MEC
Development Technical Consultants

TRANSPORT

Land at Brick Kiln Road, Raunds, Northamptonshire
Transport Assessment
October 2023

Report Ref: 25273-TRAN-0804

Land at Brick Kiln Road, Raunds, Northamptonshire
Transport Assessment
October 2023

REPORT REF: 25273-TRAN-0804

CLIENT: Mr H. Smith

ENGINEER: MEC
The Old Chapel
Station Road
Hugglescote
Leicestershire
LE67 2GB

Tel: 01530 264 753
Email group@m-ec.co.uk

REGISTRATION OF AMENDMENTS

Date	Rev	Comment	Prepared By	Checked By	Approved By
Oct 2023	-	First issue	**James Wright** **BSc (hons)** Graduate Transport Planner	**Dave Godber** **MCIHT** Senior Transport Planner	**Tim Rose** **BA (Hons), MTPS, MCIHT** Director

COPYRIGHT

The contents of this document must not be copied or reproduced in whole or part without the written consent of MEC.

CONTENTS

APPENDICES

1.0 INTRODUCTION

1.1 MEC has been commissioned by Mr H. Smith (hereafter referred to as 'the Client') to undertake a Transport Assessment for a proposed commercial development at Land at Brick Kiln Road, Raunds, North Northamptonshire (hereafter referred to as 'the site') A regional site location map can be found below in **Figure 1.1**, with a Sketch Masterplan contained in **Appendix A**.

Figure 1.1: Regional Site Location Plan

Source: Google Earth

1.2 The site is located within the unitary authority of North Northamptonshire Council (NNC) who act as the local planning authority and highways authority for the area. This report has therefore been prepared in accordance with NCC guidelines and specifications.

1.3 It should be noted the land directly adjacent to the east of the application site is going in for planning permission for a commercial development, to which M-EC have been instructed to carry out the transport

works. Hence, aspects of the proposals have been incorporated into this application, as well as the residential site being considered as a committed development for the capacity assessments.

1.4 Furthermore, the same ATC, turning count, and collision data have been used for both sites.

Methodology

1.5 This Transport Assessment (TA) has been prepared in accordance with the National Planning Policy Framework (2021) (NPPF) and seeks to demonstrate 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; 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.

1.6 Furthermore, this report has been prepared with reference to the following national & local policy/guidance documents:

- National Planning Policy Framework (September 2023);
- Guidelines for Providing for Journeys on Foot (IHT, 2000);
- PPG13 – A Guide to Better Practice' (March 2001);
- Manual for Streets / Manual for Streets 2;
- Northamptonshire Transport Plan 2012, and;
- Northamptonshire Parking Standards (September 2016).

1.7 The scope of this TA, as outlined and agreed via communications with M-EC and NCC, is as follows:

- Review the existing site including planning history, existing site use and existing highway network in the immediate vicinity of the development;
- Provide a full overview of the development's sustainability, with a review of accessibility via walking, cycling and public transport;
- Provide a full, up to date collision data review using data obtained from NNC; the agreed study area of which is detailed in Section 3.0;
- Outline the trip generation for both residential and commercial elements using trip rates obtained from the TRICS database;
- Design access designs will be provided for the residential and commercial elements of the site, and;
- The study area of junctions in regards to capacity assessments, with a future year of 2031.

1.8 This TA will therefore review all existing and proposed highway elements, providing appropriate conclusions in order to assess the impact of proposed development upon the local highway network. The structure of this report is as follows:

- A review of the relevant national and local planning policy;

- A review of historic accident data (5-year period) in the immediate vicinity of the site, so as to assess the developments impact, if any, on any known or emerging issues;
- A review of sustainable transport opportunities and accessibility in the vicinity of the site;
- A detailed overview of the development proposals;
- Design site access junctions in accordance with Highway Authority guidelines, including appropriate visibility splays;
- Undertake swept path analysis of all necessary parts of the site;
- Comment upon the level of parking proposed within the development;
- A review of the trip rates generated by the proposed development,
- Capacity assessment analysis of the extent of impact all traffic generated by the proposals will have on the surrounding highway network, and;
- Details of any proposed mitigation to make the development acceptable to planning, with regards to transport.

Disclaimer

1.9 M-EC has completed this report for the benefit of the individuals referred to in paragraph 1.1 and any relevant statutory authority which may require reference in relation to approvals for the proposed development. Other third parties should not use or rely upon the contents of this report unless explicit written approval has been gained from M-EC.

1.10 M-EC accepts no responsibility or liability for:

a) The consequence of this documentation being used for any purpose or project other than that for which it was commissioned;
b) The issue of this document to any third party with whom approval for use has not been agreed.

2.0 PLANNING POLICY

National Planning Policy Framework (September 2023)

2.1 The revised NPPF was published in September 2023, updating the February 2019 edition, however the presumption in favour of sustainable development remains the core objective. The NPPF sets out the Government's planning policy for England, which is a material consideration in determining planning applications.

2.2 The core sustainable transport policies are set out in Chapter 9; paragraphs 104 to 113 of the NPPF demonstrate the Government's overarching roles that the planning system ought to play, one of the main principles is set out in paragraph 104, which states:

'Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- *The potential impacts of development on transport networks can be addressed;*
- *Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*
- *Opportunities to promote walking cycling and public transport use are identified and pursued;*
- *The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and*
- *Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.'*

2.3 Further policies in relation to considering development proposals are set out in paragraph 110, which states:

'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 sustainable access to the site can be achieved for all users;*
- *The design of street, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
- *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.'*

2.4 Paragraph 113 states:

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

2.5 As such, an associated Travel Plan is to be submitted alongside this document with the reference 25273-TRAN-0801.

2.6 In regards to planning permission, paragraph 111 states:

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

2.7 Hence, to reiterate the overarching aim of this Transport Assessment, this document will seek to assess the extent to which the development will impact the surrounding highway network, and, where deemed unacceptable, will accordingly present the most effective and cost-efficient mitigation measures.

Department for Transport (DfT) – Creating Growth, Cutting Carbon (January 2011)

2.8 The DfT's Local Transport White Paper "Creating Growth, Cutting Carbon – Making Sustainable Transport Happen" set out the framework within which detailed policies could be taken forward with the aim of creating:

"…a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities."

2.9 The document supports the continued development of integrated transport policies and seeks to deliver growth whilst reducing the environmental impacts of transport. It also particularly targets shorter journeys, many of which could be undertaken by non-car modes where realistic alternatives are provided, and where interchange between modes can be readily achieved.

Local Policy

Northamptonshire Transport Plan 2012

2.10 Northamptonshire County Council outline several objectives aiding the implementation of their core ideology of making Northamptonshire 'a great place to live and work'; the objectives and statements related to transport are as follows:

Objectives for Realising the Vision

- *Objective 5: Connectivity and modal shift - Increase transport choice to enable modal shift and enhance North Northamptonshire's national, regional, sub-regional and local connections through improvements*

to public transport and road corridors to meet the future role expected of them, and support the development of a strong network of settlements.

Spatial Objectives

- *Objective 3: Connections - To reduce the need to travel, shorten travel distances and make sustainable travel a priority across West Northamptonshire by maximising the use of alternative travel modes. In so doing, combat congestion in our main towns and town centres, reduce carbon emissions, and address social exclusion for those in both rural and urban areas who do not have access to a private car.*

Developing the Strategic Policies

- *High-level outcomes: Transport Connectivity;*
- *Enhancing strategic connections and addressing congestion on the road network;*
- *Making public transport and cycling more attractive and encouraging and incentivising low-carbon travel;*
- *Enabling 100% countywide access to superfast broadband;*

2.11 Furthering the above objectives (and to achieve a core goal of creating 'A reduction of 20% in single occupancy car journeys to work from new developments'), Northamptonshire County Council launched their 'Fit for… Purpose' transportation model, with the key aspects outlined as:

Fit for... the Future, the Community, (Fit to) Choose, Fit for… Economic Growth, the Environment

2.12 North Northamptonshire's Transport Plan (2011) expands on these points in substantial detail.

3.0 EXISITING SITE & HIGHWAY CONDITIONS

3.1 The application site is located off Brick kiln Road, circa 1.3km north of Raunds Town Centre, and 1.9km south of the village of Ringstead. Raunds itself lies on the eastern edge of Northamptonshire County District, where Wellingborough is the closest major settlement, situated approximately 12km (directly) southwest of the application site. **Figure 3.1** illustrates the site.

Figure 1.2: Site Location Plan

Source: Google Earth

3.2 The site, irregular in shape, currently comprises agricultural land made up of 2 agricultural fields. The site is bound by agricultural land to the north and east, Brick Kiln Road to the south, and a farm to the west comprising 2 main B2/B8 units, associated hardstanding parking area and a residential C3 dwellings.

Vehicular Access

3.3 There is no formal access road to the existing site. The site is currently accessed through the B2/B8 units to the west via two locations as indicated on **Figure 3.1.**

3.4 Brick Kiln Road, orientated east – west, is a single two-way carriageway road with a width of 6.0m along the site frontage, operating under a 40mph speed restriction. 600m west of the site, Brick Kiln Road joins the Brick Kiln Road / B663 / London Road Roundabout, where 300m up the northern arm, joins the A45; southwest, the A45 acts as a major traffic artery into Northamptonshire, bypassing between Irthlingborough and Higham Ferrers, and bypassing Wellingborough to the south.

3.5 Circa 4.6km northeast, the A45 junctures with the A14 and A605; continuing north the A605 provides a direct connection to Peterborough. While the A14 east and west directly links to Huntingdon and Kettering respectfully.

3.6 South of the Brick Kiln Road / B663 /London Road Roundabout, London Road acts as one of two major arteries carrying traffic south through (and out of) Raunds where the A6 can again be reached as well as multiple small villages.

Pedestrian Access

3.7 Brick Kiln Road benefits form a continuous footway in excess of 1.5m on its southern site. The main pedestrian desire lines are considered to be south into Raunds Town Centre, and west along Brick Kiln Road towards Warth Park industrial estate and Asda supermarket located on in the northwest of the town.

3.8 When walking to Raunds high street, the B663 High Street/Brook Street, Brick Kiln Road to the east joins North Street, then the B663; as mentioned, Brick Kiln Road benefits from a single footway on its southern site. North Street and the B663 benefit from footways either side enhanced by street lighting; where the roads juncture with minor access roads, dropped kerbs are present. The B663 benefits from enhance pedestrian facilities with frequent designated crossing points and zebra crossings present situated on raised tables, or enhanced by dropped kerbs and tactile paving.

3.9 Furthermore, multiple pedestrian links between the residential streets are present improving pedestrian inter-access between the residential streets and ultimately to the site. An example of a pedestrian link, located between McInnes Way and the further south road of Windmill Lane, is demonstrated on **Figure 3.2**.

Figure 3.2: Pedestrian Link Between McInnes Way and Windmill Lane

Source: Google Earth

3.10 The residential streets beyond the mentioned roads benefit from similar pedestrian facilities and overall street design connecting the site to the Raunds Town Centre as an alternative to Brick Kiln Road.

3.11 A signalised pedestrian crossing point developed with a new signal junction associated to the housing development off Holdenby Drive can be found circa 350m west along Brick Kiln Road from the site aiding pedestrian movements towards Warth Park industrial estate. Furthermore, both the B663 / Brick Kiln Road / London Road roundabout, and the Warth Park Way Roundabout benefit from dropped kerbs, tactile paving, and pedestrian refuges aiding pedestrian movements.

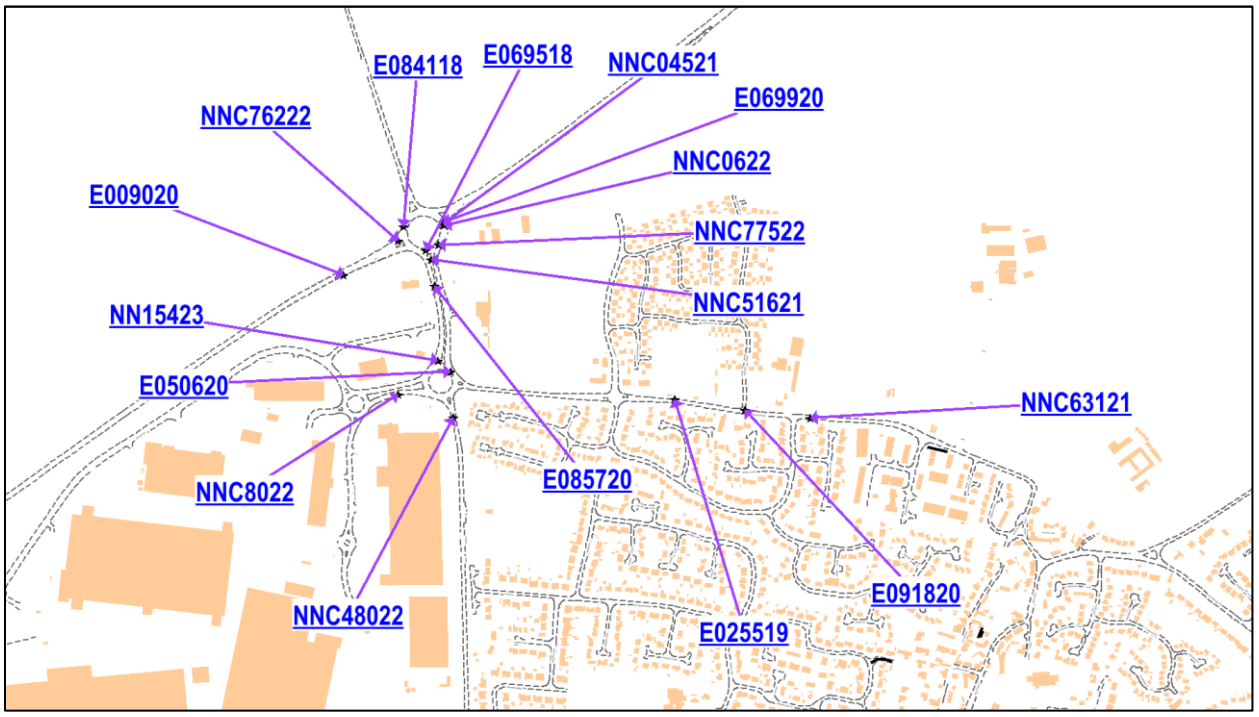
3.12 It is considered the two major pedestrian desire lines are well supported by the existing pedestrian infrastructure.

Personal Injury Collisions

3.13 NNC has requested an investigation of the existing highway safety conditions in regards to highway safety trends or problems within the vicinity of the application site. Therefore, it is necessary to review the level of Personal Injury Collisions (PIC) that have been recorded in the vicinity of the application site.

3.14 Consequently, collision data within the study area in the most recent 5-year period (1st June 2018 to 31st May 2023), as agreed with NNC, was requested from NNC. **Figure 3.3** outlines the collision plot map.

Figure 3.3: Collision Plot Map



Source: NNC

Brick Kiln Road

3.15 3 collisions were recorded in the most recent 5-year period along the extent of Brick Kiln Road all resulting in slight injuries. It is considered 3 sporadic collisions along the extent of a road within a 5-year period does not constitute a highway safety issue.

Brick Kiln Road / London Road / Warth Park Way / B663 Roundabout

3.16 4 collisions were recorded in the most recent 5-year period at, and on approach to, the Brick Kiln Road / London Road / Warth Park Way / B663 roundabout, 3 of which resulting in slight injury, and 1 resulting in serious injury.

3.17 Collisions NN15423 and E050620 were recorded on the roundabout itself. Collision NN15423 was an isolated incident whereby a vehicle collided with a pedestrian. Details of collision E050620 report the collision was a result of one driver failing to give way.

3.18 The other two collisions occurring on the approach to the roundabout, NNC48022 and E050620, were reported to be a result of a collision between a collision between a vehicle proceeding along the carriage way and one reversing, and a collision with a cyclist respectively. These are considered as isolated incidents.

3.19 4 collisions associated to differing aspects of the roundabout and its approach over a 5 year period, or an average of 1 collision every 1.2 years, is not considered to reflect a highway safety issue.

A45/B663/Raunds Road Roundabout

3.20 The collision plot map portrays a collision cluster on the A45 Roundabout and its approaches with 10 collisions occurring, 9 of which resulted in slight injuries, and 1 of which caused serious injury. It is therefore necessary to review the collision reports to further understand if there is a collision trend within the area.

3.21 Collisions E085720 and E009020 were recorded on the approach to the roundabout on separate arms outlining that both collisions were isolated incidents.

3.22 The remaining 8 collisions were recorded on the roundabout itself, whereby all resulted in slight injuries. The reports of the collisions, 5 were reported as drivers failing to give way to other motorists or cyclists, 2 were stated to be rear-end collisions, and the remaining 1 reported to be a side-on collision between a 7.5t goods vehicle and motorcyclist.

3.23 It should be noted, the traffic flow surveys instructed by M-EC on the Wednesday 28th June 2023 outlined a total of 13,052 vehicles passed through the junction during the survey hours (07:30 – 18:30).

3.24 Therefore, the 8 collisions occurring at the A45 roundabout over the most recent 5-year period, or an average of 1.6 per year, is not considered to reflect a highway safety issue given the volume of traffic using the roundabout each day.

4.0 SITE SUSTAINABILITY AND ACCESSIBILITY ASSESSMENT

Sustainable Travel

Pedestrians

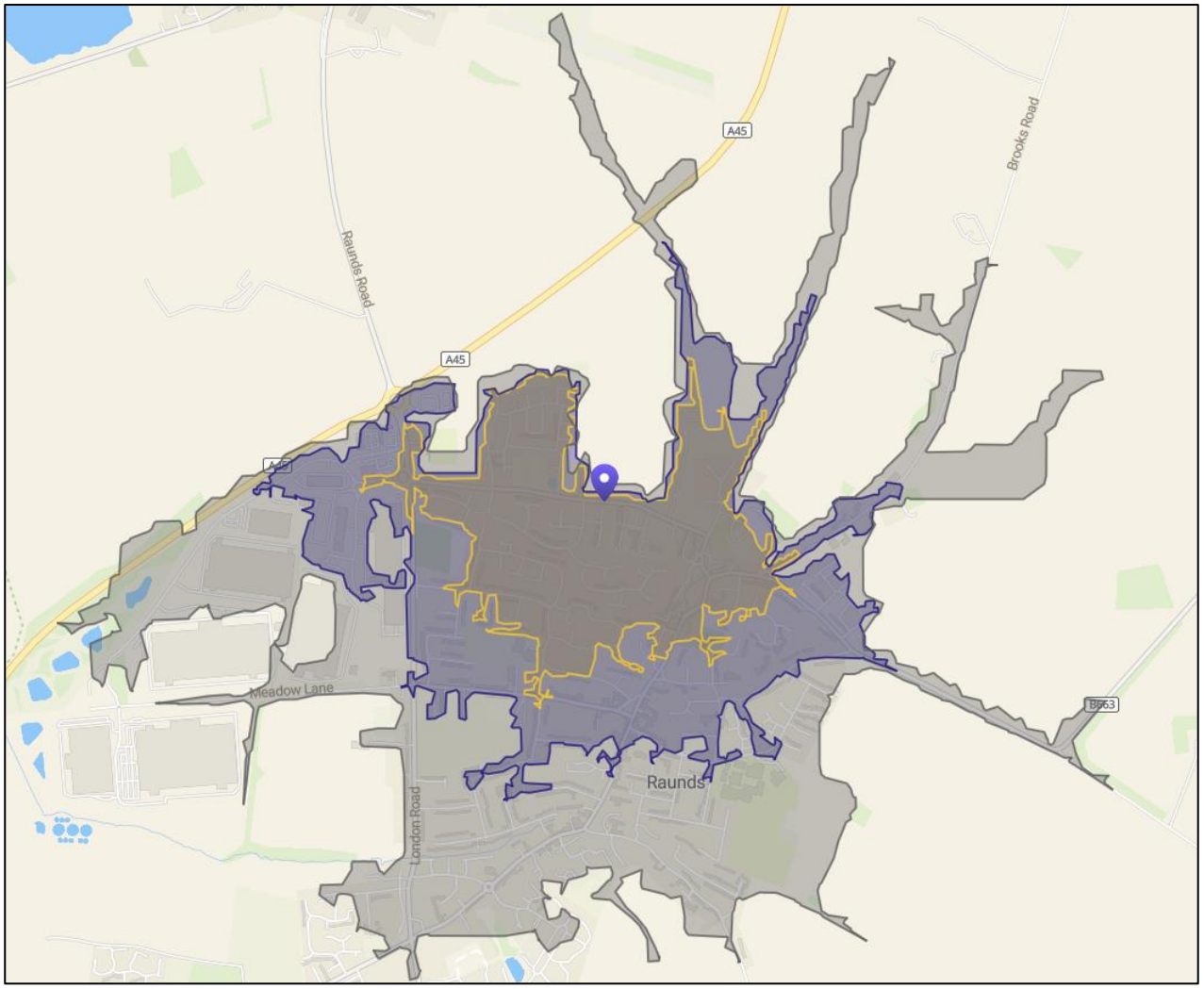
4.1 The Chartered Institution of Highways and Transportation (CIHT) publication [2000] 'Guidelines for Providing for Journeys on Foot' notes that walking accounts for over a quarter of all journeys and four-fifths of journeys less than one mile (1600m). In transport planning terms, the most suitable sites for development are those that generate fewest private car trips, which is achieved by enabling a greater proportion of walking, cycling, and public transport trips.

4.2 The CIHT Guidelines suggests acceptable walking distances to various services. 'Acceptable' distances may vary from person to person depending on their age and general fitness, but the guidelines suggest:

- Maximum distances of 800 metres to town / retail centres, 2000 metres for work / education, leisure and 1200 metres elsewhere
- Acceptable distances of 400 metres to town / retail centres, 1000 metres for work / education, leisure and 1200 metres elsewhere
- Desirable distances of 400 metres to town / retail centres, 800 metres for work / education, leisure and 800 metres elsewhere

4.3 The average walking speed suggested by the CIHT is 3mph, or 5 minutes for every 400 metres. To provide an approximate guide to how far it is possible to walk within 800m, 1200m, and 2000m (10-, 15-, and 25-minute intervals), indicative walking isochrones have been produced, as shown in **Figure 4.1.**

Figure 4.1: 2km Walking Accessibility Map shown in 800m, 1200m, and 2000m Isochrones



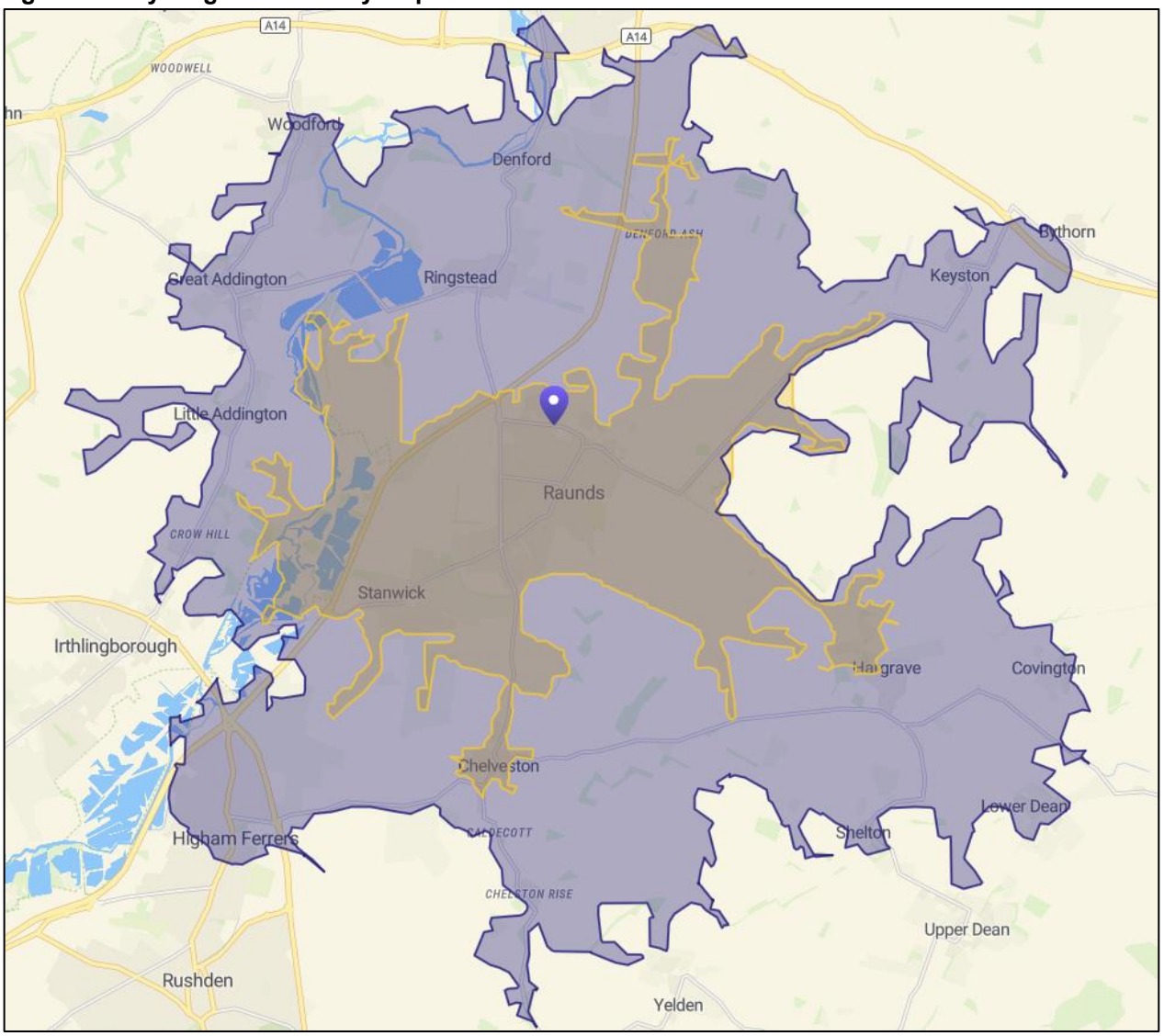
Source: Smappen.com/

4.4 **Figure 4.1** demonstrates that Raunds Town Centre is within a 1.2km reach of the site, with the whole of Raunds situated within 2km of the site; as highlighted the pedestrian infrastructure surrounding the site compliments the movements to and from the site from Raunds. Warth Park industrial estate to the west can also be reached within 1.2km of the application site.

Cycling

4.5 The Department for the Environment publication 'PPG13 – A Guide to Better Practice' (March 2001) states that the bicycle is the ideal mode of transport for journeys under 8km and that cycling *"has clear potential to substitute for short car trips, particularly those under 5km, and to form part of a longer journey by public transport"*. **Figure 4.2** provides indicative cycling isochrones demonstrating a 5km and 8km reach from the site via cycle.

Figure 4.2: Cycling Accessibility Map shown in 5km and 8km Iscohrones



Source: Smappen.com/

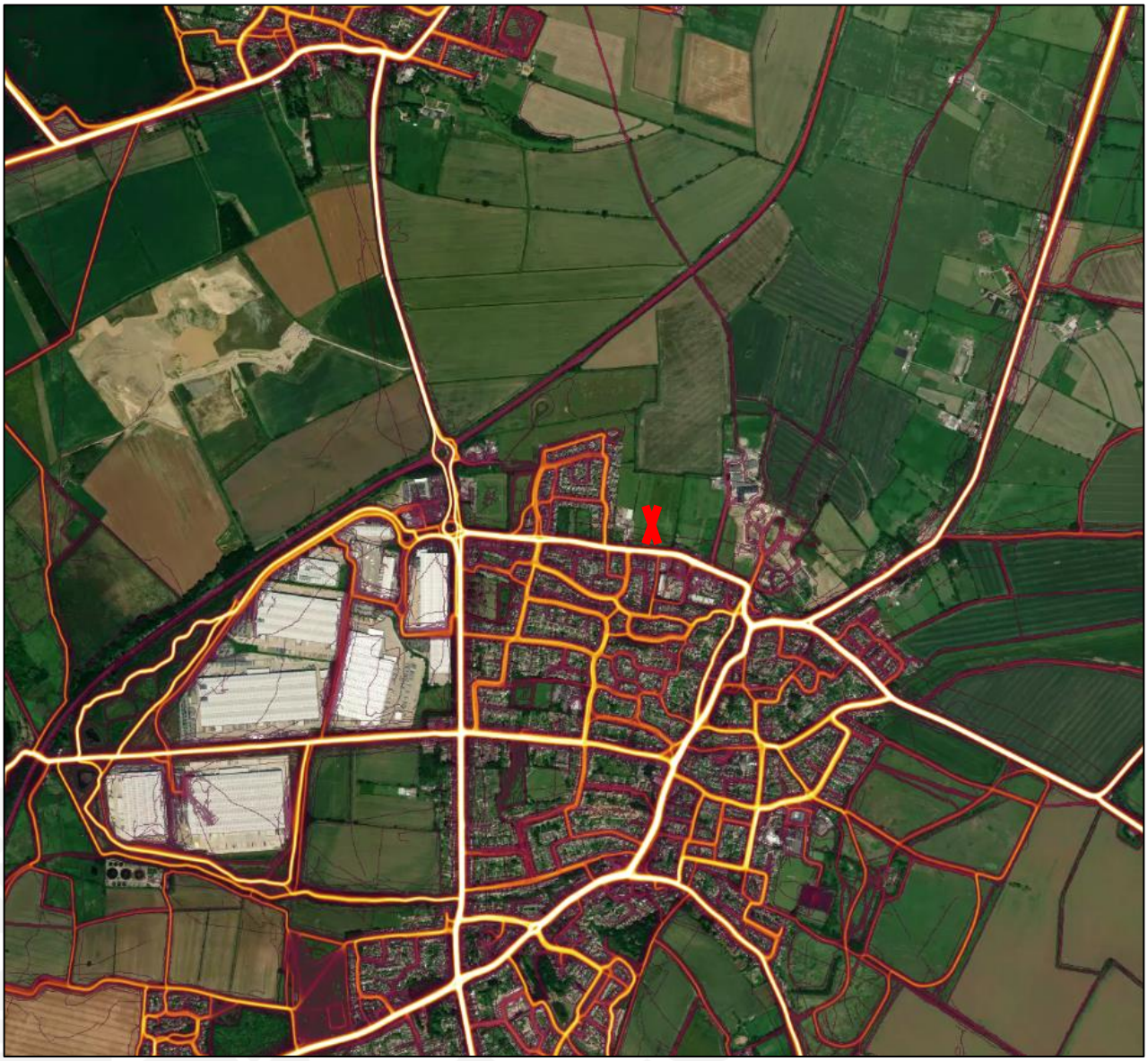
4.6 The above map demonstrates that the entirety of Raunds, and the villages of Chelveston, Stanwick and Denford Ash are all situated within a 5km reach of the site. Within an 8km cycle distance, the most notable towns/villages accessible are:

- Higham Ferrers;
- Hargrave;
- Ringstead;
- Little Addington;
- Great Addington;
- Shelton;
- Keyston;
- Denford, and;
- Covington.

4.7 The map demonstrates there is multiple key facilities and services available within 5km and 8km cycle distances among ample options for employment.

4.8 As the site is not within an 8km proximity to a National Cycle Route, it is necessary to consider the extent to which the existing roads/cycle routes can support existing cycle movements. Consequently, analysis of Strava Heatmaps has been conducted. **Figure 4.3** establishes the routes used by cyclists, where the 'hotter' (brighter) lines indicate the more frequently used routes; the red 'X' indicates the sites' location.

Figure 4.3: Strava Cycle Heatmap



Source: Strava.com/Heatmap/

4.9 As demonstrated by the heatmap, there are multiple roads, footways, and cycle routes within the vicinity of the site available for cyclists, suggesting there is a high level of cycling infrastructure in the area, specifically when travelling to and from Raunds Town Centre and Warth Park industrial estate in the northwest of the town.

Bus Provision

4.10 The closest bus stop, the 'Mallows Drive' bus stop, is situated adjacent the Brick Kiln Road / Kelmarsh Avenue priority-controlled T-junction, a circa 130m walk from the proposed site access. The stop serves the eastbound direction, and comprises a flag and post design with timetable information, and is served by the 16 and x47 Gold services. On the westbound corridor the Mallows Drive stop is listed as a stop for both directions of travel for the 16 service and also comprises of flag and post design with timetable information.

4.11 Circa 240m west of the site access, the 'Enterprise Road' bus stop is located; served by the 16 and x47 Gold (eastbound only) services. The stop opposite the Brick Kiln Road / Enterprise Road priority-controlled T-junction comprises of a flag and post design with timetable information whereas on the westbound corridor there is no physical entity symbolising the bus stop; the westbound stop is listed as a stop for both directions of travel for the 16 service.

4.12 **Table 4.1** provides a summary of the 16 and x47 Gold bus services.

Table 4.1: Summary of the 16 and x47 Gold Bus Services

Service	Operating Days	First Bus	Frequency (Minutes)			Last Bus	Route	Provider
			Morning	Midday	Evening			
16	Mon - Fri	06:55	120	30	120	19:07	Raunds - Kettering	Stagecoach Midlands
	Saturday	11:13*	120	30	90	14:55*		
	Sunday	-	-	-	-	-		
x47 Gold	Mon - Fri	05:41	30 - 60	60	60	21:04	Raunds - Northampton	Stagecoach Midlands
	Saturday	05:41	30 - 60	60	60	21:04		
	Sunday	08:20*	60	60	60	18:25		

*Source: Travelline.info: Times accurate as of time of writing. *first/last bus to serve the site*

4.13 The above table demonstrates the site is served by broadly 2-6 buses per hour on weekdays and Saturdays. As the services, specifically the x47 Gold, run beyond typical working shift patterns (09:00 – 17:00), and run frequently, it is considered the service provision provides a genuine alternative for future workers commuting to and from the site, with direct connections from Raunds, Higham Ferrers, Rushden, Wellingborough, and Kettering within a 60-minute commute.

Accessibility Assessment

4.14 To place the above sections into context, it is important to consider the locality of amenities, facilities, and services in relation to the site and subsequently pedestrian travel and public transport methods available to reach them. **Table 4.2** provides an extensive, but not exhaustive list of local amenities.

Table 4.2: Accessibility Assessment

Facility	Approx Distance (m)	Approx Journey Time (minutes)*		
		Walking	Cycling	Public Transport
Education				
Windmill Primary School	650	8	2	8
St Peter's CE Academy	1200	15	5	11
Health				
Marshalls Road Surgery	1000	13	4	5
Lloyds Pharmacy	1100	14	4	5
The Cottons Medical Centre	1200	15	5	7
Retail				
Spar	950	12	4	6
Raunds Post Office	1100	15	4	6
Asda	1100	14	4	7
Jesters Bistro and Coffee Lounge	1200	16	5	9
Central Co-op Food	1400	18	5	10
Public transport				
Mallows Drive	130	2	1	N/A
Enterprise Road Bus Stop	240	3	1	N/A

**Assumes a walking speed of 1.4m/s (3.2mph or 5.0kph) taken from the Guidance for Providing for Journeys on Foot (IHT, 2000) and cycling speed of 4m/s (9mph or 14.4kph), taken from Local Transport Note 1/86. All public transport times are taken from Google Maps' 'directions' feature.*

4.15 The accessibility assessment showcases that the application site is located within maximum distances to all necessary local amenities as outlined by the CIHT, with a good level of public transport (bus) provision. Thus, the site is considered to be situated within a sustainable location.

5.0 DEVELOPMENT PROPOSALS

Development Quantum

5.1 The development will see the erection of 87 dwellings, associated parking, internal estate roads, private shared access surfaces, and footways/paths. The development mix in regards to dwelling ownership type is as follows:

- 26 affordable dwellings, and;
- 61 privately owned dwellings.

Access

Vehicular Access

5.2 Access for the site is proposed to be taken from Brick Kiln Road via a new priority-controlled T-junction developed in the southeast corner of the site demonstrated by Drawing 25273_08_020_01; the junction will have a radius of 6 and serve a 5.5m wide adoptable estate road.

5.3 A second vehicular access link is proposed to be taken from the north of the adjacent residential development to the west of the site (ref: 20/00347/OUT); vehicles will then use the associated junction to gain access to Brick Kiln Road.

5.4 The adoptable internal estate roads are proposed to be a width of 5.5m, with the shared access surfaces proposed to be 5.0m in width.

Visibility

5.5 When assessing the suitability of a new vehicular access to serve a development, it is necessary to consider visibility splays for drivers emerging on to the highway network. To verify the speeds of vehicles travelling past the access on Brick Kiln Road, an Automatic Traffic Count (ATC) was conducted between 22/06/2022 – 28/06/2022 by Road Data Services Ltd. (RDS). Consequently, 85th %ile vehicular speeds of 39.7mph and 41.4mph were recorded for eastbound and westbound respectively; the full results and ATC location map is contained in **Appendix B**.

5.6 Guidance relating to appropriate visibility splays is published within The Department for Transport's document Design Manual for Roads and Bridges (DMRB), within which 'CA/123 Geometric Design of At-Grade Priority and Signal Controlled junctions' recommends that 'Y' distance are based on the Sight Stopping Distance (SSD) for vehicles travelling along the major road, in this case Derby Road. As previous stated, Derby Road operates under a 40mph speed restriction, which equates to a design speed of 65kph (40mph). Table 2.10 of document 'CD109 Highway Link Design' recommends an SSD of 120m for a design speed of 70kph.

5.7 In terms of the 'X' distance, a figure of 2.4m can be adopted for lightly trafficked junctions, such as this, per Manual for Streets guidance.

5.8 Based on the above guidance**,** visibility splays of 2.4m x 120m are required eastbound and westbound respectively. Drawing 25273_08_020_01 contained in **Appendix C** demonstrates such visibility splays can be achieved.

Servicing

5.9 It is necessary to consider how a refuse lorry, the largest anticipated vehicle that would regular gain access to the site, can gain access to all the dwellings, turn around, and exit in forward gears. Consequently, swept path analysis has been undertaken using the most up to date version of the computer software Causeway Drive. The swept paths are based upon a Phoenix 2-23W (with Elite 2 6x4 chassis) refuse vehicle measuring 2.53m by 10.52m, the results of which are illustrated on drawing 25273_08_020_01 contained in **Appendix C**. It has been demonstrated a refuse vehicle is able to gain access to the site, access all necessary parts of it, turn around, and exit in forward gears.

Pedestrian Access

5.10 The internal adopted estate roads are proposed to benefit from 2.0m footways on either site; several internal footpaths, measuring 2.0m in width, are proposed on the site to ease pedestrian interconnectivity.

5.11 The footways will originate from the site access, where an appropriate crossing point will be provided aiding pedestrians joining the existing sole footway on the southern side of Brick Kiln Road.

5.12 Where shared access surfaces are proposed, 1.5m strip footways are proposed either side.

Parking

Vehicle Parking

5.13 Chapter 9 of NCCs 'Northamptonshire Parking Standards' (September 2016) sets out the minimum level of parking provision for each use class. Table 5.2 provides an extract of the parking standards for dwellings.

Table 5.2: NCC Parking Standards for Class C3: Dwelling Houses

Use	Vehicle	Cycle	Motorcycle/Scooter	Disabled
1 Bed	1 space per dwelling, plus visitor spaces of 1 per dwelling across the development	1 secure covered space per bedroom	N/A	N/A if parking is in curtilage of dwelling
2/3 Bed	2 space per dwelling, plus visitor spaces of 1 per dwelling across the development	1 secure covered space per bedroom		
4+ Beds	3 space per dwelling, plus visitor spaces of 1 per dwelling across the development	1 secure covered space per bedroom		

Source: Chapter 9: Northamptonshire Parking Standards (September 2016)

5.14 All dwellings are provided with a minimum of 2 spaces on a private driveway or in a private garage space, with the maximum spaces allocated per a single dwelling at 4.

5.15 As per the outlined standards, a minimum of 1 visitor space has been provide per dwelling.

5.16 The level of parking is above the minimum standards outlined by NCCs 'Northamptonshire Parking Standards', and therefore considered appropriate in relation to the size of the development. The provision of spaces will prevent any overspill onto the internal estate roads or onto Brick Kiln Road.

Cycle Parking

5.17 It is expected that bicycles will be stored within the boundary of each property either in the private garage, garden shed, similar storage facilities. As shown in the proposed site plan in **Appendix A**, each dwelling will be provided with a minimum of either a private garage or private garden, and in most cases both.

6.0 HIGHWAY IMPACT

Trip Generation

6.1 To determine the impact of the proposed development, an analysis of the Trip Rate Information Computer Systems (TRICS), a computer program that assists in estimating trip rates to and from a variety of land uses, has been undertaken.

6.2 The trip rates were derived used the TRICS categories 'Residential, Privately Owned' and 'Residential, Affordable / Local Authority Houses', in order to reflect the market and affordable dwelling elements within the proposed development, and based on a comparison of number of bedrooms, with the geographic areas of Ireland, Northern Ireland, Scotland, Wales, and Greater London being excluded from the search; It is considered this methodology is relevant to this report and accurately reflects the likely trip generations.

6.3 The resulting trip rates for a weekday AM and PM peak hours for affordable housing is summarised below in **Table 6.1**, while a copy of the TRICS output data is shown in **Appendix D**. The trip generation shown below is based on a total of 26 affordable dwellings being developed.

Table 6.1: Affordable/Local Authority Housing Trip Rates

Time Period	Trip Rates (per unit)		Trip Generation (26 units)		
	Arrive	Depart	Arrive	Depart	Total
AM Peak (08:00-09:00)	0.211	0.380	5	10	15
PM Peak (17:00-18:00)	0.366	0.254	10	7	17

**Rounding errors may occur*

6.4 As demonstrated above, 26 affordable dwellings will generate approximately 15 trips in the AM peak and 17 trips in the PM peak. Seen within **Table 6.2** below is the trip generation for 61 proposed privately owned dwellings; the TRICS output data is visible in **Appendix D**.

Table 6.2: Trip Generation for Market Dwellings

Time Period	Trip Rates (per unit)		Trip Generation (61 units)		
	Arrive	Depart	Arrive	Depart	Total
AM Peak (08:00-09:00)	0.156	0.371	10	23	33
PM Peak (17:00-18:00)	0.342	0.168	21	10	31

**Rounding errors may occur*

6.5 As shown by Table 2.2, the proposed privately owned dwellings will generate circa 33 trips in the AM peak period and 31 trips in the PM peak.

6.6 In total, the proposed development will see 48 two-way trips in both the AM and PM peaks.

Junction Capacity Analysis

Methodology

Assessment Years and Scenarios

6.7 Junction capacity assessments have been undertaken to determine the impact of the proposed residential development at the following junctions:

- Junction 1: A45/B663/Raunds Road Roundabout;
- Junction 2: Brick Kiln Road/London Road/Warth Park Way/B663 Roundabout;
- Junction 3: Brick Kiln Road/Holdenby Drive/Mallows Drive Signalised Crossroad Junction;
- Junction 4: Proposed Residential Access on Brick Kiln Road;
- Junction 5: New Farm Barn Industrial Estate Access on Brick Kiln Road;
- Junction 6: North Street/Midland Road/High Street Priority T-Junction, and;
- 20 00347 OUT Site Access / Brick Kiln Road Proposed Access Junction

6.8 It should be noted Junction 3 was not part of the original scope, but given it is a major junction within the direct vicinity of the site, it is deemed appropriate to assess it.

6.9 The assessments will consider junction operation at current year (2023) and at a future year of 2031 (with and without proposed development traffic) as per NNCs scope set out in the 'Transport Assessment Scoping' response email.

6.10 The operational capacity of the outlined junctions has therefore been assessed in the following traffic flow scenarios:

- 2023 Base Flows (AM/PM) as taken from traffic surveys dated Wednesday 28th June 2023, undertaken by Road Data Services Ltd. (RDS);
- 2028 Do Nothing AM/PM (2023 Base + natural traffic growth);
- 2028 Do Minimum AM/PM (2028 Do Nothing + Committed Development Flows)
- 2028 Do Something AM/PM (2028 Do Minimum + Proposed Development Flows.

Base Traffic Count Data

6.11 Weekday AM (0730 – 0930) and PM (1630 – 1830) peak period traffic count data has been obtained for all junctions within the defined scope. Fully classified traffic turning counts were undertaken by RDS on Wednesday 28th June 2023; the full output results for each junction is contained in **Appendix E**.

6.12 To ensure a robust assessment of baseline traffic conditions, the morning and evening peak periods have been surveyed in order to enable the actual peak hour to be identified i.e., the highest flow recorded in a single hour within the wider peak period. In addition, it should be noted that for the purposes of the capacity assessments all peak hour survey flows have been converted from vehicles per hour (VPH) into passenger car units (PCUs) using factors identified in the Institute of Highways and Transportation's book "Transport in the Urban Environment - Part 5" (1997):

- Car or light goods vehicles (LGVs) = 1.0 PCU;
- Medium goods vehicles = 1.5 PCU;
- Heavy goods vehicle (HGVs) = 2.3 PCU;
- Bus / Coach = 2.0 PCU;
- Motor Cycle = 0.4 PCU;
- Bicycle = 0.2 PCU.

6.13 The traffic data has been growthed using NTM adjusted TEMPro generated factors for the local area. To achieve a 2028 future year, the 2023 surveys have been growthed using rates obtained from TEMpro 7.2/NTM dataset AF15 for East Northamptonshire region 006 (E02005634). The base traffic flows for the assessed junctions have been growthed from 2023 – 2031 by the rates illustrated below in **Table 6.3**.

Table 6.3: Adjusted TEMpro Growth Rates

Type	Area	Dataset Code	Period	AM Peak	PM Peak
Vehicular	East Northamptonshire 006	E02005634	2023 - 2031	1.0583	1.0607

Committed Developments

6.14 Committed developments can be defined as proposed development schemes with planning permission that, upon their completion, will result in material changes to the existing traffic conditions recorded in the base surveys. Such developments may not yet be commenced and/or are currently under construction but not yet complete or fully occupied.

6.15 It is considered appropriate to incorporate any local developments that have highways consent and are deemed to generate traffic through the assessment junctions. The committed developments assessed as part of the junction capacity analysis are as follows:

- Associated New Barn Industrial Estate Expansion;
- Hillside - 20/00347/OUT;
- Rushden East - 20/01453/OUT;
- Thrapson Business Park NE 22 00698 OUT;
- Land East of Halden's Parkway, Thrapston - NE/22/00151/FUL.

Trip Distribution

6.16 The overall traffic distribution has been based on information provided in the Transport Assessment for West End, Land North of Brick Kiln Road, Raunds, Northamptonshire (application reference: 11/01747/OUT); the TA uses 2001 Census data to determine the AM peak hour origin and destination traffic distributions, originating from Brick Kiln Road.

6.17 It has been assumed the PM peak hour distribution is the same as the AM peak hour, but reversed.

6.18 The full distribution methodology, data, and distribution diagrams as provided in the 11/01747/OUT TA is presented in **Appendix F**.

6.19 In regards to traffic distribution from the site access, and access link through 20/00347/OUT, the traffic distribution has been attributed to a 75%/25% split in favour of the main site access junction; given the internal layout, it is considered the main site access would serve the majority of the dwellings, with the access link through 20/00347/OUT serving the dwellings located in the northwest corner of the site.

6.20 The M-EC traffic distributions and flow diagrams are contained in **Appendix G.**

Modelling Software

6.21 The capacity of the junctions within the Transport Assessment study area has been undertaken using the Department of Transport TRL program JUNCTIONS 9 and the JCT Consultancy program LinSig 3. These programs are recognised as “industry standard” traffic modelling software packages used for assessing the capacity of roundabout junctions and T- junctions.

6.22 For both priority roundabouts and priority T-junctions a Ratio of Flow to Capacity (RFC) value of 0.85 or less typically demonstrate that a junction arm or turning movement is operating “within capacity” and is therefore unlikely to experience regular queuing. RFC values greater than 0.85 represent increased levels of queues and congestion i.e. the junction operates “over capacity” as essentially, 85% of the theoretical capacity is the maximum flow rate. The consequences of a high RFC depend on the flow. An RFC value of 1.2 might not matter with a very low flow whereas a value of 0.85 might be disastrous with a high flow. Therefore, it is important to review delay alongside RFC, in order to determine a junctions overall operation capacity.

6.23 For signalised junctions a Max Degree of Saturation (DOS) value of 0.90 (90%) or less typically demonstrate that a junction arm is operating “within capacity” and is therefore unlikely to experience regular queuing. The Practical Reserve Capacity (PRC) of the whole junction is measured as a percentage, with a positive percentage illustrating that the junction is able to accept further traffic. A negative percentage states that the junction is operating over capacity and that it is suffering from congestion.

