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Woodhouse Garden Suburb, Brighouse
Calderdale Local Plan Site Ref LP1451
Transport Assessment

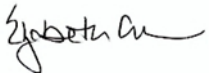
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Prepared on behalf of

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1. Introduction

1.1 INTRODUCTION

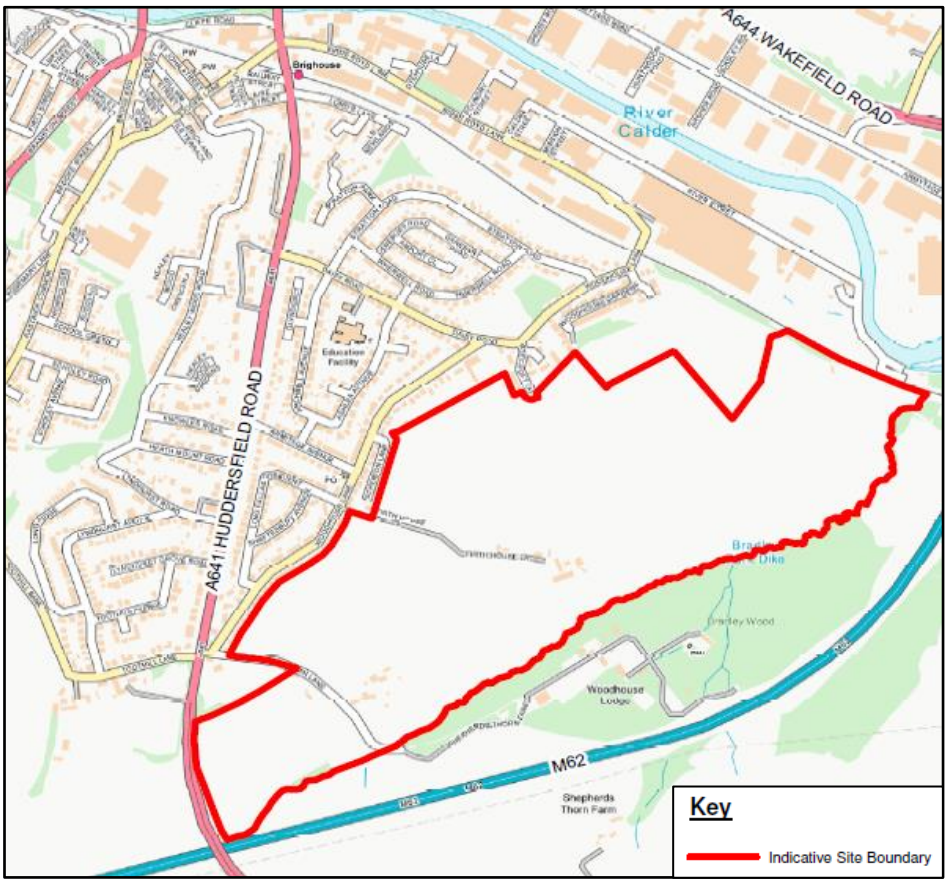
1.1.1 Optima Highways and Transportation Consultancy Ltd (Optima) has been appointed by Thornhill Estates Limited to provide transport related planning advice in support of the allocation and subsequent development of 'Land between Bradley Wood and Woodhouse Lane, Rastrick, Brighouse'.

1.1.2 Calderdale Council is promoting the Site (Local Plan Ref LP1451) as a new Garden Suburb in its Local Plan Publication Draft 2018 (LPPD 2018) and has assessed that the Site has a residential capacity of 1257 dwellings and should also accommodate a range of new infrastructure in line with the requirements of the Infrastructure Delivery Plan (IDP) that accompanies the LPPD 2018. Amongst others, new infrastructure will include a new Primary School and a Local Centre accommodating a range of uses benefitting the new mixed community. The IDP indicates that secondary education will be accommodated at the sister Garden Suburb site at Thornhills Lane.

1.1.3 The Site is one of two within Brighouse that Calderdale Council is seeking to allocate as a new Garden Suburb. The other site is at Thornhills Lane to the north east of Brighouse Town Centre.

1.1.4 The Site in its local context is shown on Figure 1 and an extract is provided below in Image 1.1 which shows the indicative boundary of the proposed allocation.

Image 1.1 Site Location – Local Context



1.2 BACKGROUND

1.2.1 In the Calderdale Unitary Development Plan 2006 (as amended on 25th August 2009 by direction of the Secretary of State, Communities and Local Government), the Site is designated as Green Belt (Policy GNE1) with a designated Wildlife Corridor (NE 15) across part of the area and it is within the Leeds Bradford Airport Consult Zone (Policy T 27).

1.2.2 Calderdale Council consulted on the Local Plan Initial Draft in August 2017 and this showed the Site being taken out of Green Belt with a proposed allocation as a new Garden Suburb (Policy SD7). The Glossary to the Local Plan Initial Draft describes a Garden Suburb as:

> *"Involves the planned extension of a city or town and can contribute to creating more sustainable patterns of development when located in the right place, with well-planned infrastructure including access to a range of facilities, and when developed at appropriate densities."*

1.2.3 The Site retains its proposed allocation as a new Garden Suburb in the Calderdale Local Plan Publication Draft 2018. The Calderdale Local Plan was submitted to the Secretary of State on Friday 11th January 2019 in order that it can be examined by an independent Planning Inspector. Local Plan Examination hearings are due to start in June 2019.

1.3 SCHEME PROPOSAL AND SCOPE OF REPORT

1.3.1 This Transport Assessment (TA) has been prepared to provide the Local Plan Examination with a comprehensive assessment of the likely impact of an allocation of the Site as a new Garden Suburb and bases the assessment on the Council's residential capacity of 1257 dwellings.

1.3.2 This TA has been prepared in accordance with the Department for Communities and Local Government (DCLG) 'National Planning Practice Guidance' published in 2014 and 2015 which supersedes the Department for Transport (DfT) and DCLG's 'Guidance on Transport Assessment' (GTA) document. Cognisance has also been taken of the prevailing National Planning Policy Framework (NPPF) as well as the emerging Calderdale Local Plan.

1.3.3 There has been ongoing liaison with Calderdale Council, including a number of meetings, over a prolonged period of time to discuss the preparation of the master plan for the Site and also around the transport impact and likely transport infrastructure requirements.

1.3.4 This report sets out the transport impacts relating to the allocation proposals and identifies what measures may be required to accommodate these impacts. The TA considers the sustainability and accessibility of the site, reviewing the provision for, and quality of, facilities and connections to and from the surrounding areas. The document structure is as follows:

- Section 2 - describes the Site and the existing transport conditions including a review of collision data for the local highway network;
- Section 3 - defines the development proposals including the access strategy and considers connectivity for non-car modes;
- Section 4 - describes the accessibility of the Site by non-car modes including accessibility to local facilities / services;
- Section 5 - sets out the trip generation and distribution methodologies applied in the assessment of the highway network;

- Section 6 - describes the build-up of traffic flow information for the base and design years and sets out the assumptions that have been made regarding potential mitigation measures;
- Section 7 - provides a commentary of the junction assessments that have been undertaken to determine the impact of the development; and
- Section 8 - summarises and concludes the Transport Assessment.

2. The Site and Existing Transport Network

2.1 EXISTING SITE

2.1.1 The Site is a predominantly greenfield area of land located to the north of the M62 Motorway and to the south east of A641 Huddersfield Road. The Site has an overall area of approximately 63.2 hectares (156.2 acres).

2.1.2 The Site is bound to the north west by existing residential development on Woodhouse Lane, to the north east by the Brighouse to Leeds railway line, to the south by Bradley Park Dike and Bradley Wood and to the west by A641 Huddersfield Road. The southern boundary of the Site lies on the administrative boundary between Calderdale and Kirklees Councils.

2.1.3 The Site has limited frontage on to the existing highway network but is directly bound by A641 Huddersfield Road on its western side. There is field gate into the Site at the end of Ryecroft Lane which leads off Woodhouse Lane to the north and there are also two lanes running into the Site from Woodhouse Lane; Firth House Lane and Shepherds Thorn Lane.

2.1.4 Firth House Lane provides access to a group of listed buildings at Firth House. Shepherds Thorn Lane runs through the Site to the south of Firth House Lane and provides access to several properties within the Site and to Bradley Wood Activity Centre and other properties which lie beyond the southern boundary.

2.1.5 At the north eastern end of the Site there is a private access under the railway line leading from River Street. The location of the Site in a local and a more strategic context is shown in Figures 1 and 2 respectively.

2.2 EXISTING LOCAL TRANSPORT NETWORK

Vehicular Network

2.2.1 Ryecroft Lane, a short residential cul-de-sac, which provides access to Tithe Barn View another short residential cul-de-sac, meets Woodhouse Lane at a simple priority junction. Woodhouse Lane provides a through route along the southern side of the existing Woodhouse residential area. Woodhouse Lane runs from Birds Royd Lane to the north of the railway line, over the railway to a mini-roundabout junction with Woodhouse Gardens. Just to the east of its junction with Ryecroft Lane, Woodhouse Lane becomes a more secondary route leading through the estate to a staggered cross road junction on to A641 Huddersfield Road with Toothill Lane opposite.

2.2.2 Where Woodhouse Lane continues as a more secondary route, Daisy Road provides a direct link through the estate to meet A641 Huddersfield Road further to the north than its junction with Woodhouse Lane. The form of junction is a priority junction with ghost island right turn holding lane.

2.2.3 Between the junctions of Woodhouse Lane and Daisy Road there is another route into the Woodhouse estate; Armitage Avenue provides another direct link between A641 Huddersfield Road and Woodhouse Lane.

2.2.4 To the north of the Site, on the other side of the railway line, Birds Royd Lane runs in a westerly direction to a traffic signal controlled cross road junction with A641 Huddersfield Road and Gooder Lane.

2.2.5 A641 Huddersfield Road runs in a northerly direction over the River Calder into Brighouse Town Centre. Just to the south of the river crossing is a traffic signal controlled cross road junction with Mill Royd Street. To the right hand side, Mill Royd Street is a cul-de-sac providing access into

Mill Royd Mill, an apartment conversion, and to the left hand side, Mill Royd Street runs in a westerly direction for some 170m to its simple priority junction with A643 Owler Ings Road. A643 runs in a generally southerly direction through Rastrick, under the M62 Motorway to Ainley Top and M62 Junction 24.

2.2.6 Continuing to the north, A641 Huddersfield Road meets Bethel Street, Bradford Road and Lawson Road at an elongated roundabout-type junction where A641 Huddersfield Road bends to the east. Traffic on A641 Huddersfield Road coming from the east gives way to north-east bound traffic. Both Bethel Street and Bradford Road are one-way leading away from the junction and traffic emerging from Lawson Road gives way to traffic on A641 Huddersfield Road eastbound. There is an additional give-way at the junction where traffic turning right out of Lawson Street to go north also gives way to traffic on A641 Huddersfield Road coming from the east.

2.2.7 Just to the east of the roundabout-type junction there is a traffic signal controlled junction which provides access into Sainsburys and also on to Mill Lane and Wharf Street. The junction of Mill Lane and Wharf Street with the access into Sainsburys car park is a mini roundabout.

2.2.8 A641 continues in a north easterly direction to a further traffic signal controlled junction with A644 and A643. There is a gyratory type junction at this location where A643 eastbound traffic is to the north of an island, A643 westbound traffic is to the south of the island and the traffic signal control is on the westerly end with a compact roundabout on the easterly end. This allows the interchange of traffic between A644 and A643 from all directions. This junction is sometimes referred to as the Stotts Arms junction.

2.2.9 A643 Clifton Common leads away from the roundabout in a north easterly direction, becomes Highmoor Lane and Walton Lane before meeting A649 Halifax Road at staggered cross road junction with B6120 Scholes Lane. A649 is the route between Hipperholme to the west and Heckmondwike to the east.

2.2.10 A644 Wakefield Road leads away from the roundabout in an easterly direction to M62 Junction 25 and continuing beyond to Cooper Bridge. From here it continues as Huddersfield Road into Dewsbury.

2.2.11 Just to the north east of the gyratory type junction, A644 meets Ludenscheid Link and A641 Bradford Road at a roundabout junction which also provides access into Tesco's car park (Tesco Roundabout).

2.2.12 From the centre of Brighouse, A641 Bradford Road leads to the north through Bailiff Bridge, through the Wyke Lion cross road junction with A58 Whitehall Road East to Odsal and the southern outskirts of Bradford before continuing into Bradford City Centre as Manchester Road.

2.2.13 The roundabout at the western end of the Ludenscheid Link is the junction between A644 Halifax Road, A6025 Elland Road and A643 Owler Ings Road. A6025 Elland Road leads in a westerly direction connecting Brighouse Town Centre to Elland.

2.2.14 A644 leads to the north west out of Brighouse Town Centre into Hipperholme before continuing as A644 Brighouse and Denholme Gate Road to Stone Chair Roundabout, the junction with A6036 Halifax Road. From here A644 continues to Queensbury and beyond to its junction with A629 Smithy Hill / Halifax Road just to the south of Denholme.

2.2.15 From its staggered cross road junction with Woodhouse Lane and Toothill Lane at the western end of the Site, A641 Huddersfield Road runs in a southerly direction over the M62 Motorway to Bradley Bar Roundabout, its junction with A6107 Fixby Road / Bradley Road. From Bradley Bar Roundabout, A641 Bradford Road continues to the south into Huddersfield Town Centre.

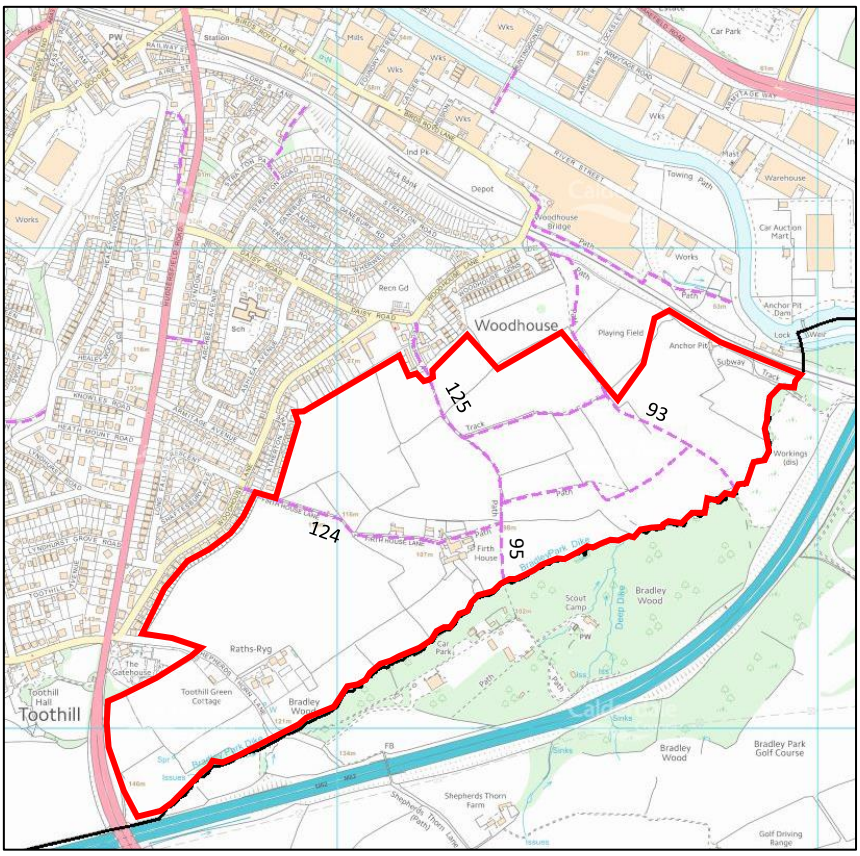
2.2.16 A6107 Bradley Road runs in an east to west direction from its junction with A62 Leeds Road, just to the south of Cooper Bridge, through Bradley Bar Roundabout as Fixby Road and then Clough Lane to the traffic signal controlled junction with A643 New Hey Road. From the junction, B6114 Dewsbury Road continues in a westerly direction into Elland. As already noted in paragraph 2.2.5, A643 New Hey Road is the route from Brighouse to Ainley Top and M62 Junction 24.

2.2.17 Toothill Lane / Toothill Bank provides a link from A641 Huddersfield Road to A643 via Ogden Lane. From the junction of Toothill Bank and Ogden Lane / Rastrick Common, Rastrick Common runs in a northerly direction joining Gooder Lane and leading into Brighouse Town Centre. Bridge End is a link from Rastrick Common to A643 Barmston Street at a mini roundabout junction.

Pedestrian and Cycle Network

2.2.18 Image 2.1 shows an extract of Calderdale Council's Public Rights of Way Map and illustrates the pedestrian routes crossing and in close proximity to the Site. Public Footpaths are denoted by the purple dotted lines.

Image 2.1 Pedestrian Routes in the area of the Site

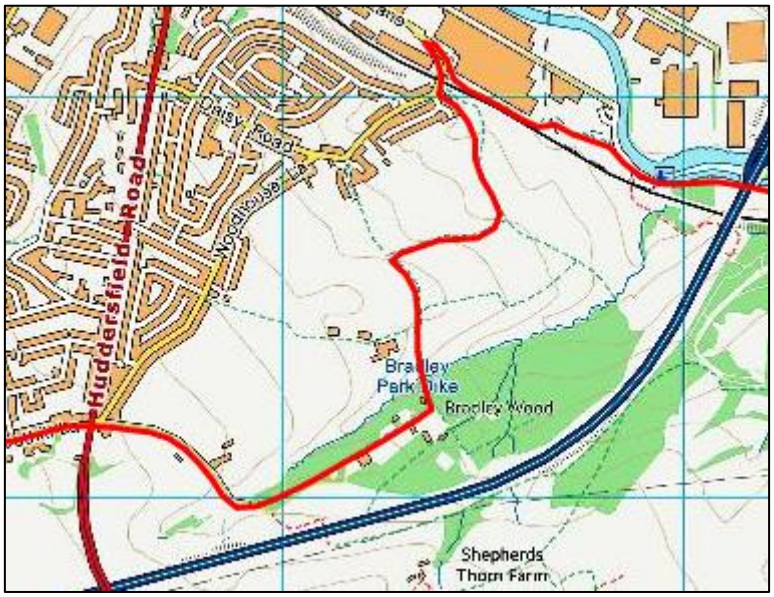


2.2.19 Brighouse 124 follows the route of Firth House Lane skirting to the north of Firth House to join Brighouse 095. Brighouse 095 runs in a north south direction from Brighouse 125 which runs from Daisy Road via Ryecroft Lane into the Site from the north to Bradley Park Dike to the south. Brighouse 095 also continues as both the west to east routes shown and these connect to Brighouse 093 provides a route from Woodhouse Lane at the north west corner of the Site across and into Bradley Wood.

2.2.20 The Brighouse Boundary Walk also crosses the Site as shown in Image 2.2 below which contains an extract of the map provided on The Long Distance Walkers Association website.

2.2.21 In a clockwise direction, The Brighouse Boundary Walk follows the route of the existing PRoW to the northern end of the Site before entering Bradley Wood and continuing in south westerly direction until it meets Shepherds Thorn Lane. It continues along Shepherds Thorn Lane and crosses A641 Huddersfield Road to continue along Toothill Lane.

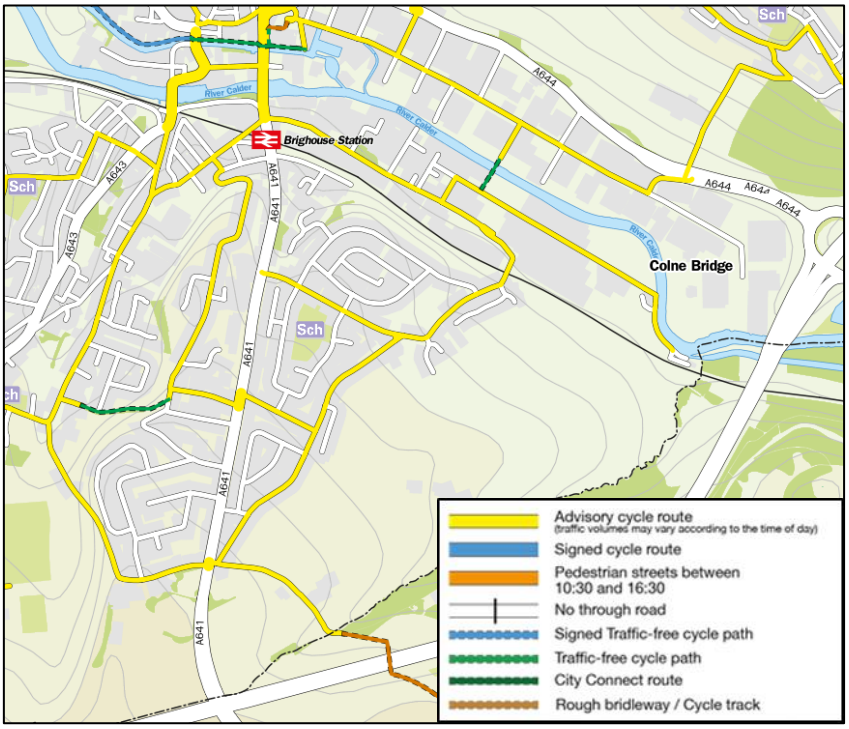
Image 2.2 The Brighouse Boundary Walk crossing the Site



2.2.22 To the north of the Site within the existing Woodhouse residential area there is a network of footways that lead to local services, bus stops and into Brighouse Town Centre.

2.2.23 The West Yorkshire Interactive Cycle Map indicates several advisory cycle routes in the vicinity of the Site. An extract from the map is shown in Image 2.3.

Image 2.3 Local Cycle Routes



2.2.24 Woodhouse Lane and Birds Royd Lane are advisory cycle routes leading to Brighouse Railway Station and the Town Centre. Shepherds Thorn Lane crossing the Site at the southern end is also an advisory cycle route that leads into a rough bridleway / cycle track leading to the south over the M62 Motorway and connecting to A6107 Bradley Road. From here there is a network of advisory cycle routes leading in a southerly direction into Huddersfield Town Centre.

2.3 EXISTING SURVEY DATA

Manual Classified Turning Count Surveys

2.3.1 Traffic surveys have been undertaken at key junctions within Brighouse and the surrounding area. These surveys were undertaken on Thursday 17th May 2018 between the hours of 0700-1000 and 1600-1900. The junctions surveyed are summarised in Table 2.1 below.

Table 2.1 Fully Classified Junction Count Surveys

Location	Junction Type
A643 Owler Ings Road / A6025 Elland Road / A644 Halifax Road / Ludenscheid Link	Four Arm Roundabout
Ludenscheid Link / A641 Bradford Road / Tesco Car Park Access / A644	Four Arm Roundabout
A644 / A643 / A641 Huddersfield Road (Stotts Arms Junction)	Traffic Signal Controlled T Junction
A643 / A643 Clifton Road / A644 Phoenix Bridge	Three Arm Compact Roundabout
A641 Huddersfield Road / Mill Lane	Traffic Signal Controlled T Junction
A641 Huddersfield Road / Bethel Street / Bradford Road / Lawson Road / A641 Huddersfield Road	Gyratory-type Roundabout with Give Way Control on Circulatory Carriageway
A641 Huddersfield Road / Mill Royd Street	Traffic Signal Controlled Cross Road Junction
A641 Huddersfield Road / Gooder Lane / Birds Royd Lane	Traffic Signal Controlled Cross Road Junction

2.4 PERSONAL INJURY COLLISION DATA

2.4.1 Personal injury collision data has been obtained over an area of interest that is likely to be influenced by the traffic generated from both the Garden Suburb sites. The area of interest has been concentrated on the key junctions within Brighouse Town Centre with other junctions included to the north and south of the Town Centre.

2.4.2 The area of interest is detailed on the plots contained in Appendix A and, given that it is such a wide area to consider, attention has been focussed on key junctions and links within the area and also on any serious or fatal accidents that occurred elsewhere on the network.

A641 / A649 Traffic Signal Controlled Junction, Bailiff Bridge and A641 Bradford Road Corridor

2.4.3 There have been 27 collisions on the A641 corridor between Bailiff Bridge and the Tesco Roundabout, four of which occurred at the traffic signal controlled junction of A641 Bradford Road and A649 Wakefield Road / Birkby Lane. Twenty four of the collisions have been classified as slight

in severity and three as serious, there have been no fatal collisions on this part of the network. Three of the collisions involved a cyclist and six involved a pedestrian.

Tesco Roundabout

2.4.4 There have been five collisions at the Tesco Roundabout, four of which have been classified as slight in severity and the remaining collision as severe in severity and was as a result of excess speed and the driver being drink impaired. Of the four remaining collisions there is no particular pattern to these with two occurring on the circulatory carriageway of the roundabout, one being a rear end shunt on an approach and one occurring on an exit from the roundabout. There have been no pedestrian or cyclist casualties.

A643 / A644 / A641 Stotts Arms Junction

2.4.5 There have been five collisions at the junction of A641 Huddersfield Road and A644 Wakefield Road, three of which have been classified as slight in severity and the remaining two classified as serious in severity. All but one of the collisions occurred at the traffic signals that control movement between A643 Wakefield Road and A641 / A644. The collisions appear to have been caused in the main by vehicles ignoring a red signal albeit in two of the collisions, both drivers claim to have had a green signal. One of the serious collisions involved a pedestrian being struck by an HGV exiting the Tesco service yard on the northern side of the gyratory.

A61 Huddersfield Road / Mill Lane and A641 Huddersfield Road / Bethel Street / Lawson Road Junctions

2.4.6 There have been six collisions on this part of the network including the two closely spaced junctions; A641 Huddersfield Road / Mill Lane which provides access into Sainsburys car park and A641 Huddersfield Road / Bethel Street / Lawson Road which provides access into the Town Centre. 3 of the collisions, all of which have been classified as slight in severity, occurred at the A641 Huddersfield Road / Mill Lane junction which is traffic signal controlled. One of the collisions occurred as a result of a pedestrian stepping out in front of a vehicle emerging from Mill Street and the remaining collisions were unrelated in terms of cause.

2.4.7 The three remaining collisions occurred at the junction of A641 Huddersfield Road / Bethel Street / Lawson Road, one of which has been classified as serious in severity and involved a vehicle pulling into the path of a cyclist. The remaining two collisions, classified as slight in severity, both involved vehicles pulling out of Lawson Road into the path of motorcycles having failed to see them on the circulatory carriageway.

A643 / A6025 / A644 / Ludenscheid Link Roundabout

2.4.8 There has been a total of eight collisions at this roundabout junction, at the western end of the Ludenscheid Link, seven of which have been classified at slight in severity and the remaining one as serious in severity. Four of the collisions, including the serious incident, have involved a cyclist. Three of these collisions involving a cyclist occurred on the circulatory carriageway of the roundabout.

A641 Huddersfield Road / Gooder Lane / Birds Royd Lane Traffic Signal Controlled Junction

2.4.9 There have been three collisions at the junction of A641 Huddersfield Road and Gooder Lane / Birds Royd Lane and a further collision at the nearby junction of A641 Huddersfield Road and Cliffe Road, all of which have been classified as slight in severity. Two of the collisions involved a pedestrian casualty.

A641 Huddersfield Road Corridor including the Toothill Lane / Woodhouse Lane Junction

2.4.10 There has been a total of seven collisions on this part of the highway network; the A641 Huddersfield Road corridor south from its junction with Birds Royd Lane to and including the junction with Toothill Lane and Woodhouse Lane. Five of the collisions have been classified as slight in severity, one as serious and there has been one fatality. It should be noted that the fatal collision did not occur on the public highway but within the curtilage of a residential property. It is assumed that the incident has been recorded due to the victim who was working on his vehicle being dragged on to the public highway when the vehicle moved having fallen from its jacked up position.

2.4.11 Three of the collisions occurred as a result of a vehicle being struck or striking another vehicle when emerging from a side road or driveway.

Serious and Fatal Collisions

2.4.12 In the main the collisions that have been classified as serious in severity have been accounted for in the breakdowns given above. There have been two collisions in the wider study area that have been classified as fatal; one of which occurred on A644 Wakefield Road to the east of the Town Centre and appears to have been a result of two drivers racing each other along Wakefield Road in a westerly direction when one driver lost control of the vehicle.

2.4.13 The other collision that resulted in a fatality occurred at the junction of A649 Halifax Road and B6120 Scholes Lane to the north east of the Town Centre. The collision involved a vehicle emerging from Scholes Lane being struck by an oncoming vehicle where the driver was possibly exceeding the speed limit.

Summary

2.4.14 Whilst a significant number of collisions have occurred over what is a wide study area, there does not appear to be any locations where a pattern has emerged, nor does there appear to be any particular road safety problems.

2.5 EXISTING PUBLIC TRANSPORT PROVISION

Bus Services

2.5.1 A641 Huddersfield Road is a bus route and is used by Services X49, X63 and 363. There are existing bus stops in the vicinity of the junction with Toothill Lane / Woodhouse Lane. The bus stop for northbound services is just to the north of the junction with Toothill Lane and has a pole, shelter timetable information and raised kerbs with bus stop markings on the carriageway. The bus stop for southbound services is just to the south of the access into The Gatehouse and has a pole, raised kerbs and bus stop markings.

2.5.2 There are further pairs of bus stops on A641 Huddersfield Road to the north towards Brighouse Town Centre that can be accessed through the Woodhouse estate. There is a pair in the vicinity of the junction of Huddersfield Road and Armitage Avenue. The stop for southbound services has a pole, shelter, timetable information, raised kerbs and bus stop markings and the stop for northbound services has a pole, timetable information, raised kerbs and bus stop markings. There is a pedestrian refuge in the centre of Huddersfield Road immediately to the north of the junction with Armitage Avenue for ease of crossing to and from the northbound bus stop.

2.5.3 There is also a pair of bus stops in the vicinity of the junction of Huddersfield Road and Daisy Road. Both have a pole, timetable information, raised kerbs and bus stop markings. There is also a

pedestrian refuge in the centre of Huddersfield Road immediately to the north of the junction with Daisy Road for ease of crossing to and from the northbound bus stop.

2.5.4 Service 257 passes through the Woodhouse estate and can be accessed on a 'hail and ride' basis. In the northbound direction, the service follows a route from Toothill Lane across Huddersfield Road on to Woodhouse Lane. Within the Woodhouse estate it follows Woodhouse Lane, Armitage Avenue, Ashlea Avenue, Wherwell Road and Stratton Road before rejoining Woodhouse Lane and running on to Birds Royd Lane.

2.5.5 The routes of bus services in the vicinity of the Site and the locations of the nearest bus stops are shown on Figure 6 with a summary of the services given in Table 2.2.

Table 2.2 Summary of Bus Services in the vicinity of the Site

Service	Route	Days of Operation	Approx. Frequency in Each Direction	Approx. Times of Operation
X63	Bradford City Centre - Huddersfield Town Centre	Mon-Fri	10 Minutes	06:44 – 18:21
		Sat	10 Minutes	08:53 – 17:58
		Sun	No Service	No Service
363	Bradford City Centre - Huddersfield Town Centre	Mon-Fri	12 Services per day	05:38 – 23:34
		Sat	12 Services per day	05:38 – 23:34
		Sun	30 minutes	07:35 – 22:35
257	Brighouse - Elland	Mon-Fri	1 every 2 hours	10:46 – 17:26
		Sat	1 every 2 hours	09:45 – 15:45
		Sun	No Service	-
X49 (School Days Only)	Brighouse- New Mill Road Huddersfield Road	Mon-Fri	2 Services	07:42 – 16:04
		Sat	No Service	-
		Sun	No Service	-

Rail Services

2.5.6 Brighouse Railway Station is located approximately 1.3km from the centre of the Site on Railway Street. The station provides access to a number of locations, including Manchester, Leeds, Bradford, Halifax, Huddersfield and London Kings Cross with approximately 6 trains per hour departing the station.

2.5.7 The station is accessible within the preferred maximum acceptable walking distance of 2km for commuting trips in accordance with the Chartered Institution of Highways and Transportation document 'Providing for Journeys on Foot' (2000). In addition, there is bicycle storage available enabling multimodal trips including cycling.

2.5.8 As shown in Image 2.3, Brighouse Station is accessible by an advisory route (along Woodhouse Lane and Birds Royd Lane) from the Site. Bus Services X63 and 363 also provide access to the station from the bus stops on Huddersfield Road within an approximate 3 minute journey time.

3. Development Proposals and Access Strategy

3.1 BACKGROUND

3.1.1 In November 2016 Calderdale Council published its 'Strategic Vision for South East Calderdale' (Strategic Vision). This document identified that the Council was at an advanced stage in the preparation of its Local Plan and had identified that Brighouse and Rastrick will be the key focal points for new residential development.

3.1.2 The Strategic Vision therefore contains the results of a master planning exercise carried out by WSP|Parsons Brinckerhoff working with Spawforths on behalf of the Council for two large sites proposed for allocation as Garden Suburbs; Woodhouse (LP 1451) and Thornhills Lane (LP 1463).

Constraints and Opportunities

3.1.3 The Strategic Vision notes constraints and opportunities afforded by the Site under several headings; topography and views, access and highways, features, neighbouring uses, ecology and flooding / run-off.

3.1.4 In terms of access and highways it is noted that currently vehicular access is through the existing Woodhouse neighbourhood which is likely to restrict the number of units which can be delivered on the Site prior to a new access road being provided on to A641 Huddersfield Road. It is noted that this new access road should not conflict with any future proposals for a potential new Junction 24A on the M62 Motorway.

3.1.5 It is also noted that there are a number of footpaths and public rights of way which cross the Site.

Strategic Vision Proposals

3.1.6 The Strategic Vision identifies the existing access points and potential access points into the Site from its north-west side. The proposal for an access into the Site from A641 Huddersfield Road, most likely in the form of a traffic signal controlled junction, is also identified.

3.1.7 The Strategic Vision also notes that the development will respect and strengthen the existing rights of way across the Site and into Bradley Wood and accommodate these within the routes through the Site for pedestrians and cyclists to provide sustainable means of travel.

3.1.8 The master plan is to provide for green spaces, the largest of which is to complement the existing listed buildings which lie in the centre of the Site. The ecology area alongside Bradley Park Dike is also to be protected and enhanced. The Strategic Vision also proposes that a range of new infrastructure is accommodated on the Site, including amongst other a new Primary School.

3.2 PROPOSED MASTER PLAN

Plots and Phasing

3.2.1 In conjunction with officers from Calderdale Council, a concept master plan for the Site has been developed by Enjoy Design with input from the design team on matters such as drainage, access, heritage, ecology, conservation and planning. The concept master plan will be further developed in line with Local Plan Policy IM7: Master Planning of Housing Sites which states *"In relation to the two Garden suburb sites identified in the Local Plan, the Council will expect master plans to demonstrate how the design will achieve enhanced public access to high quality open space.*

3.2.2 The master plan indicates a net development area for residential uses of 38.05 hectares which for a development of 1257 dwellings represents an average density of 33 dwellings per hectare. A copy of the Enjoy Design master plan is contained at Appendix B.

3.2.3 The master plan shows the Site divided into a number of plots, P1 to P13, and a proposed phasing, Phases 1 to 7, based on the plots. The master plan also shows areas of Public Open Space (POS) associated with a number of the larger plots with an area of Publicly Accessible Landscape in the centre of the Site. Plot 7 is shown as a 2 form entry Primary School and a Local Centre with the ability to accommodate convenience shopping and healthcare, amongst other facilities and services.

3.2.4 An Indicative Housing Delivery Trajectory has been developed for the Site which suggests that the 7 phases will be built out at a rate of between 35-40 dwellings per annum starting in 2020-21 and completing in 2032-33. There will be some overlap in the delivery of the phases but there will be no more than 3 phases being delivered at any one time. A copy of the Indicative Housing Delivery Trajectory is contained at Appendix C.

Access and Public Rights of Way

3.2.5 The master plan shows vehicular access into the Site from the north from Woodhouse Lane via Ryecroft Lane. A second vehicular access is shown into the Site at its western end from A641 Huddersfield Road. A further vehicular access is also indicated at the northern side of the Site which would lead into Ryecroft Lane / Woodhouse Lane via Woodhouse Gardens. At the present time, this access would lead across land which is not within the proposed allocation. However, the master plan ensures that this would not be prejudiced at a later date.

3.2.6 Firth House Lane, which is a PRoW, will be retained as a pedestrian / cycle access and Shepherds Thorn Lane will be maintained as a right of access to existing properties and to maintain the route of the Brighouse Boundary Walk.

3.2.7 A Main Distributor Road is shown leading through the Site and linking the proposed access points on to Woodhouse Lane and A641 Huddersfield Road. It is intended that this road will have a carriageway width of 6.0m, a 2.0m wide footway to one side and a 3.0m combined footway/cycleway to the other side. The pedestrian cycle/provision will be separated from the carriageway by landscaped grass verges, each 2.0m wide.

3.2.8 Calderdale Council has suggested that the Main Distributor Road should have a low speed environment and therefore this is assisted by its proposed horizontal alignment, side road junctions and frontage access and the introduction of roundabouts at key junctions within the Site.

3.2.9 As part of its wider infrastructure delivery aspirations, including the creation of Greenways to the north and south east of Brighouse and via the Brighouse Canal Basin, Calderdale Council is also investigating the potential to provide a link from A641 Huddersfield Road through the Site to the northern boundary. Indicative proposals currently suggest that from here a route could potentially cross the railway line, the existing industrial area and the River Calder to a junction on A644 Wakefield Road.

3.2.10 A further proposal indicates that a separate route would also be created to access the site to the north of A644 Wakefield Road that is allocated for employment uses, known as Clifton Business Park. This means of access is anticipated to form part of an outline planning application for the Clifton Business Park that is expected to be submitted to the local planning authority in early Summer 2019.

3.2.11 Indicative proposals currently indicate that a route may also be created between A643 Clifton Common, through the proposed Thornhills Lane Garden Suburb site (Ref: LP 1463) to meet A641 Bradford Road to the north of Brighouse. The master plan has been designed in such a way that the potential for these future transportation interventions in the vicinity of the A641 will be safeguarded.

3.2.12 The existing network of Public Rights of Way that currently crosses the Site will be retained and enhanced within the master plan and for the most part on its existing line. There may be the need for minor diversions as the master plan develops but there will be no loss of PROW as a result of the development of the Site.

3.2.13 A pedestrian / cycle access will be provided out of the Site to the north under the railway line and linking to River Street. There are plans to create an improved cycle route / Greenway from Brighouse through to Cooper Bridge utilising the existing canal towpath. The pedestrian / cycle access out of the Site to the north will link to this proposed facility providing a safe, convenient route for cyclists between the Site, the existing industrial area to the north of the Site and Brighouse Town Centre.

3.2.14 The master plan also safeguards the provision of any future potential junction from the A641 Huddersfield Road on to the M62 Motorway, Junction 24A.

3.3 VEHICULAR ACCESS STRATEGY

3.3.1 Ryecroft Lane leading from Woodhouse Lane will provide the initial means of access into the Site to serve early phases of development. Ryecroft Lane is a Residential Estate Road and has a carriageway width of 5.5m and 2.0m wide footways to each side. Ryecroft Lane provides access to Tithe Barn View and jointly they provide access to some 20 dwellings.

3.3.2 The access into the Site from A641 Huddersfield Road will take the form of a traffic signal controlled T junction as shown on Optima drawing no. 17031/GA/01 – A641 Huddersfield Road, Proposed Site Access Arrangements, a copy of which is contained at Appendix D.

3.3.3 The master plan currently indicates that access into Phase 1 of development will be taken from Ryecroft Lane and access into Phase 2 from A641 Huddersfield Road. Later phases of development will be accessed from the Main Distributor Road allowing a choice of access points on to the wider highway network.

4. Site Accessibility and Measures to Influence Travel Behaviour

4.1 ACCESSIBILITY ON FOOT

4.1.1 The measures proposed which will positively influence trips on foot by residents at the Woodhouse Garden Suburb include:

- Boundary connections with the existing highway network on the western, northern and eastern sides of the Site providing access into the Woodhouse estate and Woodhouse Lane, on to A641 Huddersfield Road and on to River Street;
- Internal links and pedestrian routes throughout the Site and to create the shortest possible distances to the boundary connections;
- A footway to one side and a shared footway / cycleway to the other side of the Main Distributer Road separated from the carriageway by planted verges;
- A low design speed environment throughout the Site to encourage walking trips within a better environment;
- Retention and enhancement of the existing network of PRoWs that cross the Site and provide access to a wider network of pedestrian routes including within the Kirklees district to the south;
- Provision for a range of new infrastructure on the Site, including amongst others a Primary School and a Local Centre; and
- Travel Plan initiatives for residents.

4.1.2 The residential design guide 'Manual for Streets' (MfS) advises that *"walkable neighbourhoods are typically characterised by having a range of facilities within ten minutes (up to about 800m) walking distance of residential areas…"* (ref para 4.4.1). However, this is not regarded as an upper limit in MfS and reference is also made to walking offering *"the greatest potential to replace short car trips, particularly those under 2km".* The acceptability of walking trips up to 2km (an approximate 25 minutes' walk time) is also supported in the CIHT document 'Providing for Journeys on Foot', 2000.

4.1.3 The Department for Education (DfE) statutory guidance document, 'Home to School Travel and Transport', July 2014, defines an even greater maximum walking distance to schools of 2 miles (3.2km) and 3 miles (4.8km) for children under and over 8 years respectively.

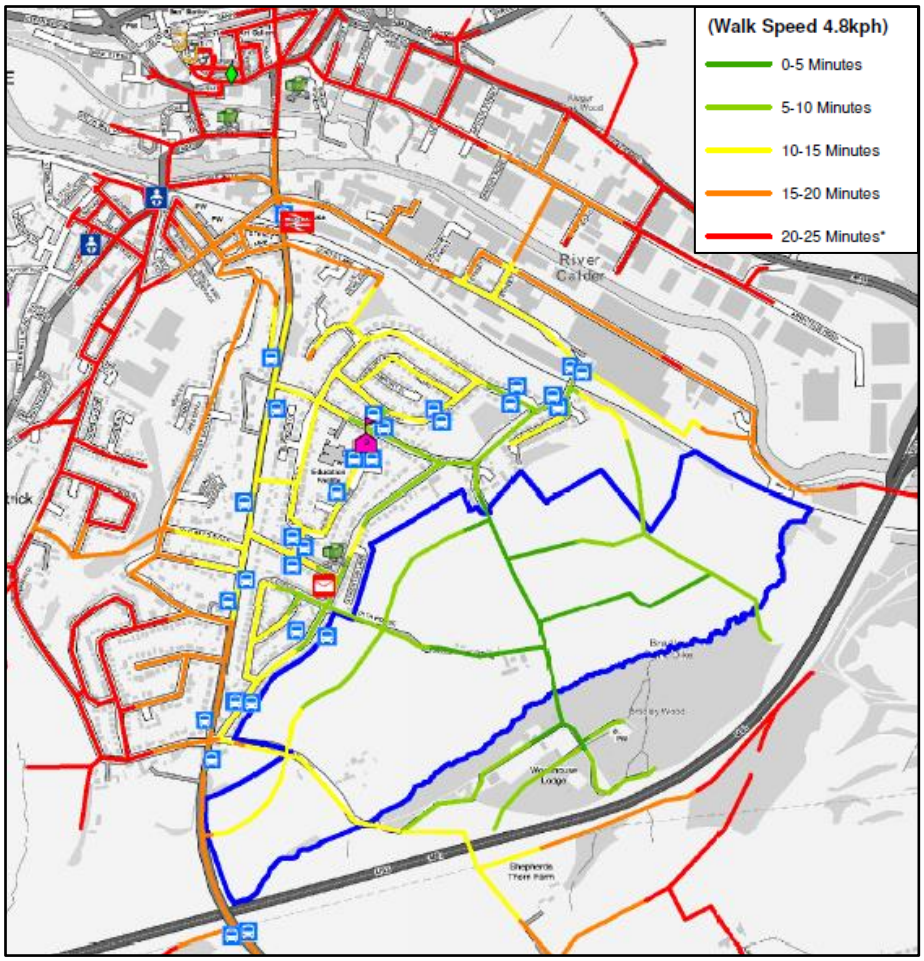
4.1.4 Using GIS Network Analysis software, typical walk times (up to 25 minutes which equates to a distance of 2km) from the centre of the Site are shown on Figure 3 with an extract provided in Image 4.1 below. This figure and the extract demonstrate the following:

- All parts of the Garden Suburb will be within a 5-10 minute walk of the Primary School and the Local Centre which will also be within a 10-15 minute walk of the Woodhouse estate;
- Woodhouse Primary School and Toy Box Day Nursery are within a 5-10 minute walk of the centre of the Site;
- Brighouse Town Centre with its wide range of shops and facilities is within a 20-25 minute walk of the centre of the Site; and

- The wide range of employment opportunities in the existing Armytage Road and Birds Royd Industrial Estates to the north of the Site as well as the proposed Clifton Business Park are within a 15-25 minute walk.

4.1.5 Brighouse Railway Station is within a 15-20 minute walk and local bus stops are closer with the nearest being within a 5-10 minute walk.

Image 4.1 Extract of Pedestrian Accessibility Plan



4.1.6 It is therefore concluded that through its wide range of walking routes including linkages to an enhanced network of Green Space and provision of facilities within the development, the proposed new Garden Suburb at Woodhouse will be provided with good accessibility on foot to a wide range of services and facilities as well as very good employment opportunities. The development will therefore accord with local and national policy and guidance.

4.2 ACCESSIBLITY BY CYCLE

4.2.1 The measures that will positively influence residents of the new Garden Suburb to undertake trips by cycle include:

- Boundary connections with the existing highway network on the western, northern and eastern sides of the Site providing access into the Woodhouse estate and Woodhouse Lane, on to A641 Huddersfield Road and on to River Street leading to the Brighouse to Cooper Bridge cycleway;

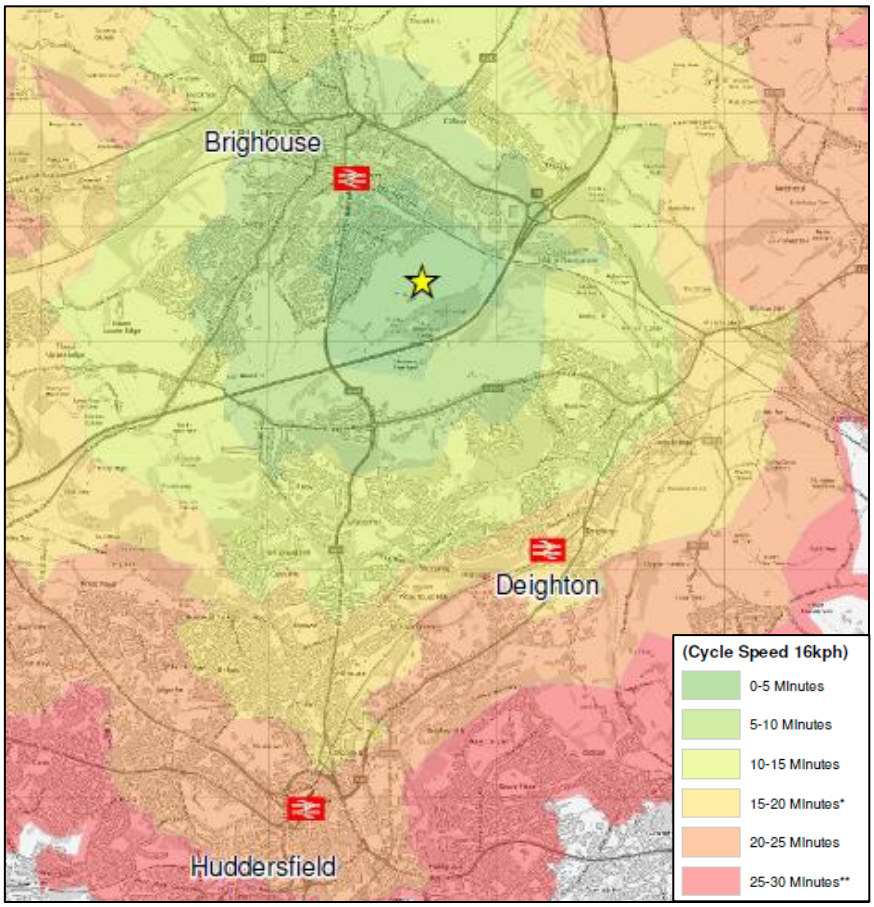
- Internal links and cycle routes throughout the Site and to create the shortest possible distances to the boundary connections;
- Provision for a range of new infrastructure on the Site, including amongst others a Primary School and a Local Centre; and
- Travel Plan initiatives for residents.

4.2.2 An acceptable and comfortable distance for general cycling trips is considered to be up to 5 kilometres as referred to in DfT's Local Transport Note 2/08. However, the same guidance also refers to commuting cycle trips of up to 8km. From the Site, an 8km catchment area encompasses all of Brighouse, Elland and parts of Halifax and Huddersfield which opens up a wider variety of employment opportunities for residents.

4.2.3 Using GIS Network Analyst software typical cycle times (up to 30 minutes which broadly equates to a distance of 8km) from the Site are shown in Figure 4 and an extract is provided in Image 4.2. Figure 4 illustrates that:

- Brighouse including the wide variety of shops, services and employment opportunities is within a 10 minute cycle ride;
- Huddersfield with a wider range of shops and services and alternative employment opportunities is a 20-25 minute cycle ride; and
- The Railway Station at Brighouse where cycle parking is provided is just over a 5 minute cycle ride.

Image 4.2 Extract from Cycle Accessibility Plan



4.2.4 It is therefore concluded that through its wide range of cycling routes including linkages to an enhanced network of Green Space and provision of facilities within the development, the new Garden Suburb at Woodhouse will be provided with good accessibility by cycle to a wide range of local services, facilities and employment opportunities, many of which are within a very short cycling distance.

4.3 ACCESSIBILITY BY BUS

4.3.1 The measures that will be provided to positively influence trips by bus for residents of the new Garden Suburb include:

- Boundary connections with the existing highway network along the western and northern sides of the Site providing access to the existing 'hail and ride' service within the Woodhouse estate and to the bus stops on A641 Huddersfield Road;
- Internal links and routes to create the shortest possible routes to the nearest bus stops including those within the Garden Suburb itself;
- Potential for bus services to penetrate the Site; and
- Travel Plan initiatives for residents.

4.3.2 The most frequent bus services are accessed from the stops on A641 Huddersfield Road where there are buses every 10 minutes between Bradford, Brighouse and Huddersfield.

4.3.3 It is concluded that the new Garden Suburb will be provided with good accessibility by bus to key local destinations which offer a wide range of services, facilities and employment opportunities.

4.4 ACCESSIBILITY BY RAIL

4.4.1 Brighouse Railway Station provides regular connections to several key destinations within the local region including Leeds (30-45 minute journey time), Bradford (30 minute journey time) and Huddersfield (12 minute journey time). There are also services to Manchester Victoria (60 minute journey time). From Leeds it is possible to interchange on to trains to Newcastle, Birmingham and London.

4.4.2 The railway station can be accessed by:

- Walking – within a 15-20 minute journey time;
- Cycle – just over a 5 minute journey time;
- Bus – within a 5 minute ride from the bus stops on A641 Huddersfield Road with opportunities in the future for more direct connections between the Garden Suburb and the Railway Station; and
- By car – typical 5 minute journey time (plus any walking time between car park and platforms)

4.4.3 It is therefore concluded that the new Garden Suburb at Woodhouse will be provided with good accessibility by rail to principal local and regional destinations which offer a vast range of services, facilities and employment opportunities.

4.5 TRAVEL PLANNING

4.5.1 An overarching Framework Travel Plan will be prepared for the new Garden Suburb under which all individual housebuilders, the Primary School and Local Centre will have individual Travel Plans. The Framework Travel Plan will demonstrate the connectivity between the new Garden

Suburb at Woodhouse and surrounding amenities including off-site secondary school provision, highlighting the opportunities for future residents to access these by means other than the car. It will also set out the ways in which the developers will facilitate and encourage trips by sustainable modes of travel, by implementing a series of measures including (but not limited to):

- The appointment of a Travel Plan Manager to ensure the Travel Plan is delivered to full effect and includes all types of trip by residents, employees, pupils and visitors to and from the Garden Suburb;
- The appointment of individual Travel Plan Co-ordinators to work with the Travel Plan Manager to ensure that the Travel Plan is delivered in all areas of the Garden Suburb;
- The development of a Woodhouse Garden Suburb website, which will be kept updated, that sets out the sustainable travel credentials of the Site and provides up-to-date information on all aspects of sustainable travel;
- Personalised journey planning; and
- Ongoing communication with residents regarding local travel options via an annual newsletter.

4.5.2 The Travel Plan will also include targets against a baseline, which will reflect the trip generation within this Transport Assessment, and monitoring will be undertaken on an annual basis, following first occupation and the results of this process reported to the Council. The targets in the Travel Plan will reflect those in the Calderdale Transport Strategy 2016-2031 which are:

- 25% more trips by bus by 2026;
- 50% more trips by rail by 2026;
- 50% more walking trips by 2026; and
- 100% more cycling trips by 2026.

4.6 SUMMARY

4.6.1 In summary it is concluded that the proposed Woodhouse Garden Suburb will be provided with good accessibility for pedestrians, cyclists and by public transport to a wide range of local services, facilities and existing and new employment opportunities. This will be reinforced by the implementation, management and monitoring of an overarching Framework Travel Plan at the Garden Suburb which will be underpinned by a series of development Travel Plans covering all areas.

4.6.2 As such the Garden Suburb is in a sustainable location and is compliant with NPPF which requires that *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location"* and *"safe and suitable access to the site can be achieved for all users"* (para 108) and states that *"applications for development should ….. give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus and other public transport services. And appropriate facilities that encourage public transport use"* (para 110).

5. Trip Generation and Distribution

5.1 BACKGROUND

5.1.1 Calderdale Council has over a number of years compiled a transport evidence base to support the development of the Calderdale Local Plan. The Council's consultant, WSP, has used the Calderdale Strategic Transport Model (CSTM), with an updated base year of 2014 (original base year was 2008) to assess the implications of the Local Plan on the road network. In August 2018 the Council prepared an 'Overview of Transport Evidence Base' which summarises the transport evidence that has been produced by WSP.

5.1.2 The transport evidence base comprises a series of Technical Notes (TN) and the overview document notes that TN9 and TN10 are 2018 updates and/or revisions on previous assumptions presented in earlier documents.

5.1.3 TN9 'Review of Previous Local Plan Evidence Base', May 2018, provides a review of the previous modelling methodology in terms of trip rates, distribution and modal split that was used in TN4: Assessment of Cumulative Impact, May 2017. TN4 introduces and utilises within the modelling general trip rates for residential development in the Borough and individual trip rates for the Garden Suburb sites and for the Clifton Employment site (Clifton Business Park).

5.1.4 Following the review of the previous local plan evidence base provided in TN9, TN10 provides an updated Assessment of Cumulative Impact.

5.2 TRIP RATES

Garden Suburb Sites

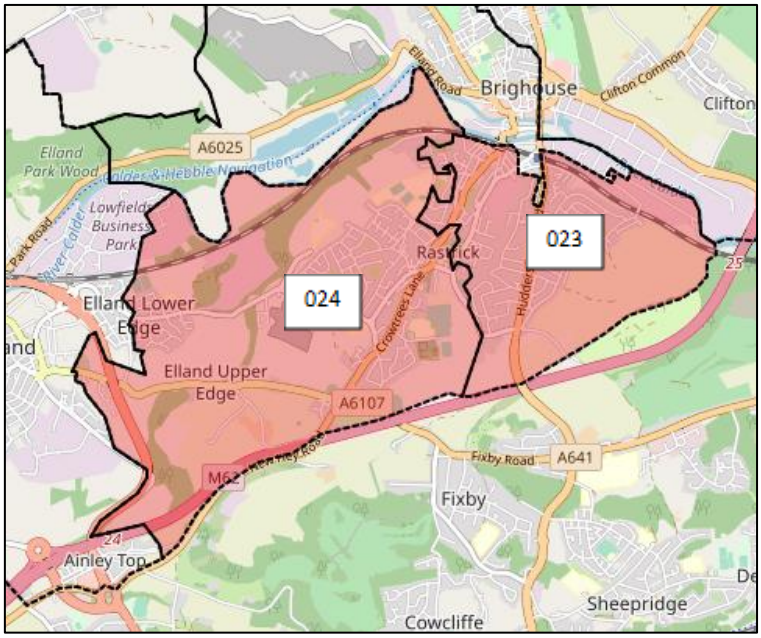
5.2.1 Table 5 of TN10 provides Garden Suburb Residential Trip Rates and these are shown in Table 5.1 below. Calderdale Council has confirmed that these are multi-modal trip rates.

Table 5.1 Garden Suburbs Residential Trip Rates

Time Period	AM Arrival	AM Departure	IP Arrival	IP Departure	PM Arrival	PM Departure
Trip rate per dwelling	0.159	0.589	0.227	0.198	0.417	0.257

5.2.2 There is no information available as to the modal split that has been assumed and AM and PM peak hour vehicular trip rates have therefore been derived by applying the modal split obtained from the Nomis dataset WU03EW – Location of usual residence and place of work by method of travel to work (MSOA) level for an average of Calderdale 023 and Calderdale 024 super output areas – middle layer. Image 5.1 below shows the two super output areas. This methodology has been agreed with Calderdale Council.

Image 5.1 Calderdale 023 and 024 2011 Super Output Areas – Mid Layer



5.2.3 Table 5.2 below shows the derivation of the vehicular trip rates by applying the modal split percentages to the multi-modal trip rates and Table 5.3 takes the vehicular trip rates and provides the resultant AM and PM peak hour traffic generation for 1257 dwellings.

Table 5.2 Derivation of Vehicular Trip Rates – Garden Suburb Sites

Method of Travel to Work	Percentage (Ave Calderdale 023 & 024)	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
		Arrivals	Departures	Arrivals	Departures
Train	3	0.005	0.018	0.013	0.008
Bus	7	0.011	0.041	0.029	0.018
Taxi	0	0.000	0.000	0.000	0.000
Motorcycle	1	0.002	0.006	0.004	0.003
Driving – car/van	71	0.113	0.418	0.296	0.182
Passenger – car/van	6	0.010	0.035	0.025	0.015
Bicycle	1	0.002	0.006	0.004	0.003
On foot	11	0.017	0.065	0.046	0.028
Other	0	0.000	0.000	0.000	0.000
WSP Multi-modal Trip Rates (total)		0.159	0.589	0.417	0.257

Table 5.3 Vehicular Trip Rates and Resultant Traffic Generation – Woodhouse Garden Suburb

Time Period	Vehicular Trip Rates (per dwelling)			Traffic Generation (1257 Dwellings)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM Peak 08:00-09:00	0.113	0.418	0.531	142	525	667
PM Peak 17:00-18:00	0.296	0.182	0.478	372	229	601

Other Residential Site Allocations

5.2.4 Table 3 of TN10 provides Multi-Modal Residential Trip Rates and these are shown in Table 5.4 below.

Table 5.4 Multi-Modal Residential Trip Rates (per dwelling)

Time Period	AM Arrival	AM Departure	IP Arrival	IP Departure	PM Arrival	PM Departure
Trip rate per dwelling	0.187	0.705	0.244	0.232	0.524	0.268

5.2.5 Whilst these are given as multi-modal trip rates there is no information available as to how vehicular trip rates have been derived and therefore the same methodology has been used as for the derivation of vehicular trip rates for the Garden Suburb sites. AM and PM peak hour vehicular trip rates have been derived by applying the modal split obtained from the Nomis dataset WU03EW – Location of usual residence and place of work by method of travel to work (MSOA) level for an average of Calderdale 023 and Calderdale 024 super output areas – middle layer (see Image 5.1).

5.2.6 Table 5.5 below shows the derivation of the vehicular trip rates by applying the modal split percentages to the multi-modal trip rates.

Table 5.5 Derivation of Vehicular Trip Rates – Other Residential Site Allocations

Method of Travel to Work	Percentage (Ave Calderdale 023 & 024)	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
		Arrivals	Departures	Arrivals	Departures
Train	3	0.006	0.021	0.016	0.008
Bus	7	0.013	0.049	0.037	0.019
Taxi	0	0.000	0.000	0.000	0.000
Motorcycle	1	0.002	0.007	0.005	0.003
Driving – car/van	71	**0.133**	**0.501**	**0.372**	**0.190**
Passenger – car/van	6	0.011	0.042	0.031	0.016
Bicycle	1	0.002	0.007	0.005	0.003
On foot	11	0.021	0.078	0.058	0.029
Other	0	0.000	0.000	0.000	0.000
WSP Multi-modal Trip Rates (total)		0.187	0.187	0.705	0.524

5.2.7 In relation the committed development as discussed in Section 6, these vehicular trip rates have been used for the Land off Lillands Lane and the Land off Toothill Bank sites.

Clifton Business Park

5.2.8 Table 6 of TN10 contains Clifton Employment Site Trip Rates and these are shown in Table 5.6 below.

Table 5.6 Clifton Employment Site Trip Rates (per 100sqm GFA)

Land Use	AM Arrival	AM Departure	IP Arrival	IP Departure	PM Arrival	PM Departure
B2	0.4828	0.2556	0.2858	0.28826	0.2769	0.4047
B8	0.3266	0.0355	0.035	0.04118	0.2556	0.213

5.2.9 Whilst it is not clear whether these are multi-modal or vehicular trip rates but, on the assumption that those provided in Table 5 of TN10 for the Garden Suburb sites are multi-modal rates, it is assumed that these for Clifton Business Park are also multi-modal rates. There is however no information provided on modal split, size of overall development assumed or on the split between B2 and B8 land-uses.

5.2.10 Leeds City Region's website suggests that the Clifton Business Park is a 25.5ha site that is planned to produce 52,954 sq m of B1/B2/B8 floor space and a Public Consultation brochure recently produced by Calderdale Council suggests a mix of up to 21 units, varying in size from starter units to large footprint units suitable for B8 uses.

5.2.11 In terms of the split between B2 and B8 land use (no B1 trip rates are available within the WSP report), given that Calderdale Council is promoting the site for a significant number of jobs and taking into account the mix of unit sizes indicated on the Public Consultation brochure, it has been assumed that the development will be split 25% B8/75% B2.

5.2.12 In order to determine the likely modal split and calculate a vehicle trip rate from the multi-modal rates provided in Table 5.6 above, the Nomis dataset WU03EW – Location of usual residence and place of work by method of travel to work (MSOA) has been used to obtain the modal split for residents of all MSOAs travelling to a place of work in Calderdale 015 MSOA in which the Clifton Business Park will be located (see Image 5.2 below).

5.2.13 The Nomis data suggests that 70.08% of all trips will be made by drivers in a car or van and therefore vehicular trip rates and resultant traffic generation by land use have been derived as shown in Table 5.7 below. Table 5.8 shows the total AM and PM peak hour traffic generation for Clifton Business Park as a whole (there are minor rounding differences between the tables as the numbers have been transposed from a working spreadsheet).

Table 5.7 Clifton Business Park – Vehicular Trip Rates and Traffic Generation by Land Use

Time Period	Vehicular Trip Rates (per 100 sq m GFA)			Traffic Generation		
	Arrivals	Departures	Total	Arrivals	Departures	Total
B2 (39,715.5 sq m GFA)						
AM Peak (08:00-09:00)	0.338339	0.179121	0.51746	134	71	206
PM Peak (17:00-18:00)	0.194048	0.283608	0.477655	77	113	190
B8 (13,238.5 sq m GFA)						
AM Peak (08:00-09:00)	0.228877	0.024878	0.253754	30	3	34
PM Peak (17:00-18:00)	0.179121	0.149267	0.328388	24	20	43

Table 5.8 Clifton Business Park – Total Peak Hour Traffic Generation

Time Period	Traffic Generation		
	Arrivals	Departures	Total
AM Peak (08:00-09:00)	165	74	239
PM Peak (17:00-18:00)	101	132	233

5.2.14 Following widespread public consultation and stakeholder engagement an Indicative Master Plan has been prepared for Clifton Business Park which suggests a mix of up to 21 development parcels, varying in size to accommodate a mix of high quality units of varying configurations, from starter units to large footprint units.

5.2.15 It is understood that Calderdale Council is intending by late Spring 2019 to submit an outline planning application for Clifton Business Park which may change some of the assumptions made above. However, for the purposes of this high level Transport Assessment the assumptions are robust (they consider a 16% greater floor space than is proposed on the emerging master plan).

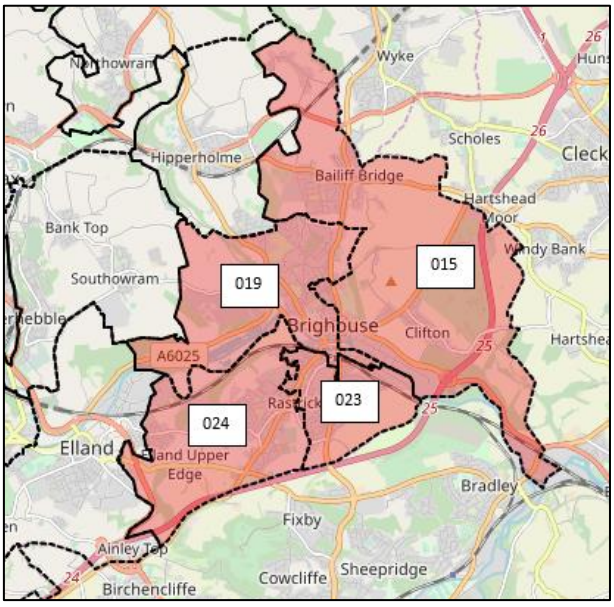
5.3 TRIP DISTRIBUTION AND ASSIGNMENT

Garden Suburbs and other Residential Sites

5.3.1 Having established the weekday AM and PM peak hour vehicular trip generation for the proposed development, as shown in Table 5.3, a distribution exercise has been completed to predict the assignment of these trips on to the local highway network. In order to ascertain a general picture of residential trip distribution for the Brighouse area that can be applied to both Garden Suburb sites and other proposed residential allocations, the latest 2011 Census data for Calderdale 015, 09, 023 and 024 MSOAs has been interrogated to obtain the places of work of residents by MSOA.

5.3.2 The percentage distribution of vehicular trips on to the local highway network has been based on the average number of journeys driving by car and van from the four MSOAs as shown in Image 5.2 below to other 2011 MSOAs.

Image 5.2 Calderdale 015,019, 023 & 024 MSOAs



5.3.3 From the data the following percentage general assignment has been determined:

- A6025 Elland Road: **4.5%**
- A643 (SW) New Hey Road / M62 West: **3.2%**
- A644 (E) Wakefield Road / M62 East: **14.1%**
- A641 (N) Bradford Road: **13.3%**
- A644 (N) Halifax Road: **3.6%**
- A629 (N) Calderdale Way / Halifax Road: **20.9%**
- A643 (NE) Highmoor Lane: **2.5%**
- A643 Clifton Common/Towngate: **0.7%**
- A644 (E) Wakefield Road / A62 Huddersfield Road: **2.8%**
- A641 (S) Huddersfield Road / Bradford Road: **11.8%**
- B6114 Dewsbury Road: **4%** (note: some traffic may use Lower Edge Road as an alternative route); and
- Internal to Calderdale 015, 019, 023, 024: **18.7%**

5.3.4 With regard to the trips that are internal to the four MSOAs, areas of existing and proposed employment within the MSOAs have been identified and a percentage distribution of those trips based on employment destination derived as follows:

- Armytage Road and Birds Royd Industrial Estates and Clifton Business Park: **80%**;
- Industrial and retail area on A641 Bradford Road (south of Bailiff Bridge): **4%**
- Lowfields Business Park, Elland: **4%**
- Brighouse Town Centre: **4%**
- Industrial premises on Rastrick Common: **2%**
- Lightcliffe Academy and Cliffe Hill Community Primary School: **2%**
- Rastrick Schools: **3%**
- Woodhouse Primary School: **1%**

5.3.5 These trips internal to the four MSOAs have been assigned to the local highway network based on the most likely route they would take to the particular destination.

Clifton Business Park

5.3.6 Having established the weekday AM and PM peak hour vehicular trip generation for the Clifton Business Park, as shown in Table 5.8, a distribution exercise has been completed to predict the assignment of these trips on to the local highway network.

5.3.7 In order to ascertain a general picture of trip distribution to and from the business park, the Nomis dataset WU03EW has been interrogated to ascertain the usual place of residence for employees working within Calderdale 015 MSOA based on the 2011 Census merged local authority districts in Yorkshire and the Humber.

5.3.8 Clearly this does not account for the other trips from other areas such as Manchester and surrounding areas to the west. However, as the Clifton Business Park is situated very close to M62

Junction 25, trips from other areas are likely to come directly from the motorway and will not impact in Brighouse Town Centre, the main area of interest for this TA.

5.3.9 As part of the proposals for Clifton Business Park there will be a link between A643 Clifton Common and A644 Wakefield Road and this link has been accounted for in the assumed traffic distribution / assignment.

5.3.10 From the data the following percentage assignment has been assumed:

- A644 (E) Wakefield Road / M62 East: **12%**
- A644 (E) Wakefield Road / A644 Huddersfield Road: **30%**
- A643 (NE) Highmoor Lane: **1%**
- A641 (N) Bradford Road: **8%**
- A644 (N) Halifax Road: **3%**
- A6025 Elland Road: **38%**
- A641 (S) Huddersfield Road: **3%**; and
- A643 (S) New Hey Road: **5%**

6. Traffic Flows and Mitigation Assumptions

6.1 EXISTING PEAK HOUR FLOWS

6.1.1 From the May 2018 survey data, the traffic flows have been extracted for the following peak hours:

- Weekday AM Peak Hour: 08:00 – 09:00; and
- Weekday PM Peak Hour: 17:00 – 18:00.

6.1.2 The traffic flows for the junction within the study area are shown on Figures 100 and 101 for the AM and PM peak hours respectively.

6.2 BASE TRAFFIC FLOWS

Committed Development

6.2.1 Optima has had an ongoing involvement in the promotion of several significant potential Brighouse/Rastrick site allocations throughout the Local Plan process and considers that there are some sites that should be considered as 'committed development' in that it is highly likely that these sites will have been developed by the time of the Interim Design Year of 2026/27 that is considered later in this TA.

6.2.2 The sites that have been considered as 'committed development' are as follows:

- LP1078 – Land between Dewsbury Road and New Hey Road, Rastrick – residential capacity: 149. A planning application has been submitted for this site for a total of 267 dwellings;
- LP0568 – Land south of Clough Lane, rear of New Hey Road, Rastrick – residential capacity: 83. A planning application is currently under consideration for this site for a (revised) total of 78 dwellings;
- LP1033 – Land off Toothill Bank, Rastrick – residential capacity: 64. Representations have been made for this site to accommodate a total of 77 dwellings;
- LP1453 – Land off Lillands Lane, Rastrick – this is an archived potential site for which separate representations are being made for the site to be allocated for housing to accommodate a total of 177 dwellings; and
- LP0571 Site to rear of 9A Birds Royd Lane, Brighouse – residential capacity: 100. Planning application no 17/01556/FUL has recently been determined with permission being granted for 100 apartments.

6.2.3 Optima is aware that there are other potential allocation sites within the Brighouse area although the deliverability and certainty of these sites being developed by the Interim Design Year is unknown. The sites listed above when delivered will provide an additional 303 dwellings over and above current Local Plan capacity estimates for those sites.

6.2.4 The capacity estimates for the other potential allocation sites within the Brighouse area total some 583 dwellings of which some 240 are on sites of less than 50 dwellings, each of which will need individual planning applications which could delay delivery. In addition, several of the sites have been held in abeyance in the 2014 SHLAA Review due to various constraints to delivery.

6.2.5 It is therefore concluded that the level of 'committed development' that has been included within the Base traffic flows is a reasonable assessment of what might be developed up to the

Interim Design Year of 2026/27 before the traffic from both Garden Suburb sites is added. The 2026/27 Base AM and PM peak hour traffic flows are shown in Figures 102 and 103 respectively.

Future Assessment Years and Background Traffic Growth

6.2.6 Two future assessment years are considered within this TA, a 2026/27 Interim Design Year and a 2032/33 Full Design Year when it is assumed the Woodhouse Garden Suburb will be fully developed based on the Indicative Housing Delivery Trajectory as contained at Appendix C.

6.2.7 The 2026/27 Interim Design Year has been chosen on the basis of advice received from Calderdale Council in relation to its Local Plan assumptions on delivery of housing numbers and when mitigation will be provided.

6.2.8 Calderdale Council has advised that its current assumptions are that by 2026/27 there will be 303 dwellings built out at the Woodhouse Garden Suburb and 750 dwellings built out at Bradley Park just to the south of the M62 Motorway in the neighbouring Kirklees district. Calderdale Council also assumes that by 2028/29 1,100 dwellings will be built out at the Thornhills Lane Garden Suburb. The Council also expects that the Clifton Business Park will be complete by 2026/27.

6.2.9 Traffic growth is predicted based on a combination of proposed future development, car ownership and changing attitudes to the way people use and have access to their vehicles. Given that the major growth in the Brighouse area is expected to come from the Garden Suburb sites and Clifton Business Park and a significant element of committed development has also been assumed, no further general traffic growth has been applied. Calderdale Council is also expecting a significant mode shift to allow the development potential in Brighouse to be realised and therefore this is another reason why general growth in vehicular traffic has not been applied.

6.3 2026/27 INTERIM DESIGN YEAR

Traffic Flows

6.3.1 In the 2026/27 Interim Design Year it has been assumed that there will be a total of 680 units occupied on each of the two Garden Suburb sites giving a total of 1360 dwellings. This is broadly in line with the Calderdale Council trajectory of 303 dwellings at Woodhouse Garden Suburb and 1,100 dwellings at Thornhills Lane Garden Suburb and accords with the Indicative Housing Delivery Trajectories for both sites where it has been assumed that by 2026/27 there will be 680 completions at Woodhouse and 676 at Thornhills Lane. For ease of reference, the Thornhills Lane Garden Suburb Indicative Housing Delivery Trajectory is also contained at Appendix C.

6.3.2 In accordance with the trip rates and traffic distribution patterns set out in Section 5, the AM and PM peak hour traffic flows associated with the interim development of 680 dwellings on the Woodhouse and the Thornhills Lane Garden Suburb sites have been assigned to the local highway network taking account of the 2026/27 Interim Design Year mitigation as discussed below.

6.3.3 Whilst there is no detailed information available regarding Bradley Park, an exercise has been carried out to determine its likely impact over the area of interest for this TA. Assuming the same trip rates as for the Garden Suburbs, 750 dwellings at Bradley Park would generate some 400 two-way trips in the more critical AM peak hour (in terms of trips).

6.3.4 Bradley Park is in Kirklees 022 MSOA and, based on an interrogation of the Nomis WU03EW dataset – Location of usual residence and place of work by method of travel to work, it has been determined that there will be 1-3% of the generated traffic from Bradley Park using the junctions within the area of interest for this TA. This equates to between 4 and 12 two-way trips which will

not be noticeable within the day-to-day fluctuations in base traffic and therefore there has been no specific addition of generated traffic from Bradley Park assumed within the assessment work.

6.3.5 In accordance with the trip rates and traffic distribution patterns set out in Section 5 for the Clifton Business Park, the AM and PM peak hour traffic flows associated with the Clifton Business Park have also been assigned on to the local highway network. The assignment of the Clifton Business Park traffic assumes there will be a link through the site and junctions on to A644 Wakefield Road and A643 Clifton Common.

Interim Mitigation

6.3.6 As part of the Clifton Business Park proposals it is intended that a link road is provided between A643 Clifton Common and A644 Wakefield Road. The distribution of the generated traffic from Clifton Business Park assumes there will be two points of access into the development. This link is included within the package of interventions included within the Calderdale Infrastructure Delivery Plan as discussed below.

6.3.7 As part of the preparation of the Local Plan, Calderdale Council has prepared an Infrastructure Delivery Plan (IDP), the latest available version of which is dated 2018. Appendix 6 of the IDP is concerned with 'South East Calderdale: Supplementary Infrastructure Statement'. In the Background to Appendix 6 it states that it should be read in conjunction with the 'Strategic Vision for South East Calderdale', November 2016 and the 'Strategic Vision for South East Calderdale – Traffic Statement', October 2016.

6.3.8 Appendix 6 of the IDP lists a number of schemes relevant to facilitating development in South East Calderdale that are expected to come forward within the Local Plan period as follows:

- A641 Programme – Improved Connectivity A644 to A641;
- A641 Programme – Improved Connectivity A641 to A643;
- A641 Programme – Improved Connectivity A6025 to Elland;
- A641 Programme – Bradford Local Highway Package;
- A641 Programme – Bailiff Bridge Improvements;
- A641 Programme – Kirklees Local Highway Package;
- A641 Programme – Brighouse Town Centre Improvements;
- A641 NPIF Scheme – National Productivity Investment Fund Bid for the Clifton Business Park Transport Network;
- A641 Programme – Huntington Road Bridge Replacement;
- A641 Programme – Cycle Route Improvements; and
- A641 Programme – Bus Journey Time Improvements.

6.3.9 The IDP suggests that all the listed improvements could be complete by 2025 although this is still under consideration and will be determined in more detail as part of a future commission to further develop the feasibility and implementation timescales of the Preferred Scheme package (the list of indicative interventions identified at para 6.3.8 above).

6.3.10 For the purposes of the 2026-27 Interim Design Year it is considered realistic to expect that the Huntington Road Bridge Replacement could be delivered. Whilst this is likely to require third party land, there is a suitable corridor of land available to provide a highway link across a new

Huntington Road Bridge from River Street to the south of the River Calder to Armytage Road to the north.

Traffic Assignment and Reassignment

6.3.11 The 2026/27 Interim Design Year traffic from the Woodhouse and Thornhills Lane Garden Suburbs has been assigned on to the local highway network to take advantage of the interim mitigation and therefore avoiding some of the key town centre junctions.

6.3.12 Based on the percentage distribution patterns set out in paragraphs 5.3.3 and 5.3.4 the traffic from each Garden Suburb that will avoid the town centre junctions is shown in Table 6.1 below.

Table 6.1 2026/27 Interim Design Year Garden Suburb Traffic Avoiding Town Centre Junctions

Destination	Percentage	AM Peak Two-Way Flows	PM Peak Two-Way Flows
Woodhouse Garden Suburb (680 dwellings)			
A643 NE	3.2%	12	10
A644 SE / M62 E	16.9%	61	55
Armytage Road Industrial Estate and Clifton Business Park	10%	36	33
Thornhills Lane Garden Suburb (680 dwellings)			
Birds Royd Industrial Estate	5%	18	17

6.3.13 It can be seen from Table 6.1 that, in the 2026/27 Interim Design Year, the mitigation that is expected to have been implemented will result in some 127 two-way movements from the Garden Suburb sites being removed from the town centre junctions in the AM peak hour and some 115 two-way movements in the PM peak hour.

6.3.14 An element of reassignment of existing traffic flows has also been assumed based on the reopening of Huntington Road Bridge. An assessment has been made, based on existing traffic flows at the A641 Huddersfield Road / Birds Royd Lane / Gooder Lane and Woodhouse Lane / Woodhouse Gardens junctions, of the likely traffic that is going through the town centre to access the two industrial estates, Armytage Road and Birds Royd, which are currently severed by the River Calder.

6.3.15 It has been estimated that some 129 vehicles in the AM peak hour come through the town centre to turn left on to Birds Royd Lane into the industrial estate and, in the PM peak hour, some 102 vehicles do the reverse movement turning right out of Birds Royd Lane on to A641 Huddersfield Road.

6.3.16 Clearly all this traffic is not to and from the east of Brighouse (A643 NE and A644 SE / M62 E) and therefore, in order to ascertain the percentage of these flows that would take advantage of the new bridge, the distribution for Clifton Business Park has been used. As can be seen from paragraph 5.3.10, 43% of the traffic coming to / from Clifton Business Park is from A644 SE / M62 E and A643 Clifton Common and therefore it is not unreasonable to assume the same origins / destinations for traffic coming to / from Armytage Road and Birds Royd Industrial Estates.

6.3.17 This will therefore result in a potential reduction of 56 vehicles in the AM peak hour travelling south through the town centre junctions and 44 vehicles travelling in the opposite direction in the PM peak hour.

6.3.18 This may be an underestimate in the likely reassignment of existing traffic. However, as all the Woodhouse Garden Suburb traffic with origins / destinations to the north east and south east sides of Brighouse and within Armytage Road Industrial Estate and Clifton Business Park has been assigned across the bridge, this will take account of fluctuations in assignment of Garden Suburb traffic and reassignment of existing traffic.

Summary

6.3.19 In summary, the 2026/27 Interim Design Year assessments have been undertaken assuming the following:

- Base traffic flows reassigned as a result of the planned mitigation
  - A link road through Clifton Business Park;
  - Huntington Road Bridge Replacement opening this to all traffic;
- Clifton Business Park traffic flows assigned on to both A644 Wakefield Road and A643 Clifton Common;
- Traffic flows from 680 units on each of the Garden Suburb sites, assignment to take advantage of the planned mitigation.

6.3.20 The 2026/27 AM and PM peak hour Interim Design Year traffic flows are shown in Figures 104 and 105 respectively.

6.4 2032/33 FULL DESIGN YEAR

Traffic Flows

6.4.1 In the 2032/33 Full Design Year it has been assumed that the full development of 1257 dwellings at the Woodhouse Garden Suburb will be complete, and at the Thornhills Lane Garden Suburb, 1391 dwellings will be complete (in line with the Indicative Housing Delivery Trajectory for that site).

Full Mitigation

6.4.2 By the time the Woodhouse Garden Suburb is fully developed it is assumed that further mitigation works will have been implemented as follows:

- A641 Programme – Improved Connectivity A644 to A641; and
- A641 Programme – Improved Connectivity A641 to A643.

6.4.3 Improved connectivity between A644 and A641 will entail a link road through the Woodhouse Garden Suburb from a junction on A641 Huddersfield Road continuing over the railway line, through Armytage Road Industrial Estate and over the River Calder to a junction on A644 Wakefield Road.

6.4.4 Improved connectivity between A641 and A643 will entail a link road through the Thornhills Lane Garden Suburb from a junction on A641 Bradford Road to the south of Bailiff Bridge to a junction on A643 Clifton Common. With the link road through the Clifton Business Park, an eastern bypass of Brighouse Town Centre will be effectively provided.

Traffic Assignment and Reassignment

6.4.5 In the 2032/33 Full Design Year the traffic from the Garden Suburb sites has been assigned on to the local highway network assuming the full mitigation will be in place which will result in further relief at some of the key town centre junctions.

6.4.6 The traffic from each Garden Suburb that will avoid the town centre junctions in the 2032/33 Full Design Year is shown in Table 6.2 below.

Table 6.2 2032/33 Full Design Year Garden Suburb Traffic Avoiding Town Centre Junctions

Destination	Percentage	AM Peak Two-Way Flows	PM Peak Two-Way Flows
Woodhouse Garden Suburb (1257 dwellings)			
A643 NE	3.2%	21	19
A644 SE / M62 E	16.9%	113	102
Armytage Road Industrial Estate North and Clifton Business Park	10%	67	60
A641 N	14.4%	96	87
Thornhills Lane Garden Suburb (1391 dwellings)			
Armytage Road Industrial Estate South	5%	37	33
A641 S	11.8%	87	79
Rastrick / Woodhouse	0.8%	6	5

6.4.7 It can be seen from Table 6.2 that, in the 2032/33 Full Design Year, the mitigation that is expected to have been implemented will result in some 427 two-way movements from the Garden Suburb sites being removed from the town centre junctions in the AM peak hour and some 385 two-way movements in the PM peak hour.

6.4.8 Initial work carried out by WSP in relation to the A641 Pre-feasibility Study has indicated that, in 2032, the A644 to A641 connection will carry some 639 two-way traffic flows in the AM peak hour and some 534 two-way traffic flows in the PM peak hour. In 2032, the A641 to A643 connection is predicted to carry some 153 and 228 two-way traffic flows in the AM and PM peak hours respectively.

6.4.9 Some reassignment of the Clifton Business Park traffic has also been assumed in line with the distribution pattern for the site. 8% of the traffic which, until full mitigation is in place, is coming through the town centre from A641 Bradford Road has been reassigned on to the A641 to A643 connection and 3% which is coming from A641 Huddersfield Road has been reassigned on to the A644 to A641 connection.

Summary

6.4.10 In summary, the 2032/33 Full Design Year assessments have been undertaken assuming the following:

- Further reassignment of base traffic flows as a result of additional mitigation
  - A641 Programme – Improved Connectivity A644 to A641; and
  - A641 Programme – Improved Connectivity A641 to A643;
- Reassignment of Clifton Business Park traffic flows;

- Traffic flows from full development of Woodhouse Garden Suburb for 1257 dwellings;
- Traffic flows from interim development of Thornhills Lane Garden Suburb for 1391 dwellings based on the Indicative Housing Delivery Trajectory for that site; and
- Traffic flows from the Garden Suburbs assigned to take advantage of full mitigation.

6.4.11 The 2032/33 AM and PM peak hour Full Design Year traffic flows are shown in Figures 106 and 107 respectively.

7. Operational Assessment of Highway Network

7.1 INTRODUCTION

7.1.1 This section of the Transport Assessment sets out the results of the individual junction capacity assessments that have undertaken to determine the impact of the development proposals on key junctions on the local highway network.

7.1.2 This section also contains the capacity assessment of the main development access junction on to A641 Huddersfield Road to demonstrate that the form of access proposed is adequate and appropriate to serve the quantum of development proposed.

7.1.3 The output for all junction capacity assessment is contained at Appendix E with the results summarised in the tables below.

7.2 EXISTING JUNCTION ASSESSMENTS

A643 Owler Ings Road / A6025 Elland Road / A644 Halifax Road / Ludenscheid Link Roundabout

7.2.1 This roundabout has been modelled using the ARCADY 9 Roundabout module in the TRL software, Junctions 9. Roundabouts are modelled using the well-established TRL/Kimber capacity relationships which consider key roundabout geometries such as entry width, approach width, flare length, conflict angle, inscribed circle diameter and entry radius. The empirical framework intrinsically links roundabout geometry to driver behaviour and in turn to predict capacities, queues and delays.

7.2.2 The existing layout of the junction is shown in Figure 7 and the junction has initially been modelled for the 2018 existing AM and PM peak hours. The results of the modelling are summarised in Table 7.1.

Table 7.1 A643 / A6025 / A644 / Ludenscheid Link – 2018 Existing ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A644 Ludenscheid Link	0.84	5	0.96	14
2. A643 Halifax Road	0.65	2	0.67	2
3. A6025 Elland Road	0.87	6	1.10	51
4. A644 Halifax Road	0.87	6	0.72	3

7.2.3 A Ratio of Flow to Capacity (RFC) value below 0.85 indicates that a junction or arm is operating within spare capacity. An RFC value between 0.85 and 1.00 indicates that there may be occasions during the period modelled when queues will develop, and delays will occur. An RFC value greater than 1.00 indicates that the junction or arm is operating beyond its theoretical capacity.

7.2.4 It can be seen that, in the PM peak hour, the junction is nearing capacity on the A644 Ludenscheid Link arm and the A6025 Elland Road arm is over-capacity with a significant queue forming.

7.2.5 The junction has then been modelled for the AM and PM Base, 2026/27 Interim Design Year and 2032/33 Full Design Year scenarios and the results are summarised in Tables 7.2 to 7.4 below.

Table 7.2 A643 / A6025 / A644 / Ludenscheid Link – Base ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A644 Ludenscheid Link	0.85	5	0.98	18
2. A643 Halifax Road	0.67	2	0.68	2
3. A6025 Elland Road	0.89	7	1.11	57
4. A644 Halifax Road	0.89	7	0.73	3

Table 7.3 A643 / A6025 / A644 / Ludenscheid Link – 2026/27 Interim Design Year ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A644 Ludenscheid Link	0.96	13	0.79	4
2. A643 Halifax Road	0.74	3	0.63	2
3. A6025 Elland Road	1.00	21	1.27	122
4. A644 Halifax Road	0.94	11	0.75	3

Table 7.4 A643 / A6025 / A644 / Ludenscheid Link – 2032/33 Full Design Year ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A644 Ludenscheid Link	1.04	37	1.10	69
2. A643 Halifax Road	0.78	3	0.75	3
3. A6025 Elland Road	1.04	31	1.34	163
4. A644 Halifax Road	0.95	13	0.77	3

7.2.6 This junction does not benefit from the relief that will be delivered by either the interim or the full mitigation packages. It is understood that WSP has, as part of the study to look at improvements to the A641 Corridor, and to facilitate development in Brighouse, developed a preliminary scheme for improvements to this junction. Details of this scheme have not been made available but is assumed that Calderdale Council will develop the scheme further as part of the Local Plan emerging Infrastructure Delivery Plan.

A644 Ludenscheid Link / A641 Bradford Road / Tesco Car Park Access / A644 Roundabout

7.2.7 This roundabout has also been modelled using the ARCADY 9 Roundabout module in the TRL software, Junctions 9. The existing layout of the junction is shown in Figure 8 and it has been modelled for the AM and PM 2018 Existing, Base, 2026/27 Interim Design Year and 2032/33 Full Design Year scenarios and the results are summarised in Tables 7.5 to 7.8 below.

Table 7.5 Ludenscheid Link / A641 / Tesco / A644 – 2018 Existing ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. Tesco Car Park	0.34	1	0.73	3
2. A644 Huddersfield Road	0.42	1	0.60	2
3. Ludenscheid Link	0.60	2	0.62	2
4. A641 Bradford Road	0.67	2	0.77	3

Table 7.6 Ludenscheid Link / A641 / Tesco / A644 – Base ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. Tesco Car Park	0.35	1	0.74	3
2. A644 Huddersfield Road	0.43	1	0.61	2
3. Ludenscheid Link	0.62	2	0.63	2
4. A641 Bradford Road	0.68	2	0.80	4

Table 7.7 Ludenscheid Link / A641 / Tesco / A644 – 2026/27 Interim Design Year ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. Tesco Car Park	0.27	0	0.85	5
2. A644 Huddersfield Road	0.50	1	0.66	2
3. Ludenscheid Link	0.68	2	0.71	2
4. A641 Bradford Road	0.35	1	0.87	6

Table 7.8 Ludenscheid Link / A641 / Tesco / A644 – 2032/33 Full Design Year ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. Tesco Car Park	0.37	1	0.81	4
2. A644 Huddersfield Road	0.51	1	0.63	2
3. Ludenscheid Link	0.68	2	0.70	2
4. A641 Bradford Road	0.66	2	0.80	4

7.2.8 As can be seen from Table 7.5 the roundabout is currently operating with spare capacity with RFC values of less than 0.85 on all arms and with the addition of the committed development flows, it continues to operate with spare capacity in the Base scenario.

7.2.9 In the 2026/27 Interim Design Year the roundabout is shown to be at practical reserve capacity with RFC values of around 0.85 on two arms in the PM peak hour. In the 2032/33 Full Design Year it can be seen that the expected mitigation will relieve the junction and leave it operating no worse off than in the Base scenario.

Stotts Arms Junction and A641 Huddersfield Road / Mill Lane Junction

7.2.10 The existing layout of the Stotts Arms and A641 Huddersfield Road / Mill Lane traffic signal controlled junctions are shown in Figures 9 and 10 respectively. The junctions have been modelled using JCT Consultancy's LinSig v3 software and the individual junction networks have been merged within the software.

7.2.11 Signal timings for the junctions have been provided by Leeds City Council and the signal staging for each of the junctions are shown in Images 7.1 and 7.2 below. The signal timings provided demonstrate a varied cycle time depending on vehicular demand although the cycle length is typically 90 seconds (i.e. 40 cycles in the peak hours).

Image 7.1 Stotts Lane Junction Signal Staging

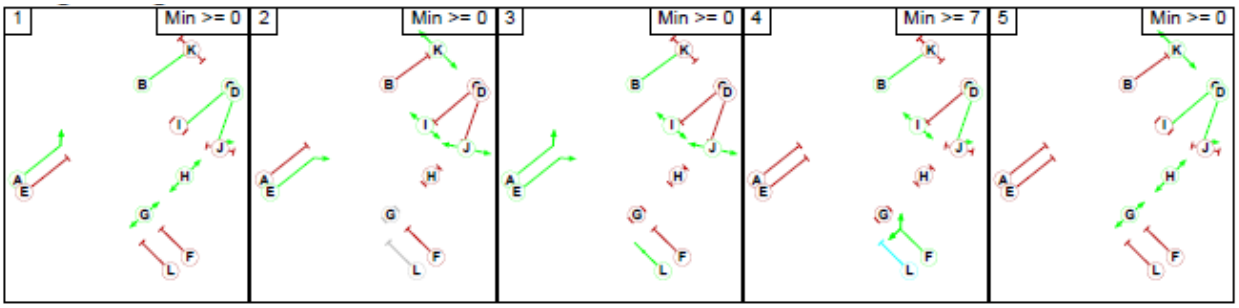
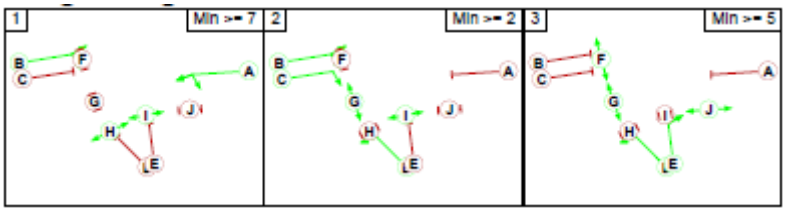


Image 7.2 A641 Huddersfield Road / Mill Lane Junction Signal Staging



7.2.12 The junctions have been modelled for the AM and PM 2018 Existing, Base, 2026/27 Interim Design Year and 2032/33 Full Design Year scenarios and the results are summarised in Tables 7.9 to 7.12 below.

Table 7.9 Stotts Arms and A641 / Mill Lane – 2018 Existing LinSig Results

Lane		AM			PM		
		DoS (%)	MMQ	Obs Q	DoS (%)	MMQ	Obs Q
Junction 1 – A641/A644/A643							
A644 Huddersfield Road NE Left	1/1	52.6	10	12	48.5	9	8
A644 Huddersfield Road NE Ahead	1/2	38.3	5	7	39.9	5	7
A644 Huddersfield Road NE Ahead	1/3	39.4	5	2	41.1	5	2
Wakefield Road Left	2/1	42.0	6	10	59.7	9	6
Wakefield Road Right	2/2	78.0	14	12	91.8	20	13
A641 Huddersfield Road SW Ahead	3/2+3/1	51.1	4	3	83.8	7	4
A641 Huddersfield Road SW Ahead	3/3	80.0	10	6	91.2	14	11
Junction 2 – A641/Mill Lane (Sainsburys)							
A641 Huddersfield Road E Left Ahead	1/1	33.6	3	6	39.1	5	3
A641 Huddersfield Road E Ahead	1/2	35.1	3	6	40.6	5	6
Mill Lane Left	2/1	24.4	3	4	43.0	6	4
Mill Lane Right	2/2	38.1	3	2	40.9	4	3
A641 Huddersfield Road W Ahead	3/1	28.9	4	2	48.8	8	2
A641 Huddersfield Road W Ahead Right	3/2+3/3	27.1	2	2	30.3	4	2

Table 7.10 Stotts Arms and A641 / Mill Lane – Base LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
Junction 1 – A641/A643/A644					
A644 Huddersfield Road NE Left	1/1	54.4	11	48.9	9
A644 Huddersfield Road NE Ahead	1/2	38.6	5	41.3	5
A644 Huddersfield Road NE Ahead	1/3	39.9	5	42.4	5
Wakefield Road Left	2/1	45.0	6	64.1	10
Wakefield Road Right	2/2	81.3	15	93.1	21
A641 Huddersfield Road SW Ahead	3/2+3/1	51.6	4	83.3	7
A641 Huddersfield Road SW Ahead	3/3	83.2	12	94.4	16
Junction 2 – A641/Mill Lane (Sainsburys)					
A641 Huddersfield Road E Left Ahead	1/1	32.8	3	43.1	5
A641 Huddersfield Road E Ahead	1/2	34.3	3	44.4	5
Mill Lane Left	2/1	26.0	3	40.4	6
Mill Lane Right	2/2	38.1	3	34.1	4
A641 Huddersfield Road W Ahead	3/1	30.3	4	53.1	10
A641 Huddersfield Road W Ahead Right	3/2+3/3	29.2	3	33.5	4

Table 7.11 Stotts Arms and A641 / Mill Lane – 2026/27 Interim Design Year LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
Junction 1 – A641/A643/A644					
A644 Huddersfield Road NE Left	1/1	60.9	13	55.7	11
A644 Huddersfield Road NE Ahead	1/2	39.7	5	43.8	5
A644 Huddersfield Road NE Ahead	1/3	40.9	5	45.1	6
Wakefield Road Left	2/1	46.6	6	67.6	11
Wakefield Road Right	2/2	96.2	24	104.3	43
A641 Huddersfield Road SW Ahead	3/2+3/1	55.6	6	84.4	14
A641 Huddersfield Road SW Ahead	3/3	93.7	15	105.9	30
Junction 2 – A641/Mill Lane (Sainsburys)					
A641 Huddersfield Road E Left Ahead	1/1	31.7	3	38.9	3
A641 Huddersfield Road E Ahead	1/2	33.0	3	39.5	2
Mill Lane Left	2/1	30.0	4	55.5	7
Mill Lane Right	2/2	38.1	3	54.5	5
A641 Huddersfield Road W Ahead	3/1	32.6	4	46.8	7
A641 Huddersfield Road W Ahead Right	3/2+3/3	30.9	3	30.5	3

Table 7.12 Stotts Arms and A641 / Mill Lane – 2032/33 Full Design Year LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
Junction 1 – A641/A643/A644					
A644 Huddersfield Road NE Left	1/1	53.5	10	49.9	9
A644 Huddersfield Road NE Ahead	1/2	40.2	5	42.3	5
A644 Huddersfield Road NE Ahead	1/3	41.4	5	43.2	6
Wakefield Road Left	2/1	4.4	1	35.0	5
Wakefield Road Right	2/2	87.8	19	92.2	21
A641 Huddersfield Road SW Ahead	3/2+3/1	60.6	4	91.0	13
A641 Huddersfield Road SW Ahead	3/3	39.8	4	58.7	6
Junction 2 – A641/Mill Lane (Sainsburys)					
A641 Huddersfield Road E Left Ahead	1/1	23.9	1	41.3	3
A641 Huddersfield Road E Ahead	1/2	26.4	1	42.8	3
Mill Lane Left	2/1	23.0	3	35.0	6
Mill Lane Right	2/2	38.1	3	48.1	5
A641 Huddersfield Road W Ahead	3/1	30.7	4	46.3	8
A641 Huddersfield Road W Ahead Right	3/2+3/3	16.4	1	18.2	2

7.2.13 As can be seen from Table 7.9 the Stotts Arms junction is currently operating above practical reserve capacity with Degrees of Saturation (DoS) above 90% on some movements particularly in the PM peak hours. In the 2026/27 Interim Design Year the Stotts Arms junction is shown to be over capacity in the PM peak hour and above practical reserve capacity in the AM peak hour. In the 2032/33 Full Design Year it can be seen that the expected mitigation will relieve the junction and leave it operating no worse off than in the Base scenario.

A643 / A643 Clifton Road / A644 Phoenix Bridge Roundabout

7.2.14 This roundabout has also been modelled using the ARCADY 9 Roundabout module in the TRL software, Junctions 9. The existing layout of the junction is shown in Figure 11 and it has been modelled for the AM and PM 2018 Existing, Base, 2026/27 Interim Design Year and 2032/33 Full Design Year scenarios and the results are summarised in Tables 7.13 to 7.16 below.

Table 7.13 A643 / A643 Clifton Road / A644 Phoenix Bridge 2018 Existing ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A643 Clifton Road (E)	0.57	1	0.66	2
2. A644 Phoenix Bridge	0.59	1	0.76	3
3. A643 Clifton Road (W)	0.54	1	0.53	1

Table 7.14 A643 / A643 Clifton Road / A644 Phoenix Bridge Base ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A643 Clifton Road (E)	0.59	1	0.67	2
2. A644 Phoenix Bridge	0.61	2	0.80	4
3. A643 Clifton Road (W)	0.56	1	0.54	1

Table 7.15 A643 / A643 Clifton Road / A644 Phoenix Bridge 2026/27 Interim Design Year ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A643 Clifton Road (E)	0.84	5	0.83	4
2. A644 Phoenix Bridge	0.62	2	0.89	7
3. A643 Clifton Road (W)	0.64	2	0.61	2

Table 7.16 A643 / A643 Clifton Road / A644 Phoenix Bridge 2032/33 Full Design Year ARCADY Results

Arm	AM Peak Hour		PM Peak Hour	
	RFC	Mean Q	RFC	Mean Q
1. A643 Clifton Road (E)	0.60	2	0.49	1
2. A644 Phoenix Bridge	0.33	1	0.57	1
3. A643 Clifton Road (W)	0.47	1	0.46	1

7.2.15 As can be seen from Table 7.13 the roundabout is currently operating with spare capacity with RFC values of less than 0.85 on all arms and with the addition of the committed development flows, it continues to operate with spare capacity in the Base scenario.

