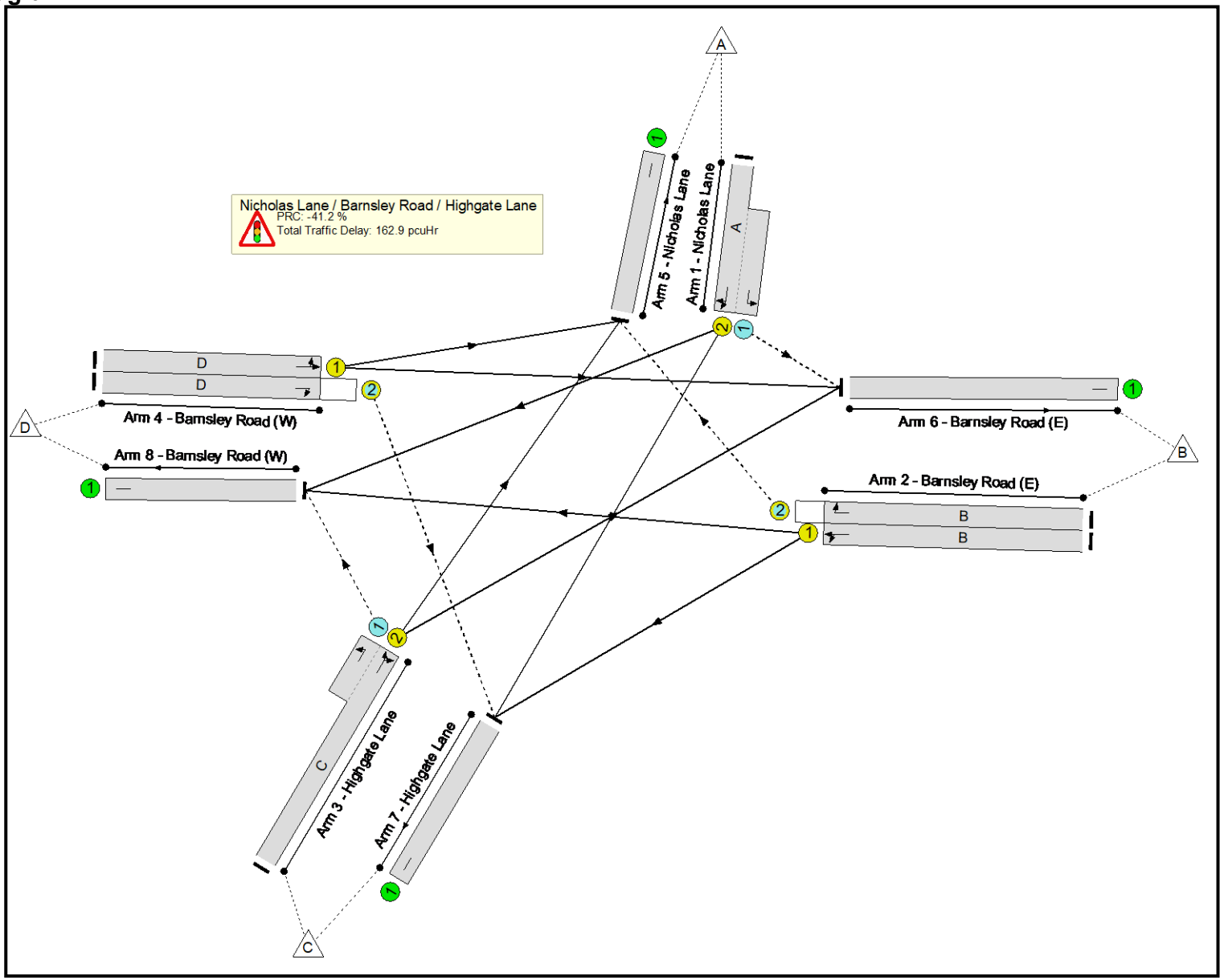
Stage	1	2	3	4
Duration	15	11	13	7
Change Point	0	26	49	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**127.1%**
Nicholas Lane / Barnsley Road / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**127.1%**
1/2+1/1	Nicholas Lane Left Ahead Right	U+O	N/A	N/A	A -		1	13	-	519	1972:1741	304+126	120.9 : 120.9%
2/1	Barnsley Road (E) Left Ahead	U	N/A	N/A	B		1	15	-	401	1880	334	120.0%
2/2	Barnsley Road (E) Right	O	N/A	N/A	B		1	15	-	147	1674	192	76.7%
3/2+3/1	Highgate Lane Ahead Right Left	U+O	N/A	N/A	C -		1	13	-	452	1928:1952	297+58	127.1 : 127.1%
4/1	Barnsley Road (W) Left Ahead	U	N/A	N/A	D		1	15	-	144	1925	342	42.1%
4/2	Barnsley Road (W) Right	O	N/A	N/A	D		1	15	-	193	1593	283	68.1%
5/1	Nicholas Lane	U	N/A	N/A	-		-	-	-	570	Inf	Inf	0.0%
6/1	Barnsley Road (E)	U	N/A	N/A	-		-	-	-	251	Inf	Inf	0.0%
7/1	Highgate Lane	U	N/A	N/A	-		-	-	-	597	Inf	Inf	0.0%
8/1	Barnsley Road (W)	U	N/A	N/A	-		-	-	-	438	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	**-**	**-**	**364**	**188**	**5**	**25.6**	**137.1**	**0.2**	**162.9**	**-**	**-**	**-**	**-**
Nicholas Lane / Barnsley Road / Highgate Lane	**-**	**-**	**364**	**188**	**5**	**25.6**	**137.1**	**0.2**	**162.9**	**-**	**-**	**-**	**-**
1/2+1/1	519	456	29	123	0	6.6	47.6	-	54.2	376.0	13.9	47.6	61.5
2/1	401	334	-	-	-	7.1	36.2	-	43.2	388.2	11.7	36.2	47.9
2/2	147	147	142	0	5	1.5	1.5	0.2	3.2	77.9	3.6	1.5	5.1
3/2+3/1	452	362	0	64	0	7.3	50.4	-	57.7	459.4	14.9	50.4	65.3
4/1	144	144	-	-	-	1.3	0.4	-	1.7	41.9	3.2	0.4	3.5
4/2	193	193	193	0	0	1.9	1.0	0.0	2.9	54.6	4.5	1.0	5.5
5/1	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -41.2
PRC Over All Lanes (%): -41.2