6.24 It should be noted, the LINSIG model used for Junction 3 (Brick Kiln Road/Holdenby Drive/Mallows Drive Signalised Crossroad Junction), was provided by NNC.

6.25 The geometric parameters entered into the models have been measured using Ordnance Survey mapping and Google Earth.

6.26 The full input data and results report for the outlined junctions are contained in **Appendix H.**

Capacity Assessments – Site Access

6.27 The following two tables provide a summary of the capacity assessment results for the proposed site access of the application site, and the site access for the consented Hillside Side development (20 00347 OUT), which is anticipated to take 25% of the application traffic as well as the Hillside traffic.

Junction 4: Proposed Residential Access on Brick Kiln Road

Table 6.4: Junction 4 Modelling Results

Residential Site Acess / Brick Kiln Road						
Arm	Morning Peak Hour (08:00-09:00)			Evening Peak Hour (17:00-18:00)		
	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)	RFC
2031 Do Something						
Site Access (Stream B - AC)	0.1	7.63	0.06	0	7.2	0.03
Brick Kiln Road (Stream C - AB)	0	4.96	0.01	0	4.87	0.01

6.28 The junction capacity assessment results illustrate the proposed site access, serving 75% of the development traffic, will operate significantly under capacity upon the developments construction.

20 0347 OUT Site Access / Brick Kiln Road Proposed Access Junction

6.29 As mentioned, it is proposed the application site will utilise the Hillside site access. As a result, the access will take both the traffic from the Hillside development, and 25% of the application site's traffic. Consequently, **Table 6.5** outlines the capacity assessment results for the Hillside site access.

Table 6.5: 20 00347 OUT Site Access Modelling Results

20 00347 OUT Site Access / Bick Kiln Road						
Arm	Morning Peak Hour (08:00-09:00)			Evening Peak Hour (17:00-18:00)		
	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)	RFC
2031 Do Minimum						
20 00347 OUT Site Access (Stream B - AC)	0	8.14	0.02	0	0	0
Brick Kiln Road (Stream C - AB)	0	4.82	0	0	4.77	0
2028 Do Something						
20 00347 OUT Site Access (Stream B - AC)	0	8.42	0.04	0	8.3	0.02
Brick Kiln Road (Stream C - AB)	0	4.78	0.01	0	4.79	0.01

6.30 The junction capacity assessment results illustrate the site access for the Hillside development, serving 100% of its traffic and 25% of the application sites traffic, will operate significantly under capacity upon both developments construction.

6.31 It is therefore deemed the site accesses are suitable for the development from a traffic perspective.

Capacity Assessments – Off-Site Junctions

Junction 1: A45 / Raunds Road / B663 Roundabout

Table 6.6: Junction 1 Modelling Results

A45 / Raunds Road / B663 Roundabout						
Arm	Morning Peak Hour (08:00-09:00)			Evening Peak Hour (17:00-18:00)		
	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)	RFC
2023 Base Flows						
Raunds Road	0.3	3.16	0.22	0.4	3.32	0.27
A45 E	6.1	18.03	0.87	37.1	89.54	1.03
Service Station	0.1	3.06	0.12	0.2	3.5	0.14
B663	24.5	91.58	1.01	16	65.32	0.98
A45 W	1.6	4.02	0.61	1.7	4.39	0.64
2031 Do Minimum						
Raunds Road	0.4	4	0.29	0.5	4.16	0.35
A45 E	28.4	70.43	1.01	171.7	416.94	1.24
Service Station	0.2	3.44	0.14	0.2	3.7	0.15
B663	91.7	314.71	1.19	36.7	129.96	1.06
A45 W	3.0	6.28	0.75	2.8	6.18	0.74
2031 Do Something						
Raunds Road	0.4	4.02	0.29	0.5	4.17	0.36
A45 E	30.7	75.05	1.01	174	424.35	1.25
Service Station	0.2	3.46	0.14	0.2	3.7	0.16
B663	97.7	343.55	1.22	39.8	138.58	1.06
A45 W	3.1	6.34	0.76	2.9	6.23	0.74

6.32 The junction assessment results illustrate the Raunds Road, Service Station, and A45 West arms all operate under capacity during all scenarios.

6.33 The A45 East arm (arm 2), and the B663 arm are seen to operate over capacity during all three scenarios, with the impact from the development upon the A45 East arm causing an RFC increase of 0.00 and 0.01 in the AM and PM peaks respectively when comparing the 2028 Do Minimum and Do Something Scenarios, and an RFC increase of 0.03 and 0.00 in the AM and PM peaks respectively on the B633 arm. The results clearly illustrate both arms are congested at contemporary, and that any subsequent results will largely be attributed to the exponential effects of such. Notwithstanding this, it is clear and unequivocal, that the final residual implications arising from the development do not adversely impact upon the severity of the specific arms, which would be apparent with or without development, and therefore the development cannot be considered the primary contributor towards the identified congestion occurring on the A45 East arm, and the B663 arm.

6.34 Moreover, a junction queue survey was instructed at the A45 roundabout, and carried out on the Wednesday 28th June, 2023. The results illustrated that in the AM peak, the A45 east are experienced a maximum queue length of 24 vehicles, and the B663 30 vehicles. In the PM peak the A45 east experienced a maximum queue length of 31 vehicles, and the B663 20 vehicles. These values largely coincide with the Junctions 9 output seen above, and as such validate the degree of existing congestion.

6.35 The development's impact at the junction is therefore not considered to be severe.

Junction 2: Brick Kiln Road / London Road / Warth Park Way / B663 Roundabout

Table 6.7: Junction 2 Modelling Results

B663 / Brick Kiln Road / London Road / Warth Park Way Roundabout						
Arm	Morning Peak Hour (08:00-09:00)			Evening Peak Hour (17:00-18:00)		
	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)	RFC
2023 Base Flows						
B663	0.4	1.85	0.29	0.7	2.25	0.4
Brick Kiln Road	1	7.16	0.5	0.7	6.97	0.42
London Road	0.6	4.51	0.36	0.4	3.93	0.31
Warth Park Way	0.2	2.02	0.15	0.4	2.21	0.26
2031 Do Minimum						
B663	0.5	1.93	0.31	0.8	2.45	0.44
Brick Kiln Road	1.3	8.49	0.57	0.3	5.56	0.25
London Road	0.7	4.98	0.41	0.4	3.7	0.31
Warth Park Way	0.2	2.12	0.17	0.4	2.12	0.26
2031 Do Something						
B663	0.5	1.94	0.31	0.5	2.08	0.34
Brick Kiln Road	1.5	9.08	0.6	0.8	6.41	0.44
London Road	0.7	5.09	0.41	0.4	3.58	0.3
Warth Park Way	0.2	2.14	0.17	0.4	2.33	0.28

6.36 The junction assessment results illustrate the Brick Kiln Road / London Road / Warth Park Way / B663 Roundabout operates under capacity during all scenarios.

Junction 3: Brick Kiln Road/Holdenby Drive/Mallows Drive Signalised Crossroad Junction

Table 6.8: Junction 3 Modelling Results

A1123 Haughton Road / St Audrey Lane / Ramsey Road			
Arm/Lane Movement	**Peak**	**Max. DOS**	**Max Queue**
2023 Base Flows			
1/1 + 1/2 Brick Kiln Road (East) Ahead Left Right	AM	40.40%	5.6
	PM	33.80%	4.9
2/1 Mallows Drive Left Right Ahead	AM	43.50%	2.3
	PM	29.80%	1.3
3/2 + 3/1 Brick Kiln Road (West) Ahead Right Left	AM	45.20%	5.9
	PM	57.10%	8.0
4/1 + 4/2 Holdenby Drive Right Left Ahead	AM	39.50%	2.0
	PM	13.00%	0.6
PRC: AM = 99.0% PM = 57.7%			
Cycle Time AM = 90 Seconds	Cycle Time PM = 90 Seconds		
2031 Do Minimum			
1/1 + 1/2 Brick Kiln Road (East) Ahead Left Right	AM	41.10%	6.3
	PM	38.10%	5.8
2/1 Mallows Drive Left Right Ahead	AM	50.60%	2.6
	PM	31.10%	1.3
3/2 + 3/1 Brick Kiln Road (West) Ahead Right Left	AM	50.10%	6.7
	PM	68.60%	10.4
4/1 + 4/2 Holdenby Drive Right Left Ahead	AM	41.60%	2.2
	PM	13.50%	0.6
PRC: AM = 77.9% PM = 31.2%			
Cycle Time AM = 90 Seconds	Cycle Time PM = 90 Seconds		
2031 Do Something			
1/1 + 1/2 Brick Kiln Road (East) Ahead Left Right	AM	43.90%	6.9
	PM	39.20%	6.0
2/1 Mallows Drive Left Right Ahead	AM	50.60%	2.6
	PM	31.10%	1.3
3/2 + 3/1 Brick Kiln Road (West) Ahead Right Left	AM	53.30%	7.2
	PM	73.80%	1.7
4/1 + 4/2 Holdenby Drive Right Left Ahead	AM	41.60%	2.2
	PM	13.50%	0.6
PRC: AM = 68.8% PM = 22.0%			

6.37 The junction assessment results illustrate the Brick Kiln Road / Holdenby Drive / Mallows Drive Signalised Crossroad Junction operates under capacity during all scenarios.

Junction 5: New Farm Barn Industrial Estate Access on Brick Kiln Road

6.38 The below table outlines the modelling results for Junction 5. It should be noted in the '2031 Do Something' scenario, known upgrades to the junction have been incorporated into thew geometric parameters of the model.

Table 6.9: Junction 5 Modelling Results

New Barn Farm Industrial Estate / Brick Kiln Road						
Arm	Morning Peak Hour (08:00-09:00)			Evening Peak Hour (17:00-18:00)		
	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)	RFC
2023 Base Flows						
Industrial Estate Access - Brick Kiln Road (Stream B - AC)	0.1	7.76	0.06	0.1	8.3	0.1
Brick Kiln Road (Stream C - AB)	0	5.03	0.04	0	5.05	0.02
2031 Do Minimum						
Industrial Estate Access - Brick Kiln Road (Stream B - AC)	0.1	8.63	0.12	0.2	9.19	0.18
Brick Kiln Road (Stream C - AB)	0.1	5.12	0.07	0	5.06	0.02
2031 Do Something (with Junction Upgrades)						
Industrial Estate Access - Brick Kiln Road (Stream B - AC)	0.1	7.08	0.1	0.2	7.59	0.15
Brick Kiln Road (Stream C - AB)	0.1	5.11	0.07	0.1	5.21	0.07

6.39 The junction assessment results illustrate the New Barn Farm Industrial Estate / Brick Kiln Road priority-controlled T-junction operates under capacity during all scenarios.

Junction 6: North Street/Midland Road/High Street Priority T-Junction

Table 6.10: Junction 6 Modelling Results

North Street / B663 Midland Road / B663 High Street						
Arm	Morning Peak Hour (08:00-09:00)			Evening Peak Hour (17:00-18:00)		
	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)	RFC
2023 Base Flows						
North Street - Midland Road (Stream B - C)	0.2	6.75	0.19	0.2	6.84	0.2
North Street - High Street (Stream B - A)	0.3	9.99	0.22	0.3	10.18	0.23
Midland Road (Stream C - AB)	0.4	7.93	0.28	0.4	7.34	0.26
2031 Do Minimum						
North Street - Midland Road (Stream B - C)	0.3	7	0.2	0.3	7.48	0.23
North Street - High Street (Stream B - A)	0.3	9.99	0.24	0.4	11.28	0.3
Midland Road (Stream C - AB)	0.3	7.25	0.2	0.5	7.56	0.28
2031 Do Something						
North Street - Midland Road (Stream B - C)	0.3	7.18	0.21	0.3	7.61	0.23
North Street - High Street (Stream B - A)	0.4	10.76	0.27	0.5	11.49	0.32
Midland Road (Stream C - AB)	0.5	8.32	0.3	0.5	7.59	0.28

6.40 The junction assessment results illustrate the North Street/Midland Road/High Street Priority T-Junction operates under capacity during all scenarios.

Capacity Assessment Summary

6.41 All junctions, including both proposed site accesses, operate within theoretical capacity except for the A45 roundabout; It has been determined that the development traffic has an imperceivable adverse impact on the A45 roundabout, and thus is not the primary contributor to the congestion seen.

7.0 SUMMARY AND CONCLUSIONS

7.1 This report has been prepared on behalf of Mr H. Smith to advise on the transport elements associated with the proposed residential development at Land at Brick Kiln Road, Raunds, Northamptonshire. The proposed development would see the erection of 87 dwellings, associated parking, internal estate roads, private shared access surfaces, and footways/paths. Consequently, this Transport Statement report has been prepared in support of the forthcoming planning application.

7.2 A review of local collision data, as provided by NNC, identified a collision cluster of 10 collisions on the A45 / Raunds Road / B663 roundabout within the most recent 5-year period; however, upon a detailed review, it is evident the collisions were not a result of unsafe highway design. Across the remaining collision scope, it is apparent there are no existing highway safety issues.

7.3 It has been demonstrated that the site is located in a sustainable location with key amenities and services located with 'maximum' distances from the application site as outlined by the CHIT. Moreover, the site is supported by a good level of bus provision, especially facilitating movements into Raunds Town centre.

7.4 Access for the site is proposed to be taken from Brick Kiln Road via a new priority-controlled T-junction. Visibility splays of 2.4m x 120m can be achieved at the site access within land under the control of either the Highway Authority or the applicant.

7.5 The proposed layout and access arrangements would accommodate the turning movements of a large refuse vehicle (and private car), turning around, and exiting the development in forward gears, as determine through swept path analysis.

7.6 The level of parking is in line with local standards, and is considered appropriate to serve the development.

7.7 The development is estimated to generate 48 two-way vehicle movements during the AM and PM peak hours which is considered to not have an adverse impact on the local highway network, as verified by junction capacity assessments.

7.8 All junctions, including both proposed site accesses, operate within theoretical capacity except for the A45 roundabout; It has been determined that the development traffic has an imperceivable adverse impact on the A45 roundabout, and thus is not the primary contributor to the congestion seen.

7.9 In conclusion, the site is located in a sustainable location for a rural site, meets relevant highway design standards, and the level of trips generated by the proposals would not impact upon the safe operation of the local highway network. It is considered that the proposed development is acceptable in transport terms.

MEC
Development Technical Consultants

APPENDICES

APPENDIX A

EXTENT OF EXTANT RESIDENTIAL DEVELOPMENT (APPLICATION REF 20/00347/OUT

DETAIL SUBJECT TO SEPERATE PLANNING APPLICATION BY SEPERATE APPLICANT (APPLICATION REF xxxxxxxxxx)

BRICK KILN ROAD

BLOCK A

BLOCK B

BLOCK C

BLOCK D

SUBSTATION

WASTE CONTAINER

CONCRETE SERVICE YARD

GRASSCRETE

CRUSHED TARMAC

HILLSIDE

Existing Hedge cut back

New footpath

Balancing pond

HAWTHORN HEDGE HT 2.0m

HAWTHORN HEDGE HT 3.3m

BARRIER HT 0.6m

HAWTHORN TREES AV Ø 0.4 AV HT 4.0m

HAWTHORN Ø 0.6 HT 8m

ASH Ø 3.X0.5 HT 8m

ASH Ø 1.6 HT 12m

CHERRY Ø 0.4 HT 5m

ASH Ø 0.4 HT 4m

PAVEMENT HT 1.2m

PAVEMENT HT 1.1m

PAVEMENT HT 1.0m

GHERKIN Ø 0.2 HT 1m

1:500 Scale bar

0m 5 10 15 20 25m

N

Rev.	Date	By	Description
A	6.8.23	ADB	FOOTPATH LINK TO SITE REVISED. HOUSING LAYOUT TO EAST REVISED.
B	4.8.23	ADB	OUTLINE SCHEME 20/00347/OUT ADDED

ABDS ltd architectural consultants

Midlands
1st Floor
15 St Cuthberts St.
Bedford
Beds
MK40 3JB

Southern
16 Meneth
Gweek
Cornwall
TR12 6UW

Tel: 0845 2242967
Email:admin@abdsservices.co.uk

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT
BRICK KILN ROAD
RAUNDS

DRAWING

PROPOSED BLOCK PLAN

SCALE: 1:500 @A1	DATE: 01.06.2023
DRAWN BY: ADB	CAD Ref: xxxxxxxxxxxx

DWG No:S/NR/23/001 | B

KEY

EXTENT OF EXTANT RESIDENTIAL DEVELOPMENT (APPLICATION REF 20/00347/OUT

DETAIL SUBJECT TO SEPERATE PLANNING APPLICATION BY SEPERATE APPLICANT (APPLICATION REF xxxxxxxxxx)

N

1:1250 Scalle bar
0m 10 20 30 40 50

Rev.	Date:	By	Description

ABDS ltd architectural consultants

Midlands
1st Floor
15 St Cuthberts St.
Bedford
Beds
MK40 3JB

Southern
16 Meneth
Gweek
Cornwall
TR12 6UW

Tel: 0845 2242967
Email:admin@abdsservices.co.uk

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
BRICK KILN ROAD
RAUNDS

DRAWING
SITE LOCATION PLAN

SCALE: 1:1250 @A1	DATE: 02.08.2023
DRAWN BY: ADB	CAD Ref: xxxxxxxxxxxx

DWG No:S/NR/23/005 | -

MEC
Development Technical Consultants

APPENDICES

APPENDIX B

- Traffic surveys – AM (07:30-09:30) PM (16:30-18:30). Traffic counts and queue lengths at all junctions.
- Pedestrian count at signalised junction (no.3)

1 - A45/B663/Raunds Road roundabout
2 - Brick Kiln Road/London Road/Warth Park Way/B663 roundabout
3 - Brick Kiln Road/Holdenby Drive/Mallows Drive signalised crossroad junction
4 – New Farm Barn Industrial Estate priority junction with Brick Kiln Road
5 – North Street/Midland Road/High Street priority junction

- ATC on Brick Kiln Road (approx. coordinates 52.350761, -0.537758) 7-day/24-hour.

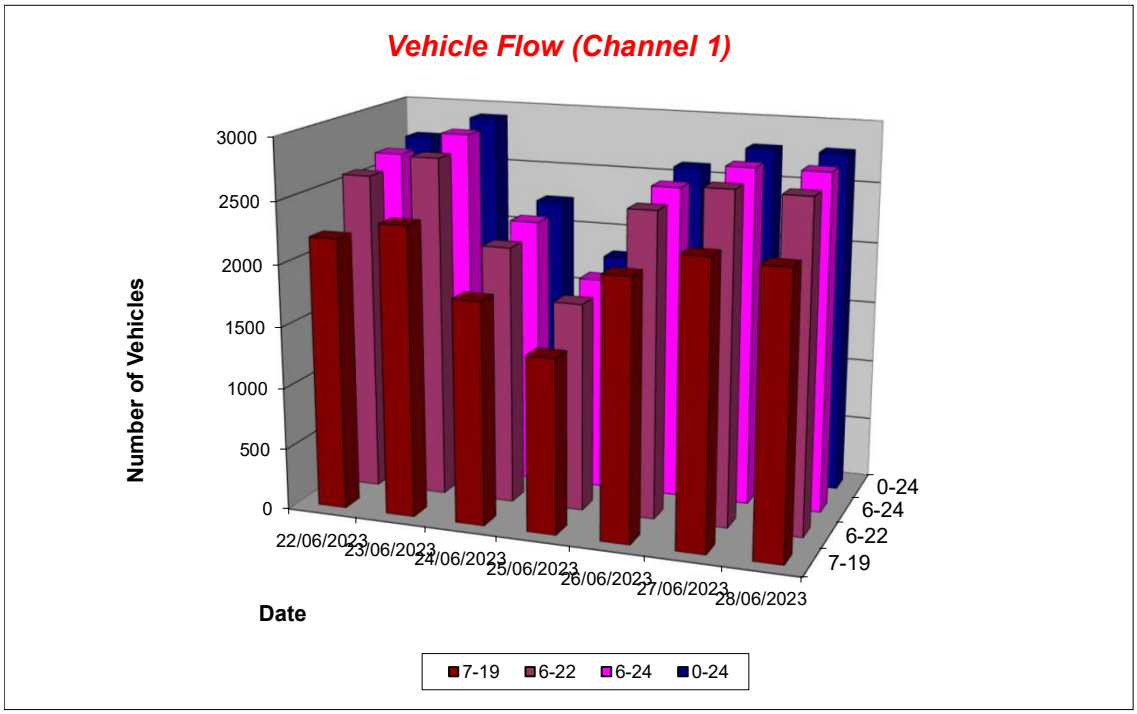
Raunds ATC, B663 Brick Kiln Road

Produced by Road Data Services Ltd.

Channel 1 - Eastbound | **Vehicle Flow** | **Week 1**

Hr Ending	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday	Weekday Average	Average
1	15	10	18	22	6	8	7	9	12
2	5	7	11	13	6	5	8	6	8
3	5	7	6	9	5	4	3	5	6
4	3	2	4	4	6	2	4	3	4
5	5	7	7	1	12	4	3	6	6
6	16	12	11	7	21	23	20	18	16
7	72	74	20	14	60	62	60	66	52
8	177	156	51	26	174	194	180	176	137
9	255	229	104	46	225	236	227	234	189
10	153	180	147	67	123	127	178	152	139
11	140	139	170	125	127	140	119	133	137
12	144	153	225	134	149	156	155	151	159
13	152	169	190	150	155	148	147	154	159
14	164	189	163	151	126	163	155	159	159
15	165	183	172	151	161	179	197	177	173
16	201	255	144	179	224	214	207	220	203
17	223	241	150	145	213	257	239	235	210
18	237	246	151	138	238	263	245	246	217
19	190	206	138	101	180	212	209	199	177
20	126	150	116	108	143	146	170	147	137
21	121	109	75	95	110	102	96	108	101
22	71	90	79	61	66	76	77	76	74
23	58	62	50	40	55	50	57	56	53
24	25	36	39	18	16	14	22	23	24

7-19	2201	2346	1805	1413	2095	2289	2258	2238	2058
6-22	2591	2769	2095	1691	2474	2675	2661	2634	2422
6-24	2674	2867	2184	1749	2545	2739	2740	2713	2500
0-24	2723	2912	2241	1805	2601	2785	2785	2761	2550



Raunds ATC, B663 Brick Kiln Road

Produced by Road Data Services Ltd.

Channel 1 - Eastbound **Average Speed** **Week 1**

Hr Ending	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday
1	34.7	38.1	37.1	36.5	37.6	37.4	37.7
2	35.2	32.3	34.7	38.3	36.2	32.6	32.7
3	35.5	38.3	40.7	36.5	34.2	33.8	31.4
4	29.5	44.4	37.0	44.8	38.5	35.0	40.2
5	36.3	34.6	34.8	32.3	34.3	32.9	37.0
6	34.0	29.7	36.8	40.2	31.8	31.7	30.5
7	33.8	33.3	34.0	33.0	33.8	32.0	35.1
8	33.7	33.6	33.3	35.9	33.9	33.6	33.7
9	31.0	30.6	32.0	32.1	31.7	32.1	32.3
10	31.1	30.4	31.3	32.6	31.6	31.2	30.4
11	30.7	31.2	32.2	32.4	32.4	31.4	31.9
12	30.9	31.9	31.1	33.5	31.3	31.8	31.5
13	31.9	31.6	32.0	32.6	31.9	31.8	31.5
14	31.7	32.8	33.3	32.9	32.7	30.9	31.9
15	31.2	32.9	32.3	33.9	32.9	31.4	31.9
16	32.5	31.3	32.8	32.9	32.5	32.0	31.7
17	32.6	32.1	33.3	34.7	32.2	31.9	31.9
18	31.2	31.9	33.7	33.7	32.2	31.4	32.8
19	32.6	32.0	33.6	36.0	33.3	32.3	32.3
20	32.5	32.6	33.4	34.2	32.3	33.2	32.4
21	34.6	34.7	33.2	32.3	33.3	33.3	33.8
22	33.3	31.3	31.6	32.1	33.8	33.5	31.7
23	36.1	34.6	33.7	34.0	34.5	32.9	34.7
24	34.7	34.9	33.7	34.6	33.4	38.2	34.9
10-12	30.8	31.6	31.6	32.9	31.8	31.6	31.7
14-16	31.9	32.0	32.6	33.4	32.7	31.8	31.8
0-24	32.2	32.1	32.7	33.6	32.6	32.1	32.3

Average (ALL)	32.4
Weekday Inter-Peak	31.8

Channel 1 - Eastbound **85th Percentile**

Hr Ending	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday
1	39.1	44.0	46.1	41.4	44.0	42.4	41.9
2	44.6	41.4	41.4	43.8	42.1	36.6	42.6
3	40.0	43.8	43.8	48.6	45.3	40.4	33.2
4	30.3	45.1	39.2	46.6	45.0	39.0	43.4
5	39.7	45.5	39.6	-	38.9	38.0	38.6
6	45.0	41.9	41.7	43.1	42.9	43.3	42.5
7	41.3	41.7	42.4	39.5	41.7	40.9	43.9
8	39.6	40.9	39.8	44.9	39.3	40.0	39.8
9	38.1	38.1	39.7	41.4	39.2	39.6	38.8
10	38.8	37.5	39.0	41.4	40.7	38.4	37.6
11	38.2	38.9	38.3	40.1	39.1	39.1	39.6
12	38.2	39.1	37.9	40.9	38.0	39.2	37.7
13	38.1	38.4	39.0	39.7	39.7	40.0	38.5
14	38.5	40.6	40.2	39.8	40.0	37.6	39.3
15	36.8	38.8	38.9	40.9	40.2	38.0	39.3
16	39.3	38.2	40.7	40.5	39.3	38.7	39.1
17	39.3	39.4	41.1	41.0	39.2	38.4	39.4
18	38.2	39.0	41.2	41.9	38.4	38.7	39.8
19	39.5	39.2	41.0	44.1	40.5	39.2	39.5
20	39.9	40.4	40.8	42.2	39.2	40.1	39.3
21	42.3	43.4	42.4	39.9	41.5	40.7	42.1
22	41.1	39.4	39.1	42.0	40.3	40.3	40.7
23	44.2	41.5	38.3	39.4	41.1	39.4	42.0
24	44.0	40.6	38.9	41.6	43.3	45.0	41.7
10-12	38.2	39.1	38.2	40.4	38.5	39.1	38.6
14-16	38.2	38.5	39.8	40.7	39.7	38.5	39.2
0-24	39.3	39.5	40.0	41.3	39.8	39.3	39.6

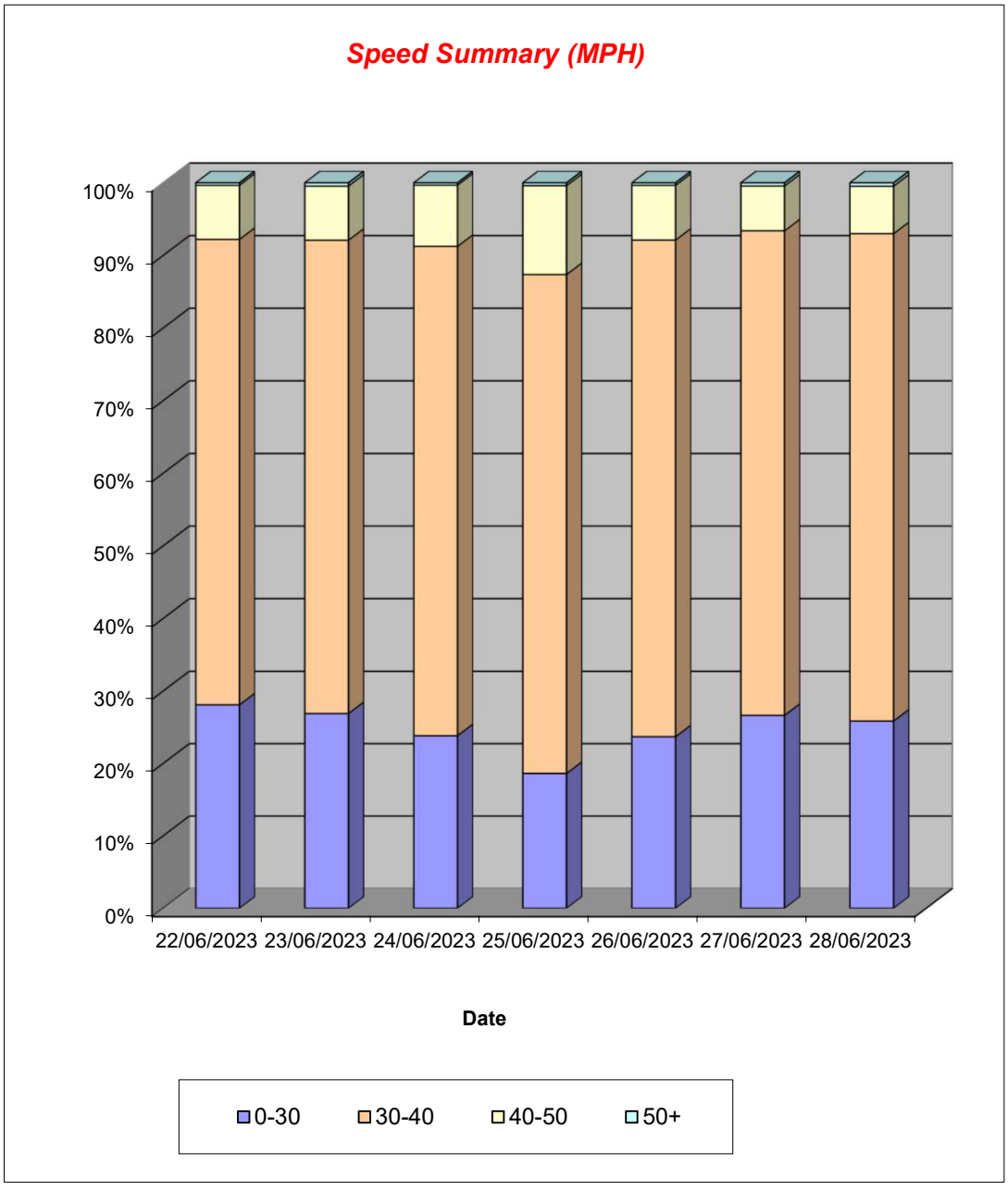
85th %ile (ALL)	39.7
Weekday Inter-Peak	38.8

Raunds ATC, B663 Brick Kiln Road

Produced by Road Data Services Ltd.

Channel 1 - Eastbound | **Speed Summary** | **Week 1**

Speed (MPH)	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday
0-30	765	783	534	336	616	742	720
30-40	1746	1899	1511	1241	1780	1859	1870
40-50	203	217	189	221	196	172	182
50+	9	13	7	7	9	12	13
TOTAL	**2723**	**2912**	**2241**	**1805**	**2601**	**2785**	**2785**



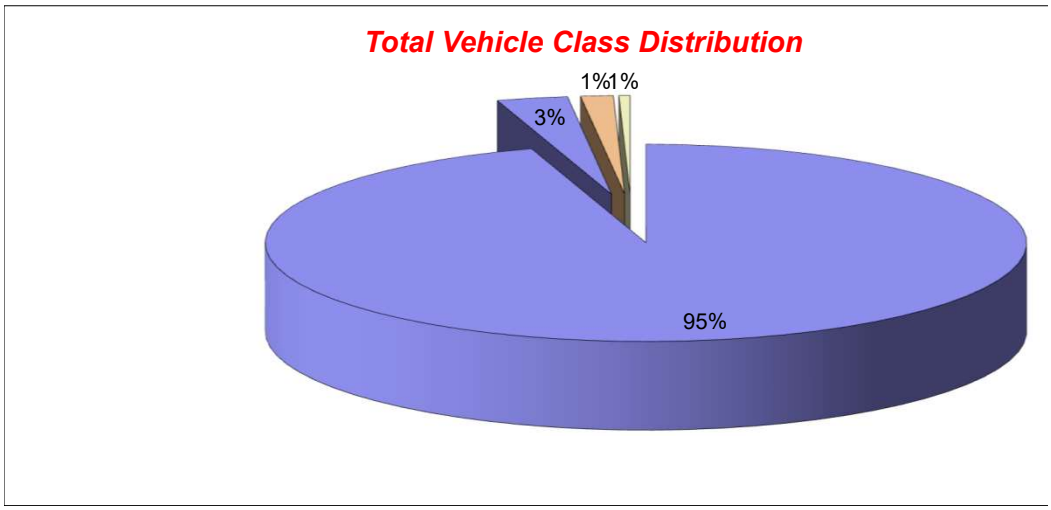
Raunds ATC, B663 Brick Kiln Road

Produced by Road Data Services Ltd.

Channel 1 - Eastbound — **Vehicle Class**

Classes / Day / Time	Car / LGV / Caravan - 1	MGV - 2	OGV1 / Bus - 3,5,6,7,12	OGV2 - 4,8,9,10,11,13
22/06/2023				
7-19	2072	84	35	10
6-22	2442	94	40	15
6-24	2525	94	40	15
0-24	2565	100	43	15
23/06/2023				
7-19	2207	85	42	12
6-22	2614	91	47	17
6-24	2711	92	47	17
0-24	2749	96	49	18
24/06/2023				
7-19	1742	39	19	5
6-22	2023	45	22	5
6-24	2112	45	22	5
0-24	2165	46	25	5
25/06/2023				
7-19	1370	26	14	3
6-22	1642	31	14	4
6-24	1698	33	14	4
0-24	1753	33	14	5
26/06/2023				
7-19	1982	65	38	10
6-22	2345	74	42	13
6-24	2415	75	42	13
0-24	2465	79	43	14
27/06/2023				
7-19	2167	78	30	14
6-22	2540	85	34	16
6-24	2603	86	34	16
0-24	2645	88	36	16
28/06/2023				
7-19	2134	83	32	9
6-22	2524	92	35	10
6-24	2603	92	35	10
0-24	2642	95	37	11

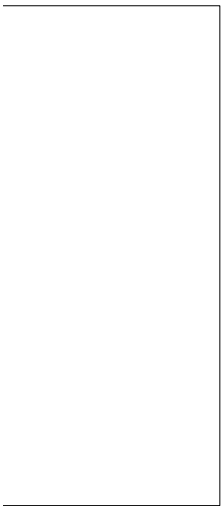
Average				
7-19	1953	66	30	9
6-22	2304	73	33	11
6-24	2381	74	33	11
0-24	2426	77	35	12



Week 1

TOTAL - 1-13
2201
2591
2674
2723
2346
2769
2867
2912
1805
2095
2184
2241
1413
1691
1749
1805
2095
2474
2545
2601
2289
2675
2739
2785
2258
2661
2740
2785

2058
2422
2500
2550

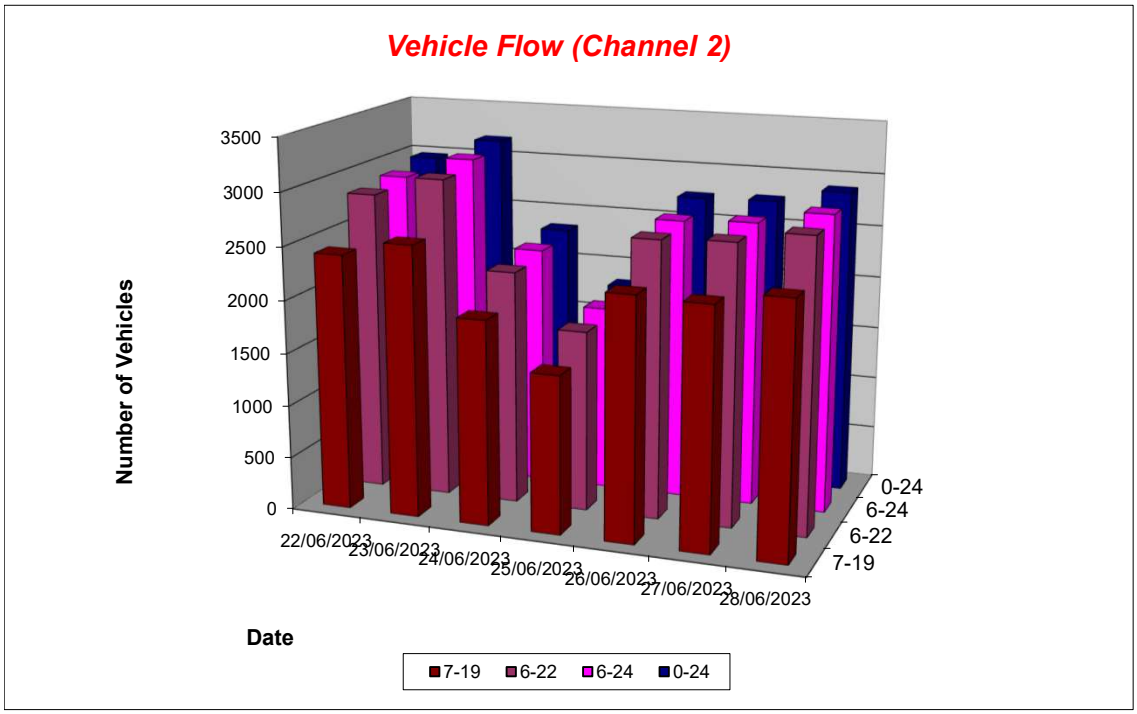


Raunds ATC, B663 Brick Kiln Road

Produced by Road Data Services Ltd.

Channel 2 - Westbound | **Vehicle Flow** | **Week 1**

Hr Ending	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday	Weekday Average	Average
1	6	6	12	22	7	4	2	5	8
2	5	4	7	12	5	3	3	4	6
3	5	5	10	5	2	1	5	4	5
4	4	4	5	3	7	2	3	4	4
5	9	7	3	1	11	7	11	9	7
6	45	46	21	13	55	54	51	50	41
7	111	100	38	22	103	121	116	110	87
8	196	210	73	53	205	187	205	201	161
9	255	240	124	71	235	242	266	248	205
10	177	188	171	99	168	148	196	175	164
11	170	191	189	168	176	170	161	174	175
12	182	148	201	155	150	149	157	157	163
13	154	186	207	170	161	166	140	161	169
14	168	188	212	134	142	140	183	164	167
15	163	191	183	129	154	170	160	168	164
16	256	296	141	165	246	230	249	255	226
17	253	256	159	124	243	224	224	240	212
18	288	274	148	113	256	261	235	263	225
19	156	194	125	112	147	172	197	173	158
20	156	175	111	80	116	123	125	139	127
21	88	119	78	66	68	74	71	84	81
22	73	76	53	51	53	75	79	71	66
23	38	54	38	28	29	25	36	36	35
24	12	20	24	21	6	12	15	13	16
7-19	2418	2562	1933	1493	2283	2259	2373	2379	2189
6-22	2846	3032	2213	1712	2623	2652	2764	2783	2549
6-24	2896	3106	2275	1761	2658	2689	2815	2833	2600
0-24	2970	3178	2333	1817	2745	2760	2890	2909	2670



Raunds ATC, B663 Brick Kiln Road

Produced by Road Data Services Ltd.

Channel 2 - Westbound **Average Speed** **Week 1**

Hr Ending	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday
1	32.3	40.6	33.9	34.9	29.7	23.4	31.8
2	37.6	32.1	29.4	30.5	36.6	27.6	34.4
3	31.6	40.9	33.1	34.0	26.0	33.2	36.8
4	30.7	36.7	40.8	33.7	30.2	34.4	30.3
5	34.1	35.5	37.7	31.2	33.6	32.6	33.2
6	36.8	38.0	36.0	38.7	37.5	37.7	39.2
7	37.4	38.7	35.9	37.6	38.5	36.9	38.3
8	34.2	35.3	36.4	39.8	34.4	34.5	35.1
9	32.0	33.4	37.0	36.3	33.1	31.5	32.2
10	32.7	32.0	33.7	35.6	33.1	31.6	33.3
11	27.8	32.4	32.4	34.6	32.2	33.0	32.1
12	32.6	31.4	32.4	33.9	32.7	33.5	33.0
13	34.4	34.1	33.1	34.7	33.0	30.7	33.4
14	32.4	34.6	34.1	34.2	34.0	33.2	31.4
15	32.1	33.6	32.4	35.6	31.8	31.8	32.9
16	32.2	30.1	33.2	32.3	32.4	30.6	31.2
17	31.6	32.2	34.7	32.2	32.3	32.9	33.5
18	32.5	31.8	33.5	35.3	33.1	32.0	32.9
19	33.0	33.4	34.2	35.3	32.1	33.2	32.6
20	33.1	33.2	34.1	34.5	32.9	33.4	32.0
21	34.8	36.9	33.6	34.4	32.1	34.5	33.6
22	34.6	34.4	31.0	35.4	34.7	32.9	32.5
23	34.6	34.7	32.0	35.1	35.2	32.6	31.2
24	40.9	37.5	34.0	37.9	33.0	34.2	33.6
10-12	30.3	32.0	32.4	34.3	32.4	33.2	32.6
14-16	32.2	31.5	32.7	33.7	32.2	31.1	31.9
0-24	32.8	33.3	33.7	34.7	33.2	32.7	33.1

Average (ALL)	33.3
Weekday Inter-Peak	31.9

Channel 2 - Westbound **85th Percentile**

Hr Ending	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday
1	43.3	45.3	40.3	42.2	41.0	34.1	35.2
2	43.7	35.5	35.9	37.6	39.1	35.4	37.9
3	39.5	47.9	41.8	44.8	33.5	-	41.3
4	36.0	43.2	47.5	38.8	36.5	39.3	35.0
5	41.3	39.1	40.8	-	42.3	40.1	41.3
6	44.6	44.7	42.4	44.1	44.9	44.9	44.4
7	42.7	45.2	42.5	43.9	46.1	43.9	44.6
8	40.9	42.1	43.4	46.3	41.6	39.6	40.9
9	39.0	41.0	43.9	42.0	39.5	39.2	40.1
10	39.6	38.9	41.1	42.4	40.0	39.8	39.6
11	37.7	40.2	40.3	42.5	40.8	39.4	39.8
12	40.6	39.7	39.5	42.5	41.0	40.6	41.2
13	42.2	40.4	41.0	41.6	41.8	40.1	41.5
14	40.6	41.6	41.2	41.7	41.4	40.5	39.8
15	40.0	41.4	40.3	43.4	40.3	40.1	41.3
16	39.7	37.5	41.4	41.0	38.9	39.1	39.0
17	40.2	39.9	43.3	41.7	39.7	40.4	40.6
18	41.0	39.9	43.0	43.5	40.6	40.2	41.2
19	41.3	41.6	41.9	42.5	40.7	42.1	41.6
20	41.6	41.8	42.7	45.2	41.9	41.6	41.2
21	44.4	45.7	44.3	42.5	41.7	43.3	43.7
22	41.6	42.3	40.7	43.3	41.8	40.9	43.5
23	42.9	44.0	42.6	42.8	42.4	41.6	40.0
24	45.2	43.3	42.6	44.7	42.8	42.6	42.3
10-12	39.6	40.0	39.9	42.6	40.9	40.0	40.6
14-16	39.9	39.3	40.7	42.2	39.5	39.5	40.0
0-24	41.0	41.2	41.8	42.8	41.1	40.7	41.2

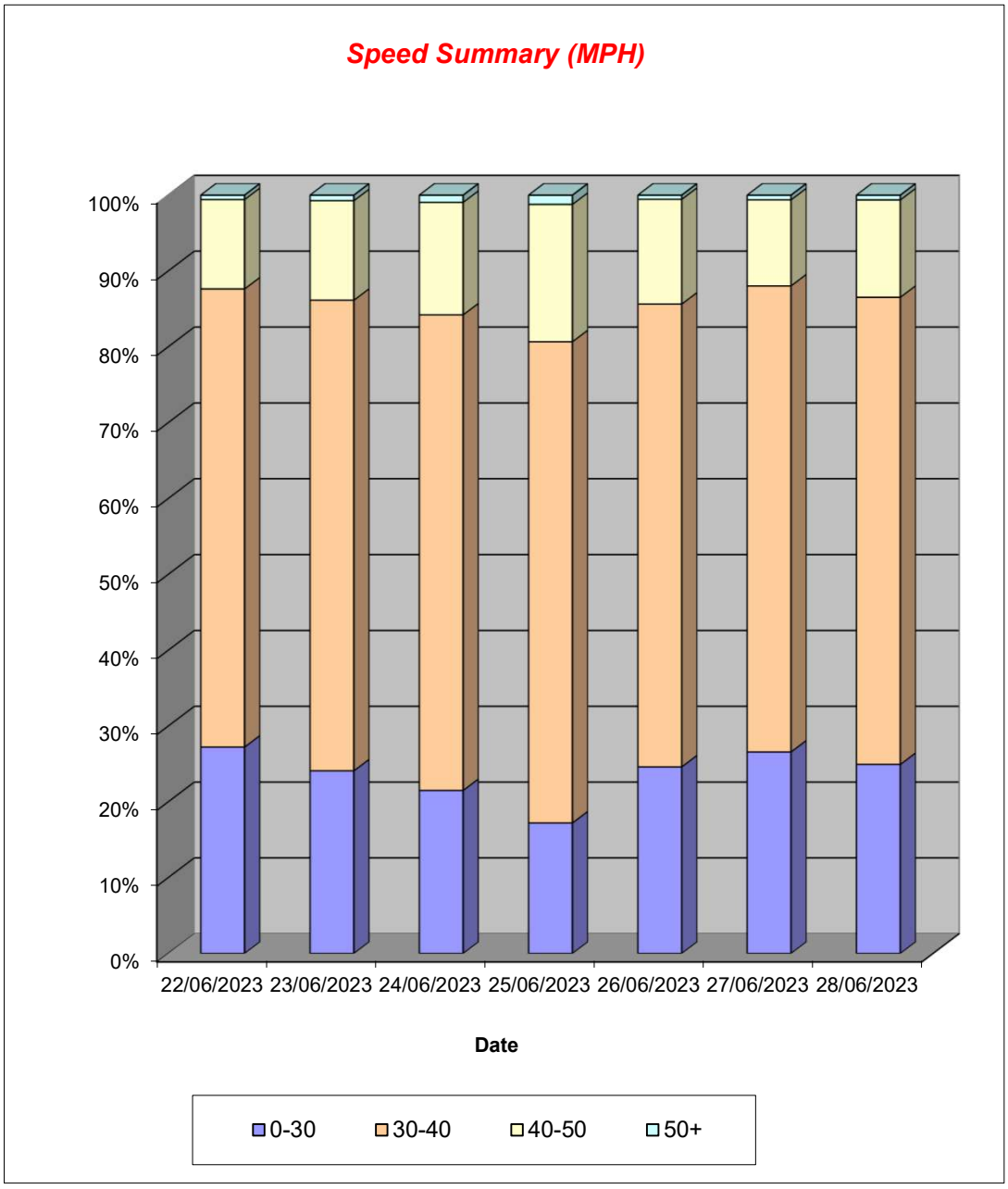
85th %ile (ALL)	41.4
Weekday Inter-Peak	39.9

Raunds ATC, B663 Brick Kiln Road

Produced by Road Data Services Ltd.

Channel 2 - Westbound | **Speed Summary** | **Week 1**

Speed (MPH)	22/06/2023 Thursday	23/06/2023 Friday	24/06/2023 Saturday	25/06/2023 Sunday	26/06/2023 Monday	27/06/2023 Tuesday	28/06/2023 Wednesday
0-30	809	766	502	313	676	734	721
30-40	1794	1972	1463	1153	1675	1696	1780
40-50	350	417	346	329	379	313	371
50+	17	23	22	22	15	17	18
TOTAL	**2970**	**3178**	**2333**	**1817**	**2745**	**2760**	**2890**



Raunds ATC, B663 Brick Kiln Road

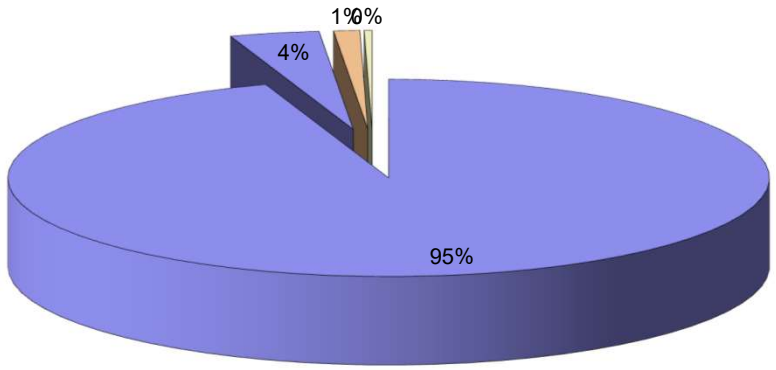
Produced by Road Data Services Ltd.