7.2.16 In the 2026/27 Interim Design Year the roundabout is shown to be at practical reserve capacity with RFC values of around 0.85 on two arms in the PM peak hour. In the 2032/33 Full Design Year it can be seen that the expected mitigation will relieve the junction and leave it operating no worse off than in the Base scenario.

A641 Huddersfield Road / Bethel Street / Bradford Road / Lawson Road Roundabout

7.2.17 Whilst in plan this junction takes the physical form of a roundabout it is effectively a series of priority junctions, the existing layout is shown in Figure 12, and therefore it has been modelled using the PICADY 9 Priority Intersection module of the Junctions 9 software as follows:

- A641 Huddersfield Road eastbound / Lawson Road;
- A641 Huddersfield Road westbound / right-turning traffic from Lawson Road (any circulating traffic); and
- A641 northeast bound / A641 to Bethel Street, Bradford Road and Lawson Road.

7.2.18 Within PICADY 9, three and four-arm unsignalised give-way intersections are modelled using well-established TRL/Kimber capacity relationships, which take into account key geometries such as road widths, visibility and the space available for traffic making an offside turn. This empirical framework intrinsically links priority junction geometry to driver behaviour and in turn to predicted capacities, queues and delays.

7.2.19 The junctions have been modelled for the AM and PM 2018 Existing, Base, 2026/27 Interim Design Year and 2032/33 Full Design Year scenarios and the results are summarised in Tables 7.17 to 7.20 also below.

Table 7.17 A641 / Bethel Street / Bradford Road / Lawson Road 2018 Existing PICADY Results

Movement	AM Peak Hour		PM Peak Hour	
	RFC	Mean Queue	RFC	Mean Queue
Junction 1 – A641 Huddersfield Road eastbound / Lawson Road				
Lawson Road – left turn on to A641 eastbound	0.33	1	0.59	1
Lawson Road – straight ahead on to circulating c'way	0.24	0	0.53	1
Junction 2 – A641 Huddersfield Road westbound / right-turning traffic from Lawson Road				
Right turn on to A641 westbound	0.19	0	0.40	1
Junction 3 – A641 northeast bound / A641 to Bethel Street, Bradford Road and Lawson Road				
Right turn from A641 E on to A641 S	0.31	1	0.47	1
A641 S – to pelican crossing	0.33	1	0.39	1

Table 7.18 A641 / Bethel Street / Bradford Road / Lawson Road Base PICADY Results

Movement	AM Peak Hour		PM Peak Hour	
	RFC	Mean Queue	RFC	Mean Queue
Junction 1 – A641 Huddersfield Road eastbound / Lawson Road				
Lawson Road – left turn on to A641 eastbound	0.27	0	0.60	1
Lawson Road – straight ahead on to circulating c'way	0.24	0	0.54	1
Junction 2 – A641 Huddersfield Road westbound / right-turning traffic from Lawson Road				
Right turn on to A641 westbound	0.19	0	0.40	1
Junction 3 – A641 northeast bound / A641 to Bethel Street, Bradford Road and Lawson Road				
Right turn from A641 E on to A641 S	0.32	1	0.47	1
A641 S – to pelican crossing	0.35	1	0.40	1

Table 7.19 A641 / Bethel Street / Bradford Road / Lawson Road 2026/27 Interim Design Year PICADY Results

Movement	AM Peak Hour		PM Peak Hour	
	RFC	Mean Queue	RFC	Mean Queue
Junction 1 – A641 Huddersfield Road eastbound / Lawson Road				
Lawson Road – left turn on to A641 eastbound	0.28	0	0.62	2
Lawson Road – straight ahead on to circulating c'way	0.25	0	0.57	1
Junction 2 – A641 Huddersfield Road westbound / right-turning traffic from Lawson Road				
Right-turn on to A641 westbound	0.19	0	0.41	1
Junction 3 – A641 northeast bound / A641 to Bethel Street, Bradford Road and Lawson Road				
Right turn from A641 E on to A641 S	0.32	1	0.48	1
A641 S – to pelican crossing	0.37	1	0.41	1

Table 7.20 A641 / Bethel Street / Bradford Road / Lawson Road 2032/33 Full Design Year PICADY Results

Movement	AM Peak Hour		PM Peak Hour	
	RFC	Mean Queue	RFC	Mean Queue
Junction 1 – A641 Huddersfield Road eastbound / Lawson Road				
Lawson Road – left turn on to A641 eastbound	0.24	0	0.52	1
Lawson Road – straight ahead on to circulating c'way	0.21	0	0.46	1
Junction 2 – A641 Huddersfield Road westbound / right-turning traffic from Lawson Road				
Right-turn on to A651 westbound	0.18	0	0.39	1
Junction 3 – A641 northeast bound / A641 to Bethel Street, Bradford Road and Lawson Road				
Right turn from A641 E on to A641 S	0.30	0	0.45	1
A641 S – to pelican crossing	0.27	1	0.32	1

7.2.20 As can be seen from Table 7.17 the junction as a whole is currently operating with spare capacity with RFC values of less than 0.85 on all movements and with the addition of the committed development flows, it continues to operate with spare capacity in the Base scenario.

7.2.21 In the 2026/27 Interim Design Year the junction is shown to continue operating with spare capacity with RFC values of less than 0.85 on all movements. In the 2032/33 Full Design Year it can be seen that the expected mitigation will relieve the junction and leave it operating no worse off than in the existing situation.

A641 Huddersfield Road / Birds Royd Lane / Gooder Lane and A641 / Mill Royd Street Junctions

7.2.22 The existing layout of the A641 Huddersfield Road / Birds Royd Lane / Gooder Lane and the A641 Huddersfield Road / Mill Royd Street traffic signal controlled junctions are shown in Figures 13 and 14 respectively. The junctions have again been modelled using JCT Consultancy's LinSig v3 software and the individual junction networks have been merged within the software.

7.2.23 Signal timings for the junctions have been provided by Leeds City Council and the signal staging for each of the junctions are shown in Images 7.3 and 7.4 below. Again these junctions have a typical cycle length of 90 seconds in the peak hours.

7.2.24 The junctions have been modelled for the AM and PM 2018 Existing, Base, 2026/27 Interim Design Year and 2032/33 Full Design Year scenarios and the results are summarised in Tables 7.21 to 7.24 also below.

Image 7.3 A641 Huddersfield Road / Birds Royd Lane / Gooder Lane Junction Signal Staging

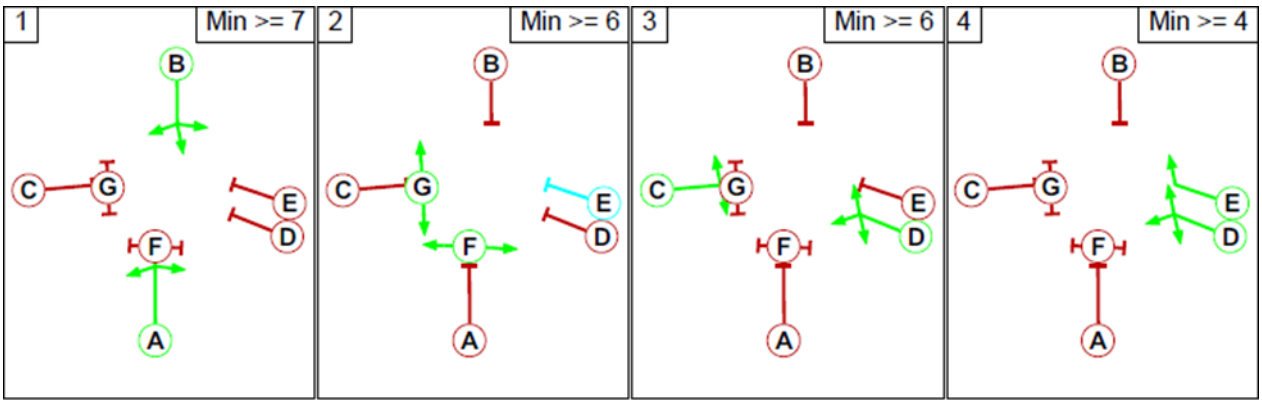


Image 7.4 A641 Huddersfield Road / Mill Royd Street Junction Signal Staging

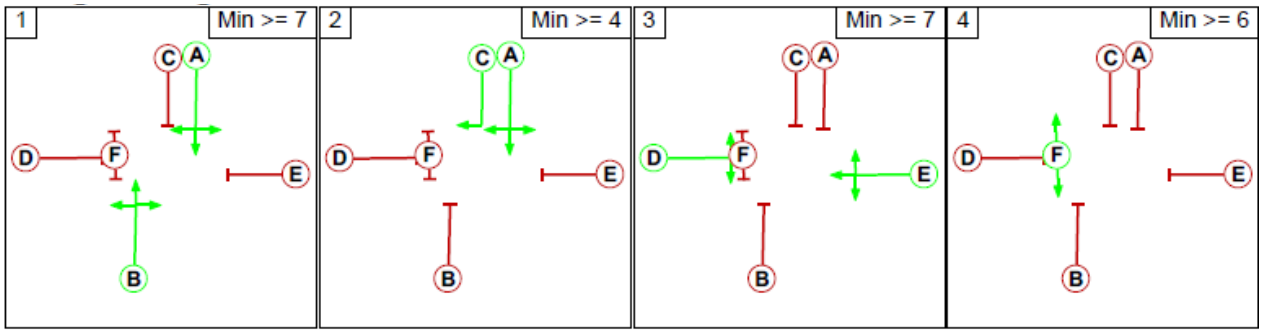


Table 7.21 A641 / Birds Royd Lane / Gooder Lane and A641 / Mill Royd Street 2018 Existing LinSig Results

Lane		AM			PM		
		DoS (%)	MMQ	Obs Q	DoS (%)	MMQ	Obs Q
Junction 1 – A641/Birds Royd Lane/Gooder Lane							
A641 Huddersfield Road N	1/1+1/2	85.9	20	8	96.3	33	10
Birds Royd Lane	2/1+2/2	63.4	5	3	77.4	6	6
A641 Huddersfield Road S	3/1+3/2	61.5	11	15	66.6	13	17
Gooder Lane	4/1	68.0	5	3	84.1	6	4
Junction 2 – Mill Royd Street/A641							
Mill Royd St W	1/1	81.7	7	10	98.3	13	11
A641 Huddersfield Road S	2/1+2/2	87.2	14	8	99.4	28	14
A641 Huddersfield Road N	3/1+3/2	67.5	13	15	83.9	21	13
Mill Royd St	4/1	13.2	1	1	4.7	1	0

Table 7.22 A641 / Birds Royd Lane / Gooder Lane and A641 / Mill Royd Street Base LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
Junction 1 – A641/Birds Royd Lane/Gooder Lane					
A641 Huddersfield Road N	1/1+1/2	88.5	24	98.2	36
Birds Royd Lane	2/1+2/2	68.6	5	86.1	7
A641 Huddersfield Road S	3/1+3/2	66.8	12	67.2	14
Gooder Lane	4/1	77.2	6	93.5	9
Junction 2 – Mill Royd Street/A641					
Mill Royd St W	1/1	89.3	9	104.1	17
A641 Huddersfield Road S	2/1+2/2	91.9	16	102.2	50
A641 Huddersfield Road N	3/1+3/2	68.6	14	87.3	24
Mill Royd St	4/1	14.2	1	4.4	0

Table 7.23 A641 / Birds Royd Lane / Gooder Lane and A641 / Mill Royd Street 2026/27 Interim Design Year LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
Junction 1 – A641/Birds Royd Lane/Gooder Lane					
A641 Huddersfield Road N	1/1+1/2	89.6	14	102.5	56
Birds Royd Lane	2/1+2/2	51.0	3	75.0	5
A641 Huddersfield Road S	3/1+3/2	75.5	16	73.2	16
Gooder Lane	4/1	84.2	7	105.2	14
Junction 2 – Mill Royd Street/A641					
Mill Royd St W	1/1	97.7	13	109.9	25
A641 Huddersfield Road S	2/1+2/2	100.6	40	108.8	76
A641 Huddersfield Road N	3/1+3/2	70.8	14	93.9	31
Mill Royd St	4/1	14.4	1	4.4	0

Table 7.24 A641 / Birds Royd Lane / Gooder Lane and A641 / Mill Royd Street 2032/33 Full Design Year LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
Junction 1 – A641/Birds Royd Lane/Gooder Lane					
A641 Huddersfield Road N	1/1+1/2	92.1	14	104.9	68
Birds Royd Lane	2/1+2/2	57.0	3	80.0	6
A641 Huddersfield Road S	3/1+3/2	48.3	8	52.0	9
Gooder Lane	4/1	92.6	9	106.4	15
Junction 2 – Mill Royd Street/A641					
Mill Royd St W	1/1	81.5	8	91.3	12
A641 Huddersfield Road S	2/1+2/2	77.8	11	93.9	18
A641 Huddersfield Road N	3/1+3/2	79.4	18	105.0	67
Mill Royd St	4/1	14.3	1	4.2	0

7.2.25 As can be seen from Table 7.22 both junctions are currently operating around capacity with Degrees of Saturation (DoS) less than 100% on all movements and this will continue in the Base scenario with the exception of the A641 Huddersfield Road / Mill Royd Street junction where, in the PM peak hour, some movements will be slightly above capacity. In the 2026/27 Interim Design Year both junctions are shown to be slightly over capacity and in the 2032/33 Full Design Year it can be seen that the expected mitigation will leave the junction continuing to operate in a similar condition to the Base scenario.

7.3 PRIMARY DEVELOPMENT ACCESS

7.3.1 The main access into the Woodhouse Garden Suburb will be from A641 Huddersfield Road to the south of the staggered cross road junction with Toothill Lane and Woodhouse Lane. The layout of the proposed junction is shown on Optima drawing no. 17031/GA/01 – A641 Huddersfield Road, Proposed Site Access Arrangements and it can be seen that a traffic signal controlled T junction.

7.3.2 The junction has therefore been modelled using the LinSig v3 software for the 2026/27 Interim and 2032/33 Full Design Years assuming the signal staging shown in Image 7.5 below with the results of the assessments provided in Tables 7.25 and 7.26 also below. The junction has been

designed to operate with a cycle length on 90 seconds (i.e. 40 cycles in the peak hours. The junction will operate with VA control and therefore the modelling assumes optimisation.

Image 7.5 A641 Huddersfield Road Development Junction Signal Staging

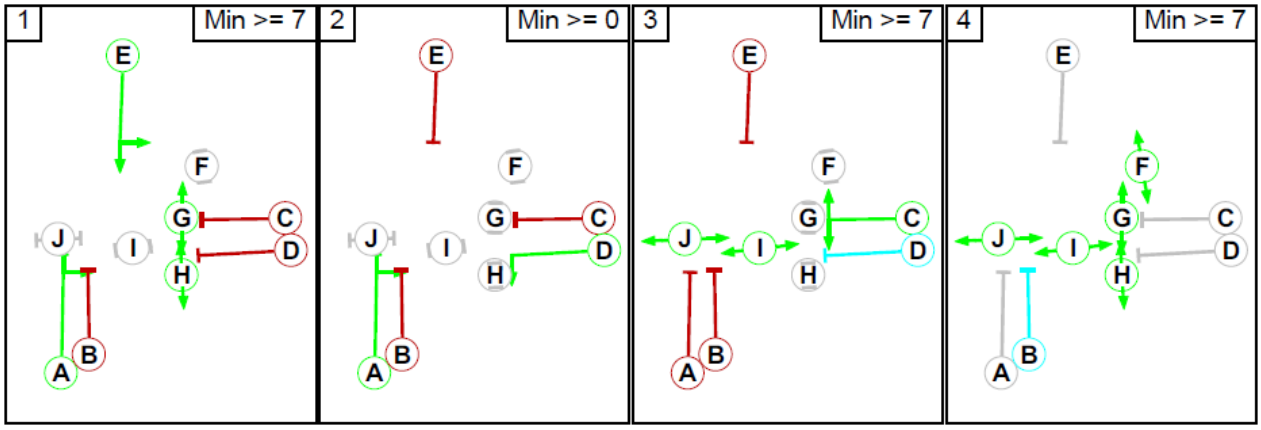


Table 7.25 A641 Huddersfield Road Development Junction 2026/27 Interim Design Year LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
A641 Huddersfield Rd (S) Ahead	1/1	35.4	5	34.4	4
A641 Huddersfield Rd (S) Ahead and Right	1/2+1/3	37.9	5	38.8	5
A641 Huddersfield Rd (N)	2/2+2/1	60.6	7	62.5	7
Site Access Right and Left	3/1+3/2	58.6	3	25.7	1

Table 7.26 41 Huddersfield Road Development Junction 2032/33 Full Design Year LinSig Results

Lane		AM		PM	
		DoS (%)	MMQ	DoS (%)	MMQ
A641 Huddersfield Rd (S) Ahead	1/1	43.3	7	37.0	5
A641 Huddersfield Rd (S) Ahead and Right	1/2+1/3	46.3	7	43.5	5
A641 Huddersfield Rd (N)	2/2+2/1	71.2	10	70.3	9
Site Access Right and Left	3/1+3/2	69.4	5	47.2	2

7.3.3 From the results tabulated above it can be seen that the form of junction proposed is appropriate to serve as the primary point of access into the Woodhouse Garden Suburb.

8. Summary and Conclusions

8.1 SUMMARY

8.1.1 This Transport Assessment (TA) has been prepared by Optima to consider the highways and transportation matters associated with the proposed allocation and subsequent development of Land between Bradley Wood and Woodhouse Lane, Rastrick, Brighouse (Local Plan Ref LP1451).

8.1.2 The Local Plan proposes that the Site is allocated as a new Garden Suburb and has assessed that it has a residential capacity of 1257 dwellings and should also accommodate a range of infrastructure serving the new community, including a new Primary School and a Local Centre amongst others. The Site has been referred to throughout this TA as the Woodhouse Garden Suburb.

8.1.3 The TA is intended to provide the Local Plan Examination with a comprehensive assessment of the likely impact of the Site as a new Garden Suburb and it also considers this impact in conjunction with the impact of a further proposed Garden Suburb site in Brighouse, Thornhills Lane Garden Suburb (LP1463), which the Council assesses has a residential capacity of 1998 dwellings.

8.1.4 The impact of the Clifton Business Park, which is already an allocated Employment site in the Calderdale UDP and is proposed in the Local Plan as a new Employment Site (LP1232), is also considered within this TA.

8.1.5 Enjoy Design has developed a concept master plan for the Site that indicates a new development area for residential uses of 38.05 hectares which, for a development of 1257 dwellings, represents an average density of 33 dwellings per hectare. The master plan also shows areas of Public Open Space associated with development phases with an area of Publicly Accessible Landscape in the centre of the Site. An area for a 2 form entry Primary School and a Local Centre has also been identified.

8.1.6 The master plan shows access into the Site from the north from Woodhouse Lane via an extension of Ryecroft Lane into the Site and a second vehicular access is shown into the Site at its western end from A641 Huddersfield Road. The access into the Site from A641 Huddersfield Road will take the form of a traffic signal controlled T junction and it has been demonstrated that this is an appropriate form of junction to serve the level of development proposed.

8.1.7 The master plan also safeguards the provision of longer term infrastructure proposals; a link between A641 Huddersfield Road and A644 Wakefield Road and the opportunity for a potential future junction on the M62 Motorway, Junction 24A on A641 Huddersfield Road.

8.1.8 This report has provided a commentary on the Site and its existing conditions. It has demonstrated that the proposed development will benefit from its close proximity to the Town Centre and will be accessible by foot, cycle and public transport to a wide range of local facilities and employment opportunities. In accordance with NPPF, this provides future residents with the choice to travel via alternative modes of transport and minimise trips have by the private car.

8.1.9 A review of personal injury collision data has been undertaken for the local highway network in the Brighouse area and this has shown that there are no specific road safety concerns and it is considered that allocation of the Site as a Garden Suburb will not materially exacerbate the existing highway safety situation particularly given the mitigation measures proposed.

8.1.10 Junction capacity assessments have been undertaken for the key junctions within Brighouse Town Centre that are going to be most affected by the proposed Garden Suburb allocations. The capacity assessments have been undertaken using industry standard software and assuming a 2026/27 Interim Design Year and a 2032/33 Full Design Year. In line with information contained

within Calderdale Council's Infrastructure Delivery Plan, which has been prepared to support the Local Plan proposals, an assumption has been made as to what mitigation is likely to have been by delivered by each design year.

8.1.11 In broad terms, the assessment work has demonstrated that, given the infrastructure to be planned and delivered by a range of parties including Calderdale Council which will be accommodated within the Garden Suburb, the traffic from both Garden Suburb sites can be accommodated on the local highway network leaving it no worse off than the present situation.

8.2 CONCLUSIONS

8.2.1 This TA has demonstrated that safe and suitable access to the proposed Woodhouse Garden Suburb can be achieved for all users and there will be no unacceptable impacts from the development on the transport network or on highway safety.

8.2.2 It has been demonstrated that the Site is in a suitable location and therefore is compliant with NPPF in this regard. The implementation, maintenance and monitoring of a Framework Travel Plan at the Garden Suburb will assist further in encouraging a modal shift to more sustainable forms of travel in line with the expectations of the Calderdale Transport Strategy.

8.2.3 It is therefore concluded that there are no reasons on highways or transport grounds why the allocation of the Site as a Garden Suburb should not be retained in the final adopted Calderdale Local Plan.

Figures

Key

Indicative Site Boundary

N

BRIGHOUSE

Rastrick

Round Hill

Clifton Wood

Alegar Bank Wood

Bradley Island Woodland

Bradley Wood

Woodhouse Lodge

Shepherds Thorn Farm

Park Hill

Screamer Wood

River Calder

Kirklees Cut

A644 WAKEFIELD ROAD

A641 HUDDERSFIELD ROAD

M62

TITLE

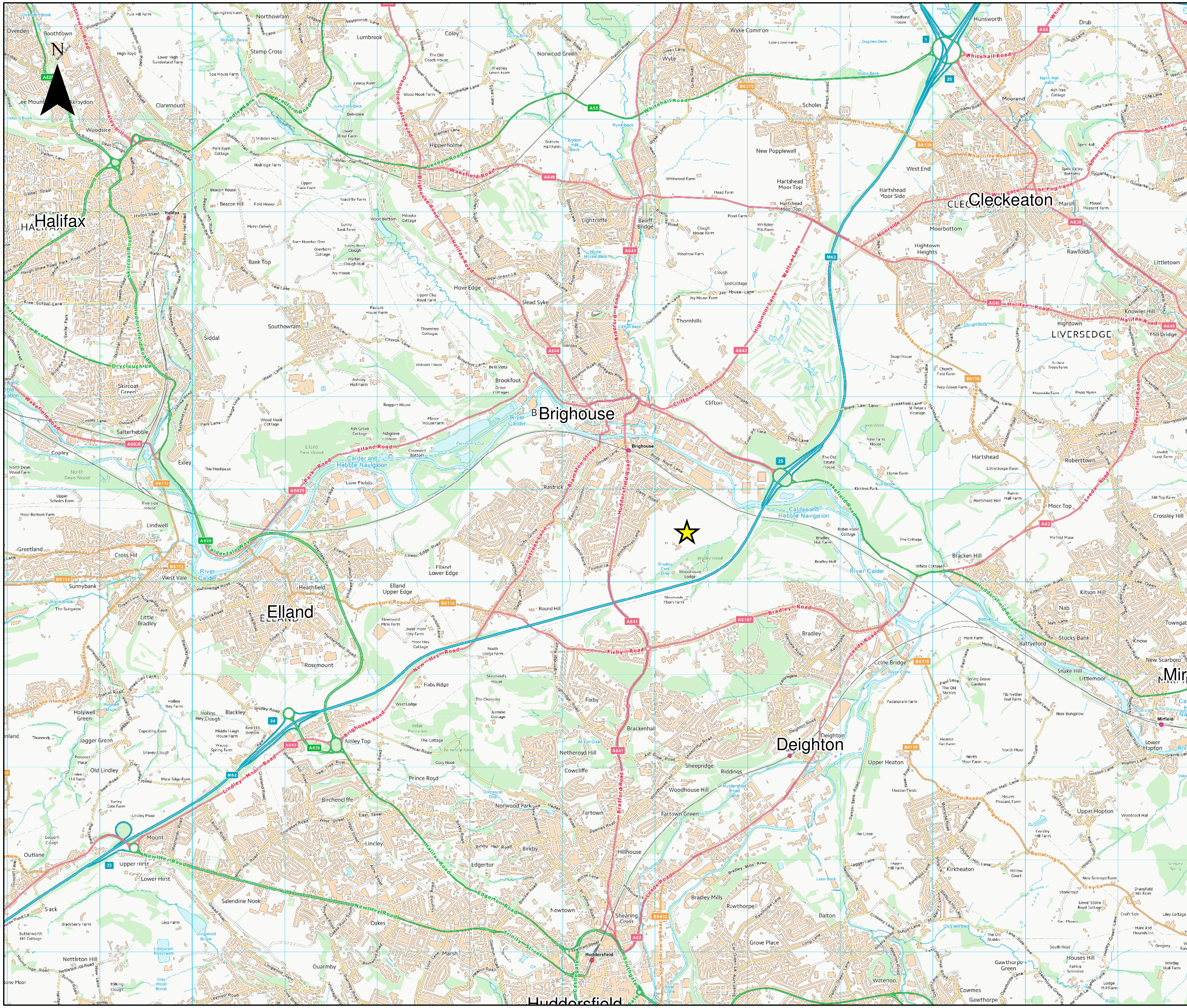
A641 Huddersfield Road, Woodhouse
Proposed Development
Site Location Plan - Local

SCALE @ A3 1:10,000

FIGURE 1

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street
Leeds LS1 2JP
Tel: 0113 245 1679

Path: O:\A641 Huddersfield Rd, Woodhouse\DRAWINGS\GIS\ARCEDITOR\190313 -GIS 5 Figures\Figure 1 - Site Location Local.mxd



Key

★ Site Location

TITLE

A641 Huddersfield Road, Woodhouse Proposed Development Site Location Plan - Strategic

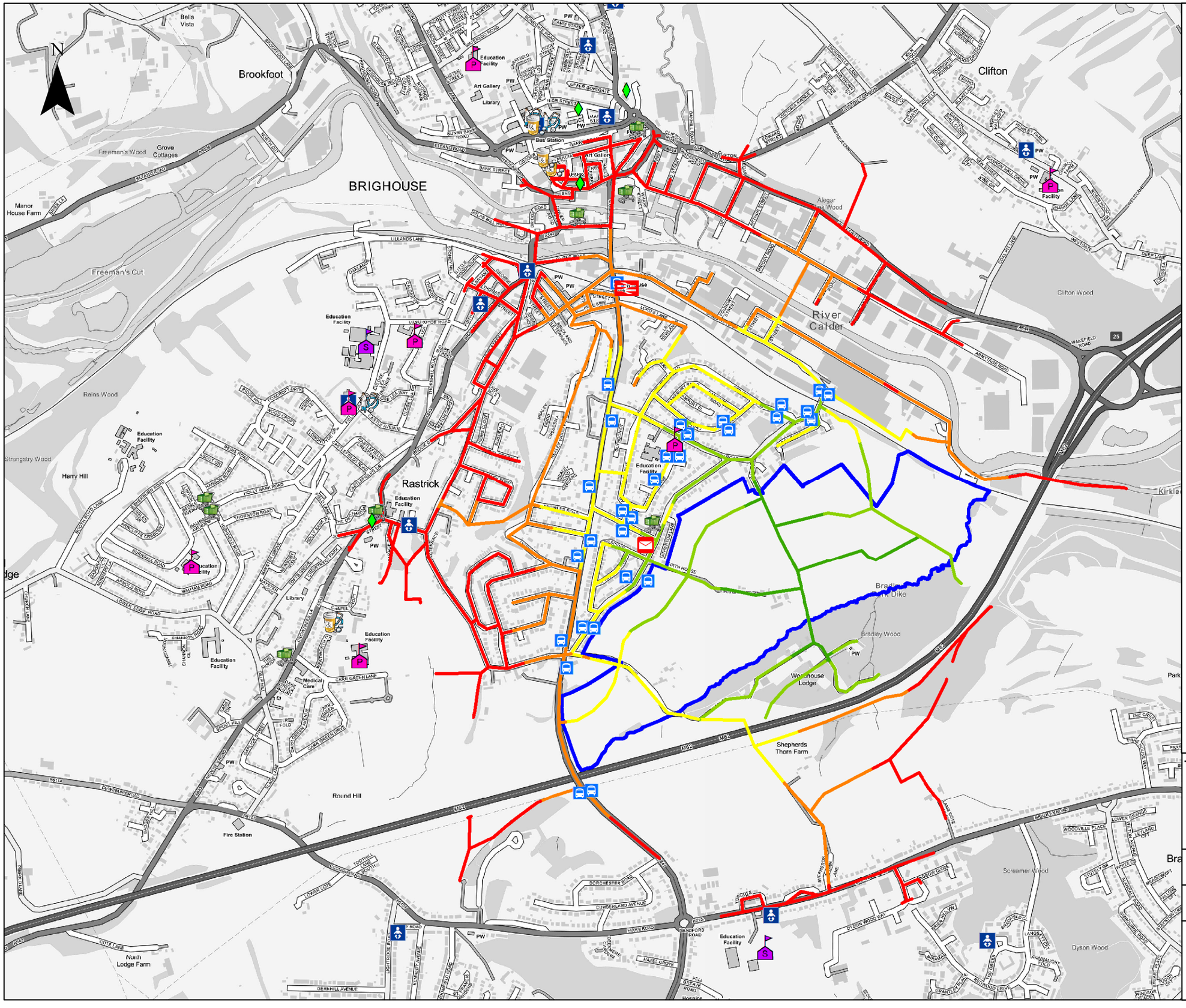
SCALE @ A3 1:40,000

FIGURE 2

OPTIMA

Suite 1, 3rd Floor
Goodbard House
Infirmary Street
Leeds LS1 2JP
Tel: 0113 245 1679

Path: O:\A641 Huddersfield Rd, Woodhouse\DRAWINGS\GIS\ARCEDITOR\190313 -GIS 5 Figures\Figure 2 - Site Location Strategic.mxd



TITLE

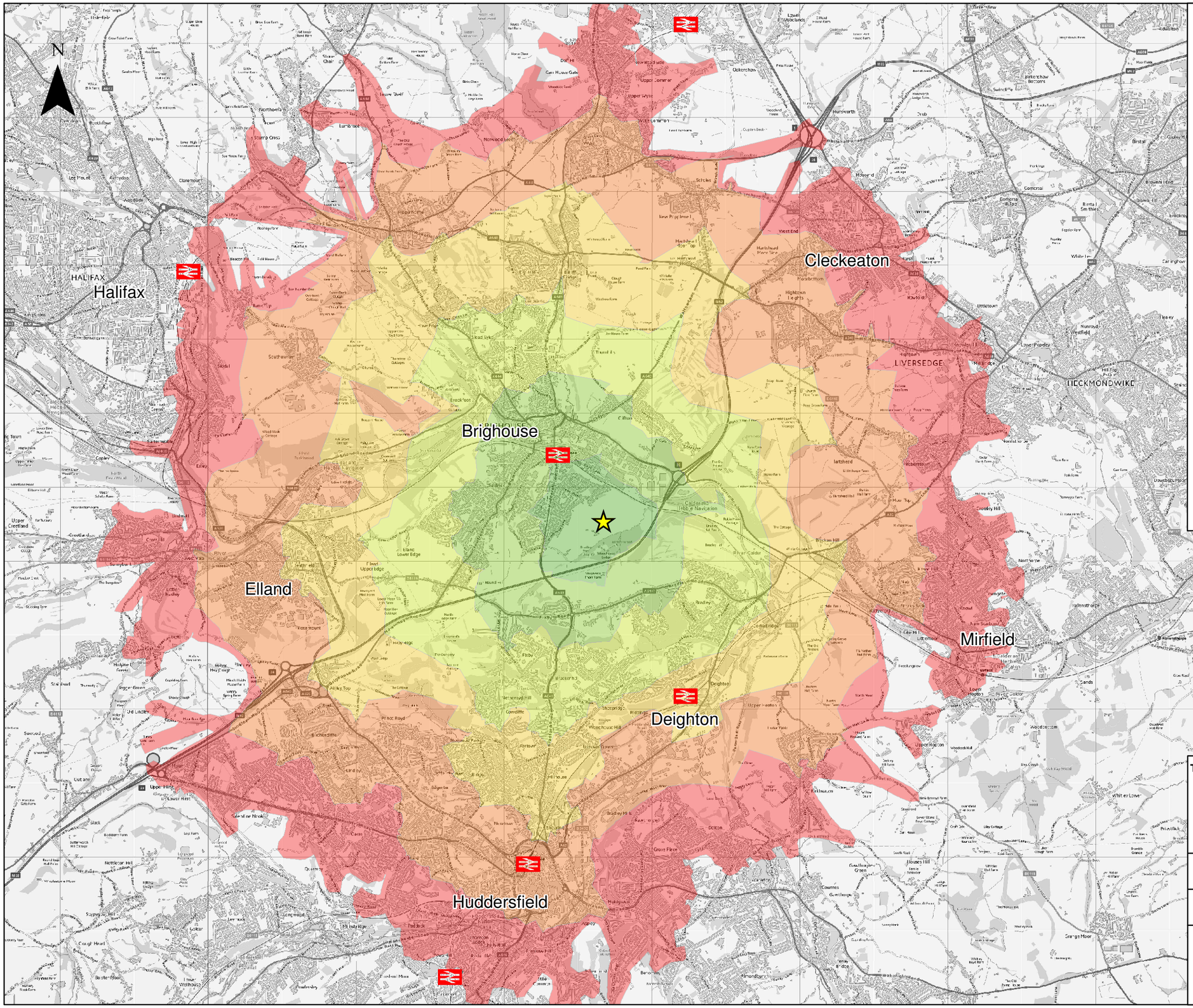
A641 Huddersfield Road, Woodhouse
Proposed Development
Pedestrian Accessibility Plan

SCALE @ A3 1:12,500

FIGURE 3

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street
Leeds LS1 2JP
Tel: 0113 245 1679

Path: O:\A641 Huddersfield Rd, Woodhouse\DRAWINGS\GIS\ARCEDITOR\190313 -GIS 5 Figures\Figure 3 - Pedestrian Accessibility.mxd



Key

- Site Location
- Train Station

Cycle Accessibility
(Cycle Speed 16kph)

- 0-5 MInutes
- 5-10 MInutes
- 10-15 MInutes
- 15-20 MInutes*
- 20-25 MInutes
- 25-30 MInutes**

*19 mins (5km) = LTN 2/08 Standard for General Cycling
**30 mins (8km) = LTN 2/08 Standard for Commuting
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TITLE

A641 Huddersfield Road, Woodhouse
Proposed Development
Cycle Accessibility Plan

SCALE @ A3 1:50,000

FIGURE 4

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street
Leeds LS1 2JP
Tel: 0113 245 1679

Path: O:\A641 Huddersfield Rd, Woodhouse\DRAWINGS\GIS\ARCEDITOR\190313 -GIS 5 Figures\Figure 4 - Cycle Accessibility.mxd

Key

- Nearest Bus Stop
- Indicative Site Boundary

Bus Stop Accessibility
(Walk Speed 4.8kph)

- 0-200 M (0 - 2.5 Minutes)
- 200-400 M (2.5 - 5 Minutes)
- 400-600 M (5 - 7.5 Minutes)

TITLE

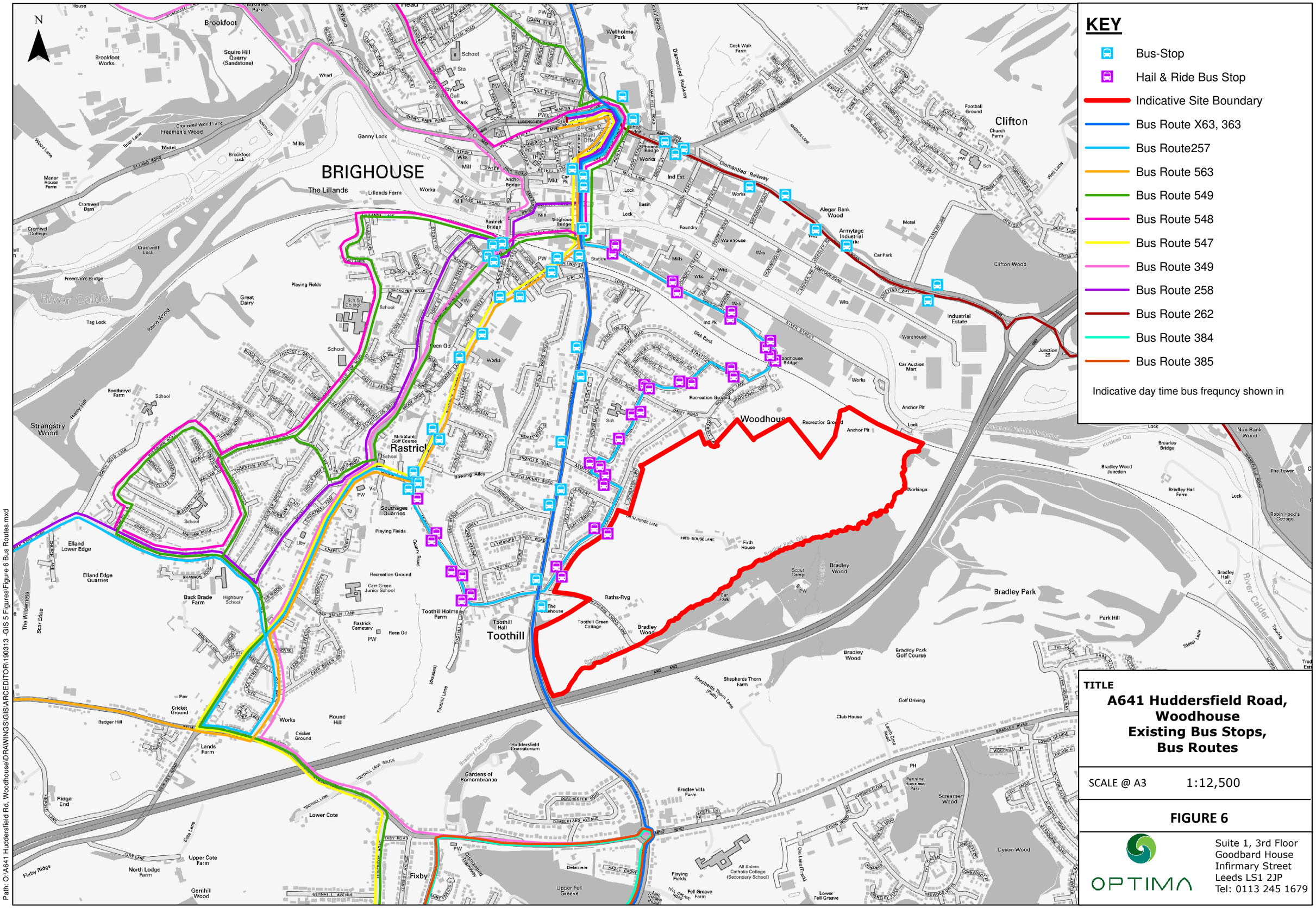
A641 Huddersfield Road, Woodhouse Proposed Development Bus Stop Accessibility Plan

SCALE @ A3 1:10,000

FIGURE 5

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street
Leeds LS1 2JP
Tel: 0113 245 1679

Path: O:\A641 Huddersfield Rd, Woodhouse\DRAWINGS\GIS\ARCEDITOR\190313 -GIS 5 Figures\Figure 5 - Bus Stop Accessibility.mxd



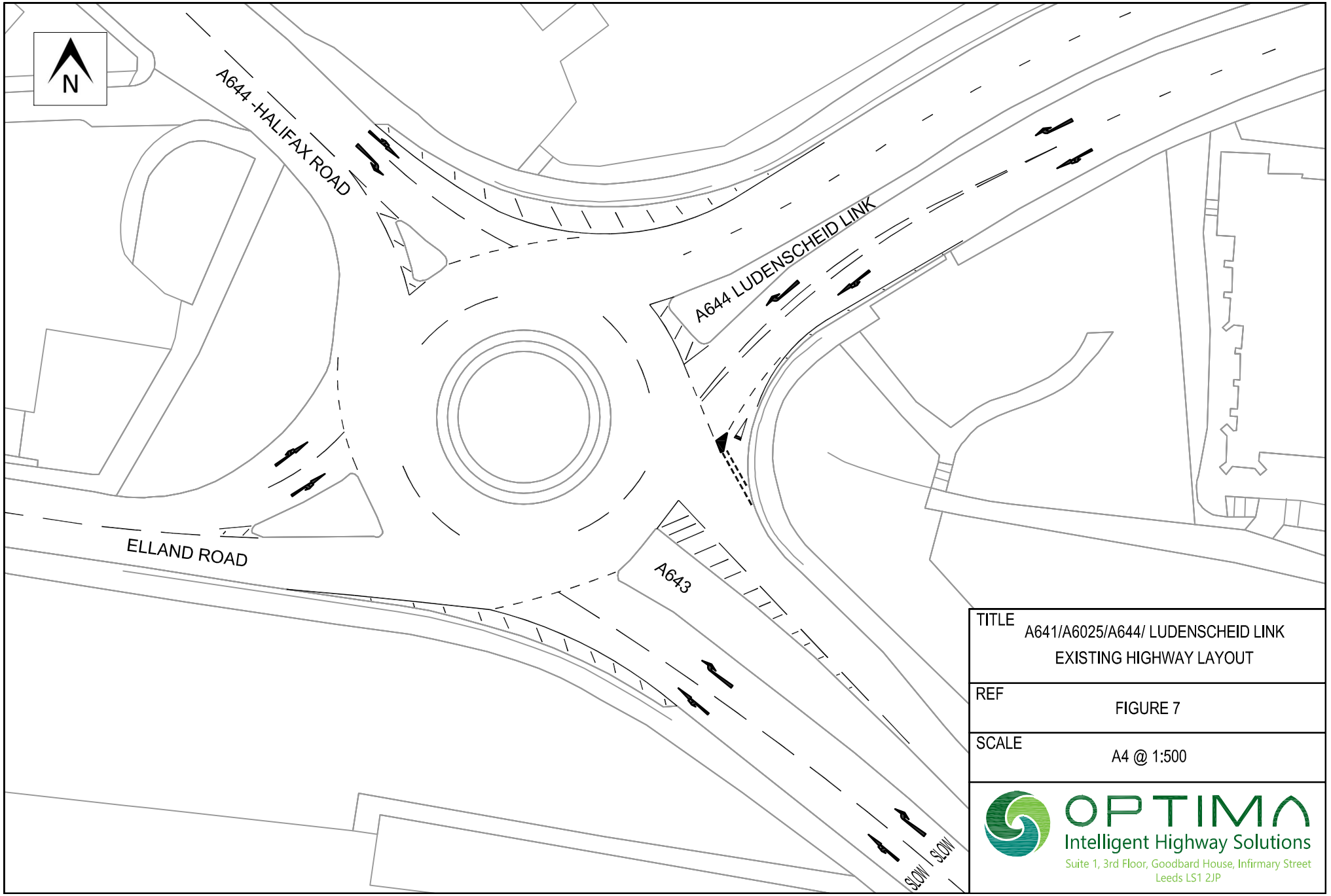
TITLE

A641 Huddersfield Road, Woodhouse Existing Bus Stops, Bus Routes

SCALE @ A3 1:12,500

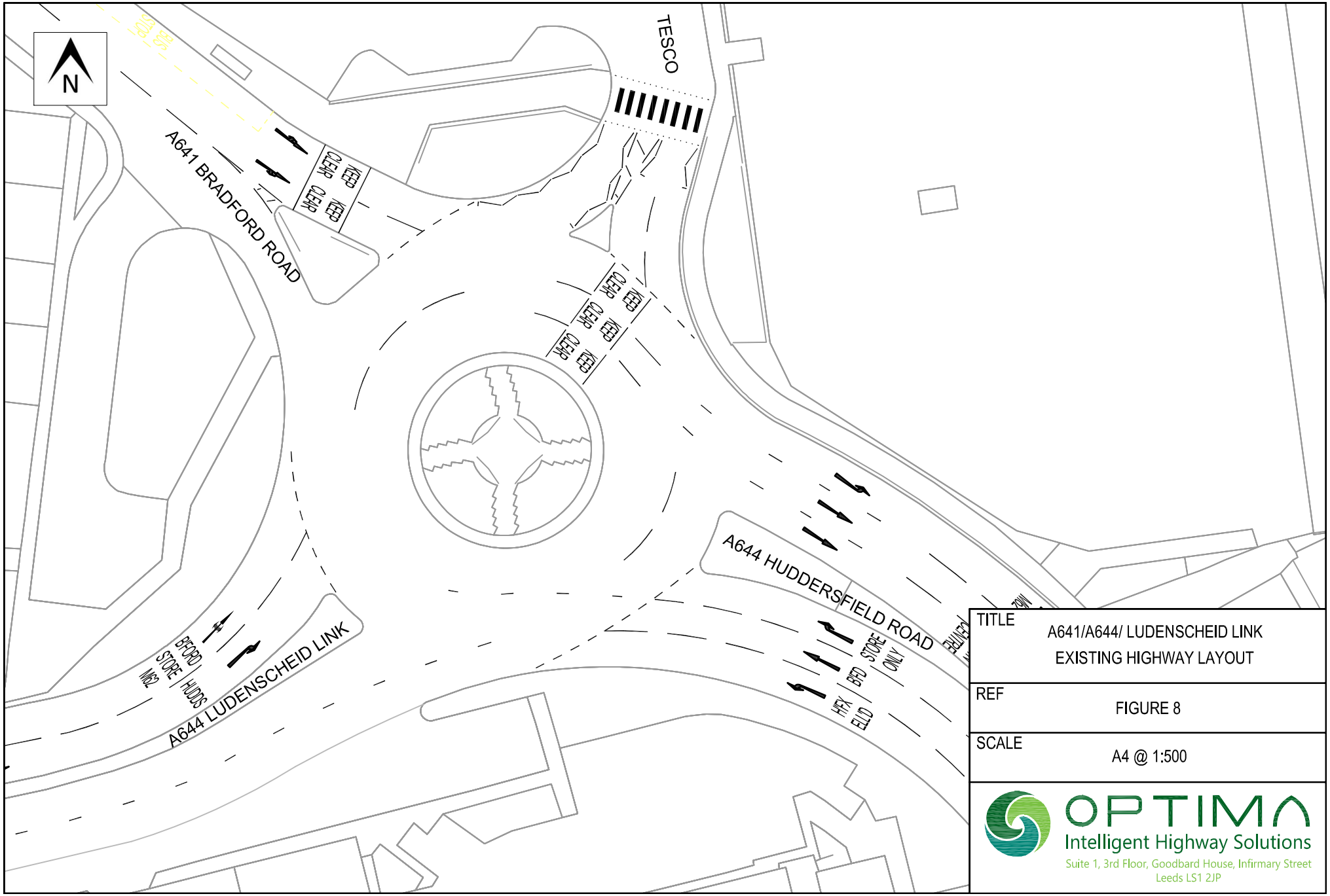
FIGURE 6

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street
Leeds LS1 2JP
Tel: 0113 245 1679



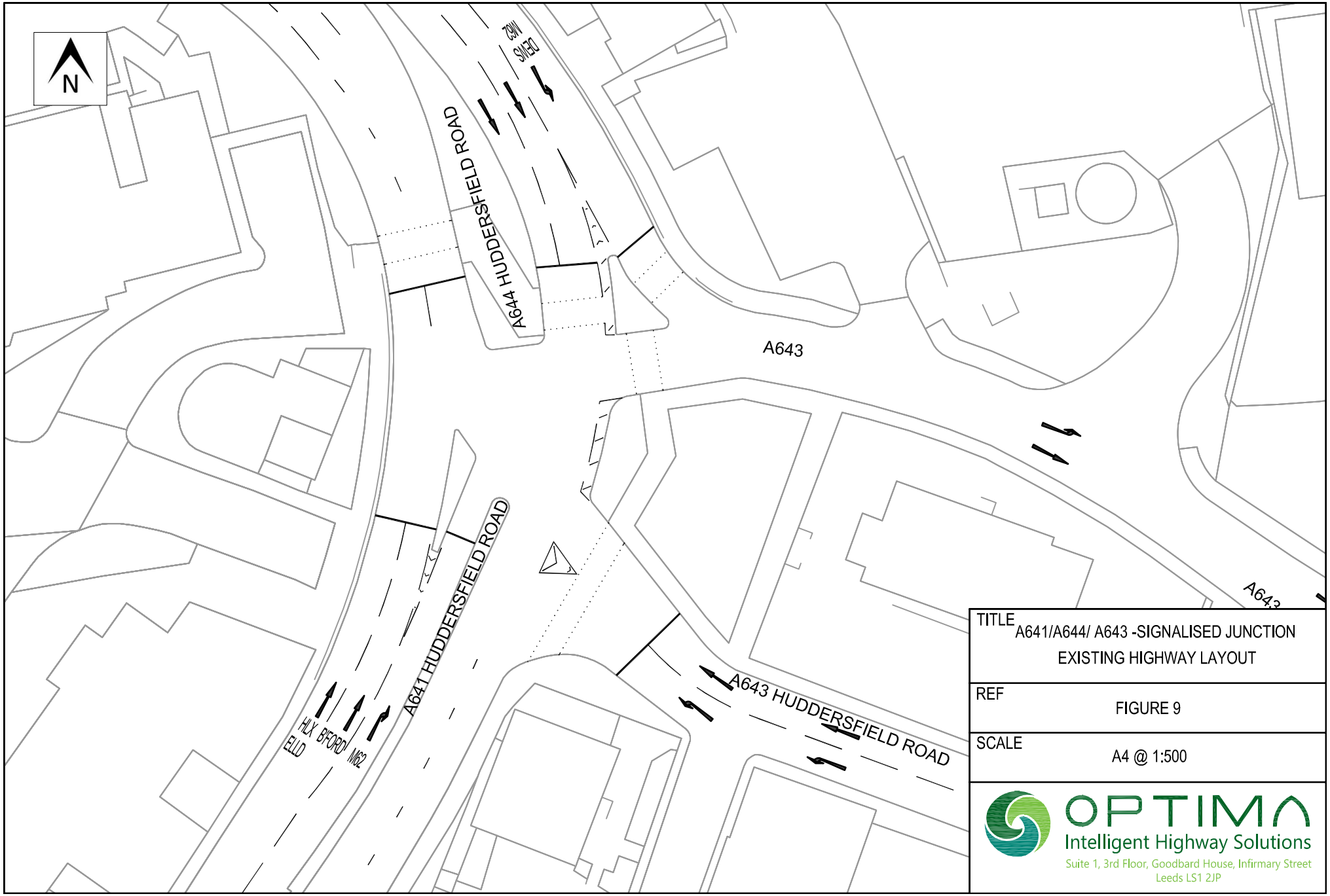
TITLE	A641/A6025/A644/ LUDENSCHEID LINK EXISTING HIGHWAY LAYOUT
REF	FIGURE 7
SCALE	A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP



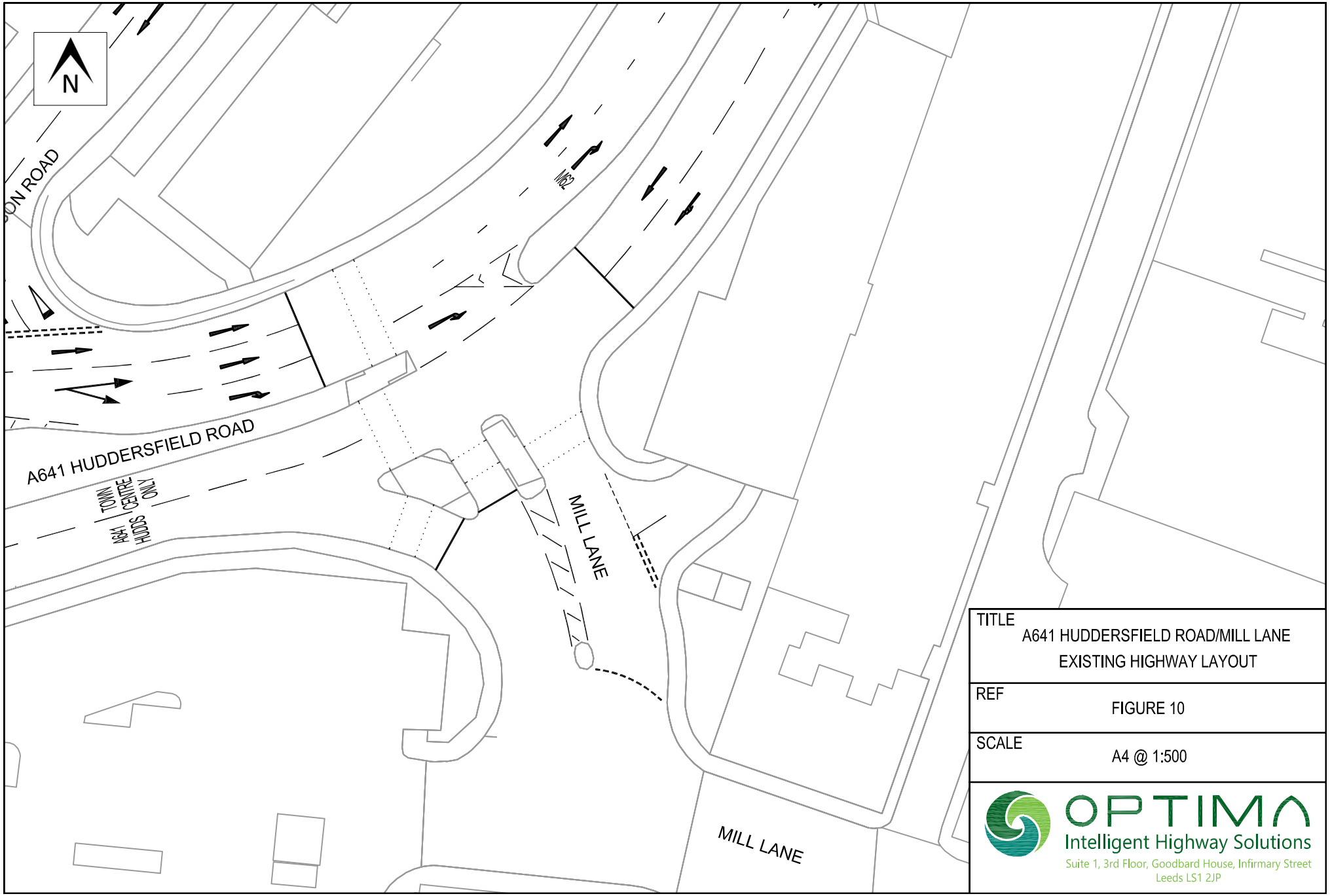
TITLE	A641/A644/ LUDENSCHEID LINK EXISTING HIGHWAY LAYOUT
REF	FIGURE 8
SCALE	A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP



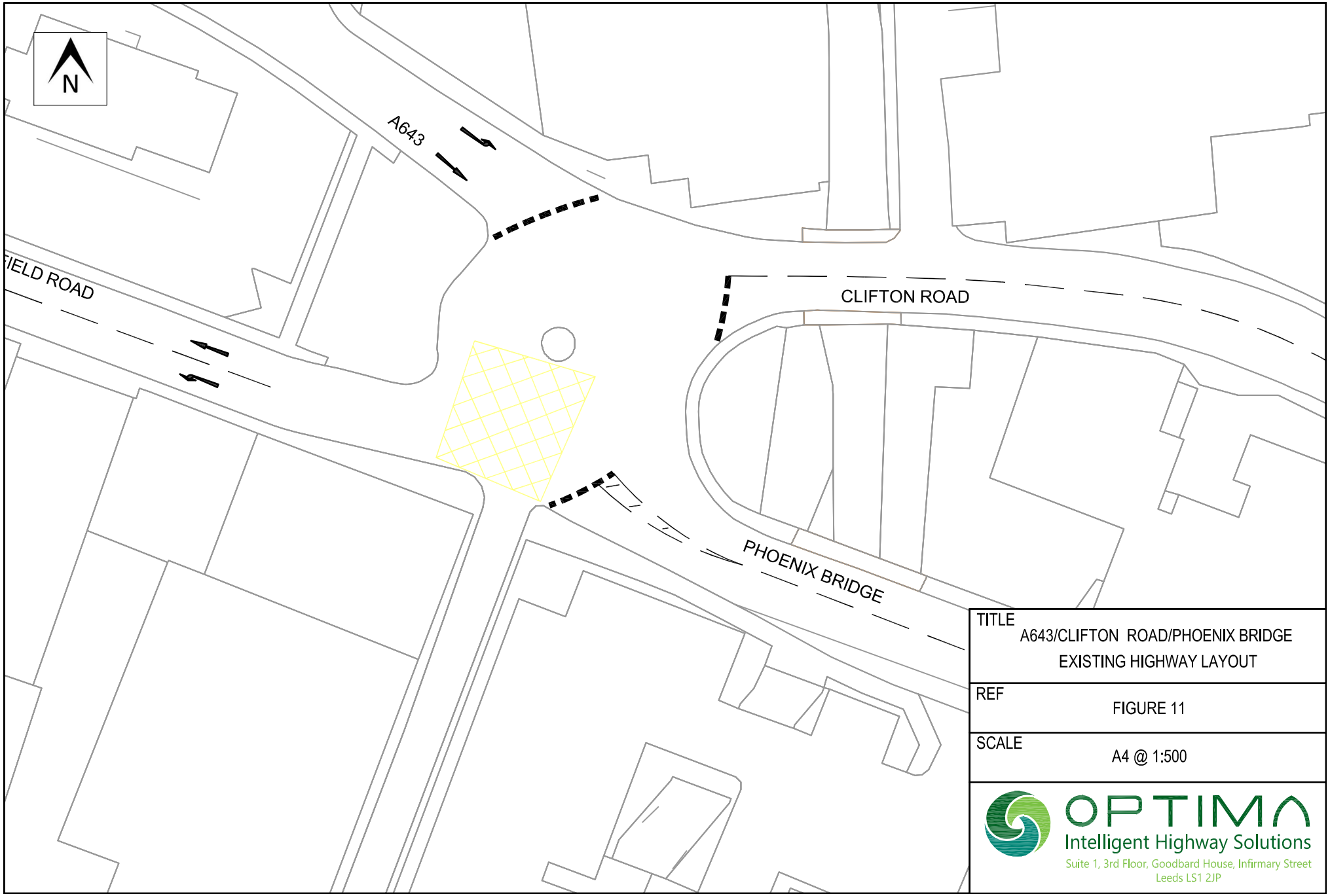
TITLE	A641/A644/ A643 -SIGNALISED JUNCTION EXISTING HIGHWAY LAYOUT
REF	FIGURE 9
SCALE	A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP



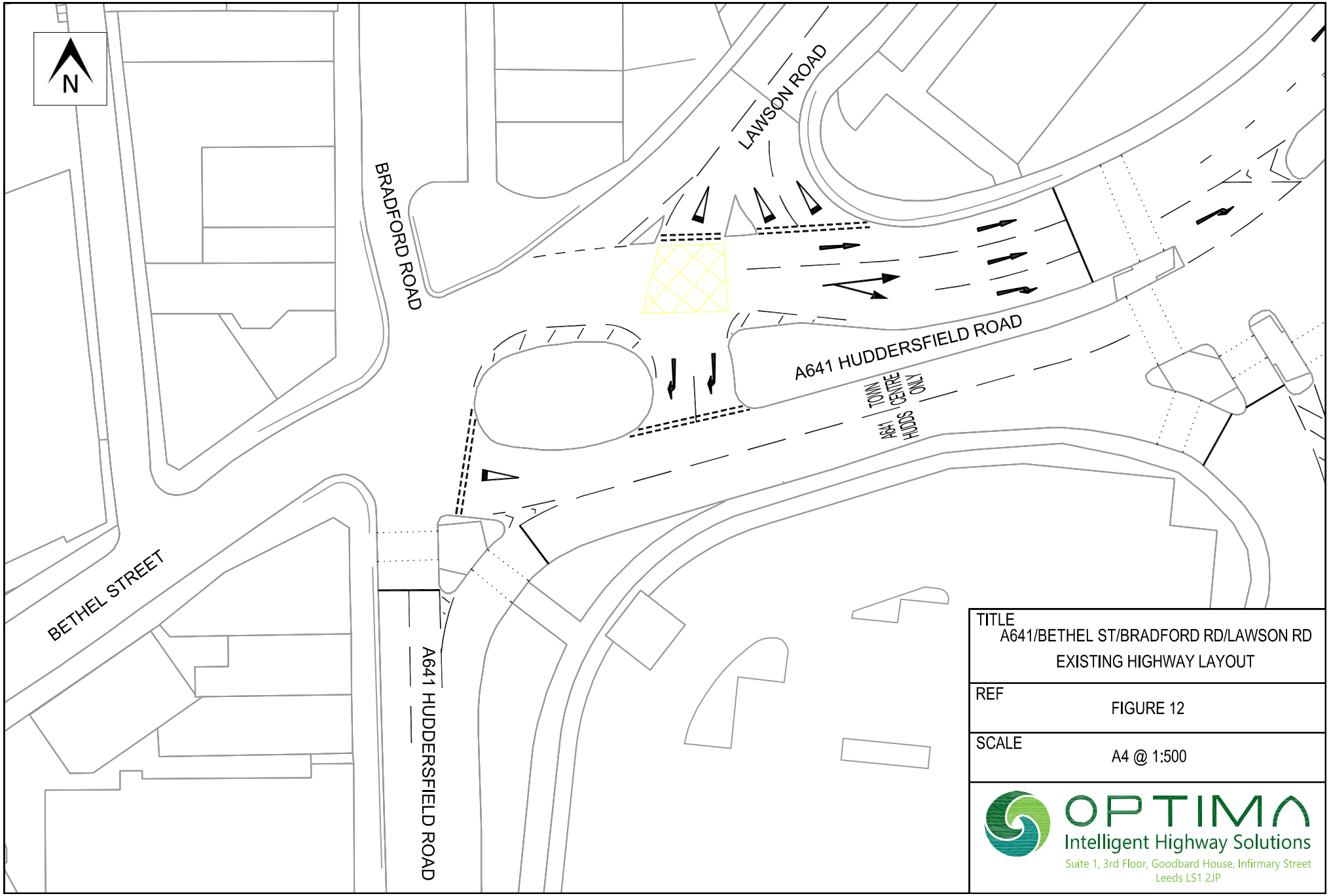
TITLE	A641 HUDDERSFIELD ROAD/MILL LANE EXISTING HIGHWAY LAYOUT
REF	FIGURE 10
SCALE	A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP



TITLE	A643/CLIFTON ROAD/PHOENIX BRIDGE EXISTING HIGHWAY LAYOUT
REF	FIGURE 11
SCALE	A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP

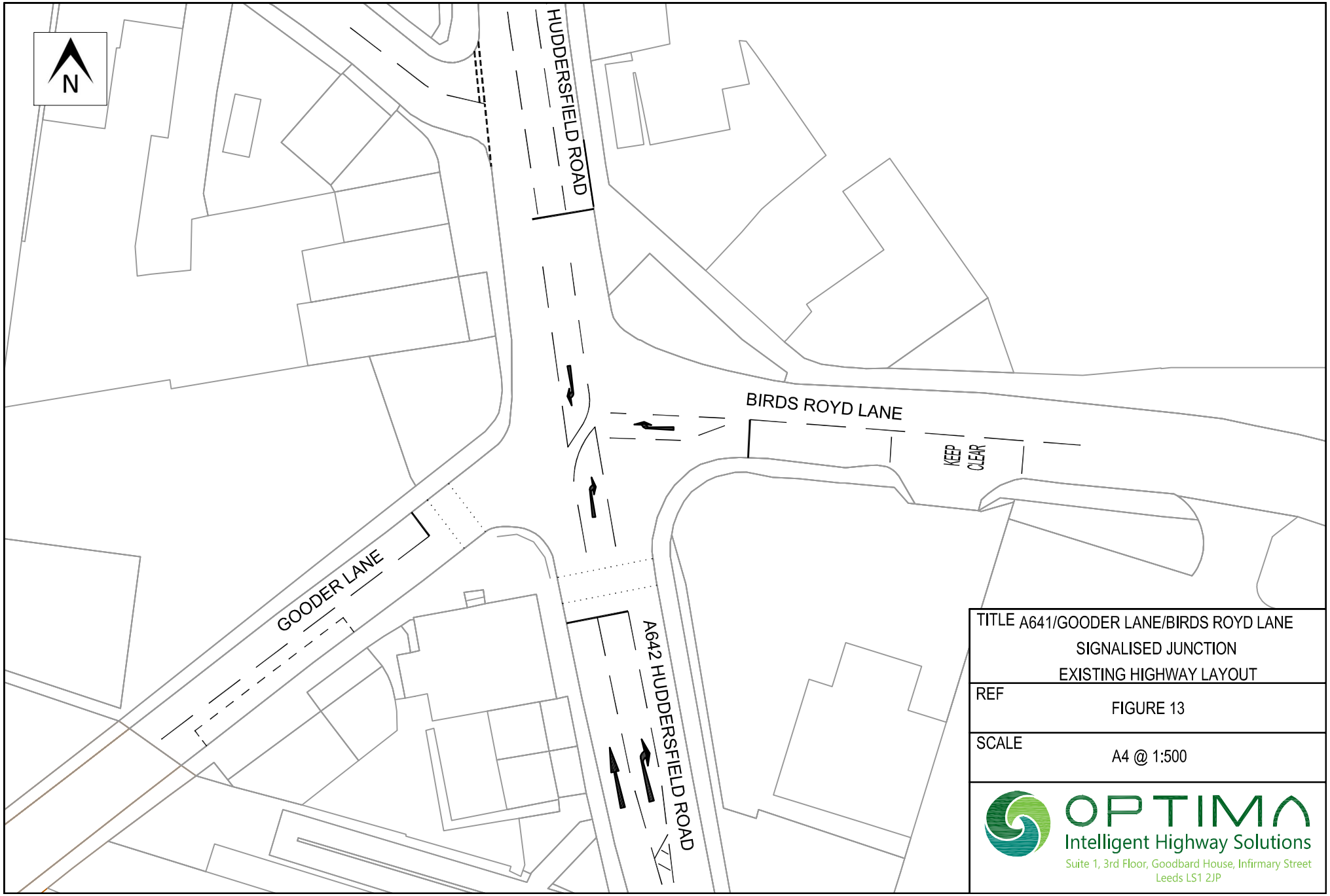


TITLE
A641/BETHEL ST/BRADFORD RD/LAWSON RD
EXISTING HIGHWAY LAYOUT

REF
FIGURE 12

SCALE
A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP

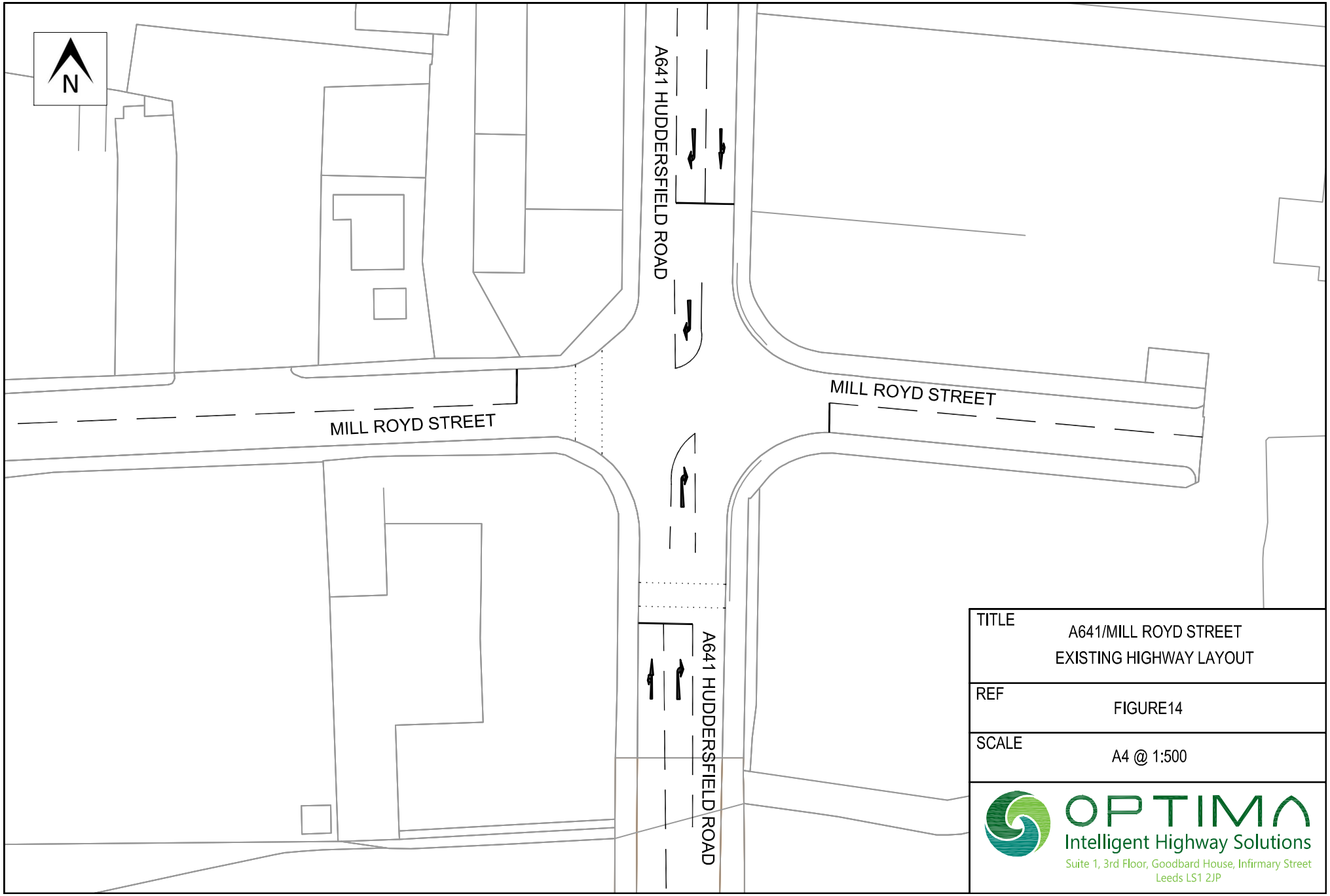


TITLE A641/GOODER LANE/BIRDS ROYD LANE
SIGNALISED JUNCTION
EXISTING HIGHWAY LAYOUT

REF FIGURE 13

SCALE A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP



TITLE	A641/MILL ROYD STREET EXISTING HIGHWAY LAYOUT
REF	FIGURE14
SCALE	A4 @ 1:500

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP

Figure 100 - 2018 AM PEAK HOUR COUNT (08:00 - 09:00)

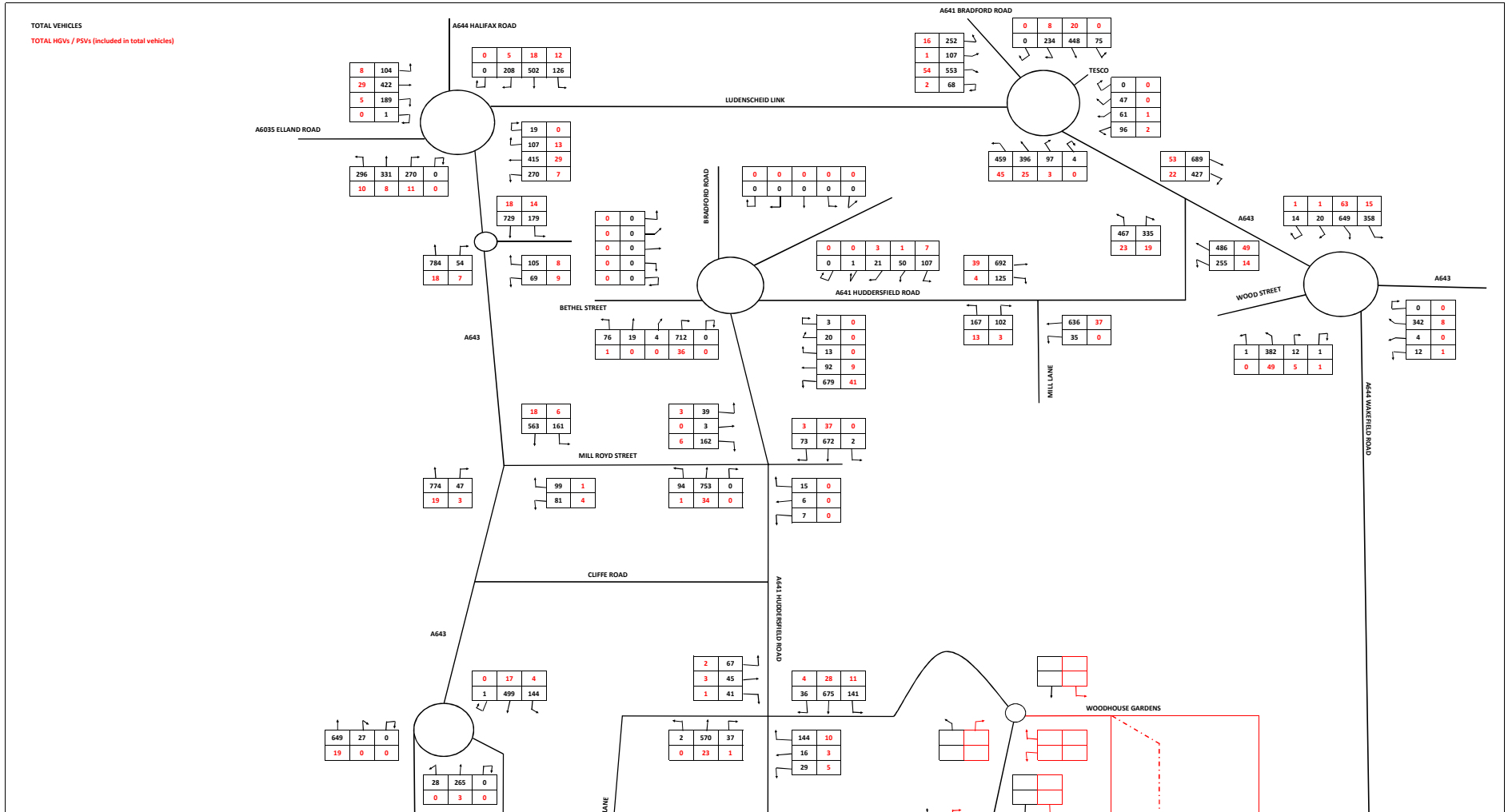


Figure 101 - 2018 PM PEAK HOUR COUNT (17:00 - 18:00)

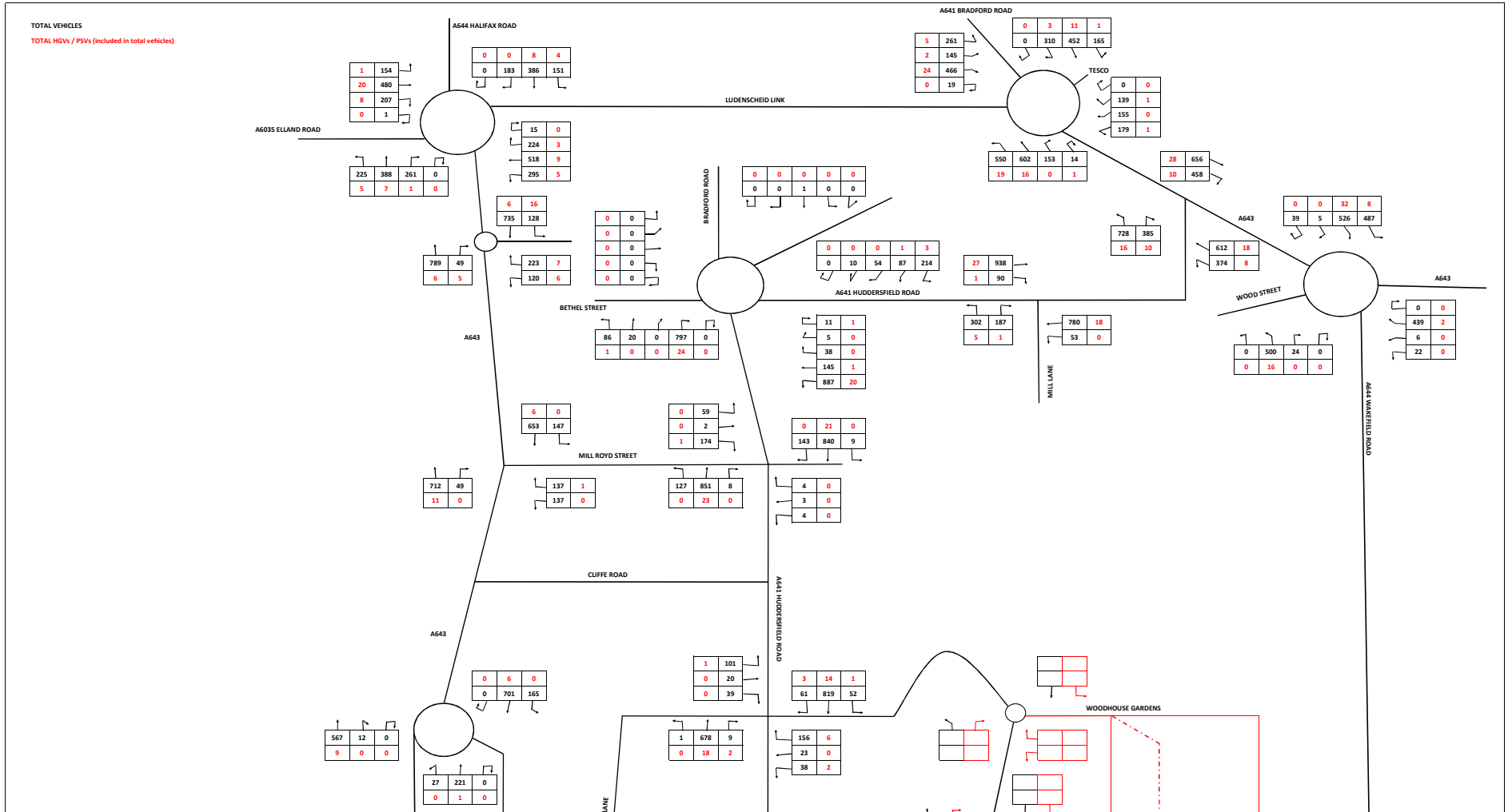


Figure 102 - 2026/27 AM PEAK HOUR BASE TRAFFIC FLOWS

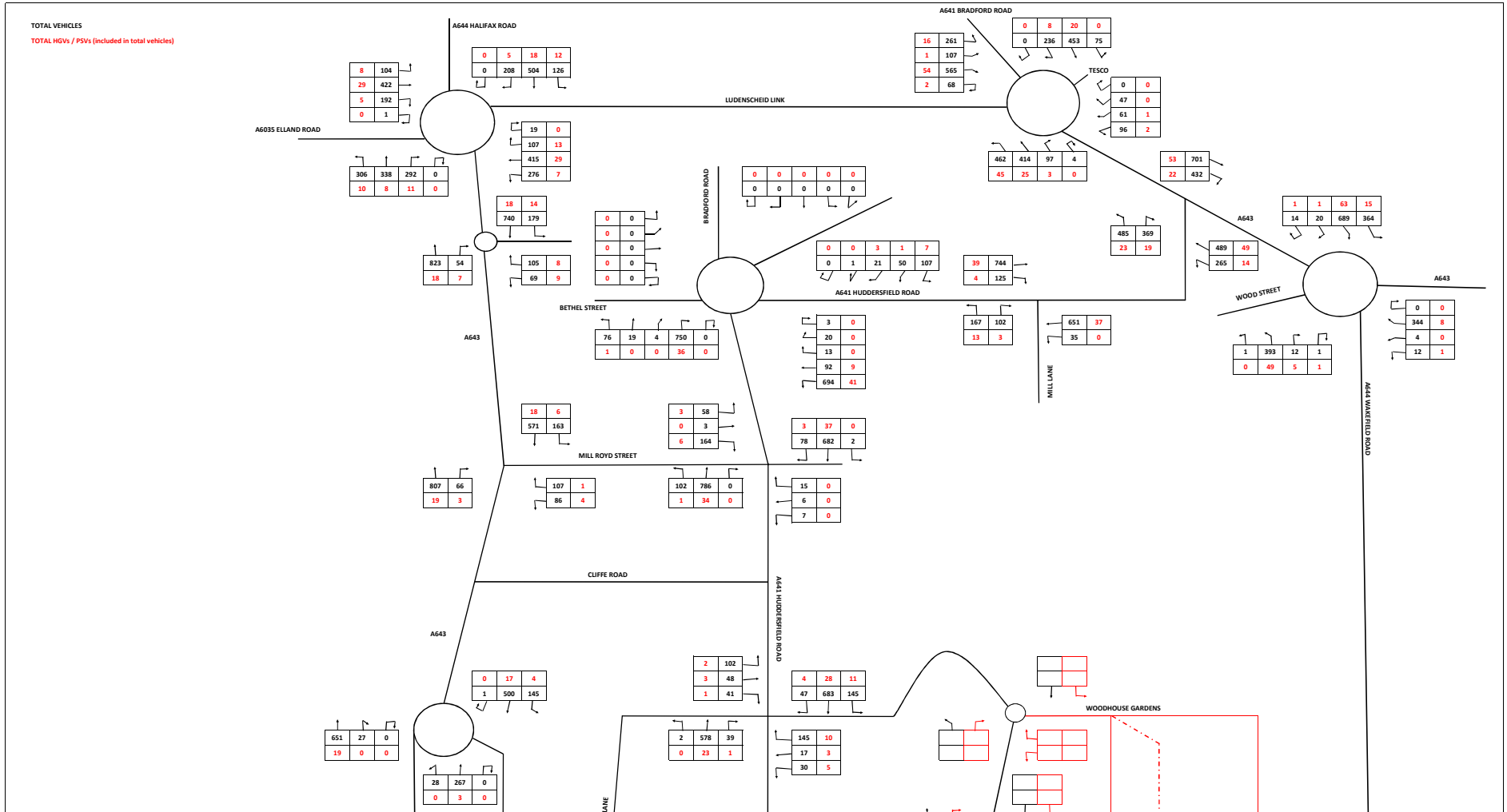


Figure 103 - 2026/27 PM PEAK HOUR BASE TRAFFIC FLOWS

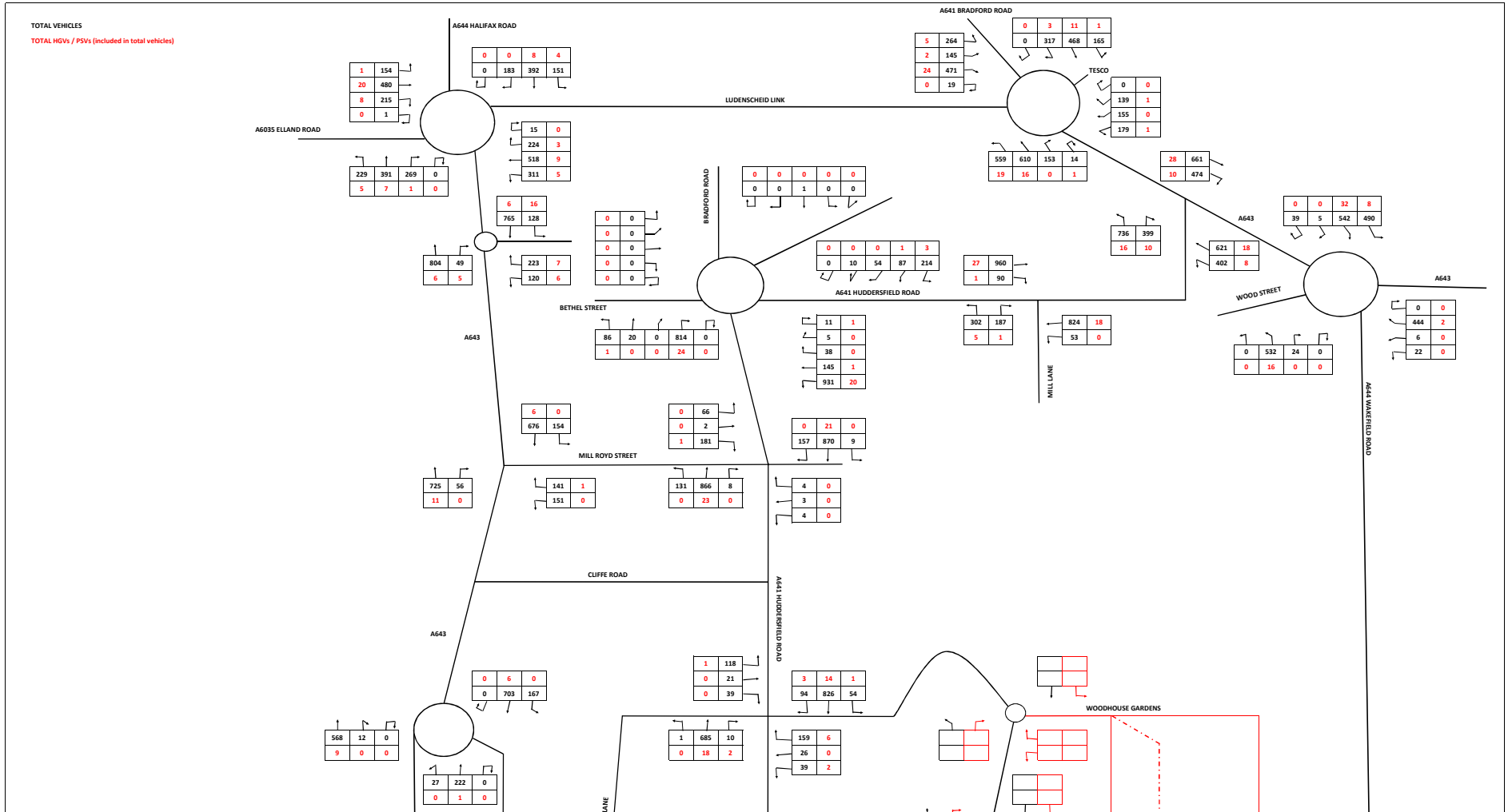


Figure 104 - 2026/27 AM PEAK HOUR INTERIM TRAFFIC FLOWS

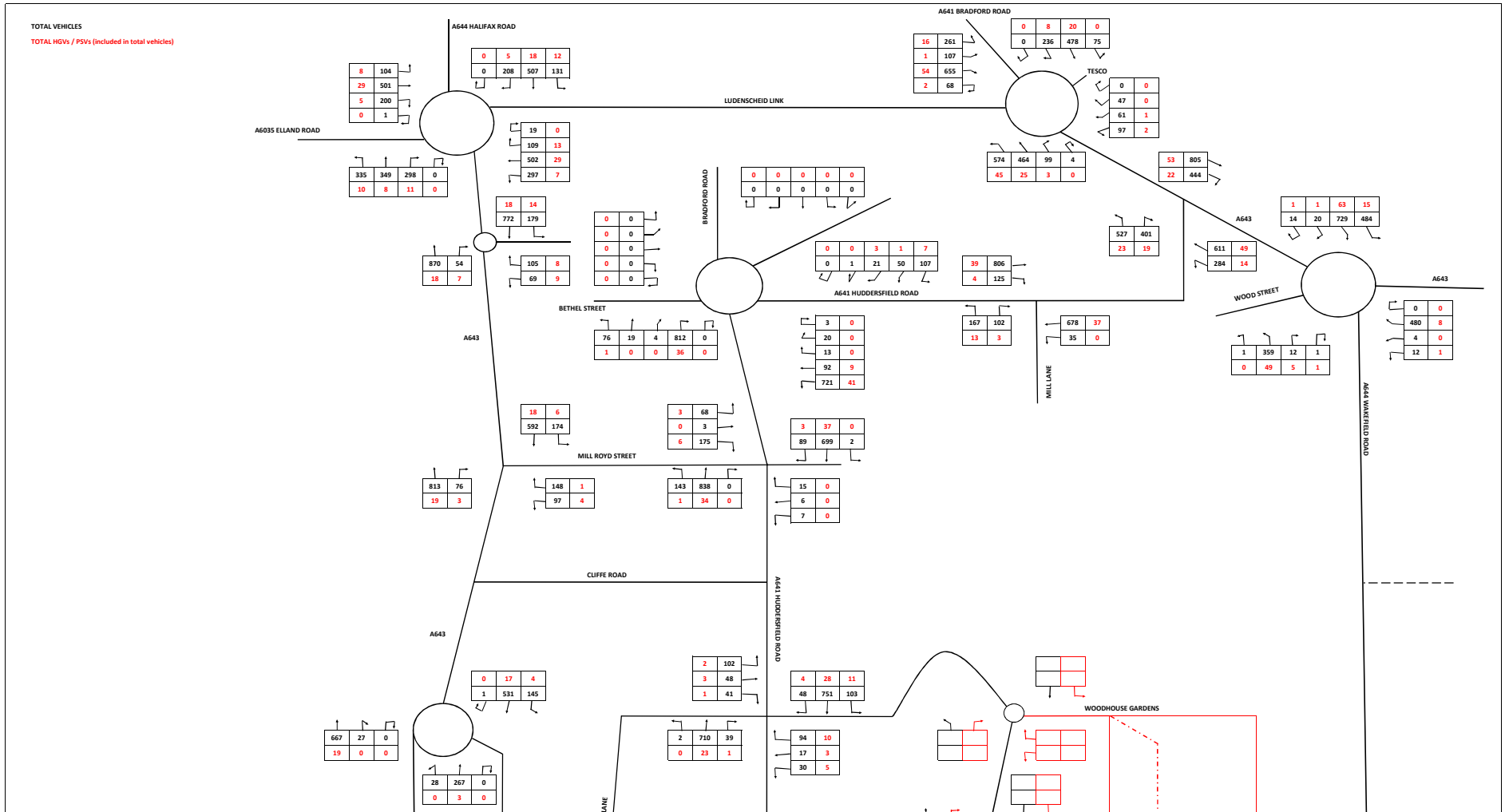


Figure 105 - 2026/27 PM PEAK HOUR INTERIM TRAFFIC FLOWS

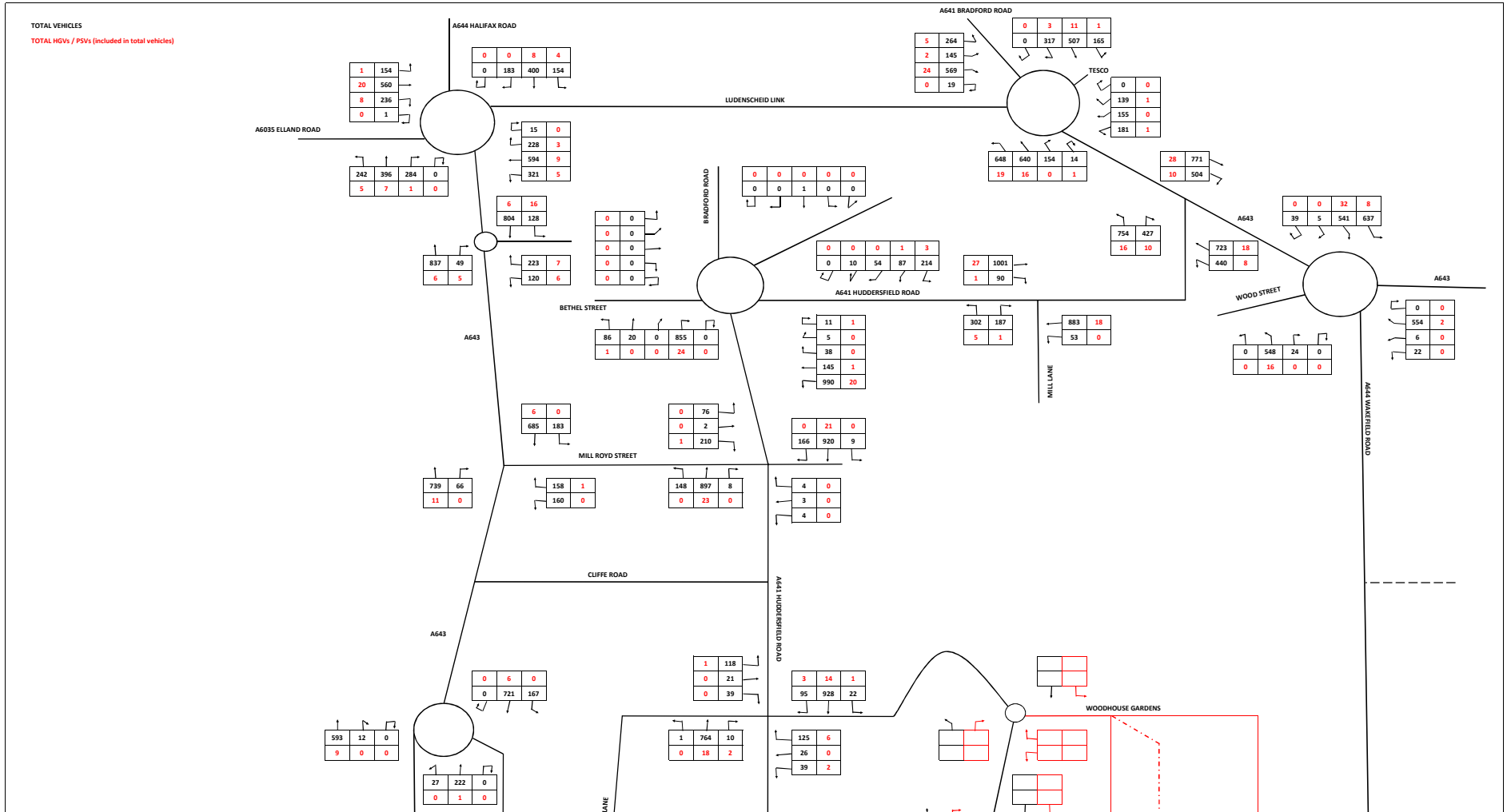


Figure 106 - 2032/33 AM PEAK HOUR DESIGN TRAFFIC FLOWS

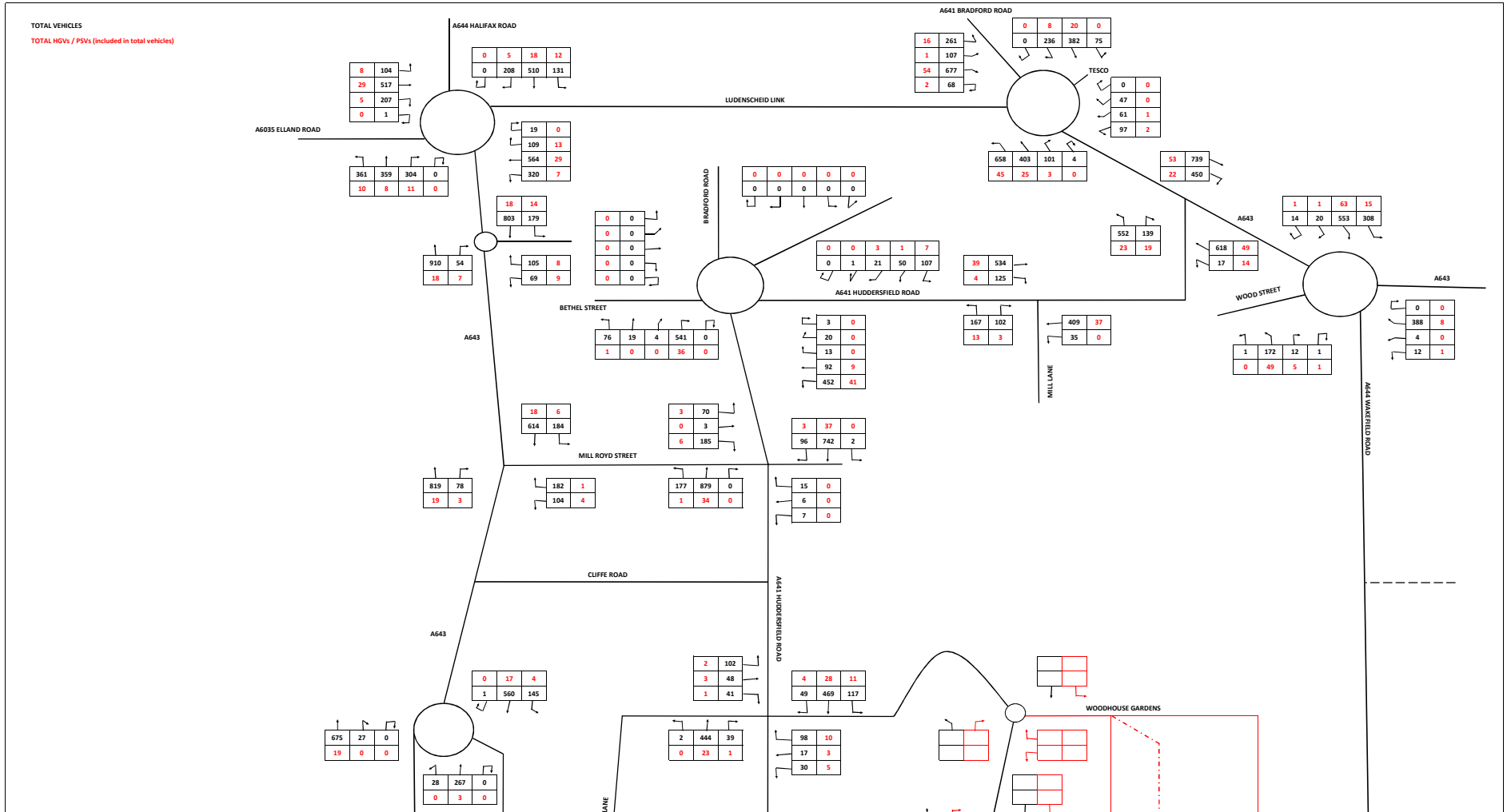
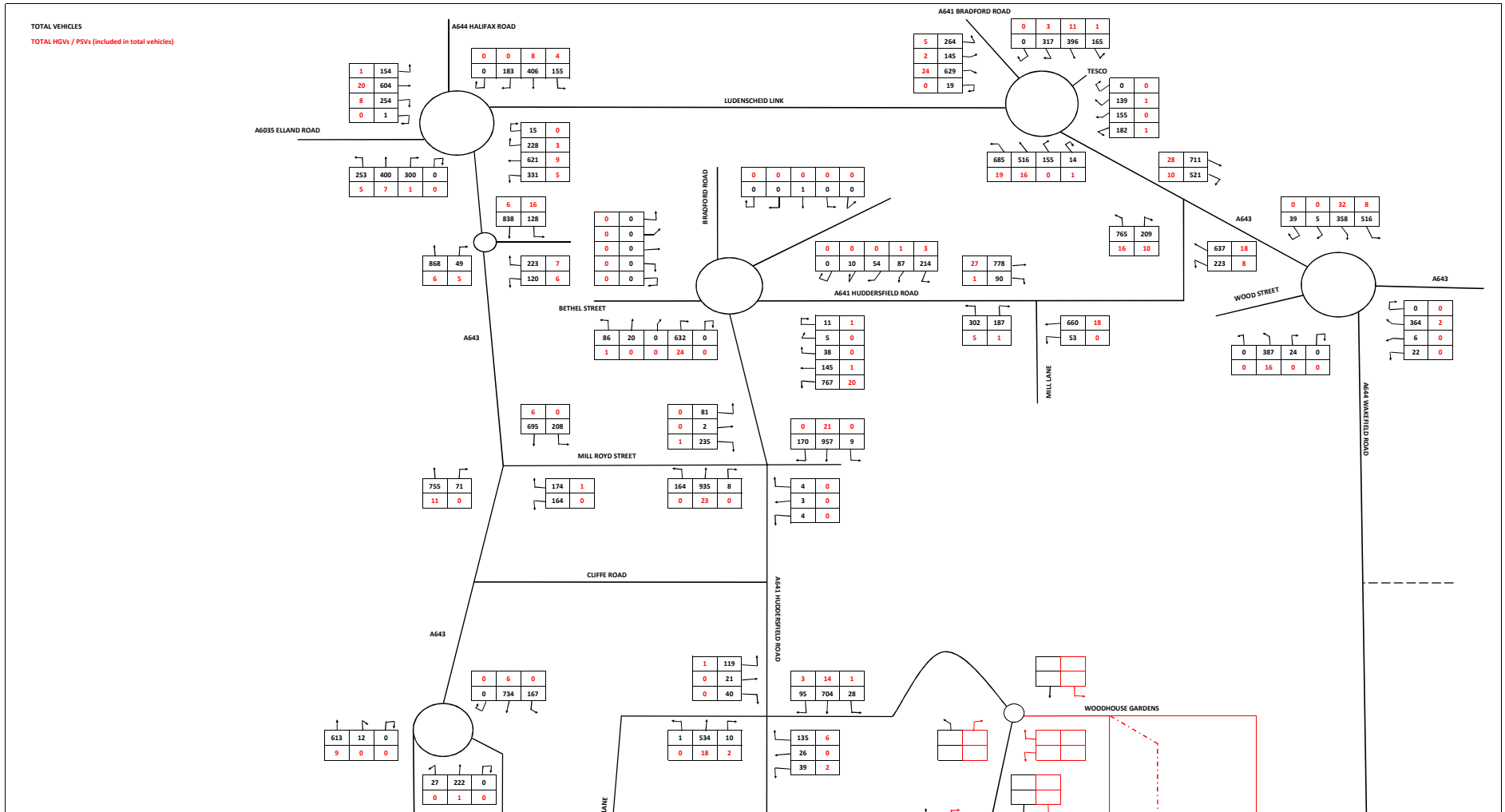
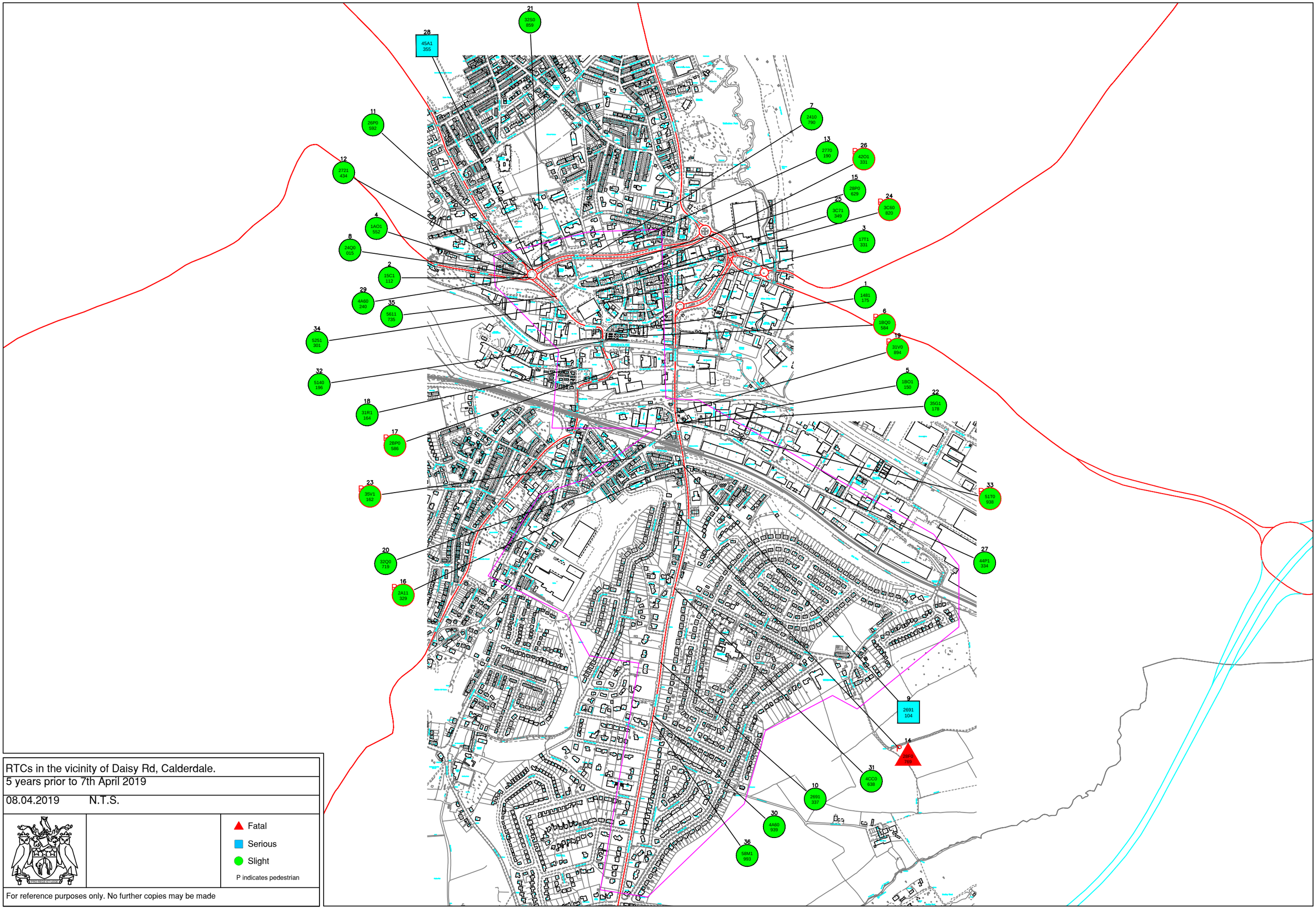


Figure 107 - 2032/33 PM PEAK HOUR DESIGN TRAFFIC FLOWS



Appendices

Appendix A Personal Injury Collision Data



RTCs in the vicinity of Daisy Rd, Calderdale.