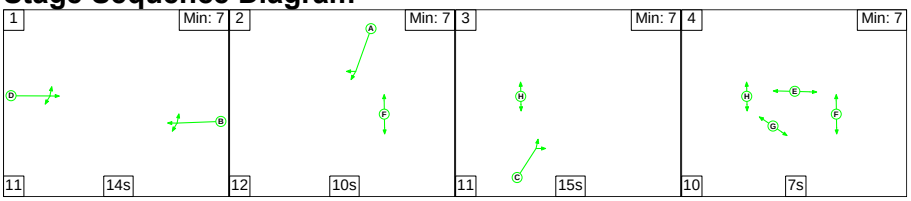
Total Delay for Signalled Lanes (pcuHr): 162.91
Total Delay Over All Lanes(pcuHr): 162.91

Cycle Time (s): 90

Full Input Data And Results

Scenario 5: '2024 Base AM' (FG1: '2024 Base AM', Plan 1: 'Network Control Plan 1')

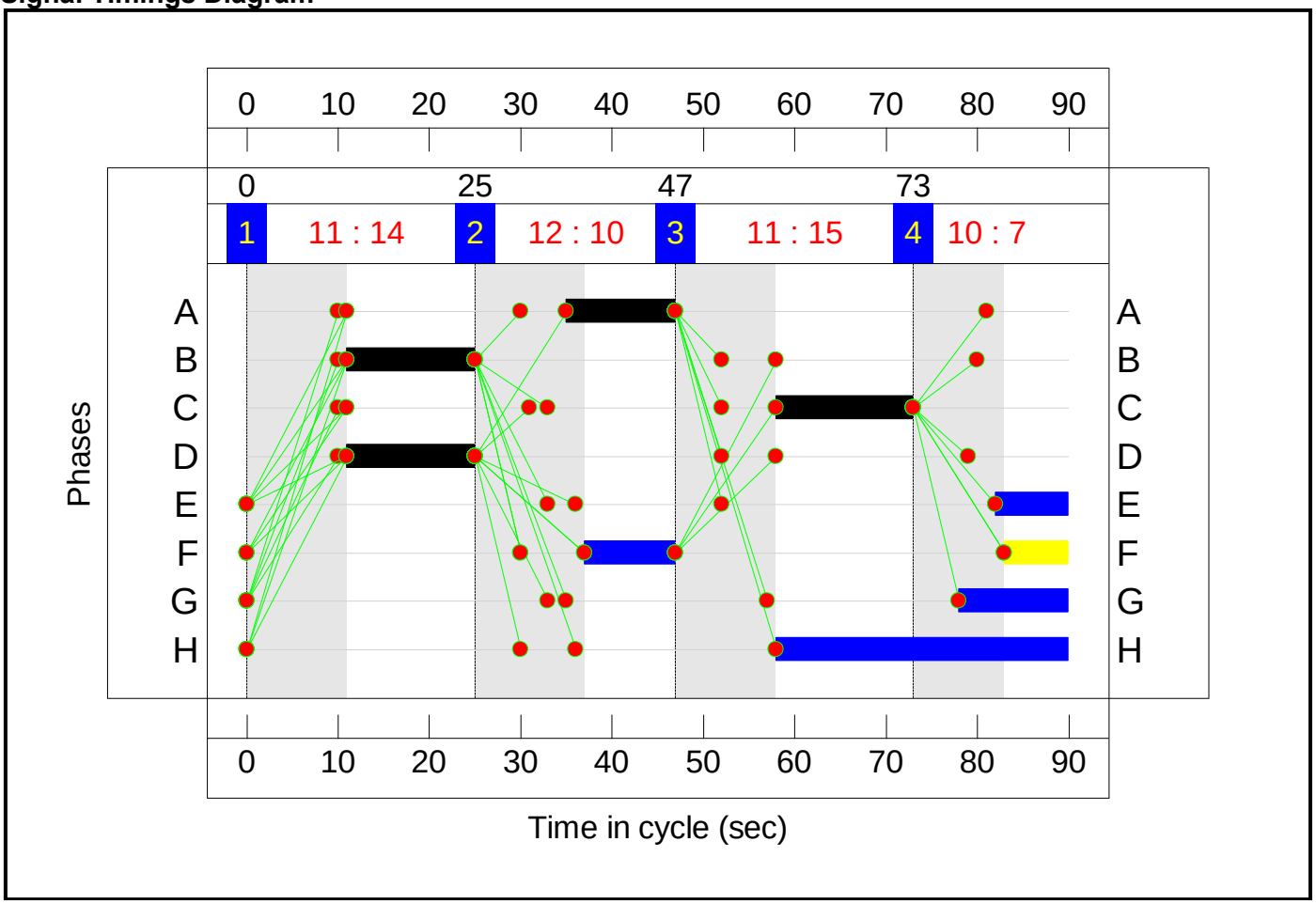
Stage Sequence Diagram



Stage Timings

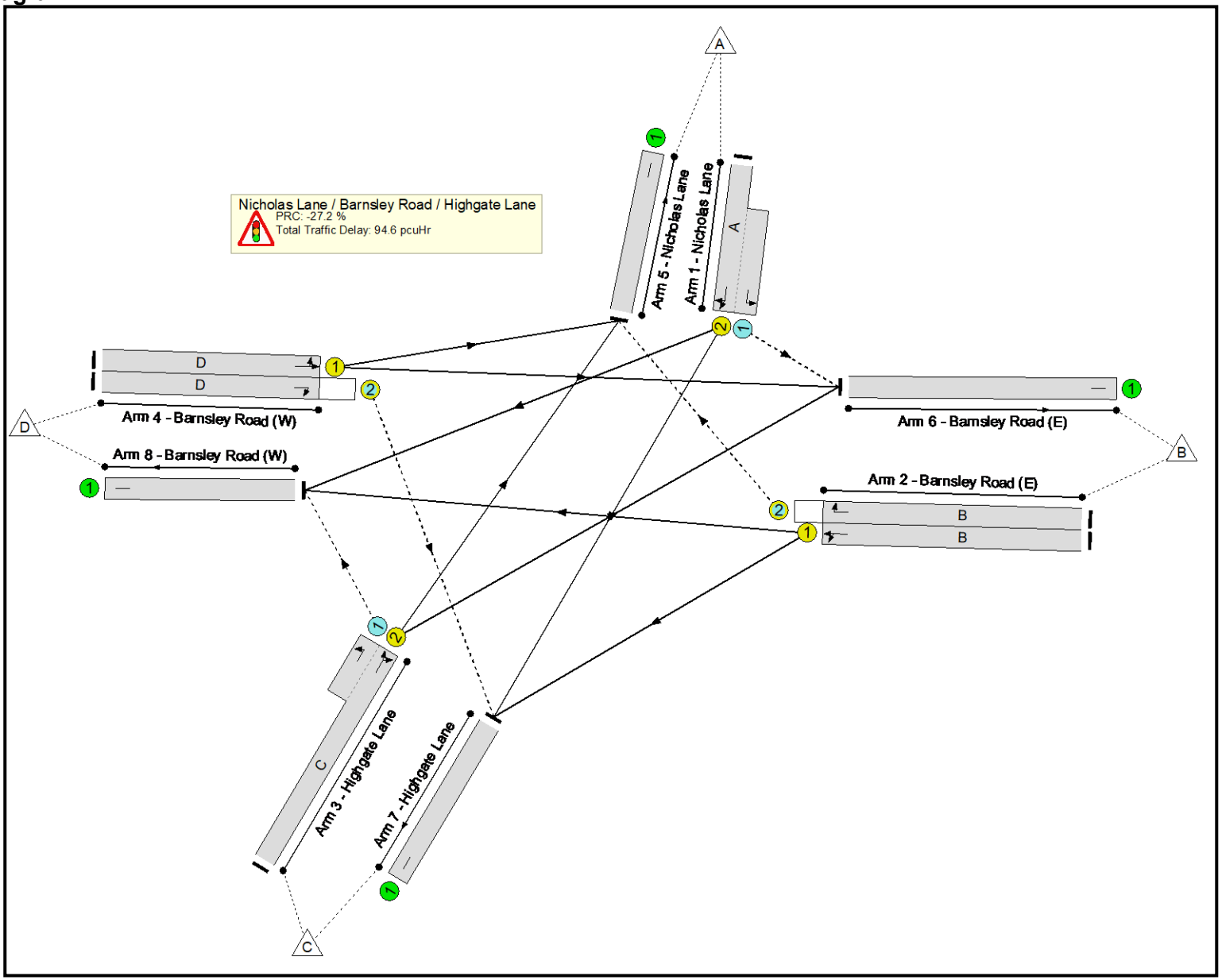
Stage	1	2	3	4
Duration	14	10	15	7
Change Point	0	25	47	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**114.5%**
Nicholas Lane / Barnsley Road / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**114.5%**
1/2+1/1	Nicholas Lane Left Ahead Right	U+O	N/A	N/A	A -		1	12	-	497	1977:1741	286+148	114.5 : 114.5%