Channel 2 - Westbound — **Vehicle Class**

Classes / Day / Time	Car / LGV / Caravan - 1	MGV - 2	OGV1 / Bus - 3,5,6,7,12	OGV2 - 4,8,9,10,11,13
22/06/2023				
7-19	2268	106	35	9
6-22	2680	117	39	10
6-24	2728	119	39	10
0-24	2799	119	40	12
23/06/2023				
7-19	2419	100	36	7
6-22	2870	115	38	9
6-24	2942	117	38	9
0-24	3004	121	39	14
24/06/2023				
7-19	1863	58	11	1
6-22	2133	67	12	1
6-24	2194	68	12	1
0-24	2248	70	13	2
25/06/2023				
7-19	1443	44	5	1
6-22	1656	48	7	1
6-24	1703	49	8	1
0-24	1757	50	8	2
26/06/2023				
7-19	2145	96	38	4
6-22	2473	104	39	7
6-24	2507	105	39	7
0-24	2580	111	41	13
27/06/2023				
7-19	2118	100	32	9
6-22	2497	112	33	10
6-24	2533	113	33	10
0-24	2595	117	34	14
28/06/2023				
7-19	2237	103	31	2
6-22	2612	117	31	4
6-24	2662	118	31	4
0-24	2731	122	32	5

Average				
7-19	2070	87	27	5
6-22	2417	97	28	6
6-24	2467	98	29	6
0-24	2531	101	30	9

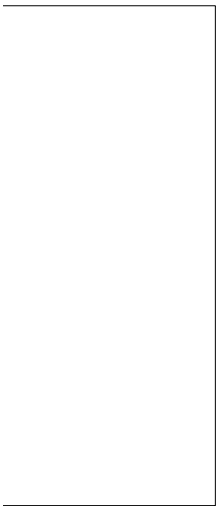
Total Vehicle Class Distribution



Week 1

TOTAL - 1-13
2418
2846
2896
2970
2562
3032
3106
3178
1933
2213
2275
2333
1493
1712
1761
1817
2283
2623
2658
2745
2259
2652
2689
2760
2373
2764
2815
2890

2189
2549
2600
2670



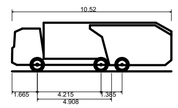
MEC
Development Technical Consultants

APPENDICES

APPENDIX C

NOTES:

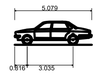
1. DO NOT SCALE FROM THIS DRAWING.



Phoenix 2-23W (with Elite 2 6x4 chassis)

Overall Length	10.520m
Overall Width	2.530m
Overall Body Height	3.211m
Min Body Ground Clearance	0.416m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.950m

REFUSE LORRY PROFILE



Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

LARGE CAR PROFILE

REV.	AMENDMENTS:	DRN:	CHK:	APP:	DATE:
-	FIRST ISSUE	DG	JW	TR	21/07/23

PROJECT:
BRICK KILN ROAD
RAUNDS
MORTHAMPTONSHIRE

DRAWING TITLE:
PROPOSED RESIDENTIAL ACCESS ARRANGEMENTS WITH REFUSE LORRY TRACKING

CLIENT:
MR H. SMITH

DRAWING NUMBER:
25273_08_020_01

REVISION:	SHEET SIZE:	SCALE:
-	A1	1:500

STATUS:
FOR INFORMATION / APPROVAL

M-EC Consulting Development Engineers
Telephone: 01530 264 753
Email: group@m-ec.co.uk
Website: www.m-ec.co.uk

ORDNANCE SURVEY © CROWN COPYRIGHT 2015. ALL RIGHTS RESERVED. LICENCE NUMBER 100055865.

File Location: T:\M-EC Job Book\25273\drawings\25273_08_020_01.dwg
Printed:30.08.2023

MEC
Development Technical Consultants

APPENDICES

APPENDIX D

Calculation Reference: AUDIT-350901-230712-0734

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : B - AFFORDABLE/LOCAL AUTHORITY HOUSES
TOTAL VEHICLES

Selected regions and areas:

03	SOUTH WEST		
	WL	WILTSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	KS	KIRKLEES	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: 17 to 54 (units:)
Range Selected by User: 10 to 100 (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 13/05/22

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:

Tuesday	1 days
Friday	1 days

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

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

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

Selected Locations:

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

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	2

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	X days - Selected
Servicing vehicles Excluded	6 days - Selected

Secondary Filtering selection:

Use Class:

C3	2 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

Population within 1 mile:

5,001 to 10,000	2 days

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

Population within 5 miles:

25,001 to 50,000	1 days
125,001 to 250,000	1 days

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

Car ownership within 5 miles:

1.1 to 1.5	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:

No	2 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	2 days

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

LIST OF SITES relevant to selection parameters

1 KS-03-B-02 TERRACED HOUSES KIRKLEES
SYKES CLOSE
BATLEY

Edge of Town
Residential Zone
Total No of Dwellings: 17
Survey date: FRIDAY *19/10/18* *Survey Type: MANUAL*

2 WL-03-B-01 TERRACED HOUSES WILTSHIRE
BUTTERFIELD DRIVE
AMESBURY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 54
Survey date: TUESDAY *18/09/18* *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/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
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	2	36	0.070	2	36	0.338	2	36	0.408
08:00 - 09:00	2	36	0.211	2	36	0.380	2	36	0.591
09:00 - 10:00	2	36	0.155	2	36	0.268	2	36	0.423
10:00 - 11:00	2	36	0.099	2	36	0.169	2	36	0.268
11:00 - 12:00	2	36	0.085	2	36	0.099	2	36	0.184
12:00 - 13:00	2	36	0.085	2	36	0.028	2	36	0.113
13:00 - 14:00	2	36	0.197	2	36	0.127	2	36	0.324
14:00 - 15:00	2	36	0.155	2	36	0.211	2	36	0.366
15:00 - 16:00	2	36	0.408	2	36	0.113	2	36	0.521
16:00 - 17:00	2	36	0.310	2	36	0.197	2	36	0.507
17:00 - 18:00	2	36	0.366	2	36	0.254	2	36	0.620
18:00 - 19:00	2	36	0.282	2	36	0.268	2	36	0.550
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.423			2.452			4.875

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	17 - 54 (units:)
Survey date date range:	01/01/15 - 13/05/22
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-350901-230712-0708

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	BO	BEDFORD	1 days
	CT	CENTRAL BEDFORDSHIRE	1 days
	ES	EAST SUSSEX	3 days
	EX	ESSEX	2 days
	HC	HAMPSHIRE	7 days
	KC	KENT	3 days
	MW	MEDWAY	1 days
	SC	SURREY	1 days
	WB	WEST BERKSHIRE	1 days
	WS	WEST SUSSEX	2 days
03	SOUTH WEST		
	DC	DORSET	1 days
	DV	DEVON	2 days
	SM	SOMERSET	1 days
04	EAST ANGLIA		
	NF	NORFOLK	12 days
	PB	PETERBOROUGH	1 days
	SF	SUFFOLK	2 days
05	EAST MIDLANDS		
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days
	WK	WARWICKSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	3 days
08	NORTH WEST		
	AC	CHESHIRE WEST & CHESTER	1 days
	LC	LANCASHIRE	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: 10 to 150 (units:)
Range Selected by User: 10 to 150 (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 01/03/23

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	7 days
Tuesday	9 days
Wednesday	19 days
Thursday	7 days
Friday	8 days

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

Selected survey types:

Manual count	44 days
Directional ATC Count	6 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:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	9
Edge of Town	39

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	50

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	12 days - Selected
Servicing vehicles Excluded	51 days - Selected

Secondary Filtering selection:

Use Class:

C3	50 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	5 days
5,001 to 10,000	11 days
10,001 to 15,000	17 days
15,001 to 20,000	8 days
20,001 to 25,000	9 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	9 days
25,001 to 50,000	6 days
50,001 to 75,000	7 days
75,001 to 100,000	5 days
100,001 to 125,000	2 days
125,001 to 250,000	16 days
250,001 to 500,000	5 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	14 days
1.1 to 1.5	34 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	26 days
No	24 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	49 days
2 Poor	1 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 AC-03-A-04 TOWN HOUSES CHESHIRE WEST & CHESTER
LONDON ROAD
NORTHWICH
LEFTWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 24
Survey date: THURSDAY 06/06/19 Survey Type: MANUAL

2 BO-03-A-01 DETACHED HOUSES BEDFORD
CARNOUSTIE DRIVE
BEDFORD
GREAT DENHAM
Edge of Town
Residential Zone
Total No of Dwellings: 30
Survey date: THURSDAY 15/10/20 Survey Type: MANUAL

3 CT-03-A-01 MIXED HOUSES CENTRAL BEDFORDSHIRE
ARLESEY ROAD
STOTFOLD

Edge of Town
Residential Zone
Total No of Dwellings: 46
Survey date: WEDNESDAY 22/06/22 Survey Type: MANUAL

4 DC-03-A-10 MIXED HOUSES DORSET
ADDISON CLOSE
GILLINGHAM

Edge of Town
Residential Zone
Total No of Dwellings: 26
Survey date: WEDNESDAY 09/11/22 Survey Type: MANUAL

5 DV-03-A-02 HOUSES & BUNGALOWS DEVON
MILLHEAD ROAD
HONITON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 116
Survey date: FRIDAY 25/09/15 Survey Type: MANUAL

6 DV-03-A-03 TERRACED & SEMI DETACHED DEVON
LOWER BRAND LANE
HONITON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 70
Survey date: MONDAY 28/09/15 Survey Type: MANUAL

7 ES-03-A-05 MIXED HOUSES & FLATS EAST SUSSEX
RATTLE ROAD
NEAR EASTBOURNE
STONE CROSS
Edge of Town
Residential Zone
Total No of Dwellings: 99
Survey date: WEDNESDAY 05/06/19 Survey Type: MANUAL

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

LIST OF SITES relevant to selection parameters (Cont.)

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

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

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

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

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

12 HC-03-A-21 TERRACED & SEMI-DETACHED HAMPSHIRE
PRIESTLEY ROAD
BASINGSTOKE
HOUNDMILLS
Edge of Town
Residential Zone
Total No of Dwellings: 39
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

13 HC-03-A-22 MIXED HOUSES HAMPSHIRE
BOW LAKE GARDENS
NEAR EASTLEIGH
BISHOPSTOKE
Edge of Town
Residential Zone
Total No of Dwellings: 40
Survey date: WEDNESDAY *31/10/18* *Survey Type: MANUAL*

14 HC-03-A-23 HOUSES & FLATS HAMPSHIRE
CANADA WAY
LIPHOOK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 62
Survey date: TUESDAY *19/11/19* *Survey Type: MANUAL*

15 HC-03-A-27 MIXED HOUSES HAMPSHIRE
DAIRY ROAD
ANDOVER

Edge of Town
Residential Zone
Total No of Dwellings: 73
Survey date: TUESDAY *16/11/21* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

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

17 HC-03-A-30 TERRACED HOUSES HAMPSHIRE
MEUDON AVENUE
FARNBOROUGH

Edge of Town Centre
Residential Zone
Total No of Dwellings: 31
Survey date: FRIDAY *14/10/22* *Survey Type: MANUAL*

18 HC-03-A-31 MIXED HOUSES & FLATS HAMPSHIRE
KILN ROAD
LIPHOOK

Edge of Town
Residential Zone
Total No of Dwellings: 44
Survey date: FRIDAY *07/10/22* *Survey Type: MANUAL*

19 KC-03-A-03 MIXED HOUSES & FLATS KENT
HYTHE ROAD
ASHFORD
WILLESBOROUGH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 51
Survey date: THURSDAY *14/07/16* *Survey Type: MANUAL*

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

21 KC-03-A-09 MIXED HOUSES & FLATS KENT
WESTERN LINK
FAVERSHAM
DAVINGTON
Edge of Town
Residential Zone
Total No of Dwellings: 14
Survey date: WEDNESDAY *09/06/21* *Survey Type: MANUAL*

22 LC-03-A-31 DETACHED HOUSES LANCASHIRE
GREENSIDE
PRESTON
COTTAM
Edge of Town
Residential Zone
Total No of Dwellings: 32
Survey date: FRIDAY *17/11/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

23 MW-03-A-02 MIXED HOUSES MEDWAY
OTTERHAM QUAY LANE
RAINHAM

Edge of Town
Residential Zone
Total No of Dwellings: 19
Survey date: MONDAY *06/06/22* *Survey Type: MANUAL*

24 NF-03-A-03 DETACHED HOUSES NORFOLK
HALING WAY
THETFORD

Edge of Town
Residential Zone
Total No of Dwellings: 10
Survey date: WEDNESDAY *16/09/15* *Survey Type: MANUAL*

25 NF-03-A-10 MIXED HOUSES & FLATS NORFOLK
HUNSTANTON ROAD
HUNSTANTON

Edge of Town
Residential Zone
Total No of Dwellings: 17
Survey date: WEDNESDAY *12/09/18* *Survey Type: DIRECTIONAL ATC COUNT*

26 NF-03-A-14 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 150
Survey date: THURSDAY *05/10/17* *Survey Type: DIRECTIONAL ATC COUNT*

27 NF-03-A-16 MIXED HOUSES & FLATS NORFOLK
NORWICH COMMON
WYMONDHAM

Edge of Town
Residential Zone
Total No of Dwellings: 138
Survey date: TUESDAY *20/10/15* *Survey Type: DIRECTIONAL ATC COUNT*

28 NF-03-A-24 MIXED HOUSES & FLATS NORFOLK
HUNSTANTON ROAD
HUNSTANTON

Edge of Town
Residential Zone
Total No of Dwellings: 127
Survey date: WEDNESDAY *22/09/21* *Survey Type: DIRECTIONAL ATC COUNT*

29 NF-03-A-25 MIXED HOUSES & FLATS NORFOLK
WOODFARM LANE
GORLESTON-ON-SEA

Edge of Town
Residential Zone
Total No of Dwellings: 55
Survey date: TUESDAY *21/09/21* *Survey Type: MANUAL*

30 NF-03-A-26 MIXED HOUSES NORFOLK
HEATH DRIVE
HOLT

Edge of Town
Residential Zone
Total No of Dwellings: 91
Survey date: WEDNESDAY *22/09/21* *Survey Type: DIRECTIONAL ATC COUNT*

LIST OF SITES relevant to selection parameters (Cont.)

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

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

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

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

33 NF-03-A-37 MIXED HOUSES NORFOLK
GREENFIELDS ROAD
DEREHAM

Edge of Town
Residential Zone
Total No of Dwellings: 44
Survey date: TUESDAY *27/09/22* *Survey Type: MANUAL*

34 NF-03-A-49 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 141
Survey date: FRIDAY *14/09/18* *Survey Type: DIRECTIONAL ATC COUNT*

35 NF-03-A-51 SEMI-DETACHED NORFOLK
CITY ROAD
NORWICH
LAKENHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 34
Survey date: TUESDAY *13/09/22* *Survey Type: MANUAL*

36 NT-03-A-08 DETACHED HOUSES NOTTINGHAMSHIRE
WIGHAY ROAD
HUCKNALL

Edge of Town
Residential Zone
Total No of Dwellings: 36
Survey date: MONDAY *18/10/21* *Survey Type: MANUAL*

37 NY-03-A-12 TOWN HOUSES NORTH YORKSHIRE
RACECOURSE LANE
NORTHALLERTON

Edge of Town Centre
Residential Zone
Total No of Dwellings: 47
Survey date: TUESDAY *27/09/16* *Survey Type: MANUAL*

38 NY-03-A-13 TERRACED HOUSES NORTH YORKSHIRE
CATTERICK ROAD
CATTERICK GARRISON
OLD HOSPITAL COMPOUND
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 10
Survey date: WEDNESDAY *10/05/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

39 NY-03-A-14 DETACHED & BUNGALOWS NORTH YORKSHIRE
PALACE ROAD
RIPON

Edge of Town
Residential Zone
Total No of Dwellings: 45
Survey date: WEDNESDAY *18/05/22* *Survey Type: MANUAL*

40 PB-03-A-04 DETACHED HOUSES PETERBOROUGH
EASTFIELD ROAD
PETERBOROUGH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 28
Survey date: MONDAY *17/10/16* *Survey Type: MANUAL*

41 SC-03-A-07 MIXED HOUSES SURREY
FOLLY HILL
FARNHAM

Edge of Town
Residential Zone
Total No of Dwellings: 41
Survey date: WEDNESDAY *11/05/22* *Survey Type: MANUAL*

42 SF-03-A-05 DETACHED HOUSES SUFFOLK
VALE LANE
BURY ST EDMUNDS

Edge of Town
Residential Zone
Total No of Dwellings: 18
Survey date: WEDNESDAY *09/09/15* *Survey Type: MANUAL*

43 SF-03-A-10 TERRACED & SEMI-DETACHED SUFFOLK
LOVETOFTS DRIVE
IPSWICH
WHITEHOUSE
Edge of Town
Residential Zone
Total No of Dwellings: 149
Survey date: TUESDAY *22/06/21* *Survey Type: MANUAL*

44 SM-03-A-01 DETACHED & SEMI SOMERSET
WEMBDON ROAD
BRIDGWATER
NORTHFIELD
Edge of Town
Residential Zone
Total No of Dwellings: 33
Survey date: THURSDAY *24/09/15* *Survey Type: MANUAL*

45 ST-03-A-08 DETACHED HOUSES STAFFORDSHIRE
SILKMORE CRESCENT
STAFFORD
MEADOWCROFT PARK
Edge of Town
Residential Zone
Total No of Dwellings: 26
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

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

47 WK-03-A-03 DETACHED HOUSES WARWICKSHIRE
BRESE AVENUE
WARWICK
GUYS CLIFFE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 23
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

48 WK-03-A-04 DETACHED HOUSES WARWICKSHIRE
DALEHOUSE LANE
KENILWORTH

Edge of Town
Residential Zone
Total No of Dwellings: 49
Survey date: FRIDAY *27/09/19* *Survey Type: MANUAL*

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

50 WS-03-A-17 MIXED HOUSES & FLATS WEST SUSSEX
SHOPWHYKE ROAD
CHICHESTER

Edge of Town
Residential Zone
Total No of Dwellings: 86
Survey date: WEDNESDAY *01/03/23* *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	50	67	0.086	50	67	0.290	50	67	0.376
08:00 - 09:00	50	67	0.156	50	67	0.371	50	67	0.527
09:00 - 10:00	50	67	0.146	50	67	0.181	50	67	0.327
10:00 - 11:00	50	67	0.134	50	67	0.167	50	67	0.301
11:00 - 12:00	50	67	0.143	50	67	0.148	50	67	0.291
12:00 - 13:00	50	67	0.162	50	67	0.158	50	67	0.320
13:00 - 14:00	50	67	0.171	50	67	0.160	50	67	0.331
14:00 - 15:00	50	67	0.168	50	67	0.199	50	67	0.367
15:00 - 16:00	50	67	0.263	50	67	0.185	50	67	0.448
16:00 - 17:00	50	67	0.273	50	67	0.167	50	67	0.440
17:00 - 18:00	50	67	0.342	50	67	0.168	50	67	0.510
18:00 - 19:00	50	67	0.271	50	67	0.148	50	67	0.419
19:00 - 20:00	1	97	0.062	1	97	0.052	1	97	0.114
20:00 - 21:00	1	97	0.031	1	97	0.021	1	97	0.052
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.408			2.415			4.823

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	10 - 150 (units:)
Survey date date range:	01/01/15 - 01/03/23
Number of weekdays (Monday-Friday):	50
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	7
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.

MEC
Development Technical Consultants

APPENDICES

APPENDIX E

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 1
Approach: Raunds Road

	To A45 (E)									To Services Access									To B663									To A45 (W)								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	0	1	0	0	0	1	1.0	0	0	4	1	0	0	0	5	5.0	0	0	11	2	1	0	0	14	14.5	0	0	51	6	1	0	0	58	58.5
07:45 - 08:00	0	0	0	0	0	0	0	0	0.0	0	0	2	1	0	0	0	3	3.0	0	0	14	2	0	0	0	16	16.0	0	0	38	7	0	0	0	45	45.0
Hourly Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.0**	**0**	**0**	**6**	**2**	**0**	**0**	**0**	**8**	**8.0**	**0**	**0**	**25**	**4**	**1**	**0**	**0**	**30**	**30.5**	**0**	**0**	**89**	**13**	**1**	**0**	**0**	**103**	**103.5**
08:00 - 08:15	0	0	2	0	0	0	0	2	2.0	1	0	5	3	0	0	0	9	8.2	0	0	18	1	0	0	0	19	19.0	0	0	45	3	1	0	0	49	49.5
08:15 - 08:30	0	0	1	0	0	0	0	1	1.0	0	0	3	1	0	0	0	4	4.0	0	0	20	1	0	0	2	23	25.0	0	0	36	6	0	0	0	42	42.0
08:30 - 08:45	0	0	2	1	0	0	0	3	3.0	0	0	4	1	0	0	0	5	5.0	0	0	16	2	0	0	0	18	18.0	0	1	30	5	1	0	0	37	36.9
08:45 - 09:00	0	0	0	0	0	0	0	0	0.0	0	0	5	0	0	0	0	5	5.0	0	1	21	2	0	0	0	24	23.4	0	0	36	8	1	1	0	46	47.5
Hourly Total	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**6**	**6.0**	**1**	**0**	**17**	**5**	**0**	**0**	**0**	**23**	**22.2**	**0**	**1**	**75**	**6**	**0**	**0**	**2**	**84**	**85.4**	**0**	**1**	**147**	**22**	**3**	**1**	**0**	**174**	**176.2**
09:00 - 09:15	0	0	2	0	0	1	0	3	4.3	0	0	3	0	0	0	0	3	3.0	0	0	26	1	0	0	0	27	27.0	0	0	41	3	2	2	0	48	51.6
09:15 - 09:30	0	0	2	1	0	2	0	5	7.6	0	0	4	1	0	0	0	5	5.0	0	0	8	2	1	0	0	11	11.5	0	0	30	6	3	0	0	39	40.5
Hourly Total	**0**	**0**	**4**	**1**	**0**	**3**	**0**	**8**	**11.9**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**8**	**8.0**	**0**	**0**	**34**	**3**	**1**	**0**	**0**	**38**	**38.5**	**0**	**0**	**71**	**9**	**5**	**2**	**0**	**87**	**92.1**
TOTAL	**0**	**0**	**9**	**3**	**0**	**3**	**0**	**15**	**18.9**	**1**	**0**	**30**	**8**	**0**	**0**	**0**	**39**	**38.2**	**0**	**1**	**134**	**13**	**2**	**0**	**2**	**152**	**154.4**	**0**	**1**	**307**	**44**	**9**	**3**	**0**	**364**	**371.8**
16:30 - 16:45	0	0	0	0	0	0	0	0	0.0	0	0	7	1	0	0	0	8	8.0	1	0	22	5	1	0	0	29	28.7	0	0	36	12	0	1	0	49	50.3
16:45 - 17:00	0	0	1	0	0	2	0	3	5.6	0	0	4	0	0	0	0	4	4.0	0	2	23	2	0	0	0	27	25.8	0	1	37	3	0	2	0	43	45.0
Hourly Total	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**3**	**5.6**	**0**	**0**	**11**	**1**	**0**	**0**	**0**	**12**	**12.0**	**1**	**2**	**45**	**7**	**1**	**0**	**0**	**56**	**54.5**	**0**	**1**	**73**	**15**	**0**	**3**	**0**	**92**	**95.3**
17:00 - 17:15	0	0	1	2	0	1	0	4	5.3	0	0	5	1	0	0	0	6	6.0	0	0	25	4	0	0	0	29	29.0	0	0	47	10	0	0	0	57	57.0
17:15 - 17:30	0	0	5	0	0	0	0	5	5.0	0	0	6	0	0	0	0	6	6.0	0	0	28	5	0	0	0	33	33.0	0	0	47	10	0	0	0	57	57.0
17:30 - 17:45	0	0	2	2	0	0	0	4	4.0	0	0	4	1	0	0	0	5	5.0	0	0	15	4	0	0	0	19	19.0	0	0	34	5	1	0	0	40	40.5
17:45 - 18:00	0	0	3	1	0	0	0	4	4.0	0	0	4	0	0	0	0	4	4.0	0	0	14	2	0	0	0	16	16.0	0	0	32	3	1	0	0	36	36.5
Hourly Total	**0**	**0**	**11**	**5**	**0**	**1**	**0**	**17**	**18.3**	**0**	**0**	**19**	**2**	**0**	**0**	**0**	**21**	**21.0**	**0**	**0**	**82**	**15**	**0**	**0**	**0**	**97**	**97.0**	**0**	**0**	**160**	**28**	**2**	**0**	**0**	**190**	**191.0**
18:00 - 18:15	0	0	2	1	0	0	0	3	3.0	0	0	3	1	0	0	0	4	4.0	0	0	16	4	0	0	0	20	20.0	0	0	30	4	0	0	0	34	34.0
18:15 - 18:30	0	0	1	1	0	0	0	2	2.0	0	0	4	1	0	0	0	5	5.0	0	0	14	2	0	0	0	16	16.0	0	0	27	2	0	0	0	29	29.0
Hourly Total	**0**	**0**	**3**	**2**	**0**	**0**	**0**	**5**	**5.0**	**0**	**0**	**7**	**2**	**0**	**0**	**0**	**9**	**9.0**	**0**	**0**	**30**	**6**	**0**	**0**	**0**	**36**	**36.0**	**0**	**0**	**57**	**6**	**0**	**0**	**0**	**63**	**63.0**
TOTAL	**0**	**0**	**15**	**7**	**0**	**3**	**0**	**25**	**28.9**	**0**	**0**	**37**	**5**	**0**	**0**	**0**	**42**	**42.0**	**1**	**2**	**157**	**28**	**1**	**0**	**0**	**189**	**187.5**	**0**	**1**	**290**	**49**	**2**	**3**	**0**	**345**	**349.3**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 1
Approach: A45 East

	To Services Access									To B663									To A45 (W)									To Raunds Road								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	6	4	2	1	0	13	15.3	0	0	27	6	2	3	0	38	42.9	0	1	118	40	12	21	0	192	224.7	0	0	4	2	1	0	0	7	7.5
07:45 - 08:00	0	0	6	2	0	0	0	8	8.0	0	0	42	11	1	0	0	54	54.5	0	0	110	30	7	18	0	165	191.9	0	0	1	0	0	0	0	1	1.0
Hourly Total	**0**	**0**	**12**	**6**	**2**	**1**	**0**	**21**	**23.3**	**0**	**0**	**69**	**17**	**3**	**3**	**0**	**92**	**97.4**	**0**	**1**	**228**	**70**	**19**	**39**	**0**	**357**	**416.6**	**0**	**0**	**5**	**2**	**1**	**0**	**0**	**8**	**8.5**
08:00 - 08:15	0	0	11	2	0	0	0	13	13.0	0	0	47	16	4	2	0	69	73.6	0	1	101	25	9	23	0	159	192.8	0	0	2	2	1	0	0	5	5.5
08:15 - 08:30	0	0	4	5	1	0	0	10	10.5	0	1	53	11	2	5	0	72	78.9	0	0	97	41	8	34	0	180	228.2	0	0	3	1	0	0	0	4	4.0
08:30 - 08:45	0	0	1	1	1	1	0	4	5.8	0	0	48	10	2	4	0	64	70.2	0	1	90	31	8	28	0	158	197.8	0	0	2	1	0	0	0	3	3.0
08:45 - 09:00	0	0	6	1	1	0	0	8	8.5	0	0	51	7	2	5	0	65	72.5	0	0	93	20	17	11	1	142	165.8	0	0	3	0	1	1	0	5	6.8
Hourly Total	**0**	**0**	**22**	**9**	**3**	**1**	**0**	**35**	**37.8**	**0**	**1**	**199**	**44**	**10**	**16**	**0**	**270**	**295.2**	**0**	**2**	**381**	**117**	**42**	**96**	**1**	**639**	**784.6**	**0**	**0**	**10**	**4**	**2**	**1**	**0**	**17**	**19.3**
09:00 - 09:15	0	0	4	1	1	2	0	8	11.1	0	0	45	8	2	0	0	55	56.0	0	0	74	31	16	13	0	134	158.9	0	0	4	1	0	0	0	5	5.0
09:15 - 09:30	0	0	8	2	1	1	0	12	13.8	0	0	26	5	2	4	0	37	43.2	0	0	81	28	11	19	0	139	169.2	0	0	5	1	0	1	0	7	8.3
Hourly Total	**0**	**0**	**12**	**3**	**2**	**3**	**0**	**20**	**24.9**	**0**	**0**	**71**	**13**	**4**	**4**	**0**	**92**	**99.2**	**0**	**0**	**155**	**59**	**27**	**32**	**0**	**273**	**328.1**	**0**	**0**	**9**	**2**	**0**	**1**	**0**	**12**	**13.3**
TOTAL	**0**	**0**	**46**	**18**	**7**	**5**	**0**	**76**	**86.0**	**0**	**1**	**339**	**74**	**17**	**23**	**0**	**454**	**491.8**	**0**	**3**	**764**	**246**	**88**	**167**	**1**	**1269**	**1529.3**	**0**	**0**	**24**	**8**	**3**	**2**	**0**	**37**	**41.1**
16:30 - 16:45	0	0	5	2	0	0	0	7	7.0	0	0	76	15	3	2	0	96	100.1	0	0	132	40	3	16	0	191	213.3	0	0	8	1	0	0	0	9	9.0
16:45 - 17:00	0	0	4	1	1	1	0	7	8.8	0	2	70	20	3	1	0	96	97.6	0	1	111	54	8	15	0	189	211.9	0	0	7	2	0	1	0	10	11.3
Hourly Total	**0**	**0**	**9**	**3**	**1**	**1**	**0**	**14**	**15.8**	**0**	**2**	**146**	**35**	**6**	**3**	**0**	**192**	**197.7**	**0**	**1**	**243**	**94**	**11**	**31**	**0**	**380**	**425.2**	**0**	**0**	**15**	**3**	**0**	**1**	**0**	**19**	**20.3**
17:00 - 17:15	0	0	7	5	1	0	0	13	13.5	0	0	50	13	4	4	0	71	78.2	0	3	115	40	7	17	0	182	205.8	0	4	3	2	1	1	0	11	10.4
17:15 - 17:30	0	0	5	2	1	2	0	10	13.1	0	2	63	15	3	4	0	87	92.5	0	2	129	35	5	15	0	186	206.8	0	0	2	1	2	0	0	5	6.0
17:30 - 17:45	0	0	12	2	0	0	0	14	14.0	0	0	58	13	4	5	0	80	88.5	0	0	141	26	5	7	1	180	192.6	0	0	4	2	0	2	0	8	10.6
17:45 - 18:00	0	0	10	2	0	1	0	13	14.3	0	0	59	10	2	6	0	77	85.8	0	0	133	29	7	7	0	176	188.6	0	0	8	1	1	0	0	10	10.5
Hourly Total	**0**	**0**	**34**	**11**	**2**	**3**	**0**	**50**	**54.9**	**0**	**2**	**230**	**51**	**13**	**19**	**0**	**315**	**345.0**	**0**	**5**	**518**	**130**	**24**	**46**	**1**	**724**	**793.8**	**0**	**4**	**17**	**6**	**4**	**3**	**0**	**34**	**37.5**
18:00 - 18:15	0	0	10	3	0	1	0	14	15.3	0	0	61	7	2	2	0	72	75.6	0	4	105	18	8	6	0	141	150.4	0	0	4	1	0	0	0	5	5.0
18:15 - 18:30	0	0	12	2	0	0	0	14	14.0	0	0	48	6	2	3	0	59	63.9	0	0	107	21	3	9	0	140	153.2	0	0	7	1	2	1	0	11	13.3
Hourly Total	**0**	**0**	**22**	**5**	**0**	**1**	**0**	**28**	**29.3**	**0**	**0**	**109**	**13**	**4**	**5**	**0**	**131**	**139.5**	**0**	**4**	**212**	**39**	**11**	**15**	**0**	**281**	**303.6**	**0**	**0**	**11**	**2**	**2**	**1**	**0**	**16**	**18.3**
TOTAL	**0**	**0**	**65**	**19**	**3**	**5**	**0**	**92**	**100.0**	**0**	**4**	**485**	**99**	**23**	**27**	**0**	**638**	**682.2**	**0**	**10**	**973**	**263**	**46**	**92**	**1**	**1385**	**1522.6**	**0**	**4**	**43**	**11**	**6**	**5**	**0**	**69**	**76.1**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 1
Approach: Services Access

	To B663									To A45 (W)									To Raunds Road									To A45 (E)								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	1	3	4	4	0	0	12	13.4	0	0	9	3	0	2	0	14	16.6	0	0	3	1	0	0	0	4	4.0	0	0	5	2	0	2	0	9	11.6
07:45 - 08:00	0	0	10	2	3	0	0	15	16.5	0	0	8	4	1	0	0	13	13.5	0	0	2	1	0	0	0	3	3.0	0	0	7	4	1	1	0	13	14.8
Hourly Total	**0**	**1**	**13**	**6**	**7**	**0**	**0**	**27**	**29.9**	**0**	**0**	**17**	**7**	**1**	**2**	**0**	**27**	**30.1**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**7**	**7.0**	**0**	**0**	**12**	**6**	**1**	**3**	**0**	**22**	**26.4**
08:00 - 08:15	0	0	6	1	0	0	0	7	7.0	0	0	8	9	0	0	0	17	17.0	0	0	1	1	0	0	0	2	2.0	0	0	2	3	0	0	0	5	5.0
08:15 - 08:30	0	0	5	1	0	0	0	6	6.0	0	0	6	7	0	0	0	13	13.0	0	0	1	0	0	0	0	1	1.0	0	0	4	2	0	0	0	6	6.0
08:30 - 08:45	0	0	6	2	0	0	0	8	8.0	0	0	11	4	0	1	0	16	17.3	1	0	3	1	0	0	0	5	4.2	0	0	5	4	0	0	0	9	9.0
08:45 - 09:00	0	0	11	0	1	0	0	12	12.5	0	0	8	2	1	2	0	13	16.1	0	0	3	0	0	0	0	3	3.0	0	0	3	1	0	2	0	6	8.6
Hourly Total	**0**	**0**	**28**	**4**	**1**	**0**	**0**	**33**	**33.5**	**0**	**0**	**33**	**22**	**1**	**3**	**0**	**59**	**63.4**	**1**	**0**	**8**	**2**	**0**	**0**	**0**	**11**	**10.2**	**0**	**0**	**14**	**10**	**0**	**2**	**0**	**26**	**28.6**
09:00 - 09:15	0	0	11	3	0	0	0	14	14.0	0	0	4	3	1	1	0	9	10.8	0	0	1	0	0	0	0	1	1.0	0	0	4	2	1	0	0	7	7.5
09:15 - 09:30	0	0	6	1	1	0	0	8	8.5	0	0	12	2	2	3	0	19	23.9	0	0	1	0	0	0	0	1	1.0	0	0	7	1	1	0	0	9	9.5
Hourly Total	**0**	**0**	**17**	**4**	**1**	**0**	**0**	**22**	**22.5**	**0**	**0**	**16**	**5**	**3**	**4**	**0**	**28**	**34.7**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**	**0**	**0**	**11**	**3**	**2**	**0**	**0**	**16**	**17.0**
TOTAL	**0**	**1**	**58**	**14**	**9**	**0**	**0**	**82**	**85.9**	**0**	**0**	**66**	**34**	**5**	**9**	**0**	**114**	**128.2**	**1**	**0**	**15**	**4**	**0**	**0**	**0**	**20**	**19.2**	**0**	**0**	**37**	**19**	**3**	**5**	**0**	**64**	**72.0**
16:30 - 16:45	0	0	9	2	1	0	0	12	12.5	0	0	8	3	0	0	0	11	11.0	0	0	2	1	0	0	0	3	3.0	0	0	4	1	0	1	0	6	7.3
16:45 - 17:00	0	0	11	0	0	0	0	11	11.0	0	0	9	3	2	1	0	15	17.3	0	0	2	1	0	0	0	3	3.0	0	0	4	2	0	1	0	7	8.3
Hourly Total	**0**	**0**	**20**	**2**	**1**	**0**	**0**	**23**	**23.5**	**0**	**0**	**17**	**6**	**2**	**1**	**0**	**26**	**28.3**	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**6**	**6.0**	**0**	**0**	**8**	**3**	**0**	**2**	**0**	**13**	**15.6**
17:00 - 17:15	0	0	10	3	0	0	0	13	13.0	0	0	6	3	1	0	0	10	10.5	0	0	2	1	0	0	0	3	3.0	0	0	4	2	0	0	0	6	6.0
17:15 - 17:30	0	0	13	3	0	0	0	16	16.0	0	0	12	3	0	0	0	15	15.0	0	0	2	1	0	0	0	3	3.0	0	0	8	2	0	1	0	11	12.3
17:30 - 17:45	0	0	16	0	0	0	0	16	16.0	0	0	18	2	0	2	0	22	24.6	0	0	4	0	0	0	0	4	4.0	0	0	10	2	0	2	0	14	16.6
17:45 - 18:00	0	0	18	2	0	0	0	20	20.0	0	0	9	1	1	0	0	11	11.5	0	0	4	0	0	0	0	4	4.0	0	0	14	1	0	0	0	15	15.0
Hourly Total	**0**	**0**	**57**	**8**	**0**	**0**	**0**	**65**	**65.0**	**0**	**0**	**45**	**9**	**2**	**2**	**0**	**58**	**61.6**	**0**	**0**	**12**	**2**	**0**	**0**	**0**	**14**	**14.0**	**0**	**0**	**36**	**7**	**0**	**3**	**0**	**46**	**49.9**
18:00 - 18:15	0	0	13	6	1	0	0	20	20.5	0	0	19	0	1	0	0	20	20.5	0	0	2	0	0	0	0	2	2.0	0	0	3	1	0	1	0	5	6.3
18:15 - 18:30	0	0	20	2	0	1	0	23	24.3	0	0	9	3	0	0	0	12	12.0	0	0	1	1	0	0	0	2	2.0	0	0	6	0	0	0	0	6	6.0
Hourly Total	**0**	**0**	**33**	**8**	**1**	**1**	**0**	**43**	**44.8**	**0**	**0**	**28**	**3**	**1**	**0**	**0**	**32**	**32.5**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**4**	**4.0**	**0**	**0**	**9**	**1**	**0**	**1**	**0**	**11**	**12.3**
TOTAL	**0**	**0**	**110**	**18**	**2**	**1**	**0**	**131**	**133.3**	**0**	**0**	**90**	**18**	**5**	**3**	**0**	**116**	**122.4**	**0**	**0**	**19**	**5**	**0**	**0**	**0**	**24**	**24.0**	**0**	**0**	**53**	**11**	**0**	**6**	**0**	**70**	**77.8**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 1
Approach: B663

	To A45 (W)									To Raunds Road									To A45 (E)									To Services Access								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	83	15	1	2	0	101	104.1	0	0	38	4	0	0	1	43	44.0	0	1	65	17	4	5	0	92	99.9	0	0	8	2	1	0	0	11	11.5
07:45 - 08:00	0	1	63	13	2	1	0	80	81.7	0	0	16	1	0	0	0	17	17.0	0	0	66	12	4	7	0	89	100.1	0	0	3	2	0	0	0	5	5.0
Hourly Total	**0**	**1**	**146**	**28**	**3**	**3**	**0**	**181**	**185.8**	**0**	**0**	**54**	**5**	**0**	**0**	**1**	**60**	**61.0**	**0**	**1**	**131**	**29**	**8**	**12**	**0**	**181**	**200.0**	**0**	**0**	**11**	**4**	**1**	**0**	**0**	**16**	**16.5**
08:00 - 08:15	0	2	60	20	4	3	1	90	95.7	0	0	27	1	1	0	1	30	31.5	0	0	47	15	5	3	1	71	78.4	0	0	5	4	0	0	0	9	9.0
08:15 - 08:30	0	0	59	9	1	4	0	73	78.7	0	0	21	1	0	0	0	22	22.0	0	0	42	16	2	5	0	65	72.5	0	0	3	1	0	0	0	4	4.0
08:30 - 08:45	0	0	62	6	3	2	0	73	77.1	0	0	26	3	0	0	0	29	29.0	0	0	45	21	4	4	2	76	85.2	0	0	6	2	0	0	0	8	8.0
08:45 - 09:00	0	0	64	9	0	5	0	78	84.5	0	0	37	2	3	0	0	42	43.5	0	0	60	6	1	3	0	70	74.4	0	0	10	1	0	0	0	11	11.0
Hourly Total	**0**	**2**	**245**	**44**	**8**	**14**	**1**	**314**	**336.0**	**0**	**0**	**111**	**7**	**4**	**0**	**1**	**123**	**126.0**	**0**	**0**	**194**	**58**	**12**	**15**	**3**	**282**	**310.5**	**0**	**0**	**24**	**8**	**0**	**0**	**0**	**32**	**32.0**
09:00 - 09:15	0	0	51	15	3	2	0	71	75.1	0	0	18	3	0	0	0	21	21.0	0	0	45	18	3	7	0	73	83.6	0	0	5	3	0	0	0	8	8.0
09:15 - 09:30	0	0	46	9	3	0	0	58	59.5	0	0	12	2	0	0	0	14	14.0	0	0	39	9	3	1	0	52	54.8	0	0	5	1	2	0	0	8	9.0
Hourly Total	**0**	**0**	**97**	**24**	**6**	**2**	**0**	**129**	**134.6**	**0**	**0**	**30**	**5**	**0**	**0**	**0**	**35**	**35.0**	**0**	**0**	**84**	**27**	**6**	**8**	**0**	**125**	**138.4**	**0**	**0**	**10**	**4**	**2**	**0**	**0**	**16**	**17.0**
TOTAL	**0**	**3**	**488**	**96**	**17**	**19**	**1**	**624**	**656.4**	**0**	**0**	**195**	**17**	**4**	**0**	**2**	**218**	**222.0**	**0**	**1**	**409**	**114**	**26**	**35**	**3**	**588**	**648.9**	**0**	**0**	**45**	**16**	**3**	**0**	**0**	**64**	**65.5**
16:30 - 16:45	0	0	63	18	2	1	0	84	86.3	0	0	27	6	0	0	0	33	33.0	0	0	49	18	1	7	0	75	84.6	0	0	8	2	0	0	0	10	10.0
16:45 - 17:00	0	0	38	9	1	4	0	52	57.7	0	0	34	6	0	0	0	40	40.0	0	0	51	14	1	5	0	71	78.0	0	0	6	2	0	0	0	8	8.0
Hourly Total	**0**	**0**	**101**	**27**	**3**	**5**	**0**	**136**	**144.0**	**0**	**0**	**61**	**12**	**0**	**0**	**0**	**73**	**73.0**	**0**	**0**	**100**	**32**	**2**	**12**	**0**	**146**	**162.6**	**0**	**0**	**14**	**4**	**0**	**0**	**0**	**18**	**18.0**
17:00 - 17:15	0	0	59	9	3	0	0	71	72.5	0	0	29	2	0	1	0	32	33.3	0	0	90	15	1	4	0	110	115.7	0	0	10	3	0	0	1	14	15.0
17:15 - 17:30	0	0	69	6	1	1	0	77	78.8	0	2	20	2	1	0	1	26	26.3	0	0	61	13	1	1	0	76	77.8	0	0	11	0	0	0	0	11	11.0
17:30 - 17:45	0	0	48	4	0	2	0	54	56.6	0	0	22	2	0	1	0	25	26.3	0	0	62	11	1	4	0	78	83.7	0	0	11	1	0	0	0	12	12.0
17:45 - 18:00	0	0	52	6	0	0	0	58	58.0	0	0	15	1	0	0	0	16	16.0	0	0	41	11	1	3	0	56	60.4	0	0	7	1	0	0	0	8	8.0
Hourly Total	**0**	**0**	**228**	**25**	**4**	**3**	**0**	**260**	**265.9**	**0**	**2**	**86**	**7**	**1**	**2**	**1**	**99**	**101.9**	**0**	**0**	**254**	**50**	**4**	**12**	**0**	**320**	**337.6**	**0**	**0**	**39**	**5**	**0**	**0**	**1**	**45**	**46.0**
18:00 - 18:15	0	0	62	2	1	0	0	65	65.5	0	0	28	6	0	0	0	34	34.0	0	0	45	7	0	3	0	55	58.9	0	0	7	1	0	0	0	8	8.0
18:15 - 18:30	0	0	44	3	2	1	0	50	52.3	0	0	10	1	0	0	0	11	11.0	0	0	45	7	1	1	1	55	57.8	0	0	9	1	0	0	0	10	10.0
Hourly Total	**0**	**0**	**106**	**5**	**3**	**1**	**0**	**115**	**117.8**	**0**	**0**	**38**	**7**	**0**	**0**	**0**	**45**	**45.0**	**0**	**0**	**90**	**14**	**1**	**4**	**1**	**110**	**116.7**	**0**	**0**	**16**	**2**	**0**	**0**	**0**	**18**	**18.0**
TOTAL	**0**	**0**	**435**	**57**	**10**	**9**	**0**	**511**	**527.7**	**0**	**2**	**185**	**26**	**1**	**2**	**1**	**217**	**219.9**	**0**	**0**	**444**	**96**	**7**	**28**	**1**	**576**	**616.9**	**0**	**0**	**69**	**11**	**0**	**0**	**1**	**81**	**82.0**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 1
Approach: A45 West

	To Raunds Road									To A45 (E)									To Services Access									To B663								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	20	4	0	0	0	24	24.0	0	0	103	32	9	13	0	157	178.4	0	0	10	3	2	0	0	15	16.0	0	0	50	21	2	2	1	76	80.6
07:45 - 08:00	0	0	14	5	1	0	0	20	20.5	0	0	110	43	13	19	2	187	220.2	0	0	6	5	2	0	0	13	14.0	0	1	61	14	4	1	1	82	85.7
Hourly Total	**0**	**0**	**34**	**9**	**1**	**0**	**0**	**44**	**44.5**	**0**	**0**	**213**	**75**	**22**	**32**	**2**	**344**	**398.6**	**0**	**0**	**16**	**8**	**4**	**0**	**0**	**28**	**30.0**	**0**	**1**	**111**	**35**	**6**	**3**	**2**	**158**	**166.3**
08:00 - 08:15	0	0	12	9	2	0	0	23	24.0	0	2	129	42	14	14	2	203	229.0	0	0	5	5	1	0	0	11	11.5	0	0	50	10	4	2	0	66	70.6
08:15 - 08:30	0	0	23	4	0	2	0	29	31.6	0	0	103	43	9	13	0	168	189.4	0	0	6	6	0	0	0	12	12.0	0	0	63	8	2	1	0	74	76.3
08:30 - 08:45	0	0	18	3	0	3	0	24	27.9	0	0	92	31	19	14	0	156	183.7	0	0	10	2	1	3	0	16	20.4	0	0	57	8	2	1	0	68	70.3
08:45 - 09:00	0	0	14	4	1	2	0	21	24.1	0	0	61	21	14	11	0	107	128.3	0	0	10	1	0	0	0	11	11.0	0	1	63	9	3	2	0	78	81.5
Hourly Total	**0**	**0**	**67**	**20**	**3**	**7**	**0**	**97**	**107.6**	**0**	**2**	**385**	**137**	**56**	**52**	**2**	**634**	**730.4**	**0**	**0**	**31**	**14**	**2**	**3**	**0**	**50**	**54.9**	**0**	**1**	**233**	**35**	**11**	**6**	**0**	**286**	**298.7**
09:00 - 09:15	0	0	14	1	1	1	0	17	18.8	0	0	80	21	13	10	3	127	149.5	0	0	8	3	2	1	0	14	16.3	0	0	42	13	4	3	0	62	67.9
09:15 - 09:30	0	0	17	3	0	2	0	22	24.6	0	1	74	25	10	15	0	125	148.9	0	0	8	3	1	0	0	12	12.5	0	1	26	19	1	1	0	48	49.2
Hourly Total	**0**	**0**	**31**	**4**	**1**	**3**	**0**	**39**	**43.4**	**0**	**1**	**154**	**46**	**23**	**25**	**3**	**252**	**298.4**	**0**	**0**	**16**	**6**	**3**	**1**	**0**	**26**	**28.8**	**0**	**1**	**68**	**32**	**5**	**4**	**0**	**110**	**117.1**
TOTAL	**0**	**0**	**132**	**33**	**5**	**10**	**0**	**180**	**195.5**	**0**	**3**	**752**	**258**	**101**	**109**	**7**	**1230**	**1427.4**	**0**	**0**	**63**	**28**	**9**	**4**	**0**	**104**	**113.7**	**0**	**3**	**412**	**102**	**22**	**13**	**2**	**554**	**582.1**
16:30 - 16:45	0	1	36	8	3	4	0	52	58.1	0	0	109	32	5	20	0	166	194.5	0	0	9	3	1	1	0	14	15.8	0	1	47	15	2	3	0	68	72.3
16:45 - 17:00	0	0	32	4	0	5	0	41	47.5	0	0	99	30	3	7	0	139	149.6	0	0	9	3	0	0	0	12	12.0	0	0	75	17	1	1	0	94	95.8
Hourly Total	**0**	**1**	**68**	**12**	**3**	**9**	**0**	**93**	**105.6**	**0**	**0**	**208**	**62**	**8**	**27**	**0**	**305**	**344.1**	**0**	**0**	**18**	**6**	**1**	**1**	**0**	**26**	**27.8**	**0**	**1**	**122**	**32**	**3**	**4**	**0**	**162**	**168.1**
17:00 - 17:15	0	0	33	4	0	2	0	39	41.6	0	1	104	11	2	21	0	139	166.7	0	0	12	4	0	0	0	16	16.0	0	0	93	15	2	1	1	112	115.3
17:15 - 17:30	0	0	32	2	0	1	0	35	36.3	0	0	104	22	3	17	0	146	169.6	0	0	17	2	0	1	0	20	21.3	0	2	79	14	1	2	0	98	99.9
17:30 - 17:45	0	0	37	4	1	0	0	42	42.5	0	0	93	10	0	8	0	111	121.4	0	0	16	1	0	0	0	17	17.0	0	0	78	17	1	3	0	99	103.4
17:45 - 18:00	0	1	33	3	0	0	0	37	36.4	0	0	98	13	2	6	0	119	127.8	0	0	17	3	1	0	0	21	21.5	0	1	86	12	2	1	0	102	103.7
Hourly Total	**0**	**1**	**135**	**13**	**1**	**3**	**0**	**153**	**156.8**	**0**	**1**	**399**	**56**	**7**	**52**	**0**	**515**	**585.5**	**0**	**0**	**62**	**10**	**1**	**1**	**0**	**74**	**75.8**	**0**	**3**	**336**	**58**	**6**	**7**	**1**	**411**	**422.3**
18:00 - 18:15	0	1	24	4	0	0	0	29	28.4	0	2	116	19	4	18	0	159	183.2	0	0	16	4	0	0	0	20	20.0	0	0	57	8	2	2	0	69	72.6
18:15 - 18:30	0	0	24	3	0	0	0	27	27.0	0	3	86	14	9	14	1	127	148.9	0	0	16	3	0	0	0	19	19.0	0	1	80	14	4	4	1	104	111.6
Hourly Total	**0**	**1**	**48**	**7**	**0**	**0**	**0**	**56**	**55.4**	**0**	**5**	**202**	**33**	**13**	**32**	**1**	**286**	**332.1**	**0**	**0**	**32**	**7**	**0**	**0**	**0**	**39**	**39.0**	**0**	**1**	**137**	**22**	**6**	**6**	**1**	**173**	**184.2**
TOTAL	**0**	**3**	**251**	**32**	**4**	**12**	**0**	**302**	**317.8**	**0**	**6**	**809**	**151**	**28**	**111**	**1**	**1106**	**1261.7**	**0**	**0**	**112**	**23**	**2**	**2**	**0**	**139**	**142.6**	**0**	**5**	**595**	**112**	**15**	**17**	**2**	**746**	**774.6**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