5 years prior to 7th April 2019

08.04.2019 N.T.S.

- Fatal
- Serious
- Slight

P indicates pedestrian

For reference purposes only. No further copies may be made

RTC in the vicinity of Daisy Rd, Calderdale, 5 years prior to 07.04.2019

1481175 SLIGHT 08/04/2014 0017:08 414514 /422747 Ship Street

vehicle 1 is a land rover manoeuvring out of road, as it reverses vehicle 2 a motorcycle is at the rear of the vehicle is behind vehicle 1 and collides with vehicle 2 causing the rider to fall off, causing minor damage. details are exchanged between both parties at the time of the collision. following the collision the rider of vehicle 2 reports the matter to the police as an injury collision. Stats 19 Completed.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Reversing	N	S	Male	52	Not contacted	1	Driver/Rider	SLIGHT	2	Male	24	
2	M/cycle 50 - 125cc	Going ahead other	E	W	Male	24	Not contacted							

Contributory Factors

Poor turn or manoeuvre	V001 V.likely	Failed to look properly	V001 Possible

---

15C1112 SLIGHT 08/05/2014 0016:55 414284 /422893 Junction of A6025 Elland Road and A644 Halifax Road

vehicle 1 is a van waiting to pull onto the roundabout from Elland road, on to Halifax road, vehicle 2 is a pedal cycle, in front of the van waiting to go ahead onto the roundabout, vehicle 1 sets off anticipating the movement of the pedal cycle, the pedal cycle is stationary as the van hits the rear of the pedal cycle causing damage to the pedal cycle and minor injury to the cyclist. details are exchanged at the scene, rider reports the matter a couple of days later due to injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Van/Goods < 3.5t	Going ahead other	W	E	Male	-1	Not contacted	1	Driver/Rider	SLIGHT	2	Male	42	
2	Pedal Cycle	Going ahead other	W	E	Male	42	Not contacted							

Contributory Factors

Failed to look properly	V001 Possible	Following too close	V001 V.likely

---

17T1331 SLIGHT 29/07/2014 0018:00 414469 /422822 Briggate Brighouse

This collision involves 2 vehicles that were travelling slowly (less than 10mph) through the town centre of BRIGHOUSE. Vehicle 2 stops as the vehicle in front pulls into a parking space. Vehicle 1 has glanced away at this point and does not see vehicle 1 stop. Vehicle 1 collides with the rear of vehicle 2 and driver of vehicle 2 sustains injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	56	Negative	1	Driver/Rider	SLIGHT	2	Male	69	
2	Car	Going ahead other	W	E	Male	69	Negative							

Contributory Factors

Distraction outside vehicle	V001 V.likely

1AO1552 SLIGHT 24/10/2014 0220:20 414266 /422900 Junction of A6025 Elland Road and A643 Halifax Road

vehicle 1 stationary at roundabout Elland Road /Halifax Road Brighouse. vehicle 2 collides with rear of vehicle 1 shunting it into roundabout causing damage to rear bumper of vehicle 1 and slight injury to driver and passenger of vehicle 1. vehicle 2 fails to stop and drives off onto Halifax Road out of sight .Registartion of vehicle 2 obtained by witness

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Wait go ahead, held up	W	E	Female	49	Not contacted	1	Driver/Rider	SLIGHT	1	Female	49	
2	Car	Going ahead other	W	E	Not known	26	Not contacted	2	Passenger	SLIGHT	1	Female	62	

Contributory Factors

Failed to look properly V002 V.likely

1BO1150 SLIGHT 24/11/2014 0016:55 414681 /422495 Junction of Birdsroyd Lane and Gooder Lane

Rider of motorcycle was approaching junction of Huddersfield Road onto Gooder Lane, from Birdsroyd Lane at 16:55hrs. The rider observed a White vehicle approach from Gooder Lane and thought that it was going to turn right across his path, he braked hard and slipped on the slippy road surface where he lost control of the bike and fell to the ground not colliding with any other vehicle.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle 125 - 500cc	Going ahead other	E	W	Male	34	Not requested	1	Driver/Rider	SLIGHT	1	Male	34	
2	Other:	Going ahead other	W	E	Not known	-1	Not applicable							

Contributory Factors

Sudden braking V001 V.likely Deposit on road V001 Possible Slippery road due to weather V001 Possible

Loss of control V001 Possible

1BQ0584 SLIGHT 26/11/2014 0012:48 414554 /422733 Bethel Street, Brighouse

Sir, I was not witness to this collision. There is one vehicle and two pedestrians involved. It has occurred in the Bethel Street public car park in Halifax. The two pedestrians are elderly and relatively slow on their feet, both requiring walking sticks for mobility. It would appear that the vehicle (a fishmongers small van) had pulled into the car park and was in the process of reversing when the two pedestrians had passed behind his vehicle to cross to the far side completely obscured from any view. Nearby witnesses shouted for the van to stop, which it did immediately. Unfortunately the close proximity of the van to the male pedestrian has caused him to lose balance and fall against his wife and the couple have fallen to the floor sustaining minor injuries. All witnesses state that the van was reversing very slowly and that it stopped instantly when warnings were given.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Van/Goods < 3.5t	Reversing	E	W	Male	56	Negative	1	Pedestrian	SLIGHT	1	Male	89	South
								2	Pedestrian	SLIGHT	1	Female	90	South

Contributory Factors

Ped fail to judge vehicle path or speed C001 Possible Ped fail to judge vehicle path or speed C001 Possible Vehicle blind spot V001 V.likely

---

2410790 SLIGHT 01/04/2015 014:43 414453 /422956 Junction of A643 Ludenschied Link Brighouse and Church Lane

Vehicle 1 is emerging from a side road onto a dual carriageway via CHURCH LANE. The junction is give way controlled. As vehicle emerges into lane 1 of 2 a vehicle 2 is travelling towards BRIGHOUSE in lane 2. Vehicle 1 enters lane 2 and clips the rear of vehicle 2 causing it to spin. Vehicle 1 then collides with stone wall on nearside. Driver of vehicle 1 sustains minor injury to hand.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Change lane to right	N	E	Female	84	Negative	1	Driver/Rider	SLIGHT	1	Female	84	
2	Car	Going ahead other	W	E	Male	23	Negative							

Contributory Factors

Poor turn or manoeuvre	V001 V.likely	Failed to look properly	V001 V.likely

---

24Q0015 SLIGHT 26/04/2015 000:09 414264 /422901 Junction of A6025 Elland Road and A644 Halifax Road

The circumstances of this collision are as follows: Vehicle 1 - Skoda Octavia - contained two occupants. Vehicle 2 - Vauxhall Vectra (Taxi) - contained three occupants. Veh 1 is travelling along ELLAND ROAD, BRIGHOUSE towards BRIGHOUSE. As Veh 1 approaches the roundabout at the junction with HALIFAX ROAD the driver attempts to overtake a unconnected vehicle on the approach to the roundabout . Veh 1 clips the curb, continuing towards the roundabout, Veh 1 collides with the rear nearside of Veh 2, which is on the roundabout travelling towards HALIFAX ROAD. This causes Veh 2 to spin, Veh 1 continues to travel straight on mounting the raised roundabout which causes Veh 1 to flip over and roll, coming to a stop on the roundabout, the correct way up. The driver of veh 1 is arrested OPL. Fire and ambulance attend and the front seat passenger of veh 1 has to be extracted.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	O/T moving veh on its O/S	W	E	Male	25	Positive	1	Driver/Rider	SLIGHT	1	Male	25	
2	Taxi	Going ahead other	S	N	Male	34	Negative	2	Passenger	SLIGHT	1	Female	32	
								3	Driver/Rider	SLIGHT	2	Male	34	
								4	Passenger	SLIGHT	2	Female	32	

Contributory Factors

Impaired by alcohol	V001 V.likely

2691104 SERIOUS 09/06/2015 0017:10 414698 /422381 Junction of A641 Huddersfield Road, Brighouse and Aire Street, Brighouse

This is a 2 vehicle RTC involving a motor car and motor bike which has occurred on a busy main road in rush hour traffic, where Veh 1 (motor car) has started to enter the main road from a minor road intending to turn right towards Huddersfield. The main road at the time has queuing traffic on it, but the junction had been left clear for vehicles to turn right onto the minor road and for vehicles to turn right onto the main road. As Veh 1 begins to turn right, Veh 2 (motor bike) is overtaking the queuing traffic on the offside and approaching the minor junction to the nearside. Driver of Veh 1 fails to see Veh 2, as does the rider of Veh 2 which fails to see Veh1, with the 2 vehicles colliding, causing damage to both vehicles and injury to the rider of Veh 2 who is conveyed to Hudds Royal for treatment.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Overtaking on nearside	W	S	Male	21	Negative	1	Driver/Rider	SERIOUS	2	Female	24	
2	M/cycle 125 - 500cc	Going ahead other	S	N	Female	24	Not provided							

Contributory Factors

Poor turn or manoeuvre	V001 V.likely	Poor turn or manoeuvre	V002 V.likely	Disobey double white line	V002 V.likely
Stationary or parked vehicle	V002 V.likely				

2691337 SLIGHT 09/06/2015 0017:25 414637 /421842 A641 Huddersfield Road

V1 is a motor scooter, whilst filtering past a queue of stationary traffic, V2 a motor car has pulled out of line of traffic failing to see V1 and collided with him, causing damage to nearside. V1 stops but V2 fails to stop. Rider of V1 sustains minor injury to back having twisted in his seat.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle 50 - 125cc	O/T moving veh on its N/S	N	S	Male	42	Not contacted	1	Driver/Rider	SLIGHT	1	Male	42	
2	Car	Change lane to right	N	S	Male	34	Not contacted							

Contributory Factors

Poor turn or manoeuvre	V002 V.likely	Failed to look properly	V002 V.likely	Fail to judge other person path or speed	V002 Possible

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26P0592 SLIGHT 25/06/2015 0012:00 414282 /422918 Junction of A644 Halifax Road,brighouse and A643 Ludenschied Link,brighouse

This is a 2 vehicle RTC involving a motor car and motor bike where as the motor bike has approached a roundabout, slowing and stopping for other traffic, the motor car behind has failed to slow in time and collided with the rear wheel of the motor bike, pushing the bike forward and throwing the rider onto the road, where he sustained minor injury. The motor car fails to stop and turns left down the Ludenshceid Link and out of sight. Ambulance attend and treat rider for minor injury. Hospital treatment not required.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle 50 - 125cc	Wait go ahead, held up	N	S	Male	18	Negative	1	Driver/Rider	SLIGHT	1	Male	18	
2	Van/Goods < 3.5t	Going ahead other	N	S	Male	-1	Not contacted							

Contributory Factors

Poor turn or manoeuvre	V002 V.likely	Fail to judge other person path or speed	V002 V.likely

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2721434 SLIGHT 02/07/2015 0019:00 414270 /422902 Junction of A644 Halifax Road and A6025 Elland Road

V1 is a motor vehicle driven along A644 towards Hipperholme. V2 is a pedal cycle being ridden on the roundabout at the junction of the A644 and A6025. As V2 travels around the roundabout, V1 enters onto it and collides with V2. This causes the rider of V2 to fall to the floor causing minor injuries.

Vehicles		From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Starting	NW	SE	Male	28	Negative	1	Driver/Rider	SLIGHT	2	Male	35	
2 Pedal Cycle	Going ahead other	SW	NE	Male	35	Negative							

Contributory Factors

Failed to look properly V001 V.likely

2770190 SLIGHT 07/07/2015 0015:35 414567 /422996 Martin Street

V1 was being driven by casualty from the car park of St Joseph's Church Parish Hall, Casualty thought that she had set the hand brake and started to climb out of her vehicle. The vehicle rolled forwards a maximum of 6 feet and traps the casualty's leg between the drivers door and railings leading out of the car park. The casualty was trapped prior to being released by Fire Service. No other vehicle involved and appears to be driver error.

Vehicles		From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Stopping	W	E	Female	56	Negative	1	Driver/Rider	SLIGHT	1	Female	56	

Contributory Factors

Loss of control V001 V.likely

28F0769 FATAL 15/08/2015 0012:43 414681 /422250 80 Huddersfield Road Brighouse

Pedestrian is carrying out repairs to his own vehicle within his private garden he jacks the vehicle up and is laying under the nearside behind the front wheel, removing things from the underside. The vehicle begins to move of its own accord as male is still underneath working on it. It falls from the jack and drags him down the drive coming to rest with the front nearside wheel over his chest. The vehicle and pedestrian ends up in a public place outside of the garden. Paramedics work on him at scene and transport him via land Ambulance to HUDDERSFIELD ROYAL INFIRMARY, where he later dies from the injuries sustained.

Vehicles		From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Parked	P	P	Male	46	Not provided	1	Pedestrian	FATAL	1	Male	46	Unknown

Contributory Factors

Other V001 V.likely

28P0629 SLIGHT 25/08/2015 0012:20 414451 /422909 Gooder Street

Vehicle 1 is in a layby to the nearside of the main road after taking a wrong turn towards the bus station. Vehicle 1 then commences a U-turn but is struck by a bus entering the bus station. This causes minor injuries to both drivers.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	U Turn	W	W	Female	55	Negative	1	Driver/Rider	SLIGHT	1	Female	55	
2	Bus or Coach	Going ahead other	W	E	Male	58	Negative	2	Driver/Rider	SLIGHT	2	Male	58	
								3	Passenger	SLIGHT	2	Female	79	

Contributory Factors

Poor turn or manoeuvre V001 V.likely

2A11329 SLIGHT 01/10/2015 0018:30 414657 /422374 Aire Street

V001 travelling from Huddersfield Road along Aire Street toward drivers home address when C001 runs out into the road between two parked vehicles colliding with the nearside of V001.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Female	47	Not requested	1	Pedestrian	SLIGHT	1	Female	5	South

Contributory Factors

Pedestrian failed to look properly C001 V.likely Ped masked by stationary or parked vehicle C001 V.likely

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2BP0586 SLIGHT 25/11/2015 0011:45 414514 /422643 Junction of Mill Royd Street and A643 Briggate

V1 IS TRAVELLING ALONG MILL ROYD LANE BRIGHOUSE TOWARDS THE JUNCTION WITH BRIGGATE. IP IS CROSSING THE ROAD NEAR THE JUNCTION WITH BRIGGATE FROM RIGHT TO LEFT (OFFSIDE TO NEARSIDE) IP CLAIMS THAT V1 HAS MOUNTED THE KERB AND COLLIDED WITH HIM CAUSING INJURY BEFORE DRIVING OFF. . DRIVER OF V1 CLAIMS PEDESTRIAN HAS BANGED ON HIS WINGMIRROR.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	E	W	Male	61	Not contacted	1	Pedestrian	SLIGHT	1	Male	54	South

Contributory Factors

Fail to judge other person path or speed V001 Possible Ped fail to judge vehicle path or speed C001 Possible

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31R1164 SLIGHT 27/01/2016 0017:28 414410 /422648 Junction of Atlas Mill Road and Bridge Road

vehicle 1 turns right from Atlas Mill Road into Bridge Road heedless of motor cycle being driven on Bridge Road towards Daisy Street . Rider of vehicle 2 is knocked to ground causing minor injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Taxi	Turning right	W	S	Male	53	Not requested	1	Driver/Rider	SLIGHT	2	Male	27	
2	M/cycle 50 - 125cc	Stopping	S	N	Male	27	Not requested							

Contributory Factors

Failed to look properly V001 V.likely Poor turn or manoeuvre V001 V.likely

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31V0894 SLIGHT 31/01/2016 0014:55 414677 /422523 Junction of A641 Huddersfield Road and Cliffe Road

Birds Royd Lane and Gooder Lane form a crossroads with the A641 Huddersfield Road. Beyond that junction, when travelling towards Brighouse, Cliffe Road forms a junction to the left. Vehicle 1 was at a red light on Birds Royd Lane intending to turn right onto Huddersfield Road. Vehicle 2 was at a red light intending to turn left onto Huddersfield Road. When the light turned to green both vehicles have set off and vehicle 1 has tried to get across the front of vehicle 2. Seeing the car in his path the driver of vehicle 2 has sped up to try and avoid a collision. As a result the cars have come together int he centre of the road. As they have parted vehicle 2 has gone up Cliffe Road catching the wall to the nearside. Vehicle 1 has collided with a pedestrian that was crossing Cliffe Road at the junction with Huddersfield Road.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	E	N	Male	65	Negative	1	Pedestrian	SLIGHT	1	Female	16	South
2	Car	Turning left	W	N	Male	52	Negative							

Contributory Factors

Junction restart V001 V.likely

32Q0719 SLIGHT 26/02/2016 0013:40 414437 /422309 Junction of Gooder Lane, Brighouse and Green End, Brighouse

This is a 2 vehicle minor injury RTC which occurred on a busy unclassified road when Veh 1 travelling towards Brighouse approaches slight left hand bend with an unattended vehicle parked on the exit to the bend, when Veh 2 which was travelling in the opposite direction towards Rastrick, cuts bend slightly and collides O/S/F to O/S/F with Veh 1 pushing Veh 1. Extensive damage to both vehicles and minor injury to driver of Veh 1 who was conveyed to Hudds Royal for treatment.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead LHB	SW	NE	Male	33	Negative	1	Driver/Rider	SLIGHT	1	Male	33	
2	Car	Going ahead RHB	NE	SW	Male	32	Negative							

Contributory Factors

Poor turn or manoeuvre V002 V.likely Failed to look properly V002 V.likely

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32S0859 SLIGHT 28/02/2016 0013:45 414314 /422920 A643 Ludenscheid Link

THE COLLISION LOCATION IS THE LUDENSCHEID LINK AT BRIGHOUSE WHICH IS SHORT DUAL CARRIAGEWAY. ONLY ONE VEHICLE WAS INVOVLED WHICH WAS A MOTORCYCLE. THE CYCLIST WAS TRAVELLING IN LANE TWO APPROACHING THE ROUNDABOUT WITH HALIFAX ROAD WHEN HE HAS PUSHED WIDE HIT SOME GRAVEL WHICH CAUSED HIM TO SLIP AND HE HAS HIT THE CENTRAL RESERVE WHICH HAS UNBALANCED THE BIKE AND THE RIDER HAS BEEN UNSEATED, THE BIKE AND RIDER CONTINUING DOWN THE ROAD FOR A SHORT DISTANCE BEFORE COMING TO A HALT.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle > 500cc	Going ahead LHB	E	W	Male	51	Negative	1	Driver/Rider	SLIGHT	1	Male	51	

Contributory Factors

Deposit on road V001 V.likely

35G1178 SLIGHT 16/05/2016 0017:35 414680 /422496 Junction of A641 Huddersfield Road and Gooder Lane

V1 was driving from Gooder Lane, Brighouse with the intention of turning right up the A641 Huddersfield Road, V2 had travelled from Birds Royd Lane and intended on driving ahead onto Gooder Lane. V1 set of from a Green traffic signal towards the centre of the carriageway and started to turn right. V2 had overtaken a vehicle at the traffic lights coming from Birds Royd Lane that was turning right up the A641 Huddersfield Road. A collision then occurred mid junction that resulted in the motorcyclist fallen over the bonnet of V1. Minor graze to right shin of rider of V2. Extensive front end damage caused to V1. Minor damage caused to the front of the motorcycle. Driver V1 was unfamiliar with the road layout as a foreign national on holiday. Suitable for the insurance companies to deal. The weather was clear and dry with good visibility. Very busy with rush hour traffic.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	SW	S	Male	42	Negative	1	Driver/Rider	SLIGHT	2	Male	57	
2	M/cycle > 500cc	Going ahead other	E	SW	Male	57	Negative							

Contributory Factors

Failed to look properly V001 V.likely

35V1162 SLIGHT 31/05/2016 0017:50 414559 /422400 32 Gooder Lane Brighouse

This collision involves a Segway scooter and a motor vehicle. The motor vehicle travels along Gooder lane as the Segway emerges from between two buildings and has hit the side of the moving vehicle causing the Segway rider to dismount and as a result the rider has sustained minor injuries. All details were exchanged at the scene and the rider a 16 year old male attended Huddersfield Royal as a precaution.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	53	Negative	1	Pedestrian	SLIGHT	1	Male	16	North west

Contributory Factors

3C60820 SLIGHT 06/12/2016 0011:15 414582 /422894 Commercial Street, Brighouse

V001 is manoeuvring into a parking space. C001 is loading the boot of another vehicle and is clipped by the front bumper of V001. C001 approaches the driver of V001 and advises she made contact, and driver denied this and makes off.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Stopping		W	W	Female	-1	Not contacted	1	Pedestrian	SLIGHT	1	Female	82	Standing still

Contributory Factors

Failed to look properly V001 Possible

3C71349 SLIGHT 07/12/2016 0018:00 414582 /422900 Commercial Street

During a Police pursuit the suspect vehicle, V1, mounts the footpath to its nearside and then returns back onto the carriageway where it collides with V2 causing damage to V2 and minor injury to the driver.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Going ahead other		E	W	Not known	-1	Not contacted	1	Driver/Rider	SLIGHT	2	Female	38	
2 Car	Starting		E	W	Female	38	Not requested							

Contributory Factors

Stolen vehicle V001 V.likely

42O1331 SLIGHT 24/02/2017 0012:00 414536 /422885 Commercial Street

The pedestrian stepped behind a vehicle on Commercial Street whilst waiting to cross the road, in doing so the vehicle begins to reverse and collides with the left side of the pedestrian which makes her stumble. The vehicle stops, the pedestrian steps back onto the kerb, whereby vehicle then reverses again, mounts the kerb, with the driver putting her hand up (as though to acknowledge) and then drives off without stopping or exchanging details. The pedestrian was told by a witness that it was female driver, and only obtained an index of YT possibly a silver Ford Focus. As a result of the impact the pedestrian suffered a swollen left knee.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Reversing		S	N	Female	-1	Not contacted	1	Pedestrian	SLIGHT	1	Female	59	Standing still

Contributory Factors

44P1334 SLIGHT 25/04/2017 0017:05 415090 /422309 Birds Royd Lane

V1 is a private hire vehicle. V2 is unknown. The reporting person is a passenger who was in V1. It is alleged that V1 collided with the rear of an unknown vehicle, at slow speed whilst in queuing traffic, starting and stopping. Both drivers spoke with each other and I believe sorted the matter out. The passenger then went home, and later received treatment for whiplash type injuries and reported the matter to the police. She did try to obtain taxi details without success.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Taxi	Going ahead other	S	N	Male	34	Not contacted	1	Passenger	SLIGHT	1	Female	17	
2	Car	Stopping	S	N	Not known	-1	Not contacted							

Contributory Factors

Careless, reckless or in a hurry	V001 V.likely	Failed to look properly	V001 V.likely

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45A1355 SERIOUS 09/05/2017 0017:40 414289 /422914 Junction of A643 Elland Road Brighouse and A644 Halifax Road brighouse

v1 is a cyclist negotiating roundabout turning right from eland into Brighouse. V2 is a ford focus entering roundabout from Lludscheidlink. V2 fails to see cyclist and clips rear wheel as V2 sets off causing cyclist to fall from bike. Cyclist sustains fractured wrist

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Pedal Cycle	Change lane to left	W	S	Male	21	Not applicable	1	Driver/Rider	SERIOUS	1	Male	21	
2	Car	Going ahead other	E	N	Male	24	Negative							

Contributory Factors

Failed to look properly	V002 V.likely	Vehicle blind spot	V002 V.likely

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4A60240 SLIGHT 06/10/2017 0006:20 414274 /422895 Junction of A6025 Elland Road and A644 Halifax Road

VICTIM HAS BEEN COMING DOWN HALIFAX ROAD ON PEDAL CYCLE AND APPROACHED ROUNDABOUT, VICTIM HAS CYCLED TO TAKE 2ND EXIT AND AN UNKNOWN GREY VEHICLE HAS PULLED OUT AT THE ROUNDABOUT WHICH HAS CAUSE THE VICTIM TO COLLIDE INTO THE DRIVER'S SIDE OF THE VEHICLE. THIS HAS KNOCKED VICTIM OFF THE BIKE CAUSING SLIGHT INJURY TO BACK OF VICTIMS HEAD AND MINOR CUTS TO HIS LOWER BACK. VICTIM HAS BEEN TREATED BY THE AMBULANCE BEFORE PRE-CAUTION TAKEN TO HOSPITALS FOR THE SLIGHT HEAD INJURIES. NO CCTV FOOTAGE AVAILABLE FOR INCIDENT.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Not known	-1	Not contacted	1	Driver/Rider	SLIGHT	2	Male	49	
2	Pedal Cycle	Going ahead other	S	N	Male	49	Not contacted							

Contributory Factors

Fail to judge other person path or speed	V001 V.likely

4A60939 SLIGHT 06/10/2017 0014:18 414618 /421697 A641 Huddersfield Road

V1 was being driven up the A641 Huddersfield Road, Brighouse towards Huddersfield. The vehicle veers to the offside of the carriageway and mounts the kerb of a central pedestrian island. V1 collides with the railings and turns over onto its offside where it comes to rest in the centre of the carriageway. The railings were removed from the mountings and strewn across the carriageway. driver received only minor injury consisting of slight whiplash.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Female	87	Not provided	1	Driver/Rider	SLIGHT	1	Female	87	

Contributory Factors

Swerved V001 V.likely

4CC0638 SLIGHT 12/12/2017 0012:00 414676 /422044 Junction of A641 Huddersfield Road and Daisy Road

This collision involves two vehicles in which the occupants sustained minor injury.V2 is travelling on the main road away from the town centre when V1 emerges from a side road and into its path causing damage and injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	E	N	Female	83	Negative	1	Driver/Rider	SLIGHT	1	Female	83	
2	Car	Going ahead other	N	S	Female	29	Negative	2	Passenger	SLIGHT	1	Female	74	
								3	Driver/Rider	SLIGHT	2	Female	29	

Contributory Factors

Failed to look properly V001 V.likely

5140196 SLIGHT 04/01/2018 0005:51 414478 /422719 A643 Briggate

BOTH VEHICLES TRAVELLING IN OPPOSITE DIRECTIONS ON BRIGGATE, CROSSING OVER A SMALL HUM BACK BRIDGE. V1 VEERS INTO THE PATH OF THE ONCOMING V2 CAUSING A HEAD ON COLLISION.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Male	45	Negative	1	Driver/Rider	SLIGHT	2	Male	51	
2	Car	Going ahead other	S	N	Male	51	Negative							

Contributory Factors

Swerved V001 V.likely

51T0938 SLIGHT 29/01/2018 0014:00 414682 /422498 Junction of A641 Huddersfield Road and Birds Royds Avenue

P1 is crossing the main Huddersfield Road, Brighose towards Bird Royds Lane from Gooder Lane. V1 is an unknown motor cycle which is heading out of Bird Royds Lane and turning left in to Huddersfield Road out of Brighouse. As P1 crosses V1 collides with P1 and causes injury, the rider of V1 fails to stop and exchange details

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle 50 - 125cc	Turning left	SE	SW	Not known	-1	Not contacted	1	Pedestrian	SLIGHT	1	Female	28	South east

Contributory Factors

5251301 SLIGHT 05/02/2018 0015:57 414371 /422816 A643 Owler Ings Road, Brighouse

V2 WAS WAITING TO GIVE WAY FOR ONCOMING BUS. V1 TRAVELLING BEHIND V2 HAS FAILED TO SEE V1 STOPPED IN THE CARRIAGEWAY AND COLLIDED WITH THE REAR OF V2 CAUSING DAMAGE AND SLIGHT INJURY. V1 MADE OFF WITHOUT EXCHANGING DETAILS.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	SE	NW	Not known	-1	Not contacted	1	Driver/Rider	SLIGHT	2	Female	49	
2	Car	Wait go ahead, held up	SE	NW	Female	49	Negative							

Contributory Factors

Fail to judge other person path or speed	V001 V.likely				

5611735 SLIGHT 01/06/2018 0000:00 414352 /422842 Junction of A643 Halifax Road and Gooder Street

This collision was reported over the phone and allocated to the RPU West mailbox therefore there was no police attendance. The collision has occurred between a motor vehicle and a pedal cyclist on a mini roundabout. V1 is travelling on the A643 Halifax Road aware from Brighouse when it approaches the mini roundabout, this has only one lane. As V1 enters the mini roundabout a cyclist collides with V1's front nearside wheel arch which causes the cyclist to fall to the ground. This causes minor damage to V1's wheel arch and damage to the pedal cycle. The cyclist receives minor injuries to his legs by the means of grazing. Both parties exchange details, there are no witnesses, no CCTV or Dash Cam footage available.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Starting	SE	NW	Male	69	Not requested	1	Driver/Rider	SLIGHT	2	Male	54	
2	Pedal Cycle	Starting	SE	NW	Male	54	Not requested							

Contributory Factors

Failed to look properly	V001 Possible	Fail to judge other person path or speed	V001 Possible	Passing too close	V001 Possible
Careless, reckless or in a hurry	V002 Possible	Failed to look properly	V002 Possible	Fail to judge other person path or speed	V002 Possible

58M1993 SLIGHT 22/08/2018 0Ø1:36 414613 /421684 A641 Huddersfield Road

Vehicle 1 is exiting a driveway onto a main road, the view of the road being blocked by a parked van. Vehicle 2 is travelling along the main road and collides with the front of vehicle 1. Both parties suffer minor injuries.

Vehicles			From	To	Driver		Breath Test
1	Car	Starting	W	E	Female	40	Not requested
2	Car	Going ahead other	S	N	Male	76	Not requested

Casualties			Veh	Sex	Age	Ped direction to
1	Driver/Rider	SLIGHT	1	Female	40	
2	Driver/Rider	SLIGHT	2	Male	76	
3	Passenger	SLIGHT	2	Female	80	

Contributory Factors

Failed to look properly V001 V.likely

Stationary or parked vehicle V001 V.likely

RTC in the vicinity of Daisy Rd, Calderdale, 5 years prior to 07.04.2019

ACCIDENT SEVERITY UPTO 2019

		2014	2015	2016	2017	2018	2019	Total
Fatal	3%	0	1	0	0	0	0	**1**
Serious	6%	0	1	0	1	0	0	**2**
Slight	92%	6	9	8	5	5	0	**33**
TOTAL		**6**	**11**	**8**	**6**	**5**	**0**	**36**

WEATHER

	No.	%
Fine	30	83
Rain	3	8
Fine Wind	1	3
Rain Wind	1	3
Unknown	1	3
TOTAL	**36**	

ROAD SURFACE

	Number	%
Dry	28	78
Wet	8	22
TOTAL	**36**	

LIGHT CONDITIONS

	Number	%
Light	27	75
Dark	9	25
TOTAL	**36**	

PEDESTRIAN ACCIDENTS	**No.**	**%**
	9	25

SKIDDING ACCIDENTS	**No.**	**%**
	4	11

ACCIDENTS BY DAY AND TIME

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
00.00 - 00:59	1	0	0	0	0	1	0	**2**
01:00 - 01:59	0	0	0	0	0	0	0	**0**
02:00 - 02:59	0	0	0	0	0	0	0	**0**
03:00 - 03:59	0	0	0	0	0	0	0	**0**
04:00 - 04:59	0	0	0	0	0	0	0	**0**
05:00 - 05:59	0	0	0	0	1	0	0	**1**
06:00 - 06:59	0	0	0	0	0	1	0	**1**
07:00 - 07:59	0	0	0	0	0	0	0	**0**
08:00 - 08:59	0	0	0	0	0	0	0	**0**
09:00 - 09:59	0	0	0	0	0	0	0	**0**
10:00 - 10:59	0	0	0	0	0	0	0	**0**
11:00 - 11:59	0	0	1	1	0	0	0	**2**
12:00 - 12:59	0	0	2	1	1	1	1	**6**
13:00 - 13:59	1	0	0	0	0	1	0	**2**
14:00 - 14:59	1	1	0	1	0	1	0	**4**
15:00 - 15:59	0	1	1	0	0	0	0	**2**
16:00 - 16:59	0	1	0	0	1	0	0	**2**
17:00 - 17:59	0	1	6	1	0	0	0	**8**
18:00 - 18:59	0	0	1	1	1	0	0	**3**
19:00 - 19:59	0	0	0	0	1	0	0	**1**
20:00 - 20:59	0	0	0	0	0	1	0	**1**
21:00 - 21:59	0	0	0	1	0	0	0	**1**
22:00 - 22:59	0	0	0	0	0	0	0	**0**
23:00 - 23:59	0	0	0	0	0	0	0	**0**
TOTAL	**3**	**4**	**11**	**6**	**5**	**6**	**1**	**36**
%	8%	11%	31%	17%	14%	17%	3%	100%

ACCIDENTS BY MONTH AND YEAR UPTO 2019

	2014	2015	2016	2017	2018	2019	Total
Jan	0	0	2	0	2	0	**4**
Feb	0	0	2	1	1	0	**4**
Mar	0	0	0	0	0	0	**0**
Apr	1	2	0	1	0	0	**4**
May	1	0	2	1	0	0	**4**
June	0	3	0	0	1	0	**4**
July	1	2	0	0	0	0	**3**
Aug	0	2	0	0	1	0	**3**
Sep	0	0	0	0	0	0	**0**
Oct	1	1	0	2	0	0	**4**
Nov	2	1	0	0	0	0	**3**
Dec	0	0	2	1	0	0	**3**
TOTAL	**6**	**11**	**8**	**6**	**5**	**0**	**36**
%	17%	31%	22%	17%	14%	0%	100%

RTC in the vicinity of Daisy Rd, Calderdale, 5 years prior to 07.04.2019

CASUALTY SEVERITY UPTO 2019

	2014	2015	2016	2017	2018	2019	Total
Fatal	0	1	0	0	0	0	**1**
Serious	0	1	0	1	0	0	**2**
Slight	8	14	8	7	7	0	**44**
TOTAL	**8**	**16**	**8**	**8**	**7**	**0**	**47**

JUNCTION DETAIL

	Number	%
Roundabout and mini	8	22
T or staggered	6	17
Cross roads	3	8
Other junction	1	3
Not at junction	18	50
TOTAL	**36**	

JUNCTION CONTROLS

	Number	%
ATS	4	11
Give way sign	14	39
Not at junction	18	50
TOTAL	**36**	

CASUALTIES BY TYPE AND AGE GROUPING

	0 to 4	5 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Total	%
Pedestrian	0	1	2	1	3	3	**10**	21
Pedal cyclist	0	0	0	1	4	0	**5**	11
PTW rider	0	0	1	3	4	0	**8**	17
Car driver	0	0	0	2	8	5	**15**	32
Car passenger	0	0	0	0	1	3	**4**	9
PSV driver	0	0	0	0	1	0	**1**	2
PSV passenger	0	0	0	0	0	1	**1**	2
Hack/pri driver	0	0	0	0	1	0	**1**	2
Hack/pri pass	0	0	1	0	1	0	**2**	4
TOTAL	**0**	**1**	**4**	**7**	**23**	**12**	**47**	
%	0	2	9	15	49	26		

Number of Casualties with unknown age: 0

SPEED LIMIT

	Number	%
20 MPH	3	8
30 MPH	32	89
40 MPH	1	3
TOTAL	**36**	

ROAD CLASS

	Number	%
A	20	100
TOTAL	**20**	

VEHICLES INVOLVED BY TYPE AND AGE OF DRIVER

	0 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Unknown	Total	%
Pedal Cycle	0	0	1	4	0	0	**5**	8
PTW	0	1	3	4	0	1	**9**	15
Car	0	0	7	18	8	6	**39**	64
PSV	0	0	0	1	0	0	**1**	2
Goods < 3.5T	0	0	0	1	0	2	**3**	5
Hackney/Private	0	0	0	3	0	0	**3**	5
Other/Unknown	0	0	0	0	0	1	**1**	2
TOTAL	**0**	**1**	**11**	**31**	**8**	**10**	**61**	
%	0	2	18	51	13	16		

VEHICLE MANOEUVRES

	Number	%
Reversing	3	5
Parked	1	2
Waiting to go ahead but held up	3	5
Stopping	4	7
Starting	5	8
U turn	1	2
Turning left	2	3
Turning right	4	7
Changing lane to left	1	2
Changing lane to right	2	3
Overtaking moving veh on its offside	1	2
Overtaking moving veh on its nearside	1	2
Overtaking on nearside	1	2
Going ahead left hand bend	2	3
Going ahead right hand bend	1	2
Going ahead other	29	48
TOTAL	**61**	

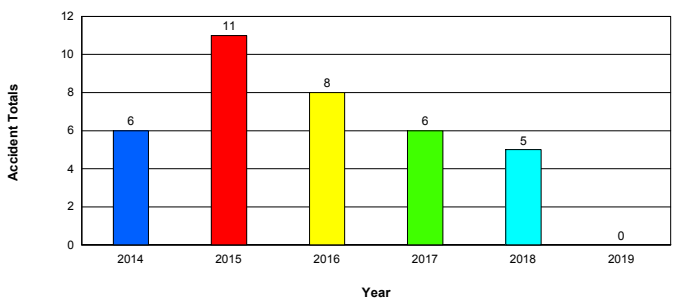
BREATH TEST

	Number	%
Not applicable	2	3
Positive	1	2
Negative	27	44
Not requested	9	15
Driver not contacted	19	31
Medical reasons	3	5
TOTAL	**61**	

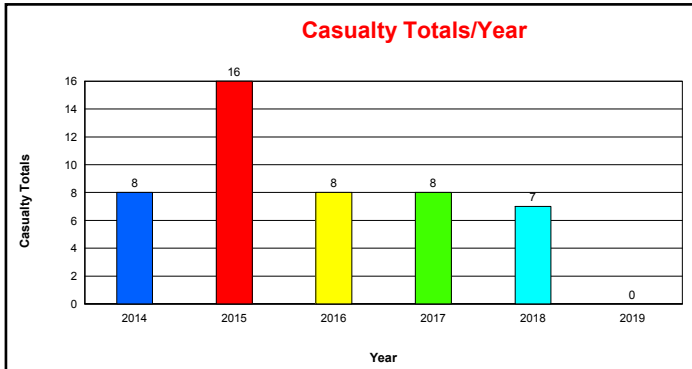
RTC in the vicinity of Daisy Rd, Calderdale, 5 years prior to 07.04.2019

Accident Date BETWEEN '08-Apr-2014' AND '07-Apr-2019'

Accident Totals/Year

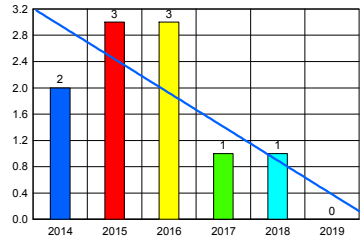


Casualty Totals/Year

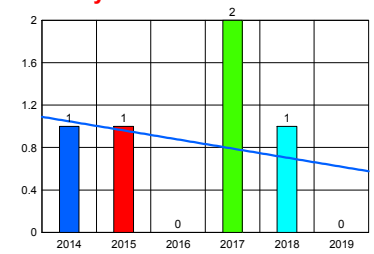


Casualty Data

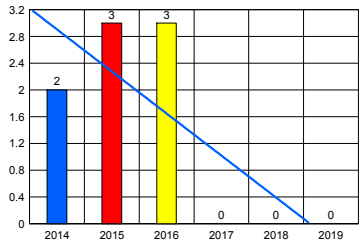
Pedestrians



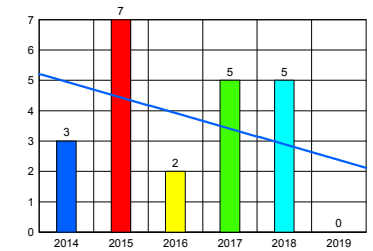
Pedal Cyclists



Motor Cyclists



Car Occupants



Acc	2014	2015	2016	2017	2018	2019	Total
Fatal	0	1	0	0	0	0	1
Serious	0	1	0	1	0	0	2
Slight	6	9	8	5	5	0	33
Damage	0	0	0	0	0	0	0
Total	6	11	8	6	5	0	36

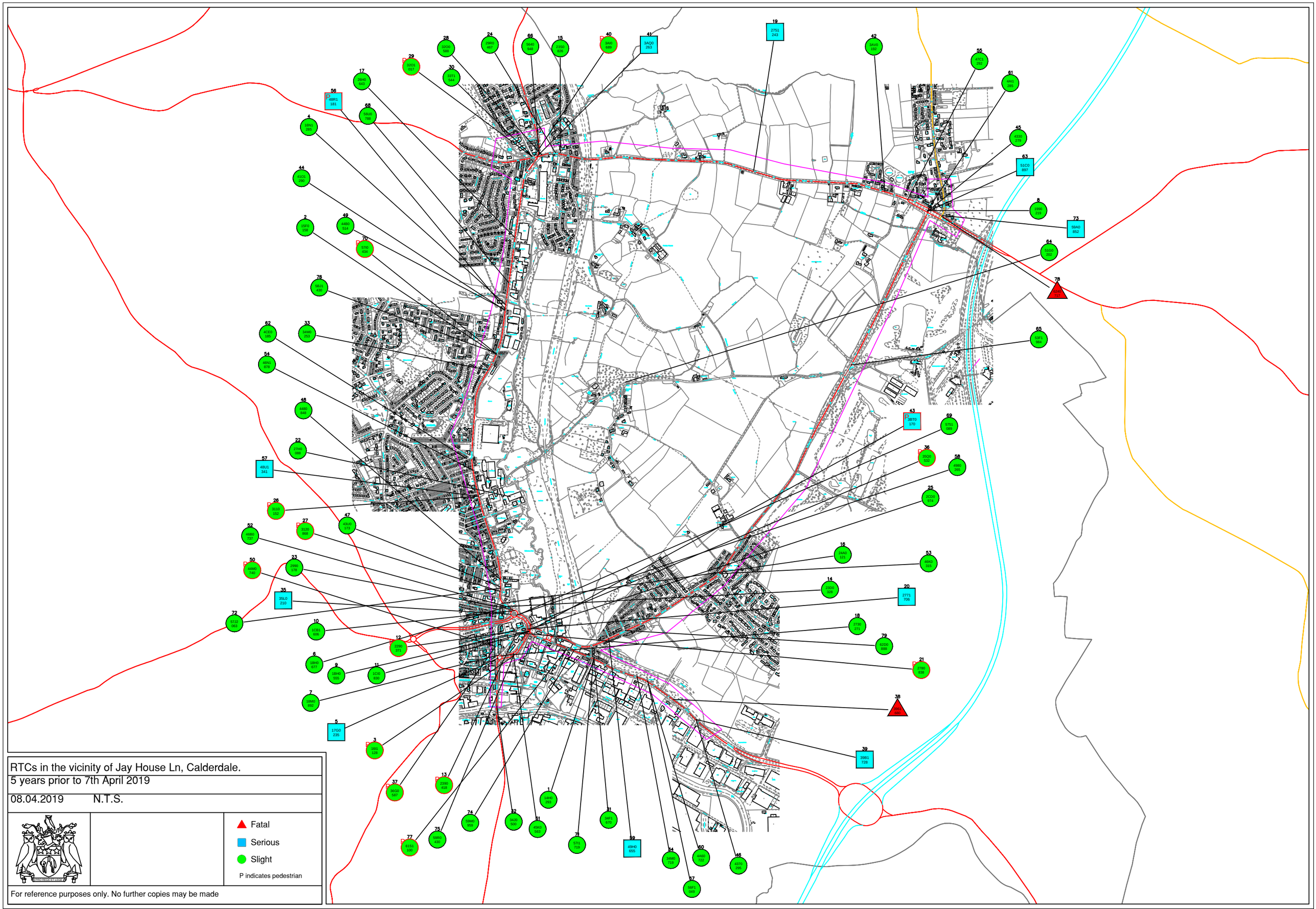
Cas	2014	2015	2016	2017	2018	2019	Total
Fatal	0	1	0	0	0	0	1
Serious	0	1	0	1	0	0	2
Slight	8	14	8	7	7	0	44
Total	8	16	8	8	7	0	47

RTC in the vicinity of Daisy Rd, Calderdale, 5 years prior to 07.04.2019

Accident Date BETWEEN '08-Apr-2014' AND '07-Apr-2019'

		PEDESTRIANS	PEDAL CYCLIST	PTW USER	HACKNEY PRI/HIRE	CAR DRIVER	CAR PASS	GOODS OCCUPANT	PSV	OTHER VEH OCCUPANT	TOTAL
0 to 4	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	0	0	0	0	0	**0**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5 to 15	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	1	0	0	0	0	0	0	0	0	**1**
	TOTAL	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
16 to 19	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	2	0	1	1	0	0	0	0	0	**4**
	TOTAL	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**4**
20 to 29	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	1	1	0	0	0	0	0	0	**2**
	Slight	1	0	2	0	2	0	0	0	0	**5**
	TOTAL	**1**	**1**	**3**	**0**	**2**	**0**	**0**	**0**	**0**	**7**
30 to 59	Fatal	1	0	0	0	0	0	0	0	0	**1**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	2	4	4	2	8	1	0	1	0	**22**
	TOTAL	**3**	**4**	**4**	**2**	**8**	**1**	**0**	**1**	**0**	**23**
60+	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	3	0	0	0	5	3	0	1	0	**12**
	TOTAL	**3**	**0**	**0**	**0**	**5**	**3**	**0**	**1**	**0**	**12**
All Ages	Fatal	1	0	0	0	0	0	0	0	0	**1**
	Serious	0	1	1	0	0	0	0	0	0	**2**
	Slight	9	4	7	3	15	4	0	2	0	**44**
	TOTAL	**10**	**5**	**8**	**3**	**15**	**4**	**0**	**2**	**0**	**47**

Number of Casualties with unknown age: 0



RTCs in the vicinity of Jay House Ln, Calderdale.

5 years prior to 7th April 2019

08.04.2019 N.T.S.

Fatal

Serious

Slight

P indicates pedestrian

For reference purposes only. No further copies may be made

14H0293 SLIGHT 17/04/2014 008:45 415132 /422811 Junction of A644 Wakefield Road and George Street

VEHICLE 1, A MOTORCYCLE IS TRAVELLING ALONG MAIN ROAD TOWARDS BRIGHOUSE TOWN CENTRE. VEHICLE 2, A RECOVERY TRUCK IS TRAVELLING OUT OF BRIGHOUSE AND STOPS AT JUNCTION WITH GEORGE STREET ON THE OFFSIDE INTENDING TO TURN INTO THIS ROAD. AS VEHICLE 2 TURNS, DRIVER SEES VEHICLE AND STOPS DEAD, VEHICLE 1 BRAKES BUT COLLIDES WITH FRONT OF VEHICLE 2. RIDER COMES OFF BIKE AND SUFFERS MINOR LEG INJURIES.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle > 500cc	Going ahead other	SE	NW	Male	22	Negative	1	Driver/Rider	SLIGHT	1	Male	22	
2	Goods 3.5 - 7.5t	Turning right	NW	SW	Male	51	Negative							

Contributory Factors

Poor turn or manoeuvre	V002 Possible	Failed to look properly	V002 Possible	Exceeding speed limit	V001 V.likely

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15F0158 SLIGHT 15/05/2014 004:30 414675 /424233 A641 Bradford Road, Brighouse

V1 a stolen vehicle is travelling at speed along Bradford Road towards Brighouse and apparently in company with V2 which appears to be racing V1, rider of V3 travelling towards the oncoming vehicles witnesses V2 overtaking V1 on his side of the carriageway, has to brake and this causes rider to fall off his cycle and sustain slight injury to his left knee and grazes to both hands. During this overtake V1 looses control and collides with a wall on the offside which spins the vehicle causing it to collide with aV4 a parked vehicle on the nearside. V2 (no details) makes off from scene.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Not known	-1	Not contacted	1	Driver/Rider	SLIGHT	3	Male	70	
2	Car	O/T moving veh on its O/S	N	S	Not known	-1	Not contacted							
3	Pedal Cycle	Going ahead other	S	N	Male	70	Not requested							
4	Car	Parked	P	P	Male	-1	Not requested							

Contributory Factors

Stolen vehicle	V001 V.likely	Loss of control	V001 V.likely	Careless, reckless or in a hurry	V002 Possible

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16I1128 SLIGHT 18/06/2014 016:32 414755 /422822 Junction of A641 Huddersfield Road and Mill Lane

V001 was exiting from Sainsbury carpark along Mill lane and was joining Huddersfield road dual carriageway the driver stated she looked to the left saw it was clear looked to the right and set off. C001 was walking along Huddersfield road towards the Tesco roundabout and decided to cross in front of V001. V001 bowled C001 over causing no damage to the car and stopped. C001 fell to the ground in front of V001 and suffered bruising and grazes to his left shoulder knee and hand. He was conveyed to Calderdale hospital purely as a precaution as he is diabetic.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Waiting to turn left	S	NW	Female	53	Negative	1	Pedestrian	SLIGHT	1	Male	44	South east

Contributory Factors

Ped fail to judge vehicle path or speed	C001 V.likely	Pedestrian failed to look properly	C001 V.likely	Failed to look properly	V001 V.likely

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16N1285 SLIGHT 23/06/2014 0016:23 414716 /424469 Junction of A641 Bradford Road and Unnamed

V1 IS WAITING TO RIGHT OUT OF THE GIVE WAY ENTRANCE TO MCDONALDS. V2 IS A MOTORCYCLE TRAVELLING OUT OF BRIGHOUSE, WHEN IT OVERTAKES A TURNING VEHICLE AT THE MCDONALDS JUNCTION. V1 FAILS TO SEE AS IT PULLS OUT V2 AND THEY COLLIDE, CAUSING INJURY TO THE RIDER.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	W	S	Male	49	Negative	1	Driver/Rider	SLIGHT	2	Male	40	
2	M/cycle > 500cc	Going ahead other	S	N	Male	40	Negative							

Contributory Factors

Failed to look properly V001 Possible Poor turn or manoeuvre V002 Possible

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17G0235 SERIOUS 16/07/2014 0007:38 414682 /422812 Junction of A641 Huddersfield Road and Bethel Street

Vehicle 1 is a Peugeot 206 who travelled along Huddersfield Road on approach to the roundabout in the centre of Brighouse with Bethel Street/Huddersfield Road. Vehicle 2 is a pedal cyclist who was travelling along Huddersfield Road approaching the roundabout, having right of way and approaching vehicle 1 to the riders nearside. Vehicle 1 whilst at the give way markings of the roundabout failed to see the oncoming cyclist to her offside, pulled out directly in font of the cyclists path whereby the cyclist struck the car causing the rider to hit the front windscreen, going onto the bonnet and then onto the road surface. As a result of the impact the cyclist has a suspected fracture to her lower left leg.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	N	Female	32	Negative	1	Driver/Rider	SERIOUS	2	Female	51	
2	Pedal Cycle	Going ahead other	E	W	Female	51	Not applicable							

Contributory Factors

Careless, reckless or in a hurry V001 V.likely Failed to look properly V001 V.likely

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18H0677 SLIGHT 17/08/2014 0012:00 414723 /423053 Junction of A641 Bradford Road and Water Lane

V2 is a pedal cycle and is travelling along Bradford Road, Brighouse - away from the town centre. Water lane is to the nearside. V1 pulls out from Water Lane and collides with V2 knocking rider onto the road. Minor injury sustained

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	S	N	Male	46	Negative	1	Driver/Rider	SLIGHT	2	Male	82	
2	Pedal Cycle	Going ahead other	SE	NW	Male	82	Not provided							

Contributory Factors

Failed to look properly V001 Possible

18M0892 SLIGHT 22/08/2014 008:00 414687 /422827 Junction of A641 Huddersfield Road and lawson road

V1 is a Ford Focus motor vehicle travelling along Lawson Road and waiting to enter the roundabout which forms the junction with Huddersfield Road. V2 is a motorcycle travelling along Huddersfield Road. V1 fails to see V2 and pulls out. V1 brakes, swerves but the rider falls off sustaining injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Starting	NW	NE	Male	70	Not contacted	1	Driver/Rider	SLIGHT	2	Male	31	
2	M/cycle 50 - 125cc	Going ahead RHB	S	NE	Male	31	Not contacted							

Contributory Factors

Junction restart	V001 V.likely	Failed to look properly	V001 V.likely

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1990219 SLIGHT 09/09/2014 007:30 416705 /424908 Junction of A643 Halifax Road and A649 Walton Lane

V2 was travelling up Halifax Road on a dual carriageway behind a 4x4 vehicle with the junction of Walton Lane on his offside. V1 was waiting to turn right on Halifax Road in the central reservation having just pulled out of Walton Lane. V1 pulled out into the path of V2 causing it to collide with the front nearside of V1 damaging the wing and ripping off the front bumper. The rider of V2 sustains injuries to his right knee and left leg. `

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	SW	SE	Female	60	Negative	1	Driver/Rider	SLIGHT	2	Male	53	
2	M/cycle > 500cc	Going ahead other	NW	SE	Male	53	Negative							

Contributory Factors

Failed to look properly	V001 V.likely	Junction restart	V001 V.likely

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1BH0555 SLIGHT 17/11/2014 012:05 414827 /422939 Junction of A644 Wakefield Road and A641 Huddersfield Road

6222 Reports V1 is travelling along HUDDERSFIELD ROAD from TESCOS towards the M62. V2 is travelling along WAKEFILED ROAD from the M62 towards TESCOS. The junctions of HUDDERSFEILD ROAD and WAKEFILED ROAD is controlled by Automatic Traffic Signals. Driver of V1 has progressed through a red traffic light and collided with V2 which has enter the junction travelling through a green traffic light. Minor injuries sustained to the occupants of the camper van.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Male	78	Not requested	1	Passenger	SLIGHT	2	Female	36	
2	Car	Going ahead other	E	W	Male	63	Not requested	2	Driver/Rider	SLIGHT	1	Male	78	

Contributory Factors

Disobeyed ATS	V001 V.likely

1CB1606 SLIGHT 11/12/2014 0213:11 414761 /423035 Junction of A641 Huddersfield Road and A641 Bradford Road

Vehicle 1 is a Peugeot 106 in green. Vehicle 2 is an Audi A3. At time and date shown. Vehicle 2 was on the roundabout junction of HUDDERSFIELD ROAD, BRADFORD ROAD and the entrance/exit to Tesco's supermarket. Vehicle 2, whilst negotiating the said roundabout, is about to exit the roundabout turning left into the entrance of Tesco's supermarket. It was at this point when Vehicle 1 is being driven along Bradford Road towards Huddersfield. Vehicle 1 then enters the roundabout without stopping or giving way. This results in the front of Vehicle 1 colliding with the nearside of Vehicle 2. As a result of this collision the driver of Vehicle 1 sustains minor pains to his chest and his vehicle sustains extensive front end damage. Vehicle 1 sustains extensive nearside damage and the driver sustains back pain. It was raining heavily at the time and the roads were extremely wet.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NW	SE	Male	46	Negative	1	Driver/Rider	SLIGHT	1	Male	46	
2	Car	Turning left	SW	NE	Female	29	Negative	2	Driver/Rider	SLIGHT	2	Female	29	

Contributory Factors

Disobey Give Way or Stop sign or marking V001 V.likely Too fast for conditions V001 V.likely

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1CI0830 SLIGHT 18/12/2014 0013:45 414827 /422936 Junction of A641 Huddersfield Road and A644 Wakefield Road

V1 is travelling along Wakefield Road towards the junction with Huddersfield Road. V2 is travelling along Huddersfield Road, passing Wakefield Road to the nearside. The traffic lights at this junction were out and signs had been placed on the traffic lights alerting drivers to this. V1 has passed through the junction onto Huddersfield Road and into the path of V2. V2 has been unable to stop and collided with front offside of V1. Minor injuries are sustained.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	E	N	Female	57	Negative	1	Driver/Rider	SLIGHT	1	Female	57	
2	Car	Going ahead other	N	S	Female	24	Negative	2	Driver/Rider	SLIGHT	2	Female	24	

Contributory Factors

Failed to look properly V001 Possible

2290371 SLIGHT 09/02/2015 0010:05 414770 /422939 Junction of Lawson Street and King Street

Lawson Street, Brighouse is single carriageway with an opposing lane. King Street is a single carriageway, one way street. V1 is on King Street at the junction with Lawson St turning right. Vehicle moves off hitting the pedestrian knocking him to the ground causing injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	W	S	Male	65	Negative	1	Pedestrian	SLIGHT	1	Male	85	East

Contributory Factors

2390418 SLIGHT 09/03/2015 009:40 414768 /422928 Junction of Lawson Road and King Street

V1 turns right from King St into Lawson Road, which is a single carriageway road in either direction. vehicle enters opposite lane and fails to see elderly pedestrian crossing road. pedestrian falls onto bonnet of car and then falls sideways onto road. Minor injuries sustained to IP consisting of bruise to hand, shock and dizziness. Driver of vehicle stopped at scene and exchanged name and reg number, then reported to police.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	E	Male	-1	Not contacted	1	Pedestrian	SLIGHT	1	Female	70	North west

Contributory Factors

Failed to look properly	V001 V.likely	Wrong use of pedestrian crossing facility	C001 V.likely

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23D0328 SLIGHT 13/03/2015 008:55 414729 /423054 Junction of A641 Bradford Road and Water Street

V1 TRAVELLING ALONG A641 BRADFORD ROAD, BRIGHOUSE TOWARDS TOWN CENTRE AT JUNCTION WITH WATER STREET. V1 STOPPED IN SLOW MOVING TRAFFIC WHEN V2 COLLIDES WITH REAR OF V1. BOTH VEHICLES MOVE ONTO TESCO FILLING STATION FORECOURT AND EXAMINE VEHICLES. AT TIME NO DAMAGE SUSPECTED AND V2 LEAVES SCENE WITHOUT ANY EXCHANGE OF DETAILS. MINOR DAMAGE TO V1 AND MINOR INJURY TO PASSENGER OF V1 LATER DISCOVERED.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NW	SE	Female	32	Not contacted	1	Passenger	SLIGHT	1	Female	10	
2	Car	Going ahead other	NW	SE	Female	-1	Not contacted							

Contributory Factors

Failed to look properly	V002 V.likely

23S0826 SLIGHT 28/03/2015 013:52 414974 /425179 A649 Birkby Lane

Outstanding stolen vehicle for roads policing unit fails to stop for Police. Vehicle is driven Dangerously passing through red light, wrong side of road into face of oncoming vehicles. The vehicle is boxed in using TPAC techniques whereby two Police Officers received slight injuries as a result of vehicle stop.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	40	Negative	1	Driver/Rider	SLIGHT	2	Male	40	
2	Car	Going ahead other	W	E	Male	40	Negative	2	Driver/Rider	SLIGHT	3	Male	40	
3	Car	O/T moving veh on its O/S	W	E	Male	40	Negative							

Contributory Factors

Stolen vehicle	V001 V.likely

24A0121 SLIGHT 10/04/2015 002:55 414700 /423069 Junction of A641 Bradford Road, Brighouse and Bradford Road, Brighouse

This is a single vehicle RTC with 4 minor casualties who were all inside Veh 1 at the time of the collision, where Veh 1 whilst travelling along main road from the direction of Bailiff Bridge towards Brighouse Town Centre has failed to negotiate a left hand bend, crossed the carriageway and collided with an electricity sub station, causing substantial damage to the vehicle and sub station. Occupants of the vehicle then walk away from scene. Area search is made and the owner of the vehicle located. She denies being the driver at the time, but is arrested after providing a positive roadside breath test (all 3 other occupants state owner was driving at time of collision).

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning left	N	SE	Female	25	Positive	1	Driver/Rider	SLIGHT	1	Female	25	
								2	Passenger	SLIGHT	1	Male	23	
								3	Passenger	SLIGHT	1	Male	23	
								4	Passenger	SLIGHT	1	Female	24	

Contributory Factors

Impaired by alcohol V001 V.likely

26H0643 SLIGHT 17/06/2015 012:52 414762 /424781 Junction of A641 Bradford Road and Summerfield Avenue

Vehicle 1 Skoda Rapid Vehicle 2 VW Tourag Vehicle 1 emerging from Summerfield Avenue in to Bradford Road intending to turn right towards Brighouse. Vehicle 2 travelling Bradford Road from Brighouse towards Bradford. Vehicle 1 pauses in centre of carriageway to afford driver view beyond parked vehicle to nearside on Bradford Road. Driver moves forward and is struck by vehicle 2. Damage to offside of V1, damage to front V2. Minor injuries to both drivers.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	E	Female	25	Negative	1	Driver/Rider	SLIGHT	1	Female	25	
2	Car	Going ahead other	E	W	Female	52	Negative	2	Driver/Rider	SLIGHT	2	Female	52	

Contributory Factors

Stationary or parked vehicle V001 V.likely

2730271 SLIGHT 03/07/2015 007:05 414696 /422824 Junction of A641 Huddersfield Rd and Lawson Rd

V1 waiting to pull out of Lawson Rd onto Huddersfield Rd, believing it to be clear V1 pulled out but clipped V2 which is a motorbike resulting in minor injury to rider of V2.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Starting	NW	SE	Female	46	Negative	1	Driver/Rider	SLIGHT	2	Female	21	
2	M/cycle 125 - 500cc	Going ahead other	S	NE	Female	21	Negative							

Contributory Factors

Failed to look properly V001 V.likely

2751243 SERIOUS 05/07/2015 0017:55 415880 /425096 A649 Birkby Lane

TWO VEHICLE RTC - V1 AND V2 WERE BOTH TRAVELLING IN THE SAME DIRECTION TOWARDS SCHOLES, V1 HAD SLOWED AND V2 HAD BEGUN TO OVERTAKE TO THE OFFSIDE WHEN V1 TURNED RIGHT INTO THE PATH OF V2, WHICH GAVE THE DRIVER OF V2 NO REALISTIC OPPORTUNITY TO TAKE AVOIDING ACTION. THE FRONT OF V2 COLLIDED WITH THE DRIVERS DOOR AREA OF V1 WHICH CAUSED EXTENSIVE DAMAGE TO BOTH VEHICLES, BOTH VEHICLES CONTINUED INTO THE OPPOSING CARRIAGEWAY AND CAME TO REST ON THE GRASSED VERGE, SERIOUS INJURIES TO FRONT SEAT PASSENGER OF V2.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	W	E	Female	44	Negative	1	Passenger	SERIOUS	2	Female	51	
2	Car	O/T moving veh on its O/S	W	E	Male	62	Negative	2	Driver/Rider	SLIGHT	2	Male	62	
								3	Driver/Rider	SLIGHT	1	Female	44	

Contributory Factors

Poor turn or manoeuvre	V001 V.likely	Failed to look properly	V001 V.likely

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2771706 SERIOUS 07/07/2015 0022:30 414821 /422949 Junction of A641 Huddersfield Road and A644 Wakefield Road

This incident took place at a automated traffic light controlled junction. V1 was travelling on Huddersfield Road from the direction of Bradford and would pass right to left in front of V2 which was negotiating a junction to the near side of V1. Both roads are controlled by traffic lights. Both drivers have approached the lights and claim to have a green light to carry on. Both vehicles collide causing damage and injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Female	48	Negative	1	Driver/Rider	SERIOUS	1	Female	48	
2	Car	Going ahead other	E	NW	Male	33	Negative	2	Passenger	SERIOUS	1	Male	30	
								3	Driver/Rider	SERIOUS	2	Male	33	

Contributory Factors

2780838 SLIGHT 08/07/2015 0000:00 414767 /422932 lawson road, brighouse

The casualty is a juvenile pedestrian who was with her mother, they had walked from the doctor's surgery into Lawson Road. V1 had travelled up King Street, Brighouse, the driver turned right into Lawson Road where the casualty walked into the path of V1. V1 collided at very slow speed with the casualty. The casualty did not fall over but stumbled. Injury consists of a minor injury to right thigh. No blame to driver V1.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	NE	SW	Female	84	Negative	1	Pedestrian	SLIGHT	1	Female	14	North west

Contributory Factors

Pedestrian failed to look properly	C001 V.likely

27H0088 SLIGHT 17/07/2015 001:00 414741 /423568 A652 Bradford Road

Vehicle 1 was travelling along Bradford Road in the direction of Dewsbury, vehicle 2 is stationary at the time at the taxi rank outside Brooklands Bar waiting for a fare, he stated that he had his side lights on at the time of being stationary. Whilst vehicle 1 was travelling in the direction of Dewsbury, vehicle 1 has collided with vehicle 2 colliding with the rear of vehicle 2 causing vehicle 2 to move forward into road junction. Driver of vehicle 2 is taken to Pinderfields Hospital.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	37	Not requested	1	Driver/Rider	SLIGHT	2	Male	62	
2	Taxi	Parked	P	P	Male	62	Not requested							

Contributory Factors

Failed to look properly V001 V.likely

2990178 SLIGHT 09/09/2015 006:55 414750 /423040 Junction of A641 Bradford Road and A644 Huddersfield Road

veh 1 is Fiesta emerging from Bradford Road onto Tesco roundabout. Veh 2 is Renault Kangoo coming from Huddersfield Road, around the roundabout towards the Tesco exit. There is also an LGV (described as Marshalls only - no further details known coming from Luddensheid Link road. The LGV emerges onto the roundabout as v2 is negotiating it. This would appear to have masked v2 from v1. V1 emerges onto the roundabout, beleiving they can do so infront of the LGV without incident (and do), but have no idea of v2. V2 emerges into the path of v1 and v1 strikes r/n/s corner of v2. This spins v2 around and it flips onto its o/s and slides into the entry junction for TESCO. (see photos attached) driver and occ of v1 uninjured. LGV does not remain at the scene and no details known. driver of v2 suffered (query broken) right arm. Paramedics downgrade this to a serious bruise on examination. D taken to Huddersfield Hosp for checks.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NW	SE	Male	25	Negative	1	Driver/Rider	SLIGHT	2	Male	56	
2	Car	Going ahead other	SE	NE	Male	56	Not provided							

Contributory Factors

Failed to look properly V001 V.likely

29R0467 SLIGHT 27/09/2015 008:25 414952 /425178 Junction of A641 Bradford Road and A649 Birkby Lane

At 0825 hours on Sunday 27th September 2015 vehicle 1 which is a white flat back MERC van is travelling along BIRKBY LANE, BRIGHOUSE, towards the junction of BRADFORD ROAD. At this time vehicle 2 is travelling along BRADFORD ROAD towards the junction of BIRKBY LANE. At this time one of the vehicle's travel through a red traffic light and a collision occurs. Both vehicle's stop and details exchanged. Driver of vehicle 2 suffers minor injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	24	Not requested	1	Driver/Rider	SLIGHT	2	Female	55	
2	Car	Going ahead other	N	S	Female	55	Not requested							

Contributory Factors

Failed to look properly V001 V.likely Failed to look properly V002 V.likely

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2CD0974 SLIGHT 13/12/2015 0015:32 414829 /422948 Junction of A641 Wakefield Road and A641 Bradford Road

I did not attend this collision and the details gathered within this report have been taken from various police systems or from ay officer accounts from the scene of the collision. V1 is travelling Bradford Road and V2 travelling Wakefield Road, At the traffic light junction both vehicles collided together. No independent witnesses and both drivers stating that they had green light to proceed. Slight injury to passenger of V1

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Taxi	Going ahead other	NW	SE	Male	67	Negative	1	Passenger	SLIGHT	1	Male	21	
2	Car	Going ahead other	SE	NW	Male	28	Negative							

Contributory Factors

Disobeyed ATS	V001 Possible	Disobeyed ATS	V002 Possible	

3110152 SLIGHT 01/01/2016 000:52 414587 /423570 Junction of A641 Bradford Road and Thornhill Bridge Lane

V1 is private hire Vehicle turning left onto minor road. I/P is pedestrian in drink crossing junction from drivers nearside. Vehicle runs over drivers foot. causing slight bruising.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Taxi	Turning left	SE	SW	Male	30	Not contacted	1	Pedestrian	SLIGHT	1	Male	27	North

Contributory Factors

3120868 SLIGHT 02/01/2016 0016:30 414693 /423125 A641 Bradford Road

C1 is crossing road at pelican crossing. V1 enters crossing colliding with C1 with nearside wing mirror causing minor injury

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Male	81	Negative	1	Pedestrian	SLIGHT	1	Female	65	West

Contributory Factors

Dazzling headlights	V001 Possible	Failed to look properly	V001 V.likely	Pedestrian failed to look properly	C001 V.likely

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32O0588 SLIGHT 24/02/2016 0011:57 414888 /425169 A649 Birkby Lane

V1 a delivery vehicle had completed a delivery at Clifton House on the A 649 Birkby Lane, Bailiff Bridge, Brighouse. V1 had approached the junction from the main car park and the driver looked right up Birkby Lane. He then saw a pedal cyclist approaching Birkby Lane from the direction of Wakefield Road. V1 then set off turning left towards the A641 Bradford Road and intended to turn right at the traffic lights towards Bradford. V2 was travelling down the A649 Birkby Lane towards the A641 Bradford Road. V1 pulled out into the path of V2 and collided into the nearside front and rear passenger doors of V2. This caused V2 to spin 180 degrees in the carriageway and came to a stop in the junction of Bradford Road. No injury was caused to the driver of V1. Driver of V2 was cut out of her vehicle as she has a previous spinal injury and conveyed to Hospital. The weather conditions were fine, dry and sunny.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Van/Goods < 3.5t	Turning left	S	W	Male	42	Negative	1	Driver/Rider	SLIGHT	2	Female	35	
2	Car	Going ahead other	E	W	Female	35	Not provided							

Contributory Factors

Failed to look properly V001 V.likely

32O1017 SLIGHT 24/02/2016 0013:37 414843 /425160 Junction of A649 Wakefield Road and Victoria Road

C1 was a Police officer on Wakefield Road at the junction with Victoria Road, directing traffic after a collision at the traffic light junction of Wakefield Road and Bradford Road at Bailiff Bridge, a short distance away. As he started to walk up Wakefield Road in order to stop traffic approaching Bradford road, V1 pulled out of Victoria Road and turned right, colliding with C1. C1 was knocked into the air and fell backwards onto the bonnet, banging his head on the windscreen, cracking the same and then rolling onto the road. .

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	N	W	Male	40	Negative	1	Pedestrian	SLIGHT	1	Male	29	Standing still

Contributory Factors

Dazzling sun V001 V.likely Failed to look properly V001 Possible

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33T1544 SLIGHT 29/03/2016 0006:00 414842 /425163 Junction of A649(M) Wakefield Road Bailiff Bridge and Victoria Road

The location of this collision is a crossroads controlled by give way markings. Two vehs involved, both had been travelling east on Wakefield Rd. Veh 2 was stationary held up by traffic waiting at the ATS junction ahead where W Rd joins the A641 Bradford Rd. There was a KEEP CLEAR box painted on the road in front of veh 2. Veh 1 passed veh 2 on the offside and then turned left across the front of veh 2, in the KEEP CLEAR box, just as veh 2 began to move off. The fronts of both vehs collided. Driver of veh 2 sustained slight injuries.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning left	W	N	Male	-1	Not contacted	1	Driver/Rider	SLIGHT	2	Male	35	
2	Car	Starting	W	E	Male	35	Not contacted							

Contributory Factors

Poor turn or manoeuvre V001 V.likely Fail to judge other person path or speed V001 V.likely

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34F1670 SLIGHT 15/04/2016 0018:00 415132 /422811 Junction of A644 Wakefield Road and George Street

V2 IS A CYCLE BEING RIDDEN ALONG WAKEFIELD RD TOWARDS BRIGHOUSE TOWN CENTRE DOWN OUTSIDE OF QUEUING TRAFFIC. V1 EMERGES FROM GEORGE ST TO V2'S NEARSIDE THROUGH A GAP IN TRAFFIC AND BEGINS TO TURN RIGHT BUT INTO PATH OF V2. RIDER SUSTAINS BRUISED ARM/SHOULDER.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	SW	SE	Male	49	Not contacted	1	Driver/Rider	SLIGHT	2	Male	50	
2	Pedal Cycle	O/T moving veh on its N/S	SE	NW	Male	50	Not contacted							

Contributory Factors

Failed to look properly	V001 V.likely	Poor turn or manoeuvre	V002 V.likely	Stationary or parked vehicle	V001 V.likely
Stationary or parked vehicle	V002 V.likely				

34J0500 SLIGHT 19/04/2016 0011:36 414677 /422587 A641 Bradford Road

I did not attend this collision I am writing this report from information passed. Vehicles travelling along Bradford road towards Huddersfield town centre. Vehicle 4 has collided into vehicle 3 then vehicle 3 into vehicle 2, followed by vehicle 2 into vehicle 1. Driver of vehicle 4 has left the scene prior to police attending.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Stopping	N	S	Male	63	Not requested	1	Driver/Rider	SLIGHT	2	Female	26	
2	Car	Stopping	N	S	Female	26	Not requested	2	Driver/Rider	SLIGHT	3	Female	38	
3	Car	Stopping	N	S	Female	38	Not requested							
4	Car	Going ahead other	N	S	Male	-1	Not requested							

Contributory Factors

Careless, reckless or in a hurry	V004 V.likely	Fail to judge other person path or speed	V004 V.likely

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34M0253 SLIGHT 22/04/2016 0008:11 414636 /424161 Junction of A641 Bradford Road and Oakroyd Close

V1 is turning right out of minor road onto an A road. V2 is going ahead on the A641. V1 pulls out of Give Way when unsafe to do so into the path of V2, which collides with it. Both drivers sustain minor injuries. Of note, directly opposite V1 was a low sun.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	W	S	Female	57	Negative	1	Driver/Rider	SLIGHT	1	Female	57	
2	Car	Going ahead other	S	N	Female	62	Negative	2	Driver/Rider	SLIGHT	2	Female	62	

Contributory Factors

Dazzling sun	V001 V.likely	Failed to look properly	V001 V.likely

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34M0719 SLIGHT 22/04/2016 0012:58 415334 /422728 Junction of A644 Wakefield Road and Sherwood Road

V2 is stationary on A644 Wakefield Road waiting to turn right. V1 collides with rear of V2. V1 has overtaken V3 which is parked on the yellow lines at the side of the road. Driver of V1 alleges that this has taken over her concentration and she has not realised that the vehicle in front has come to a stop. Minor impact IP is driver of V1 and has been injured by airbag deployment.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Female	41	Negative	1	Driver/Rider	SLIGHT	1	Female	41	
2	Car	Turning right	W	S	Male	31	Negative							

Contributory Factors

Fail to judge other person path or speed	V001 V.likely	Stationary or parked vehicle	V001 V.likely

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35L0210 SERIOUS 21/05/2016 0002:10 414744 /423018 Junction of A643 Ludensschied Link Brighouse and A641 Bradford Road

THIS COLLISION INVOLVES ONE VEHICLE , SERIOUS INJURY TO DRIVER AND FSP , SLIGHT INJURY TO TWO RSP ..... V1 IS TRAVELLING DOWN THE LUDENSCHIED LINK IN BRIGHOUSE TOWARDS THE ROUNDABOUT ITS JUNCTION WITH BRADFORD ROAD , VEHICLE IS IN LANE ONE OF TWO DRIVER INTENDING TO TAKE THE THIRD EXIT ..... DRIVER APPROACHES ROUNDABOUT WELL IN EXCESS OF THE SPEED LIMIT , FAILS TO NEGOCIATE THE ROUNDABOUT TRAVELLING STAIGHT OVER AND THEN INTO LARGE STONE SETTING IN CENTER .....

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	E	W	Male	20	Positive	1	Driver/Rider	SERIOUS	1	Male	20	
								2	Passenger	SERIOUS	1	Male	21	
								3	Passenger	SLIGHT	1	Male	21	
								4	Passenger	SLIGHT	1	Male	25	

Contributory Factors

Impaired by alcohol	V001 V.likely

35Q0532 SLIGHT 26/05/2016 0011:55 414832 /422966 Junction of A641 Huddersfield Road Brighouse and Clifton Road

Private hire vehicle sets off from traffic light junction slowly as pedestrian crosses road against the green man, the pedestrian is walks into the side of the moving vehicle and is knocked off balance falling to the floor sustaining minor injuries.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Taxi	Starting	N	S	Male	38	Negative	1	Pedestrian	SLIGHT	1	Female	75	East

Contributory Factors

Pedestrian failed to look properly	C001 V.likely	Wrong use of pedestrian crossing facility	C001 V.likely

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36G0587 SLIGHT 16/06/2016 0012:15 414670 /422867 Bradford Road Brighouse

V1 IS PARKED IN CAR PARKING SPACE. UPON REVERSING OUT, CLIPS PEDESTRIAN CROSSING THE ROAD, CAUSING MINOR INJURY.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Reversing		E	S	Male	23	Not contacted	1	Pedestrian	SLIGHT	1	Male	68	North

Contributory Factors

Failed to look properly	V001 V.likely	Ped fail to judge vehicle path or speed	C001 Possible		

3961680 FATAL 06/09/2016 0020:40 415504 /422619 A644 Wakefield Road

V1 is a white Vauxhall corsa motor car. V2 is a green Volkwagon Golf. V1 and V2 were driving from Mirfield Three Nunns public house vicinity, towards Brighouse centre direction, appearing to be racing, V1 seen driving on the wrong side of road, at speed, swerving. Between Jct25 and Brighouse centre, just after the dual carriageway A644 Wakefield Road becomes a single carriageway road, V2 has lost control leaving the carriageway to the nearside, taking out a tree, then coming to rest against a second tree, having spun. Both male and female occupants pronounced dead, still within the vehicle, it having sustained heavy collision damage. V1 has attended the scene around this time, left the scene, then re-attended the scene and finally left the scene again, prior to police arrival. V1 was located by police driving on Halifax Road, Liversedge, with heavy damage, where the sole occupant driver was arrested.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Going ahead other		SE	NW	Male	20	Negative	1	Driver/Rider	FATAL	2	Male	30	
2 Car	Going ahead other		SE	NW	Male	30	Not provided	2	Passenger	FATAL	2	Female	26	

Contributory Factors

Loss of control	V002 V.likely	Aggressive driving	V002 V.likely	Aggressive driving	V001 V.likely
Exceeding speed limit	V002 Possible	Exceeding speed limit	V001 Possible		

39B1728 SERIOUS 11/09/2016 0020:07 415610 /422525 Junction of A644 Wakefield Road and Locksley Road

Two vehicle RTC - V002 was travelling along Wakefield Road towards Brighouse. V001 was travelling in the opposite direction. Driver of V001 failed to observe a third vehicle wishing to turn right into Locksley Road and attempted to take avoiding action but in doing so lost control and V001 ended up at 90 degrees across the carriageway in the opposing lane and in the path of V002. Driver of V002 was given no realistic opportunity to take avoiding action and collided with the N/S of V001 which caused extensive damage to both vehicles. F/N/S Passenger (I/P) of V001 sustained serious injuries (cracked pelvis) due to the intrusion of the door into the passenger cell and was taken to LGI for treatment.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Going ahead other		NW	SE	Male	18	Negative	1	Passenger	SERIOUS	1	Male	19	
2 Car	Going ahead other		SE	NW	Male	35	Negative	2	Driver/Rider	SLIGHT	2	Male	35	

Contributory Factors

Learner or inexperienced driver / rider	V001 V.likely	Loss of control	V001 V.likely	Exceeding speed limit	V001 Possible

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3AI0689 SLIGHT 18/10/2016 013:35 414852 /425164 Junction of A641 Wakefield Road and A649 Bradford Road

THIS COLLISION INVOLVES ONE VEHICLE AND A PEDESTRIAN. VEHICLE IS TURNING RIGHT FROM BRADFORD ROAD PROCEEDING UP WAKEFIELD ROAD FROM BAILIFF BRIDGE. PEDESTRIAN CROSSES BETWEEN STATIONARY VEHICLES WAITING AT JUNCTION ON WAKEFIELD ROAD AND STEPS OUT INTO PATH OF VEHICLE ONE.PEDESTRIAN GATHERED ONTO BONNET AND HITS WINDSCREEN

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	S	N	Male	43	Negative	1	Pedestrian	SLIGHT	1	Male	51	West

Contributory Factors

Ped masked by stationary or parked vehicle C001 V.likely

3AQ0263 SERIOUS 26/10/2016 007:39 414866 /425163 Junction of A641 Bradford Road and A649 Wakefield Road

Vehicle 1 is a pedal cycle which was being ridden along BRADFORD ROAD (A641) BRIGHOUSE, towards BRADFORD. Vehicle 2 is Peugeot Tipper motor vehicle in white, which was being driven along BRADFORD ROAD in the opposite direction towards BRIGHOUSE. On arrival at the traffic light controlled crossroads junction with WAKEFIELD ROAD (A649), the pedal cycle proceeds through the junction to continue along BRADFORD ROAD. Vehicle 2 however, turns right off BRADFORD ROAD onto WAKEFIELD ROAD. The driver of Vehicle 2 fails to see the pedal cycle. This results in the front nearside of Vehicle 2 colliding with the pedal cycle in the junction. The impact causes the pedal cyclist to fall heavily from his cycle. The cyclist helmet is literally smashed as his head hits the ground. The cyclist suffers a broken jaw in 2 places, a shoulder injury and a cut to his chin. Weather fine and dry visibility was good.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Pedal Cycle	Going ahead other	S	N	Male	46	Not applicable	1	Driver/Rider	SERIOUS	1	Male	46	
2	Van/Goods < 3.5t	Turning right	N	W	Male	44	Negative							

Contributory Factors

Failed to look properly V002 V.likely

3AV0192 SLIGHT 31/10/2016 006:58 416494 /424999 A649 Halifax Rpad

V2 was parked and unattended nearside to kerb facing Dewsbury. V1 was travelling towards Dewsbury and misjudged overtaking V2 and collided with the offside rear of V2 with its front nearside corner causing damage to both vehicles and slight injury to the driver of V1.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	29	Negative	1	Driver/Rider	SLIGHT	1	Male	29	
2	Car	Parked	P	P	Not known	-1	Not requested							

Contributory Factors

Failed to look properly V001 V.likely

3BT0170 SERIOUS 29/11/2016 005:39 414862 /422958 Junction of A643 Clifton Road and A641 Bradford Road

Vehicle 1 Is a 18 tonne lorry that has delivered at Tesco's in Brighouse the driver pulls out of the rear exit and pulls onto the road, The pedestrian who is crossing from the drivers offside it is believed is hit by the lorry, causing her to fall and suffer serious injury or her face having it de gloved. The driver pulled over immediately and notified the ambulance. It is not known the position of the pedestrian at this time.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Goods > 7.5t	Turning left	NW	SE	Male	59	Negative	1	Pedestrian	SERIOUS	1	Female	52	South west

Contributory Factors

Ped wearing dark clothes at night	C001 V.likely	Pedestrian failed to look properly	C001 Possible	Failed to look properly	V001 Possible
Poor turn or manoeuvre	V001 Possible				

41O1290 SLIGHT 24/01/2017 018:30 414715 /424441 A641 Bradford Road

Between times stated, V1, a black Renault Megane, has collided its front nearside wing with the rear offside of V2, a parked Vauxhall Corsa car. Both cars have suffered minor frontal/rear quarter damage respectively. The positions of the car post impact suggest a relatively low impact speed and the driver of V1 stated he had moved over more to the nearside, to avoid an oncoming van, running wide. The driver suffered minor facial grazes, due to contact with dashboard or windscreen.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Male	29	Not requested	1	Driver/Rider	SLIGHT	1	Male	29	
2	Car	Parked	P	P	Female	46	Not contacted							

Contributory Factors

Failed to look properly	V001 Possible	Fail to judge other person path or speed	V001 Possible

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4330279 SLIGHT 03/03/2017 007:49 416695 /424905 Junction of Walton Lane and Halifax Road

A Police Officer did not witness this collision. V1 is a Vauxhall Movano van, travelling on Walton Lane towards Halifax Road, the driver being the only occupant in the vehicle. V2 is a Ford Fiesta Zetec, travelling on Halifax Road towards Walton Lane. V2 has three occupants. V1 on approach to the junction attempts to slow but states that his brakes failed, V1 over shot the junction and collides with the n/s of V2. Damage caused to front end of both vehicles. Ambulance in attendance slight injuries caused to all parties.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	S	N	Male	26	Negative	1	Driver/Rider	SLIGHT	1	Male	26	
2	Car	Going ahead other	SE	NW	Male	55	Not requested	2	Driver/Rider	SLIGHT	2	Male	55	
								3	Passenger	SLIGHT	2	Male	52	
								4	Passenger	SLIGHT	2	Male	47	

Contributory Factors

Defective brakes	V001 Possible	Junction overshoot	V001 Possible

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4370295 SLIGHT 07/03/2017 008:23 415610 /422525 Junction of A644 Wakefield Road and Locksley Road

both vehicles are travelling out of Brighouse on wakefield road. v1 slows to stop in order to turn right into Locksley road, v2 fails to see manoeuvre due to low winter sun and collides at low speed with the rear of v1 resulting in reported minor whiplash type injury to both parties

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	N	Male	18	Negative	1	Driver/Rider	SLIGHT	1	Male	18	
2	Car	Going ahead other	S	N	Female	33	Negative	2	Driver/Rider	SLIGHT	2	Female	33	

Contributory Factors

Dazzling sun V002 V.likely Fail to judge other person path or speed V002 V.likely

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43U0173 SLIGHT 30/03/2017 004:44 414692 /423147 Junction of A641 Bradford Road and Bonegate Road

V2 (MARKED POLICE DOG VAN) TRAVELLING ON BRADFORD ROAD IN DIRECTION OF BRADFORD. AS V2 REACHES JUNCTION WITH BONEGATE ROAD TO NEARSIDE V1 (MERCEDES SPRINTER VAN) PULLS OUT OF BONEGATE ROAD INTO BRADFORD ROAD AND INTO PATH OF V2 CAUSING V2 TO COLLIDE WITH FRONT OFFSIDE OF V1. EXTENSIVE DAMAGE IS CAUSED TO FRONT OF V2 AND BOTH AIRBAGS ARE DEPLOYED. POLICE DRIVER SUFFERS CHEST PAIN AS A RESULT OF AIRBAG DEPLOYMENT.DAMAGE IS CAUSED TO FRONT OFFSIDE OF V1 AND DRIVERS AIRBAG IS DEPLOYED. DRIVER COMPLAINS OF WHIPLASH BUT REFUSES AMBULANCE.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Van/Goods < 3.5t	Turning right	NW	S	Male	29	Negative	1	Driver/Rider	SLIGHT	1	Male	29	
2	Car	Going ahead other	S	N	Male	40	Negative	2	Driver/Rider	SLIGHT	2	Male	40	

Contributory Factors

Poor turn or manoeuvre V001 V.likely

4480848 SLIGHT 08/04/2017 013:20 414694 /423180 A641 Bradford Road

This is a one vehicle RTC involving a motorcycle. Roads Policing did not attend the scene and this report is completed following information provided by District Officers. The rider suffered minor injuries. Vehicle one, a Kawasaki 750 motorcycle is travelling along Bradford Road at Brighouse when for reasons unknown the vehicle has left the carriageway to the nearside and collided with a lamp post. Injury suffered to motorcyclists and damage caused to motorcycle and street furniture.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle > 500cc	Going ahead other	S	N	Female	35	Negative	1	Driver/Rider	SLIGHT	1	Female	35	

Contributory Factors

44B0514 SLIGHT 31/03/2017 0011:30 414715 /424444 A641 Bradford Road, Brighouse

V2 IS IN LINE AT CAR WASH. V1 IS BEHIND V2 IN QUEUE. RP STATES CAR WASH EMPLOYEE GESTURED FOR V2 TO MOVE FORWARD. INSTEAD V2 REVERSES BACK INTO V1 CAUSING DAMAGE TO FRONT BUMPER. PASSENGER IN V1 SUSTAINS INJURY TO RIGHT KNEE ON CENTRE CONSOLE.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Reversing	N	S	Male	67	Not contacted	1	Passenger	SLIGHT	2	Female	63	
2	Car	Wait go ahead, held up	S	N	Male	76	Not contacted							

Contributory Factors

Careless, reckless or in a hurry V001 V.likely

44M0740 SLIGHT 21/04/2017 0013:25 414670 /422867 Bradford Road, Brighouse

V1 PARKED STATIONARY ON DOUBLE YELLOW LINES OUTSIDE BAKERY. ANOTHER VEHICLE ON OPPOSITE SIDE OF ROAD REVERSES OUT OF A PARKING BAY. V1 THEN MOVES SLOWLY BACKWARDS AS PEDESTRIAN STEPS OUT INTO THE ROAD. V1 COLLIDES WITH PEDESTRIAN CAUSING MINOR INJURY

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Reversing	N	S	Male	48	Not contacted	1	Pedestrian	SLIGHT	1	Female	46	East

Contributory Factors

Careless, reckless or in a hurry V001 V.likely

45K0563 SLIGHT 20/05/2017 0009:32 414754 /422834 Junction of A641 Huddersfield Road and Mill Lane

v1 is private motor car travelling straight ahead West on main carriageway. V2 is private motorcar travelling East on main carriageway and turning right to go South onto minor road. V2 turns right across path of V1 and collides with same.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	E	W	Male	78	Not provided	1	Driver/Rider	SLIGHT	1	Male	78	
2	Car	Turning right	W	SE	Female	26	Not provided	2	Passenger	SLIGHT	1	Female	71	
								3	Driver/Rider	SLIGHT	2	Female	26	

Contributory Factors

Fail to judge other person path or speed V002 V.likely

46B0737 SLIGHT 25/05/2017 0012:10 414742 /423048 A641 Bradford Road, Brighouse

VEHICLE 1 DROVE INTO THE BACK OF VEHICLE 2 OUTSIDE TESCO BRIGHOUSE. PARTIES EXCHANGED DETAIL AT THE TIME, BUT SINCE, BOTH PARTIES IN VEHICLE 2 HAVE SUFFERED WHIPLASH. THE PASSENGER (MRS HARTER) IS MORE SERIOUS AND NEEDS PHYSIOTHERAPY. BOTH HAVE ACHES AND PAIN TO NECK AND SHOULDERS.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NW	SE	Male	30	Not contacted	1	Driver/Rider	SLIGHT	2	Male	75	
2	Car	Going ahead other	NW	SE	Male	75	Not contacted							

Contributory Factors

Fail to judge other person path or speed V001 V.likely

46K0315 SLIGHT 20/06/2017 0007:13 415723 /423208 Junction of A643 Highmoor Lane and Towngate

V1 is private car travelling south and turning left onto side road. V2 is private car travelling West straight ahead approaching give way to main carriageway. V1 collides into V2 whilst making left turn.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning left	N	E	Female	30	Negative	1	Passenger	SLIGHT	1	Female	30	
2	Car	Going ahead other	E	N	Male	77	Negative							

Contributory Factors

Junction overshoot V001 V.likely

Learner or inexperienced driver / rider V001 V.likely

46N1878 SLIGHT 23/06/2017 0020:23 414566 /423692 Junction of A641 Bradford Road and Rayner Road

V1 is being driven by C1 along A641 Bradford Road, towards Brighouse, near the junction with Rayner Road. V2 and V3 are parked unoccupied on Bradford Road. The front of V1 has collided with the rear of V2, causing this to shunt forward. The front of V2 has then collided with the rear of V3. Damage caused to all 3 vehicles. C1 has suffered chest and whiplash injuries consistent with airbags and seatbelt. C1 was taken to A and E due to paramedics querying whether he had blacked out at the wheel.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	N	S	Male	26	Negative	1	Driver/Rider	SLIGHT	1	Male	26	
2	Van/Goods < 3.5t	Parked	P	P	Male	29	Not contacted							
3	Car	Parked	P	P	Female	34	Not contacted							

Contributory Factors

Failed to look properly V001 V.likely

Illness or disability, mental or physical V001 Possible

Loss of control V001 V.likely

47C1292 SLIGHT 12/07/2017 0016:30 416601 /424960 Junction of A649 Halifax Road and Sunnybank Close

Vehicle 1 is travelling along the A649 from Cleckheaton towards Brighouse overtaking vehicles on a dual carriageway road. Vehicle 2 indicates to turn right into a side road and moves towards the centre of the road. Vehicle 1 collides with the front offside of vehicle 2 causing extensive damage. Vehicle 1 continues across the opposite carriageway and comes to a stop. The occupant of vehicle 1 suffers minor injuries.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	E	W	Male	33	Negative	1	Driver/Rider	SLIGHT	1	Male	33	
2	Car	Turning right	E	W	Female	34	Negative							

Contributory Factors

Fail to judge other person path or speed	V001 V.likely	Exceeding speed limit	V001 Possible	Failed to look properly	V002 Possible
Fail to judge other person path or speed	V002 Possible				

48R1181 SERIOUS 27/08/2017 0015:05 414715 /424449 A641 Bradford Road

VEHICLE v PEDESTRIAN - THE I/P WAS CROSSING ROAD FROM THE BALIFF BRIDGE BOUND SIDE OF THE CARRIAGEWAY BUT FAILED TO LOOK PROPERLY AND GAVE THE DRIVER OF THE VEHICLE TRAVELLING ON HE SAME SIDE OF THE CARRIAGEWAY NO REALISTIC OPPORTUNITY TO TAKE AVOIDING ACTION. SLIGHT CONTACT WAS MADE WHICH CAUSED HIM TO FALL TO THE FLOOR WHERE UPON HE FRACTURED/DISLOCATED HIS ELBOW. THE I/P TRANSPORTED BY AMBULANCE TO HUDDERSFIELD ROYAL FOR TREATMENT.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	S	N	Female	77	Negative	1	Pedestrian	SERIOUS	1	Male	24	East

Contributory Factors

Pedestrian failed to look properly	C001 V.likely				

48U1341 SERIOUS 30/08/2017 0017:21 414592 /423570 Junction of A641 Bradford Road and Thornhill Bridge Lane

V1 is solo motorcycle travelling on main carriageway south in slow moving traffic filtering. V2 is private motor car entering main carriageway from side road travelling West and turning right to go North. V2 pulls out between stationary traffic and collides with V1 which was overtaking = causing minor injury and damage.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle > 500cc	O/T moving veh on its N/S	N	S	Male	52	Not requested	1	Driver/Rider	SERIOUS	1	Male	52	
2	Car	Turning right	E	N	Male	49	Not requested							

Contributory Factors

Failed to look properly	V002 Possible	Failed to look properly	V001 Possible		

4980265 SLIGHT 13/09/2017 008:28 414766 /423013 Bradford Road, Brighouse

unknown how this occurred as I did not witness, also the two parties involved reported the matter to the police individually. there are no known independent witnessess

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	S	N	Male	39	Not contacted	1	Driver/Rider	SLIGHT	2	Female	53	
2	Car	Going ahead other	S	N	Female	53	Not contacted							

Contributory Factors

Other V001 Possible

49H0655 SERIOUS 17/09/2017 0010:25 415201 /422906 Junction of Clifton Common and Edward Street