2/1	Barnsley Road (E) Left Ahead	U	N/A	N/A	B		1	14	-	318	1877	313	101.7%
2/2	Barnsley Road (E) Right	O	N/A	N/A	B		1	14	-	127	1674	117	108.4%
3/2+3/1	Highgate Lane Ahead Right Left	U+O	N/A	N/A	C -		1	15	-	406	1917:1952	317+56	108.9 : 108.9%
4/1	Barnsley Road (W) Left Ahead	U	N/A	N/A	D		1	14	-	210	1925	321	65.5%
4/2	Barnsley Road (W) Right	O	N/A	N/A	D		1	14	-	83	1593	266	31.3%
5/1	Nicholas Lane	U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%
6/1	Barnsley Road (E)	U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%
7/1	Highgate Lane	U	N/A	N/A	-		-	-	-	460	Inf	Inf	0.0%
8/1	Barnsley Road (W)	U	N/A	N/A	-		-	-	-	329	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	**-**	**-**	**224**	**167**	**40**	**17.9**	**76.4**	**0.3**	**94.6**	**-**	**-**	**-**	**-**
Nicholas Lane / Barnsley Road / Highgate Lane	**-**	**-**	**224**	**167**	**40**	**17.9**	**76.4**	**0.3**	**94.6**	**-**	**-**	**-**	**-**
1/2+1/1	497	456	57	113	0	5.3	35.0	-	40.3	291.9	11.3	35.0	46.3
2/1	318	313	-	-	-	3.5	10.3	-	13.8	156.7	8.1	10.3	18.4
2/2	127	117	77	0	40	1.7	8.6	0.2	10.5	299.0	3.4	8.6	12.0
3/2+3/1	406	378	7	54	0	4.6	21.3	-	25.9	230.1	10.6	21.3	31.9
4/1	210	210	-	-	-	2.0	0.9	-	3.0	51.1	4.9	0.9	5.8
4/2	83	83	83	0	0	0.8	0.2	0.0	1.0	43.1	1.8	0.2	2.0
5/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	427	427	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	316	316	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