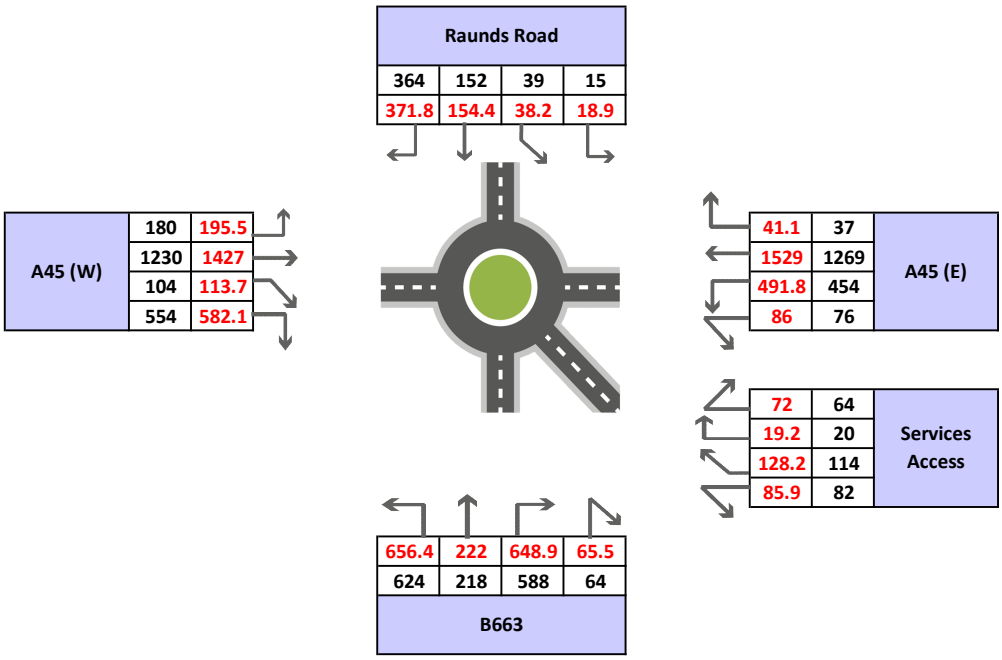
Road Data Services Ltd

From: 1) 07:30 | To: 1) 09:30 | Class: All Vehicles

Show Peak Hour: ☐ | Show PCUs: ☑ | Show Session 2

Wednesday 28th June 2023

PCUs



Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 2
Approach: B663

	Left to Brick Kiln Road									Ahead to London Road									Right to Warth Park Way								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	1	25	19	3	0	0	48	48.9	0	0	22	9	6	0	0	37	40.0	0	0	40	6	1	5	1	53	61.0
07:45 - 08:00	0	1	39	12	4	0	0	56	57.4	0	0	28	11	1	0	0	40	40.5	0	0	54	5	3	2	1	65	70.1
Hourly Total	**0**	**2**	**64**	**31**	**7**	**0**	**0**	**104**	**106.3**	**0**	**0**	**50**	**20**	**7**	**0**	**0**	**77**	**80.5**	**0**	**0**	**94**	**11**	**4**	**7**	**2**	**118**	**131.1**
08:00 - 08:15	0	0	45	15	2	0	0	62	63.0	0	0	29	5	5	1	0	40	43.8	0	0	53	7	2	3	0	65	69.9
08:15 - 08:30	0	0	41	9	1	1	1	53	55.8	0	0	46	9	2	0	1	58	60.0	0	1	49	4	1	5	0	60	66.4
08:30 - 08:45	0	0	28	7	3	2	0	40	44.1	0	0	40	15	0	0	0	55	55.0	0	0	52	2	3	3	0	60	65.4
08:45 - 09:00	0	1	44	10	1	0	0	56	55.9	0	1	45	5	1	1	0	53	54.2	0	0	53	3	3	5	0	64	72.0
Hourly Total	**0**	**1**	**158**	**41**	**7**	**3**	**1**	**211**	**218.8**	**0**	**1**	**160**	**34**	**8**	**2**	**1**	**206**	**213.0**	**0**	**1**	**207**	**16**	**9**	**16**	**0**	**249**	**273.7**
09:00 - 09:15	0	0	41	12	1	0	0	54	54.5	0	0	35	8	3	1	0	47	49.8	0	0	45	6	3	2	0	56	60.1
09:15 - 09:30	0	1	20	9	0	0	0	30	29.4	0	0	20	5	0	0	0	25	25.0	0	0	33	11	5	5	0	54	63.0
Hourly Total	**0**	**1**	**61**	**21**	**1**	**0**	**0**	**84**	**83.9**	**0**	**0**	**55**	**13**	**3**	**1**	**0**	**72**	**74.8**	**0**	**0**	**78**	**17**	**8**	**7**	**0**	**110**	**123.1**
TOTAL	**0**	**4**	**283**	**93**	**15**	**3**	**1**	**399**	**409.0**	**0**	**1**	**265**	**67**	**18**	**3**	**1**	**355**	**368.3**	**0**	**1**	**379**	**44**	**21**	**30**	**2**	**477**	**527.9**
16:30 - 16:45	1	1	52	19	2	0	0	75	74.6	0	0	69	9	2	0	0	80	81.0	0	0	37	9	3	5	0	54	62.0
16:45 - 17:00	0	1	51	13	0	0	0	65	64.4	0	3	86	19	1	0	0	109	107.7	0	0	42	10	3	2	0	57	61.1
Hourly Total	**1**	**2**	**103**	**32**	**2**	**0**	**0**	**140**	**139.0**	**0**	**3**	**155**	**28**	**3**	**0**	**0**	**189**	**188.7**	**0**	**0**	**79**	**19**	**6**	**7**	**0**	**111**	**123.1**
17:00 - 17:15	0	0	71	9	0	1	0	81	82.3	0	0	70	19	3	0	0	92	93.5	0	0	42	10	3	4	1	60	67.7
17:15 - 17:30	0	1	64	12	0	0	0	77	76.4	0	3	74	13	1	0	0	91	89.7	0	0	45	11	3	5	0	64	72.0
17:30 - 17:45	0	0	58	10	0	0	0	68	68.0	0	0	77	16	3	0	0	96	97.5	0	0	39	10	2	7	0	58	68.1
17:45 - 18:00	0	1	56	7	0	0	0	64	63.4	0	0	87	6	1	1	0	95	96.8	0	0	41	12	3	6	0	62	71.3
Hourly Total	**0**	**2**	**249**	**38**	**0**	**1**	**0**	**290**	**290.1**	**0**	**3**	**308**	**54**	**8**	**1**	**0**	**374**	**377.5**	**0**	**0**	**167**	**43**	**11**	**22**	**1**	**244**	**279.1**
18:00 - 18:15	0	0	50	8	0	0	0	58	58.0	0	0	58	13	2	0	0	73	74.0	0	0	39	5	3	4	0	51	57.7
18:15 - 18:30	0	1	60	7	1	1	0	70	71.2	0	0	56	8	0	0	0	64	64.0	0	0	44	9	5	5	1	64	74.0
Hourly Total	**0**	**1**	**110**	**15**	**1**	**1**	**0**	**128**	**129.2**	**0**	**0**	**114**	**21**	**2**	**0**	**0**	**137**	**138.0**	**0**	**0**	**83**	**14**	**8**	**9**	**1**	**115**	**131.7**
TOTAL	**1**	**5**	**462**	**85**	**3**	**2**	**0**	**558**	**558.3**	**0**	**6**	**577**	**103**	**13**	**1**	**0**	**700**	**704.2**	**0**	**0**	**329**	**76**	**25**	**38**	**2**	**470**	**533.9**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 2
Approach: Brick Kiln Road

	Left to London Road									Ahead to Warth Park Way									Right to B663								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	15	2	1	0	0	18	18.5	0	0	7	1	0	0	0	8	8.0	0	0	87	15	4	0	0	106	108.0
07:45 - 08:00	0	0	10	2	0	0	0	12	12.0	0	0	9	4	0	0	0	13	13.0	0	0	55	10	3	0	0	68	69.5
Hourly Total	**0**	**0**	**25**	**4**	**1**	**0**	**0**	**30**	**30.5**	**0**	**0**	**16**	**5**	**0**	**0**	**0**	**21**	**21.0**	**0**	**0**	**142**	**25**	**7**	**0**	**0**	**174**	**177.5**
08:00 - 08:15	0	0	11	3	0	0	0	14	14.0	0	1	17	4	0	0	0	22	21.4	0	1	56	15	4	0	0	76	77.4
08:15 - 08:30	0	0	17	3	0	0	0	20	20.0	0	0	11	2	0	0	0	13	13.0	0	0	58	10	1	1	0	70	71.8
08:30 - 08:45	0	0	22	4	1	0	0	27	27.5	0	0	18	0	1	0	0	19	19.5	0	0	75	13	3	0	2	93	96.5
08:45 - 09:00	0	0	8	1	0	0	0	9	9.0	0	0	17	8	0	0	0	25	25.0	0	0	54	6	1	1	0	62	63.8
Hourly Total	**0**	**0**	**58**	**11**	**1**	**0**	**0**	**70**	**70.5**	**0**	**1**	**63**	**14**	**1**	**0**	**0**	**79**	**78.9**	**0**	**1**	**243**	**44**	**9**	**2**	**2**	**301**	**309.5**
09:00 - 09:15	0	0	13	2	0	0	0	15	15.0	0	0	12	1	0	0	0	13	13.0	0	0	50	17	2	1	0	70	72.3
09:15 - 09:30	0	0	5	0	1	0	0	6	6.5	0	0	10	1	0	0	0	11	11.0	0	0	38	8	2	1	0	49	51.3
Hourly Total	**0**	**0**	**18**	**2**	**1**	**0**	**0**	**21**	**21.5**	**0**	**0**	**22**	**2**	**0**	**0**	**0**	**24**	**24.0**	**0**	**0**	**88**	**25**	**4**	**2**	**0**	**119**	**123.6**
TOTAL	**0**	**0**	**101**	**17**	**3**	**0**	**0**	**121**	**122.5**	**0**	**1**	**101**	**21**	**1**	**0**	**0**	**124**	**123.9**	**0**	**1**	**473**	**94**	**20**	**4**	**2**	**594**	**610.6**
16:30 - 16:45	0	0	10	4	0	0	0	14	14.0	0	0	15	2	0	0	0	17	17.0	0	0	44	23	2	0	0	69	70.0
16:45 - 17:00	1	0	12	2	0	0	0	15	14.2	0	0	7	0	1	0	0	8	8.5	0	0	39	13	0	0	0	52	52.0
Hourly Total	**1**	**0**	**22**	**6**	**0**	**0**	**0**	**29**	**28.2**	**0**	**0**	**22**	**2**	**1**	**0**	**0**	**25**	**25.5**	**0**	**0**	**83**	**36**	**2**	**0**	**0**	**121**	**122.0**
17:00 - 17:15	0	0	17	4	0	0	0	21	21.0	0	0	10	0	0	0	0	10	10.0	0	0	61	12	0	0	0	73	73.0
17:15 - 17:30	0	0	8	1	0	0	0	9	9.0	0	0	18	2	0	0	1	21	22.0	0	0	42	5	1	0	0	48	48.5
17:30 - 17:45	0	0	13	5	0	0	0	18	18.0	0	1	13	0	1	0	0	15	14.9	0	0	47	4	0	0	0	51	51.0
17:45 - 18:00	0	1	9	5	0	0	0	15	14.4	0	0	7	1	0	0	0	8	8.0	0	0	39	3	0	0	0	42	42.0
Hourly Total	**0**	**1**	**47**	**15**	**0**	**0**	**0**	**63**	**62.4**	**0**	**1**	**48**	**3**	**1**	**0**	**1**	**54**	**54.9**	**0**	**0**	**189**	**24**	**1**	**0**	**0**	**214**	**214.5**
18:00 - 18:15	0	1	11	1	0	0	0	13	12.4	0	0	16	3	0	0	0	19	19.0	0	0	54	4	1	0	0	59	59.5
18:15 - 18:30	0	0	7	2	0	0	0	9	9.0	0	0	9	3	0	0	0	12	12.0	0	0	32	7	1	0	0	40	40.5
Hourly Total	**0**	**1**	**18**	**3**	**0**	**0**	**0**	**22**	**21.4**	**0**	**0**	**25**	**6**	**0**	**0**	**0**	**31**	**31.0**	**0**	**0**	**86**	**11**	**2**	**0**	**0**	**99**	**100.0**
TOTAL	**1**	**2**	**87**	**24**	**0**	**0**	**0**	**114**	**112.0**	**0**	**1**	**95**	**11**	**2**	**0**	**1**	**110**	**111.4**	**0**	**0**	**358**	**71**	**5**	**0**	**0**	**434**	**436.5**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 2
Approach: London Road

	Left to Warth Park Way									Ahead to B663									Right to Brick Kiln Road								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	11	0	0	0	0	**11**	**11.0**	0	1	89	18	2	1	1	**112**	**114.7**	0	0	2	3	0	0	0	**5**	**5.0**
07:45 - 08:00	0	0	23	2	0	0	1	**26**	**27.0**	0	0	60	14	2	0	0	**76**	**77.0**	0	0	3	1	0	0	0	**4**	**4.0**
Hourly Total	**0**	**0**	**34**	**2**	**0**	**0**	**1**	**37**	**38.0**	**0**	**1**	**149**	**32**	**4**	**1**	**1**	**188**	**191.7**	**0**	**0**	**5**	**4**	**0**	**0**	**0**	**9**	**9.0**
08:00 - 08:15	0	0	14	3	0	0	0	**17**	**17.0**	0	0	51	11	1	0	1	**64**	**65.5**	0	0	9	0	0	0	0	**9**	**9.0**
08:15 - 08:30	0	0	12	0	1	0	0	**13**	**13.5**	0	0	54	11	1	0	0	**66**	**66.5**	0	0	10	1	0	0	0	**11**	**11.0**
08:30 - 08:45	0	0	15	1	0	0	1	**17**	**18.0**	0	0	52	10	2	0	0	**64**	**65.0**	0	0	12	1	0	0	0	**13**	**13.0**
08:45 - 09:00	0	1	30	1	0	0	0	**32**	**31.4**	0	0	80	3	2	0	0	**85**	**86.0**	0	0	15	1	1	0	0	**17**	**17.5**
Hourly Total	**0**	**1**	**71**	**5**	**1**	**0**	**1**	**79**	**79.9**	**0**	**0**	**237**	**35**	**6**	**0**	**1**	**279**	**283.0**	**0**	**0**	**46**	**3**	**1**	**0**	**0**	**50**	**50.5**
09:00 - 09:15	0	0	16	1	0	0	0	**17**	**17.0**	0	0	46	9	0	1	0	**56**	**57.3**	0	0	8	1	0	0	0	**9**	**9.0**
09:15 - 09:30	0	0	12	1	1	0	0	**14**	**14.5**	0	0	44	8	3	0	0	**55**	**56.5**	0	0	4	0	0	1	0	**5**	**6.3**
Hourly Total	**0**	**0**	**28**	**2**	**1**	**0**	**0**	**31**	**31.5**	**0**	**0**	**90**	**17**	**3**	**1**	**0**	**111**	**113.8**	**0**	**0**	**12**	**1**	**0**	**1**	**0**	**14**	**15.3**
TOTAL	**0**	**1**	**133**	**9**	**2**	**0**	**2**	**147**	**149.4**	**0**	**1**	**476**	**84**	**13**	**2**	**2**	**578**	**588.5**	**0**	**0**	**63**	**8**	**1**	**1**	**0**	**73**	**74.8**
16:30 - 16:45	0	0	16	1	0	0	1	**18**	**19.0**	0	0	51	9	0	0	0	**60**	**60.0**	0	0	9	4	0	0	0	**13**	**13.0**
16:45 - 17:00	0	0	20	1	0	0	0	**21**	**21.0**	0	0	47	10	0	0	0	**57**	**57.0**	0	0	11	0	0	0	0	**11**	**11.0**
Hourly Total	**0**	**0**	**36**	**2**	**0**	**0**	**1**	**39**	**40.0**	**0**	**0**	**98**	**19**	**0**	**0**	**0**	**117**	**117.0**	**0**	**0**	**20**	**4**	**0**	**0**	**0**	**24**	**24.0**
17:00 - 17:15	0	1	14	1	0	0	0	**16**	**15.4**	0	0	55	8	3	0	1	**67**	**69.5**	0	0	10	1	0	0	0	**11**	**11.0**
17:15 - 17:30	0	0	16	2	0	0	0	**18**	**18.0**	0	0	51	9	1	0	0	**61**	**61.5**	0	0	8	0	0	0	0	**8**	**8.0**
17:30 - 17:45	0	0	24	3	0	0	1	**28**	**29.0**	0	0	49	6	1	0	0	**56**	**56.5**	0	0	9	2	0	0	0	**11**	**11.0**
17:45 - 18:00	0	1	26	2	2	0	0	**31**	**31.4**	0	0	50	9	1	0	0	**60**	**60.5**	0	0	15	1	0	0	0	**16**	**16.0**
Hourly Total	**0**	**2**	**80**	**8**	**2**	**0**	**1**	**93**	**93.8**	**0**	**0**	**205**	**32**	**6**	**0**	**1**	**244**	**248.0**	**0**	**0**	**42**	**4**	**0**	**0**	**0**	**46**	**46.0**
18:00 - 18:15	0	1	17	2	0	1	0	**21**	**21.7**	0	0	40	6	0	0	0	**46**	**46.0**	0	0	12	1	0	0	0	**13**	**13.0**
18:15 - 18:30	0	0	14	2	0	0	0	**16**	**16.0**	0	0	35	2	1	0	0	**38**	**38.5**	0	0	7	1	0	0	0	**8**	**8.0**
Hourly Total	**0**	**1**	**31**	**4**	**0**	**1**	**0**	**37**	**37.7**	**0**	**0**	**75**	**8**	**1**	**0**	**0**	**84**	**84.5**	**0**	**0**	**19**	**2**	**0**	**0**	**0**	**21**	**21.0**
TOTAL	**0**	**3**	**147**	**14**	**2**	**1**	**2**	**169**	**171.5**	**0**	**0**	**378**	**59**	**7**	**0**	**1**	**445**	**449.5**	**0**	**0**	**81**	**10**	**0**	**0**	**0**	**91**	**91.0**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 2
Approach: Warth Park Way

	Left to B663									Ahead to Brick Kiln Road									Right to London Road								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	15	5	0	6	0	**26**	**33.8**	0	0	3	2	0	0	0	**5**	**5.0**	0	0	8	0	0	0	0	**8**	**8.0**
07:45 - 08:00	0	1	30	4	1	7	0	**43**	**52.0**	0	0	4	5	0	0	1	**10**	**11.0**	0	0	7	4	1	0	0	**12**	**12.5**
Hourly Total	**0**	**1**	**45**	**9**	**1**	**13**	**0**	**69**	**85.8**	**0**	**0**	**7**	**7**	**0**	**0**	**1**	**15**	**16.0**	**0**	**0**	**15**	**4**	**1**	**0**	**0**	**20**	**20.5**
08:00 - 08:15	0	1	32	11	4	6	2	**56**	**67.2**	0	0	2	4	0	0	0	**6**	**6.0**	0	0	3	1	1	0	0	**5**	**5.5**
08:15 - 08:30	0	0	15	6	1	7	0	**29**	**38.6**	0	0	6	1	0	0	0	**7**	**7.0**	0	0	10	4	0	0	0	**14**	**14.0**
08:30 - 08:45	0	0	13	9	1	6	0	**29**	**37.3**	0	0	4	3	0	0	1	**8**	**9.0**	0	0	7	1	1	0	0	**9**	**9.5**
08:45 - 09:00	0	0	35	9	1	7	0	**52**	**61.6**	0	0	10	4	1	0	0	**15**	**15.5**	0	0	13	1	0	0	0	**14**	**14.0**
Hourly Total	**0**	**1**	**95**	**35**	**7**	**26**	**2**	**166**	**204.7**	**0**	**0**	**22**	**12**	**1**	**0**	**1**	**36**	**37.5**	**0**	**0**	**33**	**7**	**2**	**0**	**0**	**42**	**43.0**
09:00 - 09:15	0	0	24	11	3	5	0	**43**	**51.0**	0	0	9	2	0	0	0	**11**	**11.0**	0	1	7	1	0	1	0	**10**	**10.7**
09:15 - 09:30	0	0	21	5	3	2	0	**31**	**35.1**	0	0	7	1	0	0	0	**8**	**8.0**	0	0	8	5	0	0	0	**13**	**13.0**
Hourly Total	**0**	**0**	**45**	**16**	**6**	**7**	**0**	**74**	**86.1**	**0**	**0**	**16**	**3**	**0**	**0**	**0**	**19**	**19.0**	**0**	**1**	**15**	**6**	**0**	**1**	**0**	**23**	**23.7**
TOTAL	**0**	**2**	**185**	**60**	**14**	**46**	**2**	**309**	**376.6**	**0**	**0**	**45**	**22**	**1**	**0**	**2**	**70**	**72.5**	**0**	**1**	**63**	**17**	**3**	**1**	**0**	**85**	**87.2**
16:30 - 16:45	0	0	50	10	1	8	0	**69**	**79.9**	0	0	15	4	0	0	1	**20**	**21.0**	0	0	21	4	0	0	0	**25**	**25.0**
16:45 - 17:00	0	0	49	8	2	8	0	**67**	**78.4**	0	0	17	2	0	0	0	**19**	**19.0**	0	0	23	2	0	0	0	**25**	**25.0**
Hourly Total	**0**	**0**	**99**	**18**	**3**	**16**	**0**	**136**	**158.3**	**0**	**0**	**32**	**6**	**0**	**0**	**1**	**39**	**40.0**	**0**	**0**	**44**	**6**	**0**	**0**	**0**	**50**	**50.0**
17:00 - 17:15	0	0	68	8	1	5	0	**82**	**89.0**	0	0	16	3	0	0	1	**20**	**21.0**	0	0	26	1	1	0	0	**28**	**28.5**
17:15 - 17:30	0	2	68	6	1	2	1	**80**	**82.9**	0	0	21	1	0	0	0	**22**	**22.0**	0	1	23	4	0	0	0	**28**	**27.4**
17:30 - 17:45	0	0	53	8	0	6	0	**67**	**74.8**	0	0	28	0	0	0	1	**29**	**30.0**	0	0	19	1	0	0	0	**20**	**20.0**
17:45 - 18:00	0	0	36	7	0	3	0	**46**	**49.9**	0	0	16	1	0	0	0	**17**	**17.0**	0	0	33	4	1	0	0	**38**	**38.5**
Hourly Total	**0**	**2**	**225**	**29**	**2**	**16**	**1**	**275**	**296.6**	**0**	**0**	**81**	**5**	**0**	**0**	**2**	**88**	**90.0**	**0**	**1**	**101**	**10**	**2**	**0**	**0**	**114**	**114.4**
18:00 - 18:15	0	0	45	5	0	2	0	**52**	**54.6**	0	0	15	2	0	0	0	**17**	**17.0**	0	0	23	0	0	0	0	**23**	**23.0**
18:15 - 18:30	0	0	43	3	1	2	1	**50**	**54.1**	0	0	27	2	0	0	0	**29**	**29.0**	0	0	23	0	0	1	0	**24**	**25.3**
Hourly Total	**0**	**0**	**88**	**8**	**1**	**4**	**1**	**102**	**108.7**	**0**	**0**	**42**	**4**	**0**	**0**	**0**	**46**	**46.0**	**0**	**0**	**46**	**0**	**0**	**1**	**0**	**47**	**48.3**
TOTAL	**0**	**2**	**412**	**55**	**6**	**36**	**2**	**513**	**563.6**	**0**	**0**	**155**	**15**	**0**	**0**	**3**	**173**	**176.0**	**0**	**1**	**191**	**16**	**2**	**1**	**0**	**211**	**212.7**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

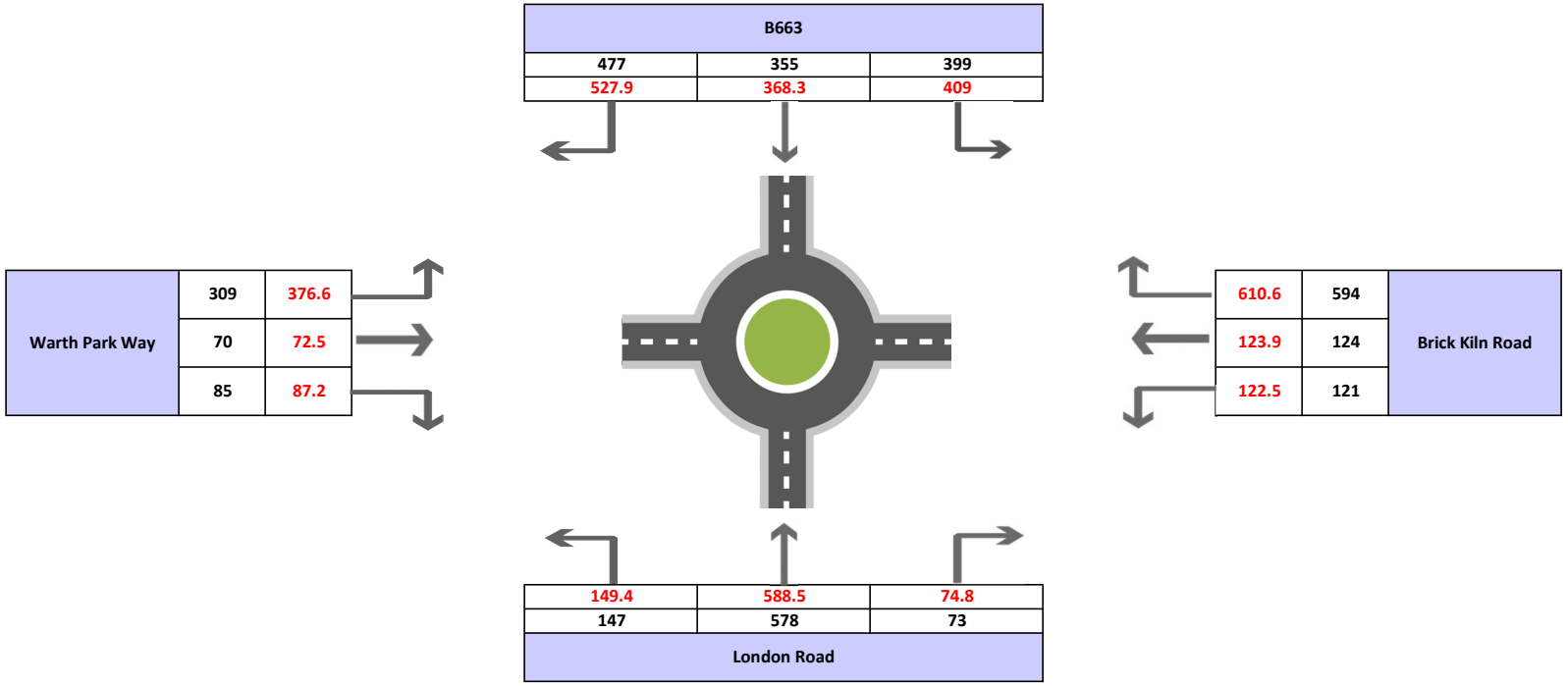
From: 1) 07:30 Show Peak Hour: ☐

To: 1) 09:30 Show PCUs: ☑

Class: All Vehicles Show Session 2

Wednesday 28th June 2023

PCUs



Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 3
Approach: Holdenby Drive

	Left to Brick Kiln Road (E)									Ahead to Mallows Drive									Right to Brick Kiln Road (W)								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0	0	0	19	1	0	0	0	20	20.0
07:45 - 08:00	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0	0	0	13	2	0	0	0	15	15.0
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**32**	**3**	**0**	**0**	**0**	**35**	**35.0**
08:00 - 08:15	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0	0	1	17	1	0	0	0	19	18.4
08:15 - 08:30	0	0	1	0	0	0	0	1	1.0	0	0	0	0	0	0	0	0	0.0	0	0	20	0	0	0	0	20	20.0
08:30 - 08:45	0	0	1	0	0	0	0	1	1.0	0	0	0	0	0	0	0	0	0.0	0	0	15	2	0	0	0	17	17.0
08:45 - 09:00	0	0	2	0	0	0	0	2	2.0	0	0	0	0	0	0	0	0	0.0	0	0	18	0	0	0	0	18	18.0
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**4.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**1**	**70**	**3**	**0**	**0**	**0**	**74**	**73.4**
09:00 - 09:15	0	0	1	0	0	0	0	1	1.0	0	0	0	1	0	0	0	1	1.0	0	0	7	1	0	0	0	8	8.0
09:15 - 09:30	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0	0	0	8	0	0	0	0	8	8.0
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1.0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.0**	**0**	**0**	**15**	**1**	**0**	**0**	**0**	**16**	**16.0**
TOTAL	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**5**	**5.0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.0**	**0**	**1**	**117**	**7**	**0**	**0**	**0**	**125**	**124.4**
16:30 - 16:45	0	0	1	0	0	0	0	1	1.0	0	0	0	0	0	0	0	0	0.0	0	0	7	0	0	0	0	7	7.0
16:45 - 17:00	0	0	1	0	0	0	0	1	1.0	0	0	0	0	0	0	0	0	0.0	0	0	6	1	0	0	0	7	7.0
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**13**	**1**	**0**	**0**	**0**	**14**	**14.0**
17:00 - 17:15	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0	0	0	6	0	0	0	0	6	6.0
17:15 - 17:30	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0	0	0	4	0	0	0	0	4	4.0
17:30 - 17:45	0	0	0	0	0	0	0	0	0.0	0	0	1	0	0	0	0	1	1.0	0	0	6	1	0	0	0	7	7.0
17:45 - 18:00	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0	0	0	7	2	0	0	0	9	9.0
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1.0**	**0**	**0**	**23**	**3**	**0**	**0**	**0**	**26**	**26.0**
18:00 - 18:15	0	0	0	1	0	0	0	1	1.0	0	0	2	1	0	0	0	3	3.0	0	0	10	1	0	0	0	11	11.0
18:15 - 18:30	0	0	0	1	0	0	0	1	1.0	0	0	0	0	0	0	0	0	0.0	0	0	6	0	0	0	0	6	6.0
Hourly Total	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**2.0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**3**	**3.0**	**0**	**0**	**16**	**1**	**0**	**0**	**0**	**17**	**17.0**
TOTAL	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**4**	**4.0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**4**	**4.0**	**0**	**0**	**52**	**5**	**0**	**0**	**0**	**57**	**57.0**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 3
Approach: Brick Kiln Road East

	Left to Mallows Drive									Ahead to Brick Kiln Road (W)									Right to Holdenby Drive								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	0	0	0	0	0	0	0.0	0	0	76	16	5	0	0	97	99.5	0	0	0	0	0	0	0	0	0.0
07:45 - 08:00	0	0	0	0	0	0	0	0	0.0	0	0	50	12	3	0	0	65	66.5	0	0	0	0	0	0	0	0	0.0
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**126**	**28**	**8**	**0**	**0**	**162**	**166.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**
08:00 - 08:15	0	0	1	1	0	0	0	2	2.0	0	0	47	18	4	0	0	69	71.0	0	0	0	0	0	0	0	0	0.0
08:15 - 08:30	0	0	0	0	0	0	0	0	0.0	0	0	52	10	1	1	0	64	65.8	0	0	0	0	0	0	0	0	0.0
08:30 - 08:45	0	0	0	0	0	0	0	0	0.0	0	0	77	12	5	0	2	96	100.5	0	0	0	0	0	0	0	0	0.0
08:45 - 09:00	0	0	1	0	0	0	0	1	1.0	0	0	55	14	1	1	0	71	72.8	0	0	3	0	0	0	0	3	3.0
Hourly Total	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**3**	**3.0**	**0**	**0**	**231**	**54**	**11**	**2**	**2**	**300**	**310.1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**3.0**
09:00 - 09:15	0	0	0	0	0	0	0	0	0.0	0	0	61	14	2	1	0	78	80.3	0	0	3	0	0	0	0	3	3.0
09:15 - 09:30	0	0	2	0	0	0	0	2	2.0	0	0	36	9	3	1	0	49	51.8	0	0	0	0	0	0	0	0	0.0
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**	**0**	**0**	**97**	**23**	**5**	**2**	**0**	**127**	**132.1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**3.0**
TOTAL	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**5**	**5.0**	**0**	**0**	**454**	**105**	**24**	**4**	**2**	**589**	**608.2**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**6**	**6.0**
16:30 - 16:45	0	0	1	1	0	0	0	2	2.0	0	0	56	28	2	0	0	86	87.0	0	0	0	0	0	0	0	0	0.0
16:45 - 17:00	0	0	2	0	0	0	0	2	2.0	1	0	40	13	1	0	0	55	54.7	0	0	2	0	0	0	0	2	2.0
Hourly Total	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**4**	**4.0**	**1**	**0**	**96**	**41**	**3**	**0**	**0**	**141**	**141.7**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**
17:00 - 17:15	0	0	1	1	0	0	0	2	2.0	0	0	73	14	0	0	0	87	87.0	0	0	0	0	0	0	0	0	0.0
17:15 - 17:30	0	0	1	0	0	0	0	1	1.0	0	0	55	7	1	0	1	64	65.5	0	0	1	1	0	0	0	2	2.0
17:30 - 17:45	0	0	3	0	0	0	0	3	3.0	0	1	59	5	1	0	0	66	65.9	0	0	0	0	0	0	0	0	0.0
17:45 - 18:00	0	0	3	0	0	0	0	3	3.0	0	1	39	7	0	0	0	47	46.4	0	0	1	0	0	0	0	1	1.0
Hourly Total	**0**	**0**	**8**	**1**	**0**	**0**	**0**	**9**	**9.0**	**0**	**2**	**226**	**33**	**2**	**0**	**1**	**264**	**264.8**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**3**	**3.0**
18:00 - 18:15	0	0	1	0	0	0	0	1	1.0	0	1	60	7	0	0	0	68	67.4	0	0	2	0	0	0	0	2	2.0
18:15 - 18:30	0	0	3	0	0	0	0	3	3.0	0	0	40	8	1	0	0	49	49.5	0	0	0	0	0	0	0	0	0.0
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**4.0**	**0**	**1**	**100**	**15**	**1**	**0**	**0**	**117**	**116.9**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**
TOTAL	**0**	**0**	**15**	**2**	**0**	**0**	**0**	**17**	**17.0**	**1**	**3**	**422**	**89**	**6**	**0**	**1**	**522**	**523.4**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**7**	**7.0**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 3
Approach: Mallows Drive

	Left to Brick Kiln Road (W)									Ahead to Holdenby Drive									Right to Brick Kiln Road (E)								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	14	1	0	0	0	**15**	**15.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	2	0	0	0	0	**2**	**2.0**
07:45 - 08:00	0	0	11	2	0	0	0	**13**	**13.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	0	0	0	0	0	**0**	**0.0**
Hourly Total	**0**	**0**	**25**	**3**	**0**	**0**	**0**	**28**	**28.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**
08:00 - 08:15	0	1	20	3	0	0	0	**24**	**23.4**	0	0	2	0	0	0	0	**2**	**2.0**	0	0	1	0	0	0	0	**1**	**1.0**
08:15 - 08:30	0	0	14	5	0	0	0	**19**	**19.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	3	0	0	0	0	**3**	**3.0**
08:30 - 08:45	0	0	23	3	0	0	0	**26**	**26.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	1	0	0	0	0	**1**	**1.0**
08:45 - 09:00	0	0	6	1	0	0	0	**7**	**7.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	2	0	0	0	0	**2**	**2.0**
Hourly Total	**0**	**1**	**63**	**12**	**0**	**0**	**0**	**76**	**75.4**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**7**	**7.0**
09:00 - 09:15	0	0	7	5	0	0	0	**12**	**12.0**	0	0	1	0	0	0	0	**1**	**1.0**	0	0	2	0	0	0	0	**2**	**2.0**
09:15 - 09:30	0	0	9	0	0	0	0	**9**	**9.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	0	0	0	0	0	**0**	**0.0**
Hourly Total	**0**	**0**	**16**	**5**	**0**	**0**	**0**	**21**	**21.0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1.0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**
TOTAL	**0**	**1**	**104**	**20**	**0**	**0**	**0**	**125**	**124.4**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**3.0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**11**	**11.0**
16:30 - 16:45	0	0	6	1	0	0	0	**7**	**7.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	1	0	0	0	0	**1**	**1.0**
16:45 - 17:00	0	0	12	1	0	0	0	**13**	**13.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	0	0	0	0	0	**0**	**0.0**
Hourly Total	**0**	**0**	**18**	**2**	**0**	**0**	**0**	**20**	**20.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1.0**
17:00 - 17:15	0	0	9	2	0	0	0	**11**	**11.0**	0	0	1	0	0	0	0	**1**	**1.0**	0	0	0	1	0	0	0	**1**	**1.0**
17:15 - 17:30	0	0	9	1	0	0	0	**10**	**10.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	2	0	0	0	0	**2**	**2.0**
17:30 - 17:45	0	0	8	3	0	0	0	**11**	**11.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	2	0	0	0	0	**2**	**2.0**
17:45 - 18:00	0	0	9	0	0	0	0	**9**	**9.0**	0	0	1	0	0	0	0	**1**	**1.0**	0	0	3	0	0	0	0	**3**	**3.0**
Hourly Total	**0**	**0**	**35**	**6**	**0**	**0**	**0**	**41**	**41.0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**8**	**8.0**
18:00 - 18:15	0	0	11	0	1	0	0	**12**	**12.5**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	1	0	0	0	0	**1**	**1.0**
18:15 - 18:30	0	0	2	4	0	0	0	**6**	**6.0**	0	0	0	0	0	0	0	**0**	**0.0**	0	0	0	0	0	0	0	**0**	**0.0**
Hourly Total	**0**	**0**	**13**	**4**	**1**	**0**	**0**	**18**	**18.5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1.0**
TOTAL	**0**	**0**	**66**	**12**	**1**	**0**	**0**	**79**	**79.5**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**	**0**	**0**	**9**	**1**	**0**	**0**	**0**	**10**	**10.0**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 3
Approach: Brick Kiln Road West

	Left to Holdenby Drive									Ahead to Brick Kiln Road (E)									Right to Mallows Drive								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	0	0	0	0	0	0	0.0	0	1	28	24	3	0	0	56	56.9	0	0	2	0	0	0	0	2	2.0
07:45 - 08:00	0	0	0	1	0	0	0	1	1.0	0	1	42	17	4	0	1	65	67.4	0	0	4	0	0	0	0	4	4.0
Hourly Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.0**	**0**	**2**	**70**	**41**	**7**	**0**	**1**	**121**	**124.3**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**6**	**6.0**
08:00 - 08:15	0	0	5	1	0	0	0	6	6.0	0	0	48	15	2	0	0	65	66.0	0	0	3	3	0	0	0	6	6.0
08:15 - 08:30	0	0	3	0	0	0	0	3	3.0	0	0	50	10	1	1	1	63	65.8	0	0	4	1	0	0	0	5	5.0
08:30 - 08:45	0	0	7	1	0	0	0	8	8.0	0	0	34	9	3	2	1	49	54.1	0	0	3	1	0	0	0	4	4.0
08:45 - 09:00	0	1	11	1	0	0	0	13	12.4	0	0	55	14	2	0	0	71	72.0	0	0	3	0	1	0	0	4	4.5
Hourly Total	**0**	**1**	**26**	**3**	**0**	**0**	**0**	**30**	**29.4**	**0**	**0**	**187**	**48**	**8**	**3**	**2**	**248**	**257.9**	**0**	**0**	**13**	**5**	**1**	**0**	**0**	**19**	**19.5**
09:00 - 09:15	0	0	12	1	0	0	0	13	13.0	0	0	40	14	1	0	0	55	55.5	0	0	6	0	0	0	0	6	6.0
09:15 - 09:30	0	0	1	1	0	0	0	2	2.0	0	0	30	6	0	1	0	37	38.3	0	1	0	3	0	0	0	4	3.4
Hourly Total	**0**	**0**	**13**	**2**	**0**	**0**	**0**	**15**	**15.0**	**0**	**0**	**70**	**20**	**1**	**1**	**0**	**92**	**93.8**	**0**	**1**	**6**	**3**	**0**	**0**	**0**	**10**	**9.4**
TOTAL	**0**	**1**	**39**	**6**	**0**	**0**	**0**	**46**	**45.4**	**0**	**2**	**327**	**109**	**16**	**4**	**3**	**461**	**476.0**	**0**	**1**	**25**	**8**	**1**	**0**	**0**	**35**	**34.9**
16:30 - 16:45	0	1	8	0	0	0	0	9	8.4	1	0	49	23	2	0	1	76	77.2	0	0	19	4	0	0	0	23	23.0
16:45 - 17:00	0	0	7	1	0	0	0	8	8.0	0	1	62	12	0	0	0	75	74.4	0	0	10	2	0	0	0	12	12.0
Hourly Total	**0**	**1**	**15**	**1**	**0**	**0**	**0**	**17**	**16.4**	**1**	**1**	**111**	**35**	**2**	**0**	**1**	**151**	**151.6**	**0**	**0**	**29**	**6**	**0**	**0**	**0**	**35**	**35.0**
17:00 - 17:15	0	0	18	1	0	0	0	19	19.0	0	0	62	9	0	1	1	73	75.3	0	0	17	3	0	0	0	20	20.0
17:15 - 17:30	0	0	15	0	0	0	0	15	15.0	0	0	66	9	0	0	0	75	75.0	0	1	12	4	0	0	0	17	16.4
17:30 - 17:45	0	0	14	0	0	0	0	14	14.0	0	0	65	9	0	0	1	75	76.0	0	0	16	3	0	0	0	19	19.0
17:45 - 18:00	0	0	15	1	0	0	0	16	16.0	0	1	55	5	0	0	0	61	60.4	0	0	17	3	0	0	0	20	20.0
Hourly Total	**0**	**0**	**62**	**2**	**0**	**0**	**0**	**64**	**64.0**	**0**	**1**	**248**	**32**	**0**	**1**	**2**	**284**	**286.7**	**0**	**1**	**62**	**13**	**0**	**0**	**0**	**76**	**75.4**
18:00 - 18:15	0	0	12	2	0	0	0	14	14.0	0	0	56	6	0	0	0	62	62.0	0	0	9	3	0	0	0	12	12.0
18:15 - 18:30	0	0	10	2	0	0	0	12	12.0	0	1	66	6	1	1	0	75	76.2	0	0	18	2	0	0	0	20	20.0
Hourly Total	**0**	**0**	**22**	**4**	**0**	**0**	**0**	**26**	**26.0**	**0**	**1**	**122**	**12**	**1**	**1**	**0**	**137**	**138.2**	**0**	**0**	**27**	**5**	**0**	**0**	**0**	**32**	**32.0**
TOTAL	**0**	**1**	**99**	**7**	**0**	**0**	**0**	**107**	**106.4**	**1**	**3**	**481**	**79**	**3**	**2**	**3**	**572**	**576.5**	**0**	**1**	**118**	**24**	**0**	**0**	**0**	**143**	**142.4**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

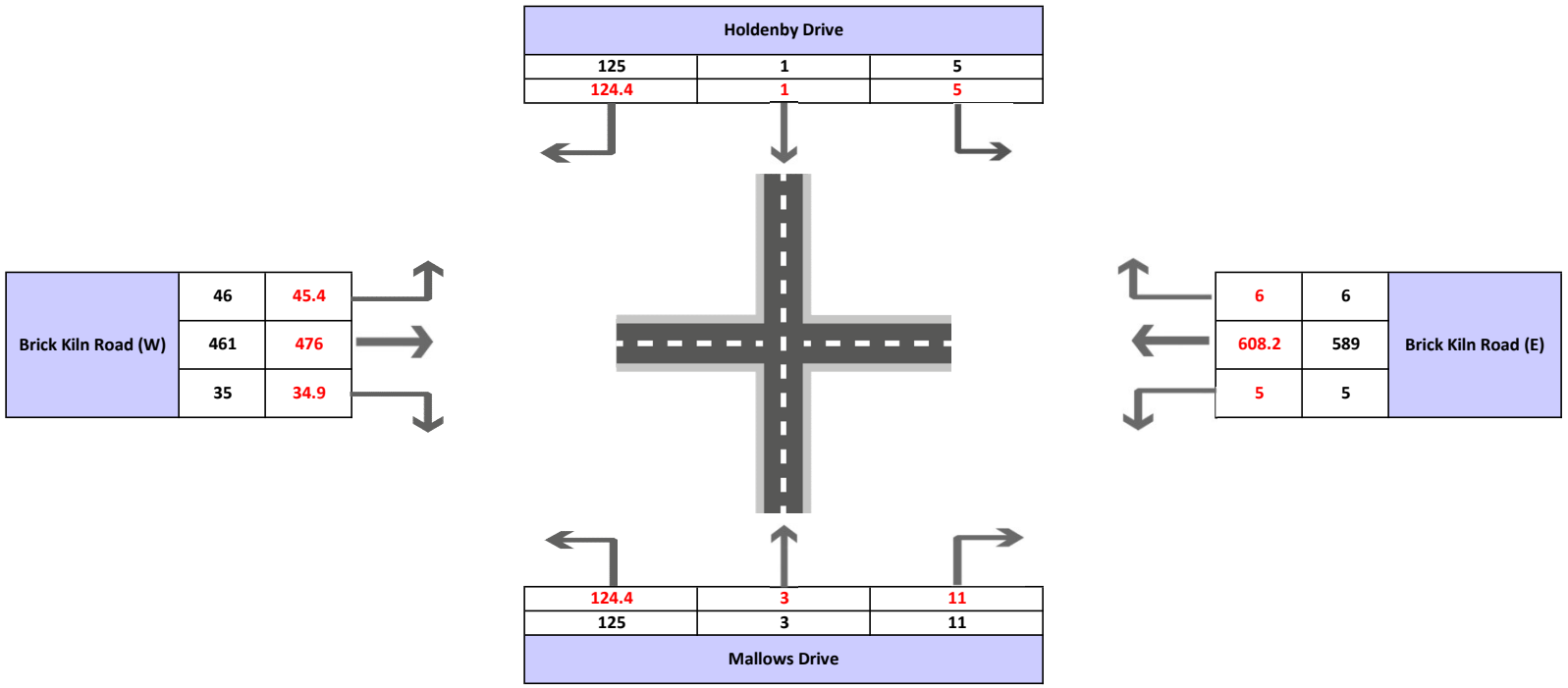
From: 1) 07:30 Show Peak Hour: ☐

To: 1) 09:30 Show PCUs: ☑

Class: All Vehicles Show Session 2

Wednesday 28th June 2023

PCUs



Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 4
Approach: New Farm Barn Estate Access