This is a two vehicle RC resulting in a broken leg to the rider of vehicle two. Vehicle two (motor cycle) has been travelling up Clifton Common away from Brighouse. Vehicle one (motor car) has been joining Clifton Common from Edward Street. This is a give way junction with vehicles travelling along Clifton Common having priority. Edward Street is positioned to the nearside of vehicle two. As vehicle two has approached the junction with Edward Street vehicle one has exited with the intention of turning right towards Brighouse. Contact has been made between the front of vehicle one and the nearside of vehicle two. The rider has fallen from the motorbike and suffered a broken left leg. The view for the driver of vehicle one was obscured by parked vehicles.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	W	S	Male	42	Negative	1	Driver/Rider	SERIOUS	2	Male	24	
2	M/cycle 125 - 500cc	Going ahead other	S	N	Male	24	Negative							

Contributory Factors

4A60722 SLIGHT 08/10/2017 0012:20 415383 /422704 Junction of A644 Wakefield Road and Sherwood Road

V1 had travelled from Sherwood Road, Brighouse towards the A644 Wakefield Road. V2 was travelling along the A644 Wakefield road, towards Brighouse. V1 then pulls out from the junction of Sherwood Road intending to turn right. V2 then collides with the front offside of V1. The driver of V2 suffers minor whiplash injury. Extensive damage is caused to the front of V2.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	NE	SE	Male	42	Negative	1	Driver/Rider	SLIGHT	2	Male	38	
2	Van/Goods < 3.5t	Going ahead other	SE	NW	Male	38	Negative							

Contributory Factors

Failed to look properly V001 V.likely

4AI1285 SLIGHT 18/10/2017 0016:05 416692 /424905 Junction of A649 Halifax Road and A643 Walton Lane

Vehicle 2 was on Halifax Road, travelling towards Bailiff Bridge. As it was passing the junction with Walton Lane, vehicle 2 emerged from the give way junction without stopping colliding with vehicle 2. Vehicle 2 overturned and the driver sustained minor injuries. Vehicle 1 failed to stop.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	SW	NE	Female	25	Not contacted	1	Driver/Rider	SLIGHT	2	Female	37	
2	Van/Goods < 3.5t	Going ahead other	SE	NW	Female	37	Not provided							

Contributory Factors

Disobey Give Way or Stop sign or marking V001 V.likely

4CE0185 SLIGHT 14/12/2017 0005:21 414536 /423747 Junction of Raynor Drive and Smithy Carr Lane

Collision involved one vehi le driver of vehi le travells towards raynor drive when the vehi le lpses control on the ice on tbe road and collideds with a wall before coming to a stop. Driver being the only occupant suffer minor injury

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NW	SE	Female	46	Not requested	1	Driver/Rider	SLIGHT	1	Female	46	

Contributory Factors

Junction overshoot V001 V.likely

51C0897 SERIOUS 12/01/2018 0013:51 416695 /424905 Junction of A643 Walton Lane and A649 Halifax Road

At 1351 hours on 12th January 2018 vehicle 1 which is a Ford Cmax is travelling up WALTON LANE, towards the junction of HALIFAX ROAD, SCHOLES, in order to turn right. Vehicle 1 turns right and into the path of vehicle 2 which was an oncoming vehicle being a Ford Focus causing a collision and serious injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	E	Male	77	Not requested	1	Driver/Rider	SERIOUS	1	Male	77	
2	Car	Going ahead other	E	W	Male	54	Not requested	2	Passenger	SERIOUS	1	Female	66	
								3	Driver/Rider	SERIOUS	2	Male	54	

Contributory Factors

Failed to look properly V001 V.likely Swerved V002 V.likely

51G0202 SLIGHT 16/01/2018 007:14 415279 /424105 Junction of Jay House Lane and Thornhills Beck Lane

V1 is solo motorcycle travelling West on slight left bend. Rider suffers loss of control and overturns.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle <= 50cc	Going ahead LHB	E	W	Male	16	Not provided	1	Driver/Rider	SLIGHT	1	Male	16	

Contributory Factors

Loss of control	V001 V.likely	Slippery road due to weather	V001 V.likely	Learner or inexperienced driver / rider	V001 V.likely

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53F1984 SLIGHT 15/03/2018 023:05 416337 /424185 Junction of A643 Walton Lane and Highmoor Lane

V1 a Clio is travelling South West along A643 Walton lane towards Brighouse. V2 a Aygo is stationary at the junction of Highmoor Lane intending on turning right onto Walton Lane. Weather is extremely foggy with visibility down to 50 metres. V2 has edged out of the junction into the path of V1. Front nearside of V1 has collided with front offside of V2. Damage caused to both vehicles. C1 is a rear offside passenger in V2. She has received slight injuries due t banging heads with another rear passenger.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NE	SW	Male	35	Not requested	1	Passenger	SLIGHT	2	Female	21	
2	Car	Turning right	SE	NE	Female	17	Not requested							

Contributory Factors

Rain, sleet, snow or fog	V001 V.likely	Rain, sleet, snow or fog	V002 V.likely	Failed to look properly	V002 Possible
Fail to judge other person path or speed	V002 Possible				

5640948 SLIGHT 04/06/2018 013:40 414875 /425171 Junction of Bradford Road and A649 Birkby Lane

V1 AND V2 ARE TRAVELLING ON BRADFORD ROAD BRIGHOUSE IN THE DIRECTION OF BRIGHOUSE CENTRE APPROACHING A SET OF TRAFFIC LIGHTS THAT ARE ILLUMINATED GREEN. V3 IS TRAVELLING IN THE OPPOSITE DIRECTION AND AS IT PROCEEDS THROUGH THE TRAFFIC LIGHTS DRIVES STRAIGHT ACROSS ONTO OPPOSITE SIDE OF CARRIGEWAY AND IS IN COLLISION WITH V1 WHO IN TURN IS PUSHED INTO V2. PASSENGER OF V1 SUSTAINS SLIGHT INJURIES.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	72	Negative	1	Passenger	SLIGHT	1	Female	69	
2	Car	Going ahead other	W	E	Male	52	Negative							
3	Car	Going ahead other	E	W	Male	65	Negative							

Contributory Factors

Poor turn or manoeuvre	V003 V.likely	Distraction in vehicle	V003 V.likely		

56F1049 SLIGHT 15/06/2018 0014:52 415384 /422703 Junction of A644 Wakefield Road and Sherwood Road

V1 is private car travelling West on main carriageway straight ahead. V2 is private car facing North and turning right onto main carriageway to go East from give way junction. V1 collides into drivers side front of V2 causing driver of V1 slight injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	O/T moving veh on its O/S	E	W	Male	20	Negative	1	Driver/Rider	SLIGHT	1	Male	20	
2	Car	Turning right	S	E	Male	41	Negative							

Contributory Factors

Exceeding speed limit	V001 V.likely	Aggressive driving	V001 V.likely	Failed to look properly	V002 Possible
Fail to judge other person path or speed	V002 Possible				

56U0788 SLIGHT 30/06/2018 0010:45 414734 /424569 A641 Bradford Road

This is a three vehicle RTC resulting in minor injury to one of the occupants. All three vehicles have been travelling along Bradford Road in Brighouse in the general direction of Brighouse. V3 slows to a stop due to on coming traffic, V2, travelling immediately behind V3 also slows to a stop. V1, travelling immediately behind V2 fails to stop in time and collides into the rear of V2, which in turn collides into the rear of V3. The driver of V2 suffers minor wrist injury. All documents in order and details exchanged.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Stopping	NW	SE	Male	31	Negative	1	Driver/Rider	SLIGHT	2	Female	59	
2	Car	Stopping	NW	SE	Female	59	Negative							
3	Car	Stopping	NW	SE	Female	47	Negative							

Contributory Factors

Tyres illegal, defective or under-inflated	V001 V.likely

5751089 SLIGHT 05/07/2018 0015:12 414788 /423020 A643 Clifton Road, Brighouse

BOTH VEHICLES EXIT THE ROUNDABOUT OUTSIDE TESCO, BRIGHOUSE ONTO CLIFTON ROAD. V2 TRIES TO CHANGE LANES AND IN DOING SO COLLIDES WITH V1, CAUSING DAMAGE AND MINOR INJURY TO DRIVER OF V1.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	W	E	Male	52	Negative	1	Driver/Rider	SLIGHT	1	Male	52	
2	Car	Change lane to right	W	E	Male	28	Negative							

Contributory Factors

Failed to look properly	V002 V.likely

57I0434 SLIGHT 18/07/2018 008:50 414673 /424239 A641 Bradford Road

V1 a Toyota is travelling North on the A641 Bradford Road, Brighouse, in the direction of Bailiff Bridge, away from Brighouse. C1 is a pedestrian who is waiting to get in to her parked vehicle. Nearside wind mirror has collided with left side on C1 back causing minor injuries, and minor damage to V1 wing mirror.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	S	N	Female	73	Not requested	1	Pedestrian	SLIGHT	1	Female	34	Standing still

Contributory Factors

Failed to look properly	V001 V.likely	Passing too close	V001 V.likely	Ped fail to judge vehicle path or speed C001 Possible

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57I1719 SLIGHT 18/07/2018 019:23 415130 /422808 Junction of George Street and A644 Wakefield Road

this collision occurred on a residential street in Brighouse which is a single carriageway with two lanes. Vehicle one was travelling on the main road and turning right into George street, vehicle two was travelling on George street in the direction of Wakefield road and vehicle three was parked. As vehicle one turned into George street he misjudged the position of vehicle two and collided with it and pushed vehicle two into vehicle three. All three vehicles received minor damage and the driver of vehicle one received bruising and grazing top his right forearm.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	W	S	Male	42	Negative	1	Driver/Rider	SLIGHT	1	Male	42	
2	Car	Going ahead other	S	N	Male	53	Negative							
3	Car	Parked	P	P	Not known	-1	Not requested							

Contributory Factors

Poor turn or manoeuvre	V001 V.likely

57J2063 SLIGHT 19/07/2018 018:00 414695 /423140 A641 Bradford Road

V2 is stationary at the traffic lights in Bradford Road towards Bradford and leaving Brighouse. V1 is approaching V2 from the rear and fails to slow in time, which results in V1 hitting the rear of V2 causing minor damage to both vehicle and minor injuries to the children in the vehicle

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Stopping	SW	NE	Female	41	Not contacted	1	Passenger	SLIGHT	2	Male	15	
2	Car	Stopping	SW	NE	Male	40	Not contacted	2	Passenger	SLIGHT	2	Male	10	
								3	Passenger	SLIGHT	2	Male	16	

Contributory Factors

59A0852 SERIOUS 10/09/2018 013:27 416763 /424885 Junction of Scholes Lane and Halifax Road

v001 approaching give way junction witnesses have said that the driver of V001 emerged into major road and froze after seeing V002 approach on major road from V001 O/S. V002 collided with V001 O/S centre. V001 suffered heavy damage to O/S doors and A pillar. V002 suffered heavy front end damage. Driver of V001 suffered hairline fractures to pelvis/ groin. FSP suffers fractured rib, fractured hanger bones in spine and bruised lung. Driver and passenger of V002 suffered bruising and burns caused by air bag deployment and bruising to pelvic area caused by seatbelt.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NW	SE	Female	66	Not provided	1	Driver/Rider	SERIOUS	1	Female	66	
2	Car	Going ahead other	NE	SW	Female	31	Not requested	2	Passenger	SERIOUS	1	Male	67	
								3	Driver/Rider	SLIGHT	2	Female	31	
								4	Passenger	SLIGHT	2	Female	22	

Contributory Factors

Failed to look properly	V001 V.likely	Fail to judge other person path or speed	V001 V.likely

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59M0959 SLIGHT 22/09/2018 013:20 415038 /422848 Junction of A644 Wakefield Road and Petrol Station

V1 is solo pedal cycle travelling West along main carriageway. V2 is private car joining main carriageway from petrol station turning right from giveway East. V2 moves off and collides with passing V1 causing damage and minor injury.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Pedal Cycle	Going ahead other	E	W	Male	54	Not provided	1	Driver/Rider	SLIGHT	1	Male	54	
2	Car	Turning right	S	E	Male	53	Negative							

Contributory Factors

Failed to look properly	V002 Possible	Fail to judge other person path or speed	V001 Possible

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59R0430 SLIGHT 27/09/2018 008:30 414756 /422827 Junction of A641 Huddersfield Road, Brighouse and Mill Lane, Brighouse

This is a minor injury collision which occurred on a main road in rush hour traffic in Brighouse Town Centre, where Veh 1 (motorcycle) is riding in slow moving traffic approaching box junction. Veh 1 stops but Veh 2 which is travelling behind Veh 1, fails to stop in time and collides with rear of Veh 1 but at slow speed. Rider of Veh 1 signals for Veh 2 to pull over. Veh 2 pulls forward colliding with Veh 1 again causing minor damage before driving off. Rider of Veh 1 attends Hudds Royal A&E and is diagnosed with whiplash and concussion.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	M/cycle 50 - 125cc	Stopping	NW	SE	Male	21	Not contacted	1	Driver/Rider	SLIGHT	1	Male	21	
2	Van/Goods < 3.5t	Stopping	NW	SE	Not known	-1	Not contacted							

Contributory Factors

Following too close	V002 V.likely	Fail to judge other person path or speed	V002 V.likely

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5BJ1430 SLIGHT 19/11/2018 0014:30 414676 /424239 A641 Bradford Road

V1 is pedal cyclist riding south on footpath across petrol station entrance V2 is private car travelling south turning left into same entrance. V2 collides with pedal cycle causing damage and minor injury

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Pedal Cycle	Going ahead other	N	S	Male	15	Not contacted	1	Driver/Rider	SLIGHT	1	Male	15	
2	Car	Turning left	N	E	Male	68	Not contacted							

Contributory Factors

Failed to look properly V001 V.likely Failed to look properly V002 V.likely

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61S1100 SLIGHT 21/01/2019 0015:00 415004 /422855 Junction of A644 Wakefield Road and Grove Street

Pedestrian is crossing A644 at its junction with Grove Street and walking towards Alegar Street. Vehicle 1 emerges from Alegar Street and right in to Wakefield Road. Vehicle makes contact with pedestrian who is crossing the road. The driver of the vehicle stops and provides name and telephone number. Pedestrian appears uninjured. Pedestrian subsequently attends hospital and is diagnosed with a sprain. Incident is reported to the police.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	NE	W	Male	23	Not contacted	1	Pedestrian	SLIGHT	1	Male	79	North east

Contributory Factors

Poor turn or manoeuvre V001 V.likely Failed to look properly V001 Possible

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6240717 FATAL 04/02/2019 0012:30 416761 /424880 Junction of A649 Halifax Road and B6120 Scholes Lane

V1 is a Kia Rio. V2 is a Skoda Octavia. V1 is travelling along Halifax Road from Bailiff Bridge in general direction of Liversedge. V2 is emerging from Scholes Lane to turn right onto Halifax Rd. V1 collides with the offside of V2, in a 'T-bone' style collision. Initial enquiries suggest V1 was travelling in excess of the speed limit. The 2 occupants of V2 were both fatally injured as a result of the collision. The sole occupant of V1 suffered minor injuries.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	NW	SE	Male	20	Negative	1	Driver/Rider	FATAL	2	Male	93	
2	Car	Starting	NE	NW	Male	93	Not provided	2	Passenger	FATAL	2	Female	90	
								3	Driver/Rider	SLIGHT	1	Male	20	

Contributory Factors

62D0888 SLIGHT 13/02/2019 0013:53 415278 /422942 Junction of A643 Clifton Common and Victoria Street

V1 a Audi A1 is travelling up Clifton Common away from Brighouse. V2 is in front o fV1 travelling in same direction. V2 stops for road works. Driver of V1 is looking for a road sign. Front end of V1 collides with a rear of V2, causing minor damage to both and minor injury to passenger from V2.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Going ahead other	SW	NE	Female	24	Negative	1	Passenger	SLIGHT	2	Female	41	
2	Car	Stopping	SW	NE	Male	34	Negative							

Contributory Factors

Failed to look properly V001 V.likely

Distraction outside vehicle V001 V.likely

RTC in the vicinity of Jay House Lane, Calderdale, 5 years prior to 07.04.2019

ACCIDENT SEVERITY UPTO 2019

		2014	2015	2016	2017	2018	2019	Total
Fatal	3%	0	0	1	0	0	1	**2**
Serious	15%	1	2	4	3	2	0	**12**
Slight	82%	10	12	13	16	12	2	**65**
TOTAL		**11**	**14**	**18**	**19**	**14**	**3**	**79**

WEATHER

	No.	%
Fine	66	84
Rain	11	14
Fog Mist	1	1
Other	1	1
TOTAL	**79**	

ROAD SURFACE

	Number	%
Dry	56	71
Wet	21	27
Ice	2	3
TOTAL	**79**	

LIGHT CONDITIONS

	Number	%
Light	61	77
Dark	18	23
TOTAL	**79**	

PEDESTRIAN ACCIDENTS	**No.**	**%**
	15	19

SKIDDING ACCIDENTS	**No.**	**%**
	9	11

ACCIDENTS BY DAY AND TIME

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
00.00 - 00:59	0	0	0	1	0	1	0	**2**
01:00 - 01:59	0	0	0	0	0	1	0	**1**
02:00 - 02:59	0	0	0	0	0	1	1	**2**
03:00 - 03:59	0	0	0	0	0	0	0	**0**
04:00 - 04:59	0	0	0	0	2	0	0	**2**
05:00 - 05:59	0	0	1	0	1	0	0	**2**
06:00 - 06:59	0	1	1	1	0	0	0	**3**
07:00 - 07:59	0	0	3	2	0	2	0	**7**
08:00 - 08:59	1	0	1	2	2	3	0	**9**
09:00 - 09:59	0	1	0	0	0	0	1	**2**
10:00 - 10:59	1	1	0	0	0	0	1	**3**
11:00 - 11:59	0	0	1	1	1	1	0	**4**
12:00 - 12:59	2	2	0	1	2	1	0	**8**
13:00 - 13:59	0	2	1	2	1	2	3	**11**
14:00 - 14:59	0	1	0	0	0	1	0	**2**
15:00 - 15:59	2	1	0	0	1	0	0	**4**
16:00 - 16:59	0	1	0	3	0	0	1	**5**
17:00 - 17:59	1	0	0	1	0	0	0	**2**
18:00 - 18:59	0	0	1	0	1	1	0	**3**
19:00 - 19:59	0	0	0	1	0	0	0	**1**
20:00 - 20:59	1	0	1	0	0	1	0	**3**
21:00 - 21:59	0	0	0	0	0	0	0	**0**
22:00 - 22:59	0	0	1	0	0	0	0	**1**
23:00 - 23:59	0	0	0	0	2	0	0	**2**
TOTAL	**8**	**10**	**11**	**15**	**13**	**15**	**7**	**79**
%	10%	13%	14%	19%	16%	19%	9%	100%

ACCIDENTS BY MONTH AND YEAR UPTO 2019

	2014	2015	2016	2017	2018	2019	Total
Jan	0	0	2	1	2	1	**6**
Feb	0	1	2	0	0	2	**5**
Mar	0	3	1	4	1	0	**9**
Apr	1	1	4	2	0	0	**8**
May	1	0	2	2	0	0	**5**
June	2	1	1	2	3	0	**9**
July	1	5	0	1	4	0	**11**
Aug	2	0	0	2	0	0	**4**
Sep	1	2	2	2	3	0	**10**
Oct	0	0	3	2	0	0	**5**
Nov	1	0	1	0	1	0	**3**
Dec	2	1	0	1	0	0	**4**
TOTAL	**11**	**14**	**18**	**19**	**14**	**3**	**79**
%	14%	18%	23%	24%	18%	4%	100%

RTC in the vicinity of Jay House Lane, Calderdale, 5 years prior to 07.04.2019

CASUALTY SEVERITY UPTO 2019

	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	2	0	0	2	**4**
Serious	1	4	5	3	5	0	**18**
Slight	13	19	18	23	16	3	**92**
TOTAL	**14**	**23**	**25**	**26**	**21**	**5**	**114**

JUNCTION DETAIL

	Number	%
Roundabout and mini	7	9
T or staggered	36	46
Cross roads	6	8
Private drive	2	3
Other junction	5	6
Junction > 4 arms	1	1
Not at junction	22	28
TOTAL	**79**	

JUNCTION CONTROLS

	Number	%
ATS	11	14
Give way sign	46	58
Not at junction	22	28
TOTAL	**79**	

CASUALTIES BY TYPE AND AGE GROUPING

	0 to 4	5 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Total	%
Pedestrian	0	1	0	3	5	6	**15**	13
Pedal cyclist	0	1	0	0	4	2	**7**	6
PTW rider	0	0	1	4	5	0	**10**	9
Car driver	0	0	1	13	28	8	**50**	44
Car passenger	0	3	2	9	7	6	**27**	24
Goods driver	0	0	0	1	2	0	**3**	3
Hack/pri driver	0	0	0	0	0	1	**1**	1
Hack/pri pass	0	0	0	1	0	0	**1**	1
TOTAL	**0**	**5**	**4**	**31**	**51**	**23**	**114**	
%	0	4	4	27	45	20		

Number of Casualties with unknown age: 0

SPEED LIMIT

	Number	%
20 MPH	1	1
30 MPH	67	85
40 MPH	9	11
60 MPH	2	3
TOTAL	**79**	

ROAD CLASS

	Number	%
A	66	100
TOTAL	**66**	

VEHICLES INVOLVED BY TYPE AND AGE OF DRIVER

	0 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Unknown	Total	%
Pedal Cycle	1	0	0	4	2	0	**7**	5
PTW	0	1	4	5	0	0	**10**	7
Car	0	3	22	60	23	9	**117**	80
Goods < 3.5T	0	0	2	4	0	1	**7**	5
Goods > 3.5T	0	0	0	2	0	0	**2**	1
Hackney/Private	0	0	0	2	2	0	**4**	3
TOTAL	**1**	**4**	**28**	**77**	**27**	**10**	**147**	
%	1	3	19	52	18	7		

VEHICLE MANOEUVRES

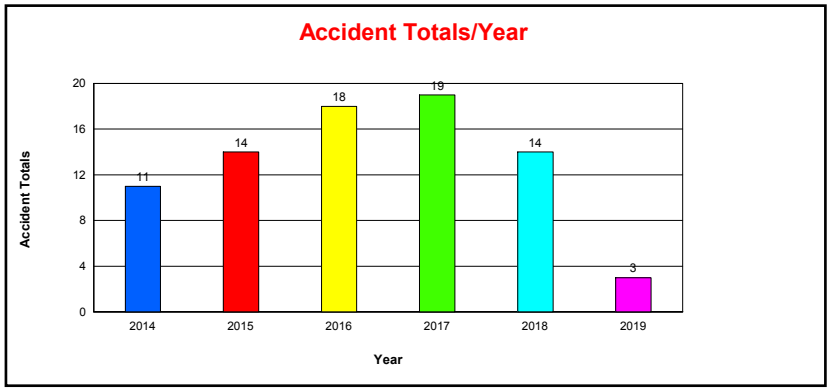
	Number	%
Reversing	3	2
Parked	7	5
Waiting to go ahead but held up	1	1
Stopping	11	7
Starting	5	3
Turning left	8	5
Waiting to turn left	1	1
Turning right	28	19
Changing lane to right	1	1
Overtaking moving veh on its offside	4	3
Overtaking moving veh on its nearside	2	1
Going ahead left hand bend	1	1
Going ahead right hand bend	1	1
Going ahead other	74	50
TOTAL	**147**	

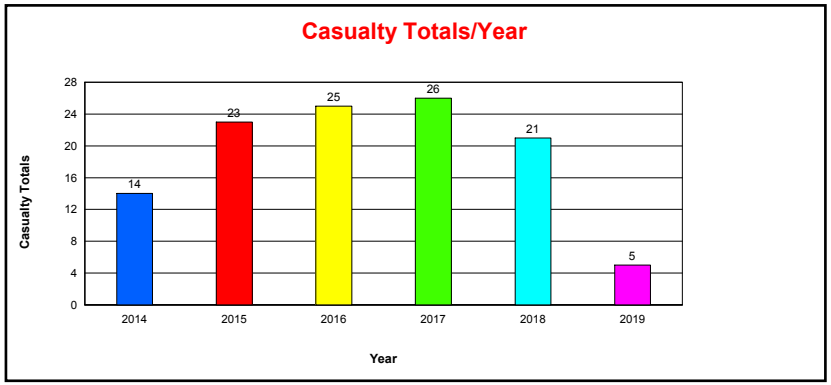
BREATH TEST

	Number	%
Not applicable	2	1
Positive	2	1
Negative	76	52
Not requested	25	17
Driver not contacted	31	21
Medical reasons	11	7
TOTAL	**147**	

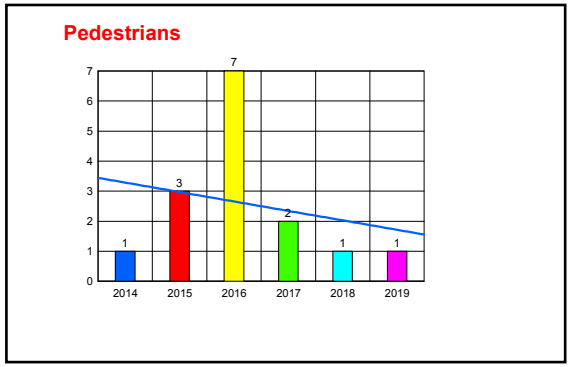
RTC in the vicinity of Jay House Lane, Calderdale, 5 years prior to 07.04.2019

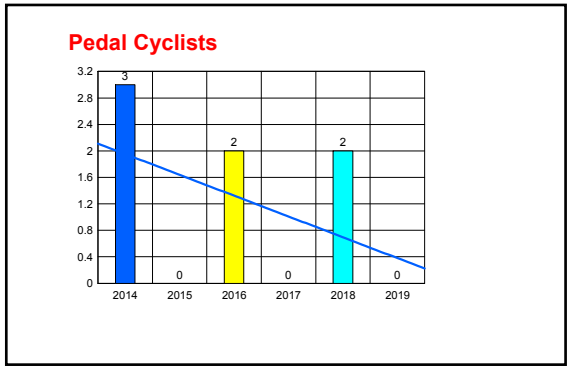
Accident Date BETWEEN '08-Apr-2014' AND '07-Apr-2019'

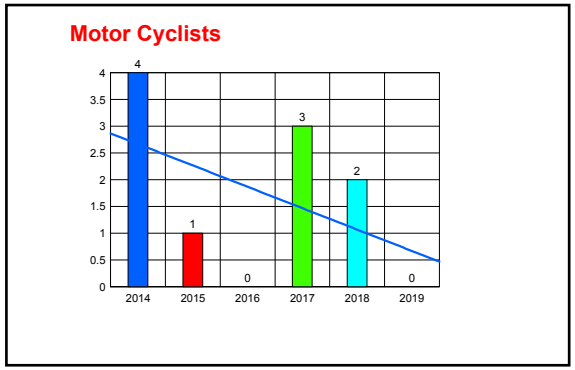


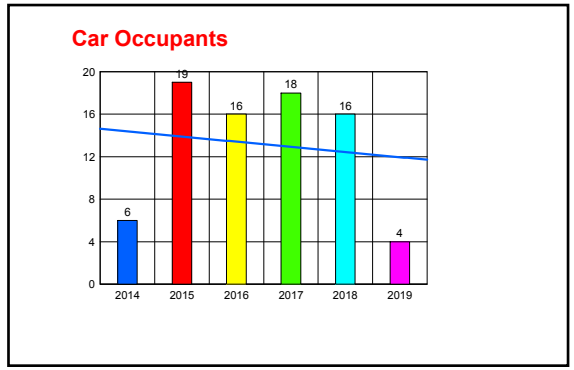


Casualty Data









Acc	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	1	0	0	1	2
Serious	1	2	4	3	2	0	12
Slight	10	12	13	16	12	2	65
Damage	0	0	0	0	0	0	0
Total	11	14	18	19	14	3	79

Cas	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	2	0	0	2	4
Serious	1	4	5	3	5	0	18
Slight	13	19	18	23	16	3	92
Total	14	23	25	26	21	5	114

RTC in the vicinity of Jay House Lane, Calderdale, 5 years prior to 07.04.2019

Accident Date BETWEEN '08-Apr-2014' AND '07-Apr-2019'

		PEDESTRIANS	PEDAL CYCLIST	PTW USER	HACKNEY PRI/HIRE	CAR DRIVER	CAR PASS	GOODS OCCUPANT	PSV	OTHER VEH OCCUPANT	TOTAL
0 to 4	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	0	0	0	0	0	**0**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5 to 15	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	1	1	0	0	0	3	0	0	0	**5**
	TOTAL	**1**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**
16 to 19	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	1	0	0	0	**1**
	Slight	0	0	1	0	1	1	0	0	0	**3**
	TOTAL	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**0**	**4**
20 to 29	Fatal	0	0	0	0	0	1	0	0	0	**1**
	Serious	1	0	1	0	1	1	0	0	0	**4**
	Slight	2	0	3	1	12	7	1	0	0	**26**
	TOTAL	**3**	**0**	**4**	**1**	**13**	**9**	**1**	**0**	**0**	**31**
30 to 59	Fatal	0	0	0	0	1	0	0	0	0	**1**
	Serious	1	2	1	0	3	2	0	0	0	**9**
	Slight	4	2	4	0	24	5	2	0	0	**41**
	TOTAL	**5**	**4**	**5**	**0**	**28**	**7**	**2**	**0**	**0**	**51**
60+	Fatal	0	0	0	0	1	1	0	0	0	**2**
	Serious	0	0	0	0	2	2	0	0	0	**4**
	Slight	6	2	0	1	5	3	0	0	0	**17**
	TOTAL	**6**	**2**	**0**	**1**	**8**	**6**	**0**	**0**	**0**	**23**
All Ages	Fatal	0	0	0	0	2	2	0	0	0	**4**
	Serious	2	2	2	0	6	6	0	0	0	**18**
	Slight	13	5	8	2	42	19	3	0	0	**92**
	TOTAL	**15**	**7**	**10**	**2**	**50**	**27**	**3**	**0**	**0**	**114**

Number of Casualties with unknown age: 0

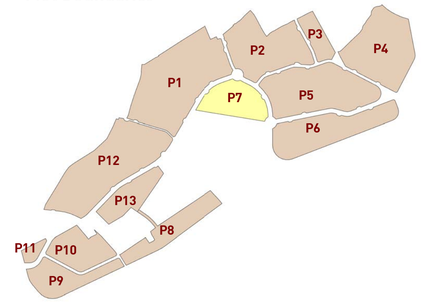
Appendix B Concept Master Plan



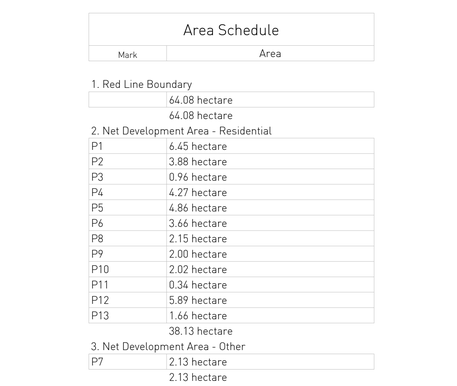
Area Schedule

Mark	Area
1. Red Line Boundary	
	64.08 hectare
	64.08 hectare
2. Net Development Area - Residential	
P1	6.45 hectare
P2	3.88 hectare
P3	0.96 hectare
P4	4.27 hectare
P5	4.86 hectare
P6	3.66 hectare
P8	2.15 hectare
P9	2.00 hectare
P10	2.02 hectare
P11	0.34 hectare
P12	5.89 hectare
P13	1.66 hectare
	38.13 hectare
3. Net Development Area - Other	
P7	2.13 hectare
	2.13 hectare
4. Publically Accessible Landscape	
	16.64 hectare
	16.64 hectare

Plot Boundaries



Proposed Phasing



P1 Net Development Plot
P.0.5
Publically Accessible Landscape
Bus Accessible Route
Existing Rights of Way
Brighouse Boundary Way

1:3000 @ A1

Contractor must verify all dimensions on site before commencing any work or shop drawings. If this drawing exceeds the quantities taken in any way the Architects are to be informed before the work is initiated. Only figured dimensions to be taken from this drawing. Do not scale off this drawing. Drawings based on Ordnance Survey and / or existing record drawings - design and drawing content subject to Site Survey, Structural Survey, Site Investigations, Planning and Statutory Requirements and Approvals. Authorised reproduction from Ordnance Survey Map with permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved. Enjoy Design Ltd.

Notes.

N

Rev. Des. By Date Ch.

Status: .

The Old Brewery
High Court
Leeds
LS2 7ES
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www.enjoy-design.co.uk

Client: ID Planning		Job No: 18,042
Project: Ryecroft Lane, Clifton		
Title: Strategic Vision for South Calderdale		
Date: 11/10/18	Scale: As indicated@A1	Checked by: GM
Drawing No: 00-010	Drawn By: GM	Revision:

ENJOY DESIGN

Appendix C Indicative Housing Delivery Trajectories

WOODHOUSE GARDEN SUBURB – CALDERDALE LOCAL PLAN
INDICATIVE HOUSING DELIVERY TRAJECTORY

	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Phase 1 200 units			40	40	40	40	40								
Phase 2 200 units				35	35	35	35	40	20						
Phase 3 200 units					30	35	35	40	40	20					
Phase 4 200 units								35	35	40	40	40	10		
Phase 5 200 units										35	40	40	40	40	5
Phase 6 200 units											35	35	40	40	40
Phase 7 200 units													35	40	40
TOTAL			40	75	105	110	110	115	95	95	115	115	125	120	85
Cumulative TOTAL			40	115	220	330	440	555	680	745	860	975	1100	1220	1305

THORNHILLS LANE GARDEN SUBURB – CALDERDALE LOCAL PLAN
INDICATIVE HOUSING DELIVERY TRAJECTORY

	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39
Phase 1 93 units			40	40	13																
Phase 2 188 units				40	40	35	35	38													
Phase 3 47 units					35	12															
Phase 4 93 units					35	40	18														
Phase 5 436 units						36	40	40	40	40	40	40	40	40	40	40					
Phase 6 51 units							10	20	21												
Phase 7 208 units								8	40	40	40	40	40								
Phase 8 174 units										40	40	40	40	14							
Phase 9 34 units														34							
Phase 10 27 units														27							
Phase 11 258 units															40	35	35	35	40	40	33
Phase 12 89 units															40	35	14				
Phase 13 91 units																15	40	36			
Phase 14 51 units																	25	26			
Phase 15 9 units																		9			
Phase 16 59 units																		19	40		
Phase 17 17 units																			17		
Phase 18 76 units																				40	36
TOTAL			40	80	123	123	106	103	101	120	120	120	120	115	120	125	114	125	97	80	69
Cumulative TOTAL			40	120	243	366	472	575	676	796	916	1036	1156	1271	1391	1516	1630	1755	1852	1932	2001

Appendix D A641 Huddersfield Road Site Access

N

The Gatehouse

Pond

MS

134

Masts (Telecommunication)

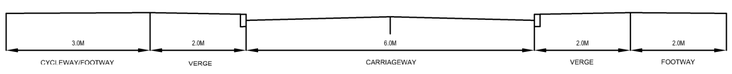
Spring

A641 HUDDERSFIELD ROAD

M62 WESTBOUND CARRIAGEWAY

M62 EASTBOUND CARRIAGEWAY

TYPICAL CROSS SECTION THROUGH
MAIN DISTRIBUTOR ROAD
(NOT TO SCALE)



KEY

- PROPOSED ACCESS ARRANGEMENTS
- PROPOSED FOOTWAY
- PROPOSED VERGE
- INDICATIVE HIGHWAY ADOPTION EXTENTS

NOTES

1. PRELIMINARY LAYOUT SUBJECT TO DETAILED DESIGN INCLUDING FULL CDM COMPLIANCE, STATUTORY UNDERTAKERS SEARCH/ DIVERSION REQUIREMENTS, TOPOGRAPHICAL SURVEY, HIGHWAY DRAINAGE PROVISION, LAND AVAILABILITY, CAPACITY ASSESSMENT AND LOCAL AUTHORITY APPROVAL.

REV	DATE	BY	DESCRIPTION	CHK	APP
A	31/05/19	UK	TIE-IN TO MASTERPLAN	EAG	EAG
-	12/05/17	UK	INITIAL ISSUE	SJP	SJP

STATUS: PRELIMINARY

PROJECT: WOODHOUSE GARDEN SUBURB

CLIENT: THORNHILL ESTATES LTD

DRAWING TITLE: A641 HUDDERSFIELD ROAD, WOODHOUSE
INDICATIVE SITE ACCESS ARRANGEMENTS

CHECKED	APPROVED	DRG No.	
EAG	EAG	17031/GA/01	
DRAWN BY:	SCALE @ A1	DATE	REV.
UK	1:500	31/05/2019	A

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP
optimahighways.com
T 0113 245 1679

Appendix E Junction Capacity Assessment Output

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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+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: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 13/08/2018 15:43:40

«2018 COUNT, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
1 - A644 Ludenscheid Link	4.9	19.40	0.84	C
2 - A643 Halifax Road	1.8	6.44	0.65	A
3 - A6025 Elland Road	5.9	26.99	0.87	D
4 - A644 Halifax Road	6.1	24.10	0.87	C

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	13/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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	2018 COUNT	AM	ONE HOUR	07:45	09:15	15

2018 COUNT, 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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	18.77	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A644 Ludenscheid Link		✓	860	100.000
2 - A643 Halifax Road		✓	926	100.000
3 - A6025 Elland Road		✓	758	100.000
4 - A644 Halifax Road		✓	871	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	19	277	444	120
	2 - A643 Halifax Road	281	0	306	339
	3 - A6025 Elland Road	451	194	1	112
	4 - A644 Halifax Road	138	520	213	0

Vehicle Mix

HV %s

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
1 - A644 Ludenscheid Link	0.84	19.40	4.9	C
2 - A643 Halifax Road	0.65	6.44	1.8	A
3 - A6025 Elland Road	0.87	26.99	5.9	D
4 - A644 Halifax Road	0.87	24.10	6.1	C

Main Results for each time segment

07:45 - 08:00

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 - A644 Ludenscheid Link	647	694	1326	0.488	644	0.9	5.252	A
2 - A643 Halifax Road	697	597	1788	0.390	695	0.6	3.286	A
3 - A6025 Elland Road	571	569	1113	0.513	567	1.0	6.537	A
4 - A644 Halifax Road	656	708	1322	0.496	652	1.0	5.344	A

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 - A644 Ludenscheid Link	773	831	1242	0.622	770	1.6	7.584	A
2 - A643 Halifax Road	832	714	1700	0.490	831	1.0	4.138	A
3 - A6025 Elland Road	681	681	1050	0.649	678	1.8	9.618	A

4 - A644 Halifax Road	783	847	1229	0.637	780	1.7	7.967	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 - A644 Ludenscheid Link	947	1005	1136	0.833	935	4.5	17.030	C
2 - A643 Halifax Road	1020	866	1586	0.643	1016	1.8	6.284	A
3 - A6025 Elland Road	835	832	964	0.866	820	5.4	23.055	C
4 - A644 Halifax Road	959	1028	1109	0.865	944	5.5	20.212	C

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 - A644 Ludenscheid Link	947	1019	1128	0.840	945	4.9	19.403	C
2 - A643 Halifax Road	1020	876	1578	0.646	1019	1.8	6.435	A
3 - A6025 Elland Road	835	835	962	0.868	833	5.9	26.992	D
4 - A644 Halifax Road	959	1040	1101	0.871	957	6.1	24.102	C

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 - A644 Ludenscheid Link	773	853	1229	0.629	786	1.7	8.335	A
2 - A643 Halifax Road	832	729	1689	0.493	836	1.0	4.237	A
3 - A6025 Elland Road	681	687	1046	0.651	697	1.9	10.757	B
4 - A644 Halifax Road	783	865	1217	0.643	800	1.9	8.963	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 - A644 Ludenscheid Link	647	702	1321	0.490	651	1.0	5.398	A
2 - A643 Halifax Road	697	603	1783	0.391	698	0.6	3.324	A
3 - A6025 Elland Road	571	573	1111	0.514	574	1.1	6.743	A
4 - A644 Halifax Road	656	716	1316	0.498	659	1.0	5.506	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 13/08/2018 15:44:37

«2018 COUNT, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
1 - A644 Ludenscheid Link	14.0	45.42	0.96	E
2 - A643 Halifax Road	2.0	7.52	0.67	A
3 - A6025 Elland Road	50.7	173.50	1.10	F
4 - A644 Halifax Road	2.5	11.64	0.72	B

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	13/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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)
D2	2018 COUNT	PM	ONE HOUR	16:45	18:15	15

2018 COUNT, PM

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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	60.37	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A644 Ludenscheid Link		✓	1069	100.000
2 - A643 Halifax Road		✓	887	100.000
3 - A6025 Elland Road		✓	871	100.000
4 - A644 Halifax Road		✓	732	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	15	300	527	227
	2 - A643 Halifax Road	262	0	230	395
	3 - A6025 Elland Road	500	215	1	155
	4 - A644 Halifax Road	155	394	183	0

Vehicle Mix

HV %s

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
1 - A644 Ludenscheid Link	0.96	45.42	14.0	E
2 - A643 Halifax Road	0.67	7.52	2.0	A
3 - A6025 Elland Road	1.10	173.50	50.7	F
4 - A644 Halifax Road	0.72	11.64	2.5	B

Main Results for each time segment

16:45 - 17:00

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 - A644 Ludenscheid Link	805	593	1387	0.580	799	1.4	6.070	A
2 - A643 Halifax Road	668	713	1701	0.393	665	0.6	3.467	A
3 - A6025 Elland Road	656	674	1054	0.622	649	1.6	8.769	A
4 - A644 Halifax Road	551	741	1299	0.424	548	0.7	4.775	A

17:00 - 17:15

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 - A644 Ludenscheid Link	961	709	1316	0.730	956	2.6	9.856	A
2 - A643 Halifax Road	797	853	1596	0.500	796	1.0	4.494	A
3 - A6025 Elland Road	783	806	978	0.800	775	3.7	17.023	C

4 - A644 Halifax Road	658	885	1204	0.547	656	1.2	6.553	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throug(put (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A644 Ludenscheid Link	1177	844	1234	0.954	1142	11.3	31.417	D
2 - A643 Halifax Road	977	1023	1468	0.665	973	1.9	7.212	A
3 - A6025 Elland Road	959	979	880	1.090	859	28.7	82.158	F
4 - A644 Halifax Road	806	1009	1121	0.719	801	2.5	11.059	B

17:30 - 17:45

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 - A644 Ludenscheid Link	1177	851	1230	0.957	1166	14.0	45.421	E
2 - A643 Halifax Road	977	1041	1454	0.671	976	2.0	7.520	A
3 - A6025 Elland Road	959	987	875	1.096	871	50.7	173.499	F
4 - A644 Halifax Road	806	1021	1114	0.724	806	2.5	11.645	B

17:45 - 18:00

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 - A644 Ludenscheid Link	961	758	1287	0.747	1005	3.1	14.563	B
2 - A643 Halifax Road	797	889	1568	0.508	801	1.0	4.716	A
3 - A6025 Elland Road	783	821	970	0.807	951	8.7	119.265	F
4 - A644 Halifax Road	658	1033	1106	0.595	662	1.5	8.189	A

18:00 - 18:15

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 - A644 Ludenscheid Link	805	606	1379	0.584	812	1.4	6.414	A
2 - A643 Halifax Road	668	723	1693	0.394	669	0.7	3.523	A
3 - A6025 Elland Road	656	679	1050	0.624	684	1.7	10.539	B
4 - A644 Halifax Road	551	771	1280	0.431	554	0.8	4.981	A

Junctions 9

ARCADY 9 - Roundabout Module

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Filename: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 23/04/2019 17:06:09

«2018 BASE, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
1 - A644 Ludenscheid Link	5.1	20.36	0.85	C
2 - A643 Halifax Road	2.0	6.97	0.67	A
3 - A6025 Elland Road	6.9	31.51	0.89	D
4 - A644 Halifax Road	6.9	27.36	0.89	D

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	23/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D3	2018 BASE	AM	ONE HOUR	07:45	09:15	15

2018 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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	20.84	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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 - A644 Ludenscheid Link		✓	866	100.000
2 - A643 Halifax Road		✓	965	100.000
3 - A6025 Elland Road		✓	761	100.000
4 - A644 Halifax Road		✓	873	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	19	283	444	120
	2 - A643 Halifax Road	303	0	316	346
	3 - A6025 Elland Road	451	197	1	112
	4 - A644 Halifax Road	138	522	213	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A644 Ludenscheid Link	0.85	20.36	5.1	C
2 - A643 Halifax Road	0.67	6.97	2.0	A
3 - A6025 Elland Road	0.89	31.51	6.9	D
4 - A644 Halifax Road	0.89	27.36	6.9	D

Main Results for each time segment

07:45 - 08:00

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 - A644 Ludenscheid Link	652	698	1323	0.493	648	1.0	5.303	A
2 - A643 Halifax Road	727	596	1788	0.406	724	0.7	3.374	A
3 - A6025 Elland Road	573	591	1101	0.520	569	1.1	6.710	A
4 - A644 Halifax Road	657	726	1309	0.502	653	1.0	5.456	A

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 - A644 Ludenscheid Link	779	835	1240	0.628	776	1.7	7.712	A
2 - A643 Halifax Road	868	714	1700	0.510	866	1.0	4.310	A

3 - A6025 Elland Road	684	707	1035	0.661	681	1.9	10.078	B
4 - A644 Halifax Road	785	870	1214	0.646	782	1.8	8.263	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 - A644 Ludenscheid Link	953	1008	1134	0.841	941	4.7	17.639	C
2 - A643 Halifax Road	1062	865	1587	0.670	1059	2.0	6.772	A
3 - A6025 Elland Road	838	863	946	0.886	821	6.2	25.867	D
4 - A644 Halifax Road	961	1053	1092	0.880	944	6.1	22.132	C

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 - A644 Ludenscheid Link	953	1024	1125	0.848	952	5.1	20.361	C
2 - A643 Halifax Road	1062	876	1579	0.673	1062	2.0	6.967	A
3 - A6025 Elland Road	838	867	943	0.888	835	6.9	31.510	D
4 - A644 Halifax Road	961	1067	1083	0.887	958	6.9	27.357	D

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 - A644 Ludenscheid Link	779	860	1224	0.636	792	1.8	8.569	A
2 - A643 Halifax Road	868	730	1688	0.514	871	1.1	4.431	A
3 - A6025 Elland Road	684	713	1031	0.663	704	2.0	11.590	B
4 - A644 Halifax Road	785	891	1200	0.654	805	1.9	9.533	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 - A644 Ludenscheid Link	652	706	1318	0.495	655	1.0	5.457	A
2 - A643 Halifax Road	727	603	1783	0.407	728	0.7	3.415	A
3 - A6025 Elland Road	573	595	1099	0.521	577	1.1	6.943	A
4 - A644 Halifax Road	657	735	1304	0.504	661	1.0	5.633	A

Junctions 9

ARCADY 9 - Roundabout Module

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Filename: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 23/04/2019 17:06:29

«2018 BASE, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
1 - A644 Ludenscheid Link	17.8	55.77	0.98	F
2 - A643 Halifax Road	2.1	7.73	0.68	A
3 - A6025 Elland Road	57.4	193.81	1.11	F
4 - A644 Halifax Road	2.7	12.06	0.73	B

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	23/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D4	2018 BASE	PM	ONE HOUR	16:45	18:15	15

2018 BASE, PM

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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	68.46	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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 - A644 Ludenscheid Link		✓	1085	100.000
2 - A643 Halifax Road		✓	902	100.000
3 - A6025 Elland Road		✓	879	100.000
4 - A644 Halifax Road		✓	738	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	15	316	527	227
	2 - A643 Halifax Road	270	0	234	398
	3 - A6025 Elland Road	500	223	1	155
	4 - A644 Halifax Road	155	400	183	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A644 Ludenscheid Link	0.98	55.77	17.8	F
2 - A643 Halifax Road	0.68	7.73	2.1	A
3 - A6025 Elland Road	1.11	193.81	57.4	F
4 - A644 Halifax Road	0.73	12.06	2.7	B

Main Results for each time segment

16:45 - 17:00

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 - A644 Ludenscheid Link	817	603	1381	0.592	811	1.4	6.260	A
2 - A643 Halifax Road	679	713	1701	0.399	676	0.7	3.505	A
3 - A6025 Elland Road	662	682	1049	0.631	655	1.7	8.994	A
4 - A644 Halifax Road	556	753	1291	0.430	553	0.7	4.853	A

17:00 - 17:15

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 - A644 Ludenscheid Link	975	722	1309	0.745	970	2.8	10.451	B
2 - A643 Halifax Road	811	852	1596	0.508	809	1.0	4.568	A

3 - A6025 Elland Road	790	816	973	0.812	781	3.9	17.986	C
4 - A644 Halifax Road	663	899	1195	0.555	662	1.2	6.729	A

17:15 - 17:30

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 - A644 Ludenscheid Link	1195	856	1227	0.973	1152	13.5	35.937	E
2 - A643 Halifax Road	993	1017	1472	0.675	989	2.0	7.390	A
3 - A6025 Elland Road	968	989	874	1.108	856	31.9	89.457	F
4 - A644 Halifax Road	813	1017	1116	0.728	807	2.6	11.453	B

17:30 - 17:45

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 - A644 Ludenscheid Link	1195	862	1223	0.977	1177	17.8	55.771	F
2 - A643 Halifax Road	993	1037	1458	0.681	993	2.1	7.734	A
3 - A6025 Elland Road	968	998	869	1.114	866	57.4	193.812	F
4 - A644 Halifax Road	813	1027	1110	0.732	812	2.7	12.057	B

17:45 - 18:00

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 - A644 Ludenscheid Link	975	769	1280	0.762	1033	3.4	17.628	C
2 - A643 Halifax Road	811	899	1561	0.519	815	1.1	4.849	A
3 - A6025 Elland Road	790	834	962	0.821	946	18.4	148.747	F
4 - A644 Halifax Road	663	1037	1103	0.602	668	1.5	8.361	A

18:00 - 18:15

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 - A644 Ludenscheid Link	817	627	1367	0.598	824	1.5	6.728	A
2 - A643 Halifax Road	679	724	1693	0.401	681	0.7	3.565	A
3 - A6025 Elland Road	662	688	1046	0.633	728	1.8	13.817	B
4 - A644 Halifax Road	556	815	1250	0.444	559	0.8	5.226	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 23/04/2019 17:06:46

«2026/27 INTERIM, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
1 - A644 Ludenscheid Link	13.2	46.84	0.96	E
2 - A643 Halifax Road	2.7	9.00	0.74	A
3 - A6025 Elland Road	21.3	82.31	1.00	F
4 - A644 Halifax Road	11.2	44.05	0.94	E

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	23/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D5	2026/27 INTERIM	AM	ONE HOUR	07:45	09:15	15

2026/27 INTERIM, 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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	43.98	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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 - A644 Ludenscheid Link		✓	976	100.000
2 - A643 Halifax Road		✓	1011	100.000
3 - A6025 Elland Road		✓	848	100.000
4 - A644 Halifax Road		✓	881	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	19	304	531	122
	2 - A643 Halifax Road	309	0	345	357
	3 - A6025 Elland Road	530	205	1	112
	4 - A644 Halifax Road	143	525	213	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A644 Ludenscheid Link	0.96	46.84	13.2	E
2 - A643 Halifax Road	0.74	9.00	2.7	A
3 - A6025 Elland Road	1.00	82.31	21.3	F
4 - A644 Halifax Road	0.94	44.05	11.2	E

Main Results for each time segment

07:45 - 08:00

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 - A644 Ludenscheid Link	735	706	1319	0.557	730	1.2	6.064	A
2 - A643 Halifax Road	761	663	1739	0.438	758	0.8	3.672	A
3 - A6025 Elland Road	638	605	1093	0.584	633	1.4	7.736	A
4 - A644 Halifax Road	663	795	1264	0.525	659	1.1	5.912	A

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 - A644 Ludenscheid Link	877	844	1234	0.711	873	2.4	9.835	A
2 - A643 Halifax Road	909	792	1641	0.554	907	1.2	4.893	A

3 - A6025 Elland Road	762	724	1025	0.744	757	2.7	13.144	B
4 - A644 Halifax Road	792	951	1160	0.683	788	2.1	9.574	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 - A644 Ludenscheid Link	1075	1005	1136	0.946	1043	10.2	31.516	D
2 - A643 Halifax Road	1113	947	1525	0.730	1108	2.6	8.517	A
3 - A6025 Elland Road	934	880	936	0.998	885	14.8	48.789	E
4 - A644 Halifax Road	970	1127	1043	0.930	943	8.7	30.319	D

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 - A644 Ludenscheid Link	1075	1025	1124	0.956	1063	13.2	46.837	E
2 - A643 Halifax Road	1113	965	1512	0.736	1113	2.7	9.001	A
3 - A6025 Elland Road	934	886	932	1.001	908	21.3	82.310	F
4 - A644 Halifax Road	970	1149	1029	0.943	960	11.2	44.051	E

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 - A644 Ludenscheid Link	877	895	1203	0.729	919	2.8	14.379	B
2 - A643 Halifax Road	909	834	1610	0.564	915	1.3	5.217	A
3 - A6025 Elland Road	762	735	1019	0.748	835	3.2	26.256	D
4 - A644 Halifax Road	792	1022	1113	0.712	826	2.6	13.948	B

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 - A644 Ludenscheid Link	735	717	1312	0.560	741	1.3	6.373	A
2 - A643 Halifax Road	761	673	1731	0.440	763	0.8	3.729	A
3 - A6025 Elland Road	638	610	1090	0.586	645	1.4	8.218	A
4 - A644 Halifax Road	663	808	1255	0.528	669	1.1	6.200	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 23/04/2019 17:07:12

«2026/27 INTERIM, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
1 - A644 Ludenscheid Link	3.6	13.79	0.79	B
2 - A643 Halifax Road	1.7	5.99	0.63	A
3 - A6025 Elland Road	122.1	424.46	1.27	F
4 - A644 Halifax Road	2.9	13.19	0.75	B

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	23/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D6	2026/27 INTERIM	PM	ONE HOUR	16:45	18:15	15

2026/27 INTERIM, PM

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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	125.32	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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 - A644 Ludenscheid Link		✓	875	100.000
2 - A643 Halifax Road		✓	935	100.000
3 - A6025 Elland Road		✓	980	100.000
4 - A644 Halifax Road		✓	749	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	15	326	303	231
	2 - A643 Halifax Road	285	0	247	403
	3 - A6025 Elland Road	580	244	1	155
	4 - A644 Halifax Road	158	408	183	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A644 Ludenscheid Link	0.79	13.79	3.6	B
2 - A643 Halifax Road	0.63	5.99	1.7	A
3 - A6025 Elland Road	1.27	424.46	122.1	F
4 - A644 Halifax Road	0.75	13.19	2.9	B

Main Results for each time segment

16:45 - 17:00

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 - A644 Ludenscheid Link	659	624	1368	0.482	655	0.9	5.026	A
2 - A643 Halifax Road	704	549	1824	0.386	701	0.6	3.200	A
3 - A6025 Elland Road	738	700	1039	0.710	728	2.3	11.293	B
4 - A644 Halifax Road	564	838	1235	0.457	561	0.8	5.313	A

17:00 - 17:15

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 - A644 Ludenscheid Link	787	744	1295	0.607	784	1.5	7.011	A
2 - A643 Halifax Road	841	657	1743	0.482	839	0.9	3.980	A

3 - A6025 Elland Road	881	838	960	0.918	859	7.8	30.616	D
4 - A644 Halifax Road	673	993	1133	0.595	671	1.4	7.758	A

17:15 - 17:30

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 - A644 Ludenscheid Link	963	859	1226	0.786	956	3.4	12.981	B
2 - A643 Halifax Road	1029	801	1635	0.630	1026	1.7	5.886	A
3 - A6025 Elland Road	1079	1024	854	1.263	849	65.2	167.078	F
4 - A644 Halifax Road	825	1044	1098	0.751	819	2.9	12.643	B

17:30 - 17:45

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 - A644 Ludenscheid Link	963	863	1223	0.788	963	3.6	13.786	B
2 - A643 Halifax Road	1029	806	1631	0.631	1029	1.7	5.985	A
3 - A6025 Elland Road	1079	1028	852	1.267	851	122.1	391.404	F
4 - A644 Halifax Road	825	1047	1096	0.752	824	2.9	13.186	B

17:45 - 18:00

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 - A644 Ludenscheid Link	787	772	1278	0.616	794	1.6	7.559	A
2 - A643 Halifax Road	841	665	1737	0.484	844	0.9	4.045	A
3 - A6025 Elland Road	881	844	957	0.921	949	105.2	424.460	F
4 - A644 Halifax Road	673	1070	1081	0.623	678	1.7	9.041	A

18:00 - 18:15

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 - A644 Ludenscheid Link	659	703	1320	0.499	661	1.0	5.484	A
2 - A643 Halifax Road	704	554	1820	0.387	705	0.6	3.235	A
3 - A6025 Elland Road	738	705	1036	0.712	1026	33.1	245.742	F
4 - A644 Halifax Road	564	1090	1068	0.528	566	1.1	7.208	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 23/04/2019 17:07:30

«2032/33 DESIGN, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
1 - A644 Ludenscheid Link	36.6	105.29	1.04	F
2 - A643 Halifax Road	3.4	10.98	0.78	B
3 - A6025 Elland Road	31.0	110.91	1.04	F
4 - A644 Halifax Road	12.6	49.29	0.95	E

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	23/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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	2032/33 DESIGN	AM	ONE HOUR	07:45	09:15	15

2032/33 DESIGN, 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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	68.09	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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 - A644 Ludenscheid Link		✓	1061	100.000
2 - A643 Halifax Road		✓	1053	100.000
3 - A6025 Elland Road		✓	871	100.000
4 - A644 Halifax Road		✓	884	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	19	327	593	122
	2 - A643 Halifax Road	315	0	371	367
	3 - A6025 Elland Road	546	212	1	112
	4 - A644 Halifax Road	143	528	213	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A644 Ludenscheid Link	1.04	105.29	36.6	F
2 - A643 Halifax Road	0.78	10.98	3.4	B
3 - A6025 Elland Road	1.04	110.91	31.0	F
4 - A644 Halifax Road	0.95	49.29	12.6	E

Main Results for each time segment

07:45 - 08:00

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 - A644 Ludenscheid Link	799	713	1314	0.608	793	1.5	6.829	A
2 - A643 Halifax Road	793	708	1704	0.465	789	0.9	3.920	A
3 - A6025 Elland Road	656	617	1086	0.604	650	1.5	8.141	A
4 - A644 Halifax Road	666	817	1249	0.533	661	1.1	6.073	A

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 - A644 Ludenscheid Link	954	852	1229	0.776	947	3.3	12.445	B
2 - A643 Halifax Road	947	846	1601	0.591	944	1.4	5.467	A

3 - A6025 Elland Road	783	737	1017	0.770	776	3.1	14.554	B
4 - A644 Halifax Road	795	976	1143	0.695	790	2.2	10.073	B

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 - A644 Ludenscheid Link	1168	1009	1134	1.030	1094	21.9	53.808	F
2 - A643 Halifax Road	1159	985	1497	0.775	1152	3.3	10.232	B
3 - A6025 Elland Road	959	891	930	1.032	893	19.6	59.496	F
4 - A644 Halifax Road	973	1143	1033	0.942	943	9.7	32.881	D

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 - A644 Ludenscheid Link	1168	1029	1122	1.041	1109	36.6	105.293	F
2 - A643 Halifax Road	1159	1000	1485	0.781	1159	3.4	10.981	B
3 - A6025 Elland Road	959	898	926	1.036	913	31.0	110.911	F
4 - A644 Halifax Road	973	1162	1020	0.954	961	12.6	49.287	E

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 - A644 Ludenscheid Link	954	916	1190	0.801	1082	4.6	50.962	F
2 - A643 Halifax Road	947	950	1523	0.622	954	1.7	6.404	A
3 - A6025 Elland Road	783	761	1004	0.780	891	4.0	48.867	E
4 - A644 Halifax Road	795	1081	1074	0.740	833	3.0	17.079	C

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 - A644 Ludenscheid Link	799	727	1306	0.612	811	1.6	7.445	A
2 - A643 Halifax Road	793	724	1693	0.468	796	0.9	4.030	A
3 - A6025 Elland Road	656	623	1082	0.606	665	1.6	8.826	A
4 - A644 Halifax Road	666	833	1239	0.537	673	1.2	6.440	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A6025 Elland Road-A644-A643 Halifax Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A6025 Elland Road-A644-A643 Halifax Road
Report generation date: 23/04/2019 17:08:02

«2032/33 DESIGN, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
1 - A644 Ludenscheid Link	68.9	167.45	1.10	F
2 - A643 Halifax Road	2.9	9.90	0.75	A
3 - A6025 Elland Road	162.9	613.46	1.34	F
4 - A644 Halifax Road	3.3	14.48	0.77	B

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A6025 Elland Road/A644/A643 Halifax Road
Location	
Site number	
Date	23/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D8	2032/33 DESIGN	PM	ONE HOUR	16:45	18:15	15

2032/33 DESIGN, PM

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	A6025 Elland Road-A644-A643 Halifax Road	Standard Roundabout		1, 2, 3, 4	216.98	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A644 Ludenscheid Link	
2	A643 Halifax Road	
3	A6025 Elland Road	
4	A644 Halifax Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A644 Ludenscheid Link	6.74	7.57	1.1	15.5	34.5	76.0	
2 - A643 Halifax Road	7.11	8.35	3.0	46.2	34.5	48.0	
3 - A6025 Elland Road	3.44	8.37	9.1	24.5	34.5	60.0	
4 - A644 Halifax Road	4.81	7.44	7.5	24.3	34.5	39.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A644 Ludenscheid Link	0.609	1748
2 - A643 Halifax Road	0.750	2236
3 - A6025 Elland Road	0.570	1438
4 - A644 Halifax Road	0.664	1792

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 - A644 Ludenscheid Link		✓	1212	100.000
2 - A643 Halifax Road		✓	966	100.000
3 - A6025 Elland Road		✓	1042	100.000
4 - A644 Halifax Road		✓	756	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	15	336	630	231
	2 - A643 Halifax Road	301	0	258	407
	3 - A6025 Elland Road	624	262	1	155
	4 - A644 Halifax Road	159	414	183	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A644 Ludenscheid Link	2 - A643 Halifax Road	3 - A6025 Elland Road	4 - A644 Halifax Road
From	1 - A644 Ludenscheid Link	0	0	0	0
	2 - A643 Halifax Road	0	0	0	0
	3 - A6025 Elland Road	0	0	0	0
	4 - A644 Halifax Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A644 Ludenscheid Link	1.10	167.45	68.9	F
2 - A643 Halifax Road	0.75	9.90	2.9	A
3 - A6025 Elland Road	1.34	613.46	162.9	F
4 - A644 Halifax Road	0.77	14.48	3.3	B

Main Results for each time segment

16:45 - 17:00

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 - A644 Ludenscheid Link	912	642	1358	0.672	904	2.0	7.814	A
2 - A643 Halifax Road	727	791	1642	0.443	724	0.8	3.909	A
3 - A6025 Elland Road	784	714	1031	0.761	773	3.0	13.394	B
4 - A644 Halifax Road	569	894	1198	0.475	566	0.9	5.664	A

17:00 - 17:15

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 - A644 Ludenscheid Link	1090	760	1285	0.848	1078	5.0	16.456	C
2 - A643 Halifax Road	868	944	1528	0.568	866	1.3	5.428	A

3 - A6025 Elland Road	937	854	951	0.985	895	13.5	45.804	E
4 - A644 Halifax Road	680	1045	1098	0.619	677	1.6	8.496	A

17:15 - 17:30

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 - A644 Ludenscheid Link	1334	868	1220	1.094	1200	38.6	77.198	F
2 - A643 Halifax Road	1064	1068	1434	0.742	1058	2.8	9.415	A
3 - A6025 Elland Road	1147	1019	857	1.339	855	86.6	221.994	F
4 - A644 Halifax Road	832	1072	1080	0.771	826	3.2	13.855	B

17:30 - 17:45

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 - A644 Ludenscheid Link	1334	872	1217	1.096	1214	68.9	167.450	F
2 - A643 Halifax Road	1064	1079	1426	0.746	1063	2.9	9.904	A
3 - A6025 Elland Road	1147	1026	853	1.345	853	160.1	512.787	F
4 - A644 Halifax Road	832	1072	1080	0.771	832	3.3	14.483	B

17:45 - 18:00

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 - A644 Ludenscheid Link	1090	775	1276	0.854	1258	26.7	140.096	F
2 - A643 Halifax Road	868	1076	1428	0.608	874	1.6	6.551	A
3 - A6025 Elland Road	937	896	927	1.010	926	162.9	613.465	F
4 - A644 Halifax Road	680	1076	1077	0.631	686	1.8	9.329	A

18:00 - 18:15

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 - A644 Ludenscheid Link	912	706	1318	0.692	1010	2.3	15.658	C
2 - A643 Halifax Road	727	869	1583	0.459	730	0.9	4.234	A
3 - A6025 Elland Road	784	740	1016	0.772	1010	106.6	481.607	F
4 - A644 Halifax Road	569	1099	1062	0.536	571	1.2	7.379	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 15/08/2018 13:24:05

«2018 COUNT, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
1 - Tesco	0.5	8.30	0.34	A
2 - A644 Huddersfield Road	0.7	2.31	0.42	A
3 - A644 Ludenscheid Link	1.5	4.65	0.60	A
4 - A641 Bradford Road	2.0	8.26	0.67	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	15/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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	2018 COUNT	AM	ONE HOUR	07:45	09:15	15

2018 COUNT, 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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	5.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Tesco		✓	207	100.000
2 - A644 Huddersfield Road		✓	1029	100.000
3 - A644 Ludenscheid Link		✓	1053	100.000
4 - A641 Bradford Road		✓	785	100.000

Demand overview (Pedestrians)

Arm	Av. Ped flow (Ped/hr)
1 - Tesco	25.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	98	62	47
	2 - A644 Huddersfield Road	100	4	504	421
	3 - A644 Ludenscheid Link	108	607	70	268
	4 - A641 Bradford Road	75	468	242	0

Vehicle Mix

HV %s

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
1 - Tesco	0.34	8.30	0.5	A
2 - A644 Huddersfield Road	0.42	2.31	0.7	A
3 - A644 Ludenscheid Link	0.60	4.65	1.5	A
4 - A641 Bradford Road	0.67	8.26	2.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	156	1043	18.82	950	0.164	155	0.2	4.524	A
2 - A644 Huddersfield Road	775	316		2822	0.274	773	0.4	1.757	A
3 - A644 Ludenscheid Link	793	430		2085	0.380	790	0.6	2.776	A

4 - A641 Bradford Road	591	667		1498	0.394	588	0.6	3.945	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	186	1249	22.47	829	0.225	186	0.3	5.595	A
2 - A644 Huddersfield Road	925	378		2766	0.334	925	0.5	1.955	A
3 - A644 Ludenscheid Link	947	514		2021	0.468	946	0.9	3.344	A
4 - A641 Bradford Road	706	798		1415	0.499	704	1.0	5.058	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	228	1527	27.53	665	0.343	227	0.5	8.211	A
2 - A644 Huddersfield Road	1133	462		2690	0.421	1132	0.7	2.310	A
3 - A644 Ludenscheid Link	1159	629		1933	0.600	1157	1.5	4.638	A
4 - A641 Bradford Road	864	977		1301	0.664	861	1.9	8.105	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	228	1531	27.53	662	0.344	228	0.5	8.299	A
2 - A644 Huddersfield Road	1133	463		2688	0.421	1133	0.7	2.314	A
3 - A644 Ludenscheid Link	1159	630		1933	0.600	1159	1.5	4.655	A
4 - A641 Bradford Road	864	979		1300	0.665	864	2.0	8.260	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	186	1255	22.47	825	0.226	187	0.3	5.651	A
2 - A644 Huddersfield Road	925	380		2764	0.335	926	0.5	1.959	A
3 - A644 Ludenscheid Link	947	515		2020	0.469	949	0.9	3.367	A
4 - A641 Bradford Road	706	801		1413	0.499	709	1.0	5.145	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	156	1049	18.82	947	0.165	156	0.2	4.557	A
2 - A644 Huddersfield Road	775	318		2820	0.275	775	0.4	1.762	A
3 - A644 Ludenscheid Link	793	431		2084	0.380	794	0.6	2.791	A
4 - A641 Bradford Road	591	670		1496	0.395	592	0.7	3.989	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 15/08/2018 13:29:07

«2018 COUNT, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
1 - Tesco	2.5	18.04	0.73	C
2 - A644 Huddersfield Road	1.5	3.63	0.60	A
3 - A644 Ludenscheid Link	1.6	5.80	0.62	A
4 - A641 Bradford Road	3.3	11.85	0.77	B

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	15/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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)
D2	2018 COUNT	PM	ONE HOUR	16:45	18:15	15

2018 COUNT, PM

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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	8.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Tesco		✓	475	100.000
2 - A644 Huddersfield Road		✓	1355	100.000
3 - A644 Ludenscheid Link		✓	922	100.000
4 - A641 Bradford Road		✓	942	100.000

Demand overview (Pedestrians)

Arm	Av. Ped flow (Ped/hr)
1 - Tesco	38.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	180	155	140
	2 - A644 Huddersfield Road	153	15	569	618
	3 - A644 Ludenscheid Link	147	490	19	266
	4 - A641 Bradford Road	166	463	313	0

Vehicle Mix

HV %s

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
1 - Tesco	0.73	18.04	2.5	C
2 - A644 Huddersfield Road	0.60	3.63	1.5	A
3 - A644 Ludenscheid Link	0.62	5.80	1.6	A
4 - A641 Bradford Road	0.77	11.85	3.3	B

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	358	975	28.61	991	0.361	355	0.6	5.646	A
2 - A644 Huddersfield Road	1020	469		2683	0.380	1018	0.6	2.159	A
3 - A644 Ludenscheid Link	694	695		1883	0.369	692	0.6	3.018	A

4 - A641 Bradford Road	709	618		1528	0.464	706	0.9	4.360	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	427	1166	34.16	878	0.487	426	0.9	7.939	A
2 - A644 Huddersfield Road	1218	562		2599	0.469	1217	0.9	2.604	A
3 - A644 Ludenscheid Link	829	831		1779	0.466	828	0.9	3.778	A
4 - A641 Bradford Road	847	740		1449	0.584	845	1.4	5.935	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	523	1424	41.84	725	0.721	517	2.4	16.818	C
2 - A644 Huddersfield Road	1492	684		2488	0.600	1489	1.5	3.594	A
3 - A644 Ludenscheid Link	1015	1016		1638	0.620	1012	1.6	5.724	A
4 - A641 Bradford Road	1037	905		1341	0.773	1030	3.2	11.303	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	523	1431	41.84	721	0.725	523	2.5	18.043	C
2 - A644 Huddersfield Road	1492	690		2483	0.601	1492	1.5	3.630	A
3 - A644 Ludenscheid Link	1015	1019		1636	0.621	1015	1.6	5.797	A
4 - A641 Bradford Road	1037	907		1340	0.774	1037	3.3	11.852	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	427	1177	34.16	871	0.490	433	1.0	8.330	A
2 - A644 Huddersfield Road	1218	570		2592	0.470	1221	0.9	2.629	A
3 - A644 Ludenscheid Link	829	836		1776	0.467	832	0.9	3.824	A
4 - A641 Bradford Road	847	743		1447	0.585	854	1.4	6.149	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	358	981	28.61	987	0.362	359	0.6	5.748	A
2 - A644 Huddersfield Road	1020	474		2679	0.381	1021	0.6	2.172	A
3 - A644 Ludenscheid Link	694	698		1880	0.369	695	0.6	3.039	A
4 - A641 Bradford Road	709	621		1526	0.465	711	0.9	4.430	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 24/04/2019 17:53:07

«2018 BASE, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
1 - Tesco	0.5	8.54	0.35	A
2 - A644 Huddersfield Road	0.8	2.35	0.43	A
3 - A644 Ludenscheid Link	1.6	4.90	0.62	A
4 - A641 Bradford Road	2.0	8.58	0.68	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D4	2018 BASE	AM	ONE HOUR	07:45	09:15	15

2018 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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	5.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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 - Tesco		✓	207	100.000
2 - A644 Huddersfield Road		✓	1050	100.000
3 - A644 Ludenscheid Link		✓	1074	100.000
4 - A641 Bradford Road		✓	792	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1 - Tesco	25.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	98	62	47
	2 - A644 Huddersfield Road	100	4	507	439
	3 - A644 Ludenscheid Link	108	619	70	277
	4 - A641 Bradford Road	75	473	244	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Tesco	0.35	8.54	0.5	A
2 - A644 Huddersfield Road	0.43	2.35	0.8	A
3 - A644 Ludenscheid Link	0.62	4.90	1.6	A
4 - A641 Bradford Road	0.68	8.58	2.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service

1 - Tesco	156	1057	18.82	942	0.165	155	0.2	4.570	A
2 - A644 Huddersfield Road	790	317		2821	0.280	789	0.4	1.772	A
3 - A644 Ludenscheid Link	809	443		2075	0.390	806	0.6	2.831	A
4 - A641 Bradford Road	596	676		1493	0.399	594	0.7	3.994	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	186	1266	22.47	819	0.227	186	0.3	5.682	A
2 - A644 Huddersfield Road	944	380		2764	0.341	943	0.5	1.977	A
3 - A644 Ludenscheid Link	966	530		2009	0.481	964	0.9	3.444	A
4 - A641 Bradford Road	712	809		1408	0.506	711	1.0	5.151	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	228	1547	27.53	652	0.349	227	0.5	8.444	A
2 - A644 Huddersfield Road	1156	464		2688	0.430	1155	0.8	2.347	A
3 - A644 Ludenscheid Link	1182	649		1918	0.617	1180	1.6	4.859	A
4 - A641 Bradford Road	872	990		1293	0.675	868	2.0	8.426	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	228	1552	27.53	649	0.351	228	0.5	8.541	A
2 - A644 Huddersfield Road	1156	466		2686	0.430	1156	0.8	2.352	A
3 - A644 Ludenscheid Link	1182	650		1918	0.617	1182	1.6	4.897	A
4 - A641 Bradford Road	872	992		1291	0.675	872	2.0	8.577	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	186	1273	22.47	814	0.228	187	0.3	5.747	A
2 - A644 Huddersfield Road	944	382		2762	0.342	945	0.5	1.981	A
3 - A644 Ludenscheid Link	966	531		2008	0.481	968	0.9	3.470	A
4 - A641 Bradford Road	712	812		1406	0.506	716	1.0	5.246	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	156	1064	18.82	938	0.166	156	0.2	4.607	A
2 - A644 Huddersfield Road	790	319		2819	0.280	791	0.4	1.777	A
3 - A644 Ludenscheid Link	809	445		2074	0.390	810	0.6	2.849	A
4 - A641 Bradford Road	596	679		1491	0.400	598	0.7	4.039	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 24/04/2019 17:53:40

«2018 BASE, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
1 - Tesco	2.8	19.81	0.74	C
2 - A644 Huddersfield Road	1.6	3.73	0.61	A
3 - A644 Ludenscheid Link	1.7	5.95	0.63	A
4 - A641 Bradford Road	3.7	13.07	0.80	B

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D5	2018 BASE	PM	ONE HOUR	16:45	18:15	15

2018 BASE, PM

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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	8.73	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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 - Tesco		✓	475	100.000
2 - A644 Huddersfield Road		✓	1372	100.000
3 - A644 Ludenscheid Link		✓	930	100.000
4 - A641 Bradford Road		✓	965	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1 - Tesco	38.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	180	155	140
	2 - A644 Huddersfield Road	153	15	578	626
	3 - A644 Ludenscheid Link	147	495	19	269
	4 - A641 Bradford Road	166	479	320	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Tesco	0.74	19.81	2.8	C
2 - A644 Huddersfield Road	0.61	3.73	1.6	A
3 - A644 Ludenscheid Link	0.63	5.95	1.7	A
4 - A641 Bradford Road	0.80	13.07	3.7	B

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service

1 - Tesco	358	995	28.61	979	0.365	355	0.6	5.756	A
2 - A644 Huddersfield Road	1033	475		2678	0.386	1030	0.6	2.182	A
3 - A644 Ludenscheid Link	700	701		1878	0.373	698	0.6	3.042	A
4 - A641 Bradford Road	727	622		1526	0.476	723	0.9	4.465	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	427	1191	34.16	863	0.495	425	1.0	8.203	A
2 - A644 Huddersfield Road	1233	568		2593	0.476	1232	0.9	2.642	A
3 - A644 Ludenscheid Link	836	839		1774	0.471	835	0.9	3.829	A
4 - A641 Bradford Road	868	744		1446	0.600	865	1.5	6.168	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	523	1453	41.84	708	0.739	516	2.6	18.205	C
2 - A644 Huddersfield Road	1511	691		2482	0.609	1508	1.5	3.687	A
3 - A644 Ludenscheid Link	1024	1025		1632	0.628	1021	1.7	5.866	A
4 - A641 Bradford Road	1062	910		1338	0.794	1054	3.6	12.327	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	523	1462	41.84	703	0.744	522	2.8	19.806	C
2 - A644 Huddersfield Road	1511	698		2476	0.610	1511	1.6	3.727	A
3 - A644 Ludenscheid Link	1024	1028		1629	0.629	1024	1.7	5.945	A
4 - A641 Bradford Road	1062	913		1336	0.795	1062	3.7	13.072	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	427	1203	34.16	856	0.499	434	1.0	8.671	A
2 - A644 Huddersfield Road	1233	577		2585	0.477	1236	0.9	2.672	A
3 - A644 Ludenscheid Link	836	843		1770	0.472	839	0.9	3.879	A
4 - A641 Bradford Road	868	748		1444	0.601	876	1.5	6.438	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	358	1002	28.61	974	0.367	359	0.6	5.868	A
2 - A644 Huddersfield Road	1033	479		2674	0.386	1034	0.6	2.196	A
3 - A644 Ludenscheid Link	700	704		1876	0.373	701	0.6	3.070	A
4 - A641 Bradford Road	727	625		1524	0.477	729	0.9	4.543	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 24/04/2019 17:53:56

«2026/27 INTERIM, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
1 - Tesco	0.4	5.75	0.27	A
2 - A644 Huddersfield Road	1.0	2.67	0.50	A
3 - A644 Ludenscheid Link	2.1	6.07	0.68	A
4 - A641 Bradford Road	0.5	4.49	0.35	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D6	2026/27 INTERIM	AM	ONE HOUR	07:45	09:15	15

2026/27 INTERIM, 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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	4.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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 - Tesco		✓	208	100.000
2 - A644 Huddersfield Road		✓	1214	100.000
3 - A644 Ludenscheid Link		✓	1164	100.000
4 - A641 Bradford Road		✓	386	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1 - Tesco	25.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	99	62	47
	2 - A644 Huddersfield Road	102	4	619	489
	3 - A644 Ludenscheid Link	108	709	70	277
	4 - A641 Bradford Road	75	67	244	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Tesco	0.27	5.75	0.4	A
2 - A644 Huddersfield Road	0.50	2.67	1.0	A
3 - A644 Ludenscheid Link	0.68	6.07	2.1	A
4 - A641 Bradford Road	0.35	4.49	0.5	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service

1 - Tesco	157	821	18.82	1082	0.145	156	0.2	3.886	A
2 - A644 Huddersfield Road	914	317		2821	0.324	912	0.5	1.884	A
3 - A644 Ludenscheid Link	876	482		2045	0.429	873	0.7	3.065	A
4 - A641 Bradford Road	291	745		1449	0.201	290	0.2	3.102	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	187	982	22.47	986	0.190	187	0.2	4.501	A
2 - A644 Huddersfield Road	1091	380		2764	0.395	1091	0.6	2.150	A
3 - A644 Ludenscheid Link	1046	577		1973	0.530	1045	1.1	3.872	A
4 - A641 Bradford Road	347	891		1356	0.256	347	0.3	3.568	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	229	1201	27.53	857	0.267	228	0.4	5.724	A
2 - A644 Huddersfield Road	1337	465		2687	0.497	1335	1.0	2.661	A
3 - A644 Ludenscheid Link	1282	706		1875	0.684	1278	2.1	5.990	A
4 - A641 Bradford Road	425	1090		1229	0.346	424	0.5	4.470	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	229	1204	27.53	855	0.268	229	0.4	5.750	A
2 - A644 Huddersfield Road	1337	466		2686	0.498	1337	1.0	2.666	A
3 - A644 Ludenscheid Link	1282	707		1874	0.684	1281	2.1	6.074	A
4 - A641 Bradford Road	425	1093		1227	0.346	425	0.5	4.488	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	187	987	22.47	984	0.190	187	0.2	4.523	A
2 - A644 Huddersfield Road	1091	381		2763	0.395	1093	0.7	2.156	A
3 - A644 Ludenscheid Link	1046	578		1972	0.531	1050	1.1	3.922	A
4 - A641 Bradford Road	347	896		1353	0.257	348	0.3	3.586	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	157	825	18.82	1079	0.145	157	0.2	3.903	A
2 - A644 Huddersfield Road	914	319		2819	0.324	915	0.5	1.892	A
3 - A644 Ludenscheid Link	876	484		2044	0.429	878	0.8	3.090	A
4 - A641 Bradford Road	291	749		1446	0.201	291	0.3	3.115	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 24/04/2019 17:54:16

«2026/27 INTERIM, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
1 - Tesco	5.1	37.23	0.85	E
2 - A644 Huddersfield Road	1.9	4.31	0.66	A
3 - A644 Ludenscheid Link	2.4	7.62	0.71	A
4 - A641 Bradford Road	6.3	21.46	0.87	C

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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	2026/27 INTERIM	PM	ONE HOUR	16:45	18:15	15

2026/27 INTERIM, PM

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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	13.39	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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 - Tesco		✓	477	100.000
2 - A644 Huddersfield Road		✓	1492	100.000
3 - A644 Ludenscheid Link		✓	1028	100.000
4 - A641 Bradford Road		✓	1004	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1 - Tesco	38.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	182	155	140
	2 - A644 Huddersfield Road	154	15	667	656
	3 - A644 Ludenscheid Link	147	593	19	269
	4 - A641 Bradford Road	166	518	320	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Tesco	0.85	37.23	5.1	E
2 - A644 Huddersfield Road	0.66	4.31	1.9	A
3 - A644 Ludenscheid Link	0.71	7.62	2.4	A
4 - A641 Bradford Road	0.87	21.46	6.3	C

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service

1 - Tesco	359	1098	28.61	918	0.391	357	0.6	6.384	A
2 - A644 Huddersfield Road	1123	474		2678	0.419	1120	0.7	2.307	A
3 - A644 Ludenscheid Link	774	724		1861	0.416	771	0.7	3.296	A
4 - A641 Bradford Road	756	696		1479	0.511	752	1.0	4.926	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	429	1313	34.16	791	0.542	427	1.2	9.839	A
2 - A644 Huddersfield Road	1341	568		2594	0.517	1340	1.1	2.868	A
3 - A644 Ludenscheid Link	924	866		1753	0.527	923	1.1	4.330	A
4 - A641 Bradford Road	903	833		1390	0.649	899	1.8	7.289	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	525	1597	41.84	623	0.843	512	4.4	29.623	D
2 - A644 Huddersfield Road	1643	685		2488	0.660	1639	1.9	4.226	A
3 - A644 Ludenscheid Link	1132	1057		1607	0.704	1127	2.3	7.419	A
4 - A641 Bradford Road	1105	1018		1270	0.871	1089	5.8	18.548	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	525	1611	41.84	614	0.855	523	5.1	37.235	E
2 - A644 Huddersfield Road	1643	696		2478	0.663	1643	1.9	4.308	A
3 - A644 Ludenscheid Link	1132	1062		1604	0.706	1132	2.4	7.621	A
4 - A641 Bradford Road	1105	1022		1267	0.872	1104	6.3	21.461	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	429	1334	34.16	778	0.551	444	1.3	11.250	B
2 - A644 Huddersfield Road	1341	585		2578	0.520	1345	1.1	2.926	A
3 - A644 Ludenscheid Link	924	874		1747	0.529	929	1.1	4.428	A
4 - A641 Bradford Road	903	838		1387	0.651	920	1.9	7.987	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	359	1107	28.61	913	0.393	362	0.7	6.560	A
2 - A644 Huddersfield Road	1123	480		2673	0.420	1125	0.7	2.326	A
3 - A644 Ludenscheid Link	774	728		1858	0.417	776	0.7	3.333	A
4 - A641 Bradford Road	756	700		1476	0.512	759	1.1	5.045	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 24/04/2019 17:55:11

«2032/33 DESIGN, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
1 - Tesco	0.6	9.14	0.37	A
2 - A644 Huddersfield Road	1.0	2.72	0.51	A
3 - A644 Ludenscheid Link	2.1	5.83	0.68	A
4 - A641 Bradford Road	1.9	8.64	0.66	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D8	2032/33 DESIGN	AM	ONE HOUR	07:45	09:15	15

2032/33 DESIGN, 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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	5.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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 - Tesco		✓	208	100.000
2 - A644 Huddersfield Road		✓	1239	100.000
3 - A644 Ludenscheid Link		✓	1186	100.000
4 - A641 Bradford Road		✓	721	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1 - Tesco	25.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	99	62	47
	2 - A644 Huddersfield Road	104	4	703	428
	3 - A644 Ludenscheid Link	108	731	70	277
	4 - A641 Bradford Road	75	402	244	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Tesco	0.37	9.14	0.6	A
2 - A644 Huddersfield Road	0.51	2.72	1.0	A
3 - A644 Ludenscheid Link	0.68	5.83	2.1	A
4 - A641 Bradford Road	0.66	8.64	1.9	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service

1 - Tesco	157	1088	18.82	924	0.170	156	0.2	4.683	A
2 - A644 Huddersfield Road	933	317		2821	0.331	931	0.5	1.902	A
3 - A644 Ludenscheid Link	893	438		2079	0.430	890	0.7	3.020	A
4 - A641 Bradford Road	543	763		1437	0.378	540	0.6	4.003	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	187	1302	22.47	797	0.235	187	0.3	5.892	A
2 - A644 Huddersfield Road	1114	380		2764	0.403	1113	0.7	2.179	A
3 - A644 Ludenscheid Link	1066	524		2013	0.530	1065	1.1	3.794	A
4 - A641 Bradford Road	648	913		1342	0.483	647	0.9	5.170	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	229	1592	27.53	626	0.366	228	0.6	9.020	A
2 - A644 Huddersfield Road	1364	464		2688	0.507	1363	1.0	2.714	A
3 - A644 Ludenscheid Link	1306	641		1924	0.679	1302	2.1	5.751	A
4 - A641 Bradford Road	794	1117		1212	0.655	790	1.8	8.459	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	229	1597	27.53	623	0.368	229	0.6	9.144	A
2 - A644 Huddersfield Road	1364	466		2686	0.508	1364	1.0	2.722	A
3 - A644 Ludenscheid Link	1306	642		1923	0.679	1306	2.1	5.825	A
4 - A641 Bradford Road	794	1120		1210	0.656	794	1.9	8.638	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	187	1310	22.47	792	0.236	188	0.3	5.966	A
2 - A644 Huddersfield Road	1114	382		2762	0.403	1115	0.7	2.189	A
3 - A644 Ludenscheid Link	1066	525		2013	0.530	1070	1.1	3.833	A
4 - A641 Bradford Road	648	917		1339	0.484	652	0.9	5.267	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	157	1095	18.82	920	0.170	157	0.2	4.720	A
2 - A644 Huddersfield Road	933	319		2819	0.331	934	0.5	1.912	A
3 - A644 Ludenscheid Link	893	439		2078	0.430	894	0.8	3.045	A
4 - A641 Bradford Road	543	767		1435	0.378	544	0.6	4.046	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A641 Bradford Road-A644-Tesco.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A641 Bradford Road-A644-Tesco
Report generation date: 24/04/2019 17:55:33

«2032/33 DESIGN, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
1 - Tesco	4.0	28.81	0.81	D
2 - A644 Huddersfield Road	1.7	3.88	0.63	A
3 - A644 Ludenscheid Link	2.3	7.07	0.70	A
4 - A641 Bradford Road	3.9	14.78	0.80	B

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641 Bradford Road/A644/Tesco
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D9	2032/33 DESIGN	PM	ONE HOUR	16:45	18:15	15

2032/33 DESIGN, PM

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	A641 Bradford Road/A644/Tesco	Standard Roundabout		1, 2, 3, 4	10.38	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Tesco	
2	A644 Huddersfield Road	
3	A644 Ludenscheid Link	
4	A641 Bradford Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Tesco	4.32	7.16	6.2	20.1	43.0	46.0	
2 - A644 Huddersfield Road	10.04	10.64	4.6	49.0	43.0	44.0	
3 - A644 Ludenscheid Link	7.47	9.22	5.2	30.5	43.0	47.0	
4 - A641 Bradford Road	6.18	7.89	13.4	14.9	43.0	66.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - Tesco	2.00	3.00		Distance	10.26	7.33

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Tesco	0.591	1567
2 - A644 Huddersfield Road	0.906	3108
3 - A644 Ludenscheid Link	0.762	2413
4 - A641 Bradford Road	0.636	1923

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 - Tesco		✓	478	100.000
2 - A644 Huddersfield Road		✓	1406	100.000
3 - A644 Ludenscheid Link		✓	1088	100.000
4 - A641 Bradford Road		✓	893	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1 - Tesco	38.00
2 - A644 Huddersfield Road	
3 - A644 Ludenscheid Link	
4 - A641 Bradford Road	

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	183	155	140
	2 - A644 Huddersfield Road	155	15	704	532
	3 - A644 Ludenscheid Link	147	653	19	269
	4 - A641 Bradford Road	166	407	320	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Tesco	2 - A644 Huddersfield Road	3 - A644 Ludenscheid Link	4 - A641 Bradford Road
From	1 - Tesco	0	0	0	0
	2 - A644 Huddersfield Road	0	0	0	0
	3 - A644 Ludenscheid Link	0	0	0	0
	4 - A641 Bradford Road	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Tesco	0.81	28.81	4.0	D
2 - A644 Huddersfield Road	0.63	3.88	1.7	A
3 - A644 Ludenscheid Link	0.70	7.07	2.3	A
4 - A641 Bradford Road	0.80	14.78	3.9	B

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service

1 - Tesco	360	1060	28.61	940	0.383	357	0.6	6.149	A
2 - A644 Huddersfield Road	1059	475		2678	0.395	1056	0.7	2.215	A
3 - A644 Ludenscheid Link	819	632		1931	0.424	816	0.7	3.221	A
4 - A641 Bradford Road	672	742		1449	0.464	669	0.9	4.592	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	430	1268	34.16	817	0.526	428	1.1	9.201	A
2 - A644 Huddersfield Road	1264	568		2594	0.487	1263	0.9	2.702	A
3 - A644 Ludenscheid Link	978	756		1837	0.533	977	1.1	4.178	A
4 - A641 Bradford Road	803	888		1355	0.592	801	1.4	6.460	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	526	1546	41.84	653	0.806	516	3.6	24.720	C
2 - A644 Huddersfield Road	1548	688		2485	0.623	1545	1.6	3.821	A
3 - A644 Ludenscheid Link	1198	923		1709	0.701	1193	2.3	6.912	A
4 - A641 Bradford Road	983	1085		1227	0.801	974	3.7	13.747	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	526	1556	41.84	647	0.813	525	4.0	28.809	D
2 - A644 Huddersfield Road	1548	697		2477	0.625	1548	1.7	3.876	A
3 - A644 Ludenscheid Link	1198	927		1706	0.702	1198	2.3	7.072	A
4 - A641 Bradford Road	983	1089		1225	0.803	983	3.9	14.778	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	430	1282	34.16	809	0.531	441	1.2	10.066	B
2 - A644 Huddersfield Road	1264	580		2582	0.489	1267	1.0	2.741	A
3 - A644 Ludenscheid Link	978	762		1832	0.534	983	1.2	4.262	A
4 - A641 Bradford Road	803	893		1352	0.594	812	1.5	6.789	A

18:00 - 18:15

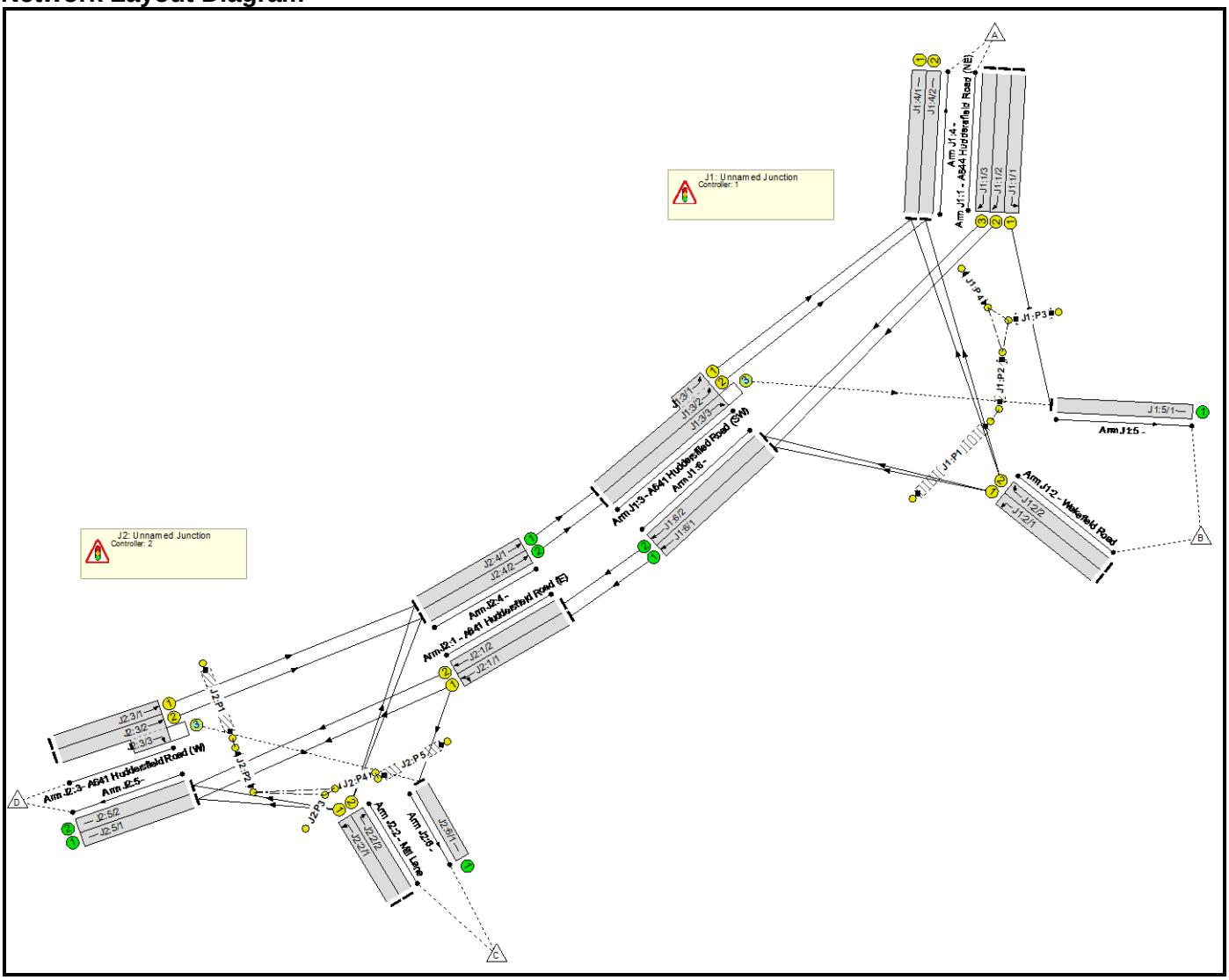
Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Tesco	360	1068	28.61	936	0.385	362	0.6	6.296	A
2 - A644 Huddersfield Road	1059	480		2674	0.396	1060	0.7	2.231	A
3 - A644 Ludenscheid Link	819	635		1929	0.425	821	0.7	3.256	A
4 - A641 Bradford Road	672	746		1447	0.465	675	0.9	4.678	A

Full Input Data And Results

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	A641-A644-A643 + A641-Sainsbury's.lsg3x
Author:	
Company:	
Address:	

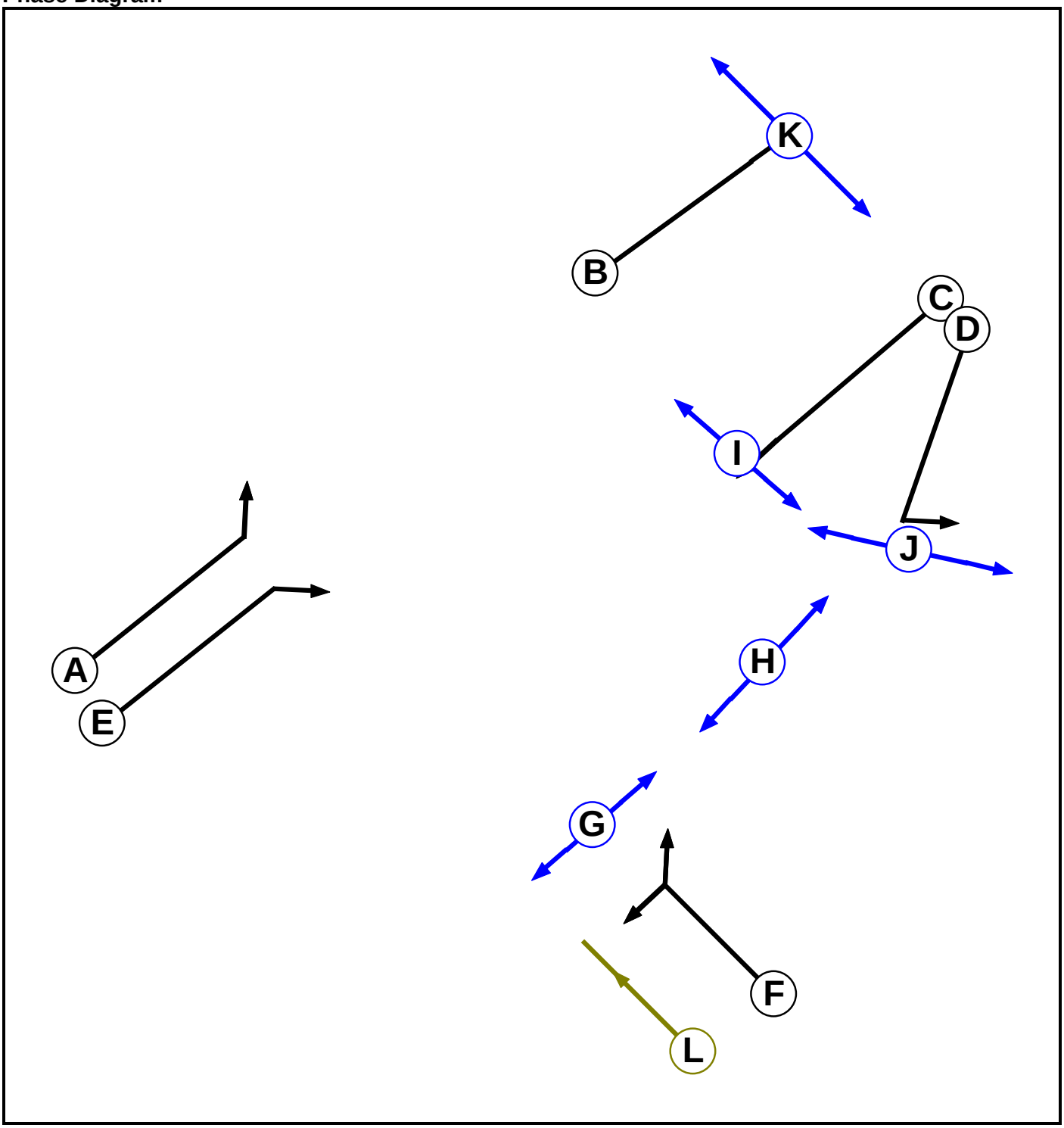
Network Layout Diagram



Full Input Data And Results

C1

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	4
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		10	10
G	Pedestrian		5	5
H	Pedestrian		5	5
I	Pedestrian		5	5
J	Pedestrian		5	5
K	Pedestrian		5	5
L	Filter	F	4	0