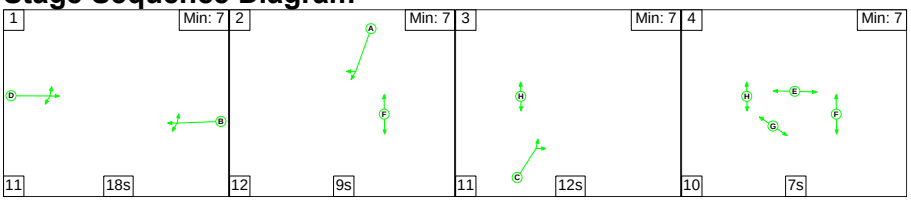
C1 PRC for Signalled Lanes (%): -27.2 Total Delay for Signalled Lanes (pcuHr): 94.60 Cycle Time (s): 90

PRC Over All Lanes (%): -27.2 Total Delay Over All Lanes(pcuHr): 94.60

Full Input Data And Results

Scenario 6: '2024 Base PM' (FG2: '2024 Base PM', Plan 1: 'Network Control Plan 1')

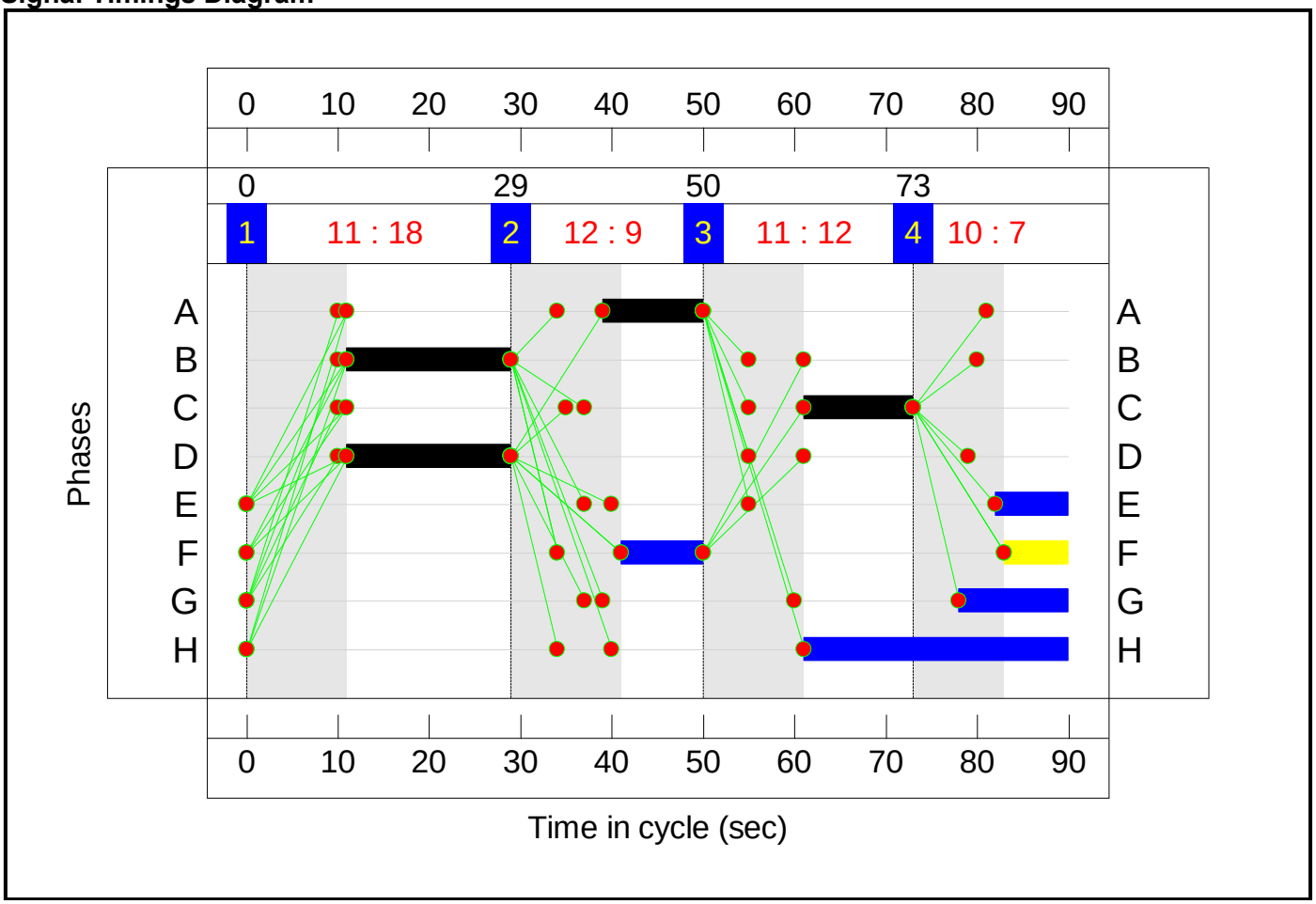
Stage Sequence Diagram



Stage Timings

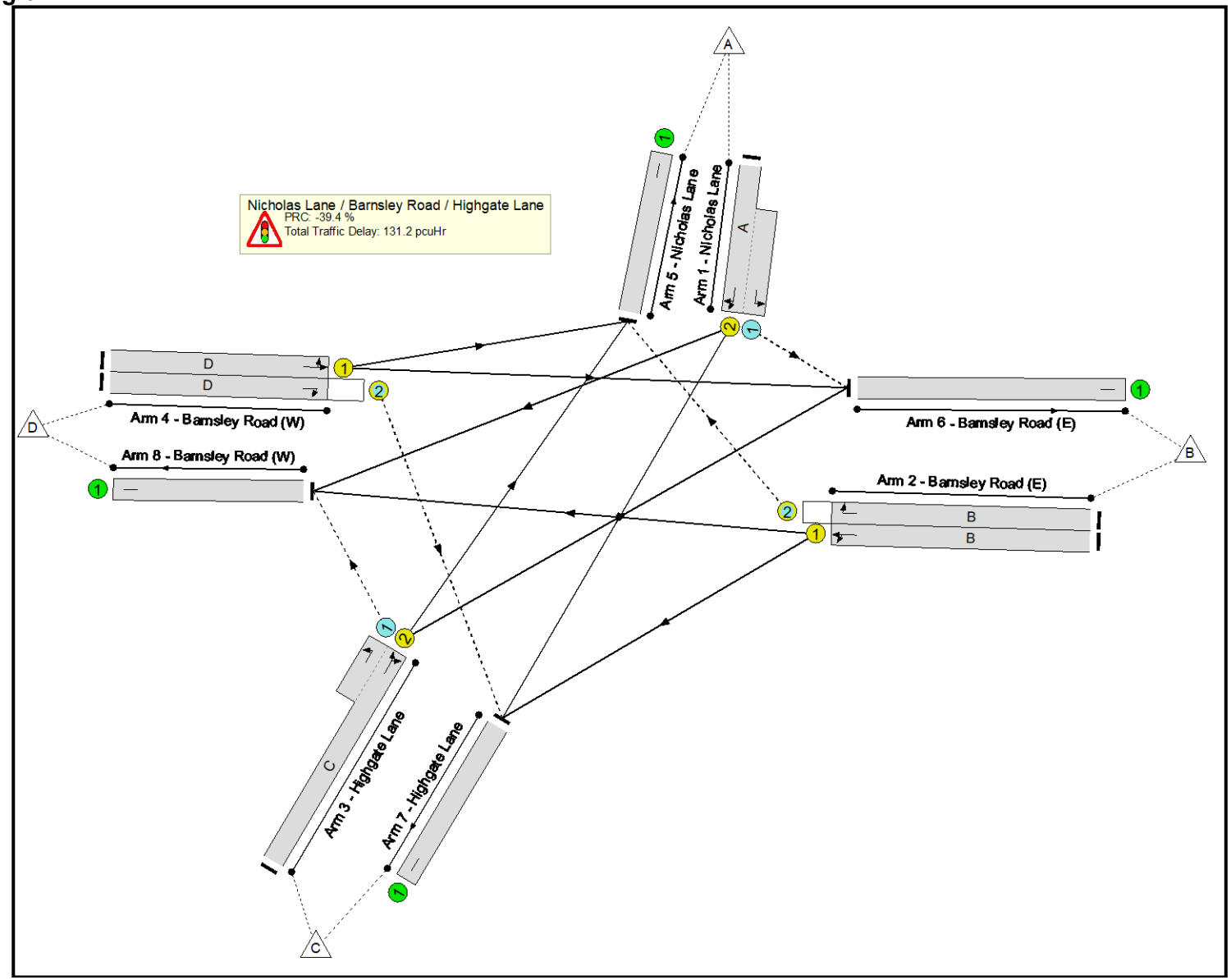
Stage	1	2	3	4
Duration	18	9	12	7
Change Point	0	29	50	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**125.4%**
Nicholas Lane / Barnsley Road / Highgate Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**125.4%**
1/2+1/1	Nicholas Lane Left Ahead Right	U+O	N/A	N/A	A -		1	11	-	471	1973:1741	263+112	125.4 : 125.4%