	Left to Brick Kiln Road (E)									Right to Brick Kiln Road (W)								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	0	0	0	0	0	0	0.0	0	0	0	2	2	0	0	4	5.0
07:45 - 08:00	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0.0
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**4**	**5.0**
08:00 - 08:15	0	0	1	0	0	0	0	1	1.0	0	0	1	4	2	0	0	7	8.0
08:15 - 08:30	0	0	0	1	0	0	0	1	1.0	0	0	0	1	1	0	0	2	2.5
08:30 - 08:45	0	0	0	1	0	0	0	1	1.0	0	0	2	1	2	0	0	5	6.0
08:45 - 09:00	0	0	2	1	0	1	0	4	5.3	0	0	2	0	1	0	0	3	3.5
Hourly Total	**0**	**0**	**3**	**3**	**0**	**1**	**0**	**7**	**8.3**	**0**	**0**	**5**	**6**	**6**	**0**	**0**	**17**	**20.0**
09:00 - 09:15	0	0	0	1	0	0	0	1	1.0	0	0	1	3	0	0	0	4	4.0
09:15 - 09:30	0	0	0	0	0	0	0	0	0.0	1	0	1	1	0	0	0	3	2.2
Hourly Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.0**	**1**	**0**	**2**	**4**	**0**	**0**	**0**	**7**	**6.2**
TOTAL	**0**	**0**	**3**	**4**	**0**	**1**	**0**	**8**	**9.3**	**1**	**0**	**7**	**12**	**8**	**0**	**0**	**28**	**31.2**
16:30 - 16:45	0	0	1	1	0	0	0	2	2.0	0	0	4	5	1	0	0	10	10.5
16:45 - 17:00	0	0	4	2	0	0	0	6	6.0	0	0	5	1	0	0	0	6	6.0
Hourly Total	**0**	**0**	**5**	**3**	**0**	**0**	**0**	**8**	**8.0**	**0**	**0**	**9**	**6**	**1**	**0**	**0**	**16**	**16.5**
17:00 - 17:15	0	0	1	0	0	0	0	1	1.0	0	0	10	1	0	0	0	11	11.0
17:15 - 17:30	0	0	1	1	0	0	0	2	2.0	0	0	5	2	0	0	0	7	7.0
17:30 - 17:45	0	0	2	1	0	0	0	3	3.0	0	0	5	1	0	0	0	6	6.0
17:45 - 18:00	0	0	1	0	0	0	0	1	1.0	0	0	2	0	0	0	0	2	2.0
Hourly Total	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**7**	**7.0**	**0**	**0**	**22**	**4**	**0**	**0**	**0**	**26**	**26.0**
18:00 - 18:15	0	0	0	0	0	0	0	0	0.0	0	0	5	1	0	0	0	6	6.0
18:15 - 18:30	0	0	0	0	0	0	0	0	0.0	0	0	2	0	0	0	0	2	2.0
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**8**	**8.0**
TOTAL	**0**	**0**	**10**	**5**	**0**	**0**	**0**	**15**	**15.0**	**0**	**0**	**38**	**11**	**1**	**0**	**0**	**50**	**50.5**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 4
Approach: Brick Kiln Road East

	Ahead to Brick Kiln Road (W)									Right to New Farm Barn Estate Access								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	57	7	3	0	0	67	68.5	0	0	0	1	0	0	0	1	1.0
07:45 - 08:00	0	0	38	12	3	0	0	53	54.5	0	0	1	0	0	0	0	1	1.0
Hourly Total	**0**	**0**	**95**	**19**	**6**	**0**	**0**	**120**	**123.0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**2.0**
08:00 - 08:15	0	0	38	8	3	0	0	49	50.5	0	0	2	0	0	0	0	2	2.0
08:15 - 08:30	0	0	42	10	0	1	0	53	54.3	0	0	1	2	1	0	0	4	4.5
08:30 - 08:45	0	0	66	9	3	0	2	80	83.5	0	0	5	1	0	0	0	6	6.0
08:45 - 09:00	0	0	62	11	1	0	0	74	74.5	0	0	2	1	0	0	0	3	3.0
Hourly Total	**0**	**0**	**208**	**38**	**7**	**1**	**2**	**256**	**262.8**	**0**	**0**	**10**	**4**	**1**	**0**	**0**	**15**	**15.5**
09:00 - 09:15	0	0	51	8	1	1	0	61	62.8	0	0	1	0	0	0	0	1	1.0
09:15 - 09:30	0	0	33	6	1	1	0	41	42.8	0	0	1	0	0	0	0	1	1.0
Hourly Total	**0**	**0**	**84**	**14**	**2**	**2**	**0**	**102**	**105.6**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**
TOTAL	**0**	**0**	**387**	**71**	**15**	**3**	**2**	**478**	**491.4**	**0**	**0**	**13**	**5**	**1**	**0**	**0**	**19**	**19.5**
16:30 - 16:45	0	0	39	20	1	0	0	60	60.5	0	0	1	0	0	0	0	1	1.0
16:45 - 17:00	1	0	48	11	1	0	0	61	60.7	0	0	3	0	0	0	0	3	3.0
Hourly Total	**1**	**0**	**87**	**31**	**2**	**0**	**0**	**121**	**121.2**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**4.0**
17:00 - 17:15	0	0	50	10	0	0	0	60	60.0	0	0	2	0	0	0	0	2	2.0
17:15 - 17:30	0	0	46	13	1	0	1	61	62.5	0	0	1	0	0	0	0	1	1.0
17:30 - 17:45	0	2	45	3	1	0	0	51	50.3	0	1	2	0	0	0	0	3	2.4
17:45 - 18:00	0	0	38	5	0	0	0	43	43.0	0	0	1	0	0	0	0	1	1.0
Hourly Total	**0**	**2**	**179**	**31**	**2**	**0**	**1**	**215**	**215.8**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**7**	**6.4**
18:00 - 18:15	0	0	59	4	1	0	0	64	64.5	0	0	0	1	0	0	0	1	1.0
18:15 - 18:30	0	0	36	7	1	0	0	44	44.5	0	0	0	0	0	0	0	0	0.0
Hourly Total	**0**	**0**	**95**	**11**	**2**	**0**	**0**	**108**	**109.0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.0**
TOTAL	**1**	**2**	**361**	**73**	**6**	**0**	**1**	**444**	**446.0**	**0**	**1**	**10**	**1**	**0**	**0**	**0**	**12**	**11.4**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 4
Approach: Brick Kiln Road West

	Left to New Farm Barn Estate Access									Ahead to Brick Kiln Road (E)								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	1	2	0	0	0	3	3.0	0	2	31	19	1	0	0	53	52.3
07:45 - 08:00	0	1	5	1	1	0	0	8	7.9	0	0	29	14	3	0	1	47	49.5
Hourly Total	**0**	**1**	**6**	**3**	**1**	**0**	**0**	**11**	**10.9**	**0**	**2**	**60**	**33**	**4**	**0**	**1**	**100**	**101.8**
08:00 - 08:15	0	0	7	3	0	0	0	10	10.0	0	0	40	10	3	0	0	53	54.5
08:15 - 08:30	0	0	1	0	0	0	0	1	1.0	0	0	52	7	1	1	1	62	64.8
08:30 - 08:45	0	0	8	3	1	1	0	13	14.8	0	0	30	9	2	1	1	43	46.3
08:45 - 09:00	0	0	5	2	0	0	0	7	7.0	0	0	32	7	2	0	0	41	42.0
Hourly Total	**0**	**0**	**21**	**8**	**1**	**1**	**0**	**31**	**32.8**	**0**	**0**	**154**	**33**	**8**	**2**	**2**	**199**	**207.6**
09:00 - 09:15	0	0	3	1	0	0	0	4	4.0	0	0	30	6	0	0	0	36	36.0
09:15 - 09:30	0	0	2	2	1	0	0	5	5.5	0	0	31	8	0	1	0	40	41.3
Hourly Total	**0**	**0**	**5**	**3**	**1**	**0**	**0**	**9**	**9.5**	**0**	**0**	**61**	**14**	**0**	**1**	**0**	**76**	**77.3**
TOTAL	**0**	**1**	**32**	**14**	**3**	**1**	**0**	**51**	**53.2**	**0**	**2**	**275**	**80**	**12**	**3**	**3**	**375**	**386.7**
16:30 - 16:45	0	0	2	1	0	0	0	3	3.0	0	0	45	11	2	0	1	59	61.0
16:45 - 17:00	0	0	5	2	0	0	0	7	7.0	1	1	49	10	0	0	0	61	59.6
Hourly Total	**0**	**0**	**7**	**3**	**0**	**0**	**0**	**10**	**10.0**	**1**	**1**	**94**	**21**	**2**	**0**	**1**	**120**	**120.6**
17:00 - 17:15	0	0	3	3	0	0	0	6	6.0	0	0	53	6	0	1	1	61	63.3
17:15 - 17:30	0	0	2	1	0	0	0	3	3.0	0	0	57	5	0	0	0	62	62.0
17:30 - 17:45	0	0	2	0	0	0	0	2	2.0	0	1	52	8	0	0	1	62	62.4
17:45 - 18:00	0	0	1	2	0	0	0	3	3.0	0	1	50	4	0	0	0	55	54.4
Hourly Total	**0**	**0**	**8**	**6**	**0**	**0**	**0**	**14**	**14.0**	**0**	**2**	**212**	**23**	**0**	**1**	**2**	**240**	**242.1**
18:00 - 18:15	0	0	2	0	0	0	0	2	2.0	0	1	49	5	0	0	0	55	54.4
18:15 - 18:30	0	0	0	0	0	0	0	0	0.0	0	0	44	6	1	1	0	52	53.8
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2.0**	**0**	**1**	**93**	**11**	**1**	**1**	**0**	**107**	**108.2**
TOTAL	**0**	**0**	**17**	**9**	**0**	**0**	**0**	**26**	**26.0**	**1**	**4**	**399**	**55**	**3**	**2**	**3**	**467**	**470.9**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

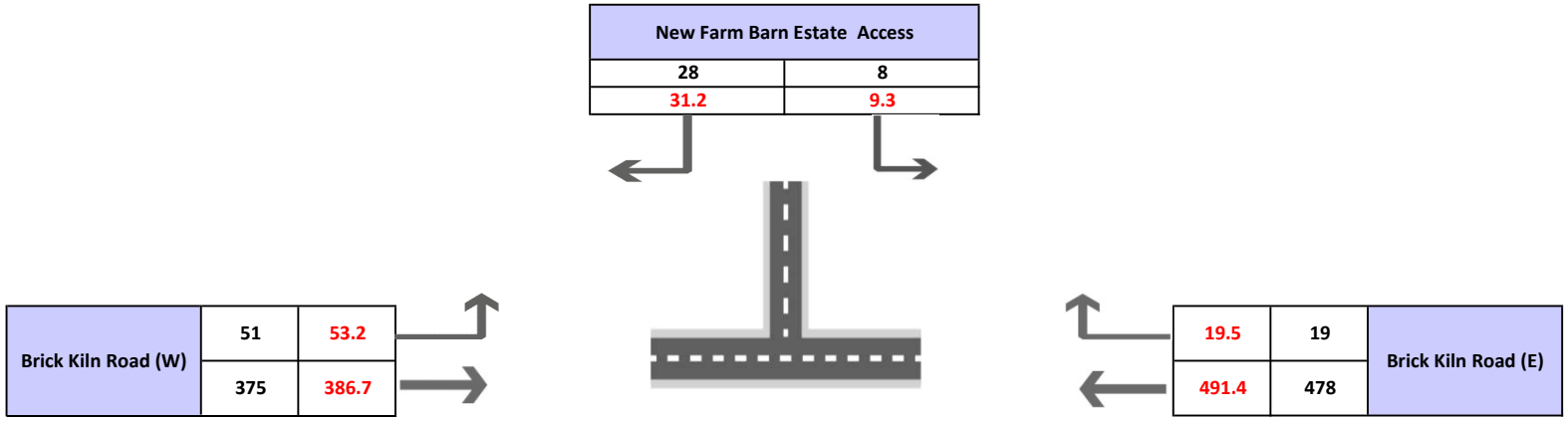
From: 1) 07:30 Show Peak Hour: ☐

To: 1) 09:30 Show PCUs: ☑

Class: All Vehicles Show Session 2

Wednesday 28th June 2023

PCUs



Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 5
Approach: North Street

	Left to Midland Road									Right to High Street								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	1	25	13	1	0	0	40	39.9	0	0	7	1	0	0	0	8	8.0
07:45 - 08:00	0	0	18	4	1	0	0	23	23.5	0	0	8	4	2	0	1	15	17.0
Hourly Total	**0**	**1**	**43**	**17**	**2**	**0**	**0**	**63**	**63.4**	**0**	**0**	**15**	**5**	**2**	**0**	**1**	**23**	**25.0**
08:00 - 08:15	0	0	20	7	1	0	0	28	28.5	0	0	14	1	0	0	0	15	15.0
08:15 - 08:30	0	0	34	5	1	0	0	40	40.5	0	0	22	2	0	0	1	25	26.0
08:30 - 08:45	0	0	17	6	0	1	0	24	25.3	0	0	23	3	1	0	1	28	29.5
08:45 - 09:00	0	0	22	3	0	0	0	25	25.0	0	0	16	4	1	0	0	21	21.5
Hourly Total	**0**	**0**	**93**	**21**	**2**	**1**	**0**	**117**	**119.3**	**0**	**0**	**75**	**10**	**2**	**0**	**2**	**89**	**92.0**
09:00 - 09:15	0	0	14	6	0	0	0	20	20.0	0	0	12	4	0	0	0	16	16.0
09:15 - 09:30	0	0	15	8	0	1	0	24	25.3	0	0	13	1	0	0	0	14	14.0
Hourly Total	**0**	**0**	**29**	**14**	**0**	**1**	**0**	**44**	**45.3**	**0**	**0**	**25**	**5**	**0**	**0**	**0**	**30**	**30.0**
TOTAL	**0**	**1**	**165**	**52**	**4**	**2**	**0**	**224**	**228.0**	**0**	**0**	**115**	**20**	**4**	**0**	**3**	**142**	**147.0**
16:30 - 16:45	0	0	18	7	1	0	0	26	26.5	0	1	18	8	0	0	1	28	28.4
16:45 - 17:00	1	0	28	5	0	0	0	34	33.2	0	0	23	8	0	0	0	31	31.0
Hourly Total	**1**	**0**	**46**	**12**	**1**	**0**	**0**	**60**	**59.7**	**0**	**1**	**41**	**16**	**0**	**0**	**1**	**59**	**59.4**
17:00 - 17:15	0	0	25	4	0	0	0	29	29.0	0	0	19	2	0	0	1	22	23.0
17:15 - 17:30	0	0	21	3	0	0	0	24	24.0	0	0	21	1	0	0	0	22	22.0
17:30 - 17:45	0	0	29	4	0	0	0	33	33.0	0	0	14	4	0	0	1	19	20.0
17:45 - 18:00	0	0	33	1	1	0	0	35	35.5	0	1	16	2	1	0	0	20	19.9
Hourly Total	**0**	**0**	**108**	**12**	**1**	**0**	**0**	**121**	**121.5**	**0**	**1**	**70**	**9**	**1**	**0**	**2**	**83**	**84.9**
18:00 - 18:15	0	1	22	3	0	0	0	26	25.4	0	0	23	2	0	0	0	25	25.0
18:15 - 18:30	0	0	29	0	0	0	0	29	29.0	0	0	15	1	0	0	0	16	16.0
Hourly Total	**0**	**1**	**51**	**3**	**0**	**0**	**0**	**55**	**54.4**	**0**	**0**	**38**	**3**	**0**	**0**	**0**	**41**	**41.0**
TOTAL	**1**	**1**	**205**	**27**	**2**	**0**	**0**	**236**	**235.6**	**0**	**2**	**149**	**28**	**1**	**0**	**3**	**183**	**185.3**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 5
Approach: Midland Road

	Ahead to High Street									Right to North Street								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	7	0	0	0	0	7	7.0	0	0	28	6	3	0	0	37	38.5
07:45 - 08:00	0	0	8	2	1	0	0	11	11.5	0	0	13	5	1	0	0	19	19.5
Hourly Total	**0**	**0**	**15**	**2**	**1**	**0**	**0**	**18**	**18.5**	**0**	**0**	**41**	**11**	**4**	**0**	**0**	**56**	**58.0**
08:00 - 08:15	0	0	4	1	0	0	0	5	5.0	0	0	20	4	1	0	0	25	25.5
08:15 - 08:30	0	0	5	1	0	0	0	6	6.0	0	0	26	7	1	0	0	34	34.5
08:30 - 08:45	1	0	23	3	0	0	0	27	26.2	0	0	45	6	0	0	2	53	55.0
08:45 - 09:00	0	0	6	4	1	0	0	11	11.5	0	0	22	4	1	0	0	27	27.5
Hourly Total	**1**	**0**	**38**	**9**	**1**	**0**	**0**	**49**	**48.7**	**0**	**0**	**113**	**21**	**3**	**0**	**2**	**139**	**142.5**
09:00 - 09:15	0	0	5	3	0	0	0	8	8.0	0	0	18	5	0	1	0	24	25.3
09:15 - 09:30	0	0	11	3	0	0	0	14	14.0	0	0	17	1	1	0	0	19	19.5
Hourly Total	**0**	**0**	**16**	**6**	**0**	**0**	**0**	**22**	**22.0**	**0**	**0**	**35**	**6**	**1**	**1**	**0**	**43**	**44.8**
TOTAL	**1**	**0**	**69**	**17**	**2**	**0**	**0**	**89**	**89.2**	**0**	**0**	**189**	**38**	**8**	**1**	**2**	**238**	**245.3**
16:30 - 16:45	0	0	15	3	1	0	0	19	19.5	0	0	16	5	0	0	0	21	21.0
16:45 - 17:00	0	0	11	4	1	0	0	16	16.5	0	1	22	4	1	0	0	28	27.9
Hourly Total	**0**	**0**	**26**	**7**	**2**	**0**	**0**	**35**	**36.0**	**0**	**1**	**38**	**9**	**1**	**0**	**0**	**49**	**48.9**
17:00 - 17:15	0	0	22	5	1	0	0	28	28.5	1	0	34	10	0	0	0	45	44.2
17:15 - 17:30	1	0	23	5	0	0	0	29	28.2	0	1	26	5	1	0	0	33	32.9
17:30 - 17:45	2	2	18	3	1	0	0	26	23.7	0	1	22	3	1	0	0	27	26.9
17:45 - 18:00	0	0	14	3	0	0	0	17	17.0	0	0	24	3	0	0	0	27	27.0
Hourly Total	**3**	**2**	**77**	**16**	**2**	**0**	**0**	**100**	**97.4**	**1**	**2**	**106**	**21**	**2**	**0**	**0**	**132**	**131.0**
18:00 - 18:15	0	0	17	6	0	0	0	23	23.0	0	0	32	8	1	0	0	41	41.5
18:15 - 18:30	1	0	12	0	0	0	0	13	12.2	0	0	12	4	0	0	0	16	16.0
Hourly Total	**1**	**0**	**29**	**6**	**0**	**0**	**0**	**36**	**35.2**	**0**	**0**	**44**	**12**	**1**	**0**	**0**	**57**	**57.5**
TOTAL	**4**	**2**	**132**	**29**	**4**	**0**	**0**	**171**	**168.6**	**1**	**3**	**188**	**42**	**4**	**0**	**0**	**238**	**237.4**

PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

Raunds
Wednesday 28th June 2023
Junction: 5
Approach: High Street

	Left to North Street									Ahead to Midland Road								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:30 - 07:45	0	0	17	1	0	0	0	18	18.0	0	0	11	3	0	0	0	14	14.0
07:45 - 08:00	0	0	15	6	0	0	0	21	21.0	2	0	7	4	2	0	0	15	14.4
Hourly Total	**0**	**0**	**32**	**7**	**0**	**0**	**0**	**39**	**39.0**	**2**	**0**	**18**	**7**	**2**	**0**	**0**	**29**	**28.4**
08:00 - 08:15	0	0	8	4	2	0	0	14	15.0	0	0	7	0	2	0	0	9	10.0
08:15 - 08:30	0	0	15	3	0	0	0	18	18.0	0	0	11	4	1	0	0	16	16.5
08:30 - 08:45	0	0	21	3	0	0	0	24	24.0	0	0	15	3	0	0	0	18	18.0
08:45 - 09:00	0	0	40	5	0	0	0	45	45.0	0	0	16	1	0	0	0	17	17.0
Hourly Total	**0**	**0**	**84**	**15**	**2**	**0**	**0**	**101**	**102.0**	**0**	**0**	**49**	**8**	**3**	**0**	**0**	**60**	**61.5**
09:00 - 09:15	0	0	32	2	0	0	0	34	34.0	0	0	5	2	0	0	0	7	7.0
09:15 - 09:30	0	0	14	3	0	1	0	18	19.3	1	0	8	1	0	0	0	10	9.2
Hourly Total	**0**	**0**	**46**	**5**	**0**	**1**	**0**	**52**	**53.3**	**1**	**0**	**13**	**3**	**0**	**0**	**0**	**17**	**16.2**
TOTAL	**0**	**0**	**162**	**27**	**2**	**1**	**0**	**192**	**194.3**	**3**	**0**	**80**	**18**	**5**	**0**	**0**	**106**	**106.1**
16:30 - 16:45	0	0	14	7	0	0	0	21	21.0	0	0	17	4	2	0	0	23	24.0
16:45 - 17:00	0	0	26	6	0	0	0	32	32.0	0	0	9	2	0	0	0	11	11.0
Hourly Total	**0**	**0**	**40**	**13**	**0**	**0**	**0**	**53**	**53.0**	**0**	**0**	**26**	**6**	**2**	**0**	**0**	**34**	**35.0**
17:00 - 17:15	0	0	23	3	0	0	1	27	28.0	3	0	9	5	0	0	0	17	14.6
17:15 - 17:30	0	0	21	3	0	0	0	24	24.0	4	0	13	1	1	0	0	19	16.3
17:30 - 17:45	0	1	20	1	0	0	0	22	21.4	0	1	10	4	0	0	0	15	14.4
17:45 - 18:00	0	0	18	1	0	0	0	19	19.0	0	0	14	1	0	0	0	15	15.0
Hourly Total	**0**	**1**	**82**	**8**	**0**	**0**	**1**	**92**	**92.4**	**7**	**1**	**46**	**11**	**1**	**0**	**0**	**66**	**60.3**
18:00 - 18:15	0	0	24	3	0	0	0	27	27.0	0	0	10	1	0	0	0	11	11.0
18:15 - 18:30	0	0	23	5	0	0	0	28	28.0	0	0	7	1	0	0	0	8	8.0
Hourly Total	**0**	**0**	**47**	**8**	**0**	**0**	**0**	**55**	**55.0**	**0**	**0**	**17**	**2**	**0**	**0**	**0**	**19**	**19.0**
TOTAL	**0**	**1**	**169**	**29**	**0**	**0**	**1**	**200**	**200.4**	**7**	**1**	**89**	**19**	**3**	**0**	**0**	**119**	**114.3**

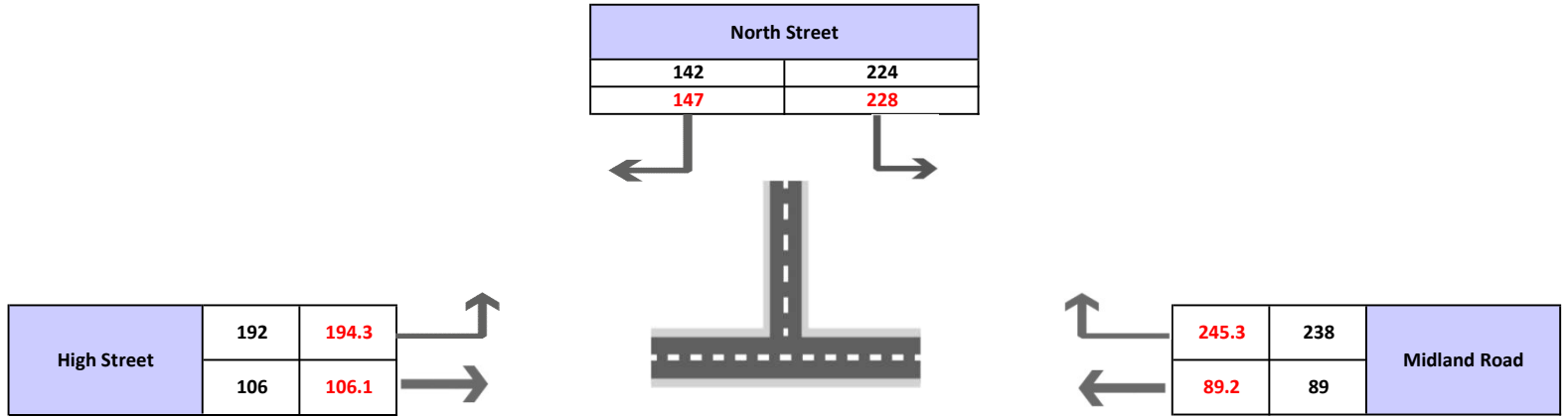
PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Road Data Services Ltd

From:	1) 07:30	**Show Peak Hour:**	☐
To:	1) 09:30	**Show PCUs:**	☑
Class:	All Vehicles	Show Session 2	

Wednesday 28th June 2023

PCUs



MEC
Development Technical Consultants

APPENDICES

APPENDIX F

West End – Trip Distribution Methodology

In order to calculate the traffic distribution for the West End development in the AM peak, journey to work data from the 2001 Census was used. For the PM peak it has been assumed that the AM distribution is reversed.

Raunds is made up of two wards; Raunds Saxon and Raunds Windmill, information was obtained for each then combined to calculate the overall distribution. The summarised origin and distribution information is shown in Figures A1 and A2 respectively.

The information shown in Figures A1 and A1 follows the same methodology, therefore the explanation detailed below for Figure A1 (Origin) is also true for Figure A2 (Destination).

Firstly, journey to work information was extracted for all trips originating in Raunds Windmill or Raunds Saxon to anywhere in the UK on a regional level, as shown in the top table on Figure A1. For all regions except East Midlands (87% of trips) the most likely route from the site to the edge of the network was worked out and assigned a letter as shown on Figure A3.

Next, journey to work information was extracted on a ward level for all wards within East Northampton and Wellingborough for both Raunds Saxon and Raunds Windmill. As with the regional data the most likely routes from the site to the edge of the network were worked out and a letter assigned, as shown on Figure A3.

For internal trips between Raunds Saxon and Raunds Windmill it has been assumed that those trips originating from the site and going to Raunds Windmill will be split 50/50 between Warth Park (L on Figure A3) and the employment area to the south of North Street (I on Figure A3). All trips from the site to Raunds Saxon have a destination of the High Street and a 60/40 north/south split has been assumed (J/K on Figure A3).

Finally, all percentages shown on the origin sheet for each of the destinations A-L were added together as shown in the bottom table on Figure A1, these percentages are then shown on Figure A3 against the relevant destination letters (A-L) to show how the trips generated by the West End development are distributed.

On Figure A3 those values shown in indigo refer to inbound trips, and those shown as orange refer to outbound trips.

The following data has been taken from Nomis (file saved in F:\CS 24675 Raunds temp folder\Census)

Work based trips have been used to generate distribution information for the proposed development
Raunds Saxon and Raunds Windmill are the two wards being used to represent the development

Journeys originating at the site

To	East	East Midlands	London	North East	North West	Northern Ireland	Scotland	South East	South West	Wales	West Midlands	Yorkshire and The Humber	Total
Saxon	257	1,831	45	0	3	0	0	50	9	0	3	9	2,207
Windmill	145	1,843	0	0	0	0	0	43	0	0	6	0	2,037
	402	3,674	45	0	3	0	0	93	9	0	9	9	4,244
percentage	9%	87%	1%	0%	0%	0%	0%	2%	0%	0%	0%	0%	
Destination (A-J)	G	Below	A	F	E	E	E	G	A	E	B	E	

East Midlands has been broken down into wards based on the distribution associated with East Northamptonshire and Wellingborough (these two have the most trips)

East Northamptonshire	Total : All people			% total distribution	Destination (A-J)
area of workplace : 2003 CAS ward	Saxon	Windmill			
34UDFX : Barnwell	12	15	27	1%	F
34UDFY : Dryden	16	12	28	1%	A
34UDFZ : Fineshade	0	0	0	0%	E
34UDGA : Higham Ferrers	64	70	134	4%	A
34UDGB : Irthlingborough	41	35	76	2%	B
34UDGC : King's Forest	3	0	3	0%	F
34UDGD : Lower Nene	0	3	3	0%	A
34UDGE : Lyveden	0	0	0	0%	E
34UDGF : Oundle	8	6	14	0%	F
34UDGG : Prebendal	0	0	0	0%	E
34UDGH : Raunds Saxon	621	238	859	26%	JK (60/40)
34UDGJ : Raunds Windmill	100	434	534	16%	IL (50/50)
34UDGK : Ringstead	28	11	39	1%	D
34UDGL : Rushden East	37	49	86	3%	A
34UDGM : Rushden North	77	126	203	6%	A
34UDGN : Rushden South	30	20	50	2%	A
34UDGP : Rushden West	5	3	8	0%	A
34UDGQ : Stanwick	25	16	41	1%	H
34UDGR : Thrapston	66	77	143	4%	F
34UDGS : Woodford	4	3	7	0%	E
Column Total	**1,137**	**1,118**	**2,255**		

Wellingborough	Total : All people			% total distribution	Destination (A-J)
area of workplace : 2003 CAS ward	Saxon	Windmill			
34UHFR : Brickhill	3	7	10	0%	C
34UHFS : Castle	28	38	66	2%	A
34UHFT : Croyland	51	35	86	3%	A
34UHFU : Earls Barton	4	6	10	0%	A
34UHFW : Finedon	10	14	24	1%	E
34UHFX : Great Doddington and	3	0	3	0%	A
34UHFY : Hemmingwell	39	58	97	3%	A
34UHFZ : Irchester	12	11	23	1%	A
34UHGA : North	4	3	7	0%	A
34UHGB : Queensway	40	42	82	3%	A
34UHGC : Redwell East	3	6	9	0%	A
34UHGD : Redwell West	17	25	42	1%	A
34UHGE : South	0	0	0	0%	A
34UHGF : Swanspool	43	52	95	3%	A
34UHGG : West	7	4	11	0%	A
34UHGH : Wollaston	14	4	18	1%	E
Column Total	**278**	**305**	**583**		
			2,838	87%	

Total % distribution	
A	33%
B	3%
C	0%
D	1%
E	2%
F	6%
G	12%
H	1%
I	8%
J	16%
K	10%
L	8%
	100%

FIGURE A1 - 2001 census data where Raunds = Origin

The following data has been taken from Nomis (file saved in F:\CS 24675 Raunds temp folder\Census)

Work based trips have been used to generate distribution information for the proposed development
Raunds Saxon and Raunds Windmill are the two wards being used to represent the development

Journeys where the site is the destination

From	East	East Midlands	London	North East	North West	Northern Ireland	Scotland	South East	South West	Wales	West Midlands	Yorkshire and The Humber	Total
Saxon	52	1,240	21	0	0	0	1	12	0	0	0	0	1,326
Windmill	33	803	3	0	0	0	0	3	0	0	0	0	842
	85	2,043	24	0	0	0	1	15	0	0	0	0	2,168
percentage	4%	94%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	
Origin (A-J)	G	Below	A	F	E	E	E	G	A	E	B	E	

East Midlands has been broken down into wards based on the distribution associated with East Northamptonshire and Wellingborough (these two have the most trips)

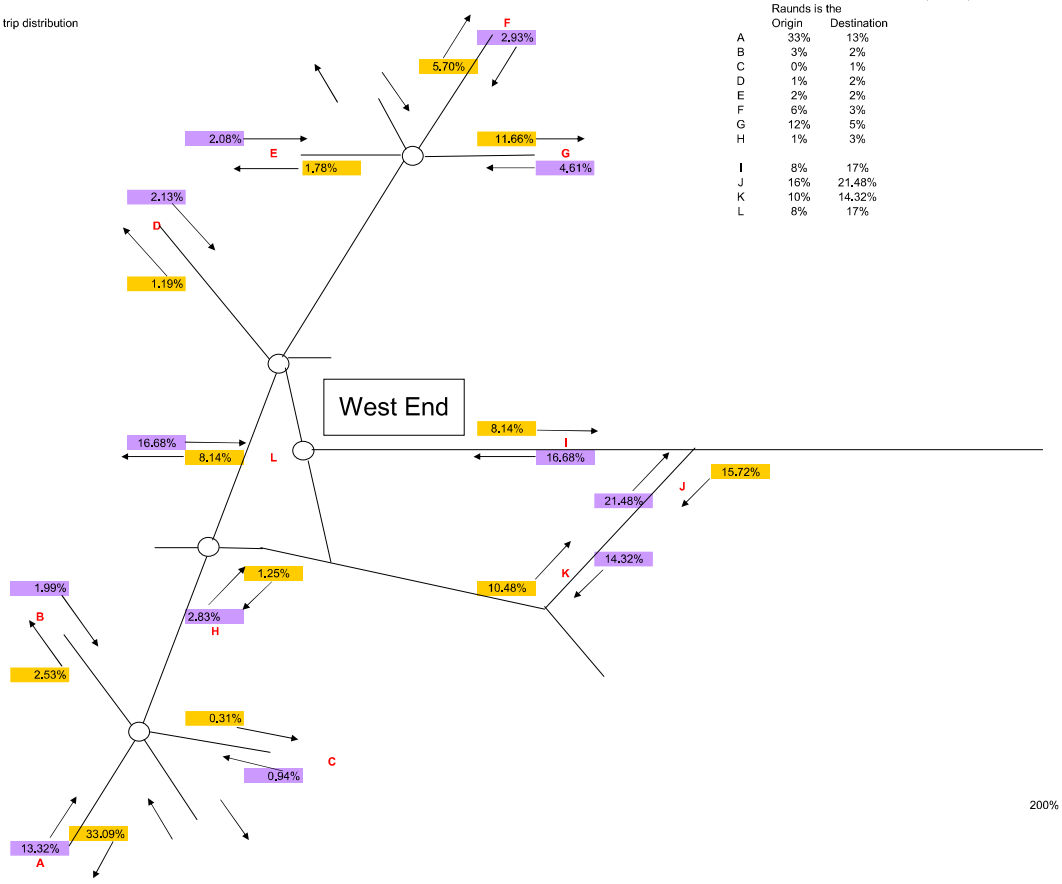
East Northamptonshire	Total : All people			% total distribution	Origin (A-J)
area of workplace : 2003 CAS ward	Saxon	Windmill			
34UDFX : Barnwell	6	0	6	0%	F
34UDFY : Dryden	8	3	11	1%	A
34UDFZ : Fineshade	0	0	0	0%	E
34UDGA : Higham Ferrers	37	15	52	3%	A
34UDGB : Irthlingborough	20	20	40	2%	B
34UDGC : King's Forest	0	3	3	0%	F
34UDGD : Lower Nene	0	0	0	0%	A
34UDGE : Lyveden	12	0	12	1%	E
34UDGF : Oundle	3	3	6	0%	F
34UDGG : Prebendal	3	0	3	0%	E
34UDGH : Raunds Saxon	621	100	721	36%	JK (60/40)
34UDGJ : Raunds Windmill	238	434	672	33%	IL (50/50)
34UDGK : Ringstead	21	22	43	2%	D
34UDGL : Rushden East	15	5	20	1%	A
34UDGM : Rushden North	13	10	23	1%	A
34UDGN : Rushden South	14	4	18	1%	A
34UDGP : Rushden West	22	12	34	2%	A
34UDGQ : Stanwick	30	27	57	3%	H
34UDGR : Thrapston	23	21	44	2%	F
34UDGS : Woodford	6	3	9	0%	E
Column Total	**1,092**	**682**	**1,774**		

Wellingborough	Total : All people			% total distribution	Origin (A-J)
area of workplace : 2003 CAS ward	Saxon	Windmill			
34UHFR : Brickhill	12	7	19	1%	C
34UHFS : Castle	7	6	13	1%	A
34UHFT : Croyland	7	3	10	0%	A
34UHFU : Earls Barton	0	0	0	0%	A
34UHFW : Finedon	8	6	14	1%	E
34UHFX : Great Doddington and	3	0	3	0%	A
34UHFY : Hemmingwell	9	6	15	1%	A
34UHFZ : Irchester	3	7	10	0%	A
34UHGA : North	0	3	3	0%	A
34UHGB : Queensway	9	5	14	1%	A
34UHGC : Redwell East	0	5	5	0%	A
34UHGD : Redwell West	0	3	3	0%	A
34UHGE : South	0	0	0	0%	A
34UHGF : Swanspool	12	0	12	1%	A
34UHGG : West	0	0	0	0%	A
34UHGH : Wollaston	0	3	3	0%	E
Column Total	**70**	**54**	**124**		
			1,898	94%	

Total % distribution	
A	13%
B	2%
C	1%
D	2%
E	2%
F	3%
G	5%
H	3%
I	17%
J	21%
K	14%
L	17%
	100%

FIGURE A2 - 2001 census data where Raunds = Destination

AM peak trip distribution

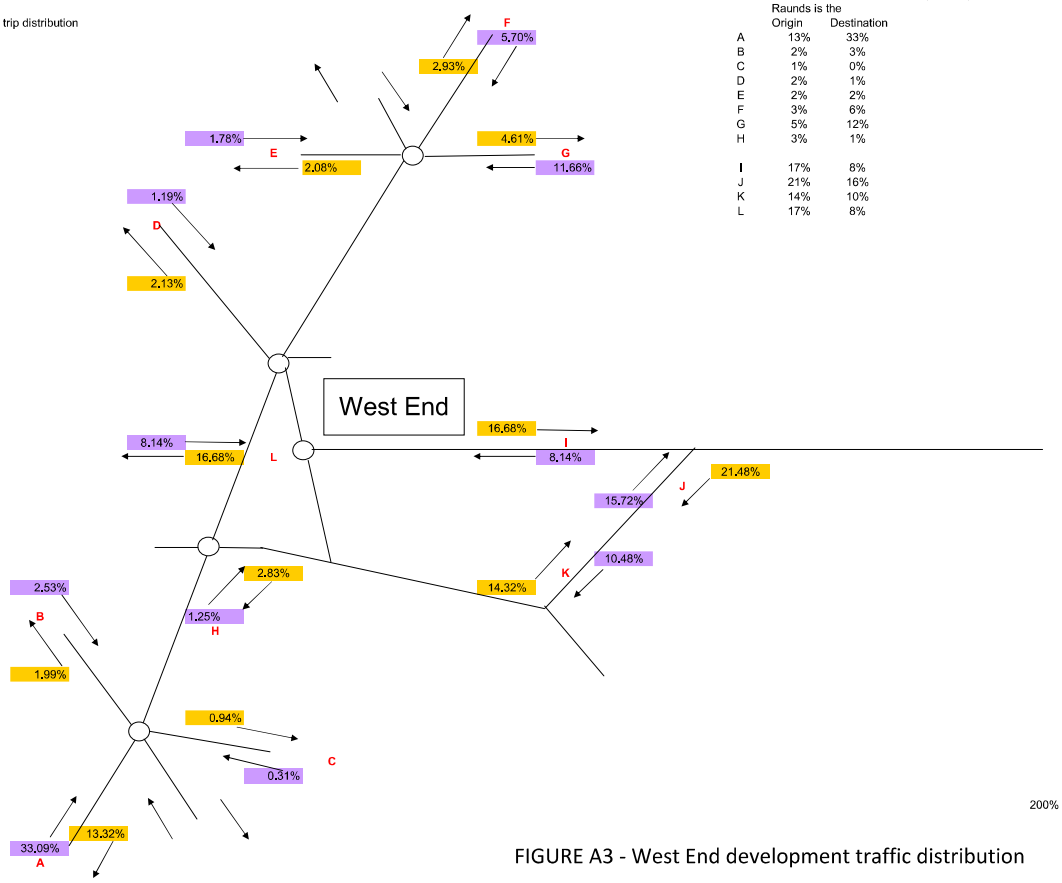


Distribution data taken from Census data (Raunds)

	Raunds is the Origin	Destination
A	33%	13%
B	3%	2%
C	0%	1%
D	1%	2%
E	2%	2%
F	6%	3%
G	12%	5%
H	1%	3%
I	8%	17%
J	16%	21.48%
K	10%	14.32%
L	8%	17%

200%

PM peak trip distribution



Distribution data taken from Census data (Raunds)

	Raunds is the Origin	Destination
A	13%	33%
B	2%	3%
C	1%	0%
D	2%	1%
E	2%	2%
F	3%	6%
G	5%	12%
H	3%	1%
I	17%	8%
J	21%	16%
K	14%	10%
L	17%	8%

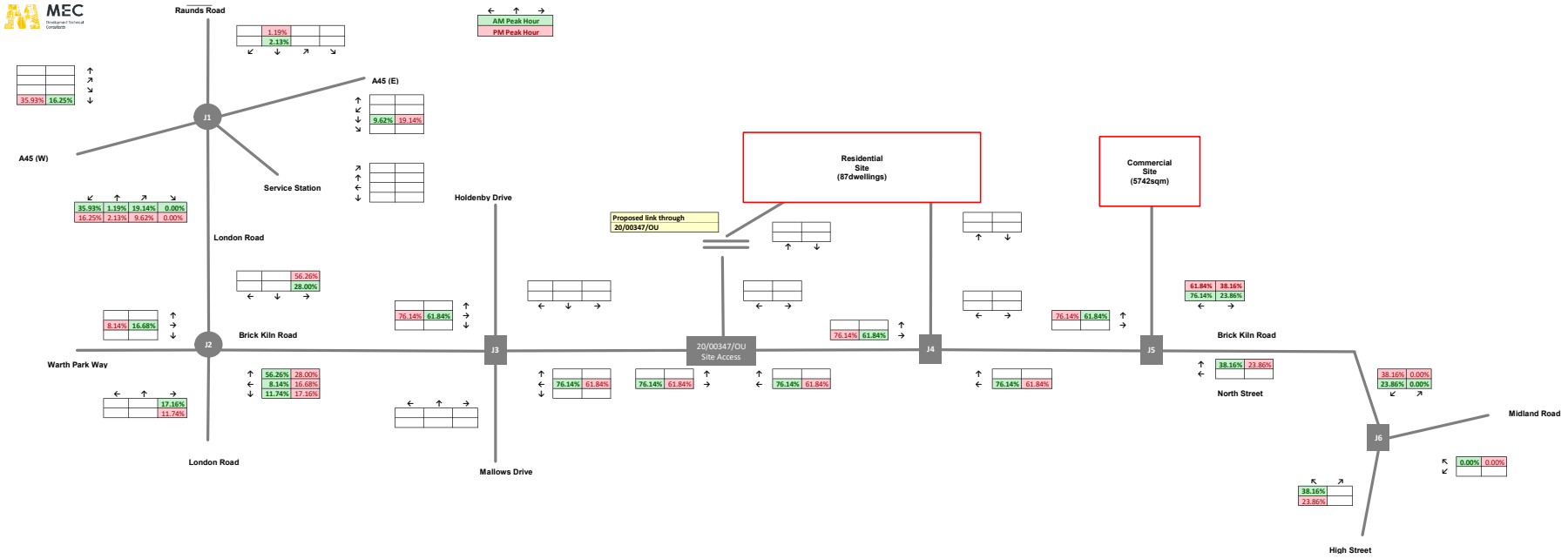
200%

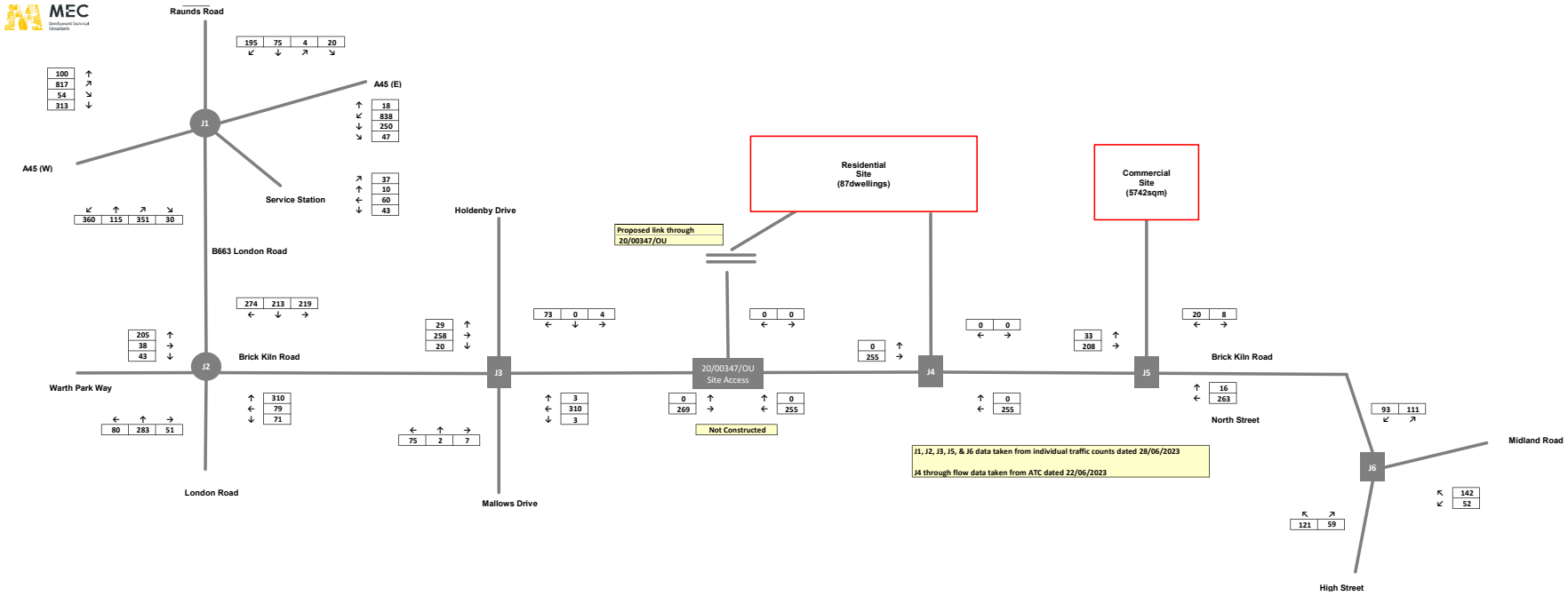
FIGURE A3 - West End development traffic distribution