Phase Intergreens Matrix

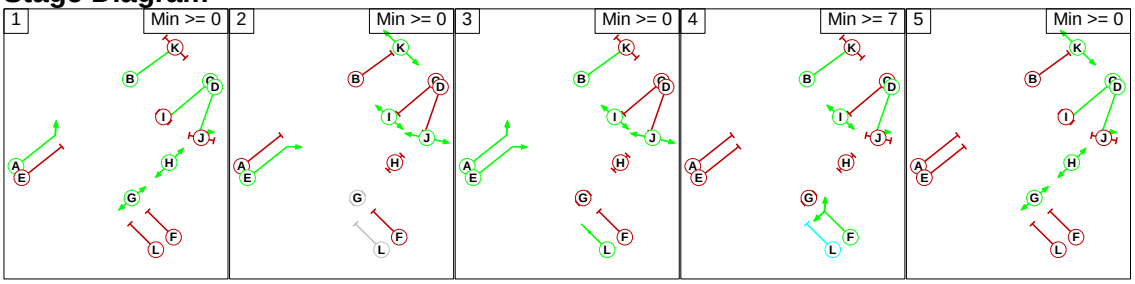
		Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K	L
Terminating Phase	A		-	-	-	-	5	-	-	-	-	-	-
	B	-		-	-	-	-	-	-	-	-	5	-
	C	-	-		-	5	7	-	-	5	-	-	7
	D	-	-	-		3	-	-	-	-	5	-	-
	E	-	-	6	8		5	-	8	-	-	-	-
	F	7	-	7	-	6		5	9	-	-	-	-
	G	-	-	-	-	-	12		-	-	-	-	12
	H	-	-	-	-	4	4	-		-	-	-	-
	I	-	-	7	-	-	-	-	-		-	-	-
	J	-	-	-	5	-	-	-	-	-		-	-
	K	-	7	-	-	-	-	-	-	-	-		-
	L	-	-	5	-	-	-	5	-	-	-	-	

Phases in Stage

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

Full Input Data And Results

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	4	4
1	2	B	Losing	7	7
1	2	C	Losing	4	4
1	2	D	Losing	4	4
1	2	H	Losing	5	5
1	3	C	Losing	5	5
1	3	D	Losing	5	5
1	3	H	Losing	6	6
1	4	A	Losing	7	7
1	4	C	Losing	5	5
1	4	H	Losing	8	8
1	5	A	Losing	3	3
1	5	B	Losing	3	3
2	1	A	Gaining absolute	3	3
2	1	I	Losing	1	1
3	4	A	Losing	3	3
4	5	B	Losing	4	4

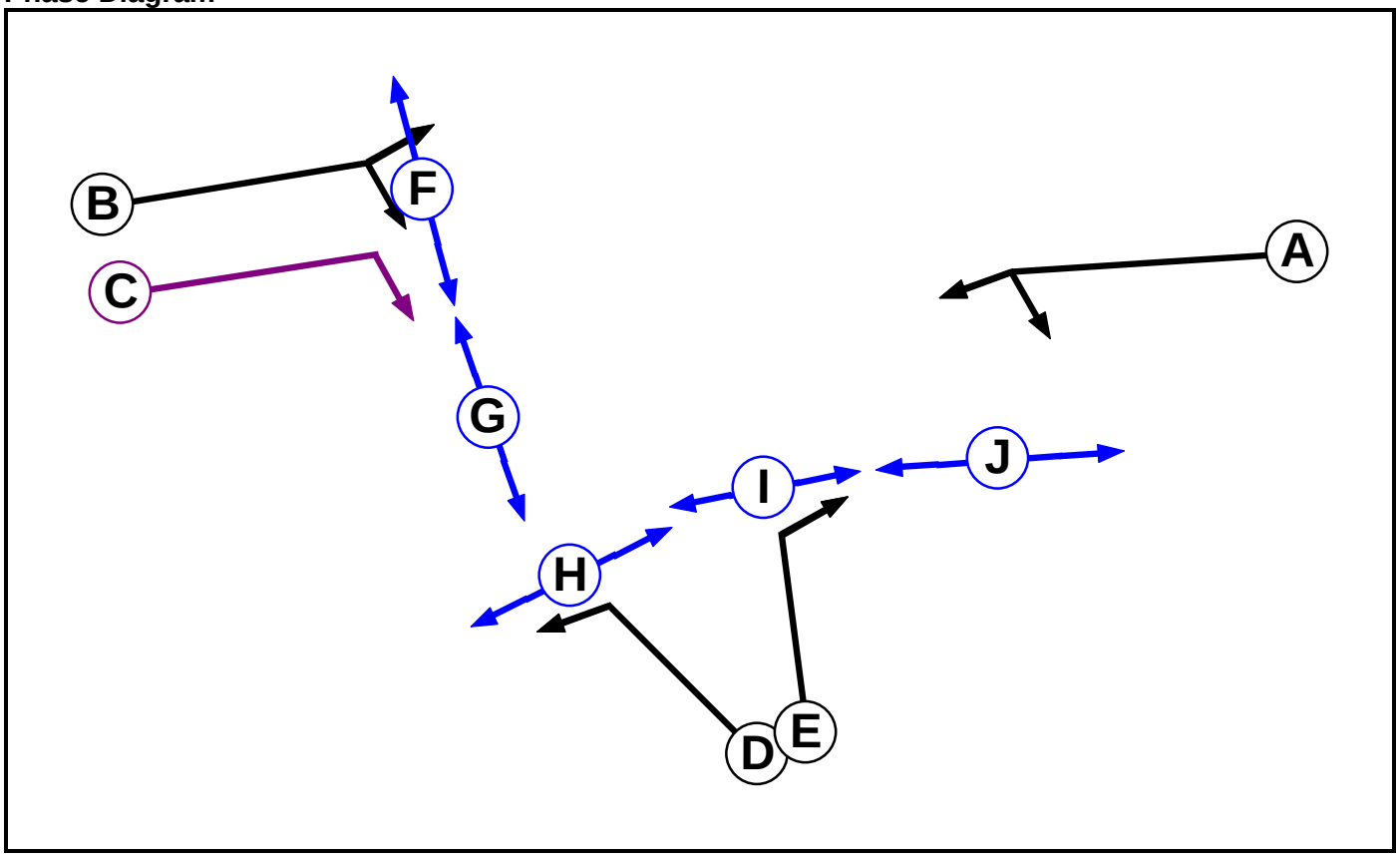
Prohibited Stage Change

		To Stage				
		1	2	3	4	5
From Stage	1		12	12	12	8
	2	8		7	8	8
	3	X	X		8	X
	4	9	6	7		9
	5	7	5	12	12	

Full Input Data And Results

C2

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	B	4	4
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		6	6
G	Pedestrian		5	5
H	Pedestrian		5	5
I	Pedestrian		5	5
J	Pedestrian		5	5

Full Input Data And Results

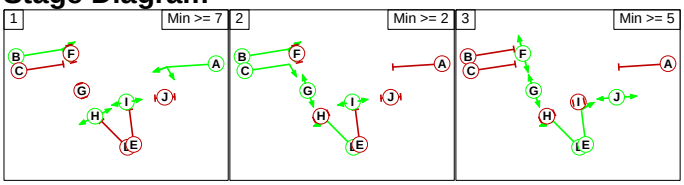
Phase Intergreens Matrix

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

Phases in Stage

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

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	A	Losing	2	2
1	3	H	Losing	2	2
1	3	I	Losing	1	1
3	1	D	Losing	3	3
3	1	E	Losing	3	3
3	1	G	Losing	2	2
3	1	J	Losing	3	3

Prohibited Stage Change

From Stage \ To Stage	1	2	3
1		7	9
2	6		9
3	10	10	

Full Input Data And Results

Full Input Data And Results

Give-Way Lane Input Data

Junction: J1: 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)**
J1:3/3 (A641 Huddersfiled Road (SW))	J1:5/1 (Ahead)	1439	0	J1:1/2	1.09	All	2.00	-	0.50	2	2.00
				J1:1/3	1.09	All					

Junction: J2: 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)**
J2:3/3 (A641 Huddersfield Road (W))	J2:6/1 (Right)	1439	0	J2:1/1	1.09	All	2.00	-	0.50	2	2.00
				J2:1/2	1.09	All					

Full Input Data And Results

Lane Input Data

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	U	D	2	3	60.0	Geom	-	5.00	0.00	Y	Arm J1:5 Left	Inf
J1:1/2 (A644 Huddersfield Road (NE))	U	C	2	3	60.0	Geom	-	3.30	0.00	Y	Arm J1:6 Ahead	Inf
J1:1/3 (A644 Huddersfield Road (NE))	U	C	2	3	60.0	Geom	-	3.00	0.00	N	Arm J1:6 Ahead	Inf
J1:2/1 (Wakefield Road)	U	F	2	3	60.0	Geom	-	4.42	0.00	Y	Arm J1:6 Left	Inf
J1:2/2 (Wakefield Road)	U	F	2	3	60.0	Geom	-	4.50	0.00	N	Arm J1:4 Right	Inf
J1:3/1 (A641 Huddersfiled Road (SW))	U	A	2	3	4.0	Geom	-	3.25	0.00	Y	Arm J1:4 Left	Inf
J1:3/2 (A641 Huddersfiled Road (SW))	U	A	2	3	60.0	Geom	-	2.80	0.00	N	Arm J1:4 Left	Inf
J1:3/3 (A641 Huddersfiled Road (SW))	O	E	2	3	60.0	Geom	-	3.23	0.00	N	Arm J1:5 Ahead	Inf
J1:4/1	U	B	2	3	60.0	Geom	-	3.60	0.00	Y		
J1:4/2	U	B	2	3	60.0	Geom	-	4.20	0.00	N		
J1:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:6/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	U	A	2	3	60.0	Geom	-	4.29	0.00	Y	Arm J2:5 Ahead	Inf
											Arm J2:6 Left	Inf
J2:1/2 (A641 Huddersfield Road (E))	U	A	2	3	60.0	Geom	-	4.29	0.00	Y	Arm J2:5 Ahead	Inf
J2:2/1 (Mill Lane)	U	D	2	3	60.0	Geom	-	4.60	0.00	Y	Arm J2:5 Left	Inf
J2:2/2 (Mill Lane)	U	E	2	3	60.0	Geom	-	4.53	0.00	Y	Arm J2:4 Right	Inf
J2:3/1 (A641 Huddersfield Road (W))	U	B	2	3	60.0	Geom	-	3.56	0.00	Y	Arm J2:4 Ahead	Inf
J2:3/2 (A641 Huddersfield Road (W))	U	B	2	3	60.0	Geom	-	3.45	0.00	N	Arm J2:4 Ahead	Inf
J2:3/3 (A641 Huddersfield Road (W))	O	B C	2	3	4.0	Geom	-	4.00	0.00	Y	Arm J2:6 Right	Inf
J2:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Count'	08:00	09:00	01:00	
2: 'PM Count'	17:00	18:00	01:00	
3: 'AM Base'	08:00	09:00	01:00	
4: 'PM Base'	17:00	18:00	01:00	
5: 'AM 2026-2027 Interim'	08:00	09:00	01:00	
6: 'PM 2026-2027 Interim'	17:00	18:00	01:00	
7: 'AM 2032-2033 Design'	08:00	09:00	01:00	
8: 'PM 2032-2033 Design'	17:00	18:00	01:00	
9: 'AM 2038-2039 Design'	08:00	09:00	01:00	
10: 'PM 2038-2039 Design'	17:00	18:00	01:00	

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

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	742	22	427	1191
	B	535	0	13	256	804
	C	61	44	0	180	285
	D	424	307	129	0	860
	Tot.	1020	1093	164	863	3140

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: AM Count
Junction: J1: Unnamed Junction	
J1:1/1	742
J1:1/2	215
J1:1/3	234
J1:2/1	269
J1:2/2	535
J1:3/1 (short)	234
J1:3/2 (with short)	485(In) 251(Out)
J1:3/3	351
J1:4/1	452
J1:4/2	568
J1:5/1	1093
J1:6/1	351
J1:6/2	367
Junction: J2: Unnamed Junction	
J2:1/1	351
J2:1/2	367
J2:2/1	180
J2:2/2	105
J2:3/1	424
J2:3/2 (with short)	436(In) 307(Out)
J2:3/3 (short)	129
J2:4/1	485
J2:4/2	351
J2:5/1	406
J2:5/2	457
J2:6/1	164

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	90.0 %	2044	2044
				Arm J2:6 Left	Inf	10.0 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM Count' (FG2: 'PM Count', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	684	29	439	1152
	B	630	0	24	358	1012
	C	123	65	0	307	495
	D	630	335	91	0	1056
	Tot.	1383	1084	144	1104	3715

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM Count
Junction: J1: Unnamed Junction	
J1:1/1	684
J1:1/2	224
J1:1/3	244
J1:2/1	382
J1:2/2	630
J1:3/1 (short)	328
J1:3/2 (with short)	753(In) 425(Out)
J1:3/3	400
J1:4/1	644
J1:4/2	739
J1:5/1	1084
J1:6/1	417
J1:6/2	433
Junction: J2: Unnamed Junction	
J2:1/1	417
J2:1/2	433
J2:2/1	307
J2:2/2	188
J2:3/1	630
J2:3/2 (with short)	426(In) 335(Out)
J2:3/3 (short)	91
J2:4/1	753
J2:4/2	400
J2:5/1	518
J2:5/2	586
J2:6/1	144

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	87.3 %	2044	2044
				Arm J2:6 Left	Inf	12.7 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

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

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	754	22	432	1208
	B	538	0	13	265	816
	C	60	45	0	180	285
	D	444	339	129	0	912
	Tot.	1042	1138	164	877	3221

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: AM Base
Junction: J1: Unnamed Junction	
J1:1/1	754
J1:1/2	217
J1:1/3	237
J1:2/1	278
J1:2/2	538
J1:3/1 (short)	245
J1:3/2 (with short)	504(In) 259(Out)
J1:3/3	384
J1:4/1	460
J1:4/2	582
J1:5/1	1138
J1:6/1	358
J1:6/2	374
Junction: J2: Unnamed Junction	
J2:1/1	358
J2:1/2	374
J2:2/1	180
J2:2/2	105
J2:3/1	444
J2:3/2 (with short)	468(In) 339(Out)
J2:3/3 (short)	129
J2:4/1	504
J2:4/2	384
J2:5/1	413
J2:5/2	464
J2:6/1	164

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	90.2 %	2044	2044
				Arm J2:6 Left	Inf	9.8 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM Base' (FG4: 'PM Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	689	29	455	1173
	B	639	0	24	386	1049
	C	122	66	0	307	495
	D	639	348	91	0	1078
	Tot.	1400	1103	144	1148	3795

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: PM Base
Junction: J1: Unnamed Junction	
J1:1/1	689
J1:1/2	232
J1:1/3	252
J1:2/1	410
J1:2/2	639
J1:3/1 (short)	342
J1:3/2 (with short)	761(In) 419(Out)
J1:3/3	414
J1:4/1	657
J1:4/2	743
J1:5/1	1103
J1:6/1	440
J1:6/2	454
Junction: J2: Unnamed Junction	
J2:1/1	440
J2:1/2	454
J2:2/1	307
J2:2/2	188
J2:3/1	639
J2:3/2 (with short)	439(In) 348(Out)
J2:3/3 (short)	91
J2:4/1	761
J2:4/2	414
J2:5/1	541
J2:5/2	607
J2:6/1	144

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	88.0 %	2044	2044
				Arm J2:6 Left	Inf	12.0 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'AM 2026-2027 Interim' (FG5: 'AM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	858	22	444	1324
	B	660	0	14	284	958
	C	60	45	0	180	285
	D	479	366	129	0	974
	Tot.	1199	1269	165	908	3541

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: AM 2026-2027 Interim
Junction: J1: Unnamed Junction	
J1:1/1	858
J1:1/2	223
J1:1/3	243
J1:2/1	298
J1:2/2	660
J1:3/1 (short)	269
J1:3/2 (with short)	539(In) 270(Out)
J1:3/3	411
J1:4/1	535
J1:4/2	664
J1:5/1	1269
J1:6/1	374
J1:6/2	390
Junction: J2: Unnamed Junction	
J2:1/1	374
J2:1/2	390
J2:2/1	180
J2:2/2	105
J2:3/1	479
J2:3/2 (with short)	495(In) 366(Out)
J2:3/3 (short)	129
J2:4/1	539
J2:4/2	411
J2:5/1	428
J2:5/2	480
J2:6/1	165

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	90.4 %	2044	2044
				Arm J2:6 Left	Inf	9.6 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'PM 2026-2027 Interim' (FG6: 'PM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	799	29	485	1313
	B	741	0	25	423	1189
	C	120	68	0	307	495
	D	656	372	91	0	1119
	Tot.	1517	1239	145	1215	4116

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: PM 2026-2027 Interim
Junction: J1: Unnamed Junction	
J1:1/1	799
J1:1/2	246
J1:1/3	268
J1:2/1	448
J1:2/2	741
J1:3/1 (short)	369
J1:3/2 (with short)	776(In) 407(Out)
J1:3/3	440
J1:4/1	694
J1:4/2	823
J1:5/1	1239
J1:6/1	477
J1:6/2	485
Junction: J2: Unnamed Junction	
J2:1/1	477
J2:1/2	485
J2:2/1	307
J2:2/2	188
J2:3/1	656
J2:3/2 (with short)	463(In) 372(Out)
J2:3/3 (short)	91
J2:4/1	776
J2:4/2	440
J2:5/1	577
J2:5/2	638
J2:6/1	145

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	88.7 %	2044	2044
				Arm J2:6 Left	Inf	11.3 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 7: 'AM 2032-2033 Design' (FG7: 'AM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	792	34	438	1264
	B	667	0	2	29	698
	C	82	23	0	180	285
	D	450	124	129	0	703
	Tot.	1199	939	165	647	2950

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 7: AM 2032-2033 Design
Junction: J1: Unnamed Junction	
J1:1/1	792
J1:1/2	226
J1:1/3	246
J1:2/1	31
J1:2/2	667
J1:3/1 (short)	254
J1:3/2 (with short)	532(In) 278(Out)
J1:3/3	147
J1:4/1	541
J1:4/2	658
J1:5/1	939
J1:6/1	239
J1:6/2	264
Junction: J2: Unnamed Junction	
J2:1/1	239
J2:1/2	264
J2:2/1	180
J2:2/2	105
J2:3/1	450
J2:3/2 (with short)	253(In) 124(Out)
J2:3/3 (short)	129
J2:4/1	532
J2:4/2	147
J2:5/1	293
J2:5/2	354
J2:6/1	165

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	84.9 %	2044	2044
				Arm J2:6 Left	Inf	15.1 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 8: 'PM 2032-2033 Design' (FG8: 'PM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	739	39	493	1271
	B	655	0	17	215	887
	C	147	41	0	307	495
	D	629	176	91	0	896
	Tot.	1431	956	147	1015	3549

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: PM 2032-2033 Design
Junction: J1: Unnamed Junction	
J1:1/1	739
J1:1/2	256
J1:1/3	276
J1:2/1	232
J1:2/2	655
J1:3/1 (short)	318
J1:3/2 (with short)	776(In) 458(Out)
J1:3/3	217
J1:4/1	682
J1:4/2	749
J1:5/1	956
J1:6/1	375
J1:6/2	389
Junction: J2: Unnamed Junction	
J2:1/1	375
J2:1/2	389
J2:2/1	307
J2:2/2	188
J2:3/1	629
J2:3/2 (with short)	267(In) 176(Out)
J2:3/3 (short)	91
J2:4/1	776
J2:4/2	217
J2:5/1	473
J2:5/2	542
J2:6/1	147

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	85.1 %	2044	2044
				Arm J2:6 Left	Inf	14.9 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 9: 'AM 2038-2039 Design' (FG9: 'AM 2038-2039 Design', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	812	32	441	1285
	B	743	0	5	68	816
	C	81	24	0	180	285
	D	452	133	129	0	714
	Tot.	1276	969	166	689	3100

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 9: AM 2038-2039 Design
Junction: J1: Unnamed Junction	
J1:1/1	812
J1:1/2	226
J1:1/3	247
J1:2/1	73
J1:2/2	743
J1:3/1 (short)	258
J1:3/2 (with short)	533(In) 275(Out)
J1:3/3	157
J1:4/1	575
J1:4/2	701
J1:5/1	969
J1:6/1	265
J1:6/2	281
Junction: J2: Unnamed Junction	
J2:1/1	265
J2:1/2	281
J2:2/1	180
J2:2/2	105
J2:3/1	452
J2:3/2 (with short)	262(In) 133(Out)
J2:3/3 (short)	129
J2:4/1	533
J2:4/2	157
J2:5/1	318
J2:5/2	371
J2:6/1	166

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	86.0 %	2044	2044
				Arm J2:6 Left	Inf	14.0 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 10: 'PM 2038-2039 Design' (FG10: 'PM 2038-2039 Design', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	793	38	494	1325
	B	688	0	18	232	938
	C	143	45	0	307	495
	D	634	201	91	0	926
	Tot.	1465	1039	147	1033	3684

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 10: PM 2038-2039 Design
Junction: J1: Unnamed Junction	
J1:1/1	793
J1:1/2	256
J1:1/3	276
J1:2/1	250
J1:2/2	688
J1:3/1 (short)	347
J1:3/2 (with short)	777(In) 430(Out)
J1:3/3	246
J1:4/1	681
J1:4/2	784
J1:5/1	1039
J1:6/1	384
J1:6/2	398
Junction: J2: Unnamed Junction	
J2:1/1	384
J2:1/2	398
J2:2/1	307
J2:2/2	188
J2:3/1	634
J2:3/2 (with short)	292(In) 201(Out)
J2:3/3 (short)	91
J2:4/1	777
J2:4/2	246
J2:5/1	482
J2:5/2	551
J2:6/1	147

Full Input Data And Results

Lane Saturation Flows

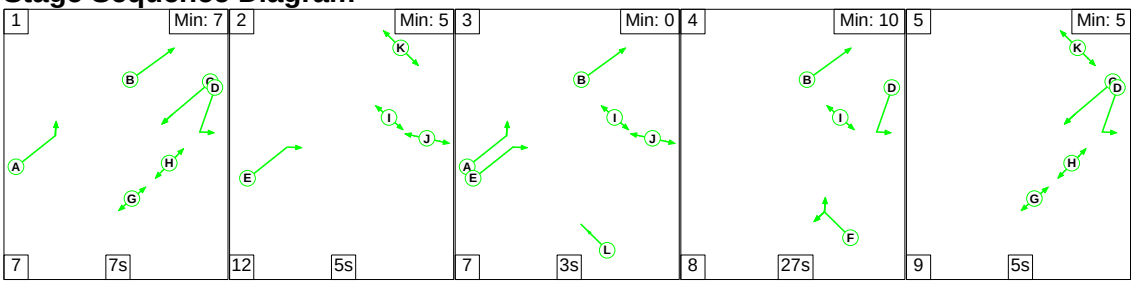
Junction: J1: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A644 Huddersfield Road (NE))	5.00	0.00	Y	Arm J1:5 Left	Inf	100.0 %	2115	2115
J1:1/2 (A644 Huddersfield Road (NE))	3.30	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1945	1945
J1:1/3 (A644 Huddersfield Road (NE))	3.00	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2055	2055
J1:2/1 (Wakefield Road)	4.42	0.00	Y	Arm J1:6 Left	Inf	100.0 %	2057	2057
J1:2/2 (Wakefield Road)	4.50	0.00	N	Arm J1:4 Right	Inf	100.0 %	2205	2205
J1:3/1 (A641 Huddersfiled Road (SW))	3.25	0.00	Y	Arm J1:4 Left	Inf	100.0 %	1940	1940
J1:3/2 (A641 Huddersfiled Road (SW))	2.80	0.00	N	Arm J1:4 Left	Inf	100.0 %	2035	2035
J1:3/3 (A641 Huddersfiled Road (SW))	3.23	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2078	2078
J1:4/1	3.60	0.00	Y				1975	1975
J1:4/2	4.20	0.00	N				2175	2175
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	85.4 %	2044	2044
				Arm J2:6 Left	Inf	14.6 %		
J2:1/2 (A641 Huddersfield Road (E))	4.29	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	2044	2044
J2:2/1 (Mill Lane)	4.60	0.00	Y	Arm J2:5 Left	Inf	100.0 %	2075	2075
J2:2/2 (Mill Lane)	4.53	0.00	Y	Arm J2:4 Right	Inf	100.0 %	2068	2068
J2:3/1 (A641 Huddersfield Road (W))	3.56	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1971	1971
J2:3/2 (A641 Huddersfield Road (W))	3.45	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2100	2100
J2:3/3 (A641 Huddersfield Road (W))	4.00	0.00	Y	Arm J2:6 Right	Inf	100.0 %	2015	2015
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM Count' (FG1: 'AM Count', Plan 1: 'Network Control Plan 1')
C1

Stage Sequence Diagram

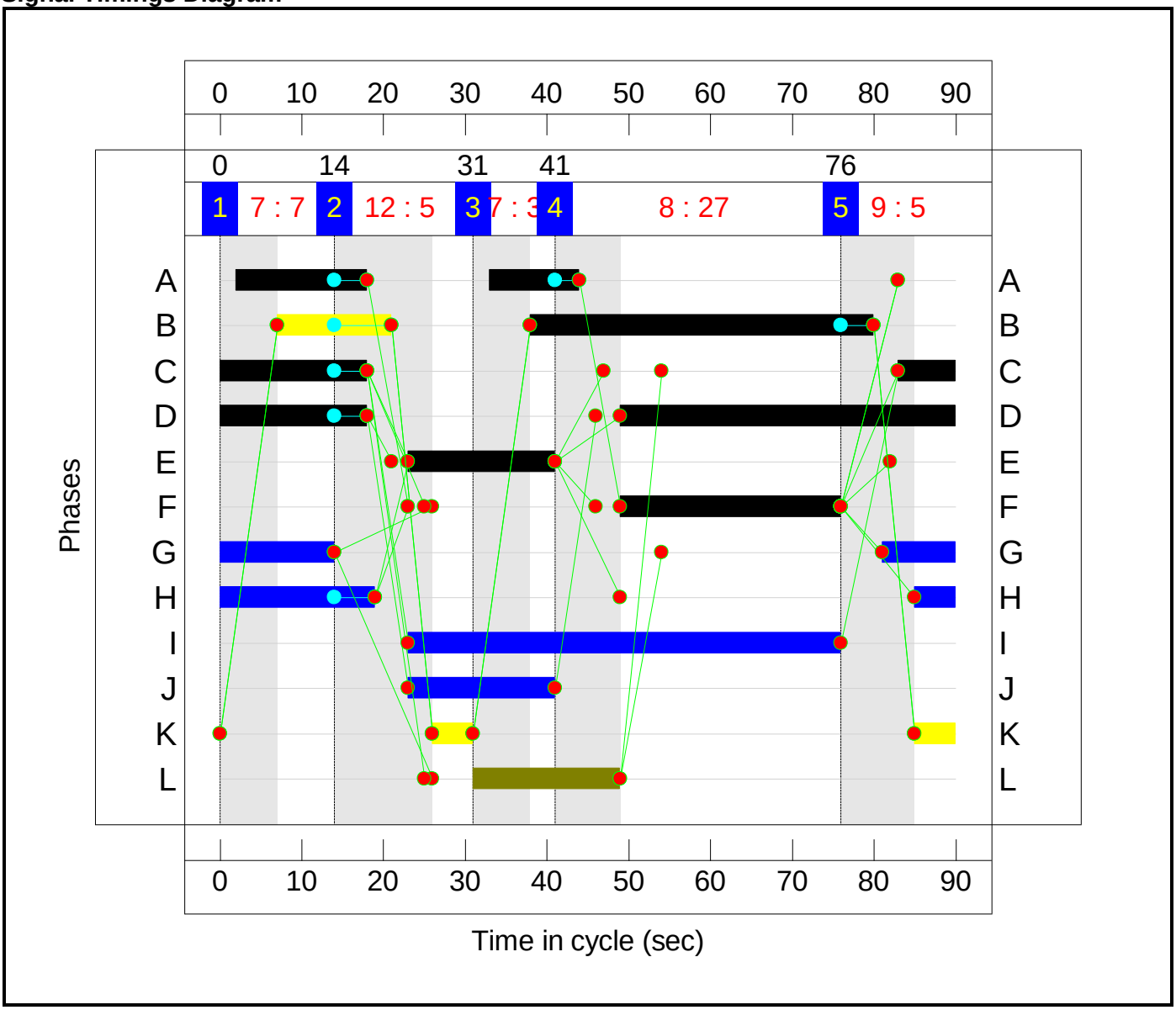


Stage Timings

Stage	1	2	3	4	5
Duration	7	5	3	27	5
Change Point	0	14	31	41	76

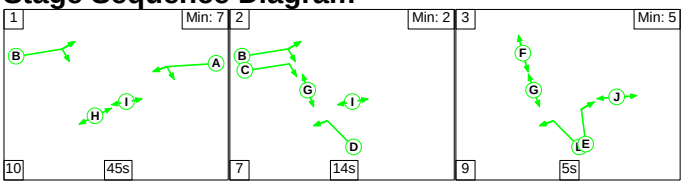
Full Input Data And Results

Signal Timings Diagram



C2

Stage Sequence Diagram

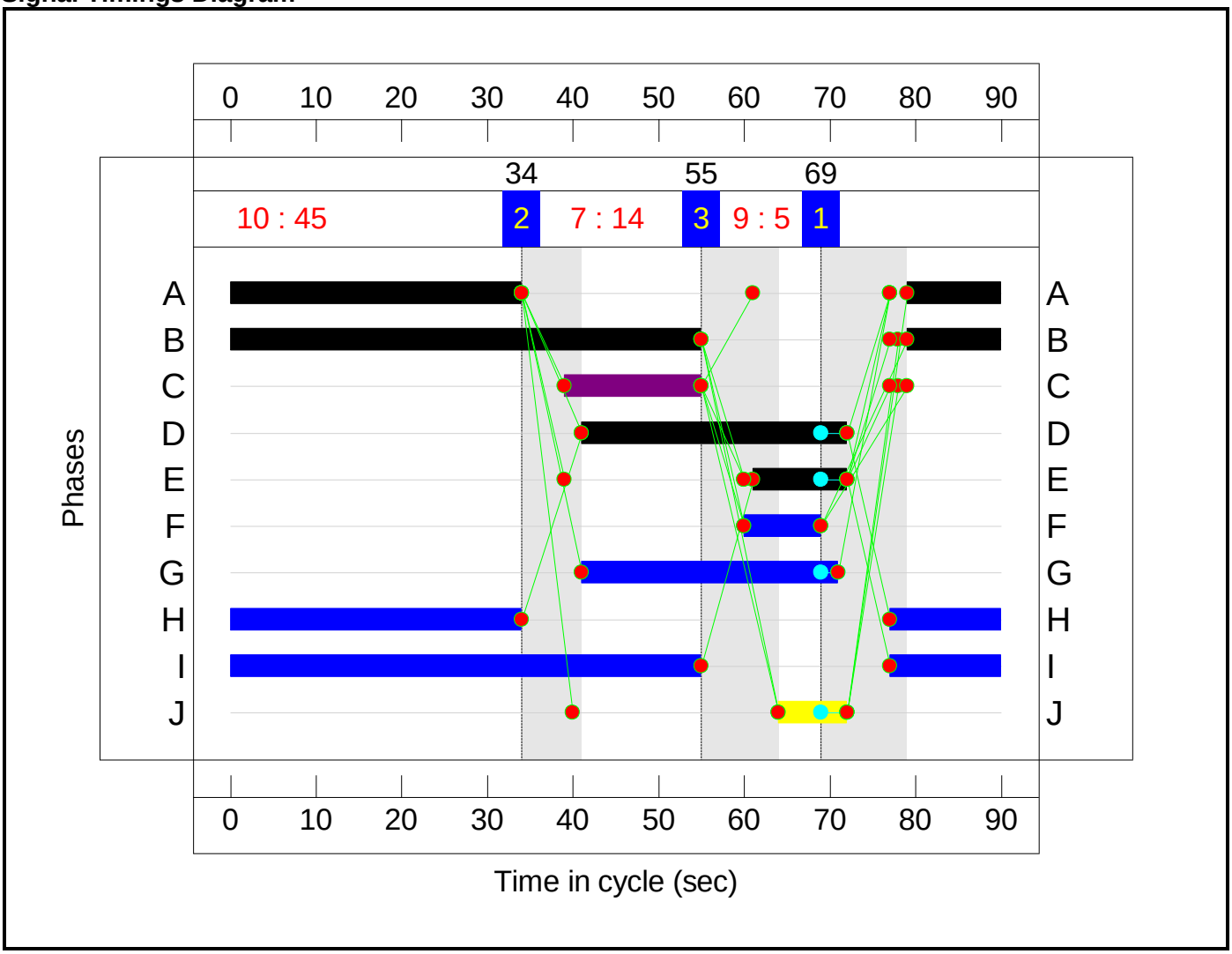


Stage Timings

Stage	1	2	3
Duration	45	14	5
Change Point	69	34	55

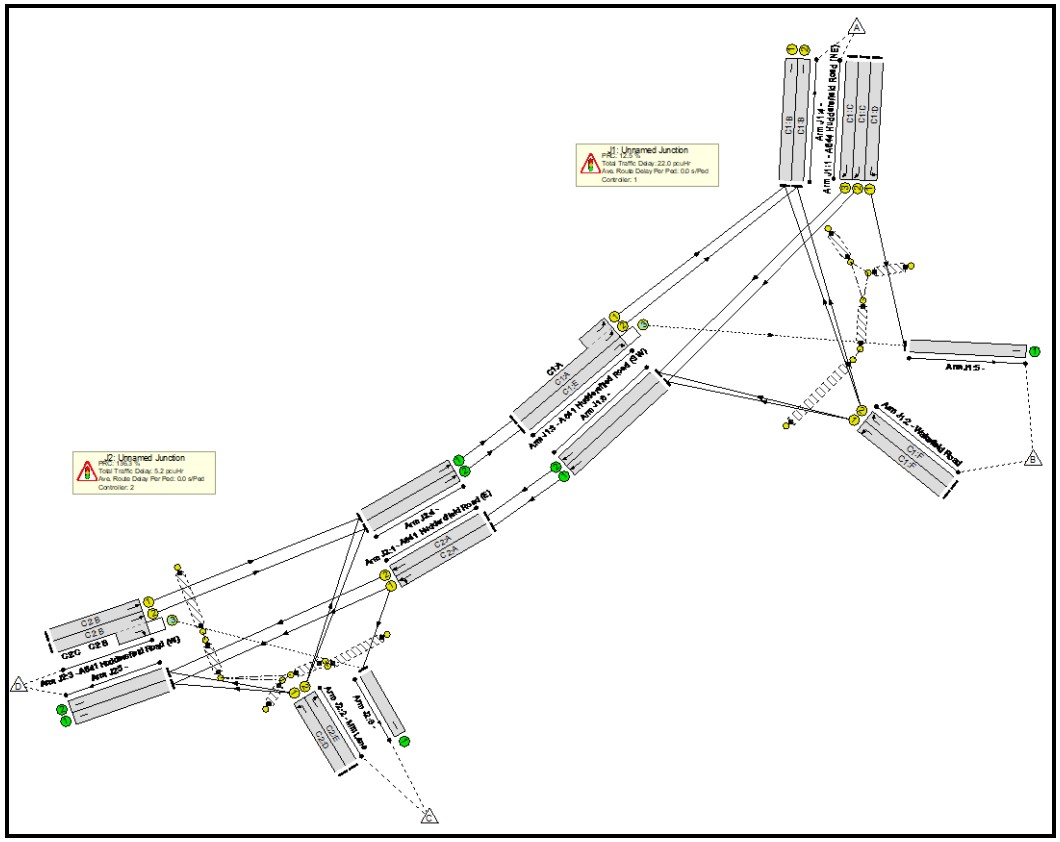
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.0%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.0%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	59	-	742	2115	1410	52.6%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	215	1945	562	38.3%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	234	2055	594	39.4%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	27	-	269	2057	640	42.0%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	27	-	535	2205	686	78.0%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	27	-	485	2035:1940	491+458	51.1 : 51.1%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	18	-	351	2078	439	80.0%
4/1		U	N/A	N/A	C1:B		2	56	-	452	1975	1273	35.5%
4/2		U	N/A	N/A	C1:B		2	56	-	568	2175	1402	40.5%
5/1		U	N/A	N/A	-		-	-	-	1093	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	18	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**38.1%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	45	-	351	2044	1045	33.6%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	45	-	367	2044	1045	35.1%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	31	-	180	2075	738	24.4%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	11	-	105	2068	276	38.1%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	66	-	424	1971	1467	28.9%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	66	16	436	2100:2015	1134+476	27.1 : 27.1%
4/1	Ahead	U	N/A	N/A	-		-	-	-	485	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	351	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	406	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	457	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	164	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	9	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	30	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	47	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	68	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	8	-	0	-	0	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	**-**	**-**	**99**	**371**	**10**	**19.4**	**7.7**	**0.1**	**27.3**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**344**	**7**	**15.7**	**6.3**	**0.0**	**22.0**	**-**	**-**	**-**	**-**
1/1	742	742	-	-	-	1.6	0.6	-	2.1	10.4	9.5	0.6	10.0
1/2	215	215	-	-	-	1.5	0.3	-	1.8	30.8	4.2	0.3	4.5
1/3	234	234	-	-	-	1.7	0.3	-	2.0	30.7	4.7	0.3	5.0
2/1	269	269	-	-	-	1.8	0.4	-	2.2	29.4	5.3	0.4	5.7
2/2	535	535	-	-	-	4.2	1.7	-	5.9	39.9	12.0	1.7	13.8
3/2+3/1	485	485	-	-	-	1.7	0.5	-	2.2	16.3	3.1	0.5	3.6
3/3	351	351	0	344	7	3.1	1.9	0.0	5.0	51.2	8.3	1.9	10.3
4/1	452	452	-	-	-	0.1	0.3	-	0.3	2.6	1.1	0.3	1.4
4/2	568	568	-	-	-	0.1	0.3	-	0.4	2.5	0.7	0.3	1.1
5/1	1093	1093	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**99**	**27**	**3**	**3.7**	**1.4**	**0.1**	**5.2**	**-**	**-**	**-**	**-**
1/1	351	351	-	-	-	0.4	0.3	-	0.7	6.8	3.1	0.3	3.4
1/2	367	367	-	-	-	0.4	0.3	-	0.7	6.7	3.1	0.3	3.3
2/1	180	180	-	-	-	1.0	0.2	-	1.2	23.7	3.1	0.2	3.3
2/2	105	105	-	-	-	1.0	0.3	-	1.3	46.1	2.4	0.3	2.7
3/1	424	424	-	-	-	0.4	0.2	-	0.6	5.5	3.4	0.2	3.6
3/2+3/3	436	436	99	27	3	0.4	0.2	0.1	0.7	5.9	2.2	0.2	2.4

Full Input Data And Results

4/1	485	485	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	351	351	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	406	406	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	457	457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	164	164	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

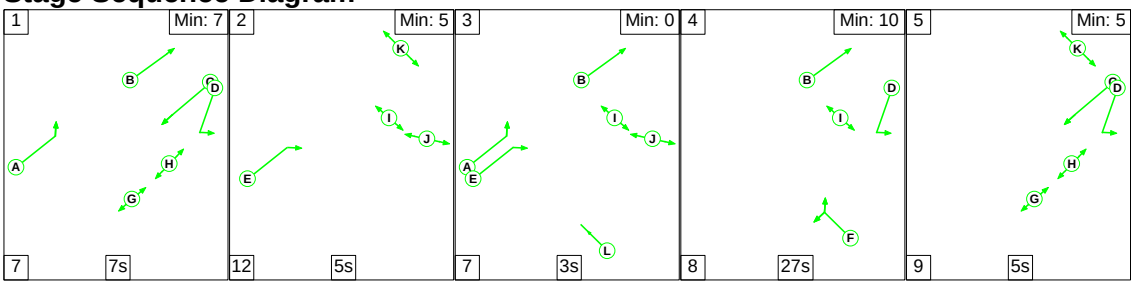
C1	PRC for Signalled Lanes (%):	12.5	Total Delay for Signalled Lanes (pcuHr):	22.02	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	136.3	Total Delay for Signalled Lanes (pcuHr):	5.23	Cycle Time (s):	90
	PRC Over All Lanes (%):	12.5	Total Delay Over All Lanes(pcuHr):	27.25		

Full Input Data And Results

Scenario 2: 'PM Count' (FG2: 'PM Count', Plan 1: 'Network Control Plan 1')

C1

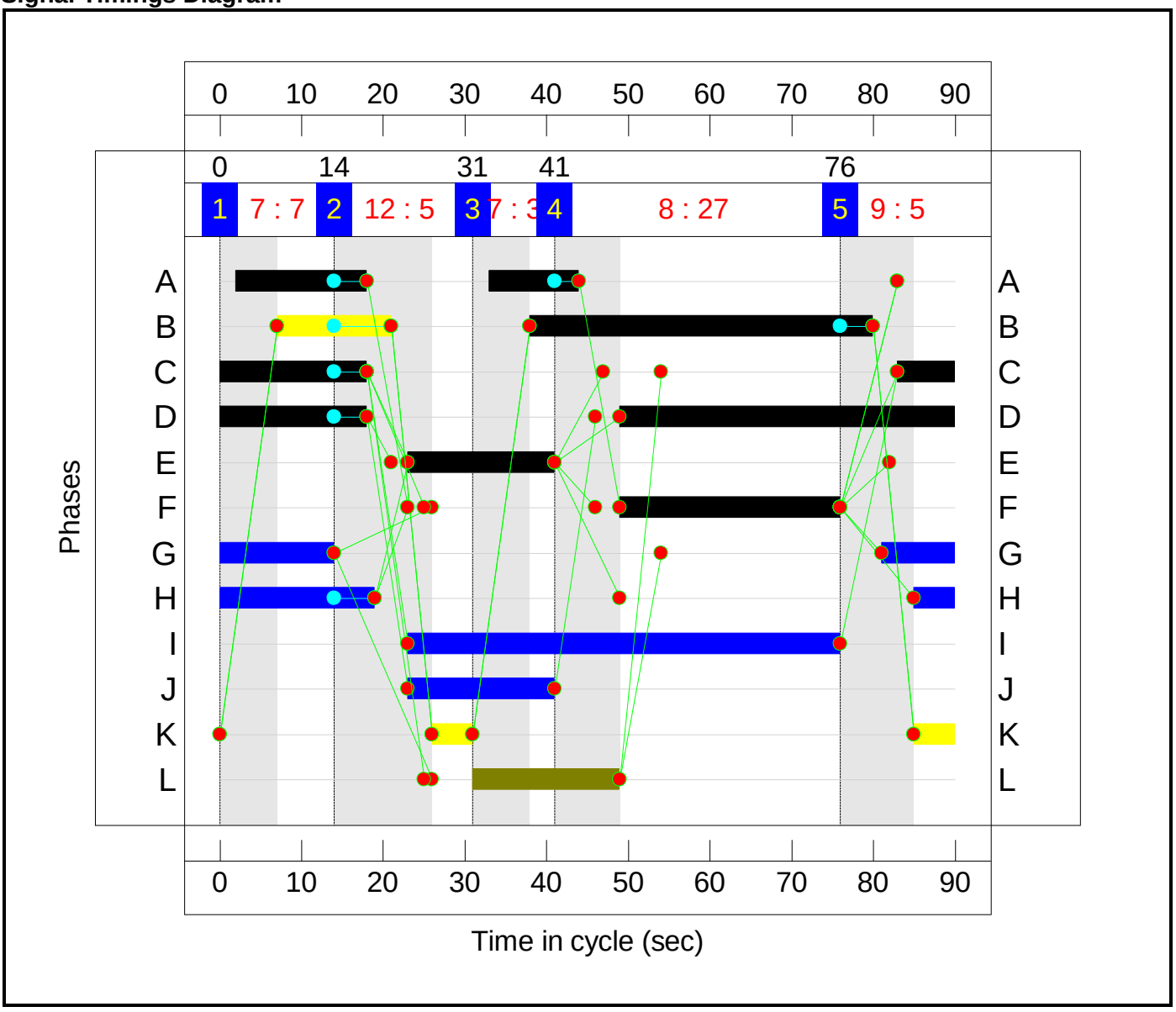
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	3	27	5
Change Point	0	14	31	41	76

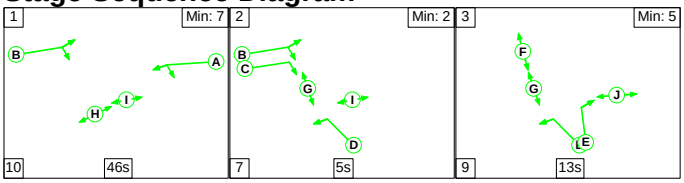
Signal Timings Diagram



Full Input Data And Results

C2

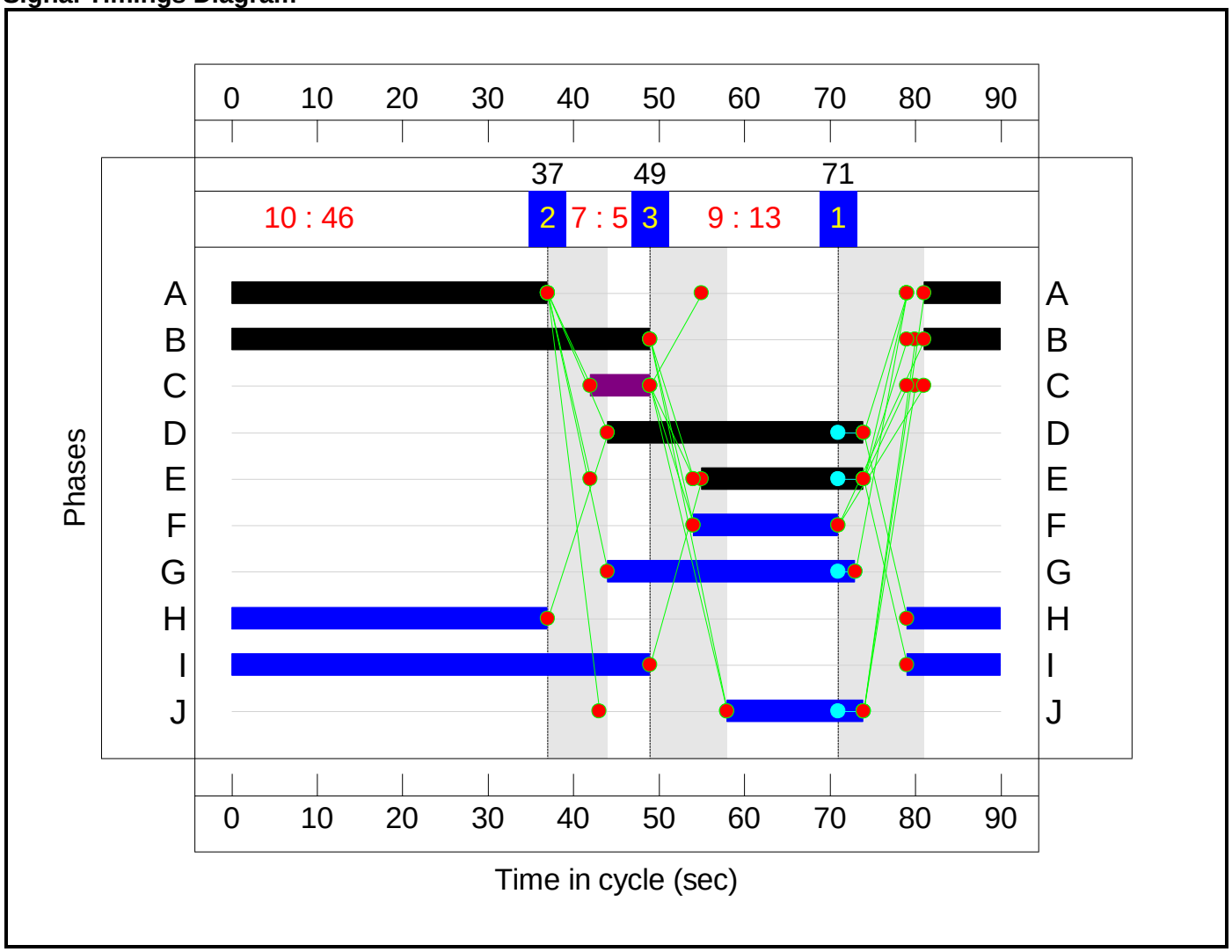
Stage Sequence Diagram



Stage Timings

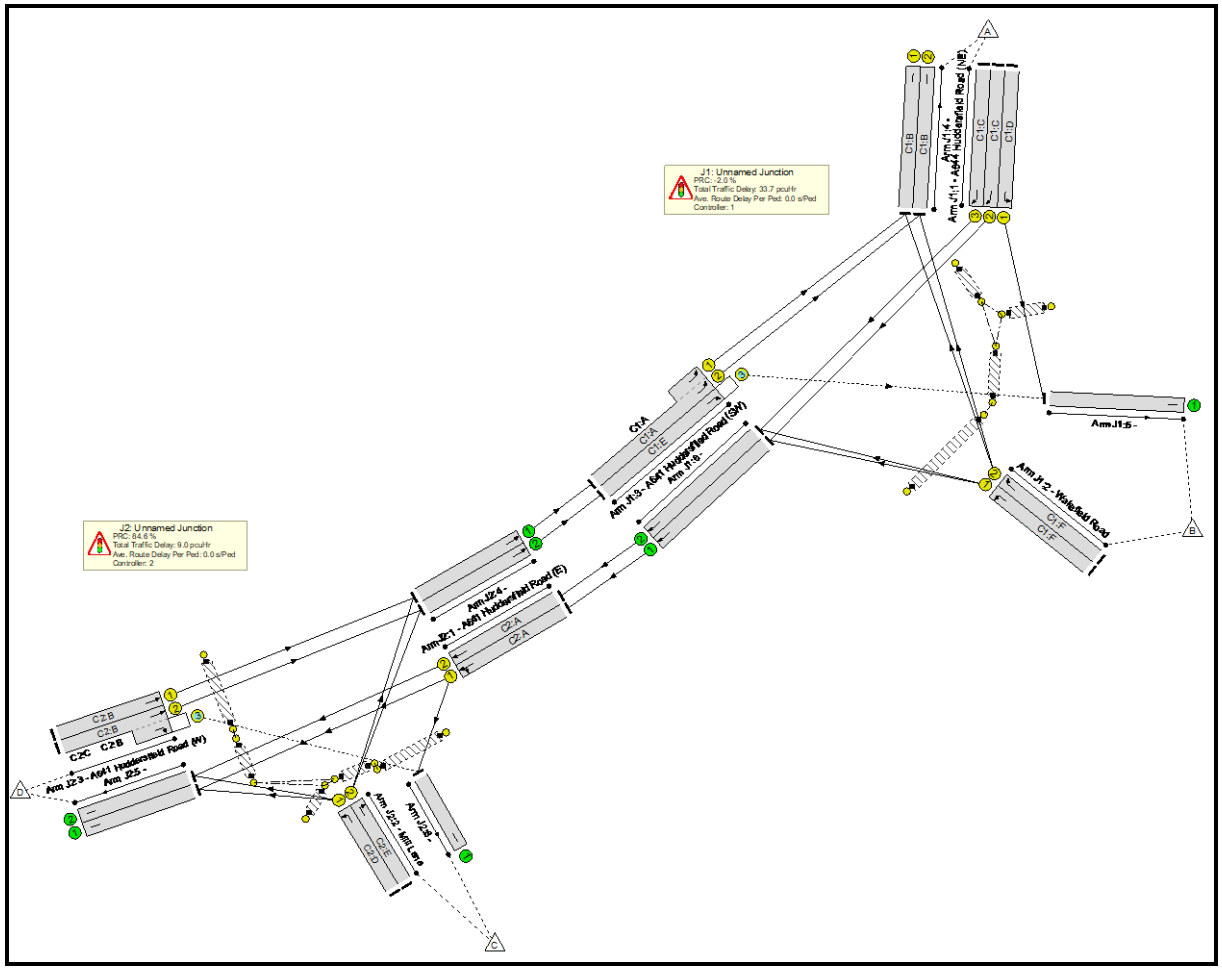
Stage	1	2	3
Duration	46	5	13
Change Point	71	37	49

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.8%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.8%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	59	-	684	2115	1410	48.5%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	224	1945	562	39.9%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	244	2055	594	41.1%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	27	-	382	2057	640	59.7%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	27	-	630	2205	686	91.8%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	27	-	753	2035:1940	507+392	83.8 : 83.8%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	18	-	400	2078	439	91.2%
4/1		U	N/A	N/A	C1:B		2	56	-	644	1975	1273	50.6%
4/2		U	N/A	N/A	C1:B		2	56	-	739	2175	1402	52.7%
5/1		U	N/A	N/A	-		-	-	-	1084	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	417	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	433	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	18	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**48.8%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	46	-	417	2044	1067	39.1%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	46	-	433	2044	1067	40.6%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	30	-	307	2075	715	43.0%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	19	-	188	2068	460	40.9%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	58	-	630	1971	1292	48.8%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	58	7	426	2100:2015	1106+300	30.3 : 30.3%
4/1	Ahead	U	N/A	N/A	-		-	-	-	753	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	586	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	144	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	17	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	29	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	48	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	60	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	16	-	0	-	0	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	**-**	**-**	**79**	**403**	**10**	**26.1**	**16.6**	**0.1**	**42.8**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**393**	**7**	**19.3**	**14.5**	**0.0**	**33.7**	**-**	**-**	**-**	**-**
1/1	684	684	-	-	-	1.4	0.5	-	1.9	9.9	8.4	0.5	8.8
1/2	224	224	-	-	-	1.6	0.3	-	1.9	31.0	4.5	0.3	4.8
1/3	244	244	-	-	-	1.8	0.3	-	2.1	31.0	4.9	0.3	5.2
2/1	382	382	-	-	-	2.8	0.7	-	3.5	33.2	8.1	0.7	8.8
2/2	630	630	-	-	-	5.2	4.8	-	10.0	57.3	15.1	4.8	19.9
3/2+3/1	753	753	-	-	-	2.7	2.5	-	5.2	24.9	4.8	2.5	7.3
3/3	400	400	0	393	7	3.5	4.2	0.0	7.7	69.3	9.8	4.2	14.1
4/1	644	644	-	-	-	0.1	0.5	-	0.6	3.6	1.8	0.5	2.3
4/2	739	739	-	-	-	0.2	0.6	-	0.7	3.6	3.1	0.6	3.7
5/1	1084	1084	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	417	417	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	433	433	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**79**	**10**	**2**	**6.8**	**2.1**	**0.1**	**9.0**	**-**	**-**	**-**	**-**
1/1	417	417	-	-	-	0.6	0.3	-	0.9	8.0	4.6	0.3	4.9
1/2	433	433	-	-	-	0.6	0.3	-	0.9	7.8	4.5	0.3	4.8
2/1	307	307	-	-	-	1.9	0.4	-	2.3	27.1	5.9	0.4	6.3
2/2	188	188	-	-	-	1.6	0.3	-	1.9	36.6	4.0	0.3	4.3
3/1	630	630	-	-	-	1.4	0.5	-	1.8	10.6	7.9	0.5	8.4
3/2+3/3	426	426	79	10	2	0.7	0.2	0.1	1.1	9.1	3.4	0.2	3.6

Full Input Data And Results

4/1	753	753	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	586	586	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	144	144	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

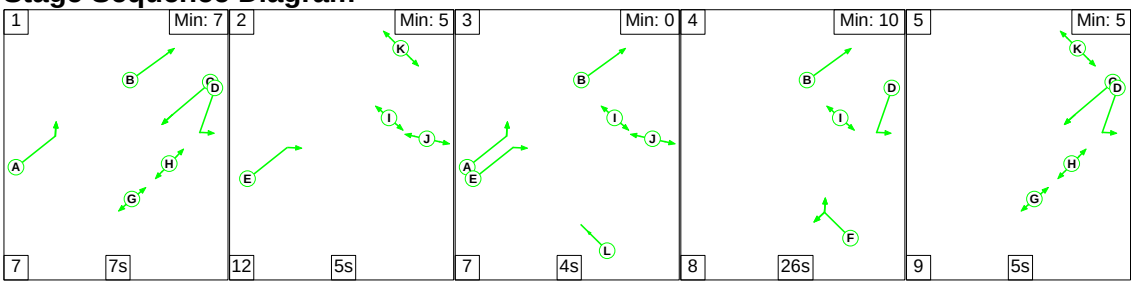
C1	PRC for Signalled Lanes (%):	-2.0	Total Delay for Signalled Lanes (pcuHr):	33.75	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	84.6	Total Delay for Signalled Lanes (pcuHr):	9.01	Cycle Time (s):	90
	PRC Over All Lanes (%):	-2.0	Total Delay Over All Lanes(pcuHr):	42.76		

Full Input Data And Results

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

C1

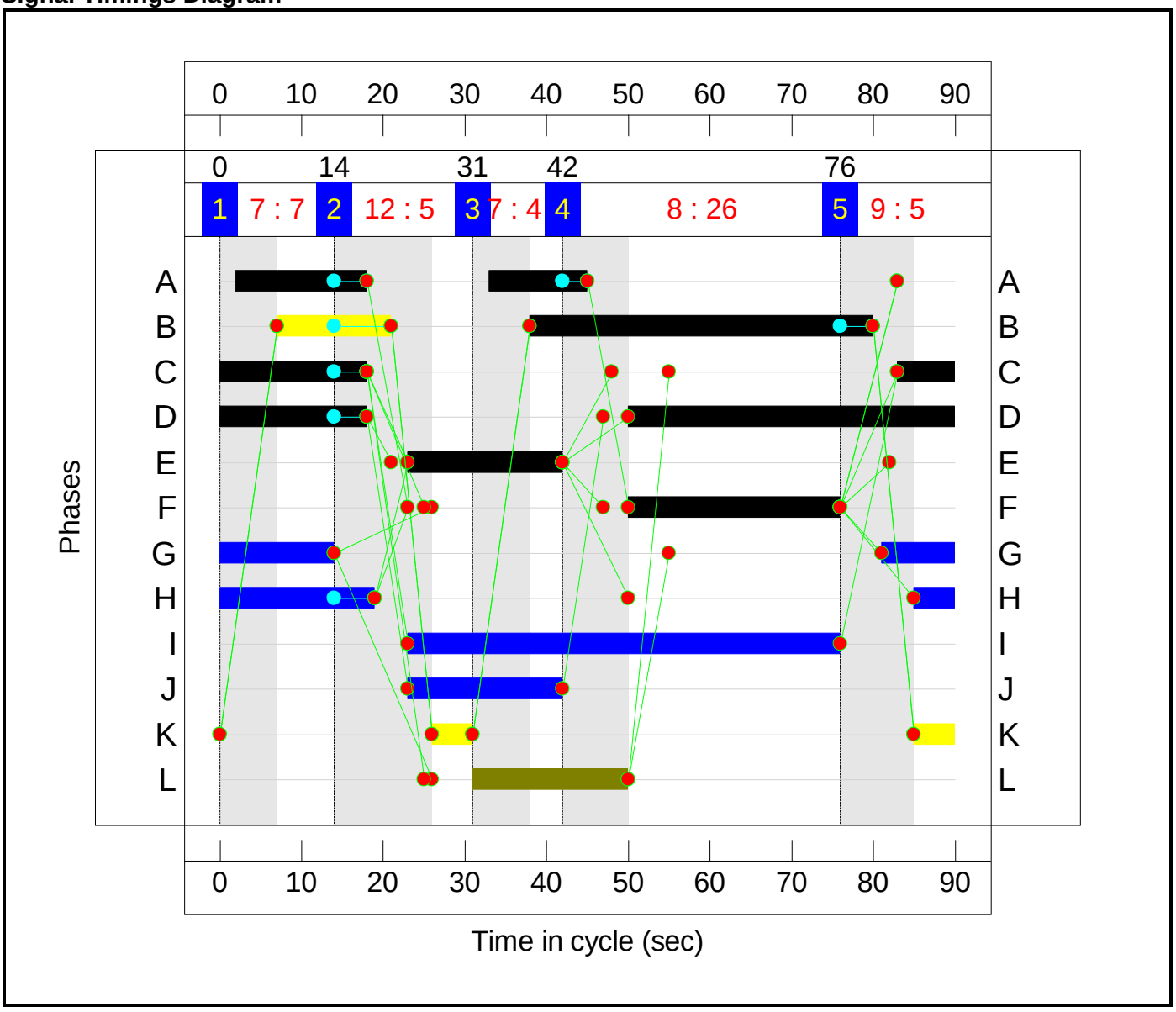
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	4	26	5
Change Point	0	14	31	42	76

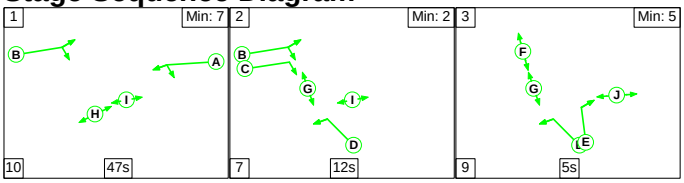
Signal Timings Diagram



Full Input Data And Results

C2

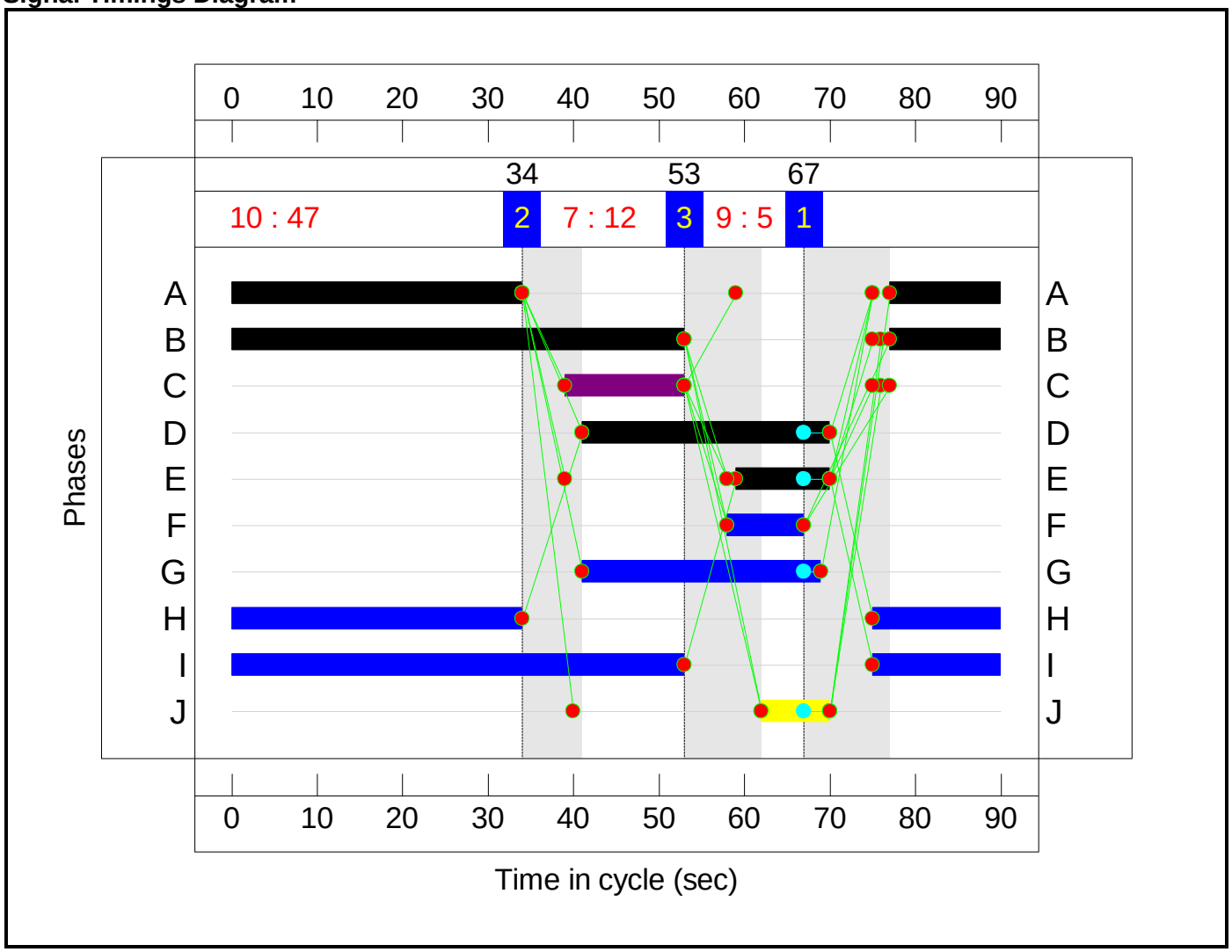
Stage Sequence Diagram



Stage Timings

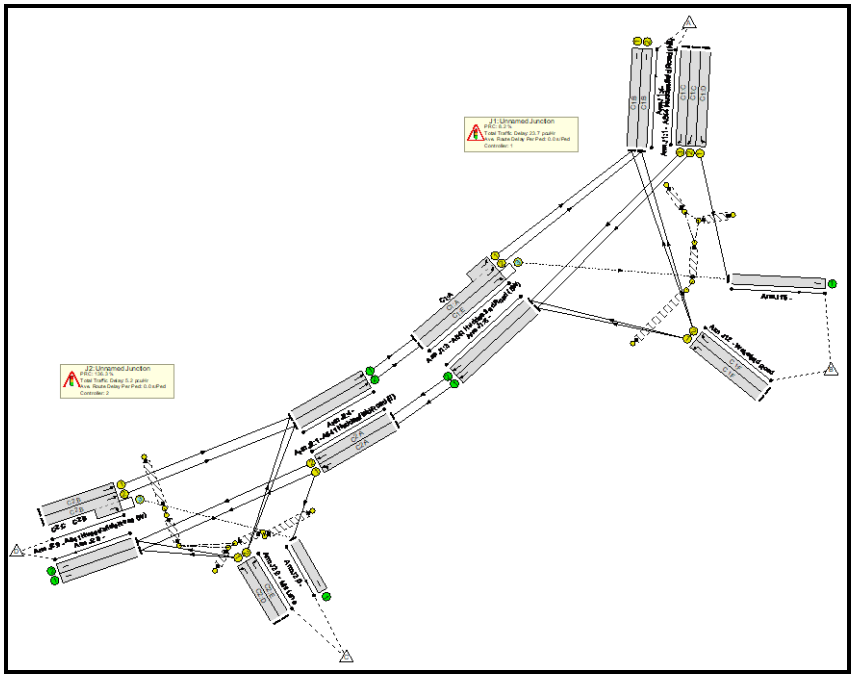
Stage	1	2	3
Duration	47	12	5
Change Point	67	34	53

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.2%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.2%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	58	-	754	2115	1387	54.4%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	217	1945	562	38.6%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	237	2055	594	39.9%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	26	-	278	2057	617	45.0%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	26	-	538	2205	662	81.3%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	28	-	504	2035:1940	502+474	51.6 : 51.6%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	19	-	384	2078	462	83.2%
4/1		U	N/A	N/A	C1:B		2	56	-	460	1975	1273	36.1%
4/2		U	N/A	N/A	C1:B		2	56	-	582	2175	1402	41.5%
5/1		U	N/A	N/A	-		-	-	-	1138	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	358	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	374	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	19	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**38.1%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	47	-	358	2044	1090	32.8%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	47	-	374	2044	1090	34.3%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	29	-	180	2075	692	26.0%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	11	-	105	2068	276	38.1%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	66	-	444	1971	1467	30.3%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	66	14	468	2100:2015	1162+442	29.2 : 29.2%
4/1	Ahead	U	N/A	N/A	-		-	-	-	504	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	384	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	464	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	164	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	9	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	28	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	49	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	68	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	8	-	0	-	0	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	**-**	**-**	**102**	**401**	**10**	**20.1**	**8.7**	**0.1**	**28.9**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**376**	**8**	**16.5**	**7.3**	**0.0**	**23.7**	**-**	**-**	**-**	**-**
1/1	754	754	-	-	-	1.7	0.6	-	2.3	11.1	10.1	0.6	10.6
1/2	217	217	-	-	-	1.5	0.3	-	1.9	30.8	4.3	0.3	4.7
1/3	237	237	-	-	-	1.7	0.3	-	2.0	30.8	4.7	0.3	5.1
2/1	278	278	-	-	-	2.0	0.4	-	2.4	30.8	5.6	0.4	6.0
2/2	538	538	-	-	-	4.4	2.1	-	6.5	43.3	12.4	2.1	14.5
3/2+3/1	504	504	-	-	-	1.7	0.5	-	2.2	15.8	3.6	0.5	4.2
3/3	384	384	0	376	8	3.4	2.3	0.0	5.7	53.3	9.1	2.3	11.5
4/1	460	460	-	-	-	0.1	0.3	-	0.3	2.6	1.1	0.3	1.4
4/2	582	582	-	-	-	0.1	0.4	-	0.4	2.6	0.7	0.4	1.1
5/1	1138	1138	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	358	358	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	374	374	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**102**	**24**	**3**	**3.7**	**1.4**	**0.1**	**5.2**	**-**	**-**	**-**	**-**
1/1	358	358	-	-	-	0.3	0.2	-	0.6	5.7	3.1	0.2	3.4
1/2	374	374	-	-	-	0.3	0.3	-	0.6	5.6	3.0	0.3	3.3
2/1	180	180	-	-	-	1.1	0.2	-	1.3	25.4	3.2	0.2	3.4
2/2	105	105	-	-	-	1.0	0.3	-	1.3	46.1	2.4	0.3	2.7
3/1	444	444	-	-	-	0.5	0.2	-	0.7	5.6	3.6	0.2	3.8
3/2+3/3	468	468	102	24	3	0.4	0.2	0.1	0.8	5.9	2.5	0.2	2.7

Full Input Data And Results

4/1	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	384	384	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	464	464	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	164	164	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

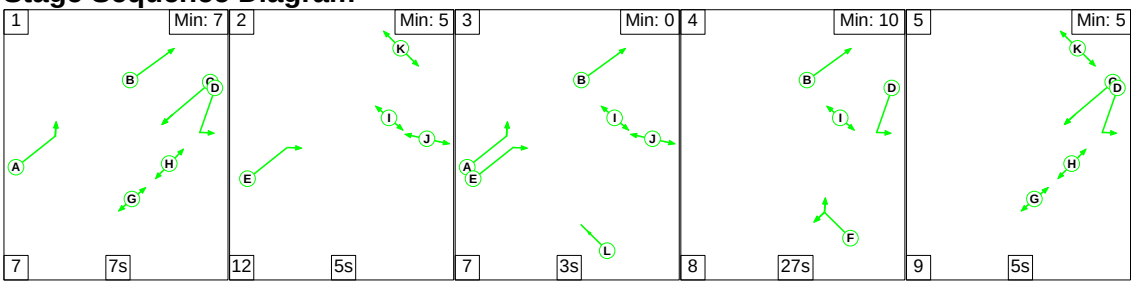
C1	PRC for Signalled Lanes (%):	8.2	Total Delay for Signalled Lanes (pcuHr):	23.71	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	136.3	Total Delay for Signalled Lanes (pcuHr):	5.22	Cycle Time (s):	90
	PRC Over All Lanes (%):	8.2	Total Delay Over All Lanes(pcuHr):	28.93		

Full Input Data And Results

Scenario 4: 'PM Base' (FG4: 'PM Base', Plan 1: 'Network Control Plan 1')

C1

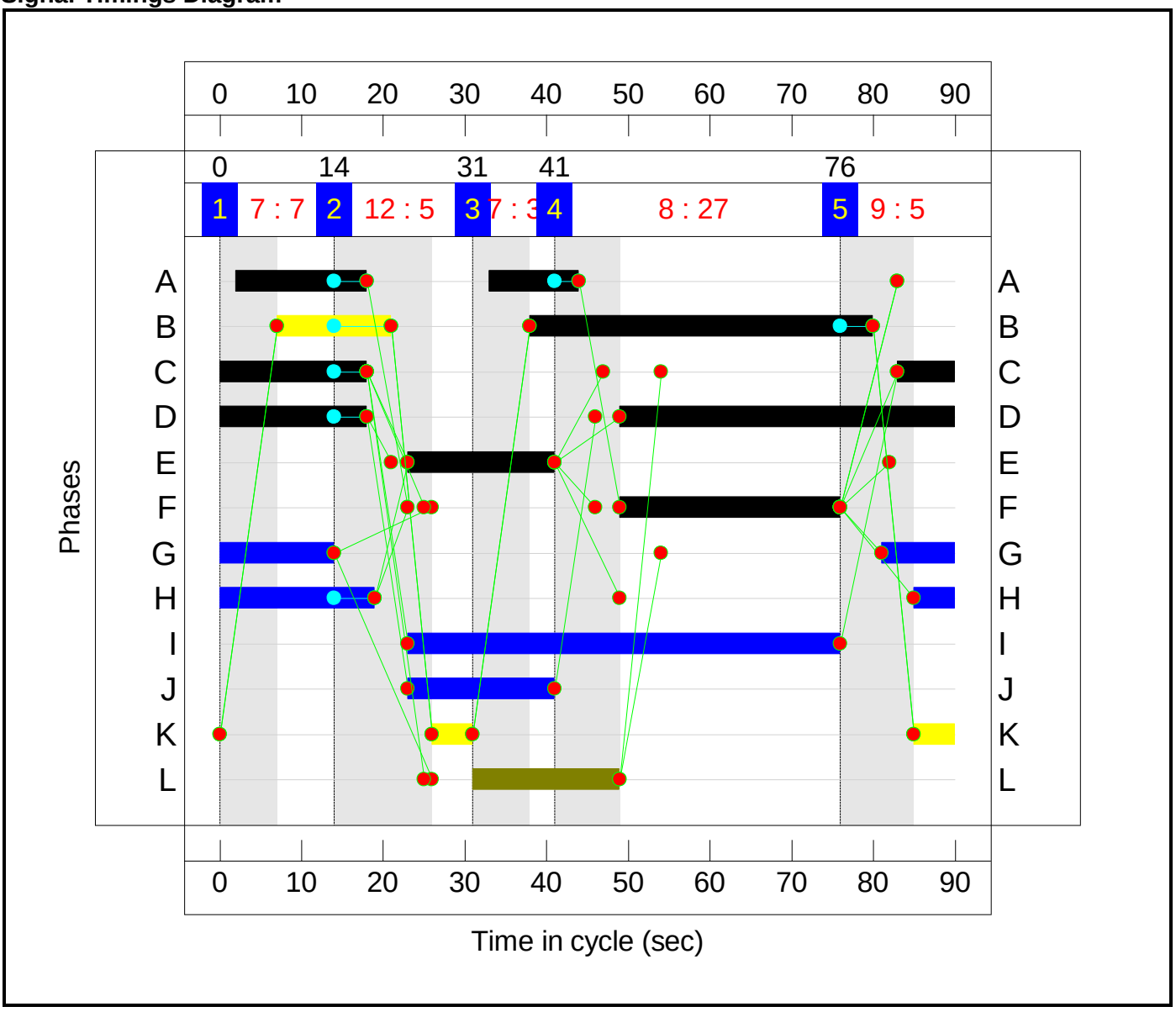
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	3	27	5
Change Point	0	14	31	41	76

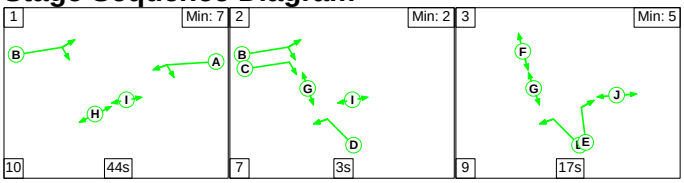
Signal Timings Diagram



Full Input Data And Results

C2

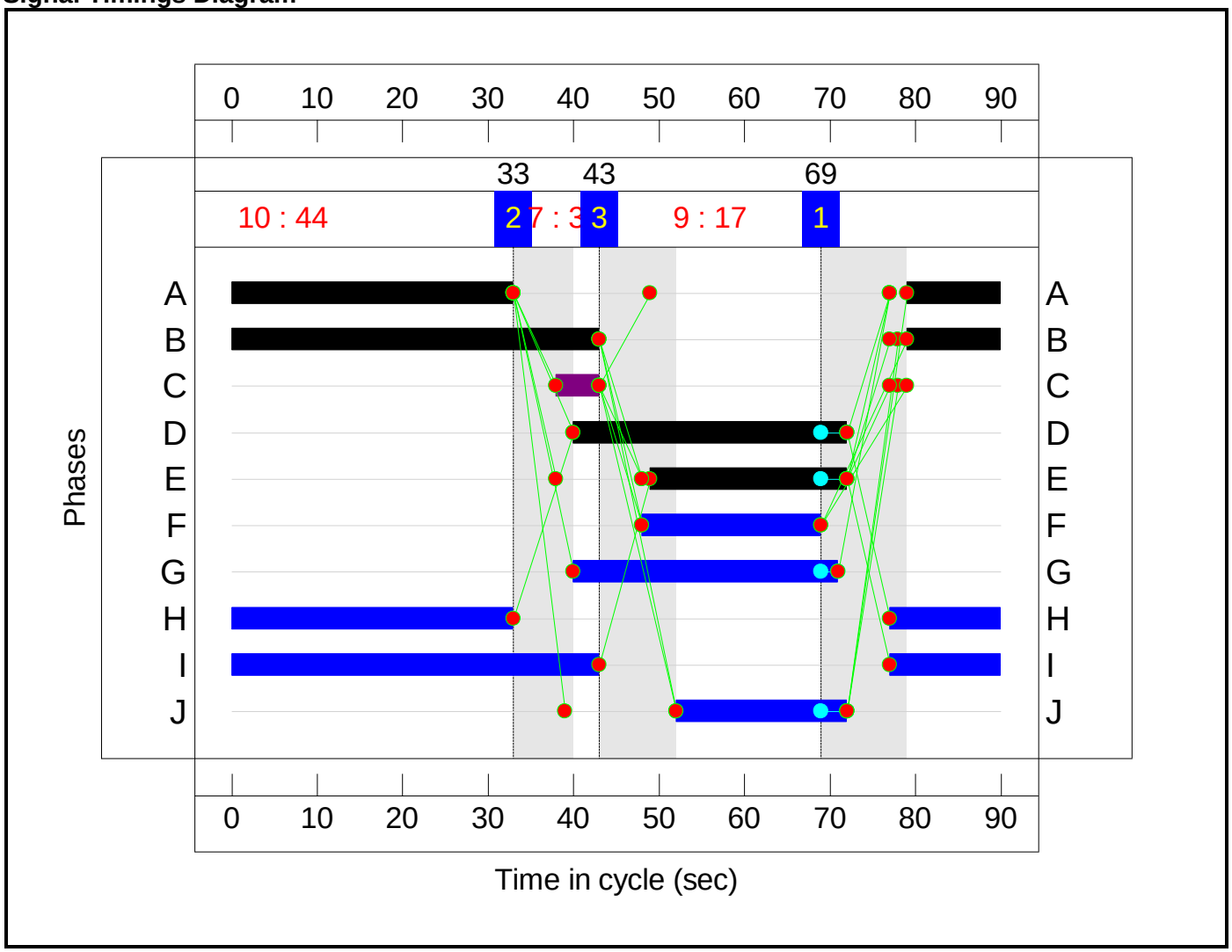
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	44	3	17
Change Point	69	33	43

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.4%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.4%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	59	-	689	2115	1410	48.9%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	232	1945	562	41.3%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	252	2055	594	42.4%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	27	-	410	2057	640	64.1%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	27	-	639	2205	686	93.1%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	27	-	761	2035:1940	503+410	83.3 : 83.3%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	18	-	414	2078	439	94.4%
4/1		U	N/A	N/A	C1:B		2	56	-	657	1975	1273	51.6%
4/2		U	N/A	N/A	C1:B		2	56	-	743	2175	1402	53.0%
5/1		U	N/A	N/A	-		-	-	-	1103	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	440	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	454	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	18	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**53.1%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	44	-	440	2044	1022	43.1%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	44	-	454	2044	1022	44.4%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	32	-	307	2075	761	40.4%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	23	-	188	2068	551	34.1%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	54	-	639	1971	1204	53.1%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	54	5	439	2100:2015	1040+272	33.5 : 33.5%
4/1	Ahead	U	N/A	N/A	-		-	-	-	761	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	541	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	607	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	144	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	21	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	31	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	46	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	56	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	20	-	0	-	0	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	**-**	**-**	**81**	**401**	**24**	**26.8**	**19.0**	**0.2**	**46.0**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**393**	**21**	**19.7**	**16.8**	**0.0**	**36.5**	**-**	**-**	**-**	**-**
1/1	689	689	-	-	-	1.4	0.5	-	1.9	9.9	8.4	0.5	8.9
1/2	232	232	-	-	-	1.7	0.4	-	2.0	31.3	4.6	0.4	5.0
1/3	252	252	-	-	-	1.8	0.4	-	2.2	31.2	5.0	0.4	5.4
2/1	410	410	-	-	-	3.0	0.9	-	3.9	34.4	8.8	0.9	9.7
2/2	639	639	-	-	-	5.3	5.5	-	10.8	61.1	15.4	5.5	20.9
3/2+3/1	761	761	-	-	-	2.5	2.4	-	5.0	23.5	5.0	2.4	7.4
3/3	414	414	0	393	21	3.5	5.7	0.0	9.3	80.5	10.2	5.7	15.9
4/1	657	657	-	-	-	0.1	0.5	-	0.7	3.7	1.9	0.5	2.5
4/2	743	743	-	-	-	0.2	0.6	-	0.7	3.6	3.1	0.6	3.6
5/1	1103	1103	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	440	440	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	454	454	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**81**	**8**	**2**	**7.1**	**2.2**	**0.2**	**9.5**	**-**	**-**	**-**	**-**
1/1	440	440	-	-	-	0.6	0.4	-	1.0	7.9	4.9	0.4	5.3
1/2	454	454	-	-	-	0.6	0.4	-	1.0	7.7	4.8	0.4	5.2
2/1	307	307	-	-	-	1.8	0.3	-	2.1	25.1	5.6	0.3	6.0
2/2	188	188	-	-	-	1.4	0.3	-	1.6	31.6	3.8	0.3	4.0
3/1	639	639	-	-	-	1.8	0.6	-	2.4	13.2	9.1	0.6	9.6
3/2+3/3	439	439	81	8	2	1.0	0.3	0.2	1.4	11.3	4.1	0.3	4.4

Full Input Data And Results

4/1	761	761	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	541	541	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	607	607	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	144	144	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

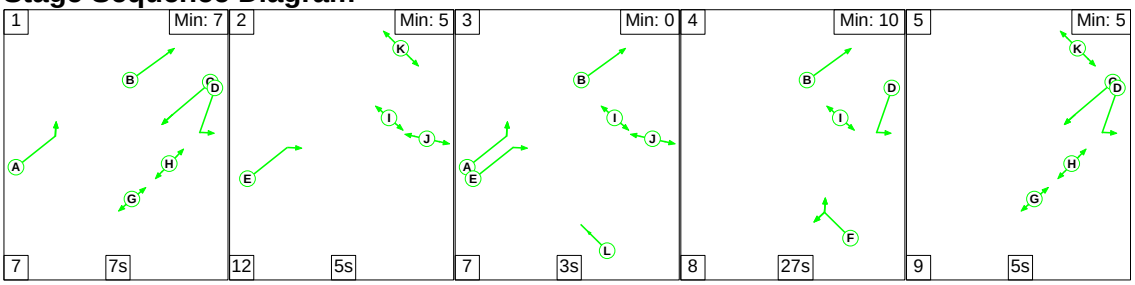
C1	PRC for Signalled Lanes (%):	-4.9	Total Delay for Signalled Lanes (pcuHr):	36.51	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	69.6	Total Delay for Signalled Lanes (pcuHr):	9.46	Cycle Time (s): 90
	PRC Over All Lanes (%):	-4.9	Total Delay Over All Lanes(pcuHr):	45.97	

Full Input Data And Results

Scenario 5: 'AM 2026-2027 Interim' (FG5: 'AM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

C1

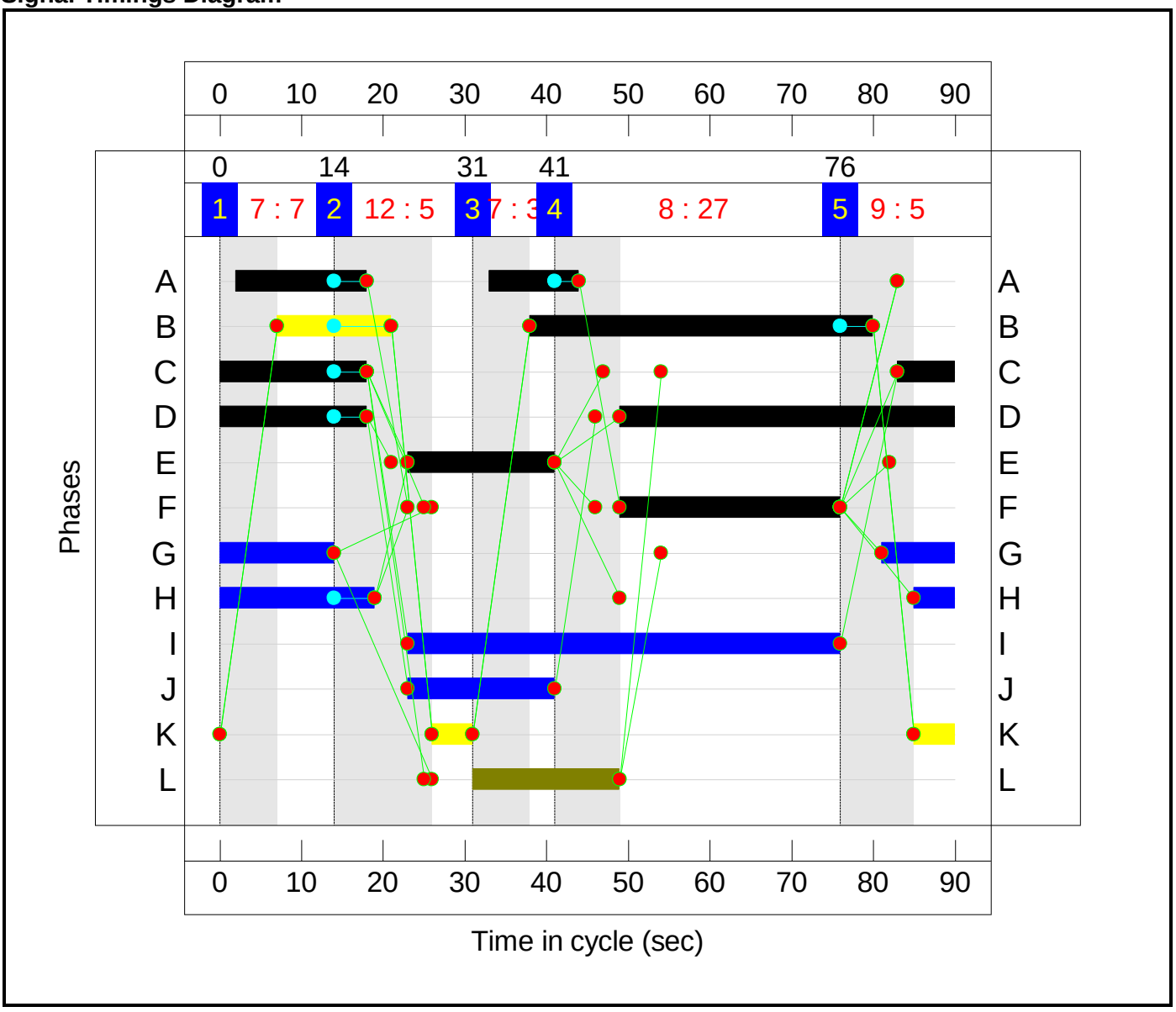
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	3	27	5
Change Point	0	14	31	41	76

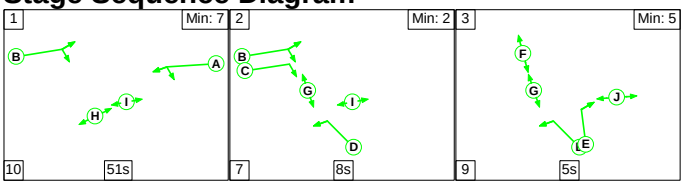
Signal Timings Diagram



Full Input Data And Results

C2

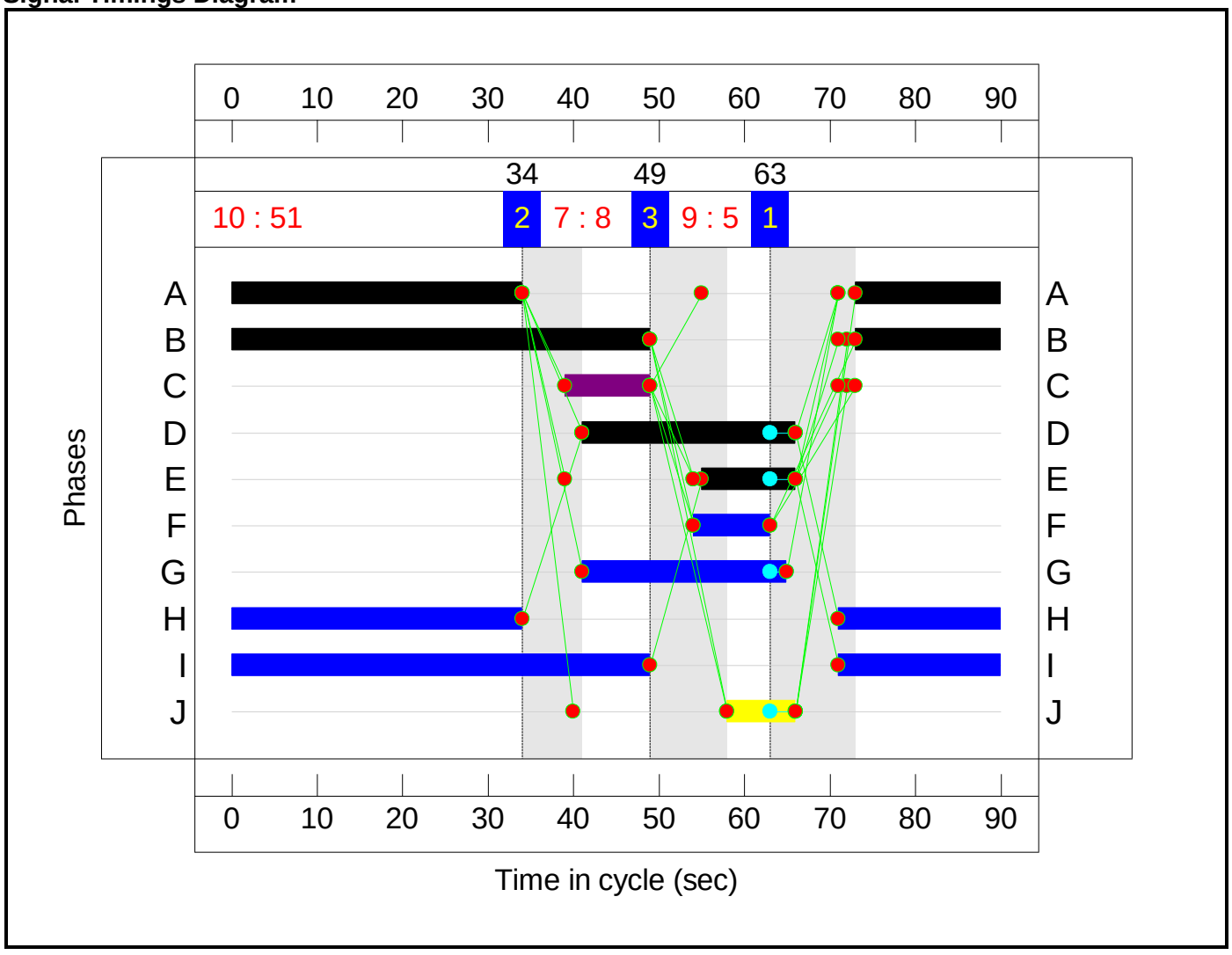
Stage Sequence Diagram



Stage Timings

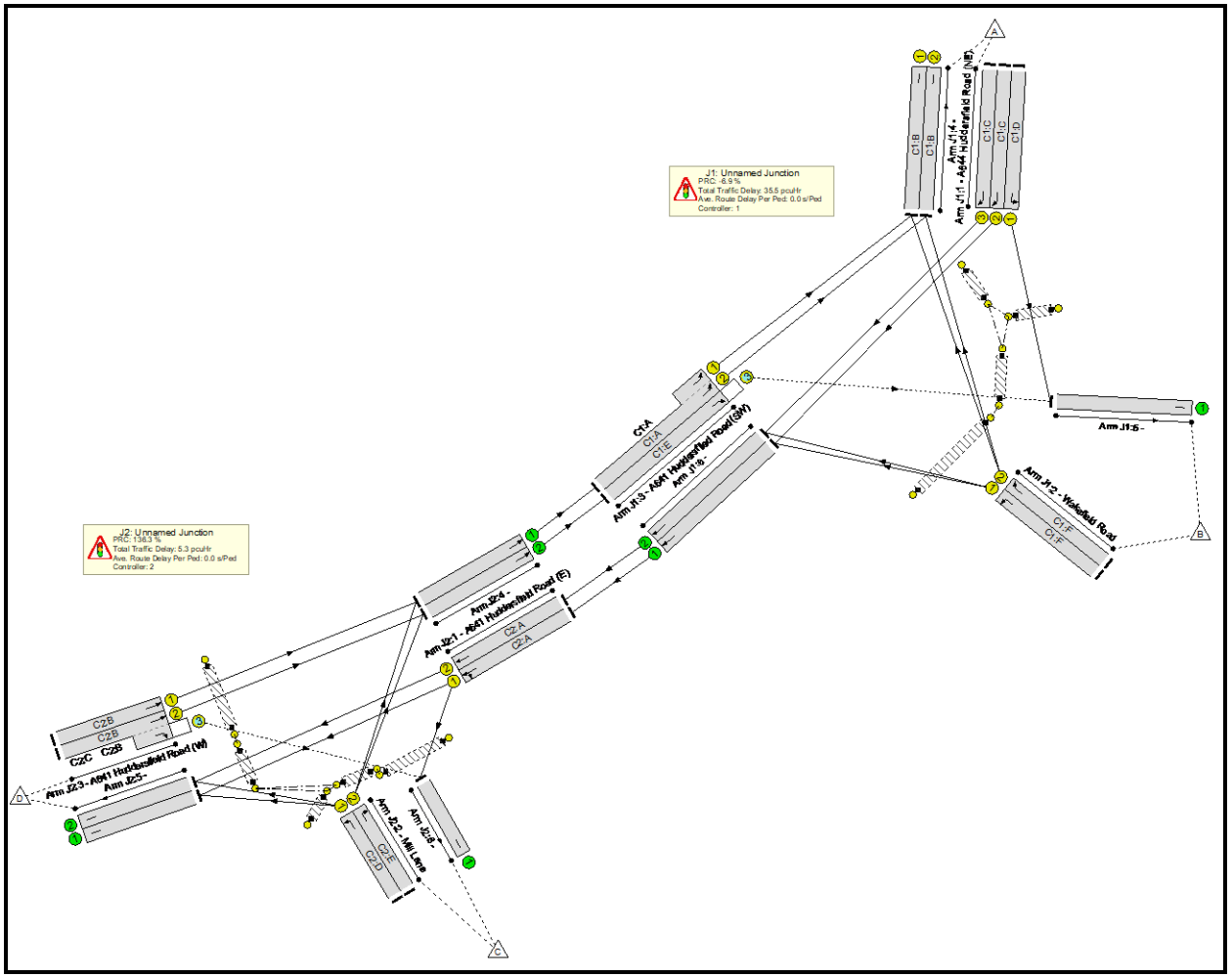
Stage	1	2	3
Duration	51	8	5
Change Point	63	34	49

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.2%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.2%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	59	-	858	2115	1410	60.9%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	223	1945	562	39.7%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	243	2055	594	40.9%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	27	-	298	2057	640	46.6%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	27	-	660	2205	686	96.2%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	27	-	539	2035:1940	486+484	55.6 : 55.6%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	18	-	411	2078	439	93.7%
4/1		U	N/A	N/A	C1:B		2	56	-	535	1975	1273	42.0%
4/2		U	N/A	N/A	C1:B		2	56	-	664	2175	1402	47.4%
5/1		U	N/A	N/A	-		-	-	-	1269	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	374	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	390	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	18	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**38.1%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	51	-	374	2044	1181	31.7%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	51	-	390	2044	1181	33.0%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	25	-	180	2075	599	30.0%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	11	-	105	2068	276	38.1%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	66	-	479	1971	1467	32.6%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	66	10	495	2100:2015	1184+417	30.9 : 30.9%
4/1	Ahead	U	N/A	N/A	-		-	-	-	539	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	411	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	428	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	165	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	9	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	53	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	68	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	8	-	0	-	0	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	**-**	**-**	**107**	**411**	**21**	**22.6**	**18.0**	**0.1**	**40.8**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**393**	**18**	**18.9**	**16.6**	**0.0**	**35.5**	**-**	**-**	**-**	**-**
1/1	858	858	-	-	-	2.0	0.8	-	2.8	11.7	11.9	0.8	12.7
1/2	223	223	-	-	-	1.6	0.3	-	1.9	31.0	4.5	0.3	4.8
1/3	243	243	-	-	-	1.7	0.3	-	2.1	30.9	4.9	0.3	5.2
2/1	298	298	-	-	-	2.1	0.4	-	2.5	30.2	6.0	0.4	6.4
2/2	660	660	-	-	-	5.6	7.9	-	13.5	73.6	16.1	7.9	24.0
3/2+3/1	539	539	-	-	-	1.9	0.6	-	2.6	17.1	5.3	0.6	6.0
3/3	411	411	0	393	18	3.8	5.4	0.0	9.1	80.1	10.1	5.4	15.4
4/1	535	535	-	-	-	0.1	0.4	-	0.4	3.0	2.2	0.4	2.6
4/2	664	664	-	-	-	0.1	0.4	-	0.5	2.9	1.9	0.4	2.3
5/1	1269	1269	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	374	374	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	390	390	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**107**	**19**	**3**	**3.7**	**1.5**	**0.1**	**5.3**	**-**	**-**	**-**	**-**
1/1	374	374	-	-	-	0.2	0.2	-	0.5	4.4	3.1	0.2	3.3
1/2	390	390	-	-	-	0.2	0.2	-	0.5	4.4	3.0	0.2	3.2
2/1	180	180	-	-	-	1.2	0.2	-	1.5	29.2	3.5	0.2	3.7
2/2	105	105	-	-	-	1.0	0.3	-	1.3	46.1	2.4	0.3	2.7
3/1	479	479	-	-	-	0.5	0.2	-	0.8	5.7	4.0	0.2	4.2
3/2+3/3	495	495	107	19	3	0.5	0.2	0.1	0.8	6.0	2.7	0.2	3.0

Full Input Data And Results

4/1	539	539	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	411	411	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	428	428	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	165	165	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

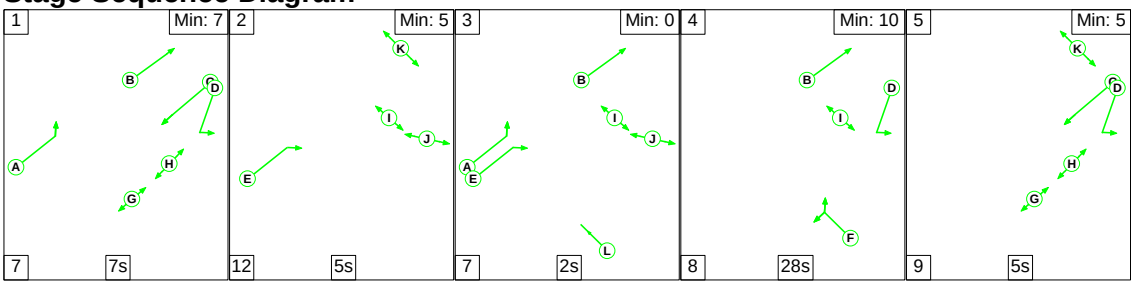
C1	PRC for Signalled Lanes (%):	-6.9	Total Delay for Signalled Lanes (pcuHr):	35.45	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	136.3	Total Delay for Signalled Lanes (pcuHr):	5.33	Cycle Time (s):	90
	PRC Over All Lanes (%):	-6.9	Total Delay Over All Lanes(pcuHr):	40.78		

Full Input Data And Results

Scenario 6: 'PM 2026-2027 Interim' (FG6: 'PM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