2/1	Barnsley Road (E) Left Ahead	U	N/A	N/A	B		1	18	-	383	1881	397	96.4%
2/2	Barnsley Road (E) Right	O	N/A	N/A	B		1	18	-	131	1674	117	111.8%
3/2+3/1	Highgate Lane Ahead Right Left	U+O	N/A	N/A	C -		1	12	-	412	1925:1952	278+58	122.6 : 122.6%
4/1	Barnsley Road (W) Left Ahead	U	N/A	N/A	D		1	18	-	300	1925	406	73.8%
4/2	Barnsley Road (W) Right	O	N/A	N/A	D		1	18	-	106	1593	336	31.5%
5/1	Nicholas Lane	U	N/A	N/A	-		-	-	-	492	Inf	Inf	0.0%
6/1	Barnsley Road (E)	U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%
7/1	Highgate Lane	U	N/A	N/A	-		-	-	-	481	Inf	Inf	0.0%
8/1	Barnsley Road (W)	U	N/A	N/A	-		-	-	-	409	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barnsley Road / Nicholas Lane / Highgate Lane	**-**	**-**	**215**	**175**	**45**	**21.5**	**109.3**	**0.4**	**131.2**	**-**	**-**	**-**	**-**
Nicholas Lane / Barnsley Road / Highgate Lane	**-**	**-**	**215**	**175**	**45**	**21.5**	**109.3**	**0.4**	**131.2**	**-**	**-**	**-**	**-**
1/2+1/1	471	404	35	106	0	6.3	50.1	-	56.4	431.3	12.5	50.1	62.6
2/1	383	383	-	-	-	3.7	6.9	-	10.6	99.8	9.5	6.9	16.3
2/2	131	117	72	0	45	1.8	10.1	0.3	12.3	337.9	3.6	10.1	13.8
3/2+3/1	412	349	1	70	0	6.0	40.6	-	46.6	406.8	12.3	40.6	52.8
4/1	300	300	-	-	-	2.8	1.4	-	4.1	49.7	7.0	1.4	8.4
4/2	106	106	106	0	0	0.9	0.2	0.0	1.1	38.1	2.2	0.2	2.5
5/1	433	433	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	403	403	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	388	388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -39.4 Total Delay for Signalled Lanes (pcuHr): 131.16 Cycle Time (s): 90
PRC Over All Lanes (%): -39.4 Total Delay Over All Lanes(pcuHr): 131.16