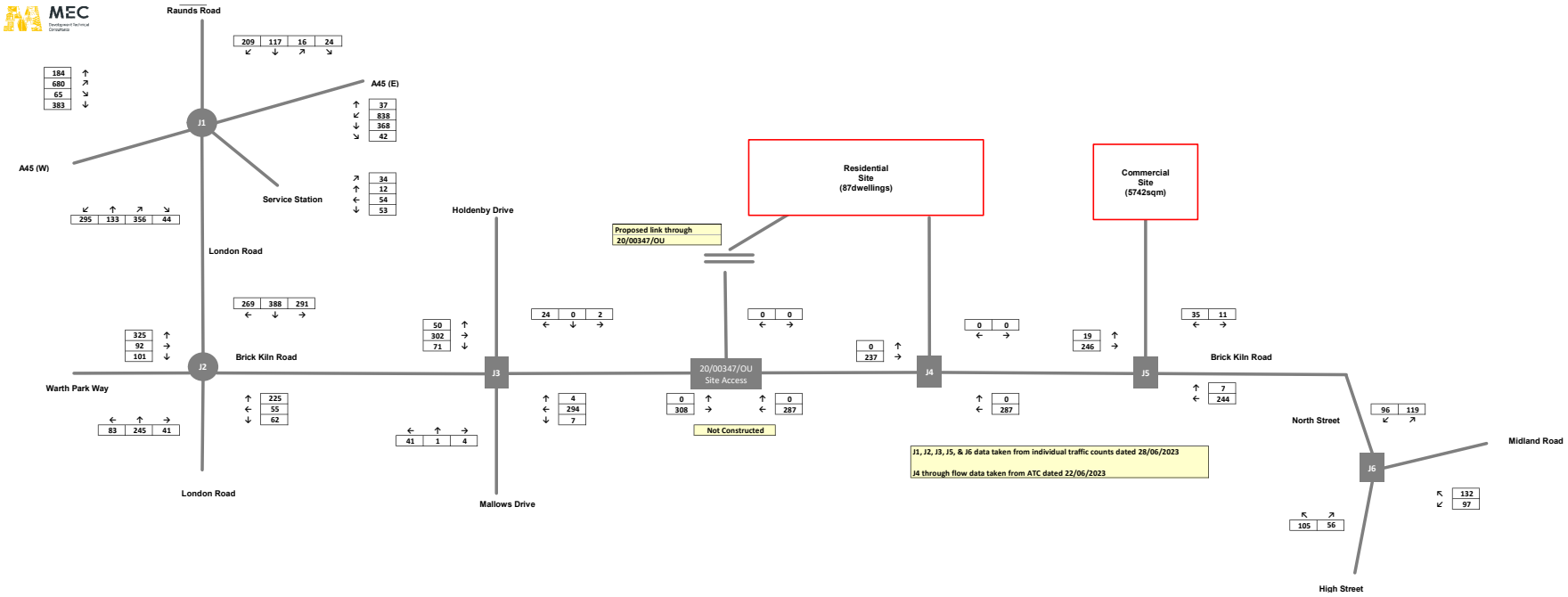
MEC
Development Technical Consultants

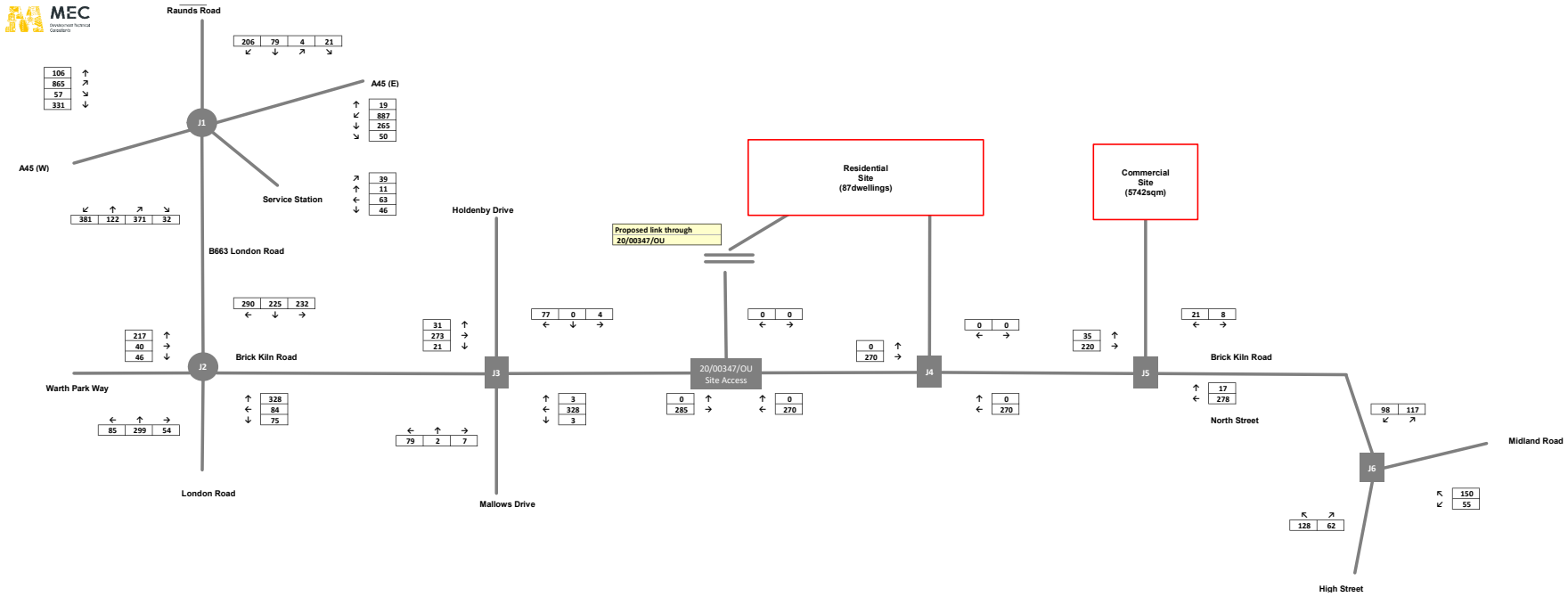
APPENDICES

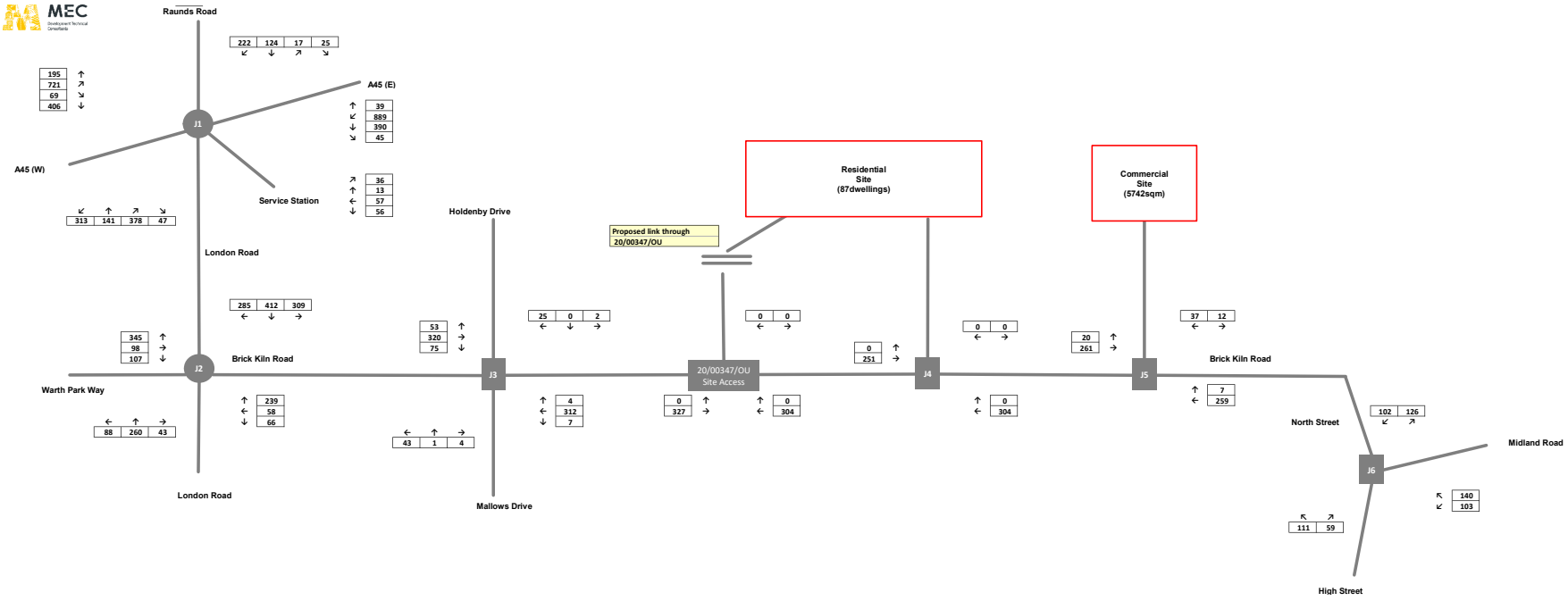
APPENDIX G

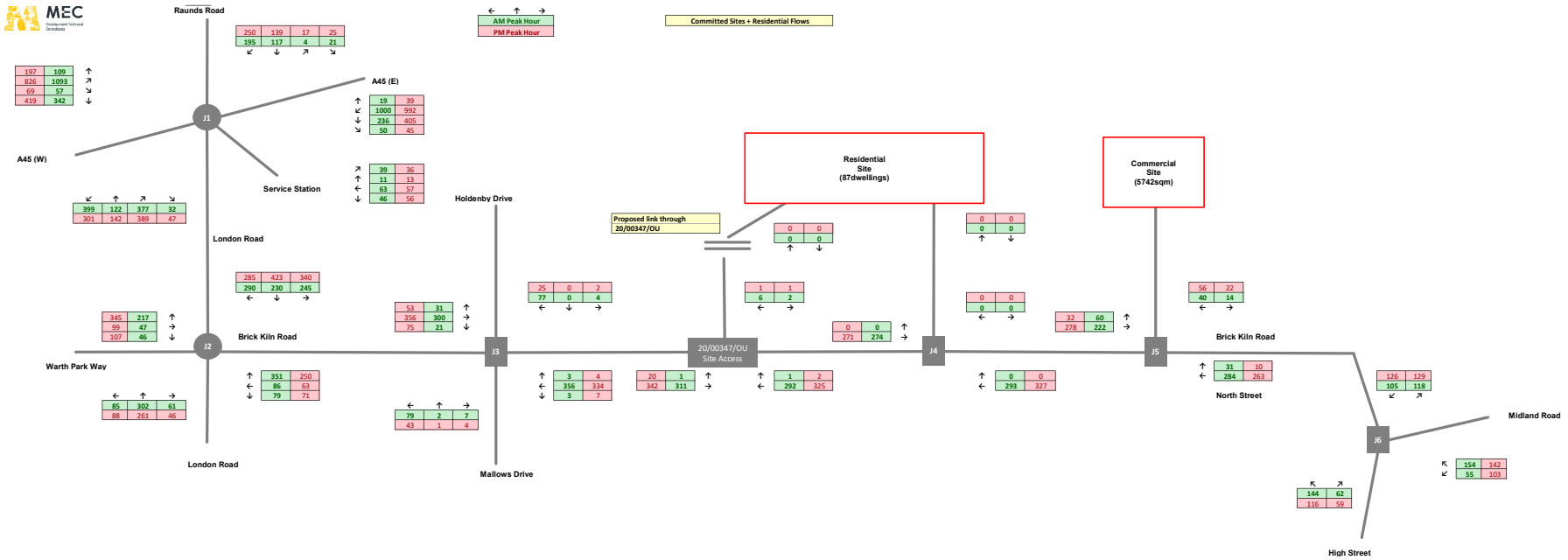

MEC
Raunds Road
AM Peak Hour
PM Peak Hour
A45 (E)
A45 (W)
J1
Service Station
Holdenby Drive
Residential Site (87dwellings)
Commercial Site (5742sqm)
Proposed link through 20/00347/OU
London Road
Brick Kiln Road
Warth Park Way
J2
J3
20/00347/OU Site Access
J4
J5
North Street
Mallows Drive
J6
Midland Road
High Street

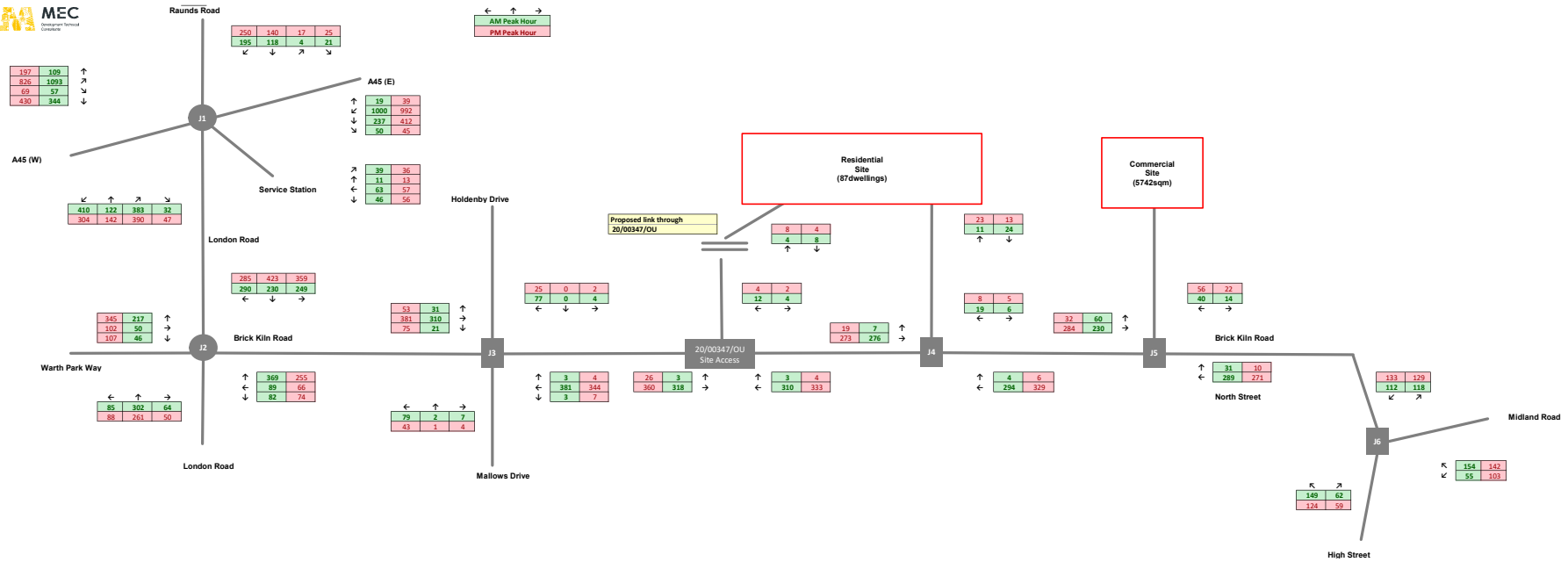

Raunds Road
195 75 4 20
100 817 54 313
A45 (E)
18 838 250 47
A45 (W)
J1
Service Station
37 10 60 43
360 115 351 30
Holdenby Drive
Residential Site (87dwellings)
Commercial Site (5742sqm)
Proposed link through 20/00347/OU
B663 London Road
274 213 219
73 0 4
0 0
0 0
20 8
205 38 43
29 258 20
0 255
33 208
J2
Brick Kiln Road
J3
20/00347/OU Site Access
J4
J5
Brick Kiln Road
Warth Park Way
310 79 71
3 310 3
0 269
0 255
0 255
16 263
North Street
80 283 51
75 2 7
Not Constructed
J1, J2, J3, J5, & J6 data taken from individual traffic counts dated 28/06/2023
J4 through flow data taken from ATC dated 22/06/2023
93 111
Midland Road
J6
142 52
121 59
London Road
Mallows Drive
High Street


Raunds Road
209 117 16 24
184 680 65 383
A45 (E)
37 838 368 42
A45 (W)
J1
Service Station
34 12 54 53
295 133 356 44
London Road
Holdenby Drive
Proposed link through 20/00347/OU
Residential Site (87dwellings)
Commercial Site (5742sqm)
269 388 291
50 302 71
24 0 2
0 0
0 237
0 0
19 246
35 11
325 92 101
J2
Brick Kiln Road
J3
20/00347/OU Site Access
J4
J5
Brick Kiln Road
Warth Park Way
225 55 62
4 294 7
0 308
0 287
0 287
7 244
83 245 41
41 1 4
Not Constructed
J1, J2, J3, J5, & J6 data taken from individual traffic counts dated 28/06/2023
J4 through flow data taken from ATC dated 22/06/2023
North Street
96 119
Midland Road
J6
132 97
105 56
London Road
Mallows Drive
High Street


Raunds Road
206 79 4 21
106 865 57 331
A45 (E)
19 887 265 50
A45 (W)
J1
Service Station
39 11 63 46
381 122 371 32
Holdenby Drive
Proposed link through 20/00347/OU
Residential Site (87dwellings)
Commercial Site (5742sqm)
B663 London Road
290 225 232
77 0 4
0 0
21 8
31 273 21
0 0
0 0
35 220
217 40 46
J2
Brick Kiln Road
J3
20/00347/OU Site Access
0 270
J4
J5
Brick Kiln Road
Warth Park Way
328 84 75
3 328 3
0 285
0 270
0 270
0 270
17 278
North Street
98 117
Midland Road
85 299 54
79 2 7
J6
150 55
128 62
London Road
Mallows Drive
High Street


Raunds Road
222 124 17 25
195 721 69 406
A45 (E)
39 889 390 45
A45 (W)
J1
36 13 57 56
Service Station
313 141 378 47
London Road
Holdenby Drive
Proposed link through 20/00347/OU
Residential Site (87dwellings)
Commercial Site (5742sqm)
285 412 309
345 98 107
Brick Kiln Road
J2
53 320 75
25 0 2
0 0
0 251
0 0
20 261
37 12
J3
20/00347/OU Site Access
J4
J5
Brick Kiln Road
Warth Park Way
239 58 66
4 312 7
0 327
0 304
0 304
7 259
88 260 43
43 1 4
North Street
102 126
Midland Road
J6
140 103
111 59
London Road
Mallows Drive
High Street


MEC
Development Technical Consultants
Raunds Road
AM Peak Hour
PM Peak Hour
Committed Sites + Residential Flows
A45 (E)
A45 (W)
J1
Service Station
London Road
Holdenby Drive
Proposed link through 20/00347/OU
Residential Site (87dwellings)
Commercial Site (5742sqm)
J2
Brick Kiln Road
Warth Park Way
J3
20/00347/OU Site Access
J4
J5
Brick Kiln Road
North Street
Midland Road
J6
High Street
London Road
Mallows Drive


MEC
Development Technical Consultants
Raunds Road
AM Peak Hour
PM Peak Hour
A45 (E)
A45 (W)
J1
Service Station
Holdenby Drive
Residential Site (87dwellings)
Commercial Site (5742sqm)
Proposed link through 20/00347/OU
London Road
Brick Kiln Road
Warth Park Way
J2
J3
20/00347/OU Site Access
J4
J5
North Street
Brick Kiln Road
Midland Road
J6
High Street
Mallows Drive
London Road

MEC
Development Technical Consultants

APPENDICES

APPENDIX H

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Junction 4 Resi - Residential Site Access - Brick Kiln Road.j9
Path: T:\M-EC Job Book\25273\calculations\transport\Updated surveys, distribution, and Models\Models\Junction 4
Report generation date: 11/09/2023 09:47:07

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	Resi Site Access - Brick Kiln Road - 2031 Do Minimum (Residential)									
Stream B-AC	D1	0.0	0.00	0.00	A	D2	0.0	0.00	0.00	A
Stream C-AB		0.0	0.00	0.00	A		0.0	0.00	0.00	A
	Resi Site Access - Brick Kiln Road - 2031 Do Something (Residential)									
Stream B-AC	D5	0.1	7.63	0.06	A	D6	0.0	7.20	0.03	A
Stream C-AB		0.0	4.96	0.01	A		0.0	4.87	0.01	A

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

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

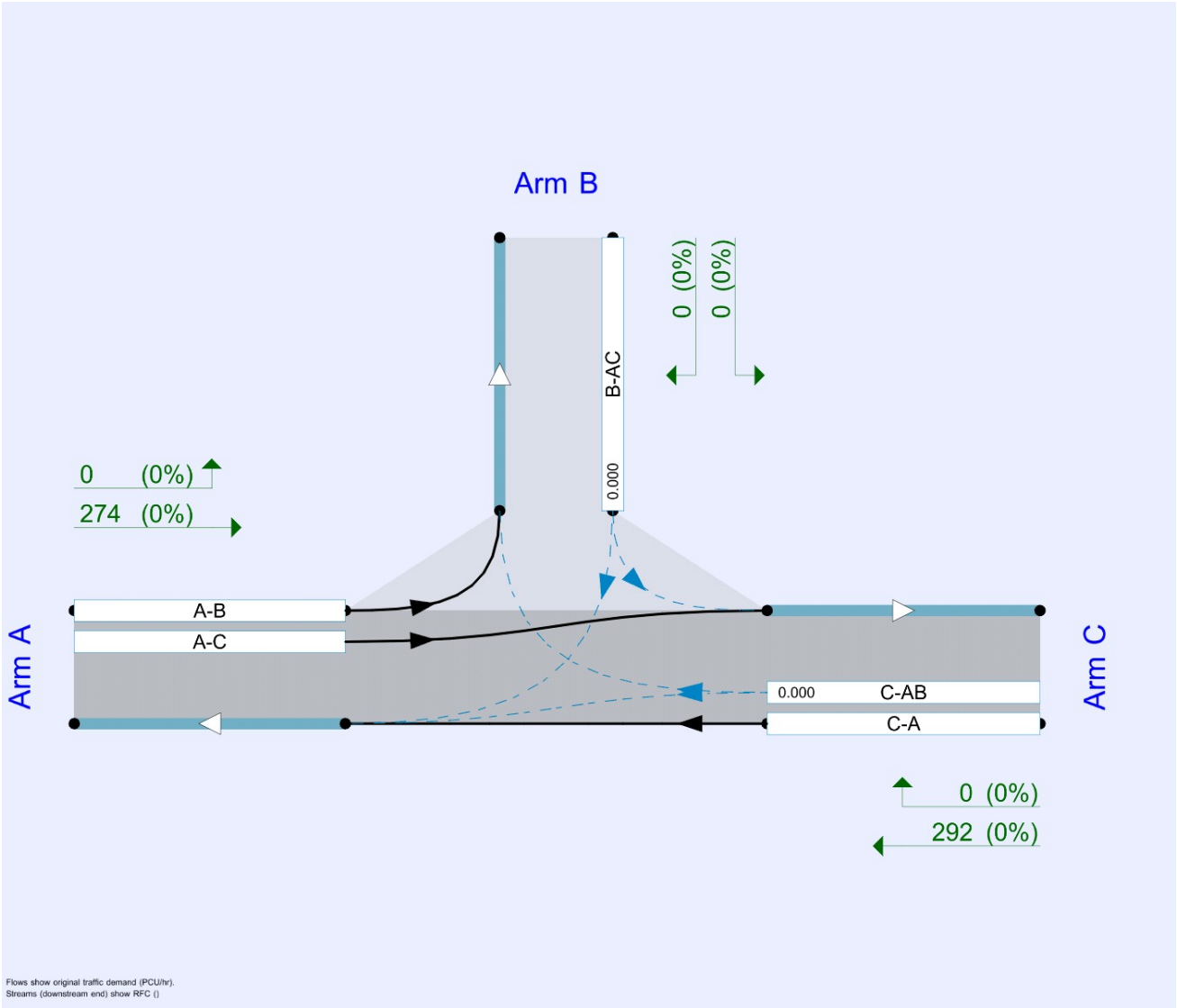
File summary

File Description

Title	
Location	
Site number	
Date	19/07/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	M-EC\james.wright
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A4	Resi Site Access - Brick Kiln Road	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031 Do Minimum (Residential)	AM	ONE HOUR	08:00	09:30	15

Resi Site Access - Brick Kiln Road - 2031 Do Minimum (Residential), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Brick Kiln Road W		Major
B	Site Access		Minor
C	Brick Kiln Road E		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.10			100.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	175	150

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	614	0.111	0.281	0.177	0.402
B-C	718	0.110	0.277	-	-
C-B	632	0.244	0.244	-	-

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

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

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

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	274	100.000
B		✓	0	100.000
C		✓	292	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	274
	B	0	0	0
	C	292	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	580	0.000	0	0.0	0.000	A
C-AB	0	582	0.000	0	0.0	0.000	A
C-A	220			220			
A-B	0			0			
A-C	206			206			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	564	0.000	0	0.0	0.000	A
C-AB	0	572	0.000	0	0.0	0.000	A
C-A	263			263			
A-B	0			0			
A-C	246			246			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	541	0.000	0	0.0	0.000	A
C-AB	0	558	0.000	0	0.0	0.000	A
C-A	321			321			
A-B	0			0			
A-C	302			302			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	541	0.000	0	0.0	0.000	A
C-AB	0	558	0.000	0	0.0	0.000	A
C-A	321			321			
A-B	0			0			
A-C	302			302			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	564	0.000	0	0.0	0.000	A
C-AB	0	572	0.000	0	0.0	0.000	A
C-A	263			263			
A-B	0			0			
A-C	246			246			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	580	0.000	0	0.0	0.000	A
C-AB	0	582	0.000	0	0.0	0.000	A
C-A	220			220			
A-B	0			0			
A-C	206			206			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 20 00347 OUT site access - Resi.j9
Path: T:\M-EC Job Book\25273\calculations\transport\Updated surveys, distribution, and Models\Models\20 00347 OUT site access
Report generation date: 11/09/2023 10:42:01

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2031 Do Minimum Residential									
Stream B-AC	D1	0.0	8.14	0.02	A	D2	0.0	0.00	0.00	A
Stream C-AB		0.0	4.82	0.00	A		0.0	4.77	0.00	A
	2031 Do Something Residential									
Stream B-AC	D5	0.0	8.42	0.04	A	D6	0.0	8.30	0.02	A
Stream C-AB		0.0	4.78	0.01	A		0.0	4.79	0.01	A

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

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

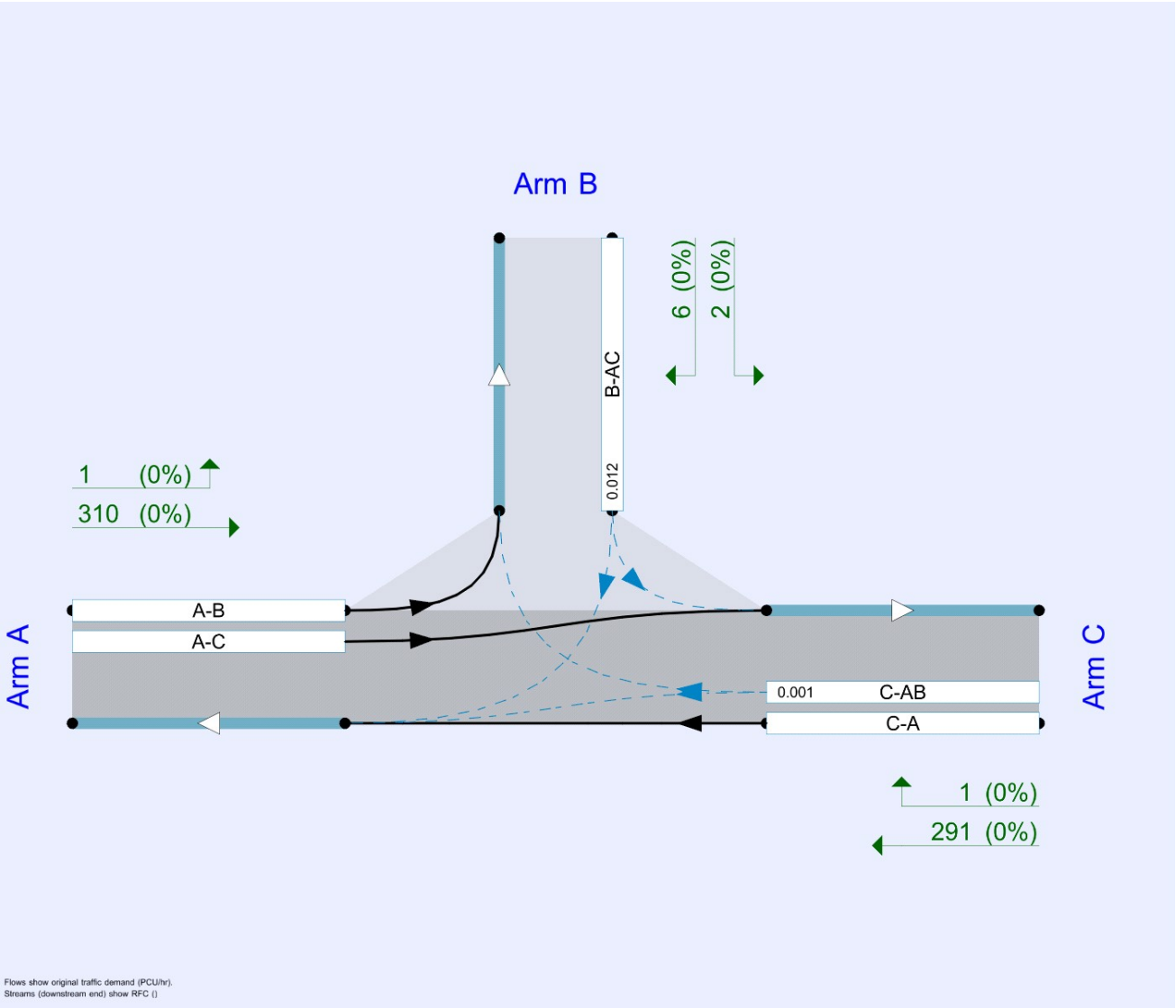
File summary

File Description

Title	
Location	
Site number	
Date	27/07/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	M-EC\james.wright
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031 Do Minimum Residential	AM	ONE HOUR	08:00	09:30	15

2031 Do Minimum Residential, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	untitled		Minor
C	untitled		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.60			150.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	35	150

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	549	0.097	0.246	0.155	0.352
B-C	700	0.105	0.264	-	-
C-B	661	0.249	0.249	-	-

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

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

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

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	311	100.000
B		✓	8	100.000
C		✓	292	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	310
	B	6	0	2
	C	291	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	8.14	0.0	A
C-AB	0.00	4.82	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	492	0.012	6	0.0	7.405	A
C-AB	1	748	0.001	1	0.0	4.817	A
C-A	219			219			
A-B	0.75			0.75			
A-C	233			233			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	475	0.015	7	0.0	7.698	A
C-AB	1	767	0.002	1	0.0	4.702	A
C-A	261			261			
A-B	0.90			0.90			
A-C	279			279			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	451	0.020	9	0.0	8.144	A
C-AB	2	793	0.002	2	0.0	4.547	A
C-A	320			320			
A-B	1			1			
A-C	341			341			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	451	0.020	9	0.0	8.144	A
C-AB	2	793	0.002	2	0.0	4.547	A
C-A	320			320			
A-B	1			1			
A-C	341			341			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	475	0.015	7	0.0	7.700	A
C-AB	1	767	0.002	1	0.0	4.704	A
C-A	261			261			
A-B	0.90			0.90			
A-C	279			279			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	492	0.012	6	0.0	7.408	A
C-AB	1	748	0.001	1	0.0	4.819	A
C-A	219			219			
A-B	0.75			0.75			
A-C	233			233			

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Junction 1 - A45 Roundabout - Resi.j9
Path: T:\M-EC Job Book\25273\calculations\transport\Updated surveys, distribution, and Models\Models\Junction 1
Report generation date: 11/09/2023 09:25:04

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	A45 Roundabout - 2023 Base									
Arm 1	D1	0.3	3.16	0.22	A	D2	0.4	3.32	0.27	A
Arm 2		6.1	18.03	0.87	C		37.1	89.54	1.03	F
Arm 3		0.1	3.06	0.12	A		0.2	3.50	0.14	A
Arm 4		24.5	91.58	1.01	F		16.0	65.32	0.98	F
Arm 5		1.6	4.02	0.61	A		1.7	4.39	0.64	A
	A45 Roundabout - 2031 Do Minimum (Residential)									
Arm 1	D3	0.4	4.01	0.29	A	D4	0.5	4.12	0.35	A
Arm 2		29.6	72.97	1.01	F		166.8	401.58	1.24	F
Arm 3		0.2	3.45	0.14	A		0.2	3.69	0.15	A
Arm 4		88.0	299.89	1.19	F		39.5	138.07	1.06	F
Arm 5		3.1	6.34	0.76	A		2.8	6.09	0.74	A
	A45 Roundabout - 2031 Do Something (Residential)									
Arm 1	D7	0.4	4.02	0.29	A	D8	0.5	4.17	0.36	A
Arm 2		30.7	75.05	1.01	F		174.0	424.35	1.25	F
Arm 3		0.2	3.46	0.14	A		0.2	3.70	0.16	A
Arm 4		97.7	343.55	1.22	F		39.8	138.58	1.06	F
Arm 5		3.1	6.34	0.76	A		2.9	6.23	0.74	A

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

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

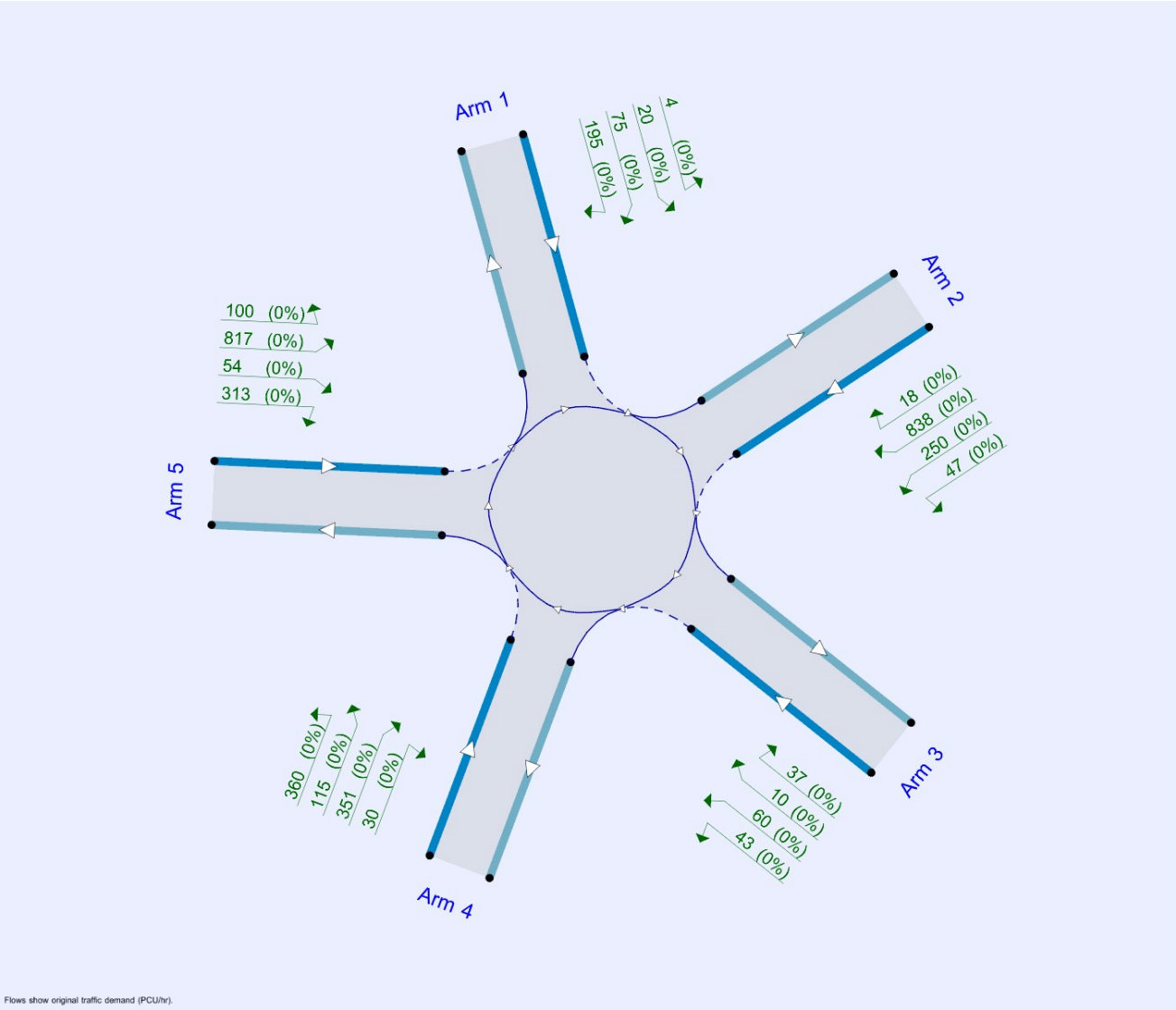
File summary

File Description

Title	
Location	
Site number	
Date	26/07/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	M-EC\james.wright
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	A45 Roundabout	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15

A45 Roundabout - 2023 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	28.30	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Raunds Road	
2	A45 E	
3	A45 W	
4	Service Station	
5	B663	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.50	10.50	30.0	48.0	75.0	29.0	
2	3.65	7.10	30.0	22.0	75.0	35.0	
3	4.60	10.00	29.0	37.0	75.0	30.0	
4	3.65	6.40	8.7	21.8	75.0	33.0	
5	7.30	9.00	30.0	30.0	75.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.622	2551
2	0.505	1846
3	0.608	2473
4	0.456	1511
5	0.640	2691

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

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	294	100.000
2		✓	1153	100.000
3		✓	150	100.000
4		✓	856	100.000
5		✓	1284	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	4	20	75	195
	2	18	0	47	250	838
	3	10	37	0	43	60
	4	115	351	30	0	360
	5	100	817	54	313	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.22	3.16	0.3	A
2	0.87	18.03	6.1	C
3	0.12	3.06	0.1	A
4	1.01	91.58	24.5	F
5	0.61	4.02	1.6	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	221	1201	1804	0.123	221	0.1	2.274	A
2	868	516	1585	0.548	863	1.2	4.953	A
3	113	1266	1703	0.066	113	0.1	2.263	A
4	644	868	1115	0.578	639	1.3	7.486	A
5	967	419	2423	0.399	964	0.7	2.463	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	264	1437	1657	0.160	264	0.2	2.584	A
2	1037	617	1534	0.676	1033	2.0	7.136	A
3	135	1515	1552	0.087	135	0.1	2.540	A
4	770	1038	1037	0.742	764	2.7	12.931	B
5	1154	501	2370	0.487	1153	0.9	2.954	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	324	1737	1470	0.220	323	0.3	3.140	A
2	1269	753	1465	0.866	1255	5.7	16.087	C
3	165	1845	1351	0.122	165	0.1	3.034	A
4	942	1264	934	1.009	888	16.3	51.880	F
5	1414	586	2316	0.610	1411	1.5	3.968	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	324	1749	1463	0.221	324	0.3	3.160	A
2	1269	755	1464	0.867	1268	6.1	18.029	C
3	165	1858	1343	0.123	165	0.1	3.056	A
4	942	1274	929	1.014	910	24.5	91.585	F
5	1414	599	2308	0.613	1414	1.6	4.025	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	264	1480	1630	0.162	265	0.2	2.637	A
2	1037	622	1532	0.677	1052	2.1	7.741	A
3	135	1534	1540	0.088	135	0.1	2.564	A
4	770	1053	1030	0.747	855	3.2	29.131	D
5	1154	554	2337	0.494	1157	1.0	3.058	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	221	1210	1798	0.123	222	0.1	2.283	A
2	868	518	1584	0.548	872	1.2	5.080	A
3	113	1276	1697	0.067	113	0.1	2.273	A
4	644	875	1111	0.580	652	1.4	7.943	A
5	967	427	2418	0.400	968	0.7	2.484	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Junction 2 Resi.j9
Path: T:\M-EC Job Book\25273\calculations\transport\Updated surveys, distribution, and Models\Models\Junction 2
Report generation date: 11/09/2023 10:27:00

«B663 / Brick Kiln Road / London Road / Warth Park Way Roundabout - 2023 Base, AM

- »Junction Network
- »Arms
- »Traffic Demand
- »Origin-Destination Data
- »Vehicle Mix
- »Results

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	B663 / Brick Kiln Road / London Road / Warth Park Way Roundabout - 2023 Base									
Arm 1	D1	0.4	1.85	0.29	A	D2	0.7	2.25	0.40	A
Arm 2		1.0	7.16	0.50	A		0.7	6.97	0.42	A
Arm 3		0.6	4.51	0.36	A		0.4	3.93	0.31	A
Arm 4		0.2	2.02	0.15	A		0.4	2.21	0.26	A
	B663 / Brick Kiln Road / London Road / Warth Park Way Roundabout - 2031 Do Minimum (Residential)									
Arm 1	D3	0.5	1.93	0.31	A	D4	0.8	2.45	0.44	A
Arm 2		1.3	8.49	0.57	A		0.3	5.56	0.25	A
Arm 3		0.7	4.98	0.41	A		0.4	3.70	0.31	A
Arm 4		0.2	2.12	0.17	A		0.4	2.12	0.26	A
	B663 / Brick Kiln Road / London Road / Warth Park Way Roundabout - 2031 Do Something (Residential)									
Arm 1	D7	0.5	1.94	0.31	A	D8	0.5	2.08	0.34	A
Arm 2		1.5	9.08	0.60	A		0.8	6.41	0.44	A
Arm 3		0.7	5.09	0.41	A		0.4	3.58	0.30	A
Arm 4		0.2	2.14	0.17	A		0.4	2.33	0.28	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	06/09/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	M-EC\james.wright
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A2	B663 / Brick Kiln Road / London Road / Warth Park Way Roundabout	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15

B663 / Brick Kiln Road / London Road / Warth Park Way Roundabout - 2023 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	3.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B663	
2	Brick Kiln Road	
3	Londonn Road	
4	Warth Park Way	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	7.50	9.83	21.9	24.6	60.3	29.0	
2	3.14	6.81	7.6	11.0	60.3	41.0	
3	3.25	8.23	12.6	19.7	60.3	29.0	
4	8.54	8.54	0.0	19.9	60.3	29.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.755	2835
2	0.462	1279
3	0.548	1654
4	0.711	2596

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

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	706	100.000
2		✓	460	100.000
3		✓	414	100.000
4		✓	286	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	219	213	274
	2	310	0	71	79
	3	283	51	0	80
	4	205	38	43	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.29	1.85	0.4	A
2	0.50	7.16	1.0	A
3	0.36	4.51	0.6	A
4	0.15	2.02	0.2	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	532	99	2760	0.193	531	0.2	1.614	A
2	346	398	1095	0.316	344	0.5	4.788	A
3	312	497	1382	0.226	311	0.3	3.358	A
4	215	483	2253	0.096	215	0.1	1.765	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	635	119	2745	0.231	634	0.3	1.704	A
2	414	476	1058	0.391	413	0.6	5.570	A
3	372	595	1328	0.280	372	0.4	3.762	A
4	257	578	2185	0.118	257	0.1	1.866	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	777	145	2725	0.285	777	0.4	1.847	A
2	506	583	1009	0.502	505	1.0	7.122	A
3	456	729	1255	0.363	455	0.6	4.497	A
4	315	708	2093	0.150	315	0.2	2.024	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	777	145	2725	0.285	777	0.4	1.847	A
2	506	584	1009	0.502	506	1.0	7.164	A
3	456	730	1254	0.363	456	0.6	4.508	A
4	315	709	2092	0.151	315	0.2	2.025	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	635	119	2745	0.231	635	0.3	1.708	A
2	414	477	1058	0.391	415	0.6	5.609	A
3	372	597	1327	0.281	373	0.4	3.775	A
4	257	580	2183	0.118	257	0.1	1.868	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	532	99	2760	0.193	532	0.2	1.617	A
2	346	399	1094	0.317	347	0.5	4.823	A
3	312	500	1380	0.226	312	0.3	3.370	A
4	215	486	2251	0.096	215	0.1	1.770	A

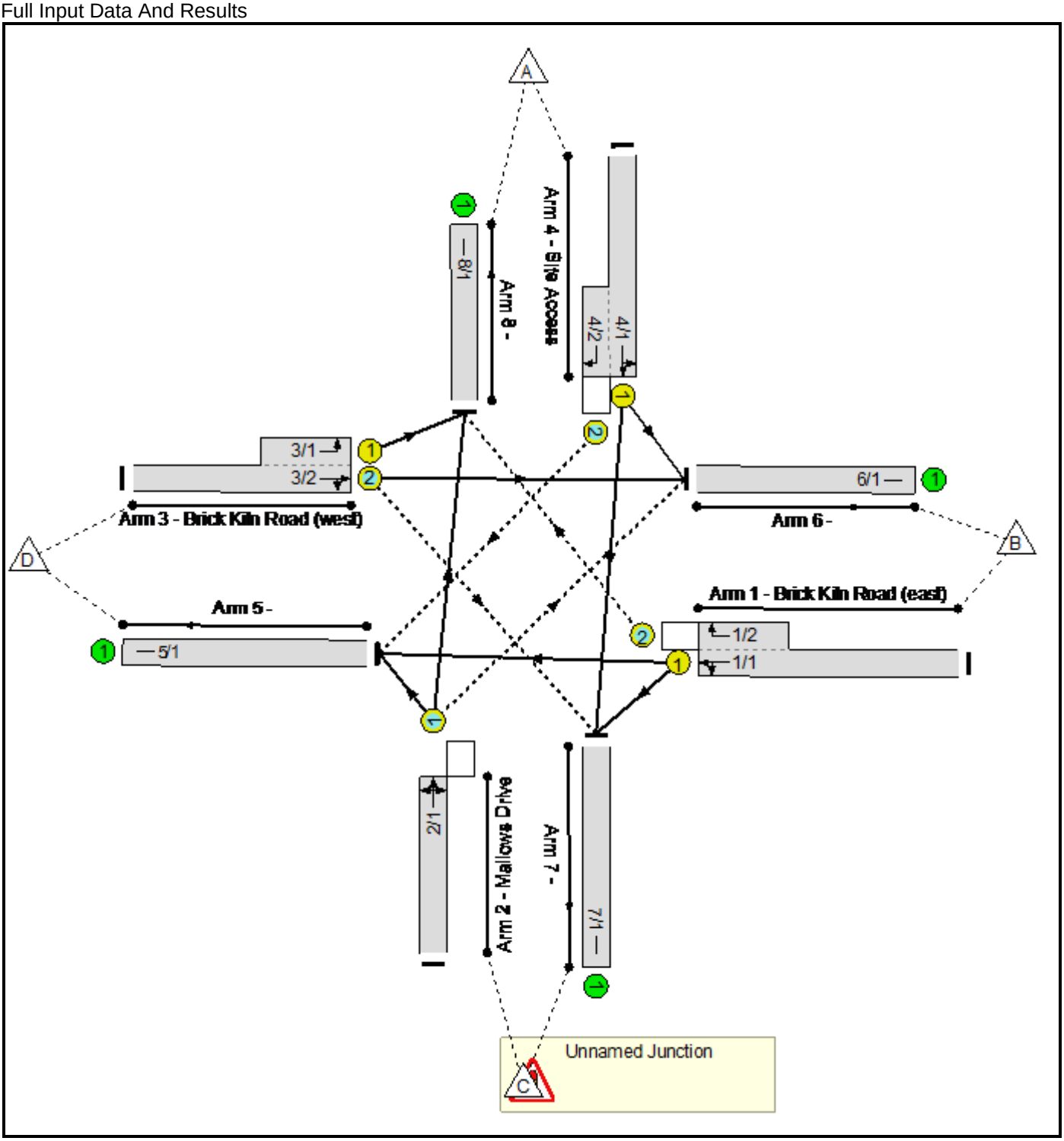
Full Input Data And Results

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	Resi - Junction 3 Option 1 NNC Model with MEC Data.lsg3x
Author:	
Company:	
Address:	