C1

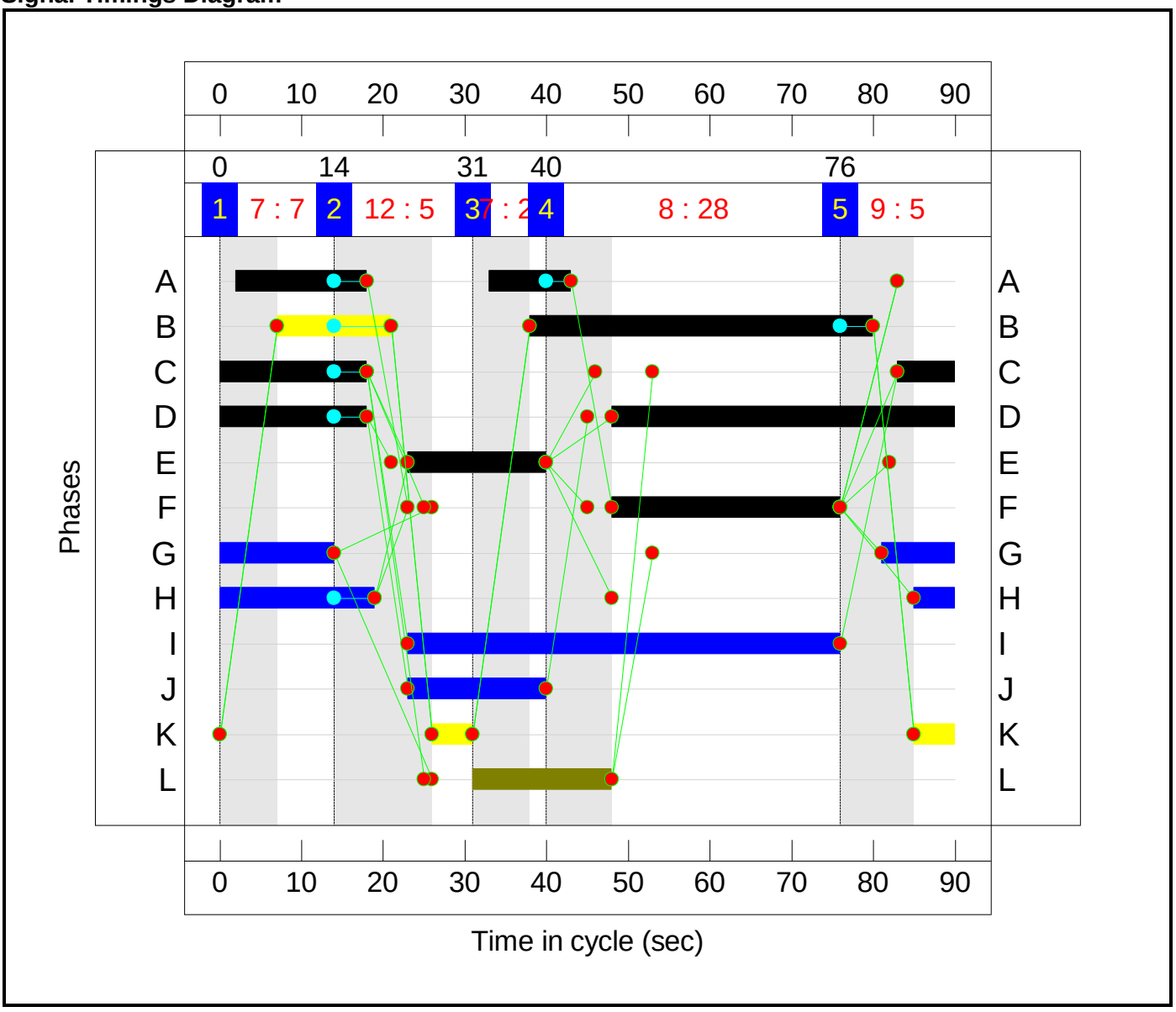
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	2	28	5
Change Point	0	14	31	40	76

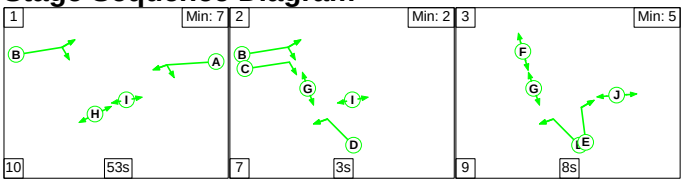
Signal Timings Diagram



Full Input Data And Results

C2

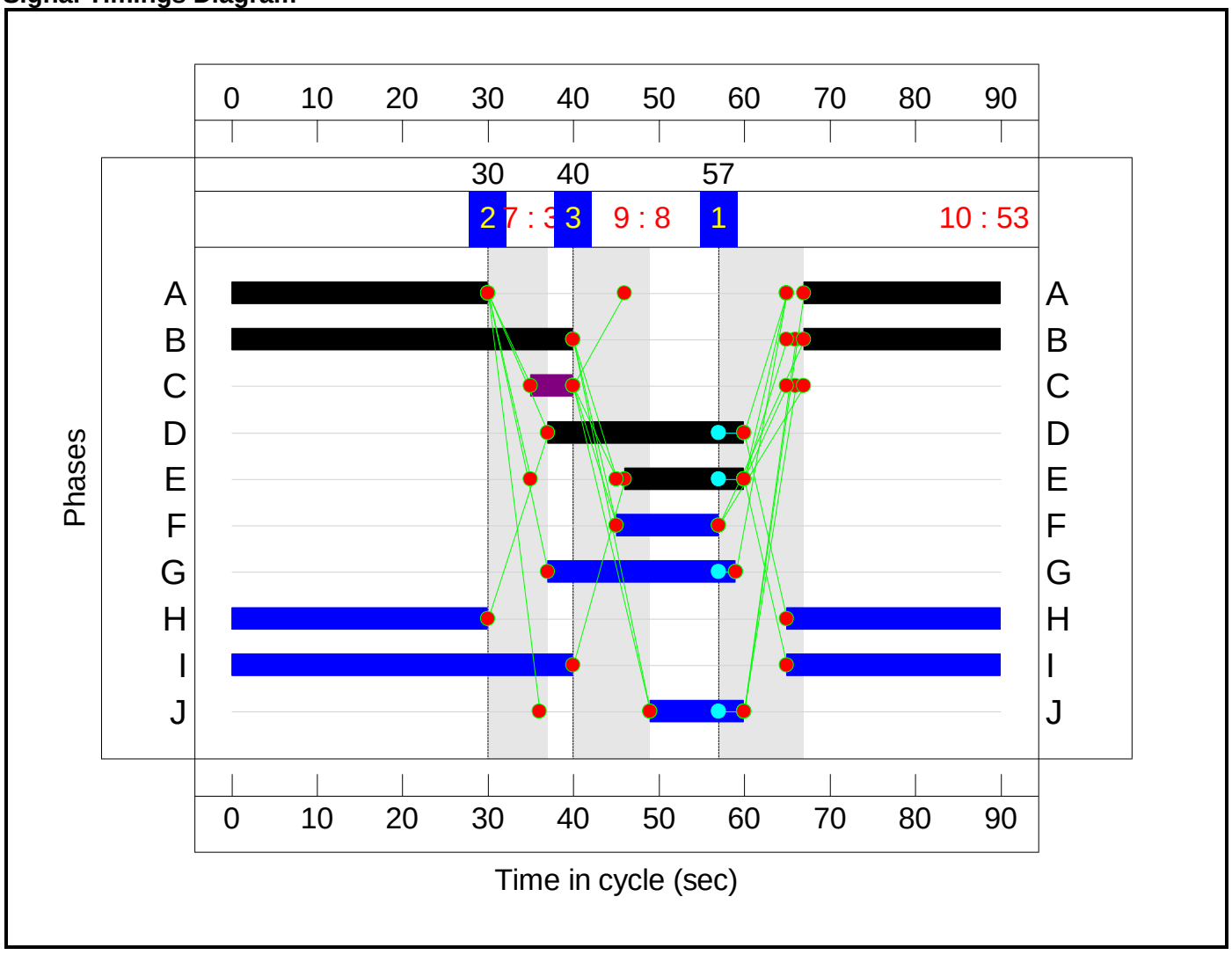
Stage Sequence Diagram



Stage Timings

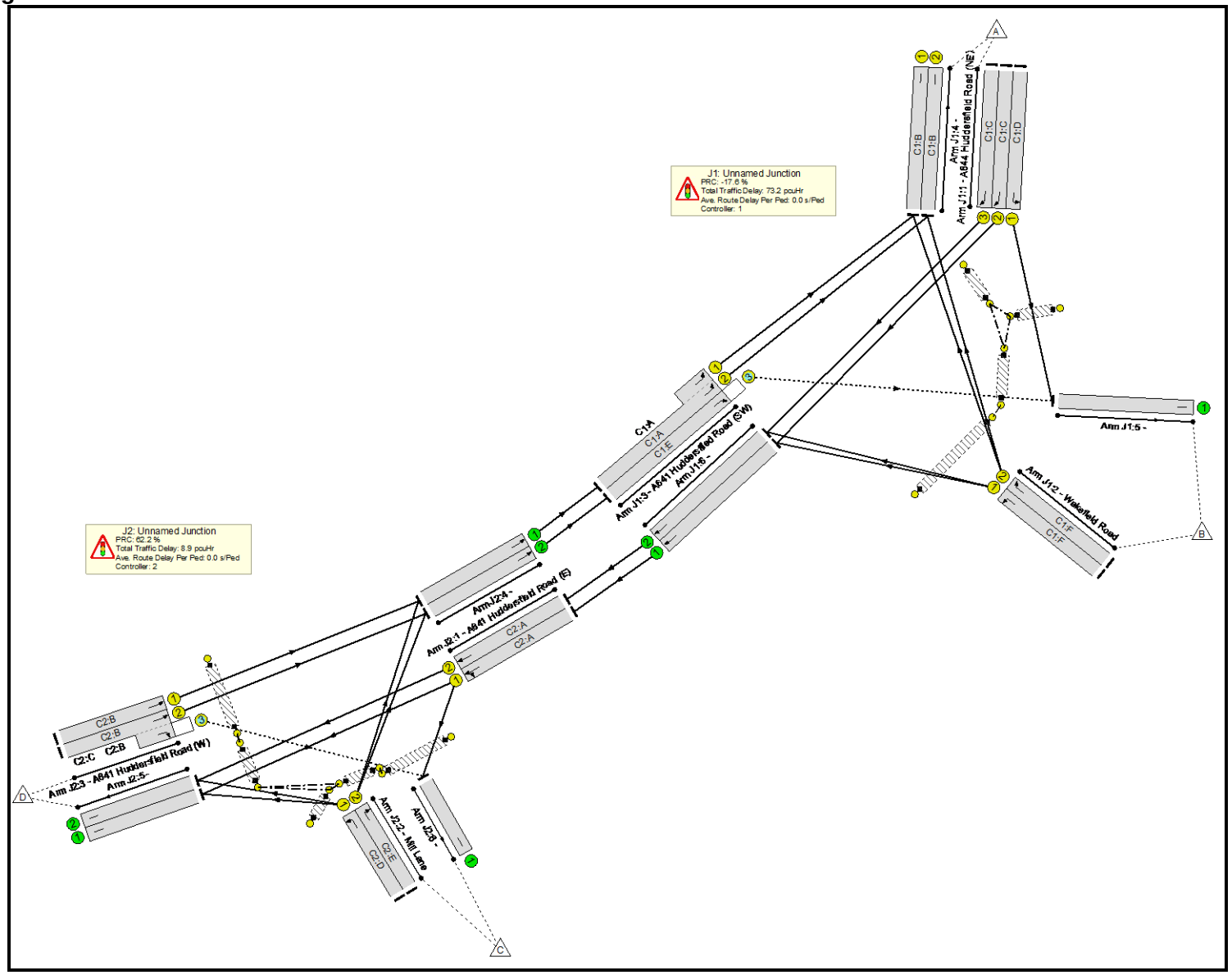
Stage	1	2	3
Duration	53	3	8
Change Point	57	30	40

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.9%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.9%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	60	-	799	2115	1433	55.7%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	246	1945	562	43.8%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	268	2055	594	45.1%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	28	-	448	2057	663	67.6%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	28	-	741	2205	710	104.3%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	26	-	776	2035:1940	482+437	84.4 : 84.4%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	17	-	440	2078	416	105.9%
4/1		U	N/A	N/A	C1:B		2	56	-	694	1975	1273	53.5%
4/2		U	N/A	N/A	C1:B		2	56	-	823	2175	1402	57.5%
5/1		U	N/A	N/A	-		-	-	-	1239	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	477	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	485	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	17	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**55.5%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	53	-	477	2044	1226	38.9%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	53	-	485	2044	1226	39.5%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	23	-	307	2075	553	55.5%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	14	-	188	2068	345	54.5%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	63	-	656	1971	1402	46.8%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	63	5	463	2100:2015	1220+298	30.5 : 30.5%
4/1	Ahead	U	N/A	N/A	-		-	-	-	776	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	440	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	638	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	145	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	12	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	22	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	55	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	65	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	11	-	0	-	0	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	**-**	**-**	**81**	**378**	**48**	**31.6**	**50.3**	**0.2**	**82.1**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**369**	**46**	**25.4**	**47.8**	**0.0**	**73.2**	**-**	**-**	**-**	**-**
1/1	799	799	-	-	-	1.7	0.6	-	2.3	10.3	10.2	0.6	10.8
1/2	246	246	-	-	-	1.8	0.4	-	2.2	31.7	5.0	0.4	5.4
1/3	268	268	-	-	-	1.9	0.4	-	2.4	31.7	5.4	0.4	5.8
2/1	448	448	-	-	-	3.3	1.0	-	4.3	34.7	9.6	1.0	10.6
2/2	741	711	-	-	-	7.3	23.2	-	30.5	148.1	19.3	23.2	42.5
3/2+3/1	776	776	-	-	-	3.8	2.6	-	6.4	29.6	11.8	2.6	14.4
3/3	440	416	0	369	46	5.3	18.2	0.0	23.5	192.4	11.6	18.2	29.8
4/1	681	681	-	-	-	0.2	0.6	-	0.8	4.1	3.3	0.6	3.9
4/2	806	806	-	-	-	0.2	0.7	-	0.9	4.1	3.7	0.7	4.3
5/1	1215	1215	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	477	477	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	485	485	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**81**	**8**	**2**	**6.2**	**2.5**	**0.2**	**8.9**	**-**	**-**	**-**	**-**
1/1	477	477	-	-	-	0.2	0.3	-	0.5	3.7	2.4	0.3	2.7
1/2	485	485	-	-	-	0.2	0.3	-	0.5	3.7	2.0	0.3	2.3
2/1	307	307	-	-	-	2.4	0.6	-	3.0	35.7	6.6	0.6	7.2
2/2	188	188	-	-	-	1.8	0.6	-	2.4	45.8	4.3	0.6	4.9
3/1	656	656	-	-	-	1.0	0.4	-	1.5	8.0	6.9	0.4	7.4
3/2+3/3	463	463	81	8	2	0.6	0.2	0.2	1.0	7.7	3.2	0.2	3.4

Full Input Data And Results

4/1	776	776	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	440	440	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	638	638	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	145	145	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

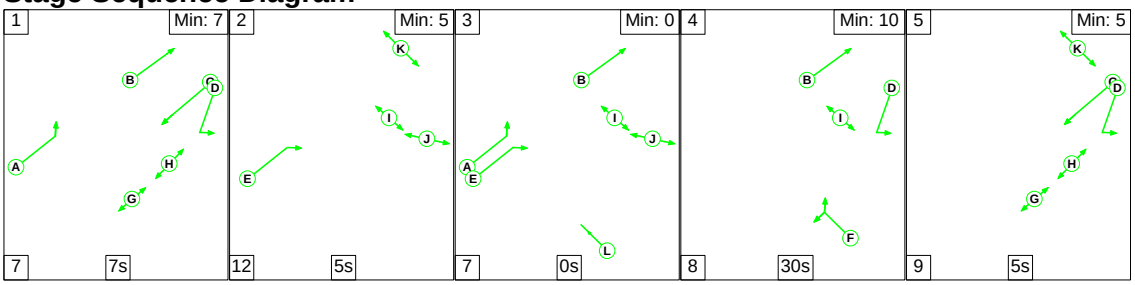
C1	PRC for Signalled Lanes (%):	-17.6	Total Delay for Signalled Lanes (pcuHr):	73.22	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	62.2	Total Delay for Signalled Lanes (pcuHr):	8.88	Cycle Time (s):	90
	PRC Over All Lanes (%):	-17.6	Total Delay Over All Lanes(pcuHr):	82.11		

Full Input Data And Results

Scenario 7: 'AM 2032-2033 Design' (FG7: 'AM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

C1

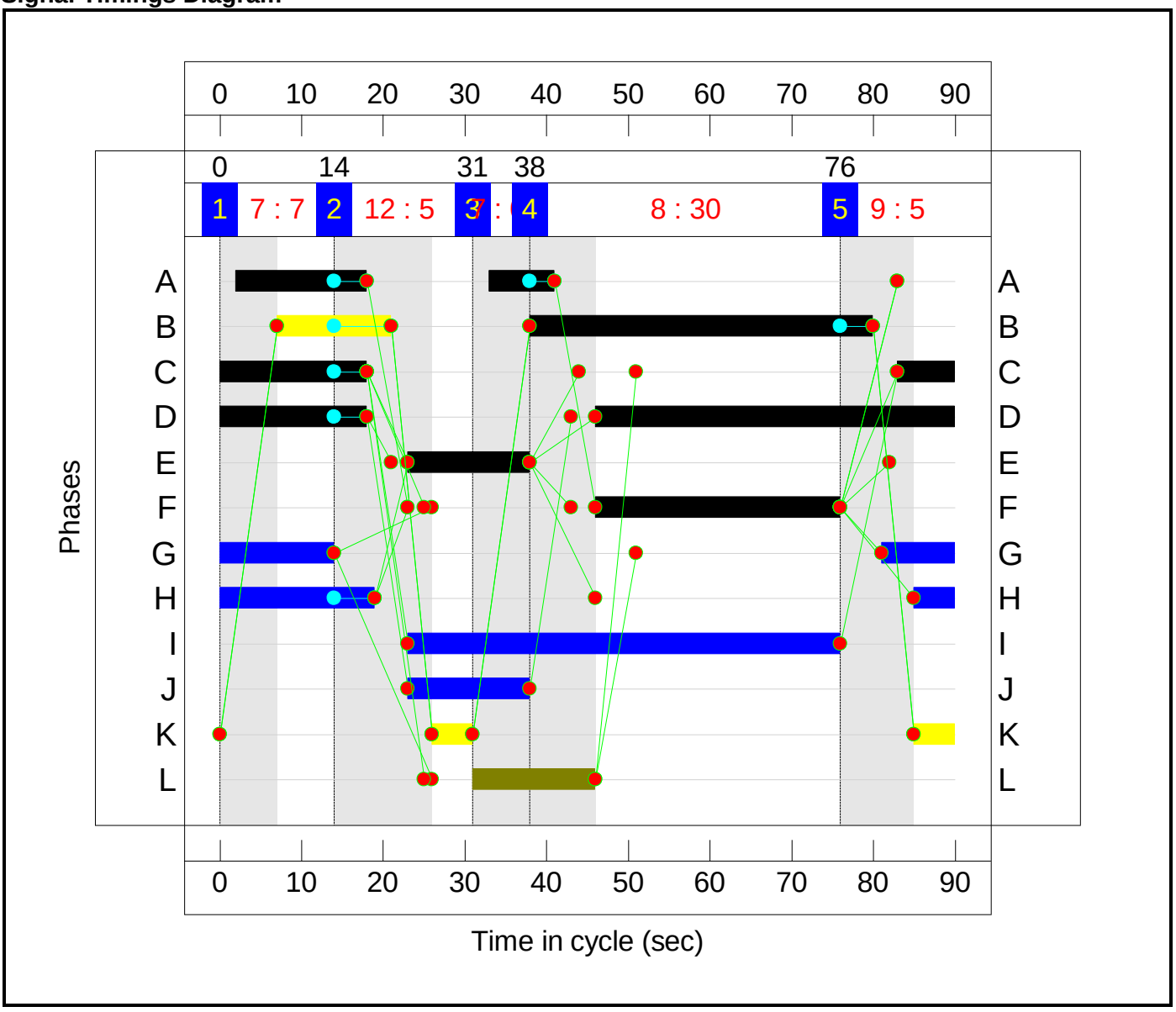
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	0	30	5
Change Point	0	14	31	38	76

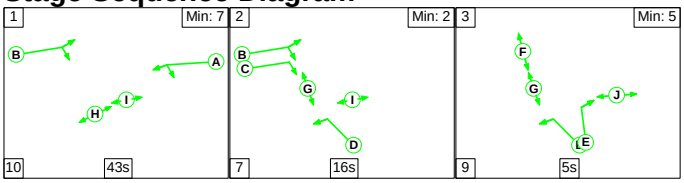
Signal Timings Diagram



Full Input Data And Results

C2

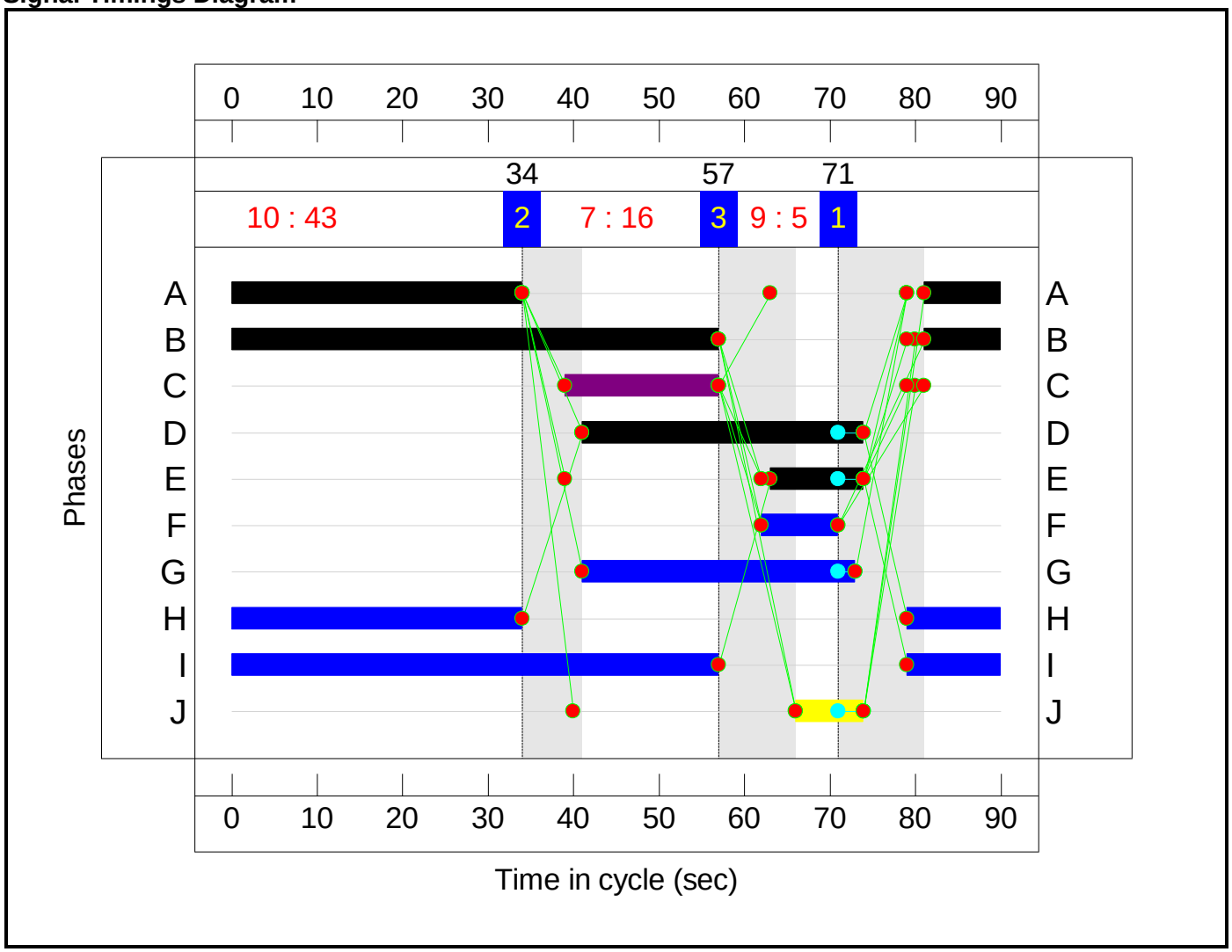
Stage Sequence Diagram



Stage Timings

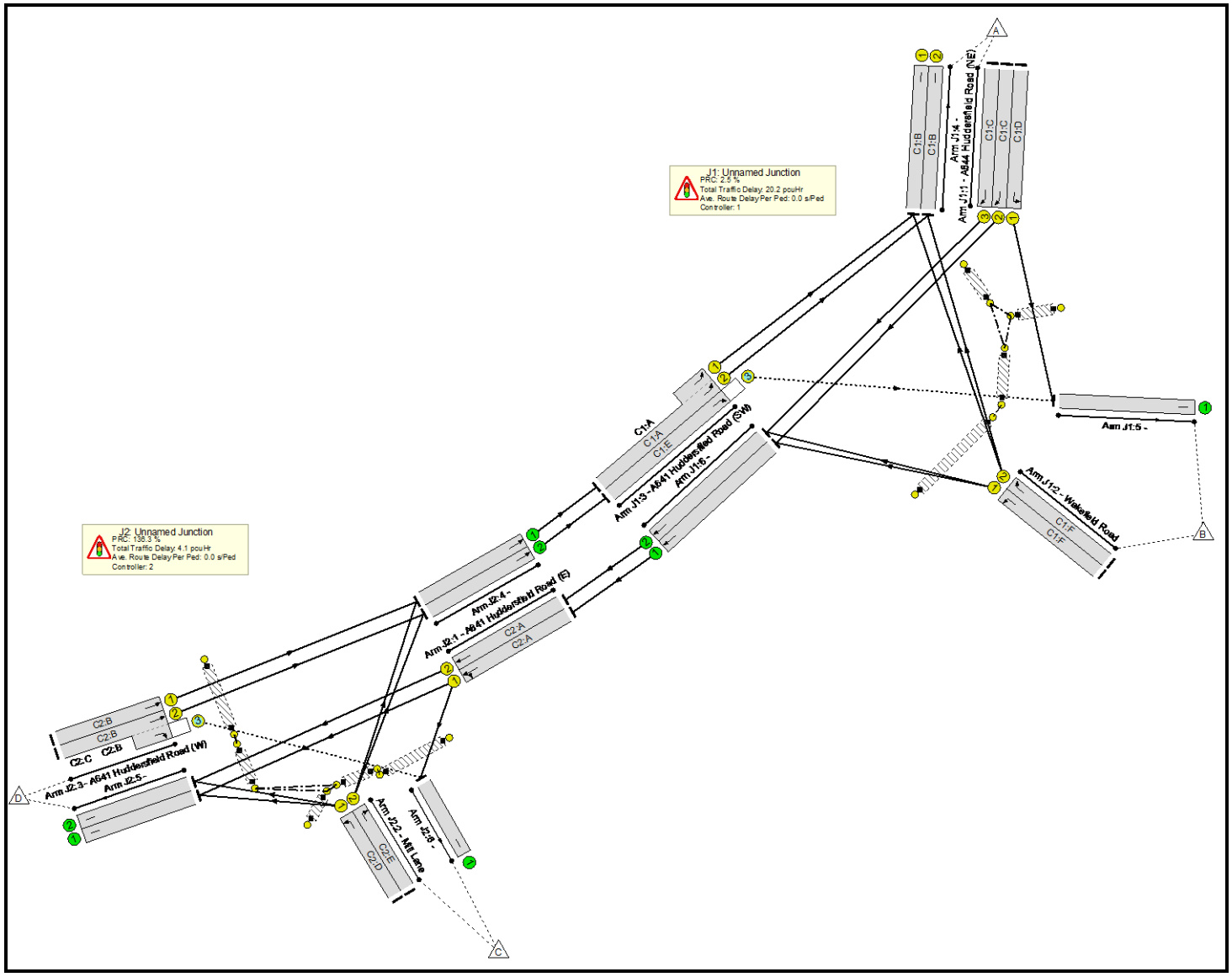
Stage	1	2	3
Duration	43	16	5
Change Point	71	34	57

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.8%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.8%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	62	-	792	2115	1481	53.5%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	226	1945	562	40.2%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	246	2055	594	41.4%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	30	-	31	2057	709	4.4%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	30	-	667	2205	759	87.8%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	24	-	532	2035:1940	459+419	60.6 : 60.6%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	15	-	147	2078	369	39.8%
4/1		U	N/A	N/A	C1:B		2	56	-	541	1975	1273	42.5%
4/2		U	N/A	N/A	C1:B		2	56	-	658	2175	1402	46.9%
5/1		U	N/A	N/A	-		-	-	-	939	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	239	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	264	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	15	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**38.1%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	43	-	239	2044	999	23.9%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	43	-	264	2044	999	26.4%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	33	-	180	2075	784	23.0%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	11	-	105	2068	276	38.1%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	66	-	450	1971	1467	30.7%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	66	18	253	2100:2015	754+784	16.4 : 16.4%
4/1	Ahead	U	N/A	N/A	-		-	-	-	532	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	147	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	293	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	354	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	165	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	9	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	32	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	45	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	68	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	8	-	0	-	0	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	**-**	**-**	**96**	**174**	**6**	**16.5**	**7.7**	**0.1**	**24.2**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**144**	**3**	**13.6**	**6.6**	**0.0**	**20.2**	**-**	**-**	**-**	**-**
1/1	792	792	-	-	-	1.4	0.6	-	2.0	9.1	9.5	0.6	10.0
1/2	226	226	-	-	-	1.6	0.3	-	2.0	31.1	4.5	0.3	4.9
1/3	246	246	-	-	-	1.8	0.4	-	2.1	31.0	4.9	0.4	5.3
2/1	31	31	-	-	-	0.2	0.0	-	0.2	22.3	0.5	0.0	0.5
2/2	667	667	-	-	-	5.1	3.4	-	8.5	45.9	15.6	3.4	18.9
3/2+3/1	532	532	-	-	-	2.1	0.8	-	2.9	19.5	3.5	0.8	4.3
3/3	147	147	0	144	3	1.2	0.3	0.0	1.6	38.4	3.3	0.3	3.6
4/1	541	541	-	-	-	0.1	0.4	-	0.4	2.9	1.1	0.4	1.5
4/2	658	658	-	-	-	0.1	0.4	-	0.5	2.9	1.2	0.4	1.7
5/1	939	939	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	239	239	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**96**	**30**	**3**	**2.9**	**1.1**	**0.1**	**4.1**	**-**	**-**	**-**	**-**
1/1	239	239	-	-	-	0.1	0.2	-	0.3	3.9	0.4	0.2	0.5
1/2	264	264	-	-	-	0.1	0.2	-	0.3	4.1	0.5	0.2	0.7
2/1	180	180	-	-	-	1.0	0.1	-	1.1	22.1	3.0	0.1	3.2
2/2	105	105	-	-	-	1.0	0.3	-	1.3	46.1	2.4	0.3	2.7
3/1	450	450	-	-	-	0.5	0.2	-	0.7	5.6	3.6	0.2	3.8
3/2+3/3	253	253	96	30	3	0.2	0.1	0.1	0.4	5.4	0.9	0.1	1.0

Full Input Data And Results

4/1	532	532	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	354	354	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	165	165	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

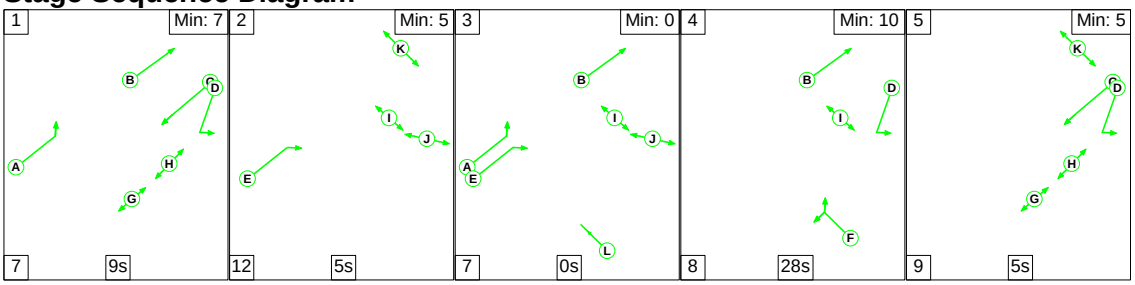
C1	PRC for Signalled Lanes (%):	2.5	Total Delay for Signalled Lanes (pcuHr):	20.16	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	136.3	Total Delay for Signalled Lanes (pcuHr):	4.09	Cycle Time (s): 90
	PRC Over All Lanes (%):	2.5	Total Delay Over All Lanes(pcuHr):	24.25	

Full Input Data And Results

Scenario 8: 'PM 2032-2033 Design' (FG8: 'PM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

C1

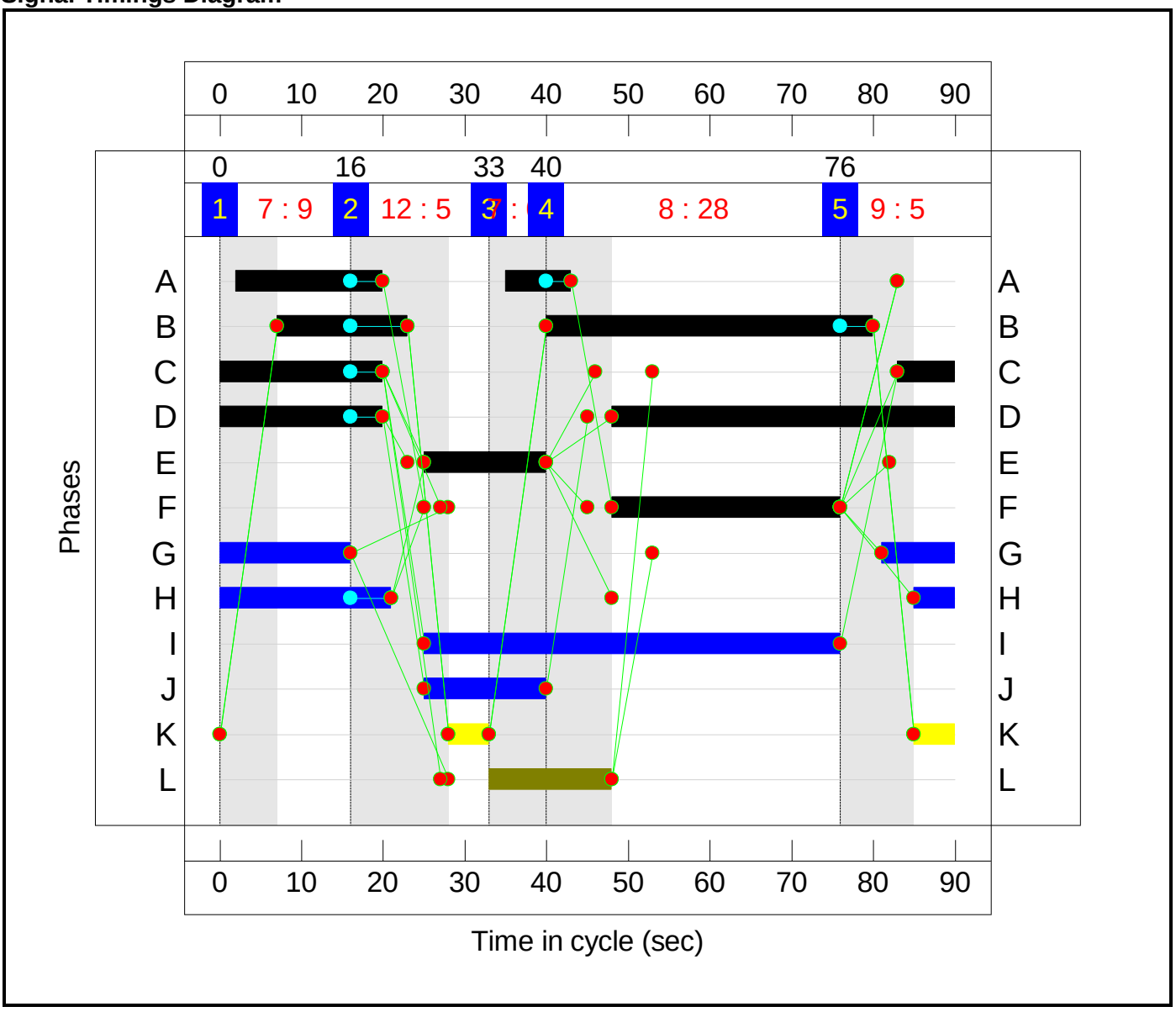
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	9	5	0	28	5
Change Point	0	16	33	40	76

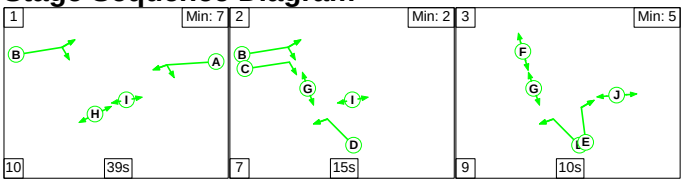
Signal Timings Diagram



Full Input Data And Results

C2

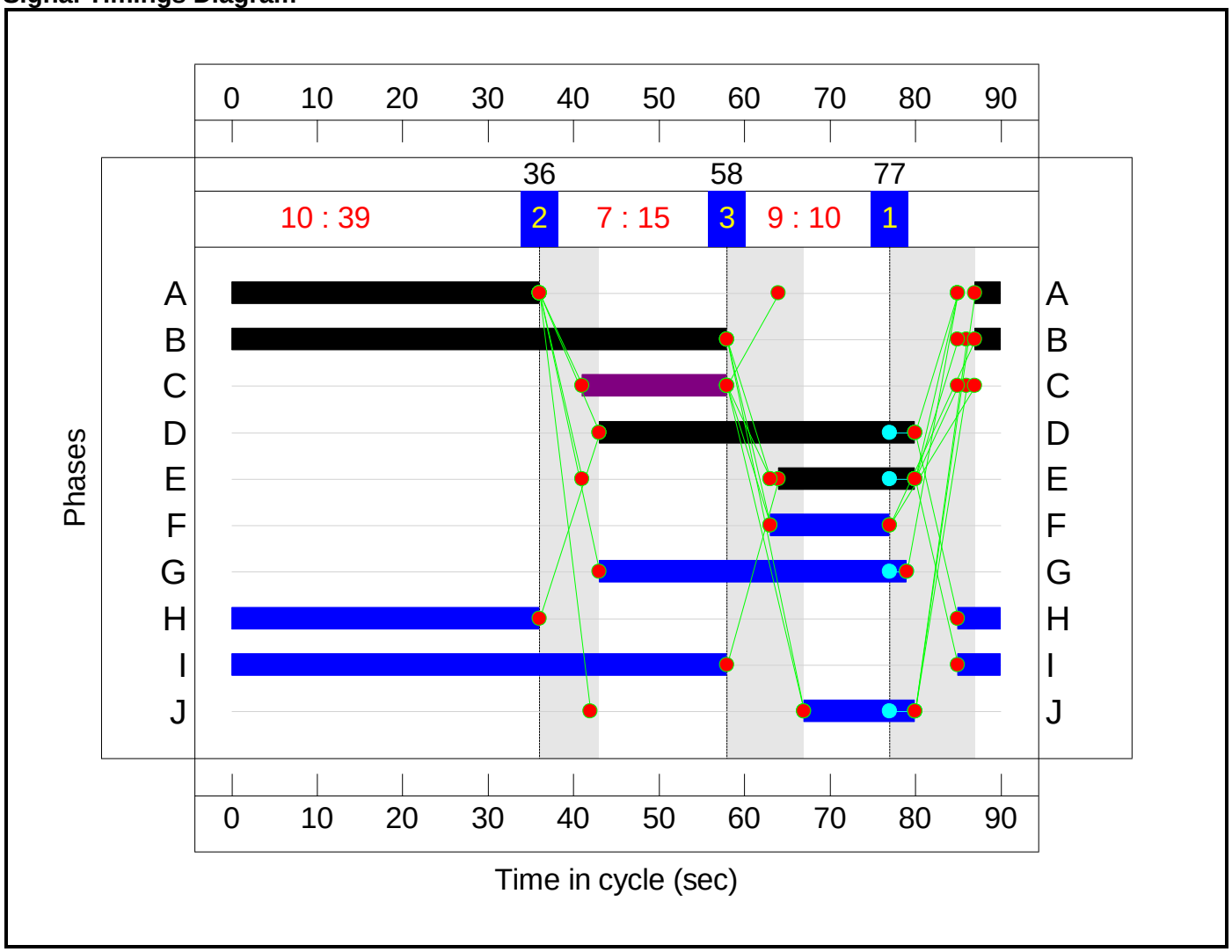
Stage Sequence Diagram



Stage Timings

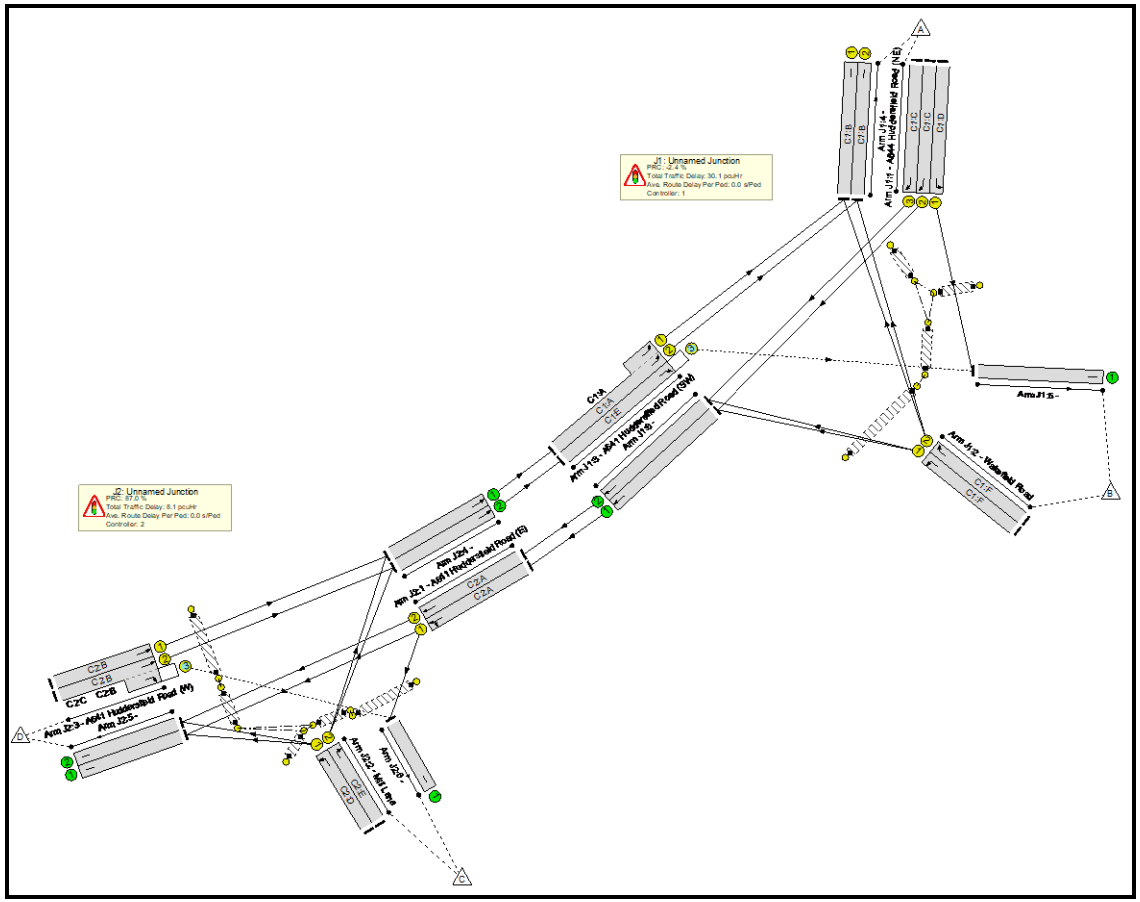
Stage	1	2	3
Duration	39	15	10
Change Point	77	36	58

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.2%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.2%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	62	-	739	2115	1481	49.9%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	27	-	256	1945	605	42.3%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	27	-	276	2055	639	43.2%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	28	-	232	2057	663	35.0%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	28	-	655	2205	710	92.2%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	26	-	776	2035:1940	503+349	91.0 : 91.0%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	15	-	217	2078	369	58.7%
4/1		U	N/A	N/A	C1:B		2	56	-	682	1975	1273	53.6%
4/2		U	N/A	N/A	C1:B		2	56	-	749	2175	1402	53.4%
5/1		U	N/A	N/A	-		-	-	-	956	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	375	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	389	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	25	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	26	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	15	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	51	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**48.1%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	39	-	375	2044	908	41.3%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	39	-	389	2044	908	42.8%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	37	-	307	2075	876	35.0%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	16	-	188	2068	391	48.1%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	61	-	629	1971	1358	46.3%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	61	17	267	2100:2015	968+501	18.2 : 18.2%
4/1	Ahead	U	N/A	N/A	-		-	-	-	776	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	217	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	473	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	542	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	147	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	14	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	36	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	41	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	63	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	13	-	0	-	0	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	**-**	**-**	**69**	**233**	**6**	**23.2**	**14.9**	**0.1**	**38.2**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**213**	**4**	**17.2**	**12.9**	**0.0**	**30.1**	**-**	**-**	**-**	**-**
1/1	739	739	-	-	-	1.3	0.5	-	1.8	8.7	8.4	0.5	8.9
1/2	256	256	-	-	-	1.7	0.4	-	2.1	29.7	5.0	0.4	5.4
1/3	276	276	-	-	-	1.9	0.4	-	2.3	29.6	5.4	0.4	5.8
2/1	232	232	-	-	-	1.5	0.3	-	1.8	27.5	4.4	0.3	4.7
2/2	655	655	-	-	-	5.4	5.0	-	10.4	56.9	15.6	5.0	20.6
3/2+3/1	776	776	-	-	-	3.3	4.5	-	7.8	36.3	8.5	4.5	13.0
3/3	217	217	0	213	4	1.8	0.7	0.0	2.5	42.0	5.0	0.7	5.7
4/1	682	682	-	-	-	0.2	0.6	-	0.7	3.8	2.4	0.6	3.0
4/2	749	749	-	-	-	0.2	0.6	-	0.7	3.6	3.2	0.6	3.8
5/1	956	956	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	375	375	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**69**	**20**	**2**	**6.0**	**2.0**	**0.1**	**8.1**	**-**	**-**	**-**	**-**
1/1	375	375	-	-	-	0.7	0.4	-	1.0	9.7	3.0	0.4	3.4
1/2	389	389	-	-	-	0.6	0.4	-	1.0	9.3	2.9	0.4	3.3
2/1	307	307	-	-	-	1.5	0.3	-	1.8	20.8	5.2	0.3	5.5
2/2	188	188	-	-	-	1.7	0.5	-	2.2	41.4	4.2	0.5	4.6
3/1	629	629	-	-	-	1.1	0.4	-	1.5	8.9	7.2	0.4	7.6
3/2+3/3	267	267	69	20	2	0.3	0.1	0.1	0.6	7.4	1.5	0.1	1.6

Full Input Data And Results

4/1	776	776	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	217	217	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	473	473	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	542	542	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

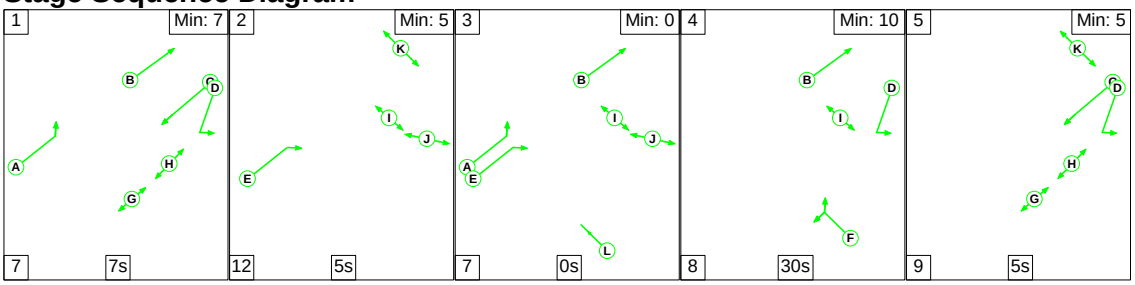
C1	PRC for Signalled Lanes (%):	-2.4	Total Delay for Signalled Lanes (pcuHr):	30.12	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	87.0	Total Delay for Signalled Lanes (pcuHr):	8.06	Cycle Time (s): 90
	PRC Over All Lanes (%):	-2.4	Total Delay Over All Lanes(pcuHr):	38.18	

Full Input Data And Results

Scenario 9: 'AM 2038-2039 Design' (FG9: 'AM 2038-2039 Design', Plan 1: 'Network Control Plan 1')

C1

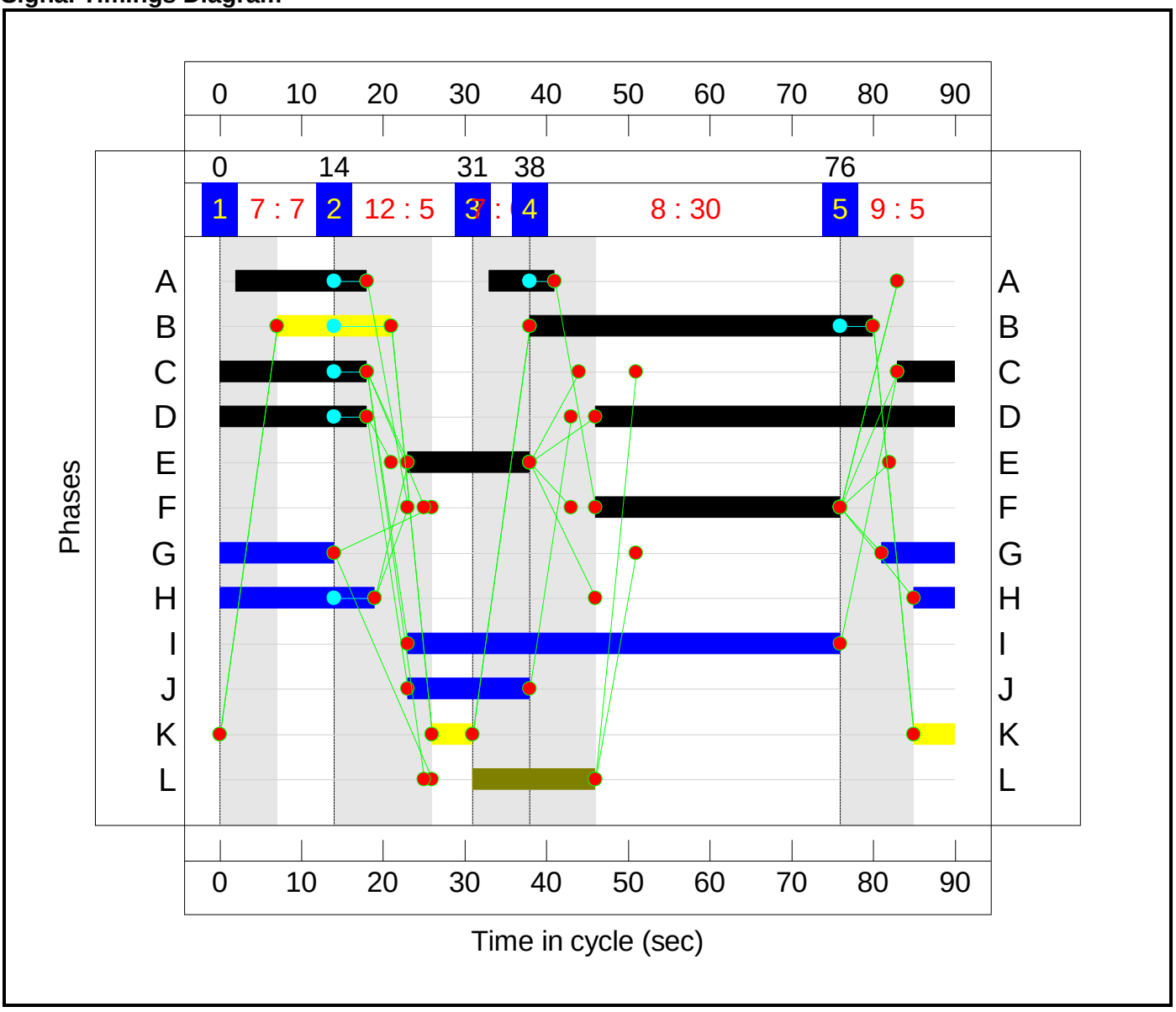
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	0	30	5
Change Point	0	14	31	38	76

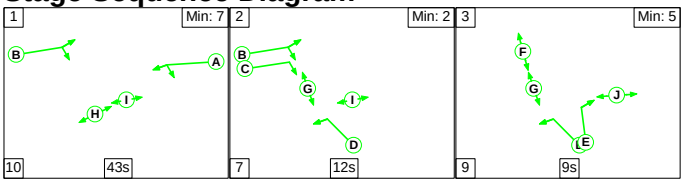
Signal Timings Diagram



Full Input Data And Results

C2

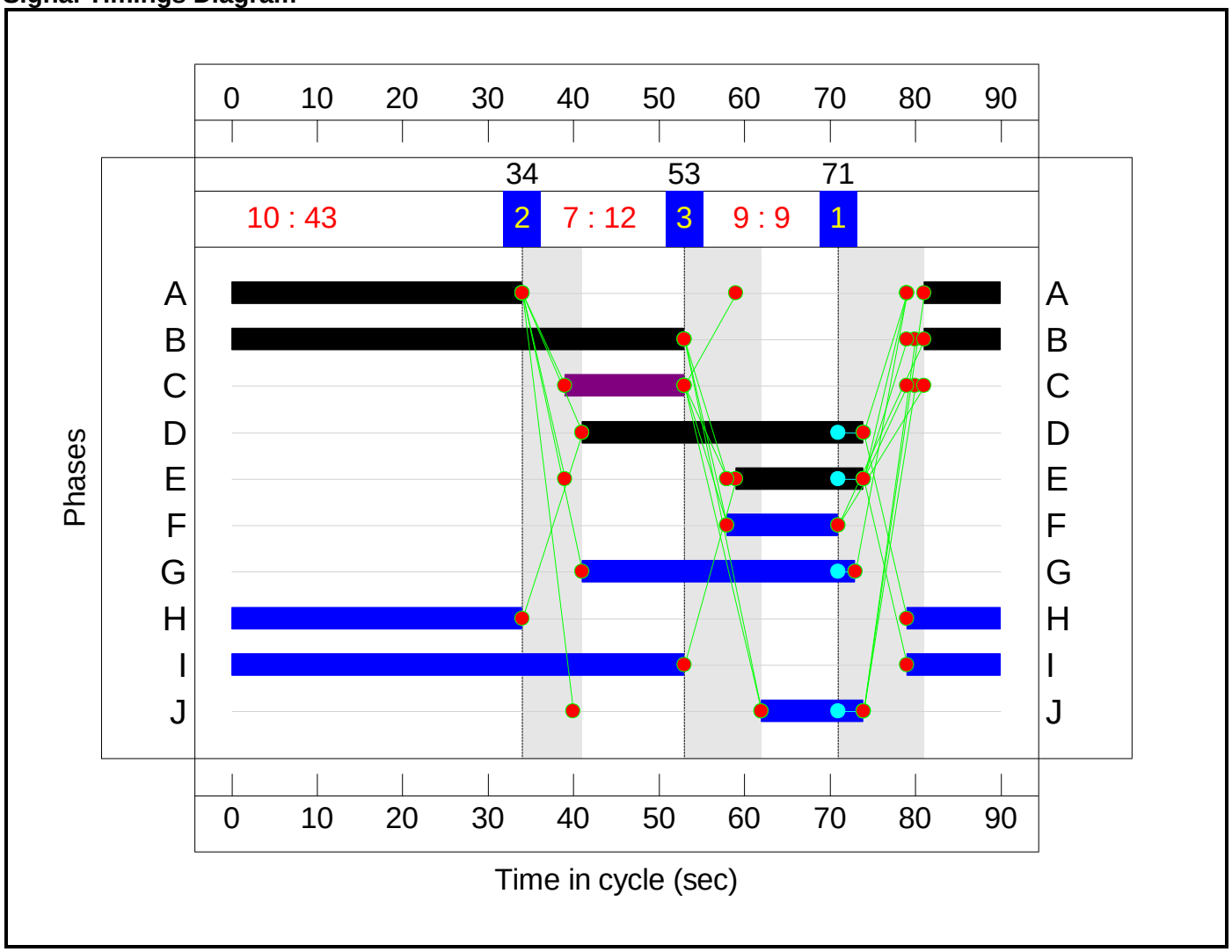
Stage Sequence Diagram



Stage Timings

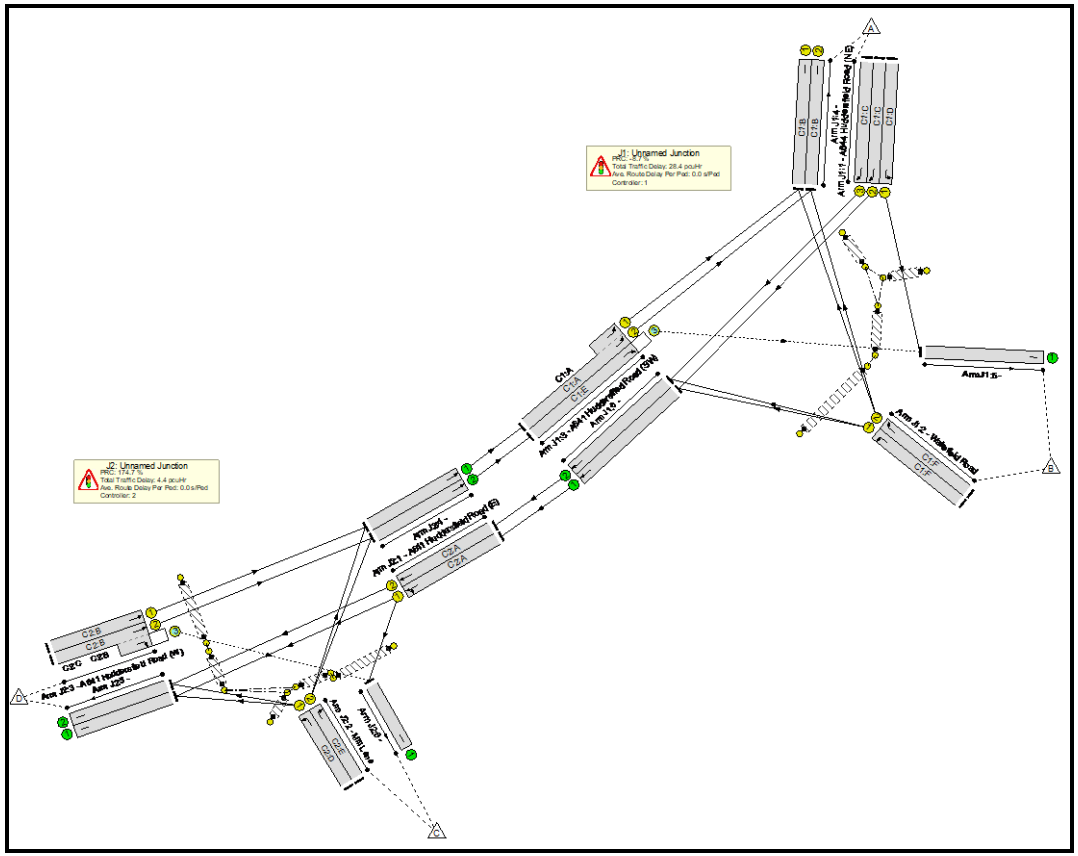
Stage	1	2	3
Duration	43	12	9
Change Point	71	34	53

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**97.8%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**97.8%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	62	-	812	2115	1481	54.8%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	226	1945	562	40.2%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	247	2055	594	41.6%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	30	-	73	2057	709	10.3%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	30	-	743	2205	759	97.8%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	24	-	533	2035:1940	457+429	60.2 : 60.2%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	15	-	157	2078	369	42.5%
4/1		U	N/A	N/A	C1:B		2	56	-	575	1975	1273	45.2%
4/2		U	N/A	N/A	C1:B		2	56	-	701	2175	1402	50.0%
5/1		U	N/A	N/A	-		-	-	-	969	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	265	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	281	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	15	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**32.8%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	43	-	265	2044	999	26.5%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	43	-	281	2044	999	28.1%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	33	-	180	2075	784	23.0%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	15	-	105	2068	368	28.6%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	62	-	452	1971	1380	32.8%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	62	14	262	2100:2015	730+708	18.2 : 18.2%
4/1	Ahead	U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	157	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	371	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	166	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	13	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	32	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	45	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	64	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	12	-	0	-	0	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	**-**	**-**	**102**	**178**	**6**	**18.1**	**14.6**	**0.1**	**32.8**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**154**	**3**	**14.9**	**13.5**	**0.0**	**28.4**	**-**	**-**	**-**	**-**
1/1	812	812	-	-	-	1.5	0.6	-	2.1	9.3	9.7	0.6	10.3
1/2	226	226	-	-	-	1.6	0.3	-	2.0	31.1	4.5	0.3	4.9
1/3	247	247	-	-	-	1.8	0.4	-	2.1	31.1	4.9	0.4	5.3
2/1	73	73	-	-	-	0.4	0.1	-	0.5	22.9	1.2	0.1	1.3
2/2	743	743	-	-	-	6.0	10.1	-	16.1	78.2	18.2	10.1	28.3
3/2+3/1	533	533	-	-	-	2.1	0.8	-	2.8	19.0	3.1	0.8	3.9
3/3	157	157	0	154	3	1.3	0.4	0.0	1.7	38.5	3.6	0.4	3.9
4/1	575	575	-	-	-	0.1	0.4	-	0.5	3.2	2.3	0.4	2.7
4/2	701	701	-	-	-	0.1	0.5	-	0.6	3.2	2.4	0.5	2.9
5/1	969	969	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	265	265	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	281	281	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**102**	**24**	**3**	**3.3**	**1.1**	**0.1**	**4.4**	**-**	**-**	**-**	**-**
1/1	265	265	-	-	-	0.2	0.2	-	0.4	5.2	0.9	0.2	1.1
1/2	281	281	-	-	-	0.2	0.2	-	0.4	4.9	0.8	0.2	1.0
2/1	180	180	-	-	-	1.0	0.1	-	1.1	22.1	3.0	0.1	3.2
2/2	105	105	-	-	-	0.9	0.2	-	1.1	38.9	2.2	0.2	2.4
3/1	452	452	-	-	-	0.7	0.2	-	0.9	7.2	4.4	0.2	4.6
3/2+3/3	262	262	102	24	3	0.3	0.1	0.1	0.5	6.9	1.0	0.1	1.1

Full Input Data And Results

4/1	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	157	157	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	318	318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	371	371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	166	166	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

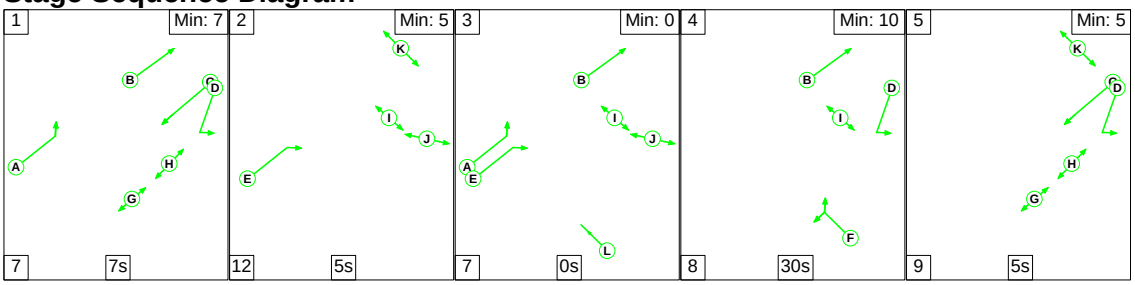
C1	PRC for Signalled Lanes (%):	-8.7	Total Delay for Signalled Lanes (pcuHr):	28.40	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	174.7	Total Delay for Signalled Lanes (pcuHr):	4.41	Cycle Time (s): 90
	PRC Over All Lanes (%):	-8.7	Total Delay Over All Lanes(pcuHr):	32.81	

Full Input Data And Results

Scenario 10: 'PM 2038-2039 Design' (FG10: 'PM 2038-2039 Design', Plan 1: 'Network Control Plan 1')

C1

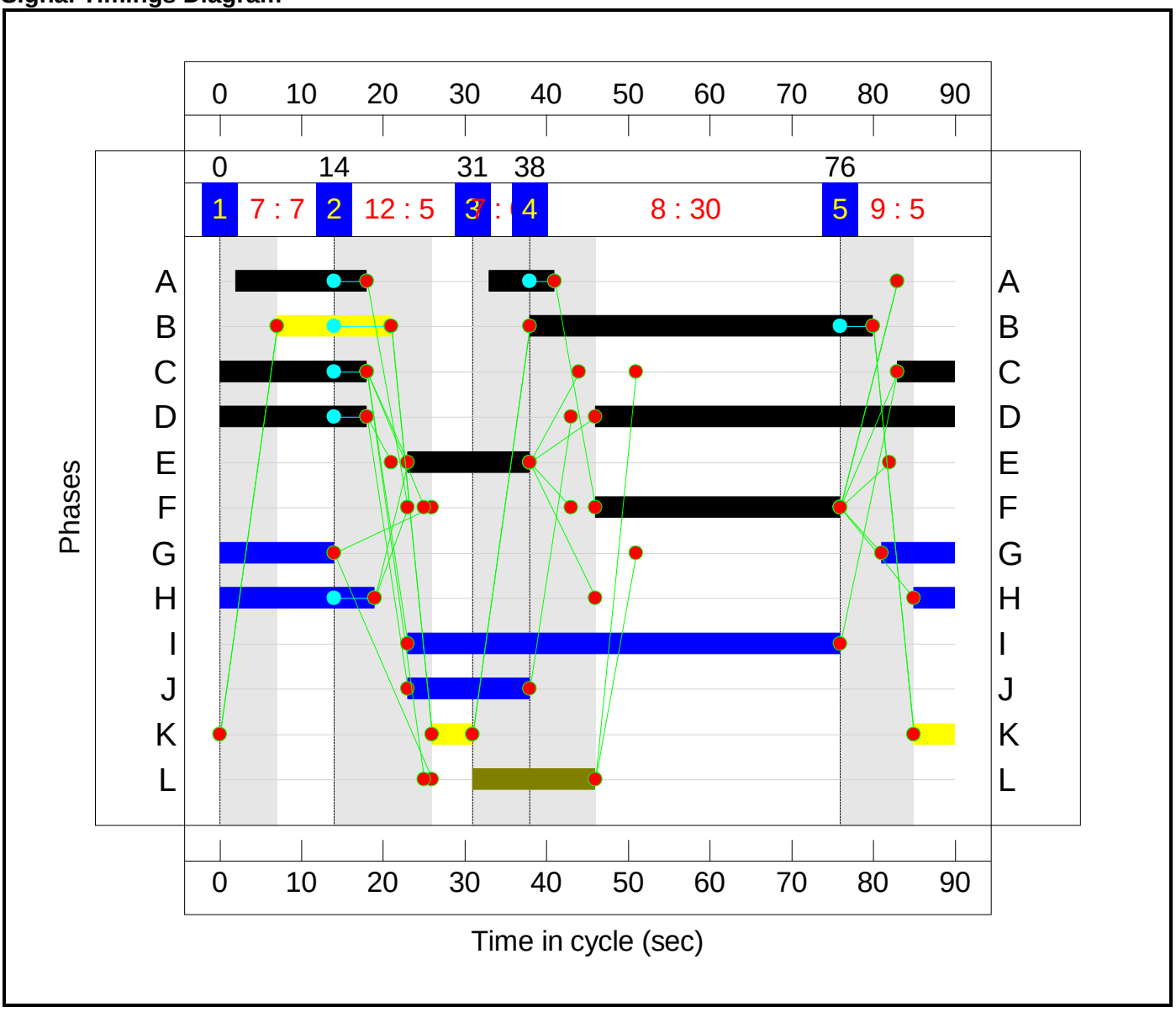
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	7	5	0	30	5
Change Point	0	14	31	38	76

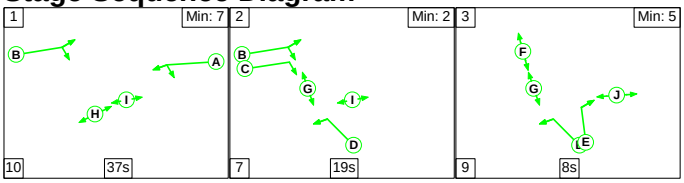
Signal Timings Diagram



Full Input Data And Results

C2

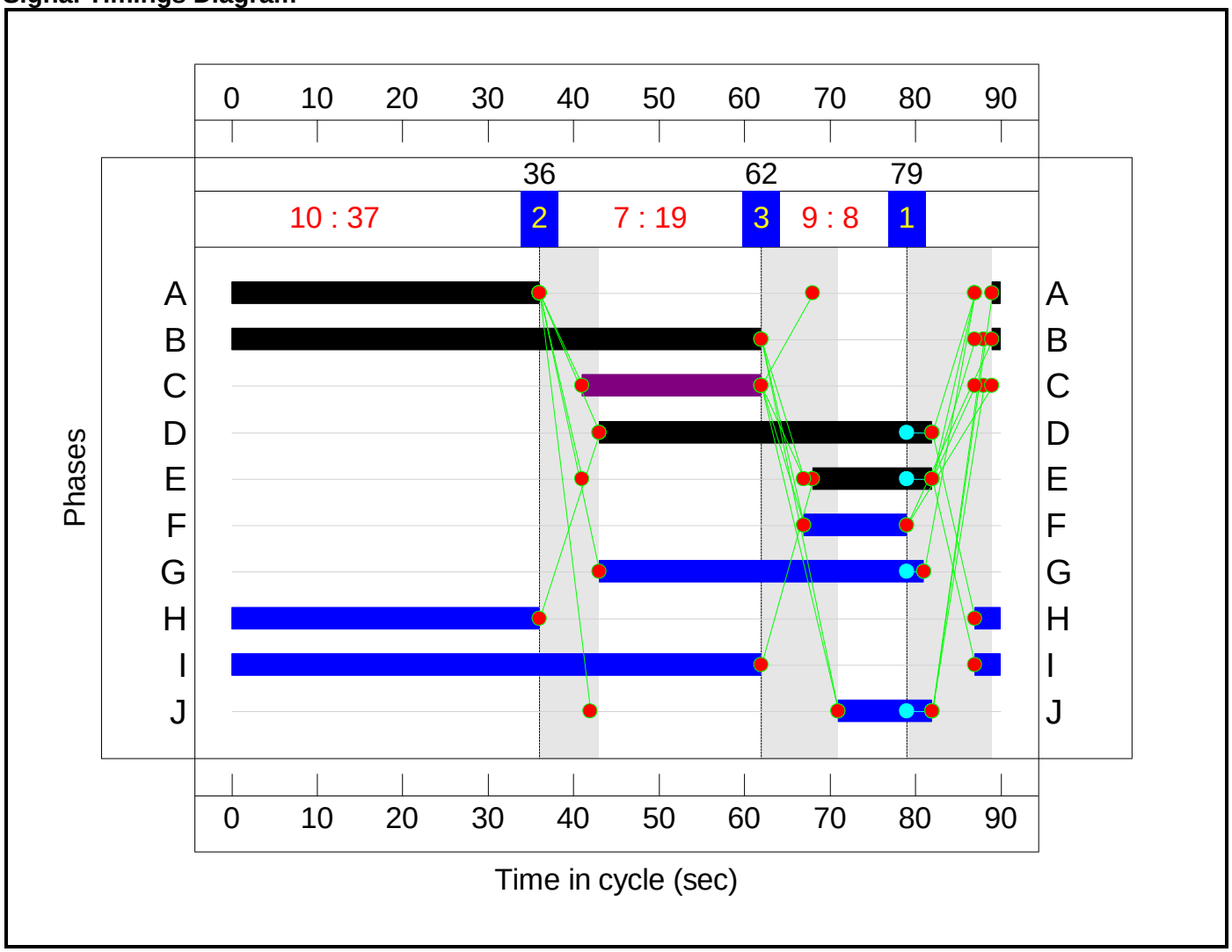
Stage Sequence Diagram



Stage Timings

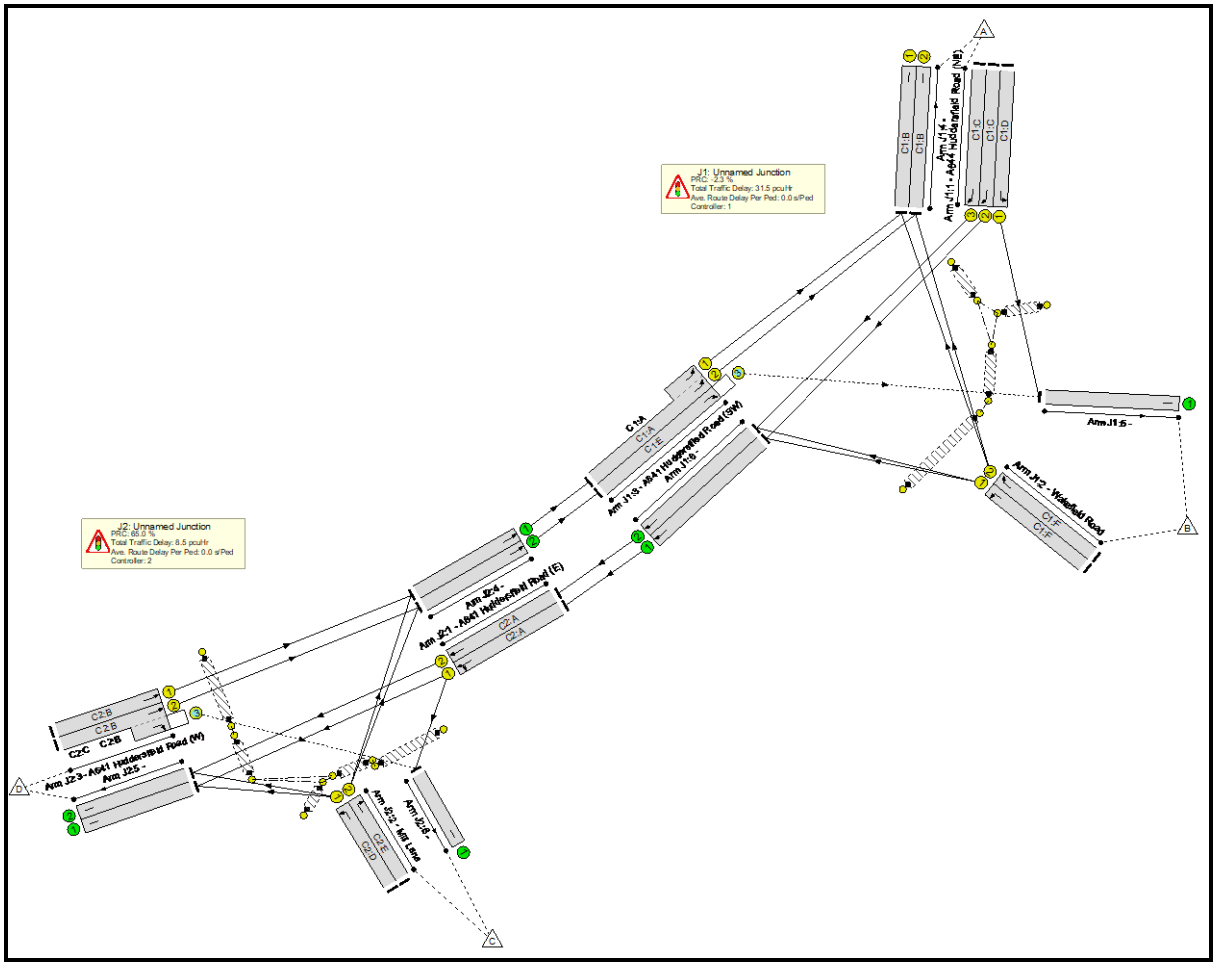
Stage	1	2	3
Duration	37	19	8
Change Point	79	36	62

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.1%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.1%**
1/1	A644 Huddersfield Road (NE) Left	U	N/A	N/A	C1:D		1	62	-	793	2115	1481	53.6%
1/2	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	256	1945	562	45.6%
1/3	A644 Huddersfield Road (NE) Ahead	U	N/A	N/A	C1:C		1	25	-	276	2055	594	46.5%
2/1	Wakefield Road Left	U	N/A	N/A	C1:F		1	30	-	250	2057	709	35.3%
2/2	Wakefield Road Right	U	N/A	N/A	C1:F		1	30	-	688	2205	759	90.6%
3/2+3/1	A641 Huddersfiled Road (SW) Left	U	N/A	N/A	C1:A		2	24	-	777	2035:1940	467+377	92.1 : 92.1%
3/3	A641 Huddersfiled Road (SW) Ahead	O	N/A	N/A	C1:E		1	15	-	246	2078	369	66.6%
4/1		U	N/A	N/A	C1:B		2	56	-	681	1975	1273	53.5%
4/2		U	N/A	N/A	C1:B		2	56	-	784	2175	1402	55.9%
5/1		U	N/A	N/A	-		-	-	-	1039	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	384	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	398	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	23	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:H		1	24	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C1:J		1	15	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	C1:I		1	53	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**54.5%**
1/1	A641 Huddersfield Road (E) Ahead Left	U	N/A	N/A	C2:A		1	37	-	384	2044	863	44.5%
1/2	A641 Huddersfield Road (E) Ahead	U	N/A	N/A	C2:A		1	37	-	398	2044	863	46.1%
2/1	Mill Lane Left	U	N/A	N/A	C2:D		1	39	-	307	2075	922	33.3%
2/2	Mill Lane Right	U	N/A	N/A	C2:E		1	14	-	188	2068	345	54.5%
3/1	A641 Huddersfield Road (W) Ahead	U	N/A	N/A	C2:B		1	63	-	634	1971	1402	45.2%
3/2+3/3	A641 Huddersfield Road (W) Ahead Right	U+O	N/A	N/A	C2:B	C2:C	1	63	21	292	2100:2015	1050+475	19.1 : 19.1%
4/1	Ahead	U	N/A	N/A	-		-	-	-	777	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	246	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	147	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	12	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C2:G		1	38	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	C2:H		1	39	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	C2:I		1	65	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	C2:J		1	11	-	0	-	0	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	**-**	**-**	**65**	**266**	**7**	**24.3**	**15.4**	**0.2**	**40.0**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**0**	**242**	**4**	**18.2**	**13.2**	**0.0**	**31.5**	**-**	**-**	**-**	**-**
1/1	793	793	-	-	-	1.4	0.6	-	2.0	9.1	9.5	0.6	10.0
1/2	256	256	-	-	-	1.9	0.4	-	2.3	32.1	5.2	0.4	5.6
1/3	276	276	-	-	-	2.0	0.4	-	2.4	31.9	5.6	0.4	6.0
2/1	250	250	-	-	-	1.5	0.3	-	1.8	25.9	4.7	0.3	4.9
2/2	688	688	-	-	-	5.4	4.3	-	9.7	50.6	16.2	4.3	20.5
3/2+3/1	777	777	-	-	-	3.7	5.1	-	8.7	40.4	7.0	5.1	12.1
3/3	246	246	0	242	4	2.1	1.0	0.0	3.0	44.6	5.8	1.0	6.8
4/1	681	681	-	-	-	0.1	0.6	-	0.7	3.7	2.9	0.6	3.5
4/2	784	784	-	-	-	0.1	0.6	-	0.8	3.6	3.2	0.6	3.8
5/1	1039	1039	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	384	384	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	398	398	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**65**	**24**	**2**	**6.1**	**2.2**	**0.2**	**8.5**	**-**	**-**	**-**	**-**
1/1	384	384	-	-	-	0.8	0.4	-	1.2	11.3	3.2	0.4	3.6
1/2	398	398	-	-	-	0.8	0.4	-	1.2	10.8	3.1	0.4	3.5
2/1	307	307	-	-	-	1.4	0.2	-	1.6	19.2	4.9	0.2	5.2
2/2	188	188	-	-	-	1.8	0.6	-	2.4	45.8	4.3	0.6	4.9
3/1	634	634	-	-	-	1.0	0.4	-	1.4	7.9	6.7	0.4	7.1
3/2+3/3	292	292	65	24	2	0.3	0.1	0.2	0.7	8.2	1.6	0.1	1.7

Full Input Data And Results

4/1	777	777	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	246	246	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	551	551	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

C1	PRC for Signalled Lanes (%):	-2.3	Total Delay for Signalled Lanes (pcuHr):	31.46	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	65.0	Total Delay for Signalled Lanes (pcuHr):	8.49	Cycle Time (s): 90
	PRC Over All Lanes (%):	-2.3	Total Delay Over All Lanes(pcuHr):	39.95	

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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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: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 15/08/2018 16:03:32

«2018 COUNT, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
1 - A643 Clifton Road (E)	1.3	11.94	0.57	B
2 - A644 Pheonix Bridge	1.4	10.49	0.59	B
5 - A643 Clifton Road (W)	1.2	3.45	0.54	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	15/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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	2018 COUNT	AM	ONE HOUR	07:45	09:15	15

2018 COUNT, 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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	6.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A643 Clifton Road (E)		✓	367	100.000
2 - A644 Pheonix Bridge		✓	451	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	1121	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	13	4	350	0
	2 - A644 Pheonix Bridge	17	2	1	431	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	373	712	21	15	0

Vehicle Mix

HV %s

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.57	11.94	1.3	B
2 - A644 Pheonix Bridge	0.59	10.49	1.4	B
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.54	3.45	1.2	A

Main Results for each time segment

07:45 - 08:00

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 - A643 Clifton Road (E)	276	563	835	0.331	274	0.5	6.396	A
2 - A644 Pheonix Bridge	340	292	907	0.374	337	0.6	6.292	A
3 - Wood Street		609						

4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	844	14	2283	0.370	842	0.6	2.493	A

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 - A643 Clifton Road (E)	330	674	781	0.423	329	0.7	7.955	A
2 - A644 Pheonix Bridge	405	350	879	0.461	404	0.8	7.573	A
3 - Wood Street		731						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	1008	17	2280	0.442	1007	0.8	2.825	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 - A643 Clifton Road (E)	404	825	706	0.573	402	1.3	11.752	B
2 - A644 Pheonix Bridge	497	427	841	0.591	494	1.4	10.326	B
3 - Wood Street		893						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1234	21	2278	0.542	1233	1.2	3.441	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 - A643 Clifton Road (E)	404	826	705	0.573	404	1.3	11.939	B
2 - A644 Pheonix Bridge	497	429	840	0.591	496	1.4	10.486	B
3 - Wood Street		897						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1234	21	2278	0.542	1234	1.2	3.449	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 - A643 Clifton Road (E)	330	675	780	0.423	332	0.7	8.085	A
2 - A644 Pheonix Bridge	405	353	877	0.462	408	0.9	7.704	A
3 - Wood Street		737						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	1008	17	2280	0.442	1009	0.8	2.837	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 - A643 Clifton Road (E)	276	565	834	0.331	277	0.5	6.476	A
2 - A644 Pheonix Bridge	340	295	906	0.375	341	0.6	6.382	A
3 - Wood Street		616						
4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	844	14	2283	0.370	845	0.6	2.504	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 15/08/2018 16:04:06

«2018 COUNT, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
1 - A643 Clifton Road (E)	1.9	13.33	0.66	B
2 - A644 Pheonix Bridge	3.0	18.73	0.76	C
5 - A643 Clifton Road (W)	1.1	3.38	0.53	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	15/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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)
D2	2018 COUNT	PM	ONE HOUR	16:45	18:15	15

2018 COUNT, PM

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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	9.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A643 Clifton Road (E)		✓	469	100.000
2 - A644 Pheonix Bridge		✓	540	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	1097	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	22	6	441	0
	2 - A644 Pheonix Bridge	24	0	0	516	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	495	558	5	39	0

Vehicle Mix

HV %s

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.66	13.33	1.9	B
2 - A644 Pheonix Bridge	0.76	18.73	3.0	C
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.53	3.38	1.1	A

Main Results for each time segment

16:45 - 17:00

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 - A643 Clifton Road (E)	353	452	890	0.397	350	0.6	6.637	A
2 - A644 Pheonix Bridge	407	367	870	0.467	403	0.9	7.652	A
3 - Wood Street		762						

4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	826	18	2280	0.362	824	0.6	2.469	A

17:00 - 17:15

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 - A643 Clifton Road (E)	422	541	846	0.498	420	1.0	8.423	A
2 - A644 Pheonix Bridge	485	440	834	0.582	483	1.4	10.202	B
3 - Wood Street		914						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	986	21	2277	0.433	985	0.8	2.786	A

17:15 - 17:30

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 - A643 Clifton Road (E)	516	662	786	0.657	513	1.8	13.003	B
2 - A644 Pheonix Bridge	595	537	787	0.756	588	2.9	17.641	C
3 - Wood Street		1114						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1208	26	2273	0.531	1206	1.1	3.369	A

17:30 - 17:45

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 - A643 Clifton Road (E)	516	663	786	0.657	516	1.9	13.327	B
2 - A644 Pheonix Bridge	595	540	785	0.757	594	3.0	18.730	C
3 - Wood Street		1122						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1208	26	2273	0.531	1208	1.1	3.377	A

17:45 - 18:00

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 - A643 Clifton Road (E)	422	542	846	0.499	425	1.0	8.625	A
2 - A644 Pheonix Bridge	485	445	832	0.583	492	1.4	10.760	B
3 - Wood Street		926						
4 - A643 Huddersfield Road		22						
5 - A643 Clifton Road (W)	986	22	2277	0.433	988	0.8	2.795	A

18:00 - 18:15

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 - A643 Clifton Road (E)	353	454	890	0.397	354	0.7	6.747	A
2 - A644 Pheonix Bridge	407	371	868	0.468	409	0.9	7.871	A
3 - Wood Street		771						
4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	826	18	2280	0.362	827	0.6	2.480	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 24/04/2019 17:14:39

«2018 BASE, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
1 - A643 Clifton Road (E)	1.4	12.97	0.59	B
2 - A644 Pheonix Bridge	1.5	10.90	0.61	B
5 - A643 Clifton Road (W)	1.3	3.63	0.56	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D4	2018 BASE	AM	ONE HOUR	07:45	09:15	15

2018 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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	7.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

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 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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 - A643 Clifton Road (E)		✓	369	100.000
2 - A644 Pheonix Bridge		✓	462	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	1167	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	13	4	352	0
	2 - A644 Pheonix Bridge	17	2	1	442	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	379	752	21	15	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.59	12.97	1.4	B
2 - A644 Pheonix Bridge	0.61	10.90	1.5	B
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.56	3.63	1.3	A

Main Results for each time segment

07:45 - 08:00

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 - A643 Clifton Road (E)	278	593	820	0.339	276	0.5	6.586	A
2 - A644 Pheonix Bridge	348	293	906	0.384	345	0.6	6.388	A

3 - Wood Street		619						
4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	879	14	2283	0.385	876	0.6	2.555	A

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 - A643 Clifton Road (E)	332	710	763	0.435	331	0.8	8.311	A
2 - A644 Pheonix Bridge	415	351	878	0.473	414	0.9	7.747	A
3 - Wood Street		742						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	1049	17	2280	0.460	1048	0.8	2.920	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 - A643 Clifton Road (E)	406	869	684	0.594	404	1.4	12.719	B
2 - A644 Pheonix Bridge	509	429	840	0.606	506	1.5	10.714	B
3 - Wood Street		907						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1285	21	2278	0.564	1283	1.3	3.614	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 - A643 Clifton Road (E)	406	870	683	0.594	406	1.4	12.968	B
2 - A644 Pheonix Bridge	509	432	839	0.607	509	1.5	10.903	B
3 - Wood Street		911						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1285	21	2278	0.564	1285	1.3	3.625	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 - A643 Clifton Road (E)	332	711	762	0.435	334	0.8	8.470	A
2 - A644 Pheonix Bridge	415	355	876	0.474	418	0.9	7.895	A
3 - Wood Street		749						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	1049	17	2280	0.460	1051	0.9	2.931	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 - A643 Clifton Road (E)	278	595	819	0.339	279	0.5	6.675	A
2 - A644 Pheonix Bridge	348	296	905	0.384	349	0.6	6.490	A
3 - Wood Street		626						
4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	879	14	2283	0.385	879	0.6	2.567	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 24/04/2019 17:15:06

«2018 BASE, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
1 - A643 Clifton Road (E)	2.0	14.06	0.67	B
2 - A644 Pheonix Bridge	3.9	23.14	0.80	C
5 - A643 Clifton Road (W)	1.2	3.45	0.54	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D5	2018 BASE	PM	ONE HOUR	16:45	18:15	15

2018 BASE, PM

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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	10.98	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

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 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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 - A643 Clifton Road (E)		✓	474	100.000
2 - A644 Pheonix Bridge		✓	572	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	1116	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	22	6	446	0
	2 - A644 Pheonix Bridge	24	0	0	548	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	498	574	5	39	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.67	14.06	2.0	B
2 - A644 Pheonix Bridge	0.80	23.14	3.9	C
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.54	3.45	1.2	A

Main Results for each time segment

16:45 - 17:00

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 - A643 Clifton Road (E)	357	464	884	0.404	354	0.7	6.756	A
2 - A644 Pheonix Bridge	431	371	868	0.496	427	1.0	8.085	A

3 - Wood Street		789						
4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	840	18	2280	0.369	838	0.6	2.492	A

17:00 - 17:15

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 - A643 Clifton Road (E)	426	555	839	0.508	425	1.0	8.655	A
2 - A644 Pheonix Bridge	514	445	832	0.618	512	1.6	11.153	B
3 - Wood Street		946						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1003	21	2277	0.441	1002	0.8	2.823	A

17:15 - 17:30

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 - A643 Clifton Road (E)	522	680	778	0.671	518	2.0	13.673	B
2 - A644 Pheonix Bridge	630	542	784	0.803	621	3.7	21.111	C
3 - Wood Street		1152						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1229	26	2274	0.540	1227	1.2	3.436	A

17:30 - 17:45

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 - A643 Clifton Road (E)	522	680	777	0.671	522	2.0	14.061	B
2 - A644 Pheonix Bridge	630	546	782	0.805	629	3.9	23.142	C
3 - Wood Street		1163						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1229	26	2273	0.541	1229	1.2	3.445	A

17:45 - 18:00

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 - A643 Clifton Road (E)	426	556	839	0.508	430	1.1	8.888	A
2 - A644 Pheonix Bridge	514	450	830	0.620	523	1.7	12.052	B
3 - Wood Street		963						
4 - A643 Huddersfield Road		22						
5 - A643 Clifton Road (W)	1003	22	2277	0.441	1005	0.8	2.833	A

18:00 - 18:15

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 - A643 Clifton Road (E)	357	466	884	0.404	358	0.7	6.875	A
2 - A644 Pheonix Bridge	431	375	866	0.497	433	1.0	8.365	A
3 - Wood Street		800						
4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	840	18	2280	0.369	841	0.6	2.503	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 24/04/2019 17:15:27

«2026/27 INTERIM, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
1 - A643 Clifton Road (E)	4.7	32.56	0.84	D
2 - A644 Pheonix Bridge	1.6	12.20	0.62	B
5 - A643 Clifton Road (W)	1.8	4.41	0.64	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D6	2026/27 INTERIM	AM	ONE HOUR	07:45	09:15	15

2026/27 INTERIM, 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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	12.18	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

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 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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 - A643 Clifton Road (E)		✓	505	100.000
2 - A644 Pheonix Bridge		✓	428	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	1327	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	13	4	488	0
	2 - A644 Pheonix Bridge	17	2	1	408	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	499	792	21	15	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.84	32.56	4.7	D
2 - A644 Pheonix Bridge	0.62	12.20	1.6	B
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.64	4.41	1.8	A

Main Results for each time segment

07:45 - 08:00

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 - A643 Clifton Road (E)	380	623	806	0.472	377	0.9	8.326	A
2 - A644 Pheonix Bridge	322	394	857	0.376	320	0.6	6.674	A

3 - Wood Street		694						
4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	999	14	2283	0.438	996	0.8	2.790	A

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 - A643 Clifton Road (E)	454	745	745	0.609	451	1.5	12.154	B
2 - A644 Pheonix Bridge	385	472	819	0.470	384	0.9	8.256	A
3 - Wood Street		832						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	1193	17	2280	0.523	1192	1.1	3.304	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 - A643 Clifton Road (E)	556	912	662	0.839	545	4.4	28.156	D
2 - A644 Pheonix Bridge	471	570	771	0.612	469	1.5	11.821	B
3 - Wood Street		1010						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1461	21	2278	0.641	1458	1.8	4.380	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 - A643 Clifton Road (E)	556	914	662	0.840	555	4.7	32.563	D
2 - A644 Pheonix Bridge	471	580	766	0.615	471	1.6	12.202	B
3 - Wood Street		1022						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1461	21	2278	0.642	1461	1.8	4.408	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 - A643 Clifton Road (E)	454	748	744	0.610	466	1.6	13.523	B
2 - A644 Pheonix Bridge	385	487	811	0.474	387	0.9	8.543	A
3 - Wood Street		851						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	1193	17	2280	0.523	1196	1.1	3.328	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 - A643 Clifton Road (E)	380	626	804	0.473	383	0.9	8.600	A
2 - A644 Pheonix Bridge	322	400	854	0.377	323	0.6	6.805	A
3 - Wood Street		704						
4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	999	14	2283	0.438	1000	0.8	2.812	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 24/04/2019 17:17:11

«2026/27 INTERIM, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
1 - A643 Clifton Road (E)	4.4	25.99	0.83	D
2 - A644 Pheonix Bridge	7.0	41.60	0.89	E
5 - A643 Clifton Road (W)	1.6	4.07	0.61	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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	2026/27 INTERIM	PM	ONE HOUR	16:45	18:15	15

2026/27 INTERIM, PM

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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	18.40	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

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 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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 - A643 Clifton Road (E)		✓	584	100.000
2 - A644 Pheonix Bridge		✓	588	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	1262	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	22	6	556	0
	2 - A644 Pheonix Bridge	24	0	0	564	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	645	573	5	39	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.83	25.99	4.4	D
2 - A644 Pheonix Bridge	0.89	41.60	7.0	E
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.61	4.07	1.6	A

Main Results for each time segment

16:45 - 17:00

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 - A643 Clifton Road (E)	440	463	885	0.497	436	1.0	7.950	A
2 - A644 Pheonix Bridge	443	452	828	0.534	438	1.1	9.128	A

3 - Wood Street		882						
4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	950	18	2280	0.417	947	0.7	2.696	A

17:00 - 17:15

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 - A643 Clifton Road (E)	525	554	840	0.625	522	1.6	11.251	B
2 - A644 Pheonix Bridge	529	542	784	0.674	525	2.0	13.716	B
3 - Wood Street		1058						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1135	21	2277	0.498	1133	1.0	3.145	A

17:15 - 17:30

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 - A643 Clifton Road (E)	643	678	778	0.826	633	4.1	23.276	C
2 - A644 Pheonix Bridge	647	657	728	0.890	631	6.0	32.853	D
3 - Wood Street		1277						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1389	26	2274	0.611	1387	1.6	4.050	A

17:30 - 17:45

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 - A643 Clifton Road (E)	643	679	778	0.827	642	4.4	25.986	D
2 - A644 Pheonix Bridge	647	666	723	0.895	644	7.0	41.600	E
3 - Wood Street		1298						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1389	26	2273	0.611	1389	1.6	4.072	A

17:45 - 18:00

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 - A643 Clifton Road (E)	525	556	839	0.626	536	1.7	12.268	B
2 - A644 Pheonix Bridge	529	555	778	0.680	548	2.2	16.791	C
3 - Wood Street		1093						
4 - A643 Huddersfield Road		22						
5 - A643 Clifton Road (W)	1135	22	2276	0.498	1137	1.0	3.164	A

18:00 - 18:15

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 - A643 Clifton Road (E)	440	465	884	0.497	443	1.0	8.211	A
2 - A644 Pheonix Bridge	443	459	825	0.537	447	1.2	9.621	A
3 - Wood Street		898						
4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	950	18	2280	0.417	951	0.7	2.714	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 24/04/2019 17:17:29

«2032/33 DESIGN, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
1 - A643 Clifton Road (E)	1.5	11.87	0.60	B
2 - A644 Pheonix Bridge	0.5	6.55	0.33	A
5 - A643 Clifton Road (W)	0.9	2.99	0.47	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D8	2032/33 DESIGN	AM	ONE HOUR	07:45	09:15	15

2032/33 DESIGN, 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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	5.77	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

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 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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 - A643 Clifton Road (E)		✓	413	100.000
2 - A644 Pheonix Bridge		✓	241	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	975	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	13	4	396	0
	2 - A644 Pheonix Bridge	17	2	1	221	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	323	616	21	15	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.60	11.87	1.5	B
2 - A644 Pheonix Bridge	0.33	6.55	0.5	A
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.47	2.99	0.9	A

Main Results for each time segment

07:45 - 08:00

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 - A643 Clifton Road (E)	311	491	871	0.357	309	0.5	6.379	A
2 - A644 Pheonix Bridge	181	326	890	0.204	180	0.3	5.064	A

3 - Wood Street		487						
4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	734	14	2283	0.322	732	0.5	2.318	A

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 - A643 Clifton Road (E)	371	588	823	0.451	370	0.8	7.929	A
2 - A644 Pheonix Bridge	217	391	858	0.252	216	0.3	5.604	A
3 - Wood Street		584						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	877	17	2280	0.384	876	0.6	2.561	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 - A643 Clifton Road (E)	455	719	758	0.600	452	1.5	11.672	B
2 - A644 Pheonix Bridge	265	478	816	0.325	265	0.5	6.524	A
3 - Wood Street		714						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1073	21	2278	0.471	1072	0.9	2.984	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 - A643 Clifton Road (E)	455	720	758	0.600	455	1.5	11.870	B
2 - A644 Pheonix Bridge	265	480	815	0.326	265	0.5	6.551	A
3 - Wood Street		717						
4 - A643 Huddersfield Road		21						
5 - A643 Clifton Road (W)	1073	21	2278	0.471	1073	0.9	2.989	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 - A643 Clifton Road (E)	371	589	823	0.451	374	0.8	8.065	A
2 - A644 Pheonix Bridge	217	394	857	0.253	217	0.3	5.634	A
3 - Wood Street		588						
4 - A643 Huddersfield Road		17						
5 - A643 Clifton Road (W)	877	17	2280	0.384	878	0.6	2.567	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 - A643 Clifton Road (E)	311	493	870	0.357	312	0.6	6.464	A
2 - A644 Pheonix Bridge	181	329	889	0.204	182	0.3	5.094	A
3 - Wood Street		491						
4 - A643 Huddersfield Road		14						
5 - A643 Clifton Road (W)	734	14	2283	0.322	735	0.5	2.326	A

Junctions 9

ARCADY 9 - Roundabout Module

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Filename: A643 Clifton Road-A644 Phoenix Bridge.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Roundabouts\A643 Clifton Road-A644 Phoenix Bridge
Report generation date: 24/04/2019 17:22:34

«2032/33 DESIGN, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
1 - A643 Clifton Road (E)	1.0	8.11	0.49	A
2 - A644 Pheonix Bridge	1.3	10.12	0.57	B
5 - A643 Clifton Road (W)	0.9	2.95	0.46	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A643 Clifton Road-A644 Phoenix Bridge
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D9	2032/33 DESIGN	PM	ONE HOUR	16:45	18:15	15

2032/33 DESIGN, PM

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	A643 Clifton Road-A644 Phoenix Bridge	Standard Roundabout		1, 2, 3, 4, 5	5.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A643 Clifton Road (E)	
2	A644 Pheonix Bridge	
3	Wood Street	
4	A643 Huddersfield Road	
5	A643 Clifton Road (W)	

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 - A643 Clifton Road (E)	3.65	6.30	2.8	12.1	26.0	63.0	
2 - A644 Pheonix Bridge	3.57	4.60	1.8	83.7	26.0	75.0	
3 - Wood Street							✓
4 - A643 Huddersfield Road							✓
5 - A643 Clifton Road (W)	6.61	10.16	6.7	69.0	26.0	53.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A643 Clifton Road (E)	0.495	1114
2 - A644 Pheonix Bridge	0.491	1050
3 - Wood Street		
4 - A643 Huddersfield Road		
5 - A643 Clifton Road (W)	0.769	2294

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 - A643 Clifton Road (E)		✓	394	100.000
2 - A644 Pheonix Bridge		✓	427	100.000
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)		✓	958	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	22	6	366	0
	2 - A644 Pheonix Bridge	24	0	0	403	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	524	390	5	39	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1 - A643 Clifton Road (E)	2 - A644 Pheonix Bridge	3 - Wood Street	4 - A643 Huddersfield Road	5 - A643 Clifton Road (W)
From	1 - A643 Clifton Road (E)	0	0	0	0	0
	2 - A644 Pheonix Bridge	0	0	0	0	0
	3 - Wood Street	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - A643 Huddersfield Road	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	5 - A643 Clifton Road (W)	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - A643 Clifton Road (E)	0.49	8.11	1.0	A
2 - A644 Pheonix Bridge	0.57	10.12	1.3	B
3 - Wood Street				
4 - A643 Huddersfield Road				
5 - A643 Clifton Road (W)	0.46	2.95	0.9	A

Main Results for each time segment

16:45 - 17:00

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 - A643 Clifton Road (E)	297	326	953	0.311	295	0.4	5.458	A
2 - A644 Pheonix Bridge	321	311	897	0.358	319	0.6	6.203	A

3 - Wood Street		622						
4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	721	18	2280	0.316	719	0.5	2.304	A

17:00 - 17:15

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 - A643 Clifton Road (E)	354	390	921	0.385	354	0.6	6.334	A
2 - A644 Pheonix Bridge	384	373	867	0.443	383	0.8	7.423	A
3 - Wood Street		746						
4 - A643 Huddersfield Road		22						
5 - A643 Clifton Road (W)	861	22	2277	0.378	861	0.6	2.540	A

17:15 - 17:30

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 - A643 Clifton Road (E)	434	477	878	0.494	432	1.0	8.059	A
2 - A644 Pheonix Bridge	470	457	826	0.569	468	1.3	9.996	A
3 - Wood Street		913						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1055	26	2273	0.464	1054	0.9	2.949	A

17:30 - 17:45

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 - A643 Clifton Road (E)	434	478	878	0.494	434	1.0	8.111	A
2 - A644 Pheonix Bridge	470	458	826	0.570	470	1.3	10.123	B
3 - Wood Street		916						
4 - A643 Huddersfield Road		26						
5 - A643 Clifton Road (W)	1055	26	2273	0.464	1055	0.9	2.953	A

17:45 - 18:00

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 - A643 Clifton Road (E)	354	391	921	0.385	356	0.6	6.384	A
2 - A644 Pheonix Bridge	384	375	866	0.443	386	0.8	7.526	A
3 - Wood Street		751						
4 - A643 Huddersfield Road		22						
5 - A643 Clifton Road (W)	861	22	2277	0.378	862	0.6	2.546	A

18:00 - 18:15

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 - A643 Clifton Road (E)	297	327	952	0.312	297	0.5	5.502	A
2 - A644 Pheonix Bridge	321	314	896	0.359	322	0.6	6.284	A
3 - Wood Street		628						
4 - A643 Huddersfield Road		18						
5 - A643 Clifton Road (W)	721	18	2280	0.316	722	0.5	2.311	A

Junctions 9

PICADY 9 - Priority Intersection Module

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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:08:57

«2018 COUNT, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
Stream B-C	0.5	11.03	0.33	B
Stream B-A	0.3	13.44	0.24	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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	2018 COUNT	AM	ONE HOUR	07:45	09:15	15

2018 COUNT, 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	A641/Lawson Road	T-Junction	Two-way		2.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	553	0.094	0.237	0.149	0.338
1	B-C	741	0.106	0.267	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	775	100.000
B - Lawson Road		✓	220	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	24	751
	B - Lawson Road	76	0	144
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.33	11.03	0.5	B
B-A	0.24	13.44	0.3	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	568	0.191	107	0.2	7.804	A
B-A	57	417	0.137	57	0.2	9.977	A
C-AB	0	453	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	565			565			

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	129	533	0.243	129	0.3	8.899	A

B-A	68	390	0.175	68	0.2	11.180	B
C-AB	0	430	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	675			675			

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	159	485	0.327	158	0.5	10.983	B
B-A	84	352	0.238	83	0.3	13.397	B
C-AB	0	397	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	827			827			

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	159	485	0.327	159	0.5	11.030	B
B-A	84	352	0.238	84	0.3	13.439	B
C-AB	0	397	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	827			827			

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	129	533	0.243	130	0.3	8.948	A
B-A	68	390	0.175	69	0.2	11.219	B
C-AB	0	430	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	675			675			

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	108	567	0.191	109	0.2	7.854	A
B-A	57	417	0.137	57	0.2	10.021	B
C-AB	0	453	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	565			565			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:10:48

«2018 COUNT, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
Stream B-C	1.4	21.51	0.59	C
Stream B-A	1.1	24.61	0.53	C
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D2	2018 COUNT	PM	ONE HOUR	16:45	18:15	15

2018 COUNT, PM

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	A641/Lawson Road	T-Junction	Two-way		6.97	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	561	0.095	0.240	0.151	0.343
1	B-C	735	0.105	0.265	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	838	100.000
B - Lawson Road		✓	369	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	5	833
	B - Lawson Road	152	0	217
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.59	21.51	1.4	C
B-A	0.53	24.61	1.1	C
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	526	0.311	162	0.4	9.832	A
B-A	114	407	0.281	113	0.4	12.184	B
C-AB	0	443	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	627			627			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	480	0.406	194	0.7	12.543	B

B-A	137	373	0.367	136	0.6	15.151	C
C-AB	0	418	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	749			749			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	408	0.586	236	1.3	20.693	C
B-A	167	314	0.532	165	1.1	23.805	C
C-AB	0	383	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	917			917			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	406	0.589	239	1.4	21.509	C
B-A	167	313	0.534	167	1.1	24.609	C
C-AB	0	383	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	917			917			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	479	0.408	198	0.7	12.940	B
B-A	137	372	0.367	139	0.6	15.555	C
C-AB	0	418	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	749			749			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	525	0.311	164	0.5	10.009	B
B-A	114	407	0.281	115	0.4	12.384	B
C-AB	0	443	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	627			627			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:11:07

«2018 BASE, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
Stream B-C	0.4	10.43	0.27	B
Stream B-A	0.3	13.66	0.24	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D3	2018 BASE	AM	ONE HOUR	07:45	09:15	15

2018 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	A641/Lawson Road	T-Junction	Two-way		2.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	559	0.095	0.240	0.151	0.342
1	B-C	736	0.105	0.266	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	813	100.000
B - Lawson Road		✓	190	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	24	789
	B - Lawson Road	76	0	114
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.27	10.43	0.4	B
B-A	0.24	13.66	0.3	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	86	557	0.154	85	0.2	7.625	A
B-A	57	415	0.138	57	0.2	10.026	B
C-AB	0	447	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	594			594			

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	102	521	0.197	102	0.2	8.594	A

B-A	68	387	0.177	68	0.2	11.285	B
C-AB	0	423	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	709			709			

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	126	471	0.267	125	0.4	10.396	B
B-A	84	347	0.241	83	0.3	13.615	B
C-AB	0	389	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	869			869			

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	126	471	0.267	126	0.4	10.428	B
B-A	84	347	0.241	84	0.3	13.655	B
C-AB	0	389	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	869			869			

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	102	521	0.197	103	0.2	8.630	A
B-A	68	387	0.177	69	0.2	11.329	B
C-AB	0	423	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	709			709			

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	86	556	0.154	86	0.2	7.664	A
B-A	57	415	0.138	57	0.2	10.072	B
C-AB	0	447	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	594			594			

Junctions 9

PICADY 9 - Priority Intersection Module

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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:11:46

«2018 BASE, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
Stream B-C	1.4	22.33	0.60	C
Stream B-A	1.2	25.57	0.54	D
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D4	2018 BASE	PM	ONE HOUR	16:45	18:15	15

2018 BASE, PM

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	A641/Lawson Road	T-Junction	Two-way		7.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	561	0.095	0.240	0.151	0.343
1	B-C	735	0.105	0.265	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	855	100.000
B - Lawson Road		✓	369	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	5	850
	B - Lawson Road	152	0	217
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.60	22.33	1.4	C
B-A	0.54	25.57	1.2	D
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	523	0.313	162	0.4	9.926	A
B-A	114	404	0.283	113	0.4	12.313	B
C-AB	0	441	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	640			640			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	476	0.410	194	0.7	12.734	B

B-A	137	369	0.370	136	0.6	15.398	C
C-AB	0	415	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	764			764			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	401	0.595	236	1.4	21.412	C
B-A	167	309	0.542	165	1.1	24.653	C
C-AB	0	379	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	936			936			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	399	0.598	239	1.4	22.333	C
B-A	167	308	0.544	167	1.2	25.572	D
C-AB	0	379	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	936			936			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	474	0.411	198	0.7	13.170	B
B-A	137	368	0.371	139	0.6	15.839	C
C-AB	0	415	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	764			764			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	521	0.313	164	0.5	10.110	B
B-A	114	404	0.284	115	0.4	12.519	B
C-AB	0	441	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	640			640			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:12:03

«2026/27 INTERIM, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
Stream B-C	0.4	11.03	0.28	B
Stream B-A	0.3	14.57	0.25	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D5	2026/27 INTERIM	AM	ONE HOUR	07:45	09:15	15

2026/27 INTERIM, 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	A641/Lawson Road	T-Junction	Two-way		2.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	559	0.095	0.240	0.151	0.342
1	B-C	736	0.105	0.266	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	875	100.000
B - Lawson Road		✓	190	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	24	851
	B - Lawson Road	76	0	114
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.28	11.03	0.4	B
B-A	0.25	14.57	0.3	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	86	544	0.158	85	0.2	7.831	A
B-A	57	404	0.142	57	0.2	10.348	B
C-AB	0	438	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	641			641			

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	102	506	0.203	102	0.3	8.915	A

B-A	68	373	0.183	68	0.2	11.788	B
C-AB	0	411	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	765			765			

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	126	452	0.278	125	0.4	10.984	B
B-A	84	331	0.253	83	0.3	14.517	B
C-AB	0	375	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	937			937			

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	126	452	0.278	126	0.4	11.026	B
B-A	84	331	0.253	84	0.3	14.566	B
C-AB	0	375	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	937			937			

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	102	506	0.203	103	0.3	8.955	A
B-A	68	374	0.183	69	0.2	11.829	B
C-AB	0	411	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	765			765			

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	86	544	0.158	86	0.2	7.874	A
B-A	57	404	0.142	57	0.2	10.399	B
C-AB	0	438	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	641			641			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:12:33

«2026/27 INTERIM, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
Stream B-C	1.6	24.68	0.62	C
Stream B-A	1.3	28.29	0.57	D
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D6	2026/27 INTERIM	PM	ONE HOUR	16:45	18:15	15

2026/27 INTERIM, PM

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	A641/Lawson Road	T-Junction	Two-way		7.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	561	0.095	0.240	0.151	0.343
1	B-C	735	0.105	0.265	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	896	100.000
B - Lawson Road		✓	369	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	5	891
	B - Lawson Road	152	0	217
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.62	24.68	1.6	C
B-A	0.57	28.29	1.3	D
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	514	0.318	162	0.5	10.161	B
B-A	114	396	0.289	113	0.4	12.636	B
C-AB	0	434	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	671			671			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	465	0.419	194	0.7	13.226	B

B-A	137	360	0.380	136	0.6	16.031	C
C-AB	0	407	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	801			801			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	386	0.618	236	1.5	23.394	C
B-A	167	296	0.566	165	1.2	26.999	D
C-AB	0	370	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	981			981			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	384	0.622	239	1.6	24.675	C
B-A	167	294	0.569	167	1.3	28.292	D
C-AB	0	370	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	981			981			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	463	0.421	198	0.7	13.763	B
B-A	137	359	0.381	139	0.6	16.583	C
C-AB	0	407	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	801			801			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	513	0.319	164	0.5	10.364	B
B-A	114	396	0.289	115	0.4	12.866	B
C-AB	0	434	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	671			671			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:13:07

«2032/33 DESIGN, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
Stream B-C	0.3	8.83	0.24	A
Stream B-A	0.3	11.28	0.21	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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	2032/33 DESIGN	AM	ONE HOUR	07:45	09:15	15

2032/33 DESIGN, 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	A641/Lawson Road	T-Junction	Two-way		2.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	559	0.095	0.240	0.151	0.342
1	B-C	736	0.105	0.266	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	604	100.000
B - Lawson Road		✓	190	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	24	580
	B - Lawson Road	76	0	114
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.24	8.83	0.3	A
B-A	0.21	11.28	0.3	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	86	599	0.143	85	0.2	7.001	A
B-A	57	453	0.126	57	0.1	9.074	A
C-AB	0	480	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	437			437			

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	102	571	0.179	102	0.2	7.669	A

B-A	68	432	0.158	68	0.2	9.890	A
C-AB	0	462	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	521			521			

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	126	533	0.235	125	0.3	8.809	A
B-A	84	403	0.208	83	0.3	11.258	B
C-AB	0	436	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	639			639			

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	126	533	0.235	126	0.3	8.826	A
B-A	84	403	0.208	84	0.3	11.278	B
C-AB	0	436	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	26			26			
A-C	639			639			

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	102	571	0.179	103	0.2	7.691	A
B-A	68	432	0.158	69	0.2	9.912	A
C-AB	0	462	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	22			22			
A-C	521			521			

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	86	598	0.143	86	0.2	7.031	A
B-A	57	453	0.126	57	0.1	9.108	A
C-AB	0	480	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	18			18			
A-C	437			437			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-Lawson Road.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-Lawson Road
Report generation date: 08/05/2019 11:13:29

«2032/33 DESIGN, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
Stream B-C	1.0	16.01	0.52	C
Stream B-A	0.8	18.22	0.46	C
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Lawson Road
Location	
Site number	
Date	08/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D8	2032/33 DESIGN	PM	ONE HOUR	16:45	18:15	15

2032/33 DESIGN, PM

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	A641/Lawson Road	T-Junction	Two-way		5.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Lawson Road		Minor
C	A641 (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 - A641 (E)	7.59			0.0	✓	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 - Lawson Road	One lane plus flare	10.00	10.00	7.20	4.00	3.60	✓	2.00	0	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	561	0.095	0.240	0.151	0.343
1	B-C	735	0.105	0.265	-	-
1	C-B	574	0.207	0.207	-	-

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 - A641 (W)		✓	673	100.000
B - Lawson Road		✓	369	100.000
C - A641 (E)		✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	5	668
	B - Lawson Road	152	0	217
	C - A641 (E)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Lawson Road	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Lawson Road	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.52	16.01	1.0	C
B-A	0.46	18.22	0.8	C
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	560	0.292	162	0.4	9.002	A
B-A	114	437	0.262	113	0.3	11.059	B
C-AB	0	469	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	503			503			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	522	0.374	194	0.6	10.955	B

B-A	137	410	0.333	136	0.5	13.113	B
C-AB	0	449	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	601			601			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	464	0.514	237	1.0	15.716	C
B-A	167	365	0.458	166	0.8	17.952	C
C-AB	0	421	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	735			735			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	239	464	0.515	239	1.0	16.009	C
B-A	167	365	0.459	167	0.8	18.223	C
C-AB	0	421	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	6			6			
A-C	735			735			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	521	0.374	197	0.6	11.155	B
B-A	137	410	0.334	138	0.5	13.307	B
C-AB	0	449	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	601			601			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	163	559	0.292	164	0.4	9.130	A
B-A	114	437	0.262	115	0.4	11.200	B
C-AB	0	469	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	4			4			
A-C	503			503			

Junctions 9

PICADY 9 - Priority Intersection Module

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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 20/08/2018 13:46:31

«2018 COUNT, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.2	9.97	0.19	A
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A641/Circular
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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	2018 COUNT	AM	ONE HOUR	07:45	09:15	15

2018 COUNT, 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	A641/Circular	T-Junction	One-way from C to A		0.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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	Av. Demand (PCU/hr)	Scaling Factor (%)
A - A641 (W)		✓	0	100.000
B - Circular		✓	76	100.000
C - A641 (E)		✓	857	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	76	0	0
	C - A641 (E)	857	0	0

Vehicle Mix

HV %s

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.19	9.97	0.2	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	682	0.000	0	0.0	0.000	A
B-A	57	471	0.121	57	0.1	8.676	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	645			645			
A-B	0			0			
A-C	0			0			

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	0	677	0.000	0	0.0	0.000	A
B-A	68	460	0.149	68	0.2	9.184	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	770			770			

A-B	0			0			
A-C	0			0			

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	0	670	0.000	0	0.0	0.000	A
B-A	84	445	0.188	83	0.2	9.957	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	944			944			
A-B	0			0			
A-C	0			0			

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	0	670	0.000	0	0.0	0.000	A
B-A	84	445	0.188	84	0.2	9.968	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	944			944			
A-B	0			0			
A-C	0			0			

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	0	677	0.000	0	0.0	0.000	A
B-A	68	460	0.149	69	0.2	9.202	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	770			770			
A-B	0			0			
A-C	0			0			

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	0	682	0.000	0	0.0	0.000	A
B-A	57	471	0.121	57	0.1	8.704	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	645			645			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 20/08/2018 13:47:27

«2018 COUNT, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.7	14.22	0.40	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A641/Circular
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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)
D2	2018 COUNT	PM	ONE HOUR	16:45	18:15	15

2018 COUNT, PM

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	A641/Circular	T-Junction	One-way from C to A		1.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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	Av. Demand (PCU/hr)	Scaling Factor (%)
A - A641 (W)		✓	0	100.000
B - Circular		✓	152	100.000
C - A641 (E)		✓	1108	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	152	0	0
	C - A641 (E)	1108	0	0

Vehicle Mix

HV %s

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.40	14.22	0.7	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	659	0.000	0	0.0	0.000	A
B-A	114	454	0.252	113	0.3	10.507	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	834			834			
A-B	0			0			
A-C	0			0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	648	0.000	0	0.0	0.000	A
B-A	137	440	0.310	136	0.4	11.825	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	996			996			

A-B	0			0			
A-C	0			0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	633	0.000	0	0.0	0.000	A
B-A	167	420	0.398	167	0.6	14.132	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1220			1220			
A-B	0			0			
A-C	0			0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	632	0.000	0	0.0	0.000	A
B-A	167	420	0.398	167	0.7	14.218	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1220			1220			
A-B	0			0			
A-C	0			0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	648	0.000	0	0.0	0.000	A
B-A	137	440	0.310	137	0.5	11.921	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	996			996			
A-B	0			0			
A-C	0			0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	658	0.000	0	0.0	0.000	A
B-A	114	454	0.252	115	0.3	10.617	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	834			834			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 24/04/2019 13:35:54

«2018 BASE, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.2	10.01	0.19	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Circular
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D4	2018 BASE	AM	ONE HOUR	07:45	09:15	15

2018 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	A641/Circular	T-Junction	One-way from C to A		0.80	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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 - A641 (W)		✓	0	100.000
B - Circular		✓	76	100.000
C - A641 (E)		✓	872	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	76	0	0
	C - A641 (E)	872	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.19	10.01	0.2	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	682	0.000	0	0.0	0.000	A
B-A	57	470	0.122	57	0.1	8.697	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	656			656			
A-B	0			0			
A-C	0			0			

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	0	677	0.000	0	0.0	0.000	A
B-A	68	459	0.149	68	0.2	9.212	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	784			784			

A-B	0			0			
A-C	0			0			

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	0	670	0.000	0	0.0	0.000	A
B-A	84	443	0.189	83	0.2	9.997	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	960			960			
A-B	0			0			
A-C	0			0			

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	0	670	0.000	0	0.0	0.000	A
B-A	84	443	0.189	84	0.2	10.009	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	960			960			
A-B	0			0			
A-C	0			0			

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	0	677	0.000	0	0.0	0.000	A
B-A	68	459	0.149	69	0.2	9.228	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	784			784			
A-B	0			0			
A-C	0			0			

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	0	682	0.000	0	0.0	0.000	A
B-A	57	470	0.122	57	0.1	8.725	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	656			656			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 24/04/2019 13:36:15

«2018 BASE, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.7	14.53	0.40	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Circular
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D5	2018 BASE	PM	ONE HOUR	16:45	18:15	15

2018 BASE, PM

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	A641/Circular	T-Junction	One-way from C to A		1.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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 - A641 (W)		✓	0	100.000
B - Circular		✓	153	100.000
C - A641 (E)		✓	1152	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	153	0	0
	C - A641 (E)	1152	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.40	14.53	0.7	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	658	0.000	0	0.0	0.000	A
B-A	115	452	0.255	114	0.3	10.620	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	867			867			
A-B	0			0			
A-C	0			0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	647	0.000	0	0.0	0.000	A
B-A	138	437	0.315	137	0.5	11.996	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1036			1036			

A-B	0			0			
A-C	0			0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	631	0.000	0	0.0	0.000	A
B-A	168	416	0.405	168	0.7	14.433	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1268			1268			
A-B	0			0			
A-C	0			0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	631	0.000	0	0.0	0.000	A
B-A	168	416	0.405	168	0.7	14.526	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1268			1268			
A-B	0			0			
A-C	0			0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	647	0.000	0	0.0	0.000	A
B-A	138	437	0.315	138	0.5	12.102	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1036			1036			
A-B	0			0			
A-C	0			0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	658	0.000	0	0.0	0.000	A
B-A	115	452	0.255	116	0.3	10.734	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	867			867			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 24/04/2019 13:36:31

«2026/27 INTERIM, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.2	10.08	0.19	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Circular
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D6	2026/27 INTERIM	AM	ONE HOUR	07:45	09:15	15

2026/27 INTERIM, 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	A641/Circular	T-Junction	One-way from C to A		0.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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 - A641 (W)		✓	0	100.000
B - Circular		✓	76	100.000
C - A641 (E)		✓	899	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	76	0	0
	C - A641 (E)	899	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.19	10.08	0.2	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	682	0.000	0	0.0	0.000	A
B-A	57	468	0.122	57	0.1	8.735	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	677			677			
A-B	0			0			
A-C	0			0			

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	0	677	0.000	0	0.0	0.000	A
B-A	68	457	0.150	68	0.2	9.265	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	808			808			

A-B	0			0			
A-C	0			0			

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	0	670	0.000	0	0.0	0.000	A
B-A	84	441	0.190	83	0.2	10.070	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	990			990			
A-B	0			0			
A-C	0			0			

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	0	670	0.000	0	0.0	0.000	A
B-A	84	441	0.190	84	0.2	10.082	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	990			990			
A-B	0			0			
A-C	0			0			

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	0	677	0.000	0	0.0	0.000	A
B-A	68	457	0.150	69	0.2	9.281	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	808			808			
A-B	0			0			
A-C	0			0			

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	0	682	0.000	0	0.0	0.000	A
B-A	57	468	0.122	57	0.1	8.763	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	677			677			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 24/04/2019 13:37:07

«2026/27 INTERIM, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.7	14.87	0.41	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Circular
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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	2026/27 INTERIM	PM	ONE HOUR	16:45	18:15	15

2026/27 INTERIM, PM

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	A641/Circular	T-Junction	One-way from C to A		1.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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 - A641 (W)		✓	0	100.000
B - Circular		✓	153	100.000
C - A641 (E)		✓	1211	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	153	0	0
	C - A641 (E)	1211	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.41	14.87	0.7	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	658	0.000	0	0.0	0.000	A
B-A	115	448	0.257	114	0.3	10.742	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	912			912			
A-B	0			0			
A-C	0			0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	647	0.000	0	0.0	0.000	A
B-A	138	432	0.318	137	0.5	12.187	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1089			1089			

A-B	0			0			
A-C	0			0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	630	0.000	0	0.0	0.000	A
B-A	168	410	0.410	168	0.7	14.768	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1333			1333			
A-B	0			0			
A-C	0			0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	630	0.000	0	0.0	0.000	A
B-A	168	410	0.410	168	0.7	14.870	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1333			1333			
A-B	0			0			
A-C	0			0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	646	0.000	0	0.0	0.000	A
B-A	138	432	0.318	138	0.5	12.295	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1089			1089			
A-B	0			0			
A-C	0			0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	657	0.000	0	0.0	0.000	A
B-A	115	448	0.257	116	0.4	10.862	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	912			912			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 24/04/2019 13:37:27

«2032/33 DESIGN, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.2	9.40	0.18	A
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Circular
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D8	2032/33 DESIGN	AM	ONE HOUR	07:45	09:15	15

2032/33 DESIGN, 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	A641/Circular	T-Junction	One-way from C to A		1.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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 - A641 (W)		✓	0	100.000
B - Circular		✓	76	100.000
C - A641 (E)		✓	630	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	76	0	0
	C - A641 (E)	630	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.18	9.40	0.2	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	683	0.000	0	0.0	0.000	A
B-A	57	486	0.118	57	0.1	8.373	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	474			474			
A-B	0			0			
A-C	0			0			

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	0	678	0.000	0	0.0	0.000	A
B-A	68	478	0.143	68	0.2	8.781	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	566			566			

A-B	0			0			
A-C	0			0			

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	0	672	0.000	0	0.0	0.000	A
B-A	84	467	0.179	83	0.2	9.386	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	694			694			
A-B	0			0			
A-C	0			0			

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	0	671	0.000	0	0.0	0.000	A
B-A	84	467	0.179	84	0.2	9.396	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	694			694			
A-B	0			0			
A-C	0			0			

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	0	678	0.000	0	0.0	0.000	A
B-A	68	478	0.143	69	0.2	8.796	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	566			566			
A-B	0			0			
A-C	0			0			

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	0	682	0.000	0	0.0	0.000	A
B-A	57	486	0.118	57	0.1	8.400	A
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	474			474			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

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Filename: A641 Circular.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641 Circular
Report generation date: 24/04/2019 13:37:57

«2032/33 DESIGN, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.6	13.65	0.39	B
Stream C-AB	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/Circular
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D9	2032/33 DESIGN	PM	ONE HOUR	16:45	18:15	15

2032/33 DESIGN, PM

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	A641/Circular	T-Junction	One-way from C to A		1.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (W)		Major
B	Circular		Minor
C	A641 (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 - A641 (E)	7.87			0.0	✓	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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Circular	Two lanes	4.27	3.91	19	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	528	0.055	0.140	0.088	0.200
1	B-C	703	0.062	0.157	-	-
1	C-B	574	0.128	0.128	-	-

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 - A641 (W)		✓	0	100.000
B - Circular		✓	153	100.000
C - A641 (E)		✓	988	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	153	0	0
	C - A641 (E)	988	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (W)	B - Circular	C - A641 (E)
From	A - A641 (W)	0	0	0
	B - Circular	0	0	0
	C - A641 (E)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.39	13.65	0.6	B
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	659	0.000	0	0.0	0.000	A
B-A	115	462	0.249	114	0.3	10.293	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	744			744			
A-B	0			0			
A-C	0			0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	649	0.000	0	0.0	0.000	A
B-A	138	450	0.306	137	0.4	11.501	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	888			888			

A-B	0			0			
A-C	0			0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	634	0.000	0	0.0	0.000	A
B-A	168	432	0.390	168	0.6	13.575	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1088			1088			
A-B	0			0			
A-C	0			0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	634	0.000	0	0.0	0.000	A
B-A	168	432	0.390	168	0.6	13.650	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	1088			1088			
A-B	0			0			
A-C	0			0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	649	0.000	0	0.0	0.000	A
B-A	138	450	0.306	138	0.4	11.588	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	888			888			
A-B	0			0			
A-C	0			0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0	659	0.000	0	0.0	0.000	A
B-A	115	462	0.249	116	0.3	10.397	B
C-AB	0	574	0.000	0	0.0	0.000	A
C-A	744			744			
A-B	0			0			
A-C	0			0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 13/09/2018 10:30:58

«2018 COUNT, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.5	10.91	0.31	B
Stream C-A	1.0	1.92	0.33	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A641/A641
Location	
Site number	
Date	13/09/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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	2018 COUNT	AM	ONE HOUR	07:45	09:15	15

2018 COUNT, 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	A641-A641	T-Junction	One-way from C to A		3.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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	Av. Demand (PCU/hr)	Scaling Factor (%)
A - A641 (N)		✓	0	100.000
B - A641 (E)		✓	137	100.000
C - A641 (S)		✓	848	100.000

Demand overview (Pedestrians)

Arm	Av. Ped flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	107.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	137	0	0
	C - A641 (S)	848	0	0

Vehicle Mix

HV %s

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.31	10.91	0.5	B
C-A	0.33	1.92	1.0	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		495	0.000	0	0.0	0.000	A
B-A	103		518	0.199	102	0.2	8.633	A
C-A	638	80.56	2921	0.219	636	0.6	1.576	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		489	0.000	0	0.0	0.000	A
B-A	123		502	0.245	123	0.3	9.477	A
C-A	762	96.19	2872	0.265	762	0.7	1.706	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		480	0.000	0	0.0	0.000	A
B-A	151		481	0.314	150	0.4	10.876	B
C-A	934	117.81	2812	0.332	933	1.0	1.920	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		480	0.000	0	0.0	0.000	A
B-A	151		481	0.314	151	0.5	10.915	B
C-A	934	117.81	2812	0.332	934	1.0	1.920	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		489	0.000	0	0.0	0.000	A
B-A	123		502	0.245	124	0.3	9.524	A
C-A	762	96.19	2872	0.265	763	0.7	1.709	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		495	0.000	0	0.0	0.000	A
B-A	103		518	0.199	103	0.3	8.693	A
C-A	638	80.56	2921	0.219	639	0.6	1.581	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 13/09/2018 10:59:26

«2018 COUNT, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Q (PCU)	Delay (s)	RFC	LOS
	2018 COUNT			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.9	14.50	0.47	B
Stream C-A	1.3	2.25	0.39	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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

File summary

File Description

Title	A641/A641
Location	
Site number	
Date	13/09/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q 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)
D2	2018 COUNT	PM	ONE HOUR	16:45	18:15	15

2018 COUNT, PM

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	A641-A641	T-Junction	One-way from C to A		4.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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	Av. Demand (PCU/hr)	Scaling Factor (%)
A - A641 (N)		✓	0	100.000
B - A641 (E)		✓	201	100.000
C - A641 (S)		✓	928	100.000

Demand overview (Pedestrians)

Arm	Av. Ped flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	187.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	201	0	0
	C - A641 (S)	928	0	0

Vehicle Mix

HV %s

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.47	14.50	0.9	B
C-A	0.39	2.25	1.3	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		483	0.000	0	0.0	0.000	A
B-A	151		511	0.296	150	0.4	9.927	A
C-A	699	140.78	2754	0.254	696	0.7	1.750	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		473	0.000	0	0.0	0.000	A
B-A	181		493	0.366	180	0.6	11.470	B
C-A	834	168.11	2694	0.310	833	0.9	1.938	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		459	0.000	0	0.0	0.000	A
B-A	221		470	0.471	220	0.9	14.358	B
C-A	1022	205.89	2625	0.389	1020	1.3	2.248	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		459	0.000	0	0.0	0.000	A
B-A	221		469	0.471	221	0.9	14.503	B
C-A	1022	205.89	2625	0.389	1022	1.3	2.254	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		472	0.000	0	0.0	0.000	A
B-A	181		493	0.367	182	0.6	11.614	B
C-A	834	168.11	2694	0.310	836	0.9	1.943	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		482	0.000	0	0.0	0.000	A
B-A	151		510	0.297	152	0.4	10.066	B
C-A	699	140.78	2754	0.254	700	0.7	1.757	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 24/04/2019 13:26:27

«2018 BASE, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.5	11.09	0.32	B
Stream C-A	1.1	1.97	0.35	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/A641
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D4	2018 BASE	AM	ONE HOUR	07:45	09:15	15

2018 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	A641-A641	T-Junction	One-way from C to A		3.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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 - A641 (N)		✓	0	100.000
B - A641 (E)		✓	137	100.000
C - A641 (S)		✓	886	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	107.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	137	0	0
	C - A641 (S)	886	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.32	11.09	0.5	B
C-A	0.35	1.97	1.1	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		495	0.000	0	0.0	0.000	A
B-A	103		515	0.200	102	0.2	8.706	A
C-A	667	80.56	2921	0.228	665	0.6	1.596	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		489	0.000	0	0.0	0.000	A
B-A	123		498	0.247	123	0.3	9.586	A
C-A	796	96.19	2872	0.277	796	0.8	1.737	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		479	0.000	0	0.0	0.000	A
B-A	151		475	0.317	150	0.5	11.051	B
C-A	976	117.81	2812	0.347	974	1.1	1.962	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		479	0.000	0	0.0	0.000	A
B-A	151		475	0.317	151	0.5	11.093	B
C-A	976	117.81	2812	0.347	975	1.1	1.966	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		488	0.000	0	0.0	0.000	A
B-A	123		498	0.247	124	0.3	9.634	A
C-A	796	96.19	2872	0.277	798	0.8	1.740	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		495	0.000	0	0.0	0.000	A
B-A	103		514	0.201	103	0.3	8.771	A
C-A	667	80.56	2921	0.228	668	0.6	1.601	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 24/04/2019 13:26:52

«2018 BASE, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2018 BASE			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.9	14.64	0.47	B
Stream C-A	1.3	2.28	0.40	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/A641
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D5	2018 BASE	PM	ONE HOUR	16:45	18:15	15

2018 BASE, PM

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	A641-A641	T-Junction	One-way from C to A		4.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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 - A641 (N)		✓	0	100.000
B - A641 (E)		✓	201	100.000
C - A641 (S)		✓	945	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	187.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	201	0	0
	C - A641 (S)	945	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.47	14.64	0.9	B
C-A	0.40	2.28	1.3	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		482	0.000	0	0.0	0.000	A
B-A	151		509	0.297	150	0.4	9.972	A
C-A	711	140.78	2754	0.258	709	0.7	1.761	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		473	0.000	0	0.0	0.000	A
B-A	181		491	0.368	180	0.6	11.542	B
C-A	850	168.11	2694	0.315	849	0.9	1.954	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		459	0.000	0	0.0	0.000	A
B-A	221		467	0.474	220	0.9	14.490	B
C-A	1040	205.89	2625	0.396	1039	1.3	2.275	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		458	0.000	0	0.0	0.000	A
B-A	221		467	0.474	221	0.9	14.636	B
C-A	1040	205.89	2625	0.396	1040	1.3	2.279	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		472	0.000	0	0.0	0.000	A
B-A	181		491	0.368	182	0.6	11.687	B
C-A	850	168.11	2694	0.315	851	0.9	1.959	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		482	0.000	0	0.0	0.000	A
B-A	151		509	0.298	152	0.4	10.113	B
C-A	711	140.78	2754	0.258	712	0.7	1.768	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 24/04/2019 13:27:13

«2026/27 INTERIM, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.5	11.39	0.32	B
Stream C-A	1.2	2.04	0.37	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/A641
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D6	2026/27 INTERIM	AM	ONE HOUR	07:45	09:15	15

2026/27 INTERIM, 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	A641-A641	T-Junction	One-way from C to A		3.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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 - A641 (N)		✓	0	100.000
B - A641 (E)		✓	137	100.000
C - A641 (S)		✓	948	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	107.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	137	0	0
	C - A641 (S)	948	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.32	11.39	0.5	B
C-A	0.37	2.04	1.2	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		495	0.000	0	0.0	0.000	A
B-A	103		509	0.203	102	0.3	8.832	A
C-A	714	80.56	2921	0.244	711	0.6	1.630	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		488	0.000	0	0.0	0.000	A
B-A	123		491	0.251	123	0.3	9.767	A
C-A	852	96.19	2872	0.297	851	0.8	1.785	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		479	0.000	0	0.0	0.000	A
B-A	151		467	0.323	150	0.5	11.350	B
C-A	1044	117.81	2812	0.371	1042	1.2	2.039	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		478	0.000	0	0.0	0.000	A
B-A	151		467	0.323	151	0.5	11.394	B
C-A	1044	117.81	2812	0.371	1044	1.2	2.043	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		488	0.000	0	0.0	0.000	A
B-A	123		491	0.251	124	0.3	9.820	A
C-A	852	96.19	2872	0.297	854	0.8	1.789	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		494	0.000	0	0.0	0.000	A
B-A	103		508	0.203	103	0.3	8.900	A
C-A	714	80.56	2921	0.244	714	0.6	1.636	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Junctions 9

PICADY 9 - Priority Intersection Module

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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 24/04/2019 13:27:42

«2026/27 INTERIM, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2026/27 INTERIM			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.9	14.98	0.48	B
Stream C-A	1.4	2.35	0.41	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/A641
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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	2026/27 INTERIM	PM	ONE HOUR	16:45	18:15	15

2026/27 INTERIM, PM

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	A641-A641	T-Junction	One-way from C to A		4.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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 - A641 (N)		✓	0	100.000
B - A641 (E)		✓	201	100.000
C - A641 (S)		✓	986	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	187.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	201	0	0
	C - A641 (S)	986	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.48	14.98	0.9	B
C-A	0.41	2.35	1.4	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		482	0.000	0	0.0	0.000	A
B-A	151		505	0.300	150	0.4	10.079	B
C-A	742	140.78	2754	0.270	739	0.7	1.788	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		472	0.000	0	0.0	0.000	A
B-A	181		487	0.371	180	0.6	11.715	B
C-A	886	168.11	2694	0.329	885	1.0	1.994	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		458	0.000	0	0.0	0.000	A
B-A	221		462	0.479	220	0.9	14.825	B
C-A	1086	205.89	2625	0.414	1084	1.4	2.344	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		458	0.000	0	0.0	0.000	A
B-A	221		461	0.480	221	0.9	14.985	B
C-A	1086	205.89	2625	0.414	1086	1.4	2.347	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		472	0.000	0	0.0	0.000	A
B-A	181		486	0.372	182	0.6	11.873	B
C-A	886	168.11	2694	0.329	888	1.0	1.998	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		481	0.000	0	0.0	0.000	A
B-A	151		505	0.300	152	0.4	10.226	B
C-A	742	140.78	2754	0.270	743	0.7	1.795	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Junctions 9

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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 24/04/2019 13:28:08

«2032/33 DESIGN, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.4	10.18	0.30	B
Stream C-A	0.7	1.74	0.27	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/A641
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D8	2032/33 DESIGN	AM	ONE HOUR	07:45	09:15	15

2032/33 DESIGN, 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	A641-A641	T-Junction	One-way from C to A		3.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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 - A641 (N)		✓	0	100.000
B - A641 (E)		✓	137	100.000
C - A641 (S)		✓	677	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	107.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	137	0	0
	C - A641 (S)	677	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.30	10.18	0.4	B
C-A	0.27	1.74	0.7	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		496	0.000	0	0.0	0.000	A
B-A	103		534	0.193	102	0.2	8.311	A
C-A	510	80.56	2921	0.175	508	0.4	1.492	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		490	0.000	0	0.0	0.000	A
B-A	123		522	0.236	123	0.3	9.018	A
C-A	609	96.19	2872	0.212	608	0.5	1.590	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		482	0.000	0	0.0	0.000	A
B-A	151		505	0.299	150	0.4	10.152	B
C-A	745	117.81	2812	0.265	745	0.7	1.742	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		482	0.000	0	0.0	0.000	A
B-A	151		504	0.299	151	0.4	10.180	B
C-A	745	117.81	2812	0.265	745	0.7	1.743	A
C-B	0	117.81	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		490	0.000	0	0.0	0.000	A
B-A	123		522	0.236	124	0.3	9.056	A
C-A	609	96.19	2872	0.212	609	0.5	1.594	A
C-B	0	96.19	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		496	0.000	0	0.0	0.000	A
B-A	103		534	0.193	103	0.2	8.364	A
C-A	510	80.56	2921	0.175	510	0.4	1.496	A
C-B	0	80.56	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Junctions 9

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Filename: A641-A641.j9
Path: O:\A641 Huddersfield Rd, Woodhouse\ANALYSIS\CAPACITY\Priority Junctions\A641-A641
Report generation date: 24/04/2019 13:28:27

«2032/33 DESIGN, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2032/33 DESIGN			
Stream B-C	0.0	0.00	0.00	A
Stream B-A	0.8	13.27	0.45	B
Stream C-A	0.9	2.02	0.32	A
Stream C-B	0.0	0.00	0.00	A

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

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	A641/A641
Location	
Site number	
Date	24/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UK
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	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)
D9	2032/33 DESIGN	PM	ONE HOUR	16:45	18:15	15

2032/33 DESIGN, PM

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	A641-A641	T-Junction	One-way from C to A		4.37	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A641 (N)		Major
B	A641 (E)		Minor
C	A641 (S)		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 - A641 (S)	6.16			0.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - A641 (E)	One lane plus flare	10.00	6.65	5.12	4.68	4.46		3.00	89	0

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C - A641 (S)	7.00	3.00	2.90	1.00	4.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.079	0.200	0.126	0.285
1	B-C	521	0.058	0.146	-	-
1	C-B	574	0.161	0.161	-	-

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 - A641 (N)		✓	0	100.000
B - A641 (E)		✓	201	100.000
C - A641 (S)		✓	763	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
A - A641 (N)	
B - A641 (E)	
C - A641 (S)	187.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	201	0	0
	C - A641 (S)	763	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A641 (N)	B - A641 (E)	C - A641 (S)
From	A - A641 (N)	0	0	0
	B - A641 (E)	0	0	0
	C - A641 (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.45	13.27	0.8	B
C-A	0.32	2.02	0.9	A
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		484	0.000	0	0.0	0.000	A
B-A	151		526	0.288	150	0.4	9.521	A
C-A	574	140.78	2754	0.209	572	0.5	1.650	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		475	0.000	0	0.0	0.000	A
B-A	181		512	0.353	180	0.5	10.829	B
C-A	686	168.11	2694	0.255	685	0.7	1.792	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		462	0.000	0	0.0	0.000	A
B-A	221		493	0.449	220	0.8	13.169	B
C-A	840	205.89	2625	0.320	839	0.9	2.020	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		462	0.000	0	0.0	0.000	A
B-A	221		492	0.449	221	0.8	13.272	B
C-A	840	205.89	2625	0.320	840	0.9	2.021	A
C-B	0	205.89	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		474	0.000	0	0.0	0.000	A
B-A	181		512	0.353	182	0.6	10.940	B
C-A	686	168.11	2694	0.255	687	0.7	1.798	A
C-B	0	168.11	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0		483	0.000	0	0.0	0.000	A
B-A	151		526	0.288	152	0.4	9.641	A
C-A	574	140.78	2754	0.209	575	0.5	1.655	A
C-B	0	140.78	0	0.000	0	0.0	0.000	A
A-B	0				0			
A-C	0				0			

Full Input Data And Results

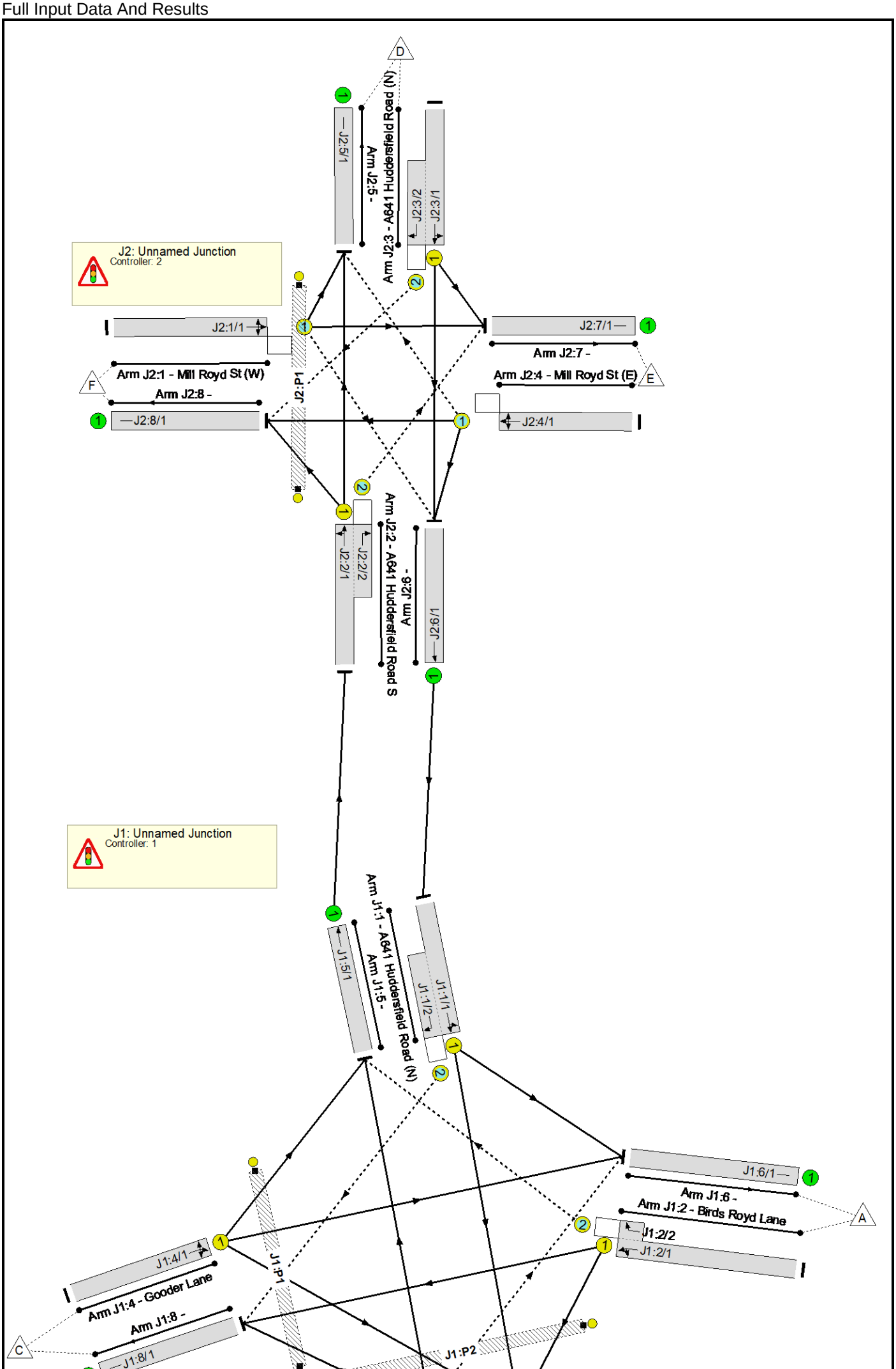
User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	Birds Royd Ln-A641 +A641-Mill Royd St.lsg3x
Author:	
Company:	
Address:	

Full Input Data And Results

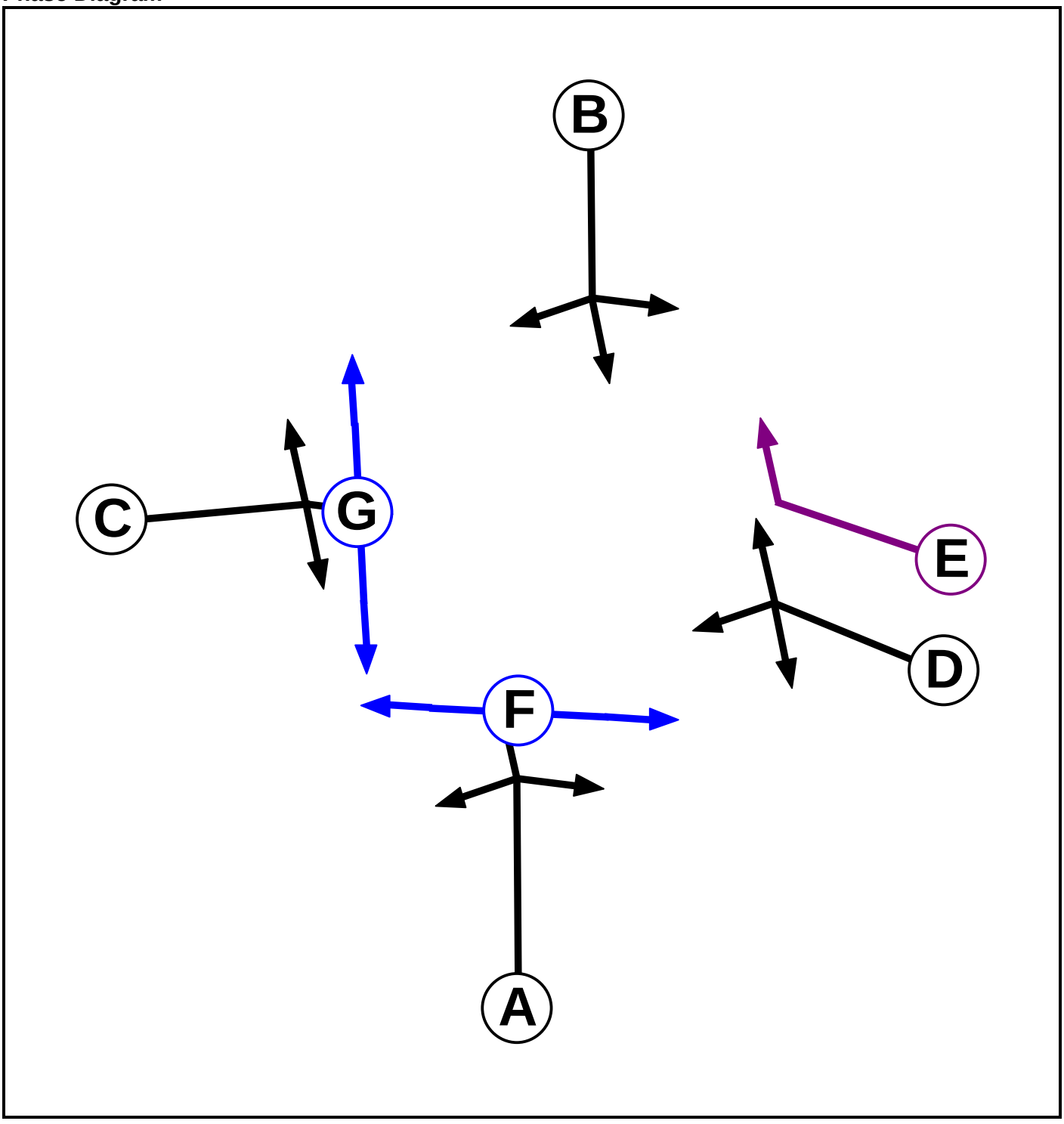
Network Layout Diagram

Full Input Data And Results



C1

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	Ind. Arrow	D	4	4
F	Pedestrian		6	6
G	Pedestrian		5	5

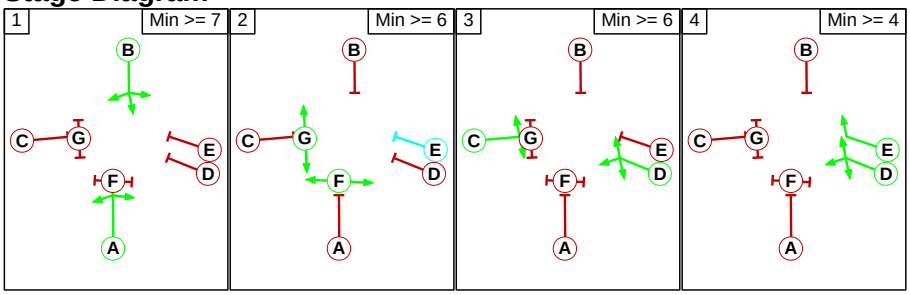
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G
A		-	5	5	5	5	7
B	-		5	6	6	8	8
C	5	5		-	5	8	5
D	5	5	-		-	7	6
E	5	5	5	-		-	-
F	8	5	6	7	-		-
G	4	4	6	4	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

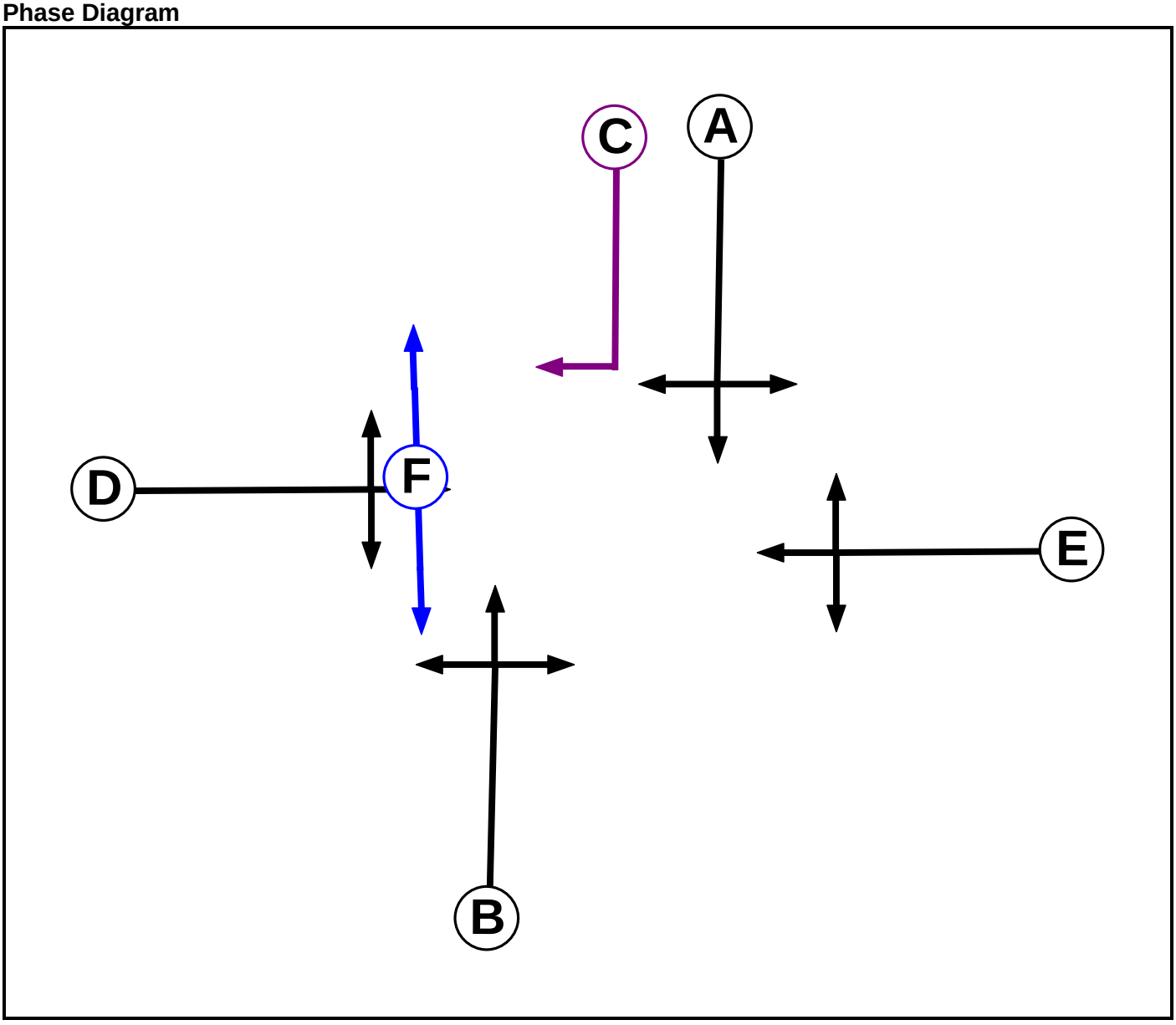
Full Input Data And Results

Prohibited Stage Change

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

C2

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	Ind. Arrow	A	4	4
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		6	6

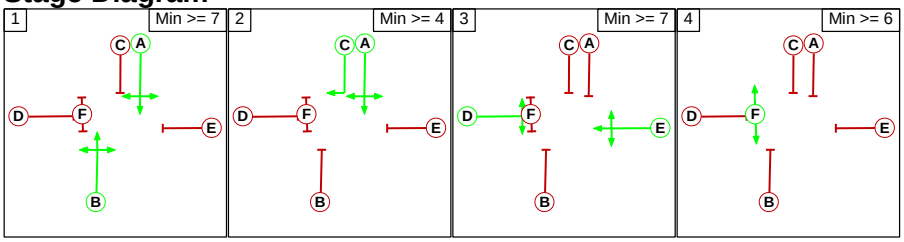
Phase Intergreens Matrix

		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		-	-	6	6	8
	B	-		5	6	6	7
	C	-	5		6	6	8
	D	5	5	5		-	5
	E	5	5	5	-		7
	F	8	8	8	10	8	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Full Input Data And Results

Prohibited Stage Change

From Stage	To Stage				
		1	2	3	4
	1		5	6	8
	2	X		6	8
	3	5	5		7
	4	8	8	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: J1: 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)**
J1:1/2 (A641 Huddersfield Road (N))	J1:8/1 (Right)	1439	0	J1:3/2	1.09	All	2.00	-	0.50	2	2.00
J1:2/2 (Birds Royd Lane)	J1:5/1 (Right)	1439	0	J1:4/1	1.09	All	2.00	-	0.50	2	2.00
J1:3/2 (A641 Huddersfield Road (S))	J1:6/1 (Right)	1439	0	J1:1/2	1.09	All	2.00	-	0.50	2	2.00

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	J2:6/1 (Right)	1439	0	J2:4/1	1.09	All	2.00	2.00	0.50	2	2.00
J2:2/2 (A641 Huddersfield Road S)	J2:7/1 (Right)	1439	0	J2:3/1	1.09	All	2.00	-	0.50	2	2.00
J2:3/2 (A641 Huddersfield Road (N))	J2:8/1 (Right)	1439	0	J2:2/1	1.09	All	2.00	-	0.50	2	2.00
J2:4/1 (Mill Royd St (E))	J2:5/1 (Right)	1439	0	J2:1/1	1.09	All	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	U	B	2	3	60.0	Geom	-	3.37	0.00	Y	Arm J1:6 Left	Inf
											Arm J1:7 Ahead	Inf
J1:1/2 (A641 Huddersfield Road (N))	O	B	2	3	7.0	Geom	-	2.80	0.00	Y	Arm J1:8 Right	Inf
J1:2/1 (Birds Royd Lane)	U	D	2	3	60.0	Geom	-	4.00	0.00	Y	Arm J1:7 Left	Inf
											Arm J1:8 Ahead	Inf
J1:2/2 (Birds Royd Lane)	O	D E	2	3	2.0	Geom	-	2.50	0.00	N	Arm J1:5 Right	Inf
J1:3/1 (A641 Huddersfield Road (S))	U	A	2	3	60.0	Geom	-	3.17	0.00	Y	Arm J1:5 Ahead	Inf
											Arm J1:8 Left	Inf
J1:3/2 (A641 Huddersfield Road (S))	O	A	2	3	4.0	Geom	-	3.12	0.00	Y	Arm J1:6 Right	Inf
J1:4/1 (Gooder Lane)	U	C	2	3	60.0	Geom	-	2.99	0.00	Y	Arm J1:5 Left	Inf
											Arm J1:6 Ahead	Inf
											Arm J1:7 Right	Inf
J1:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Junction: J2: 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)
J2:1/1 (Mill Royd St (W))	O	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:5 Left	Inf
											Arm J2:6 Right	Inf
											Arm J2:7 Ahead	Inf
J2:2/1 (A641 Huddersfield Road S)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm J2:5 Ahead	Inf
											Arm J2:8 Left	Inf
J2:2/2 (A641 Huddersfield Road S)	O	B	2	3	6.0	Geom	-	3.00	0.00	N	Arm J2:7 Right	Inf
J2:3/1 (A641 Huddersfield Road (N))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm J2:6 Ahead	Inf
											Arm J2:7 Left	Inf
J2:3/2 (A641 Huddersfield Road (N))	O	A C	2	3	7.0	Geom	-	3.00	0.00	N	Arm J2:8 Right	Inf
J2:4/1 (Mill Royd St (E))	O	E	2	3	60.0	Geom	-	3.00	0.00	Y	Arm J2:5 Right	Inf
											Arm J2:6 Left	Inf
											Arm J2:8 Ahead	Inf
J2:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Count'	08:00	09:00	01:00	
2: 'PM Count'	17:00	18:00	01:00	
3: 'AM Base'	08:00	09:00	01:00	
4: 'PM Base'	17:00	18:00	01:00	
5: 'AM 2026-2027 Interim'	08:00	09:00	01:00	
6: 'PM 2026-2027 Interim'	17:00	18:00	01:00	
7: 'AM 2032-2033 Design'	08:00	09:00	01:00	
8: 'PM 2032-2033 Design'	17:00	18:00	01:00	
9: 'AM 2038-2039 Design'	08:00	09:00	01:00	
10: 'PM 2038-2039 Design'	17:00	18:00	01:00	

Scenario 1: 'AM Count' (FG1: 'AM Count', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	34	19	137	0	17	207
	B	38	0	2	529	0	64	633
	C	48	42	0	62	0	7	159
	D	120	557	32	0	2	76	787
	E	1	5	0	15	0	6	27
	F	29	132	8	42	3	0	214
	Tot.	236	770	61	785	5	170	2027

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: AM Count
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	884(In) 844(Out)
J1:1/2 (short)	40
J1:2/1 (with short)	207(In) 53(Out)
J1:2/2 (short)	154
J1:3/1 (with short)	633(In) 595(Out)
J1:3/2 (short)	38
J1:4/1	159
J1:5/1	816
J1:6/1	236
J1:7/1	770
J1:8/1	61
Junction: J2: Unnamed Junction	
J2:1/1	214
J2:2/1 (with short)	816(In) 816(Out)
J2:2/2 (short)	0
J2:3/1 (with short)	787(In) 711(Out)
J2:3/2 (short)	76
J2:4/1	27
J2:5/1	785
J2:6/1	884
J2:7/1	5
J2:8/1	170

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	17.8 %	1952	1952
				Arm J1:7 Ahead	Inf	82.2 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	64.2 %	2015	2015
				Arm J1:8 Ahead	Inf	35.8 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.7 %	1932	1932
				Arm J1:8 Left	Inf	0.3 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	43.4 %	1914	1914
				Arm J1:6 Ahead	Inf	30.2 %		
				Arm J1:7 Right	Inf	26.4 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	19.6 %	1965	1965
				Arm J2:6 Right	Inf	79.0 %		
				Arm J2:7 Ahead	Inf	1.4 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	89.2 %	1915	1915
				Arm J2:8 Left	Inf	10.8 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	0.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.7 %	1915	1915
				Arm J2:7 Left	Inf	0.3 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	55.6 %	1915	1915
				Arm J2:6 Left	Inf	22.2 %		
				Arm J2:8 Ahead	Inf	22.2 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM Count' (FG2: 'PM Count', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	40	23	140	1	20	224
	B	11	0	1	603	6	88	709
	C	20	39	0	88	1	13	161
	D	48	755	58	0	9	143	1013
	E	0	4	0	4	0	3	11
	F	10	153	12	59	2	0	236
	Tot.	89	991	94	894	19	267	2354

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM Count
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	1040(In) 970(Out)
J1:1/2 (short)	70
J1:2/1 (with short)	224(In) 63(Out)
J1:2/2 (short)	161
J1:3/1 (with short)	709(In) 698(Out)
J1:3/2 (short)	11
J1:4/1	161
J1:5/1	960
J1:6/1	89
J1:7/1	991
J1:8/1	94
Junction: J2: Unnamed Junction	
J2:1/1	236
J2:2/1 (with short)	960(In) 952(Out)
J2:2/2 (short)	8
J2:3/1 (with short)	1013(In) 870(Out)
J2:3/2 (short)	143
J2:4/1	11
J2:5/1	894
J2:6/1	1040
J2:7/1	19
J2:8/1	267

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	6.0 %	1952	1952
				Arm J1:7 Ahead	Inf	94.0 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	63.5 %	2015	2015
				Arm J1:8 Ahead	Inf	36.5 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.9 %	1932	1932
				Arm J1:8 Left	Inf	0.1 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	63.4 %	1914	1914
				Arm J1:6 Ahead	Inf	12.4 %		
				Arm J1:7 Right	Inf	24.2 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	25.0 %	1965	1965
				Arm J2:6 Right	Inf	74.2 %		
				Arm J2:7 Ahead	Inf	0.8 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	87.3 %	1915	1915
				Arm J2:8 Left	Inf	12.7 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	100.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.0 %	1915	1915
				Arm J2:7 Left	Inf	1.0 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	36.4 %	1915	1915
				Arm J2:6 Left	Inf	36.4 %		
				Arm J2:8 Ahead	Inf	27.3 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM Base' (FG3: 'AM Base', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	35	20	138	0	17	210
	B	40	0	2	534	0	67	643
	C	51	42	0	92	0	12	197
	D	122	557	40	0	2	81	802
	E	1	5	0	15	0	6	27
	F	29	132	9	61	3	0	234
	Tot.	243	771	71	840	5	183	2113

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: AM Base
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	895(In) 846(Out)
J1:1/2 (short)	49
J1:2/1 (with short)	210(In) 55(Out)
J1:2/2 (short)	155
J1:3/1 (with short)	643(In) 603(Out)
J1:3/2 (short)	40
J1:4/1	197
J1:5/1	860
J1:6/1	243
J1:7/1	771
J1:8/1	71
Junction: J2: Unnamed Junction	
J2:1/1	234
J2:2/1 (with short)	860(In) 860(Out)
J2:2/2 (short)	0
J2:3/1 (with short)	802(In) 721(Out)
J2:3/2 (short)	81
J2:4/1	27
J2:5/1	840
J2:6/1	895
J2:7/1	5
J2:8/1	183

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	18.0 %	1952	1952
				Arm J1:7 Ahead	Inf	82.0 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	63.6 %	2015	2015
				Arm J1:8 Ahead	Inf	36.4 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.7 %	1932	1932
				Arm J1:8 Left	Inf	0.3 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	52.8 %	1914	1914
				Arm J1:6 Ahead	Inf	25.9 %		
				Arm J1:7 Right	Inf	21.3 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	26.1 %	1965	1965
				Arm J2:6 Right	Inf	72.6 %		
				Arm J2:7 Ahead	Inf	1.3 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	88.8 %	1915	1915
				Arm J2:8 Left	Inf	11.2 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	0.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.7 %	1915	1915
				Arm J2:7 Left	Inf	0.3 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	55.6 %	1915	1915
				Arm J2:6 Left	Inf	22.2 %		
				Arm J2:8 Ahead	Inf	22.2 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM Base' (FG4: 'PM Base', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	41	26	143	1	21	232
	B	12	0	1	608	5	89	715
	C	21	39	0	103	1	15	179
	D	49	755	87	0	9	157	1057
	E	0	3	0	4	0	3	10
	F	10	154	18	66	2	0	250
	Tot.	92	992	132	924	18	285	2443

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: PM Base
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	1076(In) 971(Out)
J1:1/2 (short)	105
J1:2/1 (with short)	232(In) 67(Out)
J1:2/2 (short)	165
J1:3/1 (with short)	715(In) 703(Out)
J1:3/2 (short)	12
J1:4/1	179
J1:5/1	986
J1:6/1	92
J1:7/1	992
J1:8/1	132
Junction: J2: Unnamed Junction	
J2:1/1	250
J2:2/1 (with short)	986(In) 979(Out)
J2:2/2 (short)	7
J2:3/1 (with short)	1057(In) 900(Out)
J2:3/2 (short)	157
J2:4/1	10
J2:5/1	924
J2:6/1	1076
J2:7/1	18
J2:8/1	285

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	6.1 %	1952	1952
				Arm J1:7 Ahead	Inf	93.9 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	61.2 %	2015	2015
				Arm J1:8 Ahead	Inf	38.8 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.9 %	1932	1932
				Arm J1:8 Left	Inf	0.1 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	66.5 %	1914	1914
				Arm J1:6 Ahead	Inf	11.7 %		
				Arm J1:7 Right	Inf	21.8 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	26.4 %	1965	1965
				Arm J2:6 Right	Inf	72.8 %		
				Arm J2:7 Ahead	Inf	0.8 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	87.2 %	1915	1915
				Arm J2:8 Left	Inf	12.8 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	100.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.0 %	1915	1915
				Arm J2:7 Left	Inf	1.0 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	40.0 %	1915	1915
				Arm J2:6 Left	Inf	30.0 %		
				Arm J2:8 Ahead	Inf	30.0 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'AM 2026-2027 Interim' (FG5: 'AM 2026-2027 Interim', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	35	20	89	0	15	159
	B	40	0	2	630	0	104	776
	C	51	42	0	89	0	15	197
	D	89	607	40	0	2	92	830
	E	1	6	0	15	0	6	28
	F	22	150	10	71	3	0	256
	Tot.	203	840	72	894	5	232	2246

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: AM 2026-2027 Interim
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	925(In) 875(Out)
J1:1/2 (short)	50
J1:2/1 (with short)	159(In) 55(Out)
J1:2/2 (short)	104
J1:3/1 (with short)	776(In) 736(Out)
J1:3/2 (short)	40
J1:4/1	197
J1:5/1	942
J1:6/1	203
J1:7/1	840
J1:8/1	72
Junction: J2: Unnamed Junction	
J2:1/1	256
J2:2/1 (with short)	942(In) 942(Out)
J2:2/2 (short)	0
J2:3/1 (with short)	830(In) 738(Out)
J2:3/2 (short)	92
J2:4/1	28
J2:5/1	894
J2:6/1	925
J2:7/1	5
J2:8/1	232

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	12.8 %	1952	1952
				Arm J1:7 Ahead	Inf	87.2 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	63.6 %	2015	2015
				Arm J1:8 Ahead	Inf	36.4 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.7 %	1932	1932
				Arm J1:8 Left	Inf	0.3 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	52.8 %	1914	1914
				Arm J1:6 Ahead	Inf	25.9 %		
				Arm J1:7 Right	Inf	21.3 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	27.7 %	1965	1965
				Arm J2:6 Right	Inf	71.1 %		
				Arm J2:7 Ahead	Inf	1.2 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	85.8 %	1915	1915
				Arm J2:8 Left	Inf	14.2 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	0.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.7 %	1915	1915
				Arm J2:7 Left	Inf	0.3 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	53.6 %	1915	1915
				Arm J2:6 Left	Inf	25.0 %		
				Arm J2:8 Ahead	Inf	21.4 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'PM 2026-2027 Interim' (FG6: 'PM 2026-2027 Interim', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	41	26	112	1	18	198
	B	12	0	1	668	6	108	795
	C	21	39	0	102	1	16	179
	D	20	835	86	0	9	166	1116
	E	0	4	0	4	0	3	11
	F	4	187	19	76	2	0	288
	Tot.	57	1106	132	962	19	311	2587

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: PM 2026-2027 Interim
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	1155(In) 1050(Out)
J1:1/2 (short)	105
J1:2/1 (with short)	198(In) 67(Out)
J1:2/2 (short)	131
J1:3/1 (with short)	795(In) 783(Out)
J1:3/2 (short)	12
J1:4/1	179
J1:5/1	1032
J1:6/1	57
J1:7/1	1106
J1:8/1	132
Junction: J2: Unnamed Junction	
J2:1/1	288
J2:2/1 (with short)	1032(In) 1024(Out)
J2:2/2 (short)	8
J2:3/1 (with short)	1116(In) 950(Out)
J2:3/2 (short)	166
J2:4/1	11
J2:5/1	962
J2:6/1	1155
J2:7/1	19
J2:8/1	311

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	2.3 %	1952	1952
				Arm J1:7 Ahead	Inf	97.7 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	61.2 %	2015	2015
				Arm J1:8 Ahead	Inf	38.8 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.9 %	1932	1932
				Arm J1:8 Left	Inf	0.1 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	66.5 %	1914	1914
				Arm J1:6 Ahead	Inf	11.7 %		
				Arm J1:7 Right	Inf	21.8 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	26.4 %	1965	1965
				Arm J2:6 Right	Inf	72.9 %		
				Arm J2:7 Ahead	Inf	0.7 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	86.1 %	1915	1915
				Arm J2:8 Left	Inf	13.9 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	100.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.1 %	1915	1915
				Arm J2:7 Left	Inf	0.9 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	36.4 %	1915	1915
				Arm J2:6 Left	Inf	36.4 %		
				Arm J2:8 Ahead	Inf	27.3 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 7: 'AM 2032-2033 Design' (FG7: 'AM 2032-2033 Design', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	35	20	90	0	18	163
	B	40	0	2	391	0	76	509
	C	51	42	0	87	0	17	197
	D	147	571	61	0	2	99	880
	E	1	5	1	15	0	6	28
	F	36	140	15	73	3	0	267
	Tot.	275	793	99	656	5	216	2044

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 7: AM 2032-2033 Design
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	977(In) 900(Out)
J1:1/2 (short)	77
J1:2/1 (with short)	163(In) 55(Out)
J1:2/2 (short)	108
J1:3/1 (with short)	509(In) 469(Out)
J1:3/2 (short)	40
J1:4/1	197
J1:5/1	679
J1:6/1	275
J1:7/1	793
J1:8/1	99
Junction: J2: Unnamed Junction	
J2:1/1	267
J2:2/1 (with short)	679(In) 679(Out)
J2:2/2 (short)	0
J2:3/1 (with short)	880(In) 781(Out)
J2:3/2 (short)	99
J2:4/1	28
J2:5/1	656
J2:6/1	977
J2:7/1	5
J2:8/1	216

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	20.4 %	1952	1952
				Arm J1:7 Ahead	Inf	79.6 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	63.6 %	2015	2015
				Arm J1:8 Ahead	Inf	36.4 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.6 %	1932	1932
				Arm J1:8 Left	Inf	0.4 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	52.8 %	1914	1914
				Arm J1:6 Ahead	Inf	25.9 %		
				Arm J1:7 Right	Inf	21.3 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	27.3 %	1965	1965
				Arm J2:6 Right	Inf	71.5 %		
				Arm J2:7 Ahead	Inf	1.1 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	83.7 %	1915	1915
				Arm J2:8 Left	Inf	16.3 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	0.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.7 %	1915	1915
				Arm J2:7 Left	Inf	0.3 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	53.6 %	1915	1915
				Arm J2:6 Left	Inf	25.0 %		
				Arm J2:8 Ahead	Inf	21.4 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 8: 'PM 2032-2033 Design' (FG8: 'PM 2032-2033 Design', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	41	26	119	1	20	207
	B	12	0	1	468	4	80	565
	C	21	40	0	102	1	17	181
	D	33	832	113	0	9	170	1157
	E	0	3	1	4	0	3	11
	F	8	201	27	81	2	0	319
	Tot.	74	1117	168	774	17	290	2440

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: PM 2032-2033 Design
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	1218(In) 1077(Out)
J1:1/2 (short)	141
J1:2/1 (with short)	207(In) 67(Out)
J1:2/2 (short)	140
J1:3/1 (with short)	565(In) 553(Out)
J1:3/2 (short)	12
J1:4/1	181
J1:5/1	812
J1:6/1	74
J1:7/1	1117
J1:8/1	168
Junction: J2: Unnamed Junction	
J2:1/1	319
J2:2/1 (with short)	812(In) 806(Out)
J2:2/2 (short)	6
J2:3/1 (with short)	1157(In) 987(Out)
J2:3/2 (short)	170
J2:4/1	11
J2:5/1	774
J2:6/1	1218
J2:7/1	17
J2:8/1	290

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	3.8 %	1952	1952
				Arm J1:7 Ahead	Inf	96.2 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	61.2 %	2015	2015
				Arm J1:8 Ahead	Inf	38.8 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.8 %	1932	1932
				Arm J1:8 Left	Inf	0.2 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	66.3 %	1914	1914
				Arm J1:6 Ahead	Inf	11.6 %		
				Arm J1:7 Right	Inf	22.1 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	25.4 %	1965	1965
				Arm J2:6 Right	Inf	74.0 %		
				Arm J2:7 Ahead	Inf	0.6 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	85.5 %	1915	1915
				Arm J2:8 Left	Inf	14.5 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	100.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.1 %	1915	1915
				Arm J2:7 Left	Inf	0.9 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	36.4 %	1915	1915
				Arm J2:6 Left	Inf	36.4 %		
				Arm J2:8 Ahead	Inf	27.3 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 9: 'AM 2038-2039 Design' (FG9: 'AM 2038-2039 Design', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	35	20	93	0	18	166
	B	40	0	2	397	0	77	516
	C	51	42	0	87	0	17	197
	D	159	595	61	0	2	105	922
	E	1	5	1	15	0	6	28
	F	37	139	14	74	3	0	267
	Tot.	288	816	98	666	5	223	2096

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 9: AM 2038-2039 Design
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	1012(In) 936(Out)
J1:1/2 (short)	76
J1:2/1 (with short)	166(In) 55(Out)
J1:2/2 (short)	111
J1:3/1 (with short)	516(In) 476(Out)
J1:3/2 (short)	40
J1:4/1	197
J1:5/1	689
J1:6/1	288
J1:7/1	816
J1:8/1	98
Junction: J2: Unnamed Junction	
J2:1/1	267
J2:2/1 (with short)	689(In) 689(Out)
J2:2/2 (short)	0
J2:3/1 (with short)	922(In) 817(Out)
J2:3/2 (short)	105
J2:4/1	28
J2:5/1	666
J2:6/1	1012
J2:7/1	5
J2:8/1	223

Full Input Data And Results

Lane Saturation Flows

Junction: J1: 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)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	21.0 %	1952	1952
				Arm J1:7 Ahead	Inf	79.0 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	63.6 %	2015	2015
				Arm J1:8 Ahead	Inf	36.4 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.6 %	1932	1932
				Arm J1:8 Left	Inf	0.4 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	52.8 %	1914	1914
				Arm J1:6 Ahead	Inf	25.9 %		
				Arm J1:7 Right	Inf	21.3 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	27.7 %	1965	1965
				Arm J2:6 Right	Inf	71.2 %		
				Arm J2:7 Ahead	Inf	1.1 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	83.7 %	1915	1915
				Arm J2:8 Left	Inf	16.3 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	0.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.8 %	1915	1915
				Arm J2:7 Left	Inf	0.2 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	53.6 %	1915	1915
				Arm J2:6 Left	Inf	25.0 %		
				Arm J2:8 Ahead	Inf	21.4 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 10: 'PM 2038-2039 Design' (FG10: 'PM 2038-2039 Design', Plan 1: 'AM Count')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	41	26	127	1	21	216
	B	12	0	1	486	4	81	584
	C	21	40	0	103	1	17	182
	D	39	842	113	0	9	172	1175
	E	0	3	1	4	0	3	11
	F	9	200	27	86	2	0	324
	Tot.	81	1126	168	806	17	294	2492

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 10: PM 2038-2039 Design
Junction: J1: Unnamed Junction	
J1:1/1 (with short)	1234(In) 1093(Out)
J1:1/2 (short)	141
J1:2/1 (with short)	216(In) 67(Out)
J1:2/2 (short)	149
J1:3/1 (with short)	584(In) 572(Out)
J1:3/2 (short)	12
J1:4/1	182
J1:5/1	841
J1:6/1	81
J1:7/1	1126
J1:8/1	168
Junction: J2: Unnamed Junction	
J2:1/1	324
J2:2/1 (with short)	841(In) 835(Out)
J2:2/2 (short)	6
J2:3/1 (with short)	1175(In) 1003(Out)
J2:3/2 (short)	172
J2:4/1	11
J2:5/1	806
J2:6/1	1234
J2:7/1	17
J2:8/1	294

Full Input Data And Results

Lane Saturation Flows

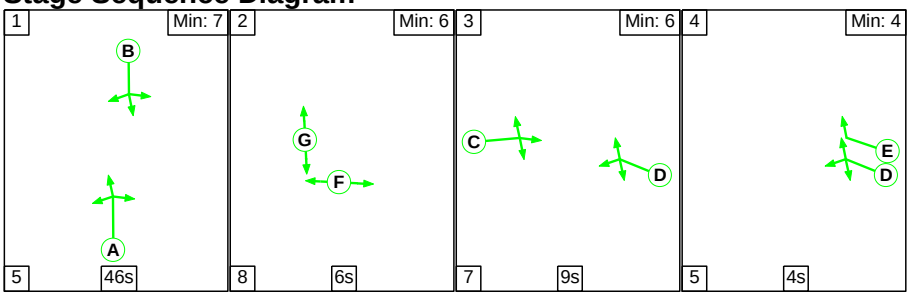
Junction: J1: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A641 Huddersfield Road (N))	3.37	0.00	Y	Arm J1:6 Left	Inf	4.4 %	1952	1952
				Arm J1:7 Ahead	Inf	95.6 %		
J1:1/2 (A641 Huddersfield Road (N))	2.80	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1895	1895
J1:2/1 (Birds Royd Lane)	4.00	0.00	Y	Arm J1:7 Left	Inf	61.2 %	2015	2015
				Arm J1:8 Ahead	Inf	38.8 %		
J1:2/2 (Birds Royd Lane)	2.50	0.00	N	Arm J1:5 Right	Inf	100.0 %	2005	2005
J1:3/1 (A641 Huddersfield Road (S))	3.17	0.00	Y	Arm J1:5 Ahead	Inf	99.8 %	1932	1932
				Arm J1:8 Left	Inf	0.2 %		
J1:3/2 (A641 Huddersfield Road (S))	3.12	0.00	Y	Arm J1:6 Right	Inf	100.0 %	1927	1927
J1:4/1 (Gooder Lane)	2.99	0.00	Y	Arm J1:5 Left	Inf	66.5 %	1914	1914
				Arm J1:6 Ahead	Inf	11.5 %		
				Arm J1:7 Right	Inf	22.0 %		
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:7/1	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Junction: J2: 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)**
J2:1/1 (Mill Royd St (W))	3.50	0.00	Y	Arm J2:5 Left	Inf	26.5 %	1965	1965
				Arm J2:6 Right	Inf	72.8 %		
				Arm J2:7 Ahead	Inf	0.6 %		
J2:2/1 (A641 Huddersfield Road S)	3.00	0.00	Y	Arm J2:5 Ahead	Inf	85.7 %	1915	1915
				Arm J2:8 Left	Inf	14.3 %		
J2:2/2 (A641 Huddersfield Road S)	3.00	0.00	N	Arm J2:7 Right	Inf	100.0 %	2055	2055
J2:3/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm J2:6 Ahead	Inf	99.1 %	1915	1915
				Arm J2:7 Left	Inf	0.9 %		
J2:3/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm J2:8 Right	Inf	100.0 %	2055	2055
J2:4/1 (Mill Royd St (E))	3.00	0.00	Y	Arm J2:5 Right	Inf	36.4 %	1915	1915
				Arm J2:6 Left	Inf	36.4 %		
				Arm J2:8 Ahead	Inf	27.3 %		
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM Count' (FG1: 'AM Count', Plan 1: 'AM Count')
C1

Stage Sequence Diagram

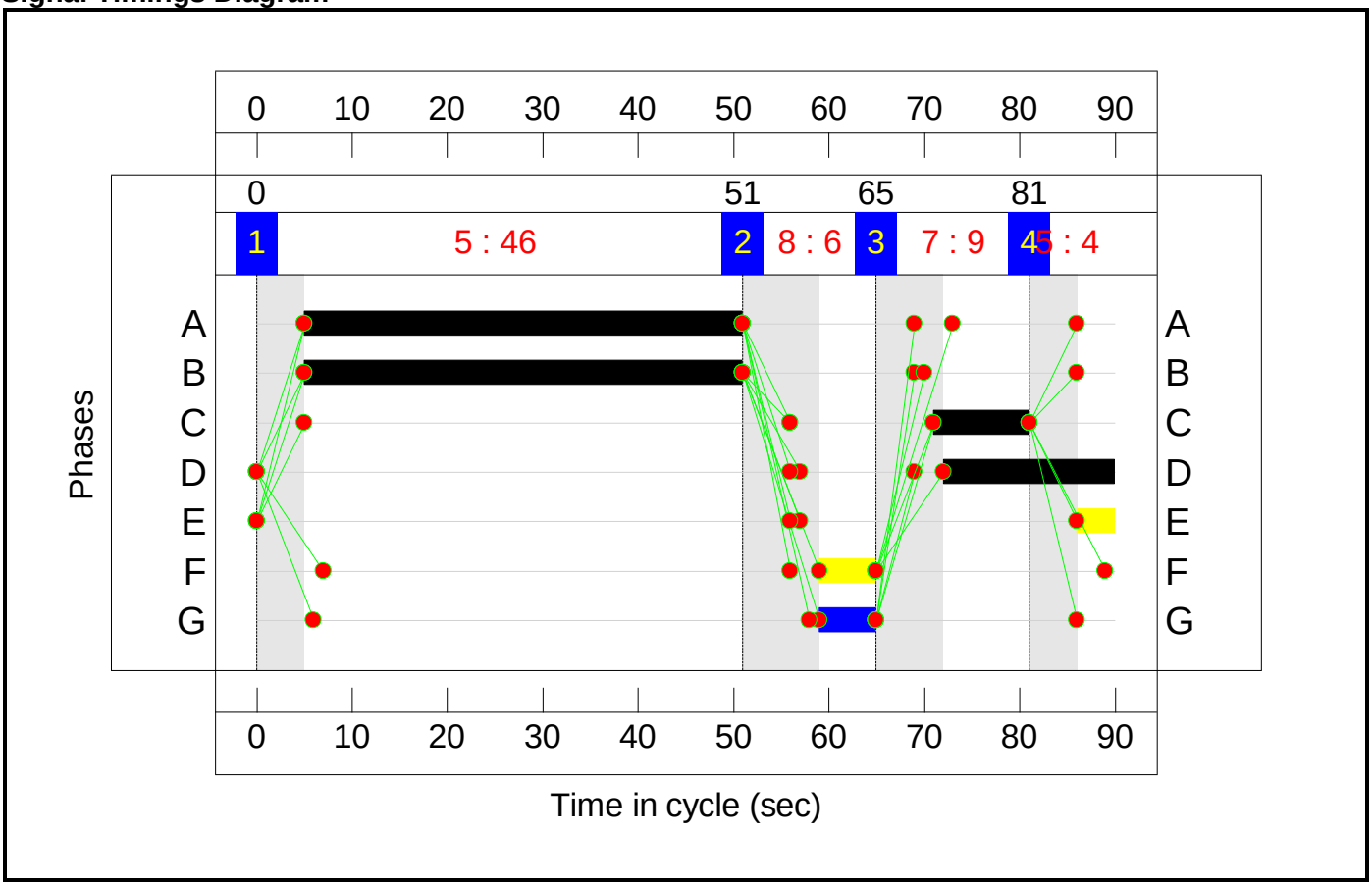


Stage Timings

Stage	1	2	3	4
Duration	46	6	9	4
Change Point	0	51	65	81

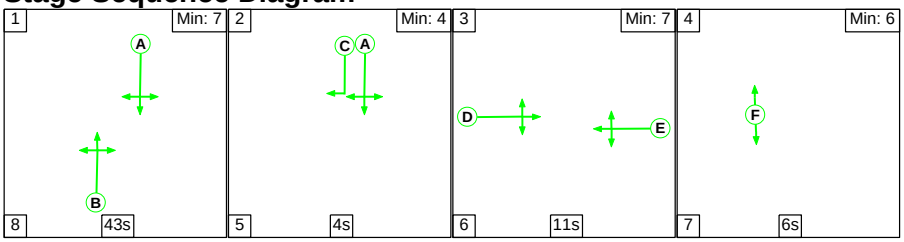
Full Input Data And Results

Signal Timings Diagram



C2

Stage Sequence Diagram

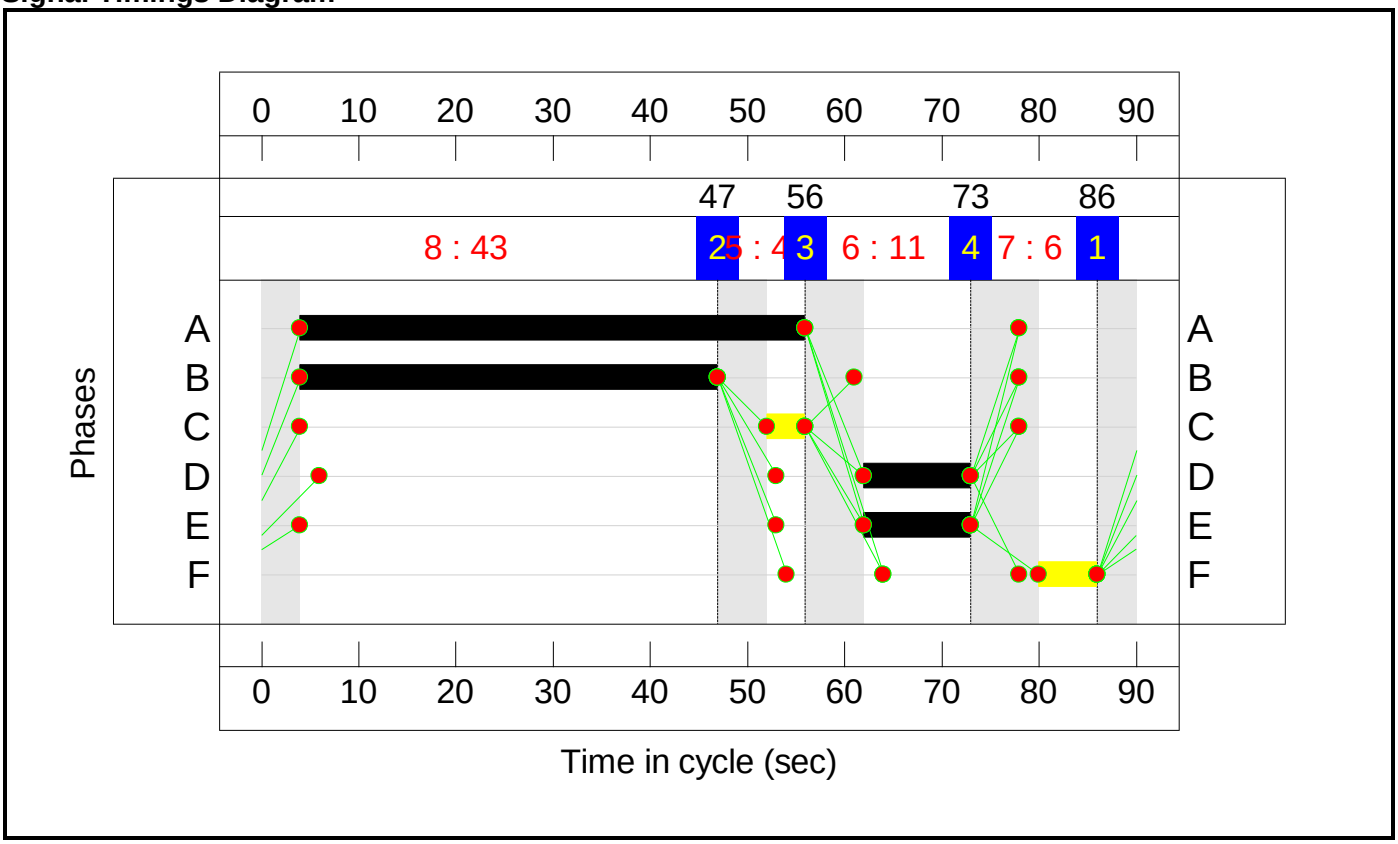


Stage Timings

Stage	1	2	3	4
Duration	43	4	11	6
Change Point	86	47	56	73

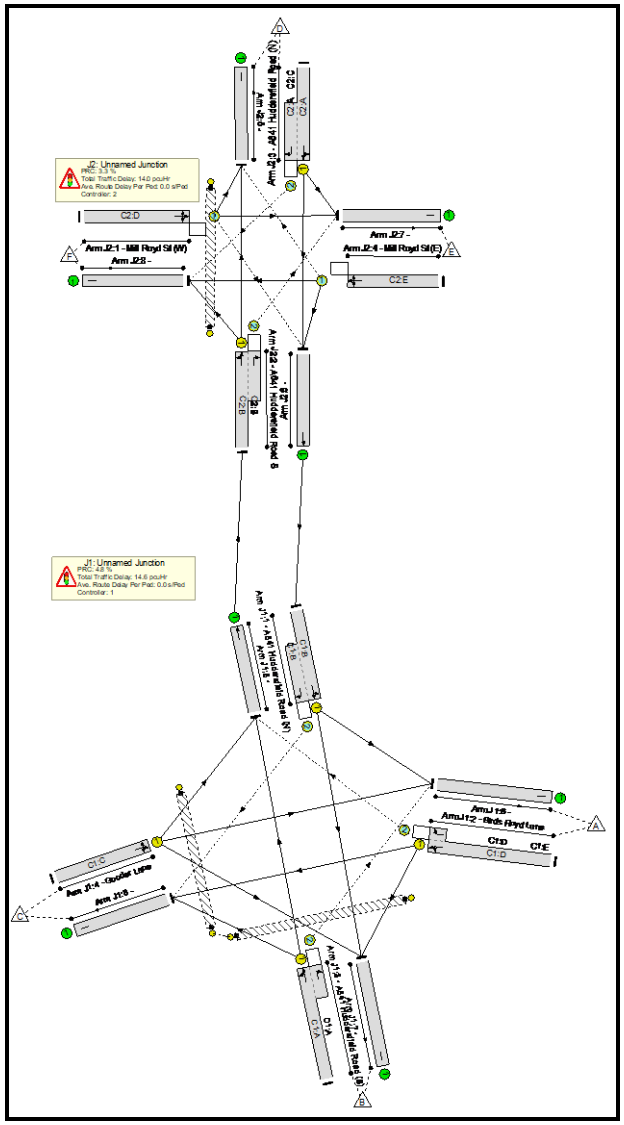
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.2%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.9%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	46	-	884	1952:1895	983+47	85.9 : 85.9%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	18	4	207	2015:2005	84+243	63.4 : 63.4%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	46	-	633	1932:1927	967+62	61.5 : 61.5%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	10	-	159	1914	234	68.0%
5/1	Ahead	U	N/A	N/A	-		-	-	-	816	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	236	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	770	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	61	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.2%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	11	-	214	1965	262	81.7%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	43	-	816	1915:2055	936+0	87.2 : 0.0%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	52	4	787	1915:2055	1054+113	67.5 : 67.5%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	11	-	27	1915	204	13.2%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	785	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	884	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**363**	**118**	**11**	**15.8**	**12.0**	**0.8**	**28.6**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**131**	**98**	**3**	**8.8**	**5.6**	**0.2**	**14.6**	**-**	**-**	**-**	**-**
1/1+1/2	884	884	40	0	0	2.7	2.9	0.0	5.6	22.8	16.7	2.9	19.7
2/1+2/2	207	207	53	98	3	1.8	0.9	0.2	2.9	50.0	3.8	0.9	4.6
3/1+3/2	633	633	38	0	0	2.6	0.8	0.0	3.4	19.3	10.6	0.8	11.4
4/1	159	159	-	-	-	1.7	1.0	-	2.7	61.2	3.8	1.0	4.8
5/1	816	816	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	236	236	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	770	770	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	61	61	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**232**	**20**	**8**	**7.0**	**6.4**	**0.6**	**14.0**	**-**	**-**	**-**	**-**
1/1	214	214	164	0	5	2.3	2.1	0.1	4.4	74.0	5.2	2.1	7.2
2/1+2/2	816	816	0	0	0	1.9	3.2	0.0	5.1	22.7	11.2	3.2	14.4
3/1+3/2	787	787	54	20	2	2.6	1.0	0.5	4.2	19.0	12.4	1.0	13.4
4/1	27	27	14	0	1	0.3	0.1	0.0	0.3	44.7	0.6	0.1	0.7
5/1	785	785	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	884	884	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

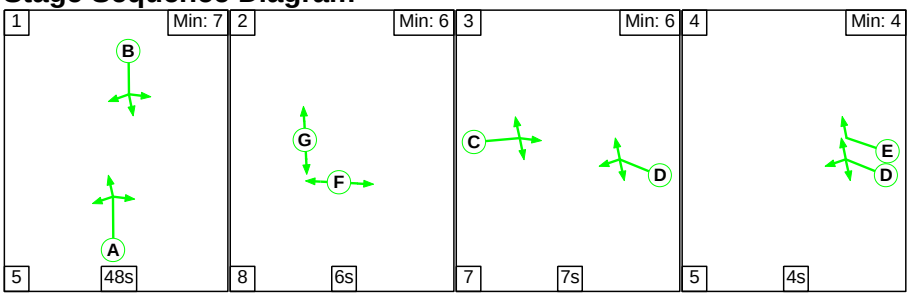
C1	PRC for Signalled Lanes (%):	4.8	Total Delay for Signalled Lanes (pcuHr):	14.59	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	3.3	Total Delay for Signalled Lanes (pcuHr):	14.02	Cycle Time (s): 90
	PRC Over All Lanes (%):	3.3	Total Delay Over All Lanes(pcuHr):	28.61	

Full Input Data And Results

Scenario 2: 'PM Count' (FG2: 'PM Count', Plan 1: 'AM Count')

C1

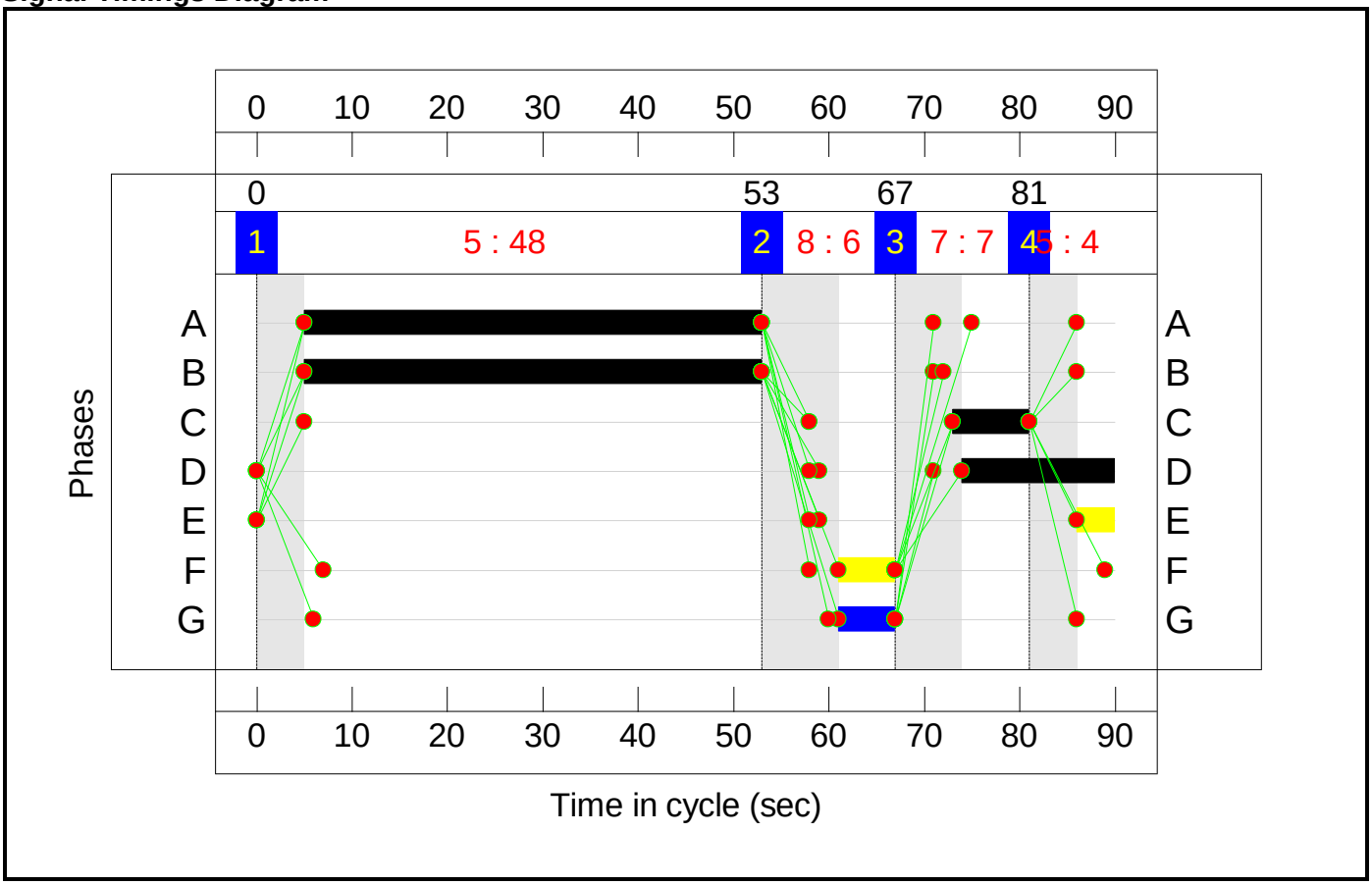
Stage Sequence Diagram



Stage Timings

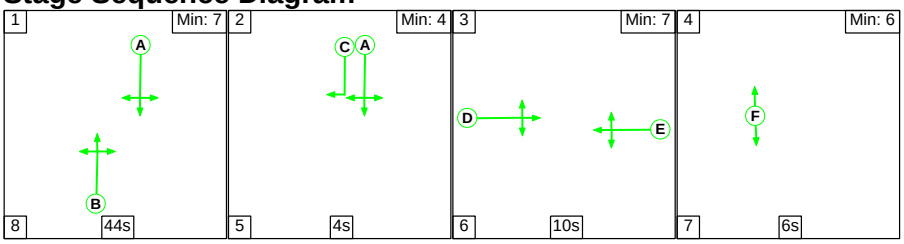
Stage	1	2	3	4
Duration	48	6	7	4
Change Point	0	53	67	81