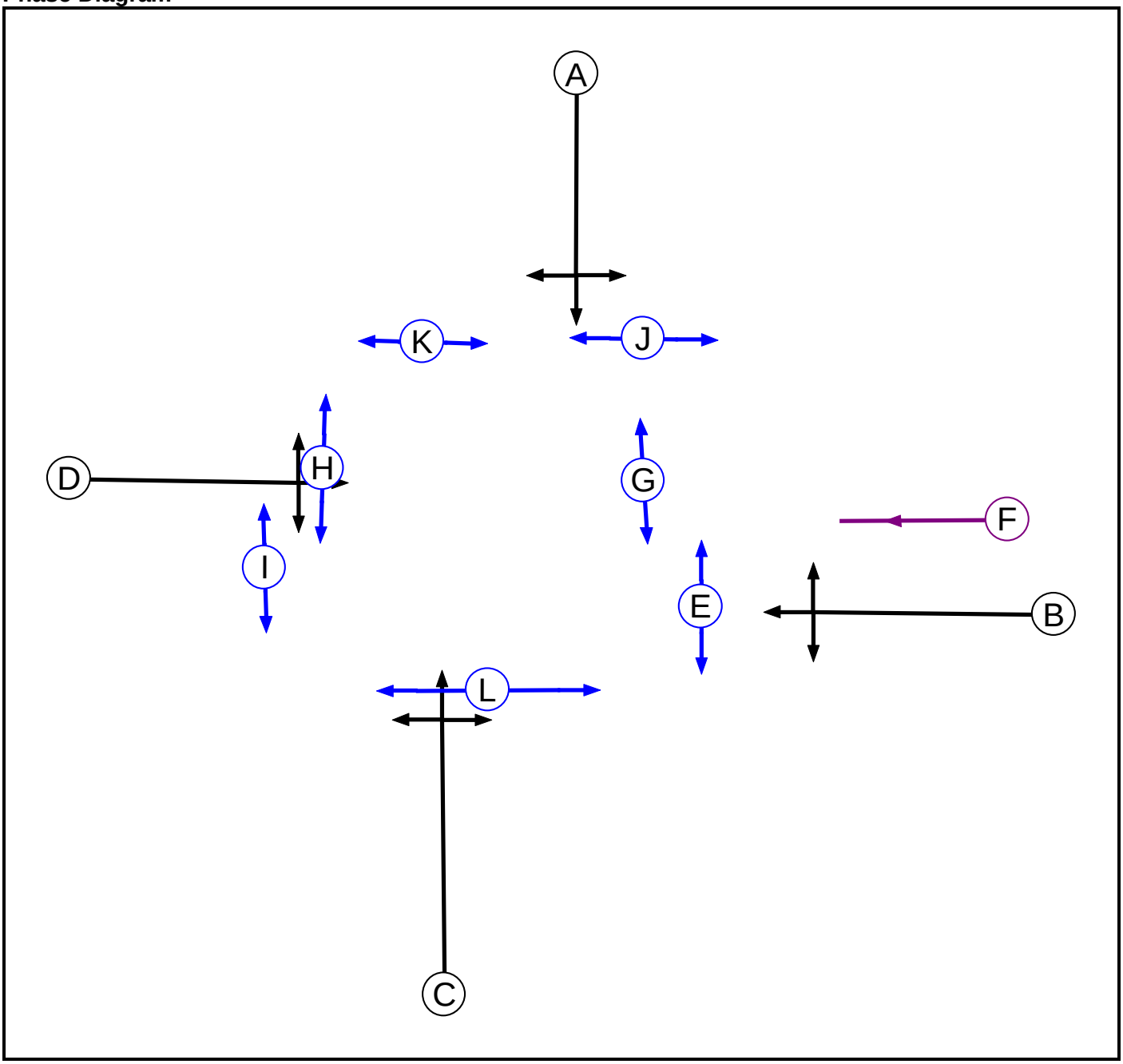
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Phase Diagram



Full Input Data And Results

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		5	5
F	Ind. Arrow		7	7
G	Pedestrian		5	5
H	Pedestrian		7	7
I	Pedestrian		7	7
J	Pedestrian		7	7
K	Pedestrian		7	7
L	Pedestrian		7	7

Phase Intergreens Matrix

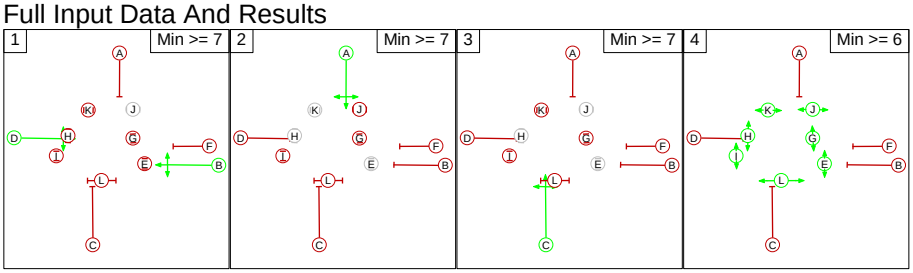
		Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K	L
Terminating Phase	A		5	5	7	-	5	7	-	9	5	-	8
	B	5		5	-	5	-	-	-	8	-	10	8
	C	5	7		5	-	5	9	-	7	-	8	5
	D	5	-	5		-	7	8	5	-	-	7	10
	E	-	6	-	-		6	-	-	-	-	-	-
	F	5	-	5	5	5		-	-	-	-	10	-
	G	7	-	7	7	-	-		-	-	-	-	-
	H	-	-	-	7	-	-	-		-	-	-	-
	I	5	5	5	-	-	-	-	-		-	-	-
	J	7	-	-	-	-	-	-	-	-		-	-
	K	-	10	10	10	-	10	-	-	-	-		-
	L	8	8	8	8	-	-	-	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	B D
2	A
3	C
4	E G H I J K L

Stage Diagram

Full Input Data And Results



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
4	1	L	Losing	2	2
4	3	L	Losing	2	2

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		5	5	10
	2	7		5	9
	3	7	5		9
	4	10	8	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/2 (Brick Kiln Road (east))	8/1 (Right)	1440	0	3/2	1.09	All	2.00	-	0.50	2	2.00
				3/1	1.09	All					
2/1 (Mallows Drive)	6/1 (Right)	1440	0	4/1	1.09	All	2.00	2.00	0.50	2	2.00
3/2 (Brick Kiln Road (west))	7/1 (Right)	1440	0	1/1	1.09	All	-	-	-	-	-
				1/2	1.09	All					
4/2 (Site Access)	5/1 (Right)	1440	0	2/1	1.09	To 5/1 (Left) To 8/1 (Ahead)	2.00	-	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Brick Kiln Road (east))	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 7 Left	15.00
1/2 (Brick Kiln Road (east))	O	B	2	3	5.0	Geom	-	3.25	0.00	N	Arm 8 Right	20.00
2/1 (Mallows Drive)	O	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Left	12.50
											Arm 6 Right	15.00
											Arm 8 Ahead	Inf
3/1 (Brick Kiln Road (west))	U	D	2	3	5.0	Geom	-	3.25	0.00	Y	Arm 8 Left	15.00
3/2 (Brick Kiln Road (west))	O	D	2	3	60.0	Geom	-	3.25	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	20.00
4/1 (Site Access)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Left	15.00
											Arm 7 Ahead	Inf
4/2 (Site Access)	O	A	2	3	5.0	Geom	-	3.25	0.00	N	Arm 5 Right	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Am Base'	08:00	09:00	01:00	
2: 'PM Base'	17:00	18:00	01:00	
3: '2031 Do Minimum (Residential) AM'	08:00	09:00	01:00	
4: '2031 Do Minimum (Residential) PM'	17:00	18:00	01:00	
5: '2031 Do Minimum (Commercial) AM'	08:00	09:00	01:00	
6: '2031 Do Minimum (Commercial) PM'	17:00	18:00	01:00	
7: '2031 Do Something (Residential) AM'	08:00	09:00	01:00	
8: '2031 Do Something (Residential) PM'	17:00	18:00	01:00	
9: '2031 Do Something (Commercial) AM'	08:00	09:00	01:00	
10: '2031 Do Something (Commercial) PM'	17:00	18:00	01:00	

Scenario 1: 'AM Base' (FG1: 'Am Base', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	4	0	73	77
	B	3	0	310	3	316
	C	2	7	0	75	84
	D	29	258	20	0	307
	Tot.	34	269	330	151	784

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: AM Base
Junction: Unnamed Junction	
1/1 (with short)	316(In) 313(Out)
1/2 (short)	3
2/1	84
3/1 (short)	29
3/2 (with short)	307(In) 278(Out)
4/1 (with short)	77(In) 4(Out)
4/2 (short)	73
5/1	151
6/1	269
7/1	330
8/1	34

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Brick Kiln Road (east))	3.00	0.00	Y	Arm 5 Ahead	Inf	1.0 %	1742	1742
				Arm 7 Left	15.00	99.0 %		
1/2 (Brick Kiln Road (east))	3.25	0.00	N	Arm 8 Right	20.00	100.0 %	1935	1935
2/1 (Mallows Drive)	3.25	0.00	Y	Arm 5 Left	12.50	89.3 %	1739	1739
				Arm 6 Right	15.00	8.3 %		
				Arm 8 Ahead	Inf	2.4 %		
3/1 (Brick Kiln Road (west))	3.25	0.00	Y	Arm 8 Left	15.00	100.0 %	1764	1764
3/2 (Brick Kiln Road (west))	3.25	0.00	N	Arm 6 Ahead	Inf	92.8 %	2069	2069
				Arm 7 Right	20.00	7.2 %		
4/1 (Site Access)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
				Arm 7 Ahead	Inf	0.0 %		
4/2 (Site Access)	3.25	0.00	N	Arm 5 Right	Inf	100.0 %	2080	2080
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: 'PM Base' (FG2: 'PM Base', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	2	0	24	26
	B	4	0	7	294	305
	C	1	4	0	41	46
	D	50	302	71	0	423
	Tot.	55	308	78	359	800

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM Base
Junction: Unnamed Junction	
1/1 (with short)	305(In) 301(Out)
1/2 (short)	4
2/1	46
3/1 (short)	50
3/2 (with short)	423(In) 373(Out)
4/1 (with short)	26(In) 2(Out)
4/2 (short)	24
5/1	359
6/1	308
7/1	78
8/1	55

Lane Saturation Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Brick Kiln Road (east))	3.00	0.00	Y	Arm 5 Ahead	Inf	97.7 %	1911	1911
				Arm 7 Left	15.00	2.3 %		
1/2 (Brick Kiln Road (east))	3.25	0.00	N	Arm 8 Right	20.00	100.0 %	1935	1935
2/1 (Mallows Drive)	3.25	0.00	Y	Arm 5 Left	12.50	89.1 %	1739	1739
				Arm 6 Right	15.00	8.7 %		
				Arm 8 Ahead	Inf	2.2 %		
3/1 (Brick Kiln Road (west))	3.25	0.00	Y	Arm 8 Left	15.00	100.0 %	1764	1764
3/2 (Brick Kiln Road (west))	3.25	0.00	N	Arm 6 Ahead	Inf	81.0 %	2051	2051
				Arm 7 Right	20.00	19.0 %		
4/1 (Site Access)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
				Arm 7 Ahead	Inf	0.0 %		
4/2 (Site Access)	3.25	0.00	N	Arm 5 Right	Inf	100.0 %	2080	2080
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 DMR AM' (FG3: '2031 Do Minimum (Residential) AM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	4	0	77	81
	B	3	0	3	355	361
	C	2	7	0	79	88
	D	31	299	21	0	351
	Tot.	36	310	24	511	881

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2031 DMR AM
Junction: Unnamed Junction	
1/1 (with short)	361(In) 358(Out)
1/2 (short)	3
2/1	88
3/1 (short)	31
3/2 (with short)	351(In) 320(Out)
4/1 (with short)	81(In) 4(Out)
4/2 (short)	77
5/1	511
6/1	310
7/1	24
8/1	36

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Brick Kiln Road (east))	3.00	0.00	Y	Arm 5 Ahead	Inf	99.2 %	1913	1913
				Arm 7 Left	15.00	0.8 %		
1/2 (Brick Kiln Road (east))	3.25	0.00	N	Arm 8 Right	20.00	100.0 %	1935	1935
2/1 (Mallows Drive)	3.25	0.00	Y	Arm 5 Left	12.50	89.8 %	1739	1739
				Arm 6 Right	15.00	8.0 %		
				Arm 8 Ahead	Inf	2.3 %		
3/1 (Brick Kiln Road (west))	3.25	0.00	Y	Arm 8 Left	15.00	100.0 %	1764	1764
3/2 (Brick Kiln Road (west))	3.25	0.00	N	Arm 6 Ahead	Inf	93.4 %	2070	2070
				Arm 7 Right	20.00	6.6 %		
4/1 (Site Access)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
				Arm 7 Ahead	Inf	0.0 %		
4/2 (Site Access)	3.25	0.00	N	Arm 5 Right	Inf	100.0 %	2080	2080
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 DMR PM' (FG4: '2031 Do Minimum (Residential) PM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	2	0	25	27
	B	4	0	7	333	344
	C	1	4	0	43	48
	D	53	356	75	0	484
	Tot.	58	362	82	401	903

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2031 DMR PM
Junction: Unnamed Junction	
1/1 (with short)	344(In) 340(Out)
1/2 (short)	4
2/1	48
3/1 (short)	53
3/2 (with short)	484(In) 431(Out)
4/1 (with short)	27(In) 2(Out)
4/2 (short)	25
5/1	401
6/1	362
7/1	82
8/1	58

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Brick Kiln Road (east))	3.00	0.00	Y	Arm 5 Ahead	Inf	97.9 %	1911	1911
				Arm 7 Left	15.00	2.1 %		
1/2 (Brick Kiln Road (east))	3.25	0.00	N	Arm 8 Right	20.00	100.0 %	1935	1935
2/1 (Mallows Drive)	3.25	0.00	Y	Arm 5 Left	12.50	89.6 %	1739	1739
				Arm 6 Right	15.00	8.3 %		
				Arm 8 Ahead	Inf	2.1 %		
3/1 (Brick Kiln Road (west))	3.25	0.00	Y	Arm 8 Left	15.00	100.0 %	1764	1764
3/2 (Brick Kiln Road (west))	3.25	0.00	N	Arm 6 Ahead	Inf	82.6 %	2053	2053
				Arm 7 Right	20.00	17.4 %		
4/1 (Site Access)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
				Arm 7 Ahead	Inf	0.0 %		
4/2 (Site Access)	3.25	0.00	N	Arm 5 Right	Inf	100.0 %	2080	2080
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2031 DSR AM' (FG7: '2031 Do Something (Residential) AM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	4	0	77	81
	B	3	0	3	380	386
	C	2	7	0	79	88
	D	31	309	21	0	361
	Tot.	36	320	24	536	916

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2031 DSR AM
Junction: Unnamed Junction	
1/1 (with short)	386(In) 383(Out)
1/2 (short)	3
2/1	88
3/1 (short)	31
3/2 (with short)	361(In) 330(Out)
4/1 (with short)	81(In) 4(Out)
4/2 (short)	77
5/1	536
6/1	320
7/1	24
8/1	36

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Brick Kiln Road (east))	3.00	0.00	Y	Arm 5 Ahead	Inf	99.2 %	1914	1914
				Arm 7 Left	15.00	0.8 %		
1/2 (Brick Kiln Road (east))	3.25	0.00	N	Arm 8 Right	20.00	100.0 %	1935	1935
2/1 (Mallows Drive)	3.25	0.00	Y	Arm 5 Left	12.50	89.8 %	1739	1739
				Arm 6 Right	15.00	8.0 %		
				Arm 8 Ahead	Inf	2.3 %		
3/1 (Brick Kiln Road (west))	3.25	0.00	Y	Arm 8 Left	15.00	100.0 %	1764	1764
3/2 (Brick Kiln Road (west))	3.25	0.00	N	Arm 6 Ahead	Inf	93.6 %	2070	2070
				Arm 7 Right	20.00	6.4 %		
4/1 (Site Access)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
				Arm 7 Ahead	Inf	0.0 %		
4/2 (Site Access)	3.25	0.00	N	Arm 5 Right	Inf	100.0 %	2080	2080
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 6: '2031 DSR PM' (FG8: '2031 Do Something (Residential) PM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	2	0	25	27
	B	4	0	7	343	354
	C	1	4	0	43	48
	D	53	381	75	0	509
	Tot.	58	387	82	411	938

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2031 DSR PM
Junction: Unnamed Junction	
1/1 (with short)	354(In) 350(Out)
1/2 (short)	4
2/1	48
3/1 (short)	53
3/2 (with short)	509(In) 456(Out)
4/1 (with short)	27(In) 2(Out)
4/2 (short)	25
5/1	411
6/1	387
7/1	82
8/1	58

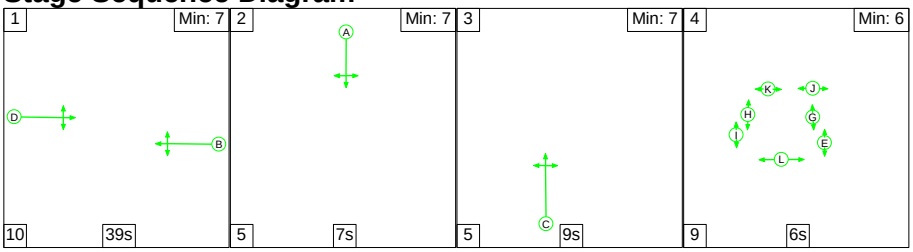
Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Brick Kiln Road (east))	3.00	0.00	Y	Arm 5 Ahead	Inf	98.0 %	1911	1911
				Arm 7 Left	15.00	2.0 %		
1/2 (Brick Kiln Road (east))	3.25	0.00	N	Arm 8 Right	20.00	100.0 %	1935	1935
2/1 (Mallows Drive)	3.25	0.00	Y	Arm 5 Left	12.50	89.6 %	1739	1739
				Arm 6 Right	15.00	8.3 %		
				Arm 8 Ahead	Inf	2.1 %		
3/1 (Brick Kiln Road (west))	3.25	0.00	Y	Arm 8 Left	15.00	100.0 %	1764	1764
3/2 (Brick Kiln Road (west))	3.25	0.00	N	Arm 6 Ahead	Inf	83.6 %	2055	2055
				Arm 7 Right	20.00	16.4 %		
4/1 (Site Access)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
				Arm 7 Ahead	Inf	0.0 %		
4/2 (Site Access)	3.25	0.00	N	Arm 5 Right	Inf	100.0 %	2080	2080
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 1: 'AM Base' (FG1: 'Am Base', Plan 1: 'Staging Plan No. 1')

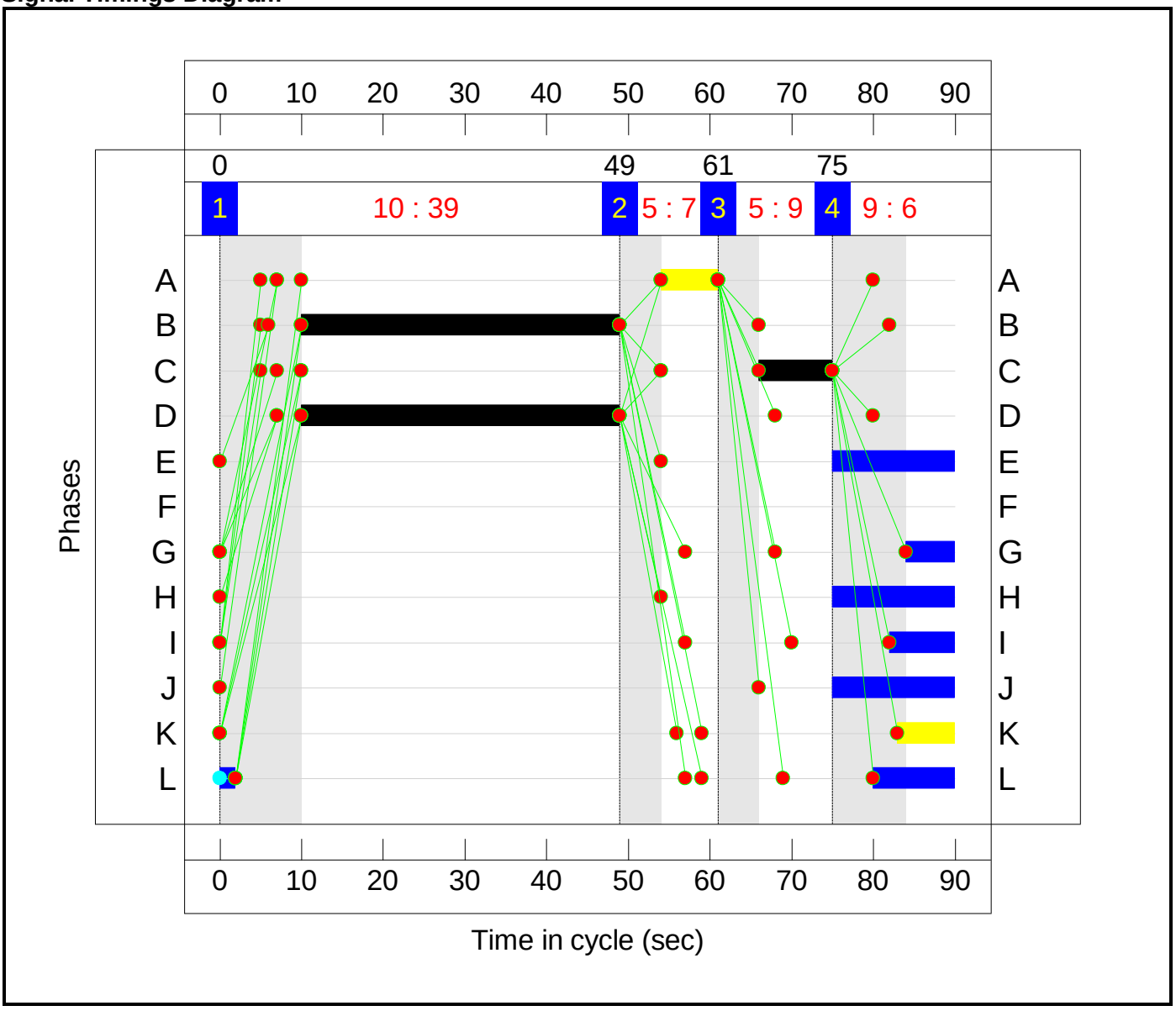
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	39	7	9	6
Change Point	0	49	61	75

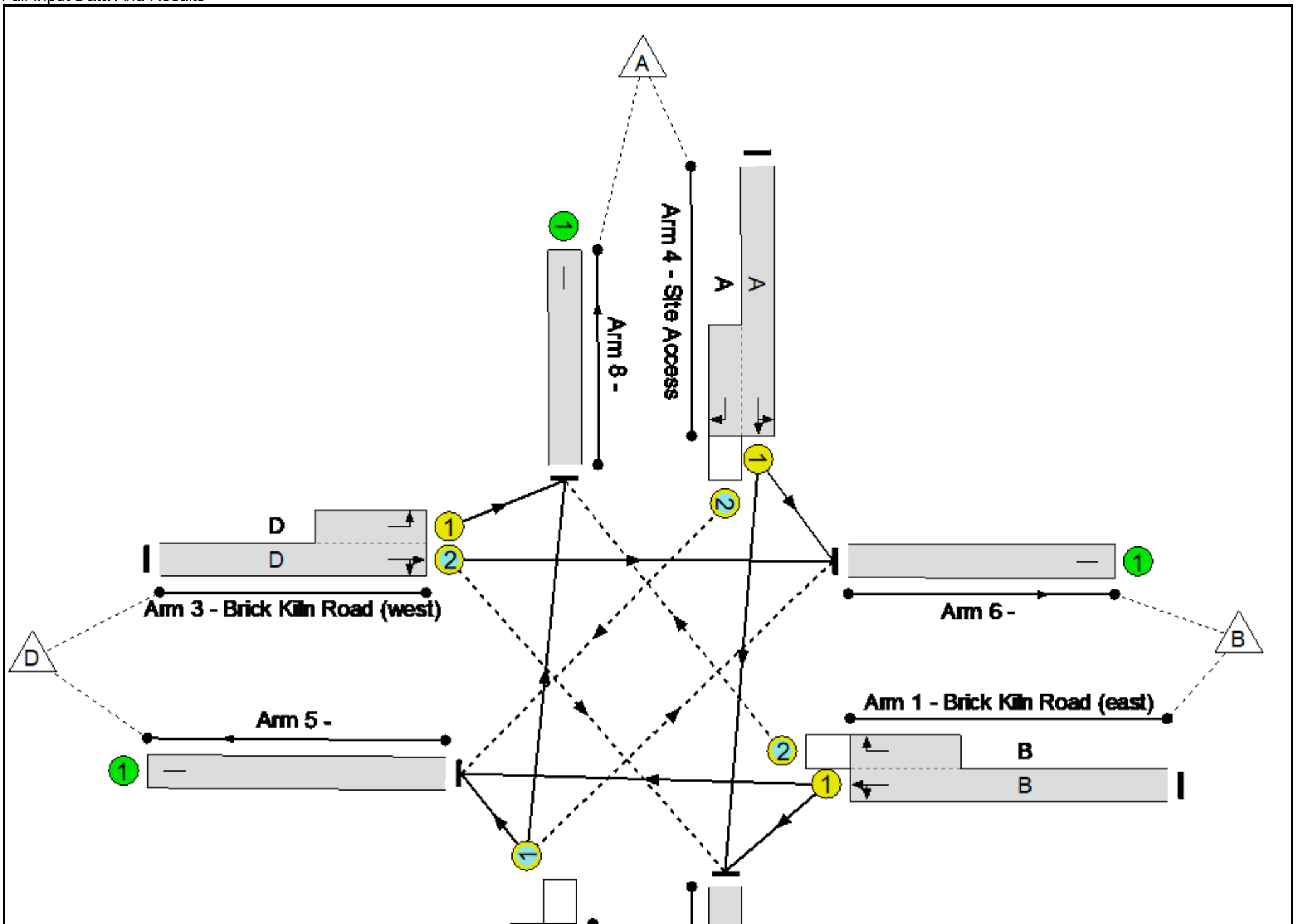
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.2%**
1/1+1/2	Brick Kiln Road (east) Ahead Left Right	U+O	N/A	N/A	B		1	39	-	316	1742:1935	782	40.4%
2/1	Mallows Drive Left Right Ahead	O	N/A	N/A	C		1	9	-	84	1739	193	43.5%
3/2+3/1	Brick Kiln Road (west) Ahead Right Left	O+U	N/A	N/A	D		1	39	-	307	2069:1764	679	45.2%
4/1+4/2	Site Access Right Left Ahead	U+O	N/A	N/A	A		1	7	-	77	1764:2080	195	39.5%
5/1		U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	269	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	330	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	34	Inf	Inf	0.0%

Full Input Data And Results

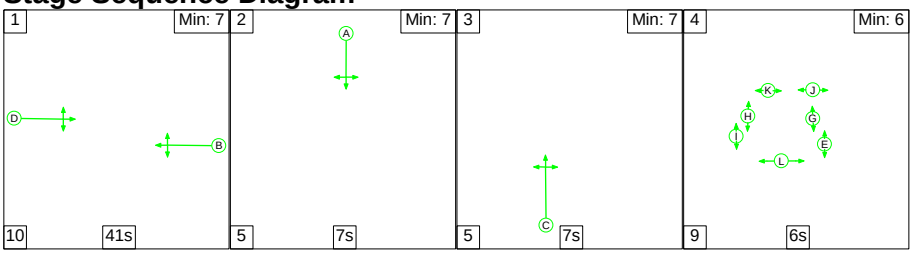
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**20**	**82**	**2**	**5.0**	**1.5**	**0.0**	**6.5**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**20**	**82**	**2**	**5.0**	**1.5**	**0.0**	**6.5**	**-**	**-**	**-**	**-**
1/1+1/2	316	316	3	0	0	1.5	0.3	0.0	1.8	20.8	5.3	0.3	5.6
2/1	84	84	0	7	0	0.9	0.4	0.0	1.3	53.7	2.0	0.4	2.3
3/2+3/1	307	307	17	3	0	1.8	0.4	-	2.2	26.3	5.5	0.4	5.9
4/1+4/2	77	77	0	71	2	0.8	0.3	0.0	1.2	53.8	1.7	0.3	2.0
5/1	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	269	269	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	34	34	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 99.0 Total Delay for Signalled Lanes (pcuHr): 6.47 Cycle Time (s): 90
PRC Over All Lanes (%): 99.0 Total Delay Over All Lanes(pcuHr): 6.47

Full Input Data And Results

Scenario 2: 'PM Base' (FG2: 'PM Base', Plan 1: 'Staging Plan No. 1')

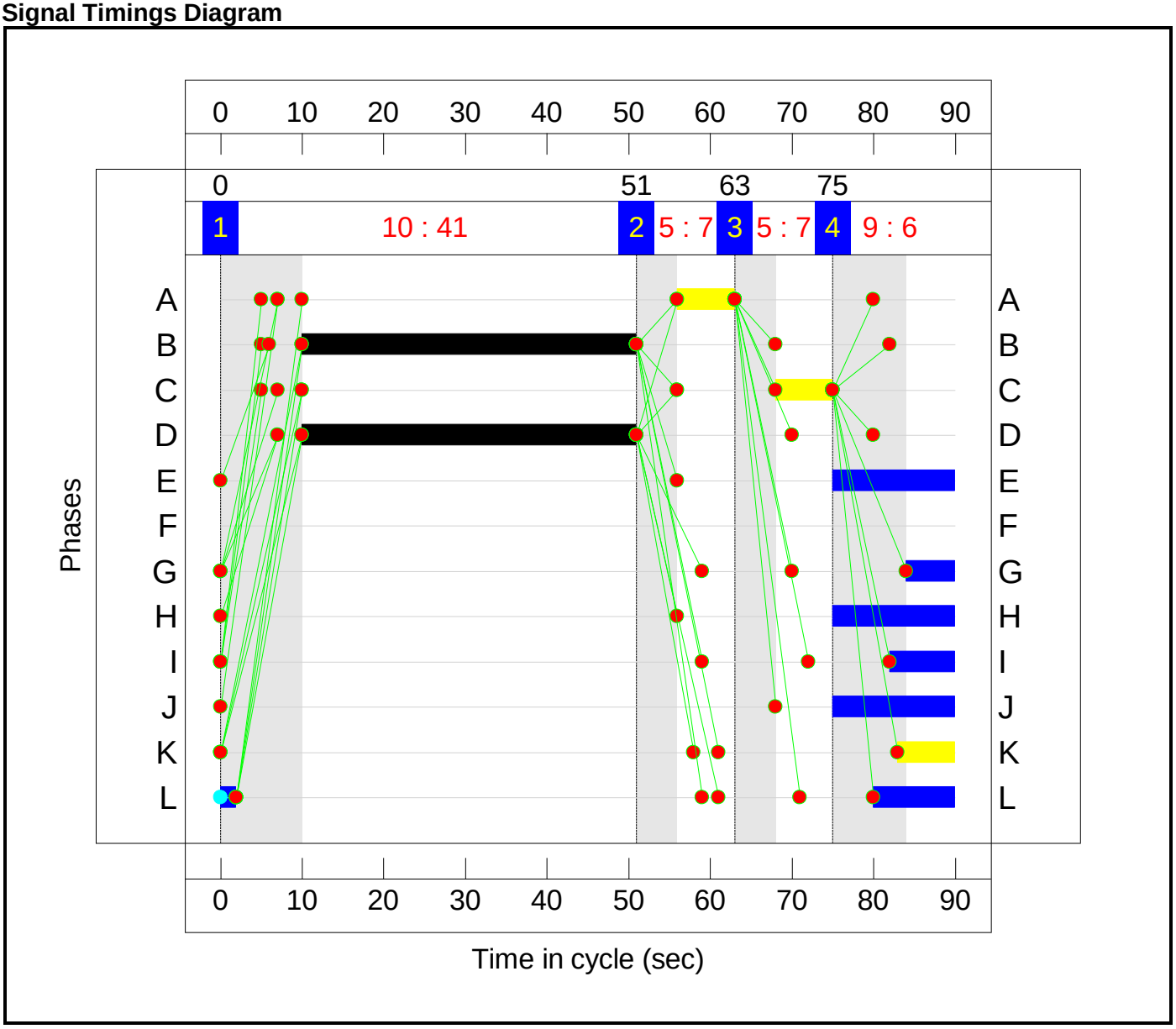
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	41	7	7	6
Change Point	0	51	63	75

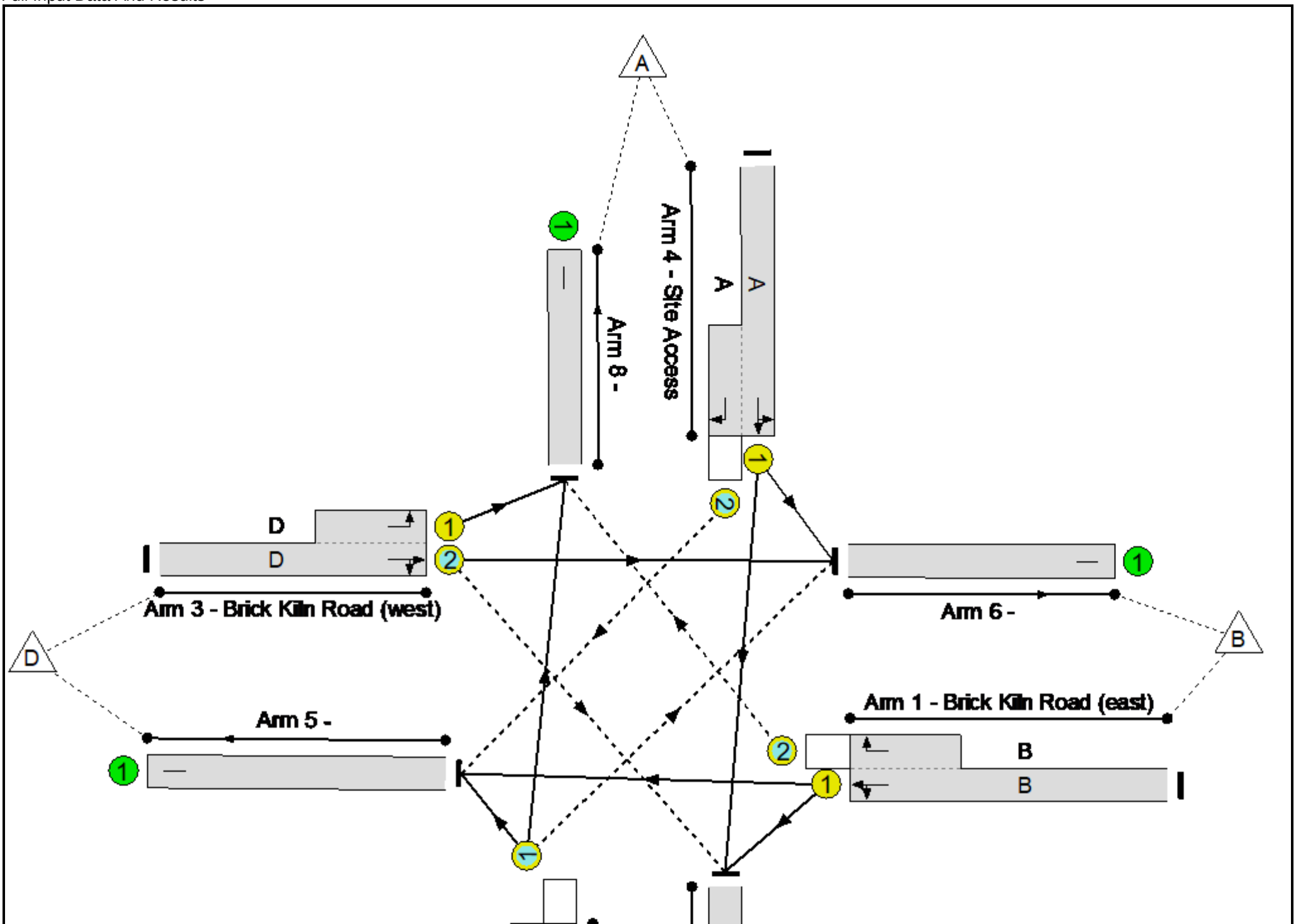
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**57.1%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**57.1%**
1/1+1/2	Brick Kiln Road (east) Ahead Left Right	U+O	N/A	N/A	B		1	41	-	305	1911:1935	903	33.8%
2/1	Mallows Drive Left Right Ahead	O	N/A	N/A	C		1	7	-	46	1739	155	29.8%
3/2+3/1	Brick Kiln Road (west) Ahead Right Left	O+U	N/A	N/A	D		1	41	-	423	2051:1764	741	57.1%
4/1+4/2	Site Access Right Left Ahead	U+O	N/A	N/A	A		1	7	-	26	1764:2080	200	13.0%
5/1		U	N/A	N/A	-		-	-	-	359	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	308	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	55	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	**-**	**-**	**66**	**36**	**1**	**4.5**	**1.2**	**0.0**	**5.7**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**66**	**36**	**1**	**4.5**	**1.2**	**0.0**	**5.7**	**-**	**-**	**-**	**-**
1/1+1/2	305	305	4	0	0	1.3	0.3	0.0	1.5	18.2	4.7	0.3	4.9
2/1	46	46	0	4	0	0.5	0.2	0.0	0.7	54.9	1.1	0.2	1.3
3/2+3/1	423	423	62	9	0	2.4	0.7	-	3.1	26.3	7.4	0.7	8.0
4/1+4/2	26	26	0	23	1	0.3	0.1	0.0	0.3	48.1	0.5	0.1	0.6
5/1	359	359	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	308	308	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	78	78	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	55	55	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 57.7
PRC Over All Lanes (%): 57.7

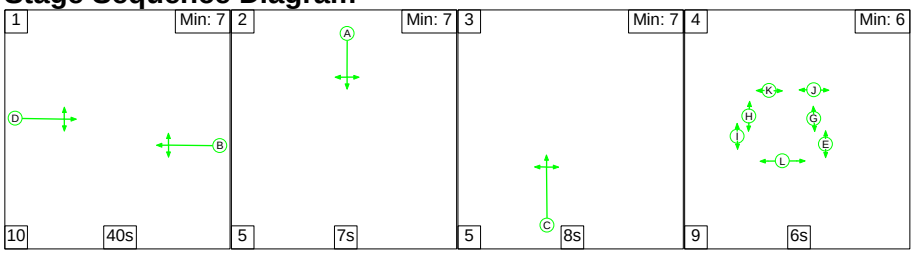
Total Delay for Signalled Lanes (pcuHr): 5.68
Total Delay Over All Lanes(pcuHr): 5.68

Cycle Time (s): 90

Full Input Data And Results

Scenario 3: '2031 DMR AM' (FG3: '2031 Do Minimum (Residential) AM', Plan 1: 'Staging Plan No. 1')

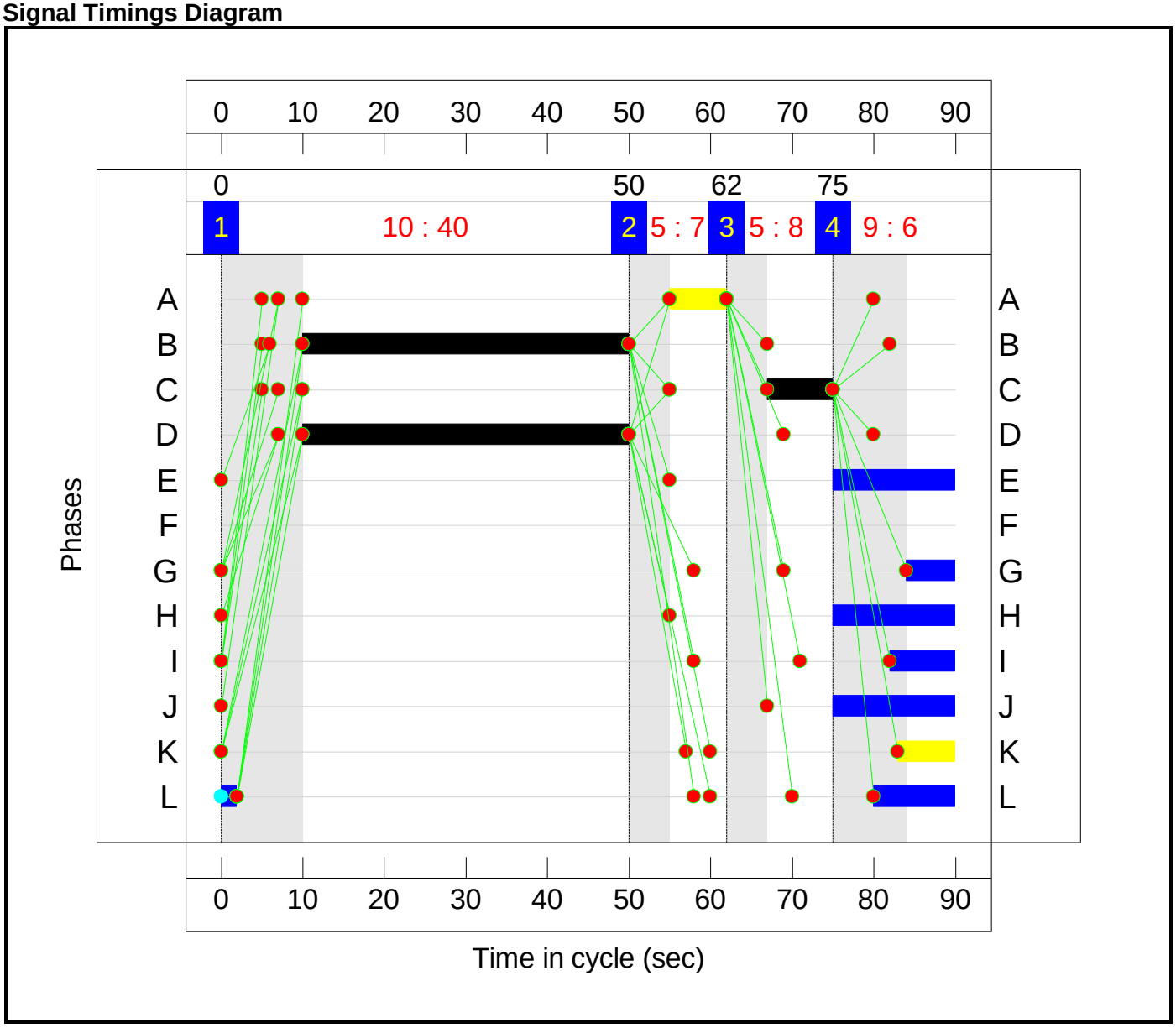
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	40	7	8	6
Change Point	0	50	62	75

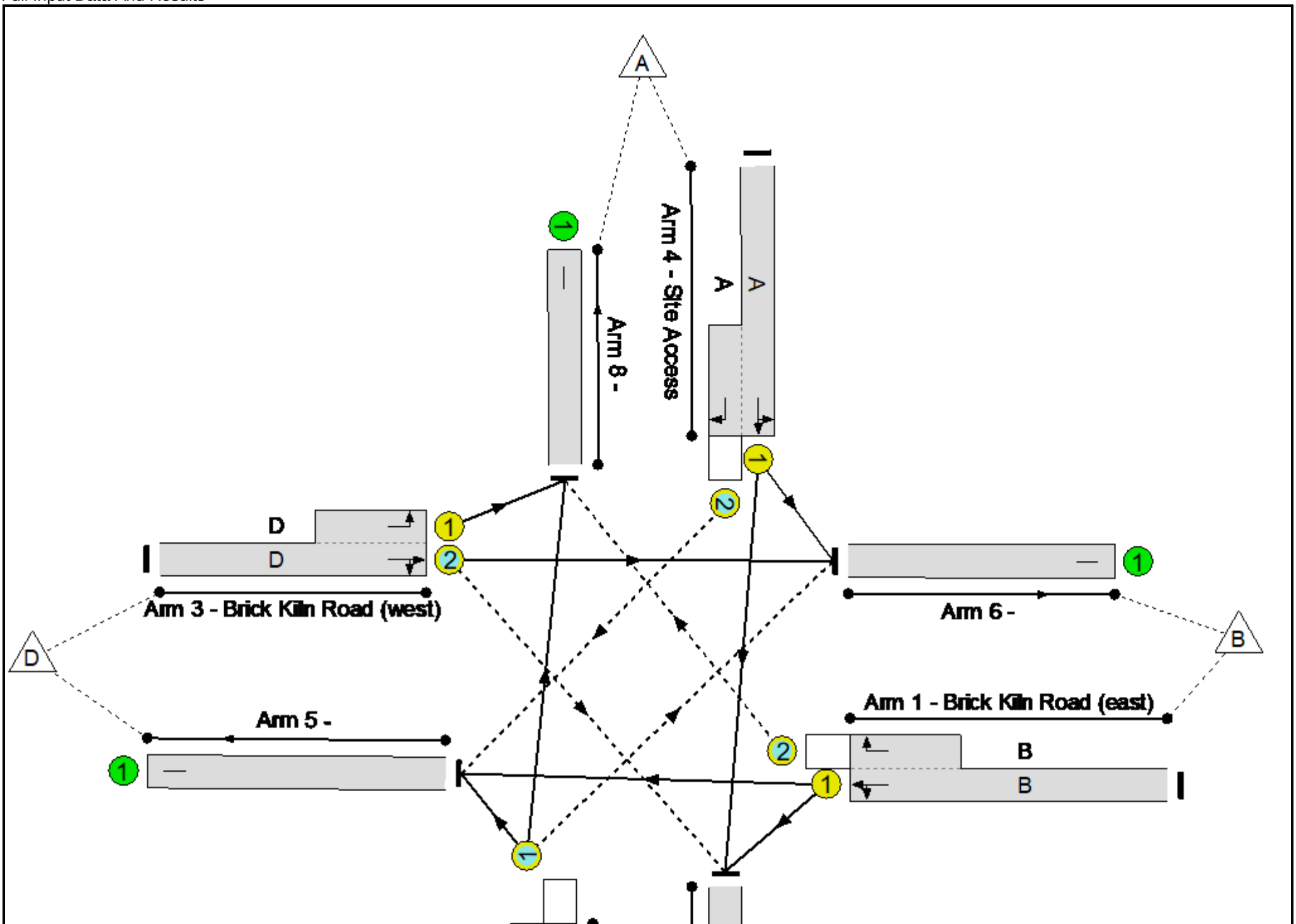
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**50.6%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**50.6%**
1/1+1/2	Brick Kiln Road (east) Ahead Left Right	U+O	N/A	N/A	B		1	40	-	361	1913:1935	879	41.1%
2/1	Mallows Drive Left Right Ahead	O	N/A	N/A	C		1	8	-	88	1739	174	50.6%
3/2+3/1	Brick Kiln Road (west) Ahead Right Left	O+U	N/A	N/A	D		1	40	-	351	2070:1764	700	50.1%
4/1+4/2	Site Access Right Left Ahead	U+O	N/A	N/A	A		1	7	-	81	1764:2080	194	41.6%
5/1		U	N/A	N/A	-		-	-	-	511	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	310	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	24	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	36	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	**-**	**-**	**21**	**85**	**2**	**5.6**	**1.7**	**0.0**	**7.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**21**	**85**	**2**	**5.6**	**1.7**	**0.0**	**7.3**	**-**	**-**	**-**	**-**
1/1+1/2	361	361	3	0	0	1.6	0.3	0.0	2.0	19.9	6.0	0.3	6.3
2/1	88	88	0	7	0	0.9	0.5	0.0	1.4	59.1	2.1	0.5	2.6
3/2+3/1	351	351	18	3	0	2.1	0.5	-	2.6	26.7	6.2	0.5	6.7
4/1+4/2	81	81	0	75	2	0.9	0.4	0.0	1.2	54.5	1.8	0.4	2.2
5/1	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	310	310	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	24	24	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	36	36	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 77.9
PRC Over All Lanes (%): 77.9

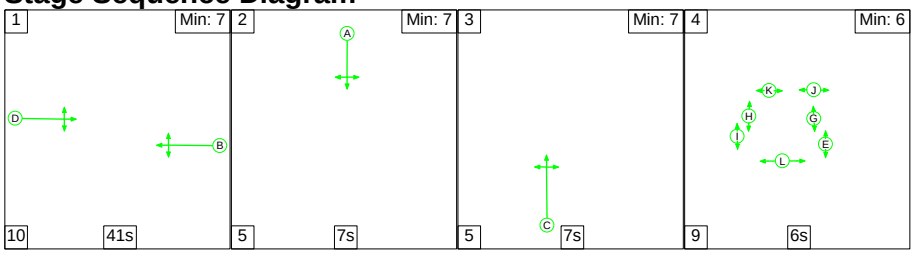
Total Delay for Signalled Lanes (pcuHr): 7.27
Total Delay Over All Lanes(pcuHr): 7.27

Cycle Time (s): 90

Full Input Data And Results

Scenario 4: '2031 DMR PM' (FG4: '2031 Do Minimum (Residential) PM', Plan 1: 'Staging Plan No. 1')

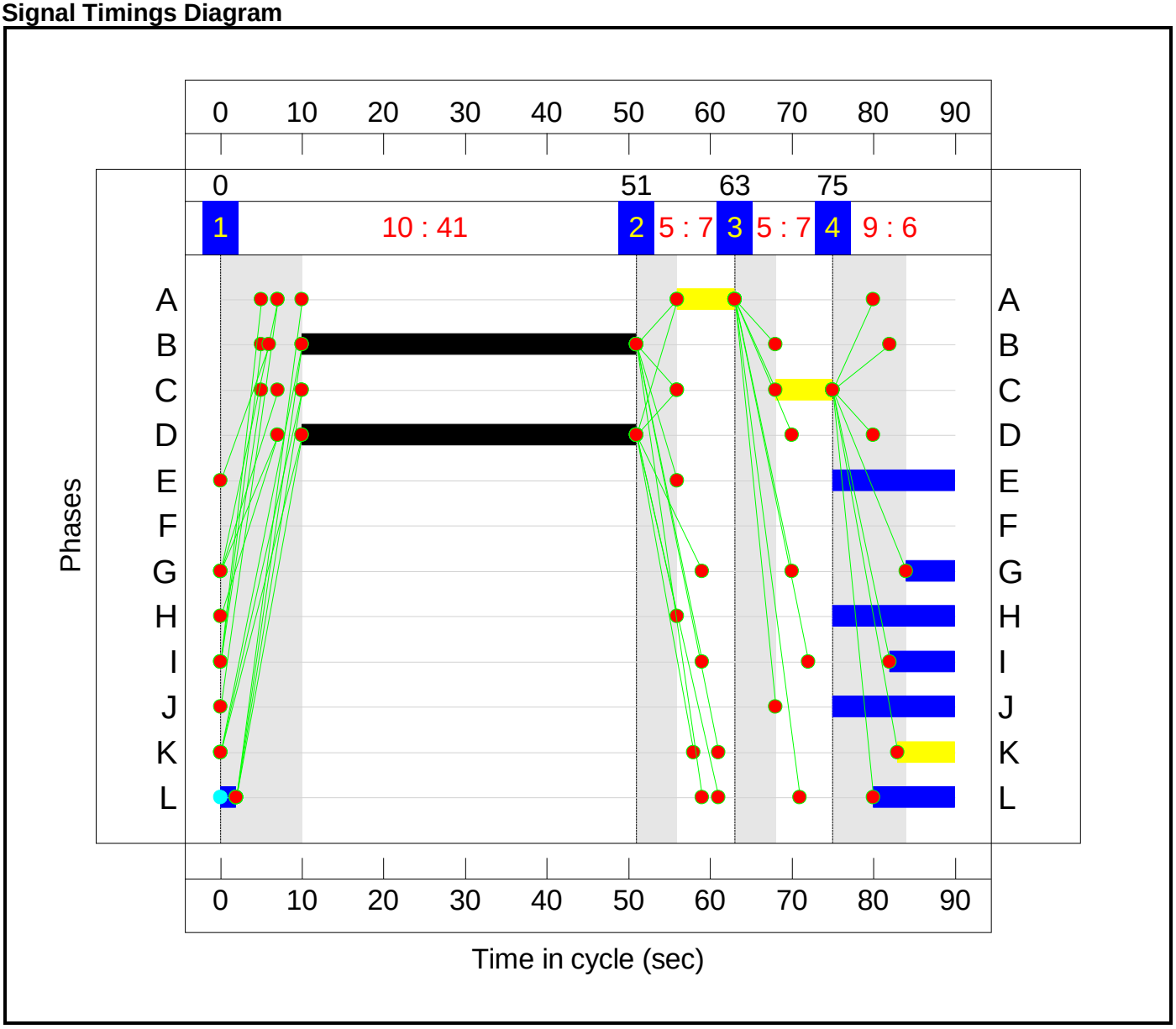
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	41	7	7	6
Change Point	0	51	63	75

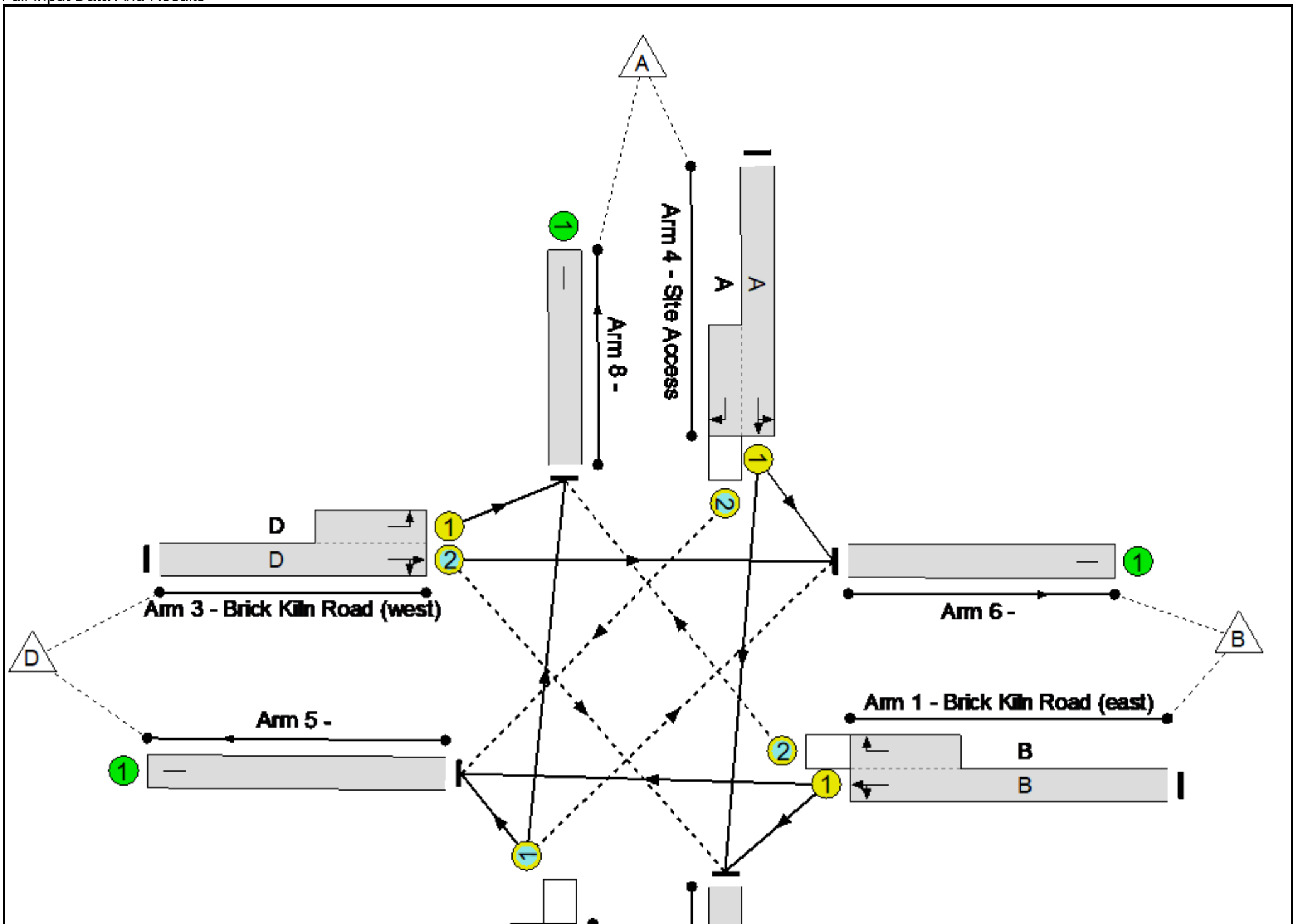
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.6%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.6%**
1/1+1/2	Brick Kiln Road (east) Ahead Left Right	U+O	N/A	N/A	B		1	41	-	344	1911:1935	902	38.1%
2/1	Mallows Drive Left Right Ahead	O	N/A	N/A	C		1	7	-	48	1739	155	31.1%
3/2+3/1	Brick Kiln Road (west) Ahead Right Left	O+U	N/A	N/A	D		1	41	-	484	2053:1764	706	68.6%
4/1+4/2	Site Access Right Left Ahead	U+O	N/A	N/A	A		1	7	-	27	1764:2080	200	13.5%
5/1		U	N/A	N/A	-		-	-	-	401	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	82	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	58	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	**-**	**-**	**71**	**36**	**1**	**5.4**	**1.7**	**0.0**	**7.0**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**71**	**36**	**1**	**5.4**	**1.7**	**0.0**	**7.0**	**-**	**-**	**-**	**-**
1/1+1/2	344	344	4	0	0	1.5	0.3	0.0	1.8	18.8	5.5	0.3	5.8
2/1	48	48	0	4	0	0.5	0.2	0.0	0.7	55.3	1.1	0.2	1.3
3/2+3/1	484	484	67	8	0	3.1	1.1	-	4.1	30.9	9.3	1.1	10.4
4/1+4/2	27	27	0	24	1	0.3	0.1	0.0	0.4	48.2	0.6	0.1	0.6
5/1	401	401	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	362	362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	82	82	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	58	58	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 31.2
PRC Over All Lanes (%): 31.2

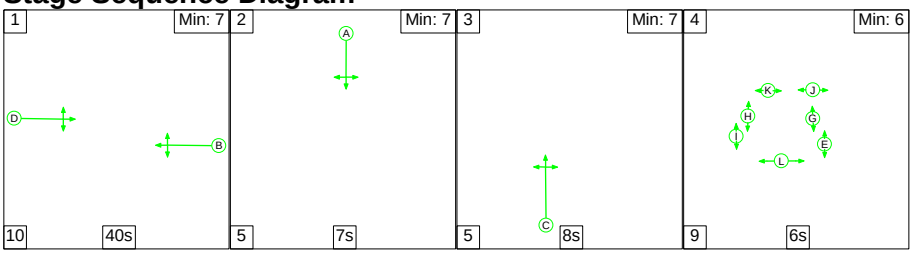
Total Delay for Signalled Lanes (pcuHr): 7.04
Total Delay Over All Lanes(pcuHr): 7.04

Cycle Time (s): 90

Full Input Data And Results

Scenario 5: '2031 DSR AM' (FG7: '2031 Do Something (Residential) AM', Plan 1: 'Staging Plan No. 1')

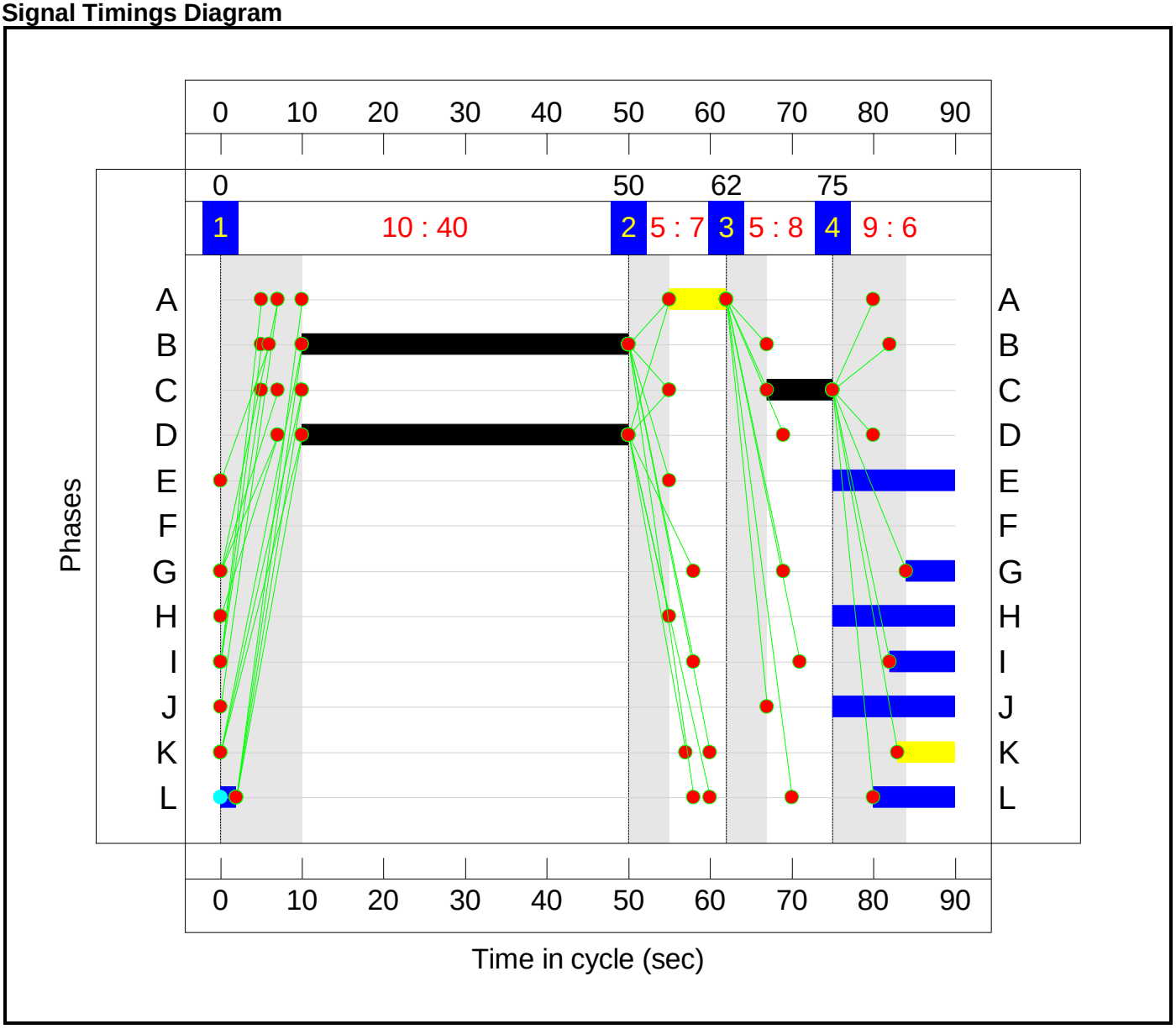
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	40	7	8	6
Change Point	0	50	62	75

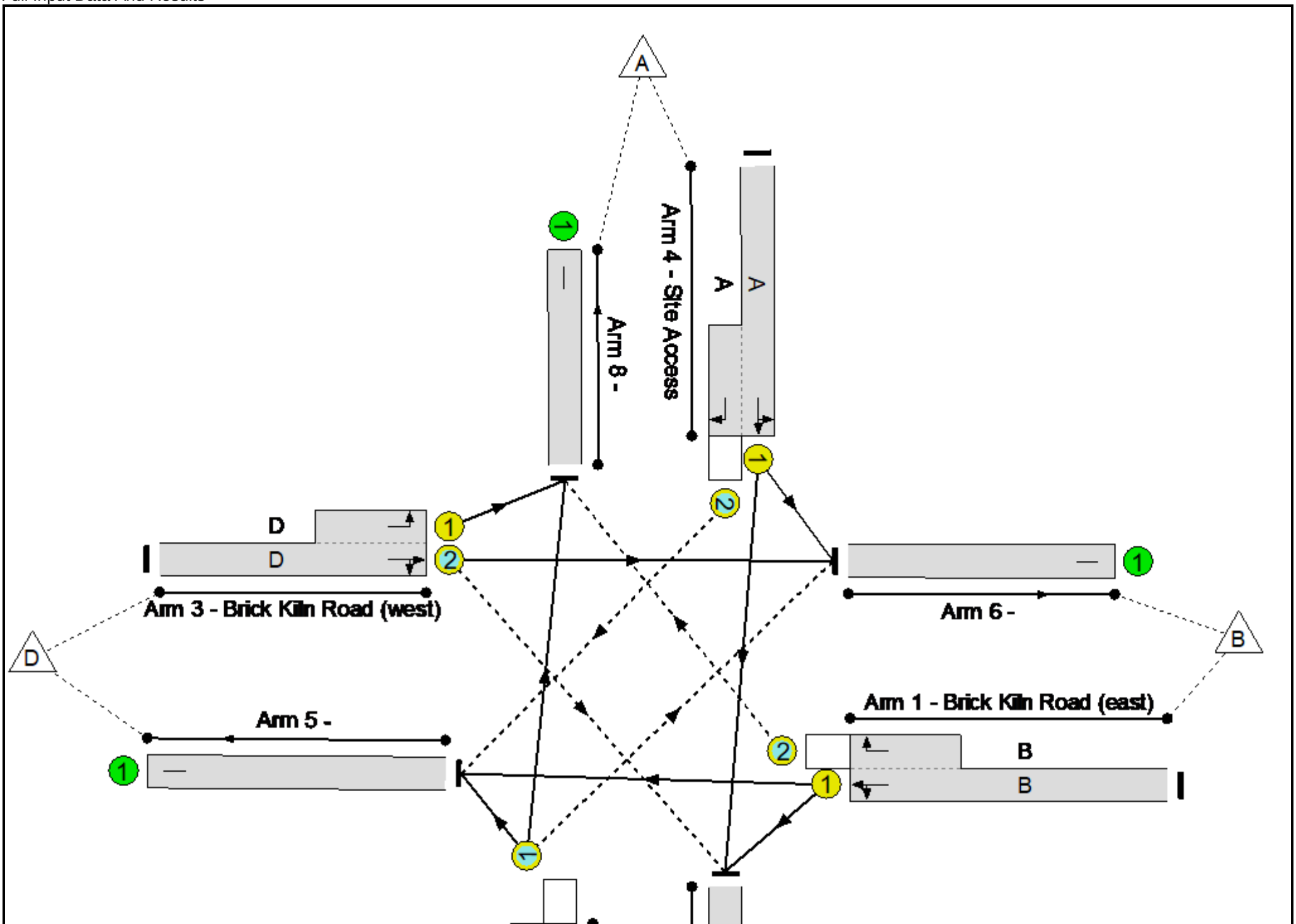
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**53.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**53.3%**
1/1+1/2	Brick Kiln Road (east) Ahead Left Right	U+O	N/A	N/A	B		1	40	-	386	1914:1935	879	43.9%
2/1	Mallows Drive Left Right Ahead	O	N/A	N/A	C		1	8	-	88	1739	174	50.6%
3/2+3/1	Brick Kiln Road (west) Ahead Right Left	O+U	N/A	N/A	D		1	40	-	361	2070:1764	677	53.3%
4/1+4/2	Site Access Right Left Ahead	U+O	N/A	N/A	A		1	7	-	81	1764:2080	194	41.6%
5/1		U	N/A	N/A	-		-	-	-	536	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	320	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	24	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	36	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	**-**	**-**	**21**	**85**	**2**	**5.8**	**1.8**	**0.0**	**7.7**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**21**	**85**	**2**	**5.8**	**1.8**	**0.0**	**7.7**	**-**	**-**	**-**	**-**
1/1+1/2	386	386	3	0	0	1.8	0.4	0.0	2.2	20.3	6.5	0.4	6.9
2/1	88	88	0	7	0	0.9	0.5	0.0	1.4	59.1	2.1	0.5	2.6
3/2+3/1	361	361	18	3	0	2.2	0.6	-	2.8	28.1	6.7	0.6	7.2
4/1+4/2	81	81	0	75	2	0.9	0.4	0.0	1.2	54.5	1.8	0.4	2.2
5/1	536	536	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	320	320	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	24	24	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	36	36	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 68.8
PRC Over All Lanes (%): 68.8

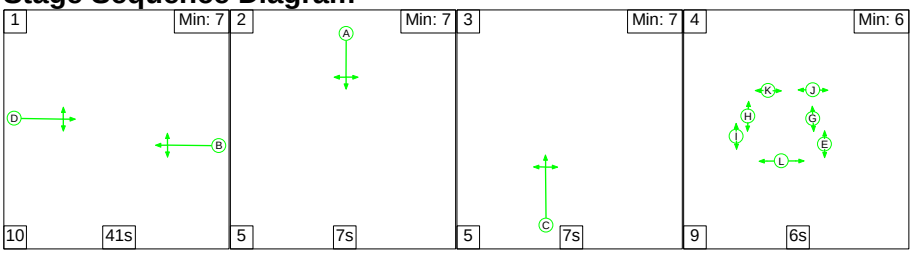
Total Delay for Signalled Lanes (pcuHr): 7.66
Total Delay Over All Lanes(pcuHr): 7.66

Cycle Time (s): 90

Full Input Data And Results

Scenario 6: '2031 DSR PM' (FG8: '2031 Do Something (Residential) PM', Plan 1: 'Staging Plan No. 1')

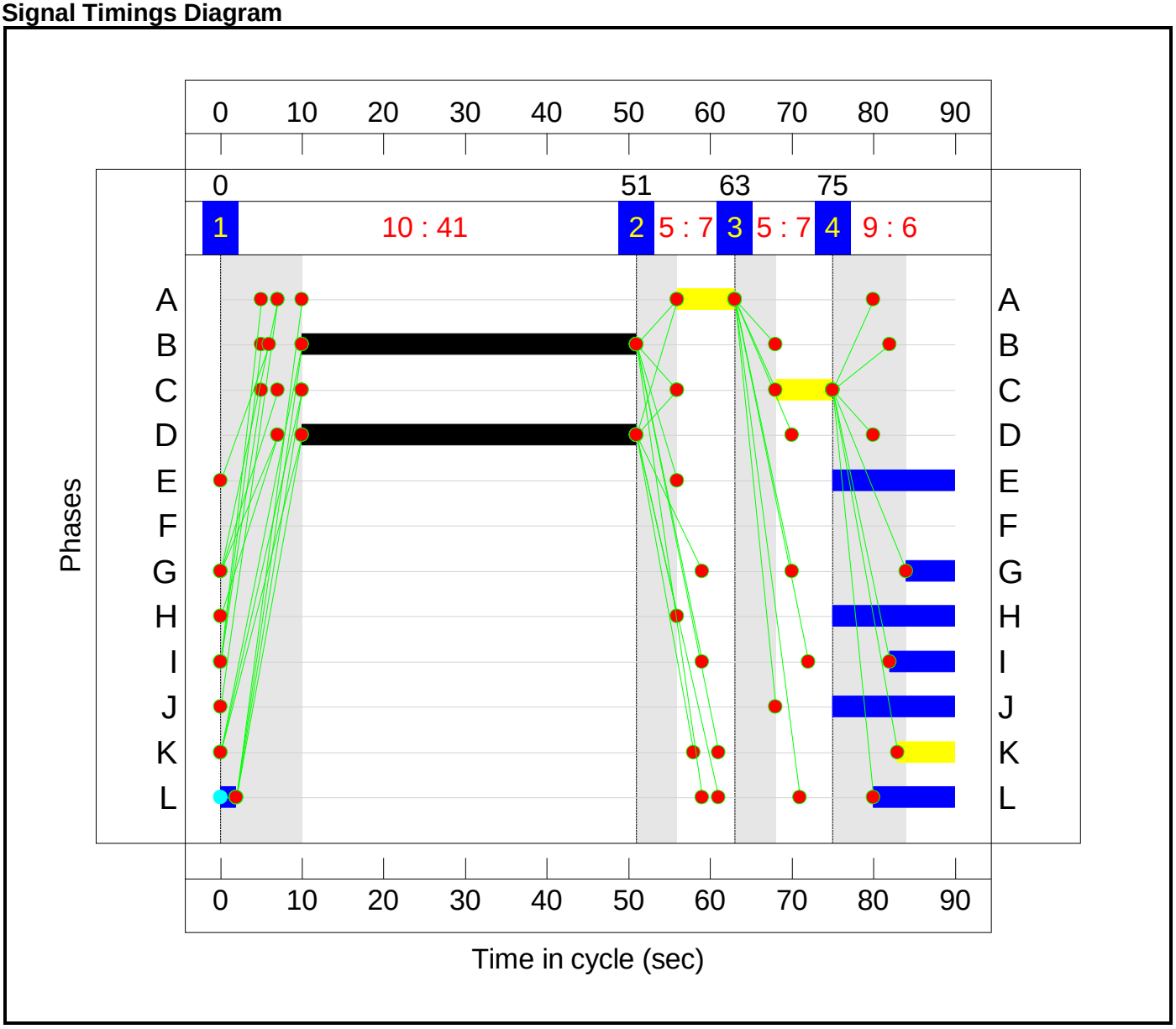
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	41	7	7	6
Change Point	0	51	63	75

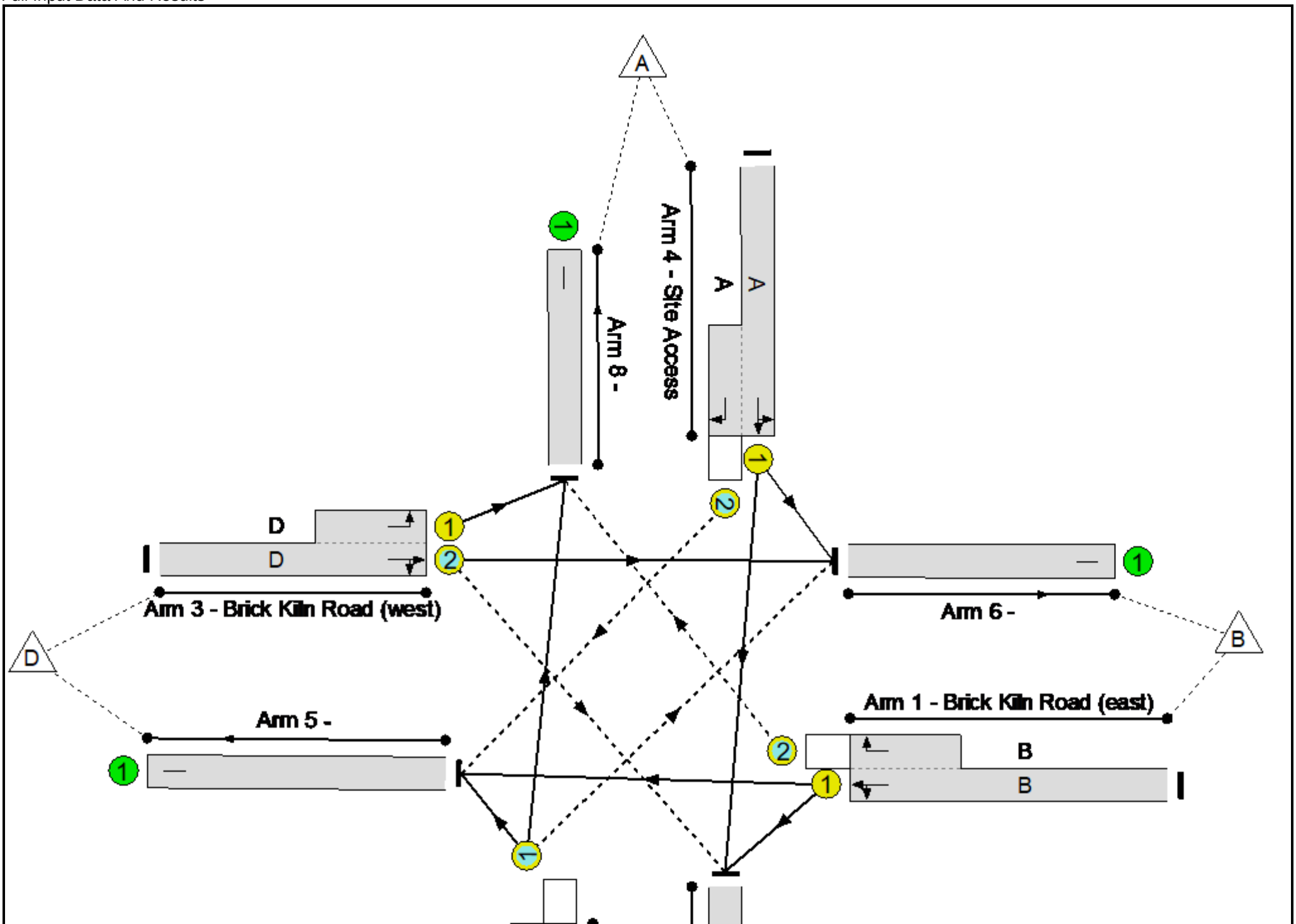
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.8%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.8%**
1/1+1/2	Brick Kiln Road (east) Ahead Left Right	U+O	N/A	N/A	B		1	41	-	354	1911:1935	902	39.2%
2/1	Mallows Drive Left Right Ahead	O	N/A	N/A	C		1	7	-	48	1739	155	31.1%
3/2+3/1	Brick Kiln Road (west) Ahead Right Left	O+U	N/A	N/A	D		1	41	-	509	2055:1764	690	73.8%
4/1+4/2	Site Access Right Left Ahead	U+O	N/A	N/A	A		1	7	-	27	1764:2080	200	13.5%
5/1		U	N/A	N/A	-		-	-	-	411	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	82	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	58	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	**-**	**-**	**71**	**36**	**1**	**5.7**	**2.0**	**0.0**	**7.7**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**71**	**36**	**1**	**5.7**	**2.0**	**0.0**	**7.7**	**-**	**-**	**-**	**-**
1/1+1/2	354	354	4	0	0	1.5	0.3	0.0	1.9	19.0	5.6	0.3	6.0
2/1	48	48	0	4	0	0.5	0.2	0.0	0.7	55.3	1.1	0.2	1.3
3/2+3/1	509	509	67	8	0	3.4	1.4	-	4.8	33.7	10.3	1.4	11.7
4/1+4/2	27	27	0	24	1	0.3	0.1	0.0	0.4	48.2	0.6	0.1	0.6
5/1	411	411	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	82	82	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	58	58	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 22.0
PRC Over All Lanes (%): 22.0

Total Delay for Signalled Lanes (pcuHr): 7.73
Total Delay Over All Lanes(pcuHr): 7.73

Cycle Time (s): 90

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Junction 5 Resi- Commercial Site Access WO upgrades.j9
Path: T:\M-EC Job Book\25273\calculations\transport\Updated surveys, distribution, and Models\Models\Junction 5\Junction 5 Resi- Commercial Site Access
Report generation date: 12/09/2023 10:55:47

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2023 Base									
Stream B-AC	D1	0.1	7.76	0.06	A	D2	0.1	8.30	0.10	A
Stream C-AB		0.0	5.03	0.04	A		0.0	5.05	0.02	A
	2031 Do Minimum Rsidential									
Stream B-AC	D3	0.1	8.63	0.12	A	D4	0.2	9.19	0.18	A
Stream C-AB		0.1	5.12	0.07	A		0.0	5.06	0.02	A

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

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

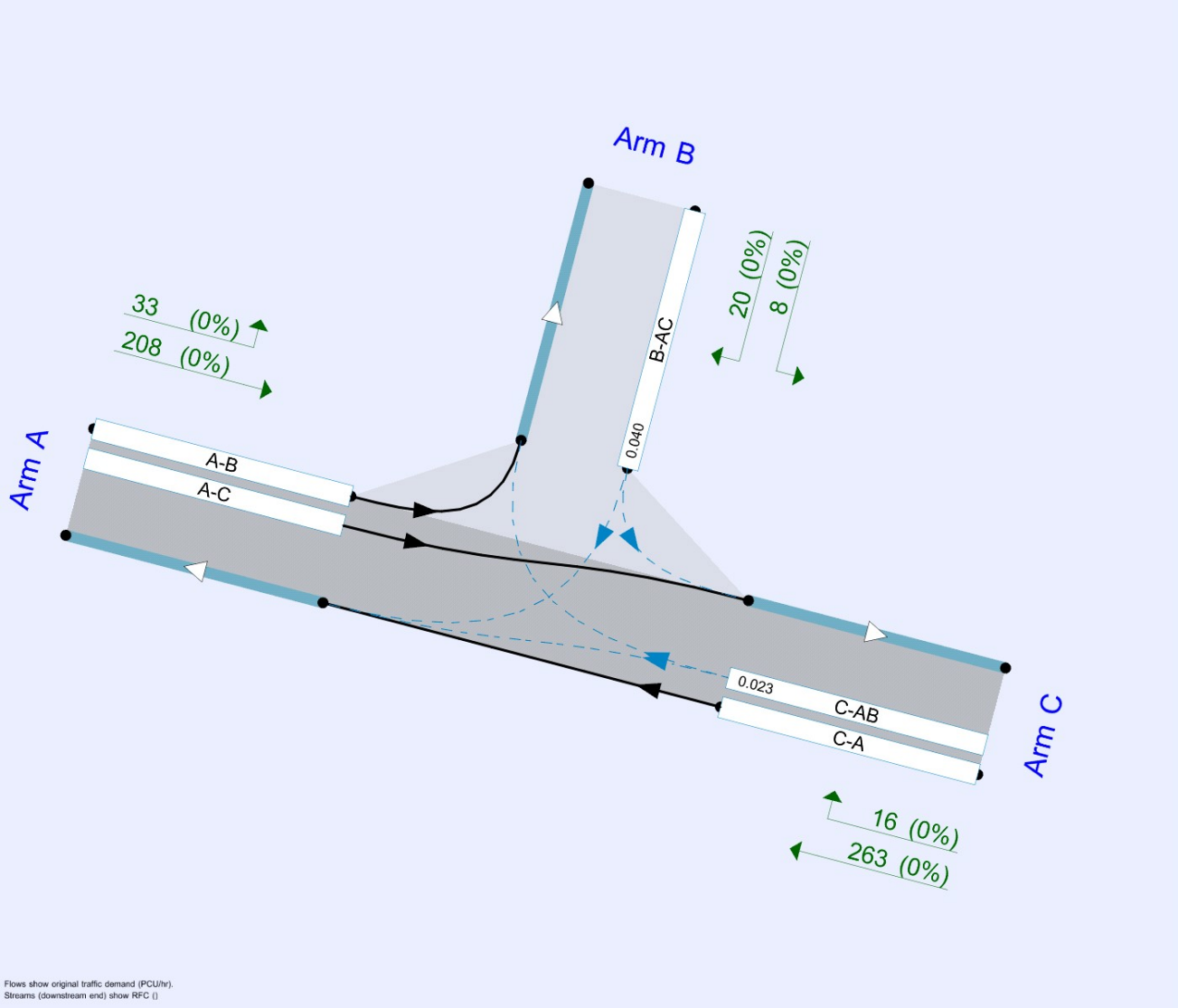
File summary

File Description

Title	
Location	
Site number	
Date	27/07/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	M-EC\james.wright
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15

2023 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Brick Kiln Road W		Major
B	Comercial Site Access		Minor
C	Brick Kiln Road E		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			125.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	100	125

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	574	0.104	0.264	0.166	0.377
B-C	703	0.108	0.272	-	-
C-B	646	0.250	0.250	-	-

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

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

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

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	241	100.000
B		✓	28	100.000
C		✓	279	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	33	208
	B	20	0	8
	C	263	16	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.06	7.76	0.1	A
C-AB	0.04	5.03	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21	530	0.040	21	0.0	7.066	A
C-AB	17	733	0.023	16	0.0	5.025	A
C-A	194			194			
A-B	25			25			
A-C	157			157			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	25	515	0.049	25	0.1	7.341	A
C-AB	21	751	0.028	21	0.0	4.932	A
C-A	230			230			
A-B	30			30			
A-C	187			187			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	495	0.062	31	0.1	7.754	A
C-AB	28	776	0.036	28	0.0	4.812	A
C-A	279			279			
A-B	36			36			
A-C	229			229			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	495	0.062	31	0.1	7.756	A
C-AB	28	776	0.036	28	0.0	4.814	A
C-A	279			279			
A-B	36			36			
A-C	229			229			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	25	515	0.049	25	0.1	7.343	A
C-AB	21	751	0.028	21	0.0	4.935	A
C-A	230			230			
A-B	30			30			
A-C	187			187			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21	530	0.040	21	0.0	7.070	A
C-AB	17	733	0.023	17	0.0	5.026	A
C-A	194			194			
A-B	25			25			
A-C	157			157			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031 DS Upgraded Junction 5 Resi- Commercial Site Access.j9
Path: T:\M-EC Job Book\25273\calculations\transport\Updated surveys, distribution, and Models\Models\Junction 5\Junction 5 Resi- Commercial Site Access
Report generation date: 12/09/2023 11:03:15

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2031 Do Something Residential									
Stream B-AC	D7	0.1	7.08	0.10	A	D8	0.2	7.59	0.15	A
Stream C-AB		0.1	5.11	0.07	A		0.1	5.21	0.07	A

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

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

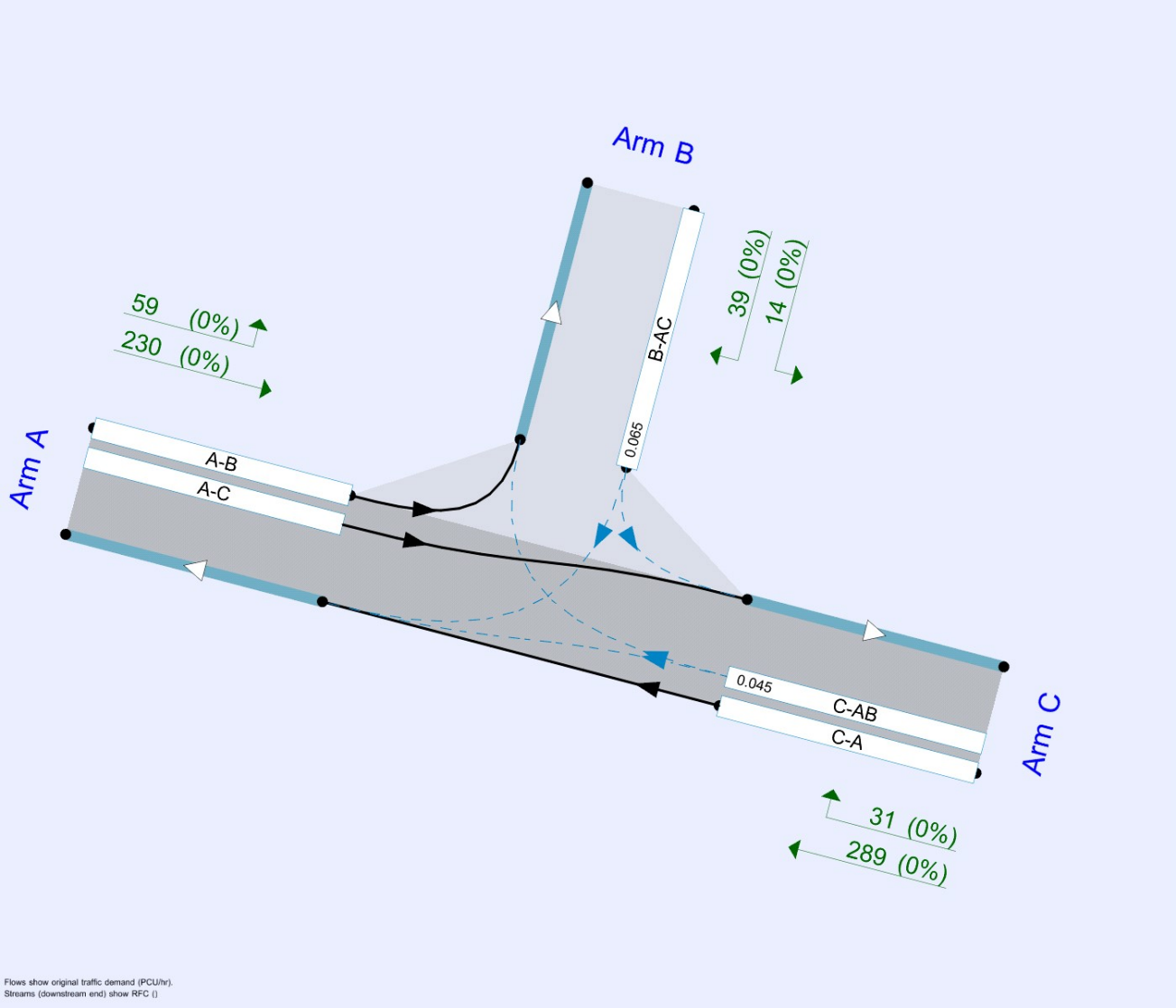
File summary

File Description

Title	
Location	
Site number	
Date	27/07/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	M-EC\james.wright
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2031 Do Something Residential	AM	ONE HOUR	08:00	09:30	15

2031 Do Something Residential, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Brick Kiln Road W		Major
B	Comercial Site Access		Minor
C	Brick Kiln Road E		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			125.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	5.00	100	125

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	688	0.125	0.317	0.199	0.453
B-C	843	0.129	0.327	-	-
C-B	646	0.250	0.250	-	-

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

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

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

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	289	100.000
B		✓	53	100.000
C		✓	320	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	59	230
	B	39	0	14
	C	289	31	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.10	7.08	0.1	A
C-AB	0.07	5.11	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	617	0.065	40	0.1	6.229	A
C-AB	33	738	0.045	33	0.1	5.105	A
C-A	208			208			
A-B	44			44			
A-C	173			173			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	596	0.080	48	0.1	6.561	A
C-AB	43	757	0.056	42	0.1	5.036	A
C-A	245			245			
A-B	53			53			
A-C	207			207			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	58	567	0.103	58	0.1	7.073	A
C-AB	58	785	0.073	57	0.1	4.950	A
C-A	295			295			
A-B	65			65			
A-C	253			253			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	58	567	0.103	58	0.1	7.076	A
C-AB	58	785	0.073	58	0.1	4.952	A
C-A	295			295			
A-B	65			65			
A-C	253			253			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	596	0.080	48	0.1	6.565	A
C-AB	43	757	0.056	43	0.1	5.040	A
C-A	245			245			
A-B	53			53			
A-C	207			207			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	617	0.065	40	0.1	6.237	A
C-AB	33	738	0.045	33	0.1	5.109	A
C-A	208			208			
A-B	44			44			
A-C	173			173			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Junction 6 Resi - North Street - High Street - Midland Road.j9
Path: T:\M-EC Job Book\25273\calculations\transport\Updated surveys, distribution, and Models\Models\Junction 6
Report generation date: 11/09/2023 09:55:05

«North Street / B663 Midland Drive / B663 High Street - 2023 Base, AM

- »Junction Network
- »Arms
- »Traffic Demand
- »Origin-Destination Data
- »Vehicle Mix
- »Results

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	North Street / B663 Midland Drive / B663 High Street - 2023 Base									
Stream B-C	D1	0.2	6.75	0.19	A	D2	0.2	6.84	0.20	A
Stream B-A		0.3	9.99	0.22	A		0.3	10.18	0.23	B
Stream C-AB		0.4	7.93	0.28	A		0.4	7.34	0.26	A
	North Street / B663 Midland Drive / B663 High Street - 2031 Do Minimum (Residential)									
Stream B-C	D3	0.3	7.00	0.20	A	D4	0.3	7.48	0.23	A
Stream B-A		0.3	9.99	0.24	A		0.4	11.28	0.30	B
Stream C-AB		0.3	7.25	0.20	A		0.5	7.56	0.28	A
	North Street / B663 Midland Drive / B663 High Street - 2031 Do Something (Residential)									
Stream B-C	D7	0.3	7.18	0.21	A	D8	0.3	7.61	0.23	A
Stream B-A		0.4	10.76	0.27	B		0.5	11.49	0.32	B
Stream C-AB		0.5	8.32	0.30	A		0.5	7.59	0.28	A

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

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

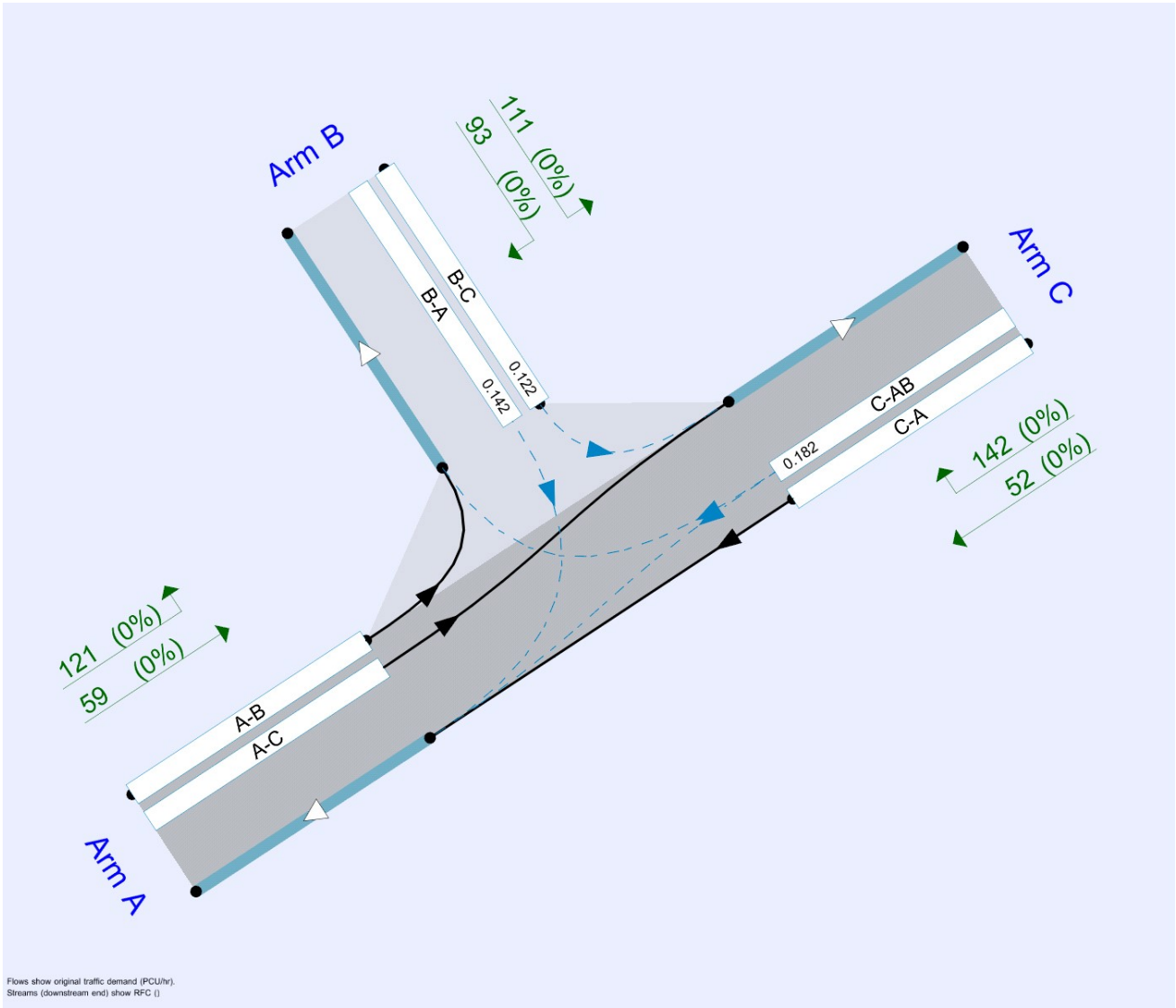
File summary

File Description

Title	
Location	
Site number	
Date	20/07/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	M-EC\james.wright
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A6	North Street / B663 Midland Drive / B663 High Street	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15

North Street / B663 Midland Drive / B663 High Street - 2023 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	High Street		Major
B	North Street		Minor
C	Midland Road		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.00			100.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	6.50	4.50	3.65	3.50		1.00	30	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	555	0.092	0.233	0.147	0.333
B-C	732	0.102	0.259	-	-
C-B	632	0.224	0.224	-	-

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

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

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

Traffic Demand

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	180	100.000
B		✓	204	100.000
C		✓	194	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	121	59
	B	93	0	111
	C	52	142	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.19	6.75	0.2	A
B-A	0.22	9.99	0.3	A
C-AB	0.28	7.93	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	84	684	0.122	83	0.1	5.982	A
B-A	70	493	0.142	69	0.2	8.476	A
C-AB	114	628	0.182	113	0.2	6.986	A
C-A	32			32			
A-B	91			91			
A-C	44			44			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	100	673	0.148	100	0.2	6.280	A
B-A	84	481	0.174	83	0.2	9.057	A
C-AB	138	627	0.220	138	0.3	7.353	A
C-A	36			36			
A-B	109			109			
A-C	53			53			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	122	655	0.186	122	0.2	6.744	A
B-A	102	463	0.221	102	0.3	9.973	A
C-AB	172	626	0.275	172	0.4	7.918	A
C-A	41			41			
A-B	133			133			
A-C	65			65			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	122	655	0.187	122	0.2	6.753	A
B-A	102	463	0.221	102	0.3	9.991	A
C-AB	172	626	0.275	172	0.4	7.933	A
C-A	41			41			
A-B	133			133			
A-C	65			65			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	100	672	0.148	100	0.2	6.293	A
B-A	84	481	0.174	84	0.2	9.082	A
C-AB	138	627	0.220	138	0.3	7.378	A
C-A	36			36			
A-B	109			109			
A-C	53			53			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	84	684	0.122	84	0.1	6.000	A
B-A	70	493	0.142	70	0.2	8.515	A
C-AB	114	628	0.182	114	0.2	7.017	A
C-A	32			32			
A-B	91			91			
A-C	44			44			

- CIVIL ENGINEERING
- TRANSPORT
- FLOOD RISK & DRAINAGE
- STRUCTURES
- GEO-ENVIRONMENTAL
- ACOUSTIC AIR
- UTILITIES
- GEOMATICS
- LIGHTING
- EXPERT WITNESS

MEC
Development Technical Consultants

The Old Chapel
Station Road, Hugglescote
Leicestershire LE67 2GB
T: 01530 264753
E: group@m-ec.co.uk
www.m-ec.co.uk