Signal Timings Diagram



C2

Stage Sequence Diagram

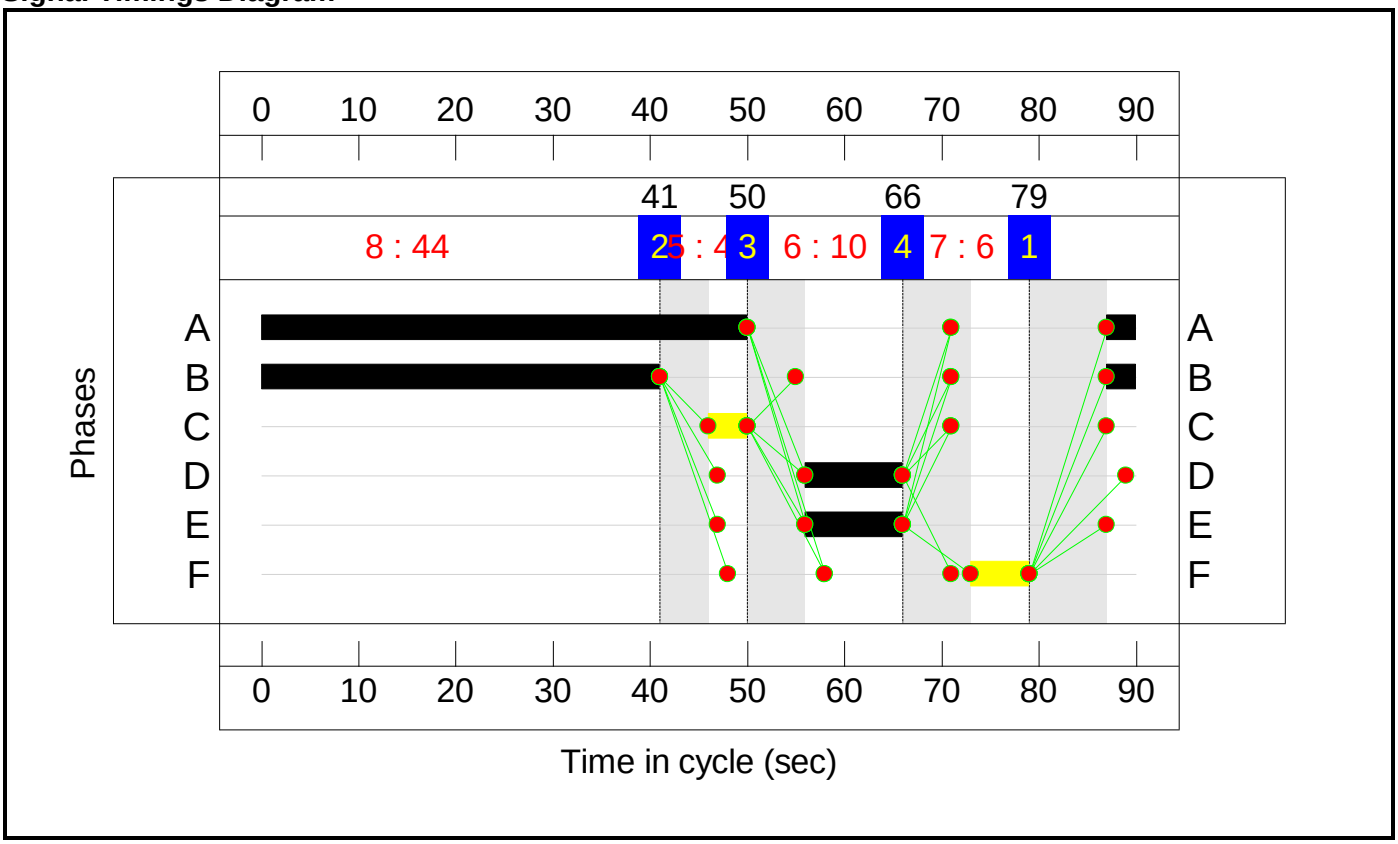


Full Input Data And Results

Stage Timings

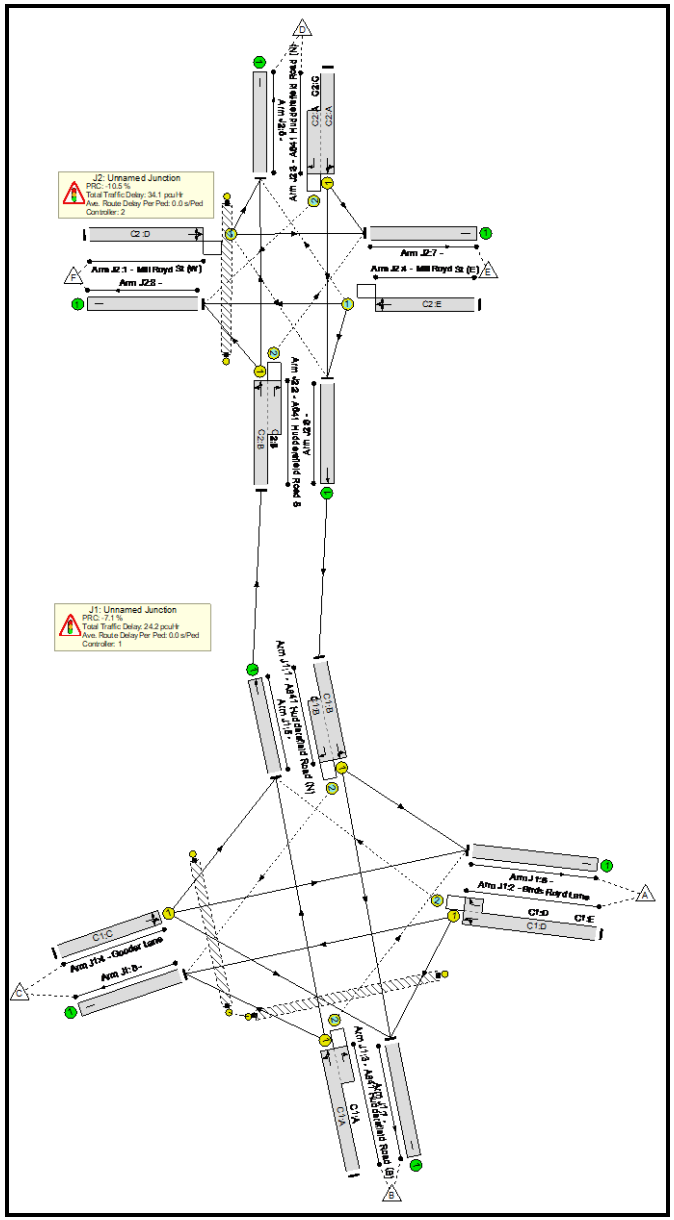
Stage	1	2	3	4
Duration	44	4	10	6
Change Point	79	41	50	66

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**99.4%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**96.3%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	48	-	1040	1952:1895	1007+73	96.3 : 96.3%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	16	4	224	2015:2005	81+208	77.4 : 77.4%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	48	-	709	1932:1927	1048+17	66.6 : 66.6%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	8	-	161	1914	191	84.1%
5/1	Ahead	U	N/A	N/A	-		-	-	-	960	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	89	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	991	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	94	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**99.4%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	10	-	236	1965	240	98.3%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	44	-	960	1915:2055	957+8	99.4 : 99.4%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	53	4	1013	1915:2055	1037+170	83.9 : 83.9%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	10	-	11	1915	233	4.7%

Full Input Data And Results

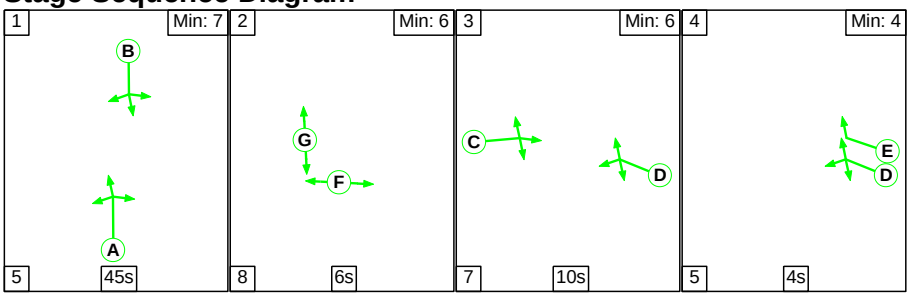
5/1		U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1040	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	19	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	0.0%

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	**-**	**-**	**276**	**278**	**18**	**19.8**	**37.4**	**1.1**	**58.3**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**100**	**139**	**4**	**10.1**	**14.0**	**0.2**	**24.2**	**-**	**-**	**-**	**-**
1/1+1/2	1040	1040	70	0	0	3.3	9.0	0.0	12.3	42.6	24.5	9.0	33.5
2/1+2/2	224	224	19	139	4	2.1	1.6	0.2	3.9	63.1	4.3	1.6	5.9
3/1+3/2	709	709	11	0	0	2.9	1.0	0.0	3.9	19.6	12.4	1.0	13.4
4/1	161	161	-	-	-	1.8	2.3	-	4.1	91.2	3.9	2.3	6.2
5/1	960	960	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	89	89	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	991	991	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	94	94	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**176**	**140**	**14**	**9.7**	**23.4**	**0.9**	**34.1**	**-**	**-**	**-**	**-**
1/1	236	236	164	0	11	2.6	6.7	0.0	9.3	142.3	5.8	6.7	12.5
2/1+2/2	960	960	8	0	0	3.0	14.2	0.0	17.2	64.6	14.4	14.2	28.6
3/1+3/2	1013	1013	0	140	3	4.0	2.5	0.9	7.4	26.4	18.8	2.5	21.4
4/1	11	11	4	0	0	0.1	0.0	0.0	0.1	43.4	0.2	0.0	0.3
5/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1040	1040	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	19	19	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

C1	PRC for Signalled Lanes (%):	-7.1	Total Delay for Signalled Lanes (pcuHr):	24.19	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	-10.5	Total Delay for Signalled Lanes (pcuHr):	34.11	Cycle Time (s): 90
	PRC Over All Lanes (%):	-10.5	Total Delay Over All Lanes(pcuHr):	58.30	

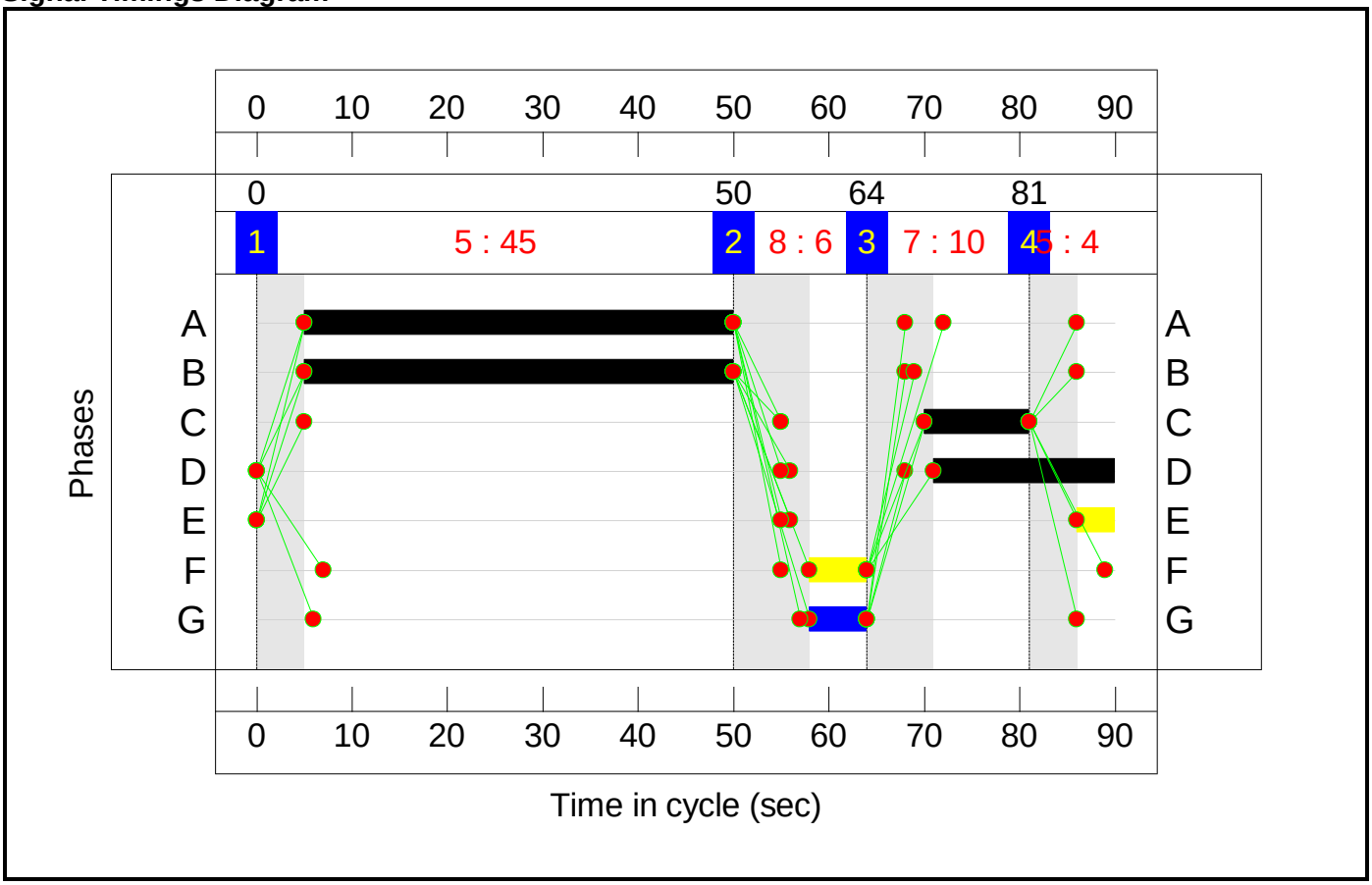
Full Input Data And Results
Scenario 3: 'AM Base' (FG3: 'AM Base', Plan 1: 'AM Count')
C1
Stage Sequence Diagram



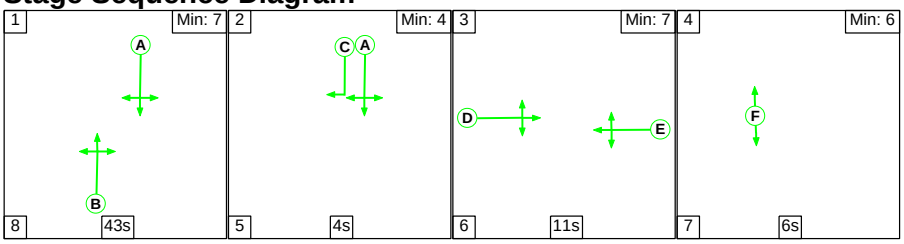
Stage Timings

Stage	1	2	3	4
Duration	45	6	10	4
Change Point	0	50	64	81

Signal Timings Diagram



C2
Stage Sequence Diagram

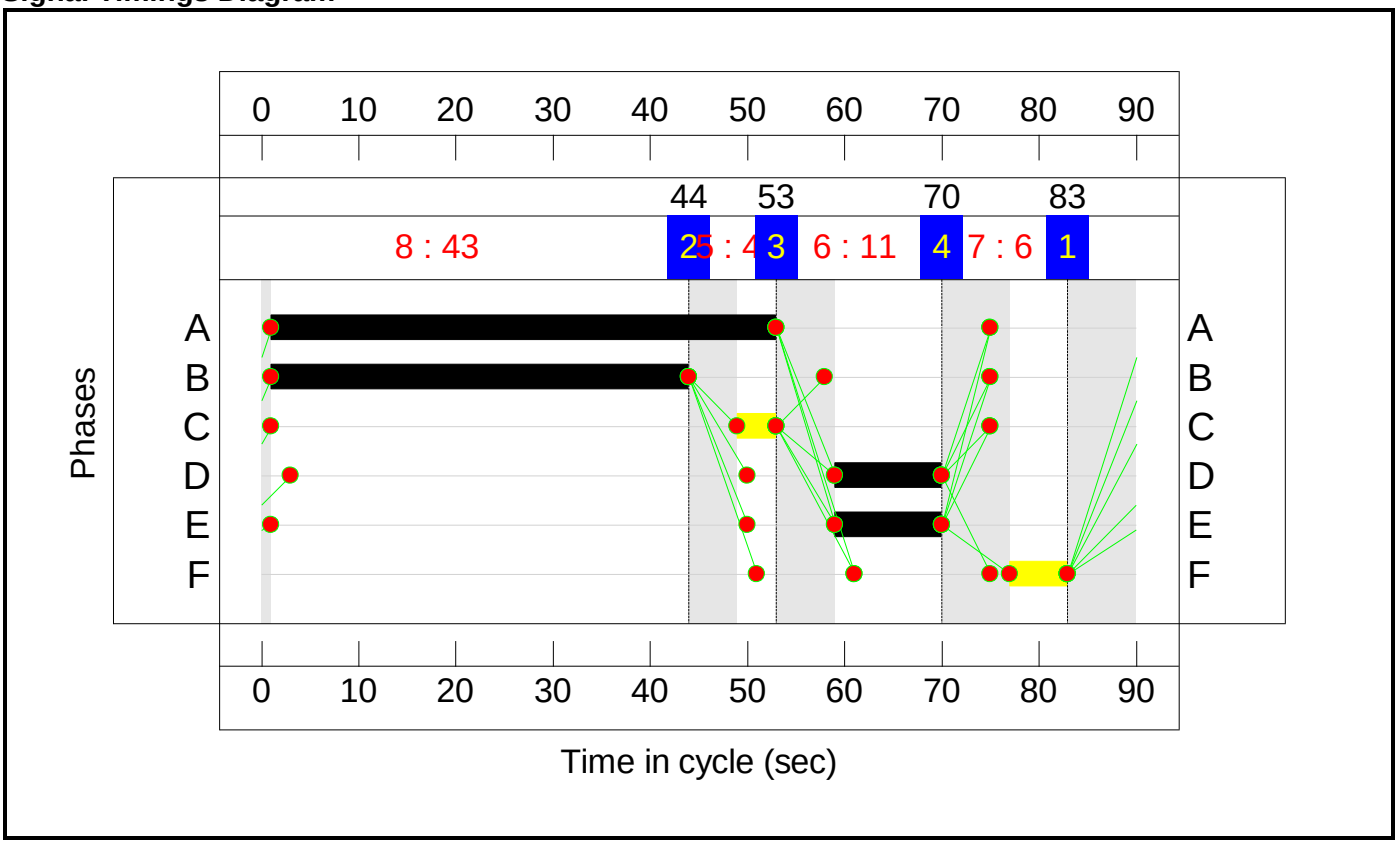


Full Input Data And Results

Stage Timings

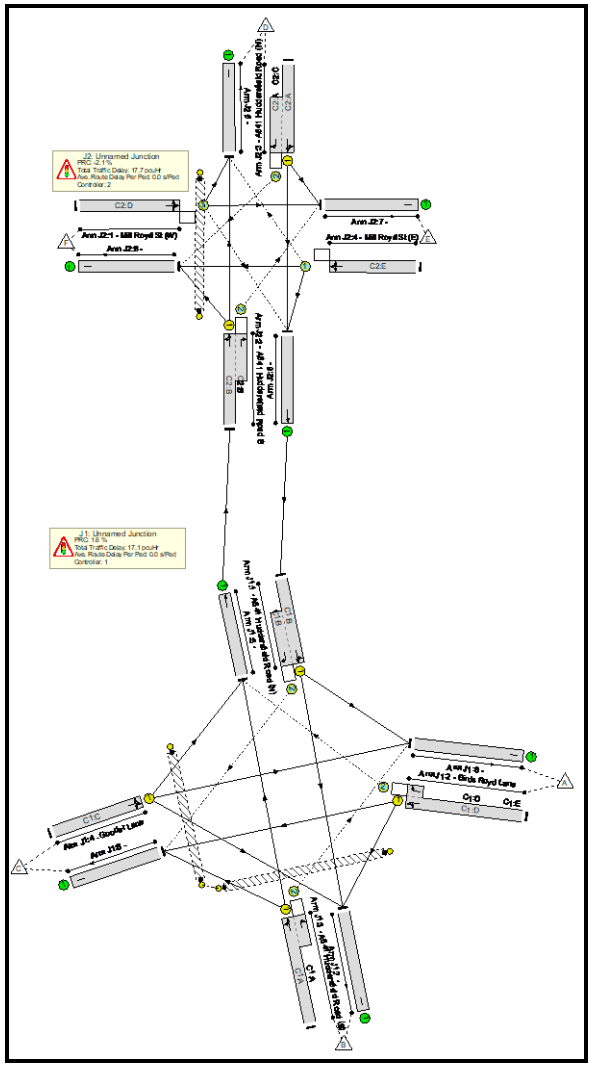
Stage	1	2	3	4
Duration	43	4	11	6
Change Point	83	44	53	70

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.9%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.5%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	45	-	895	1952:1895	955+55	88.5 : 88.5%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	19	4	210	2015:2005	80+226	68.6 : 68.6%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	45	-	643	1932:1927	945+63	63.8 : 63.8%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	11	-	197	1914	255	77.2%
5/1	Ahead	U	N/A	N/A	-		-	-	-	860	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	243	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	771	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	71	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.9%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	11	-	234	1965	262	89.3%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	43	-	860	1915:2055	936+0	91.9 : 0.0%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	52	4	802	1915:2055	1050+118	68.6 : 68.6%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	11	-	27	1915	190	14.2%

Full Input Data And Results

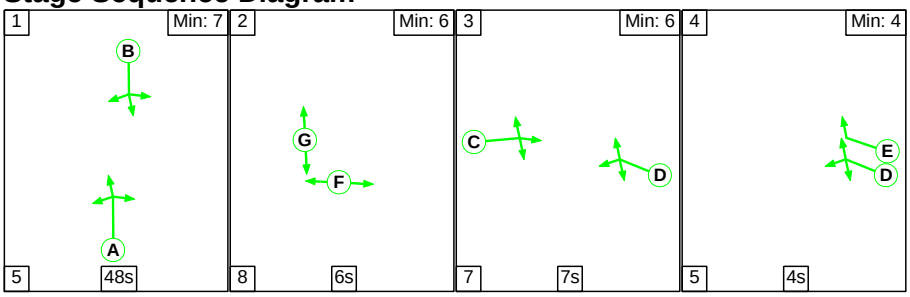
5/1		U	N/A	N/A	-		-	-	-	840	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	895	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	183	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	0.0%

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	**-**	**-**	**330**	**168**	**12**	**17.3**	**16.7**	**0.9**	**34.9**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**130**	**111**	**3**	**9.7**	**7.2**	**0.2**	**17.1**	**-**	**-**	**-**	**-**
1/1+1/2	895	895	49	0	0	3.0	3.6	0.0	6.7	26.8	20.1	3.6	23.7
2/1+2/2	210	210	41	111	3	1.9	1.1	0.2	3.1	53.7	3.8	1.1	4.9
3/1+3/2	643	643	40	0	0	2.8	0.9	0.0	3.7	20.5	11.2	0.9	12.0
4/1	197	197	-	-	-	2.1	1.6	-	3.7	67.0	4.7	1.6	6.3
5/1	860	860	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	243	243	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	771	771	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	71	71	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**200**	**57**	**9**	**7.5**	**9.5**	**0.7**	**17.7**	**-**	**-**	**-**	**-**
1/1	234	234	164	0	6	2.5	3.4	0.1	5.9	91.3	5.7	3.4	9.1
2/1+2/2	860	860	0	0	0	2.1	5.0	0.0	7.1	29.7	10.7	5.0	15.7
3/1+3/2	802	802	22	57	2	2.7	1.1	0.6	4.4	19.6	12.6	1.1	13.7
4/1	27	27	14	0	1	0.3	0.1	0.0	0.3	45.6	0.6	0.1	0.7
5/1	840	840	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	895	895	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	183	183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

C1	PRC for Signalled Lanes (%):	1.6	Total Delay for Signalled Lanes (pcuHr):	17.13	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	-2.1	Total Delay for Signalled Lanes (pcuHr):	17.74	Cycle Time (s): 90
	PRC Over All Lanes (%):	-2.1	Total Delay Over All Lanes(pcuHr):	34.87	

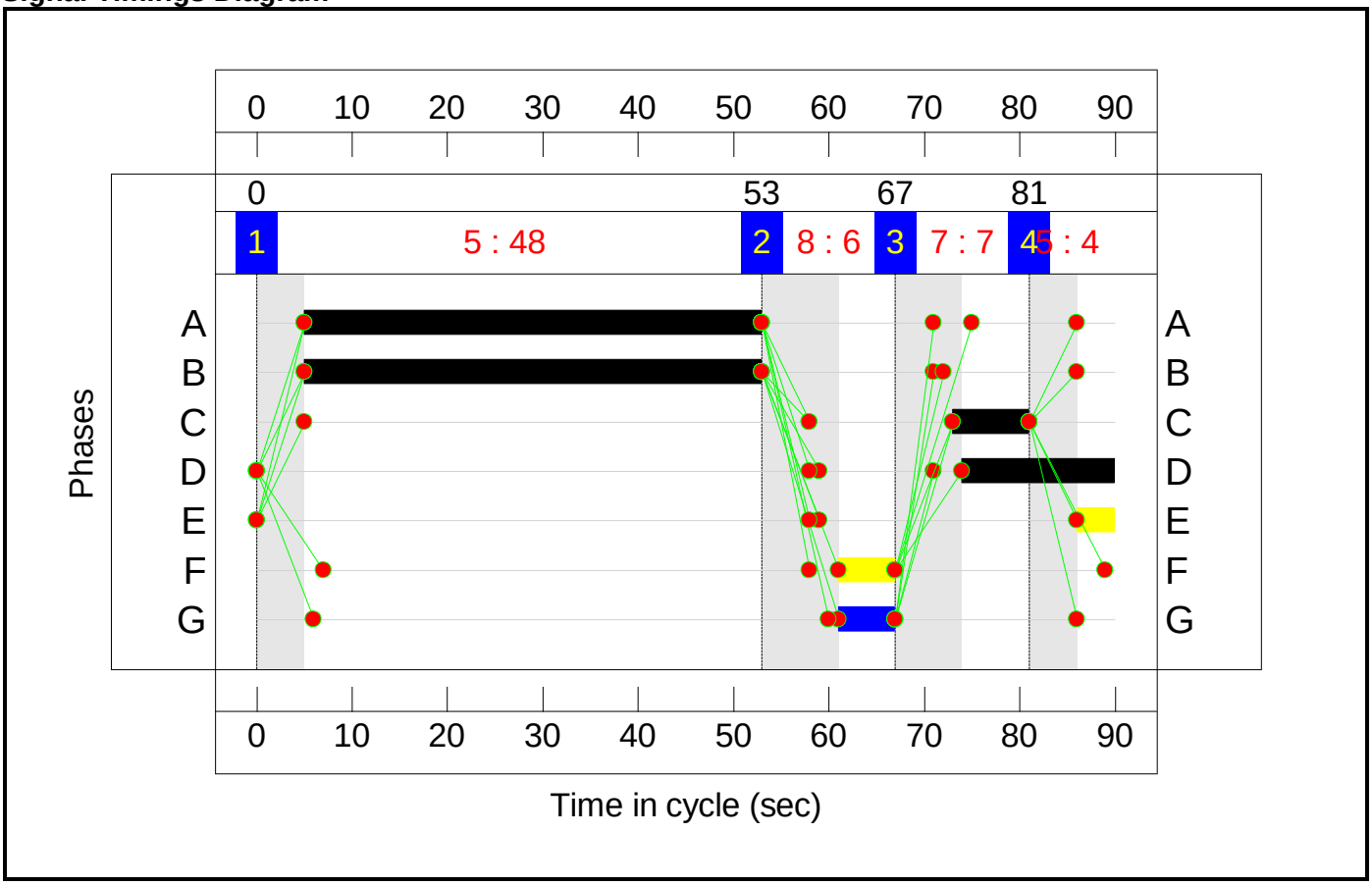
Full Input Data And Results
Scenario 4: 'PM Base' (FG4: 'PM Base', Plan 1: 'AM Count')
C1
Stage Sequence Diagram



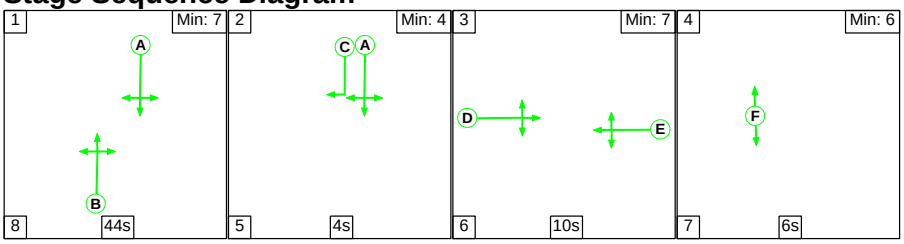
Stage Timings

Stage	1	2	3	4
Duration	48	6	7	4
Change Point	0	53	67	81

Signal Timings Diagram



C2
Stage Sequence Diagram

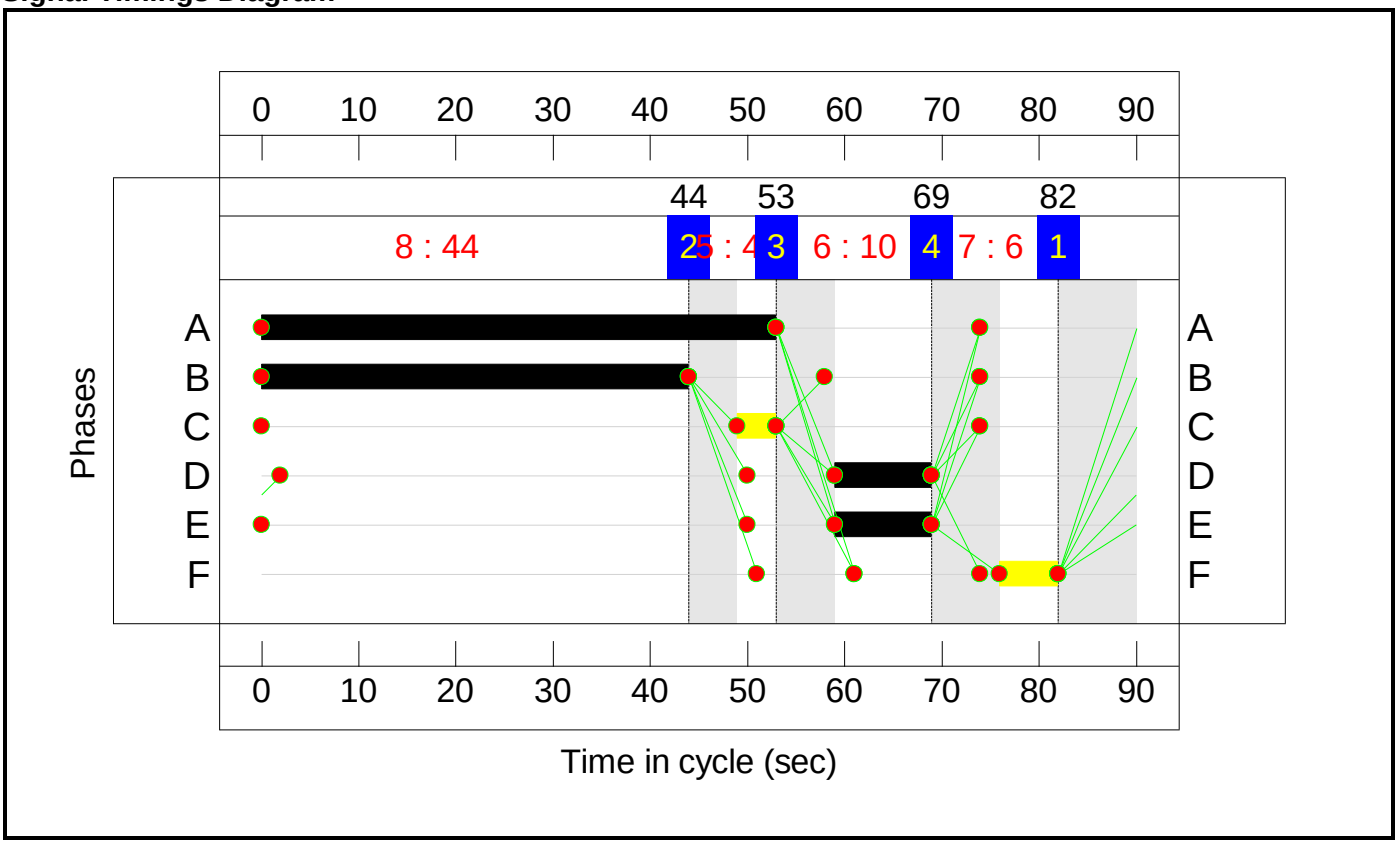


Full Input Data And Results

Stage Timings

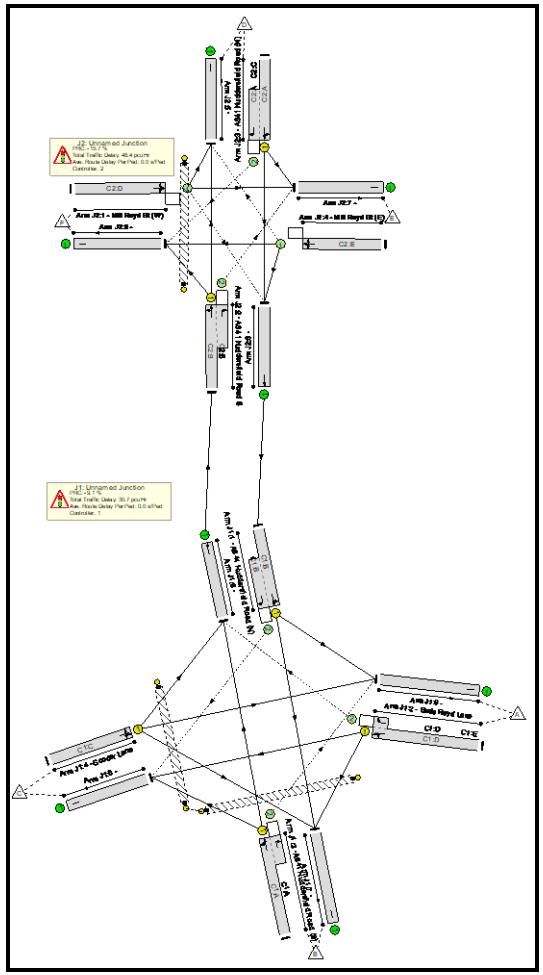
Stage	1	2	3	4
Duration	44	4	10	6
Change Point	82	44	53	69

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**104.1%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.2%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	48	-	1076	1952:1895	983+106	98.2 : 98.2%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	16	4	232	2015:2005	78+192	86.1 : 86.1%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	48	-	715	1932:1927	1046+18	67.2 : 67.2%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	8	-	179	1914	191	93.5%
5/1	Ahead	U	N/A	N/A	-		-	-	-	986	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	92	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	992	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	132	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**104.1%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	10	-	250	1965	240	104.1%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	44	-	986	1915:2055	957+7	102.2 : 102.2%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	53	4	1057	1915:2055	1030+180	87.3 : 87.3%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	10	-	10	1915	229	4.4%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	924	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1076	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	18	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	285	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**298**	**302**	**23**	**21.7**	**56.2**	**1.1**	**79.0**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**123**	**154**	**5**	**10.4**	**20.1**	**0.2**	**30.7**	**-**	**-**	**-**	**-**
1/1+1/2	1069	1069	104	0	0	3.2	12.1	0.0	15.3	51.7	24.4	12.1	36.5
2/1+2/2	232	232	6	154	5	2.2	2.7	0.2	5.1	79.2	4.4	2.7	7.1
3/1+3/2	715	715	12	0	0	2.9	1.0	0.0	3.9	19.8	12.6	1.0	13.7
4/1	179	179	-	-	-	2.0	4.3	-	6.3	126.2	4.4	4.3	8.7
5/1	986	986	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	92	92	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	986	986	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	131	131	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**176**	**148**	**18**	**11.4**	**36.1**	**0.9**	**48.4**	**-**	**-**	**-**	**-**
1/1	250	240	165	0	9	3.1	10.7	0.0	13.8	199.0	6.5	10.7	17.2
2/1+2/2	986	964	7	0	0	3.8	22.0	0.0	25.8	94.3	25.9	22.0	47.9
3/1+3/2	1057	1057	0	148	8	4.4	3.3	0.9	8.6	29.3	20.5	3.3	23.8
4/1	10	10	4	0	0	0.1	0.0	0.0	0.1	43.5	0.2	0.0	0.2
5/1	903	903	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1069	1069	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	18	18	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	282	282	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

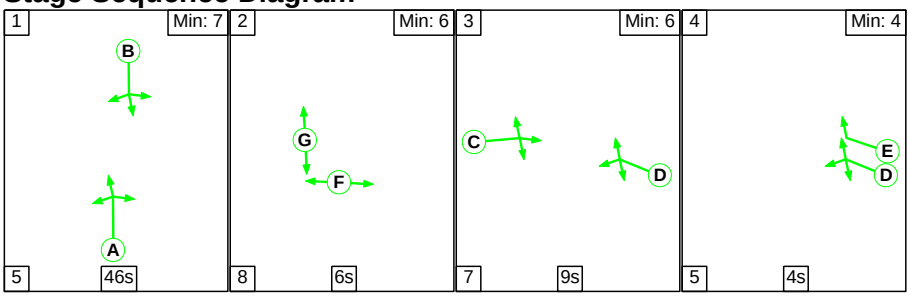
C1	PRC for Signalled Lanes (%):	-9.1	Total Delay for Signalled Lanes (pcuHr):	30.65	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	-15.7	Total Delay for Signalled Lanes (pcuHr):	48.39	Cycle Time (s):	90
	PRC Over All Lanes (%):	-15.7	Total Delay Over All Lanes(pcuHr):	79.04		

Full Input Data And Results

Scenario 5: 'AM 2026-2027 Interim' (FG5: 'AM 2026-2027 Interim', Plan 1: 'AM Count')

C1

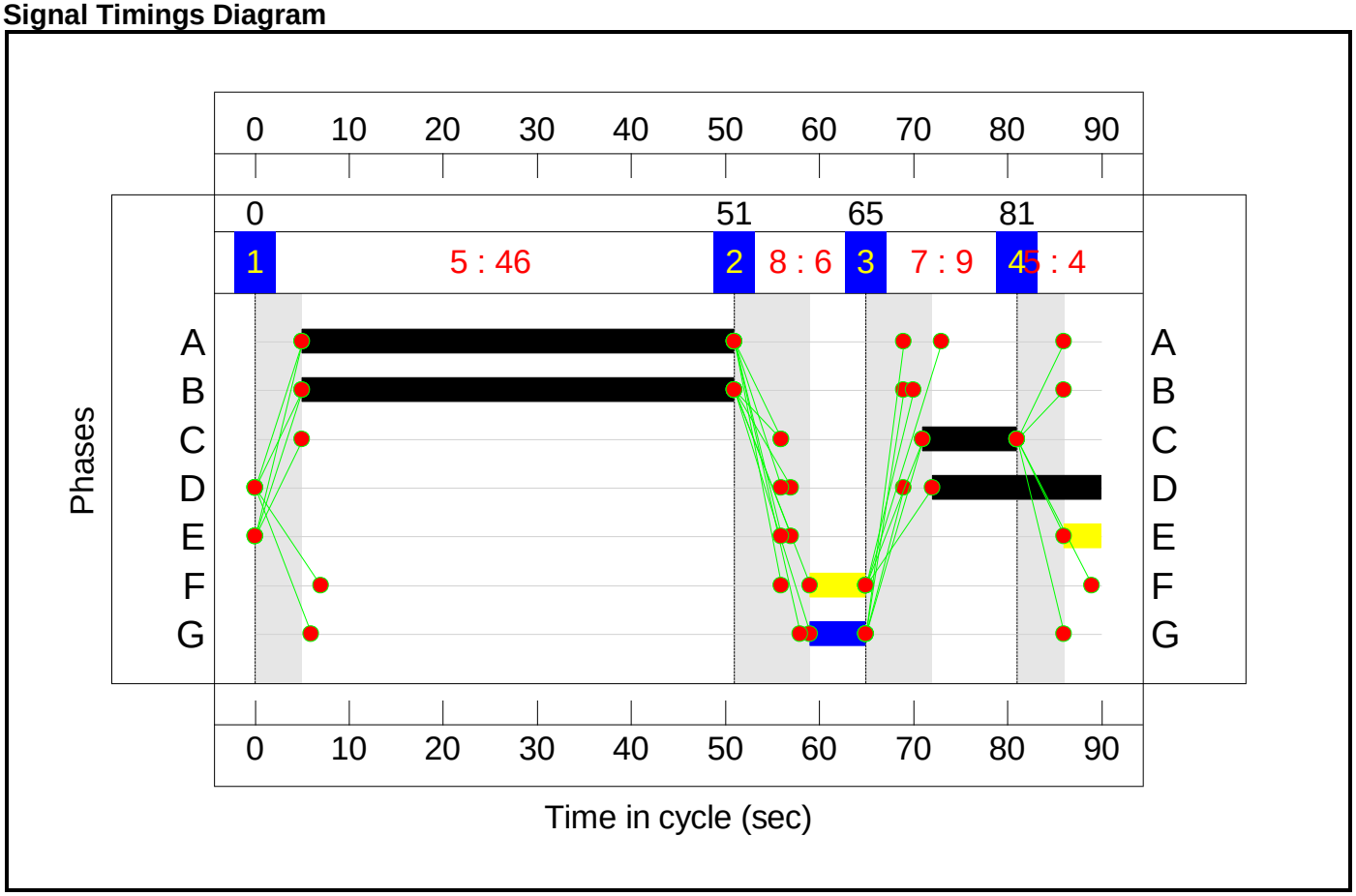
Stage Sequence Diagram



Stage Timings

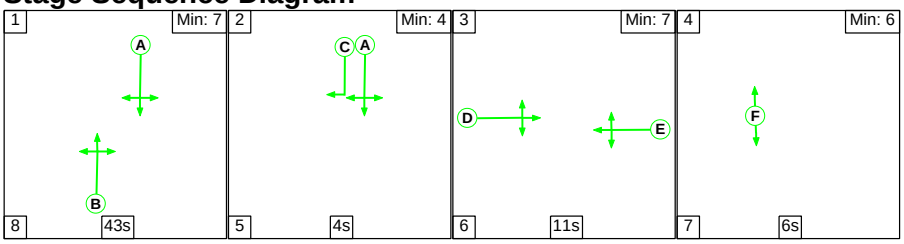
Stage	1	2	3	4
Duration	46	6	9	4
Change Point	0	51	65	81

Signal Timings Diagram



C2

Stage Sequence Diagram

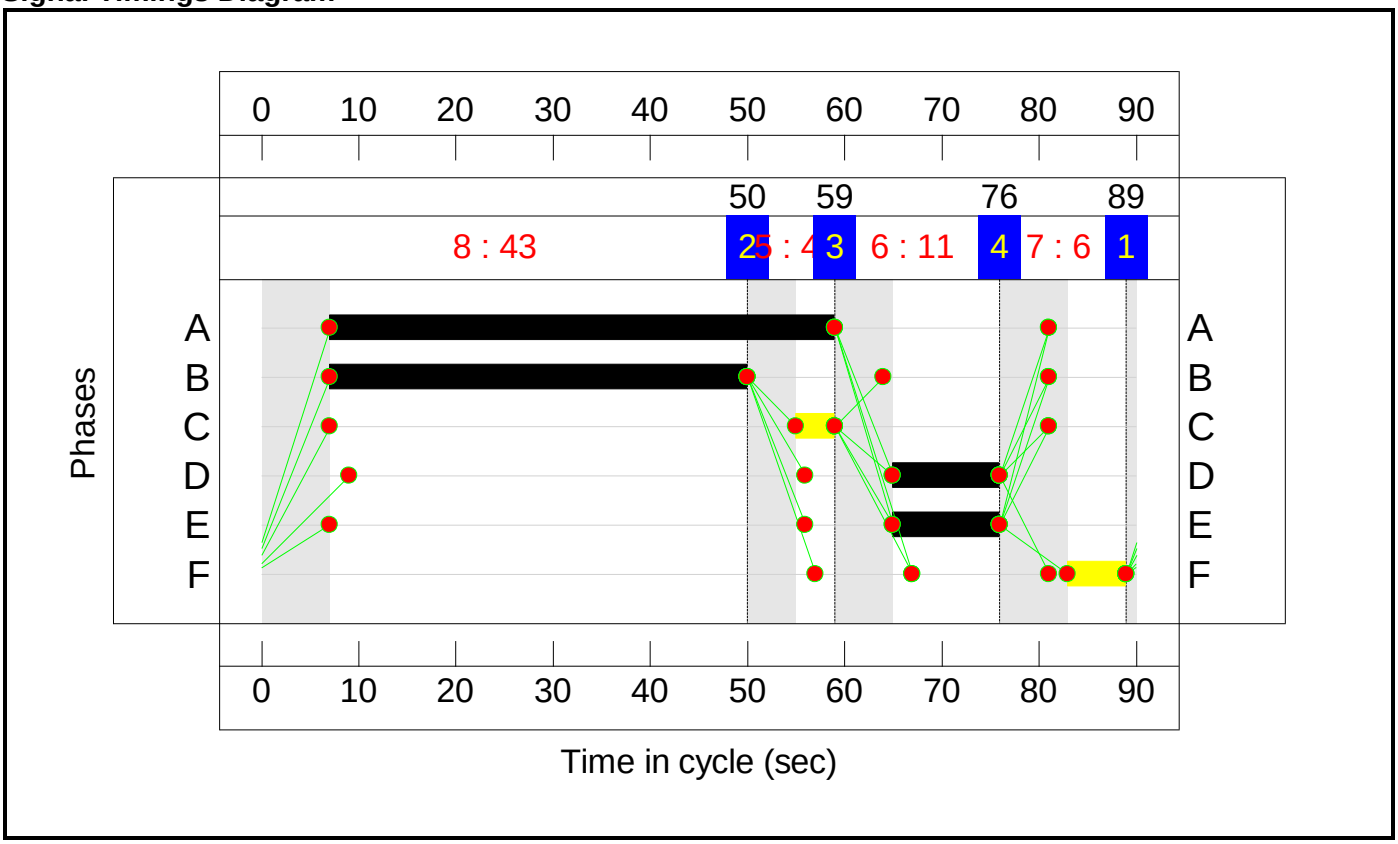


Full Input Data And Results

Stage Timings

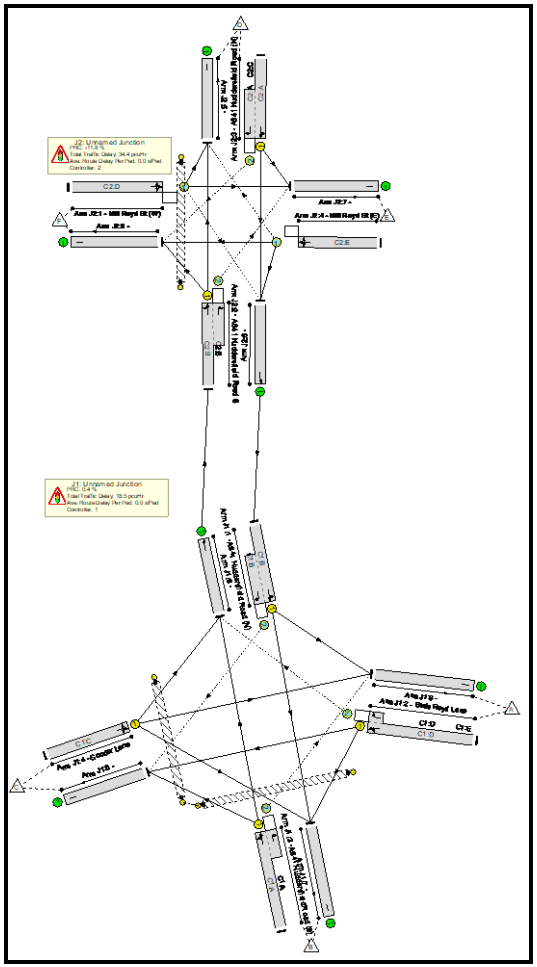
Stage	1	2	3	4
Duration	43	4	11	6
Change Point	89	50	59	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.6%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**89.6%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	46	-	925	1952:1895	976+56	89.6 : 89.6%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	18	4	159	2015:2005	108+204	51.0 : 51.0%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	46	-	776	1932:1927	974+53	75.5 : 75.5%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	10	-	197	1914	234	84.2%
5/1	Ahead	U	N/A	N/A	-		-	-	-	942	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	203	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	840	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	72	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.6%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	11	-	256	1965	262	97.7%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	43	-	942	1915:2055	936+0	100.6 : 0.0%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	52	4	830	1915:2055	1043+130	70.8 : 70.8%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	11	-	28	1915	195	14.4%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	925	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	232	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**293**	**166**	**24**	**18.7**	**33.2**	**1.0**	**52.9**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**116**	**76**	**2**	**9.9**	**8.4**	**0.2**	**18.5**	**-**	**-**	**-**	**-**
1/1+1/2	925	925	50	0	0	2.9	4.0	0.0	6.9	26.9	9.8	4.0	13.8
2/1+2/2	159	159	26	76	2	1.3	0.5	0.2	2.0	46.1	2.3	0.5	2.8
3/1+3/2	776	776	40	0	0	3.6	1.5	0.0	5.1	23.7	14.9	1.5	16.4
4/1	197	197	-	-	-	2.1	2.4	-	4.5	81.9	4.8	2.4	7.2
5/1	942	942	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	203	203	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	840	840	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	72	72	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**177**	**90**	**22**	**8.8**	**24.8**	**0.8**	**34.4**	**-**	**-**	**-**	**-**
1/1	256	256	163	0	19	2.8	6.6	0.1	9.5	133.2	6.3	6.6	13.0
2/1+2/2	942	936	0	0	0	2.9	16.9	0.0	19.8	75.6	23.7	16.9	40.6
3/1+3/2	830	830	0	90	2	2.8	1.2	0.7	4.7	20.6	13.2	1.2	14.4
4/1	28	28	14	0	1	0.3	0.1	0.0	0.4	45.4	0.6	0.1	0.7
5/1	889	889	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	925	925	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	231	231	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

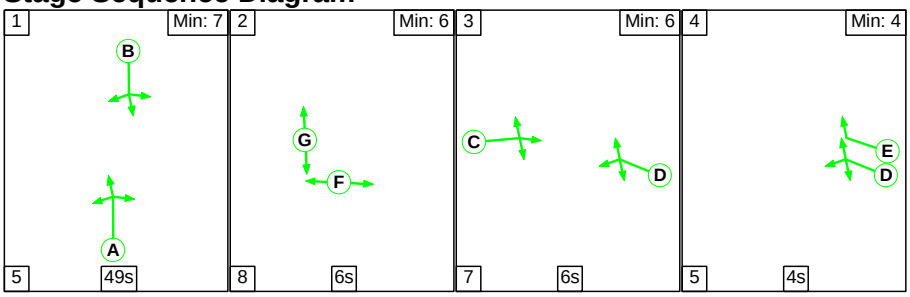
C1	PRC for Signalled Lanes (%):	0.4	Total Delay for Signalled Lanes (pcuHr):	18.55	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	-11.8	Total Delay for Signalled Lanes (pcuHr):	34.37	Cycle Time (s): 90
	PRC Over All Lanes (%):	-11.8	Total Delay Over All Lanes(pcuHr):	52.91	

Full Input Data And Results

Scenario 6: 'PM 2026-2027 Interim' (FG6: 'PM 2026-2027 Interim', Plan 1: 'AM Count')

C1

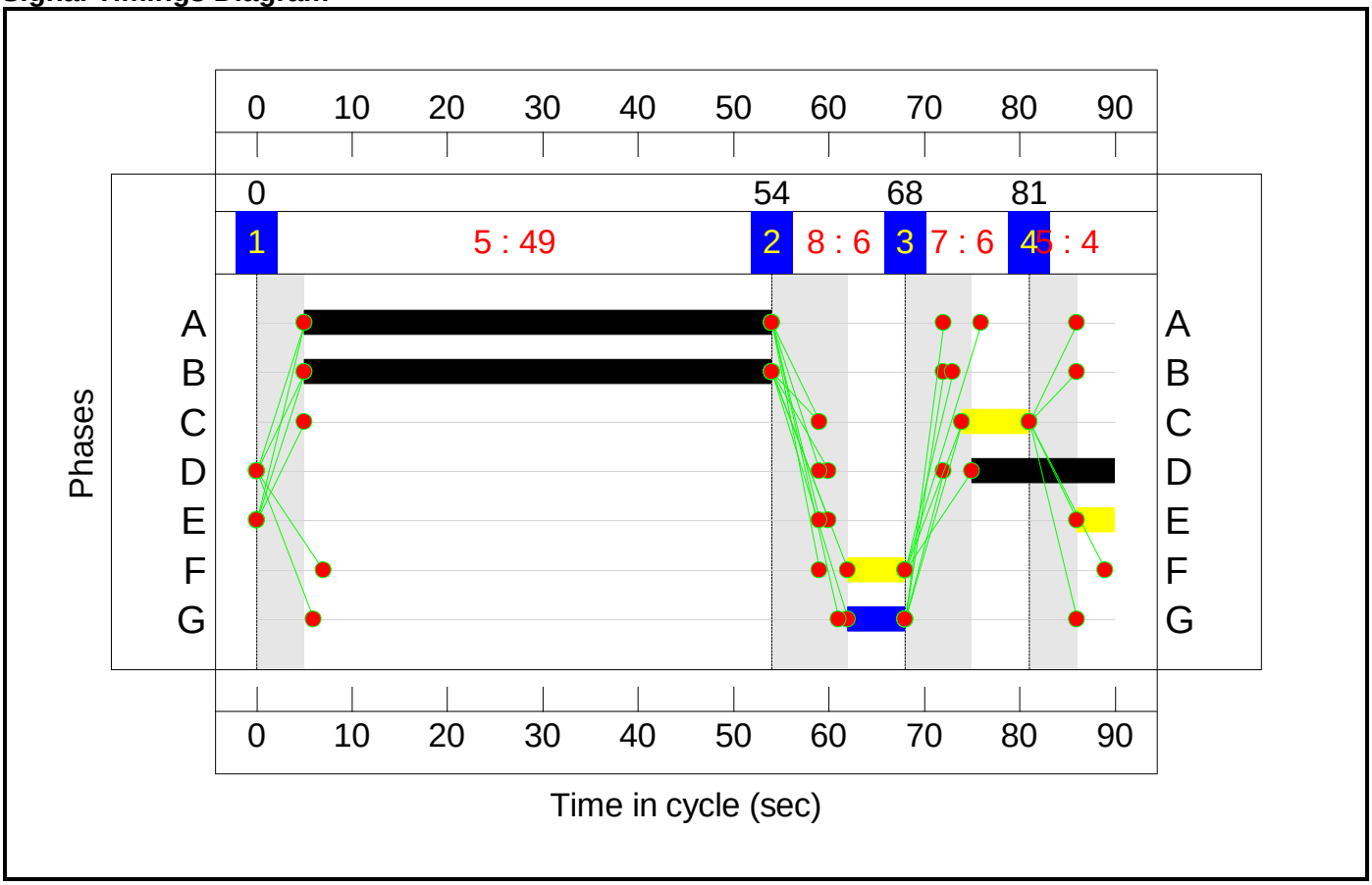
Stage Sequence Diagram



Stage Timings

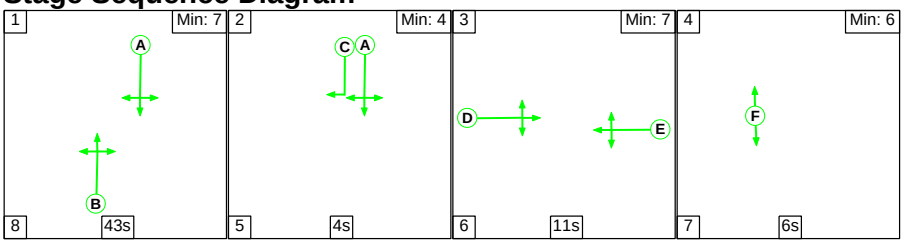
Stage	1	2	3	4
Duration	49	6	6	4
Change Point	0	54	68	81

Signal Timings Diagram



C2

Stage Sequence Diagram

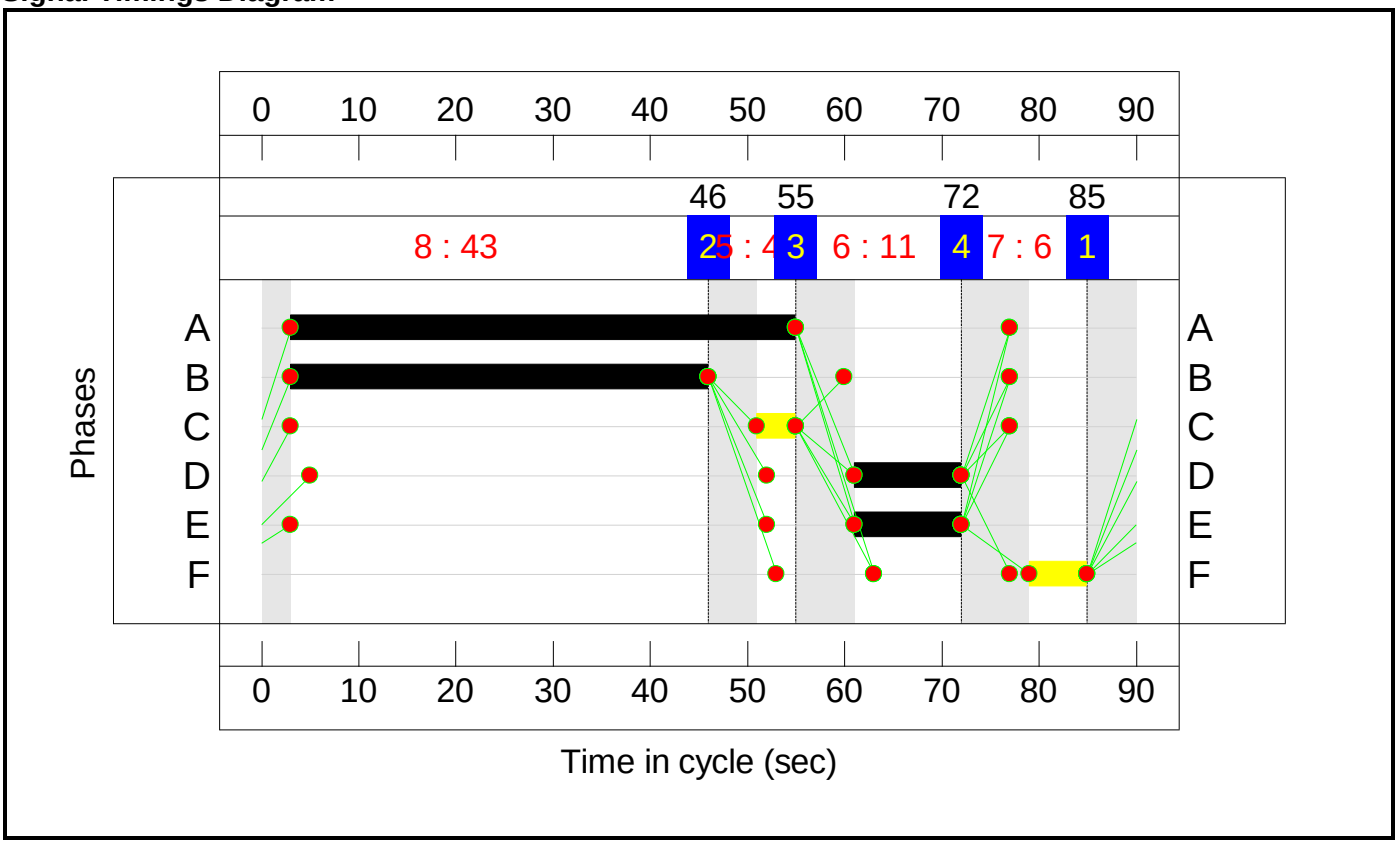


Full Input Data And Results

Stage Timings

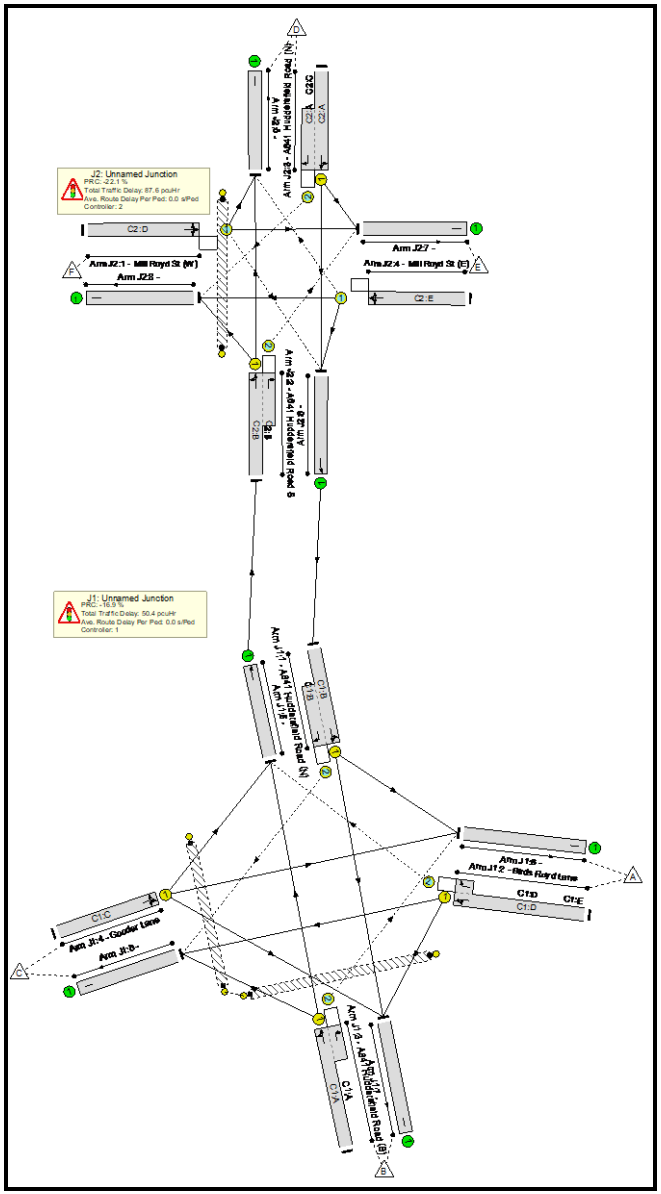
Stage	1	2	3	4
Duration	43	4	11	6
Change Point	85	46	55	72

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**109.9%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.2%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	49	-	1155	1952:1895	1008+101	102.5 : 102.5%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	15	4	198	2015:2005	89+175	75.0 : 75.0%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	49	-	795	1932:1927	1069+16	73.2 : 73.2%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	7	-	179	1914	170	105.2%
5/1	Ahead	U	N/A	N/A	-		-	-	-	1032	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	57	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1106	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	132	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**109.9%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	11	-	288	1965	262	109.9%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	43	-	1032	1915:2055	936+7	108.8 : 108.7%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	52	4	1116	1915:2055	1012+177	93.9 : 93.9%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	11	-	11	1915	249	4.4%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	962	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1155	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	19	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	311	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**304**	**277**	**32**	**29.1**	**107.7**	**1.1**	**137.9**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**113**	**128**	**3**	**13.0**	**37.2**	**0.2**	**50.4**	**-**	**-**	**-**	**-**
1/1+1/2	1136	1108	101	0	0	5.5	25.2	0.0	30.7	97.2	31.1	25.2	56.3
2/1+2/2	198	198	0	128	3	1.9	1.4	0.2	3.5	62.9	3.4	1.4	4.8
3/1+3/2	795	795	12	0	0	3.3	1.4	0.0	4.7	21.1	14.7	1.4	16.1
4/1	179	170	-	-	-	2.3	9.3	-	11.6	232.3	4.7	9.3	14.0
5/1	1026	1026	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	55	55	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1062	1062	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	128	128	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**191**	**148**	**29**	**16.1**	**70.5**	**0.9**	**87.6**	**-**	**-**	**-**	**-**
1/1	288	262	180	0	11	3.9	17.2	0.0	21.1	264.3	7.9	17.2	25.0
2/1+2/2	1026	944	7	0	0	6.9	46.8	0.1	53.7	188.3	29.2	46.8	75.9
3/1+3/2	1116	1116	0	148	17	5.3	6.5	0.8	12.6	40.7	24.2	6.5	30.7
4/1	11	11	4	0	0	0.1	0.0	0.0	0.1	42.0	0.2	0.0	0.3
5/1	880	880	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1136	1136	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	18	18	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	299	299	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

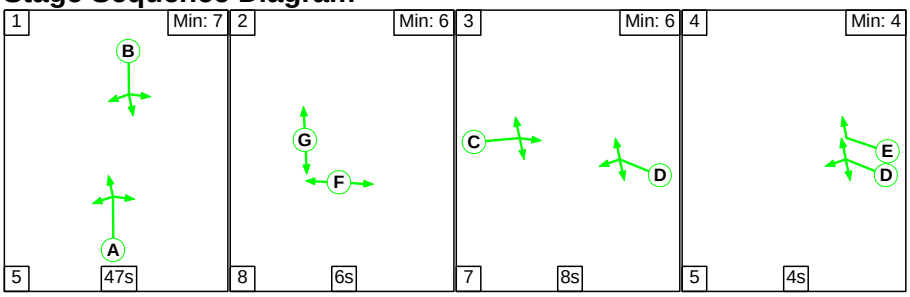
C1	PRC for Signalled Lanes (%):	-16.9	Total Delay for Signalled Lanes (pcuHr):	50.35	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	-22.1	Total Delay for Signalled Lanes (pcuHr):	87.56	Cycle Time (s): 90
	PRC Over All Lanes (%):	-22.1	Total Delay Over All Lanes(pcuHr):	137.91	

Full Input Data And Results

Scenario 7: 'AM 2032-2033 Design' (FG7: 'AM 2032-2033 Design', Plan 1: 'AM Count')

C1

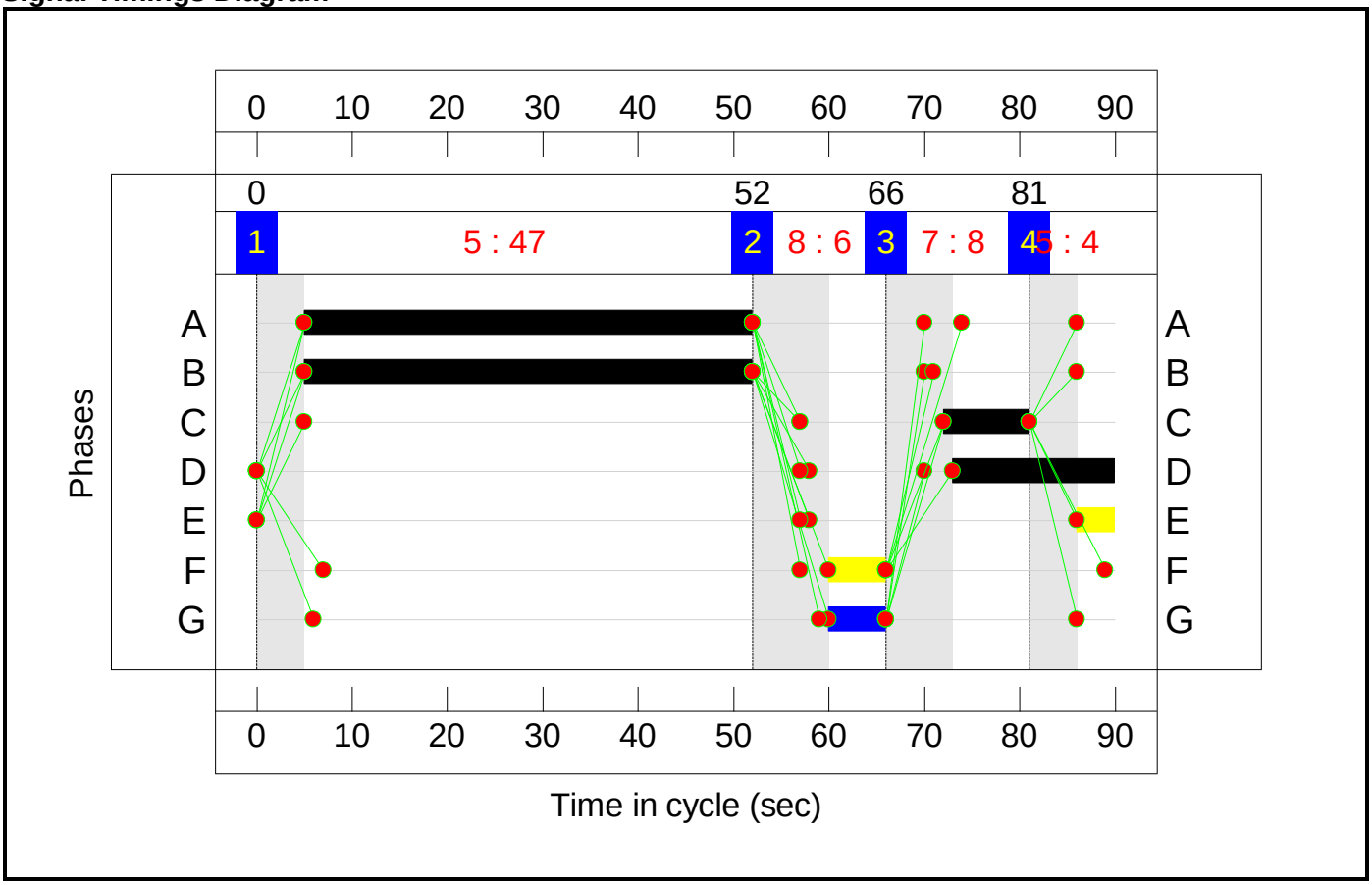
Stage Sequence Diagram



Stage Timings

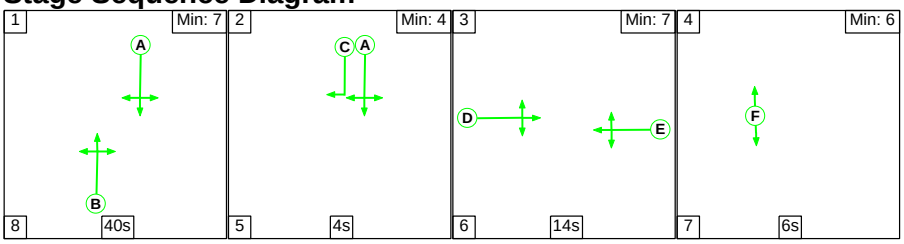
Stage	1	2	3	4
Duration	47	6	8	4
Change Point	0	52	66	81

Signal Timings Diagram



C2

Stage Sequence Diagram

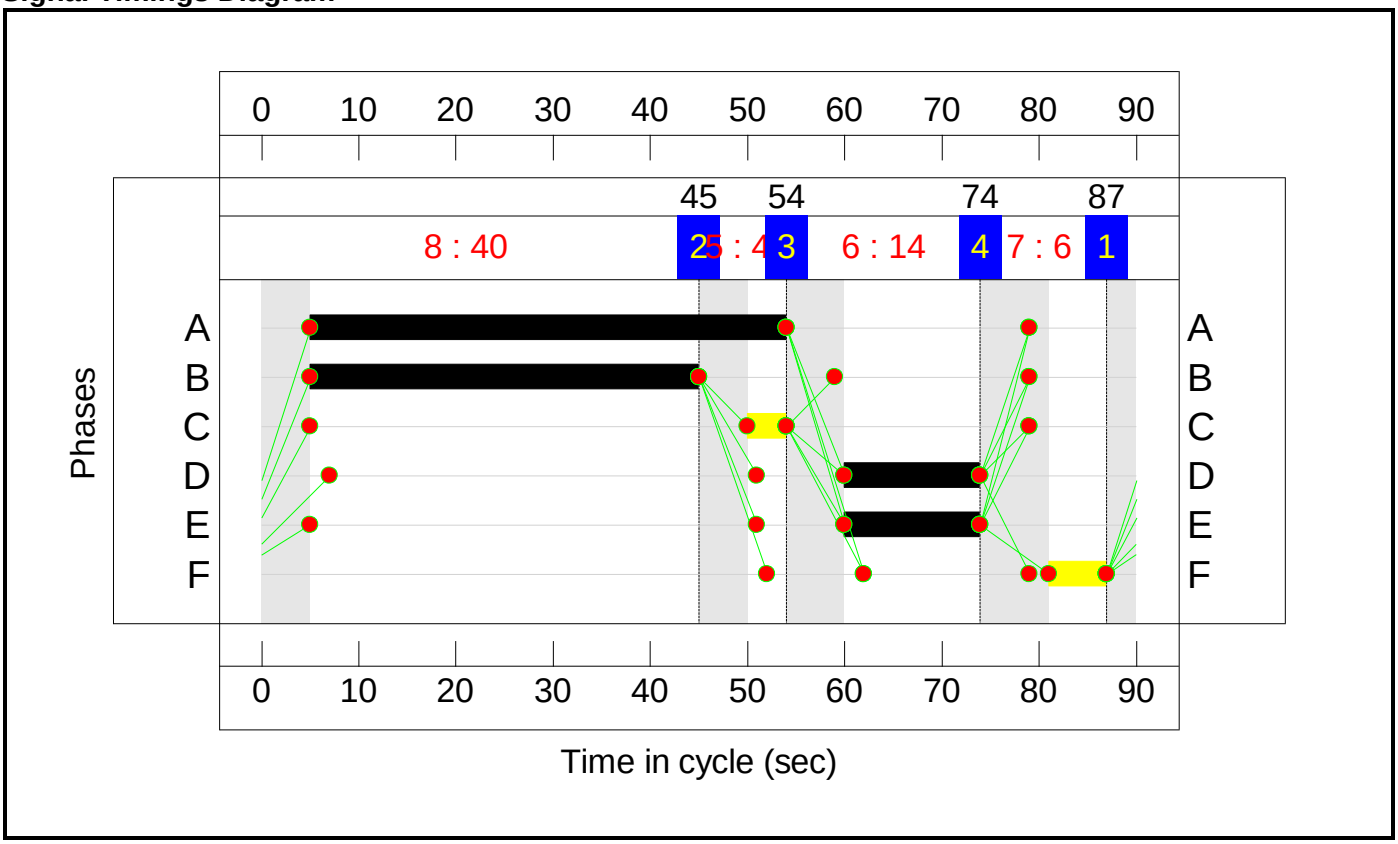


Full Input Data And Results

Stage Timings

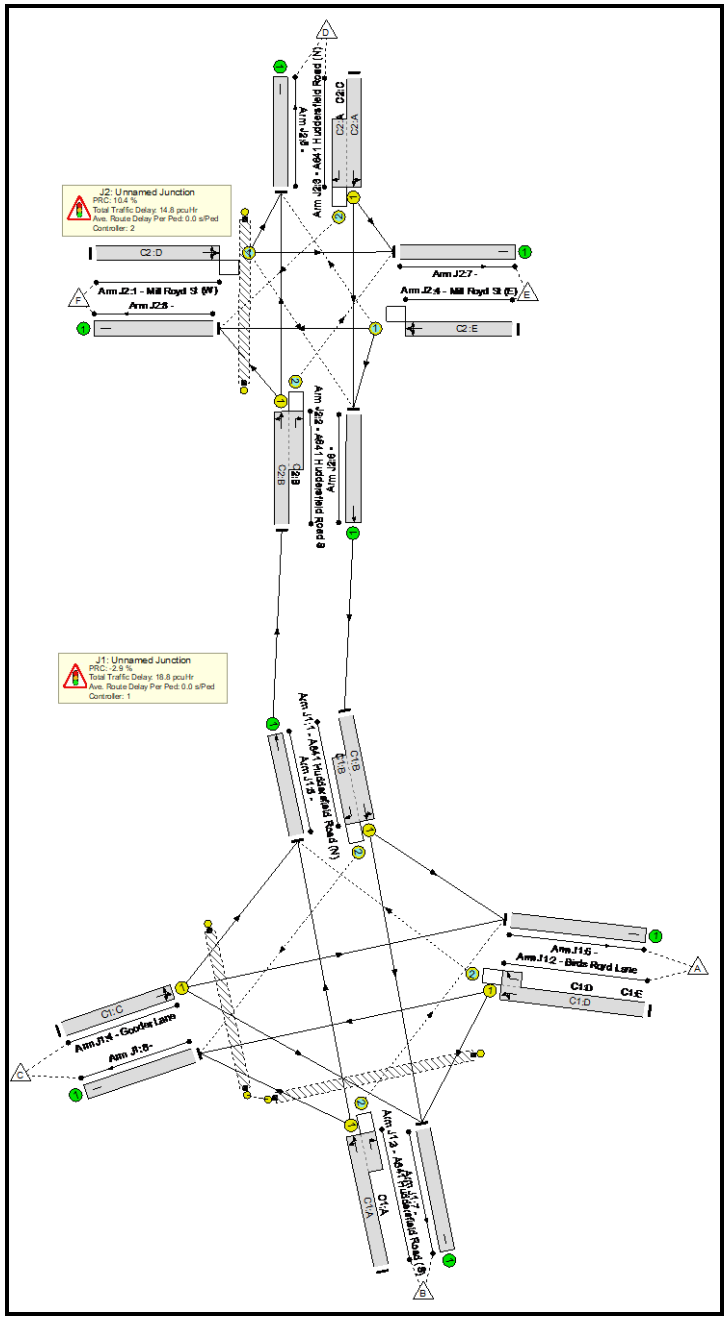
Stage	1	2	3	4
Duration	40	4	14	6
Change Point	87	45	54	74

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.6%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.6%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	47	-	977	1952:1895	978+84	92.1 : 92.1%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	17	4	163	2015:2005	97+190	57.0 : 57.0%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	47	-	509	1932:1927	971+83	48.3 : 48.3%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	9	-	197	1914	213	92.6%
5/1	Ahead	U	N/A	N/A	-		-	-	-	679	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	275	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	793	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	99	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**81.5%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	14	-	267	1965	327	81.5%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	40	-	679	1915:2055	872+0	77.8 : 0.0%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	49	4	880	1915:2055	984+125	79.4 : 79.4%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	14	-	28	1915	196	14.3%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	656	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	977	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	216	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**420**	**103**	**6**	**16.6**	**16.2**	**0.8**	**33.5**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**127**	**96**	**2**	**8.2**	**10.4**	**0.2**	**18.8**	**-**	**-**	**-**	**-**
1/1+1/2	977	977	77	0	0	2.8	5.2	0.0	7.9	29.2	9.3	5.2	14.4
2/1+2/2	163	163	10	96	2	1.4	0.7	0.2	2.3	49.8	2.4	0.7	3.1
3/1+3/2	509	509	40	0	0	1.8	0.5	0.0	2.3	16.2	7.4	0.5	7.9
4/1	197	197	-	-	-	2.2	4.1	-	6.3	114.9	4.9	4.1	9.0
5/1	679	679	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	275	275	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	793	793	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	99	99	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**293**	**8**	**4**	**8.4**	**5.8**	**0.6**	**14.8**	**-**	**-**	**-**	**-**
1/1	267	267	191	0	0	2.7	2.1	0.1	4.8	65.0	6.4	2.1	8.4
2/1+2/2	679	679	0	0	0	1.8	1.7	0.0	3.5	18.8	9.6	1.7	11.4
3/1+3/2	880	880	89	8	2	3.7	1.9	0.5	6.1	24.8	16.2	1.9	18.1
4/1	28	28	13	0	2	0.2	0.1	0.0	0.3	42.9	0.6	0.1	0.7
5/1	656	656	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	977	977	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	216	216	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

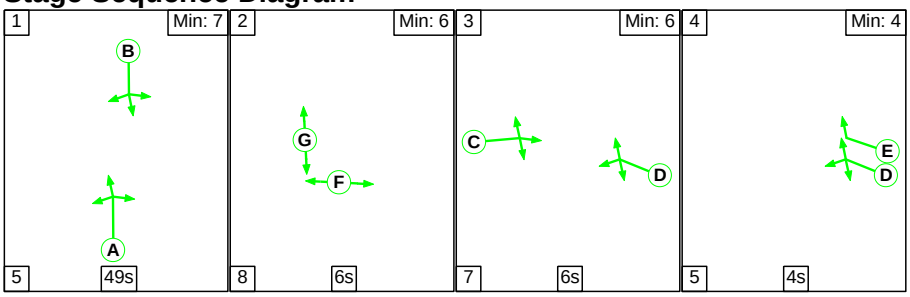
C1	PRC for Signalled Lanes (%):	-2.9	Total Delay for Signalled Lanes (pcuHr):	18.76	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	10.4	Total Delay for Signalled Lanes (pcuHr):	14.76	Cycle Time (s): 90
	PRC Over All Lanes (%):	-2.9	Total Delay Over All Lanes(pcuHr):	33.53	

Full Input Data And Results

Scenario 8: 'PM 2032-2033 Design' (FG8: 'PM 2032-2033 Design', Plan 1: 'AM Count')

C1

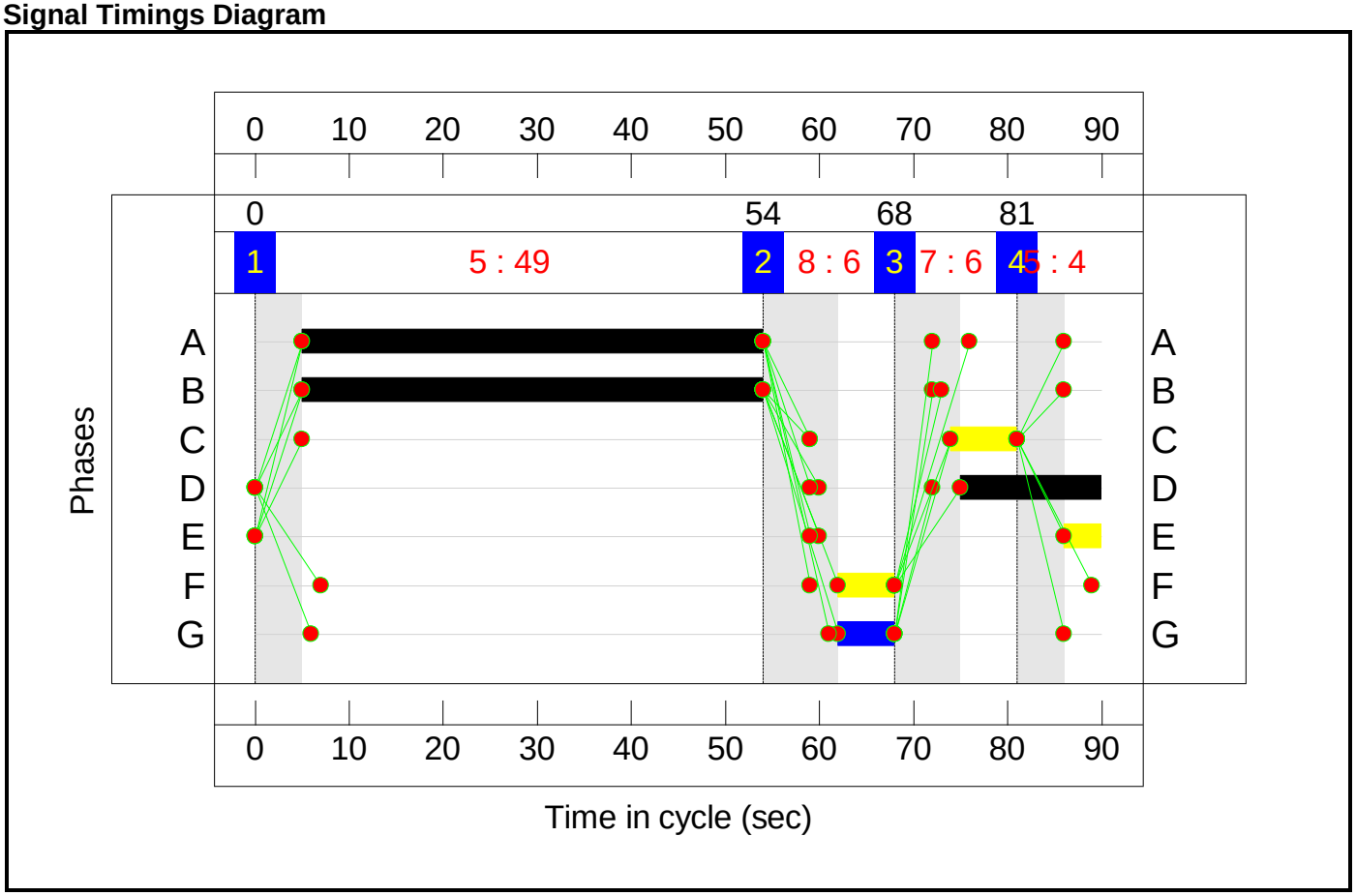
Stage Sequence Diagram



Stage Timings

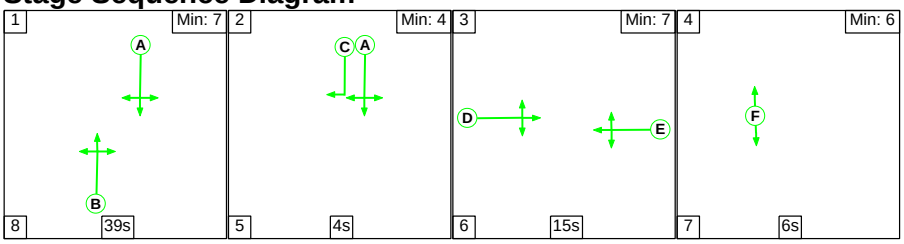
Stage	1	2	3	4
Duration	49	6	6	4
Change Point	0	54	68	81

Signal Timings Diagram



C2

Stage Sequence Diagram

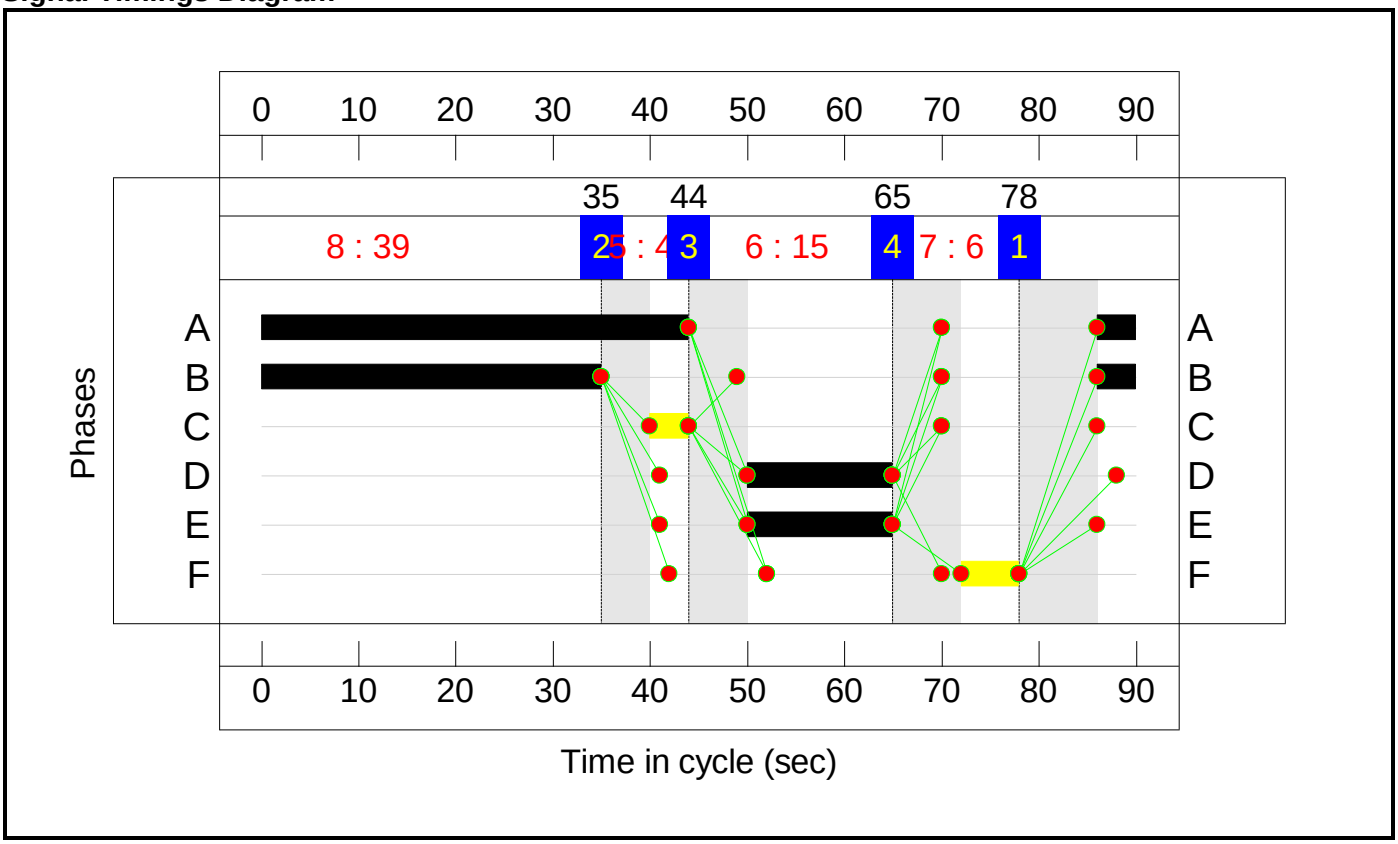


Full Input Data And Results

Stage Timings

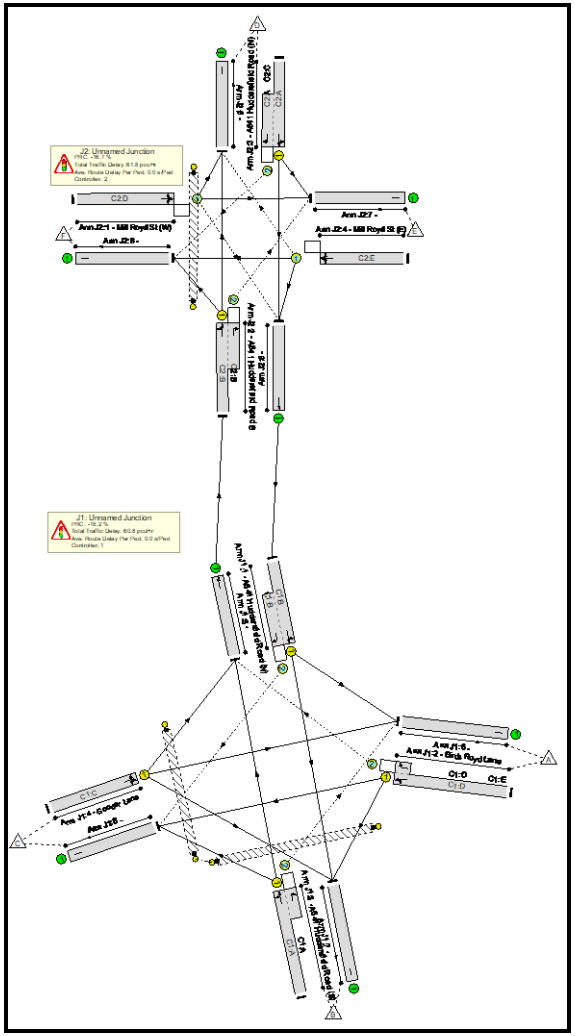
Stage	1	2	3	4
Duration	39	4	15	6
Change Point	78	35	44	65

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**106.4%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**106.4%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	49	-	1218	1952:1895	987+129	104.9 : 104.9%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	15	4	207	2015:2005	84+175	80.0 : 80.0%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	49	-	565	1932:1927	1063+23	52.0 : 52.0%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	7	-	181	1914	170	106.4%
5/1	Ahead	U	N/A	N/A	-		-	-	-	812	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	74	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1117	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	168	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.0%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	15	-	319	1965	349	91.3%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	39	-	812	1915:2055	851+6	93.9 : 93.8%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	48	4	1157	1915:2055	940+162	105.0 : 105.0%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	15	-	11	1915	263	4.2%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	774	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1218	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	17	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	290	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**389**	**284**	**16**	**27.5**	**94.1**	**1.0**	**122.6**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**141**	**137**	**3**	**12.5**	**48.1**	**0.2**	**60.8**	**-**	**-**	**-**	**-**
1/1+1/2	1171	1117	129	0	0	6.2	35.8	0.0	41.9	128.8	31.9	35.8	67.7
2/1+2/2	207	207	0	137	3	2.0	1.9	0.2	4.0	69.5	3.7	1.9	5.6
3/1+3/2	565	565	12	0	0	2.0	0.5	0.0	2.5	15.9	8.6	0.5	9.1
4/1	181	170	-	-	-	2.4	10.0	-	12.3	245.4	4.8	10.0	14.8
5/1	805	805	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	69	69	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1028	1028	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	156	156	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**248**	**147**	**13**	**15.0**	**46.0**	**0.8**	**61.8**	**-**	**-**	**-**	**-**
1/1	319	319	236	0	0	3.2	4.1	0.0	7.4	83.5	7.8	4.1	11.9
2/1+2/2	805	805	0	0	6	2.8	6.2	0.1	9.1	40.6	11.8	6.2	18.0
3/1+3/2	1157	1102	9	147	6	8.8	35.6	0.7	45.2	140.7	31.0	35.6	66.7
4/1	11	11	3	0	1	0.1	0.0	0.0	0.1	38.4	0.2	0.0	0.2
5/1	768	768	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1171	1171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	17	17	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	281	281	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

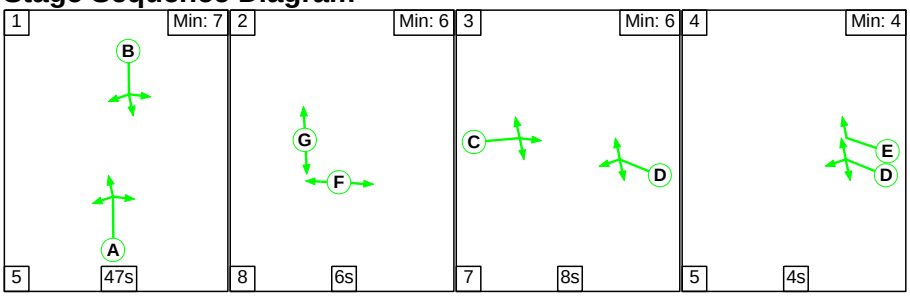
C1	PRC for Signalled Lanes (%):	-18.2	Total Delay for Signalled Lanes (pcuHr):	60.75	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	-16.7	Total Delay for Signalled Lanes (pcuHr):	61.80	Cycle Time (s): 90
	PRC Over All Lanes (%):	-18.2	Total Delay Over All Lanes(pcuHr):	122.55	

Full Input Data And Results

Scenario 9: 'AM 2038-2039 Design' (FG9: 'AM 2038-2039 Design', Plan 1: 'AM Count')

C1

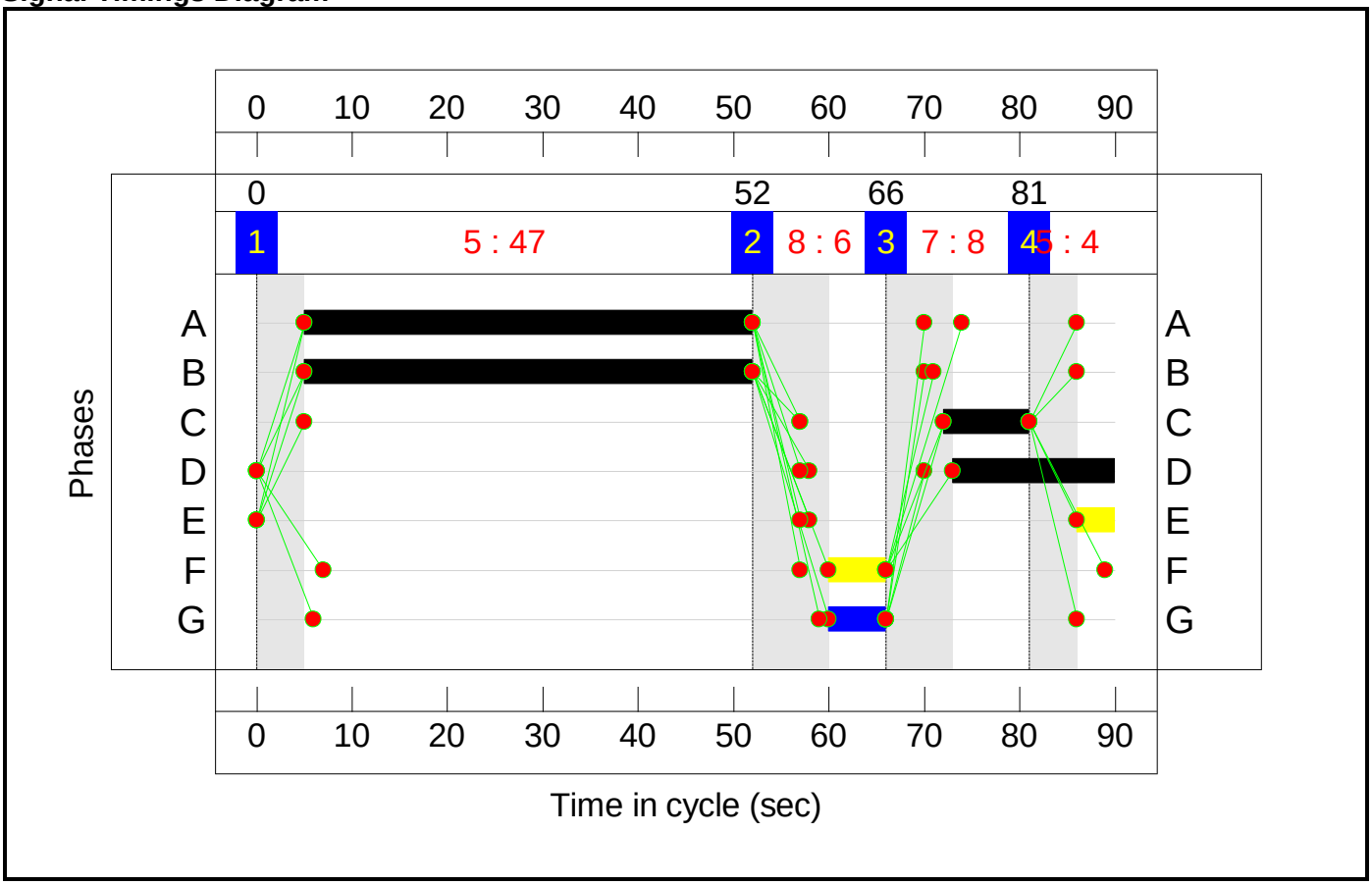
Stage Sequence Diagram



Stage Timings

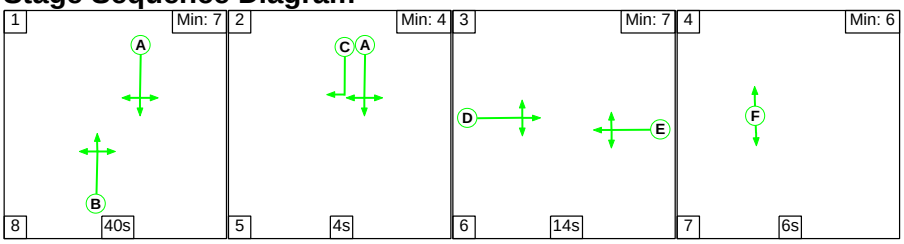
Stage	1	2	3	4
Duration	47	6	8	4
Change Point	0	52	66	81

Signal Timings Diagram



C2

Stage Sequence Diagram

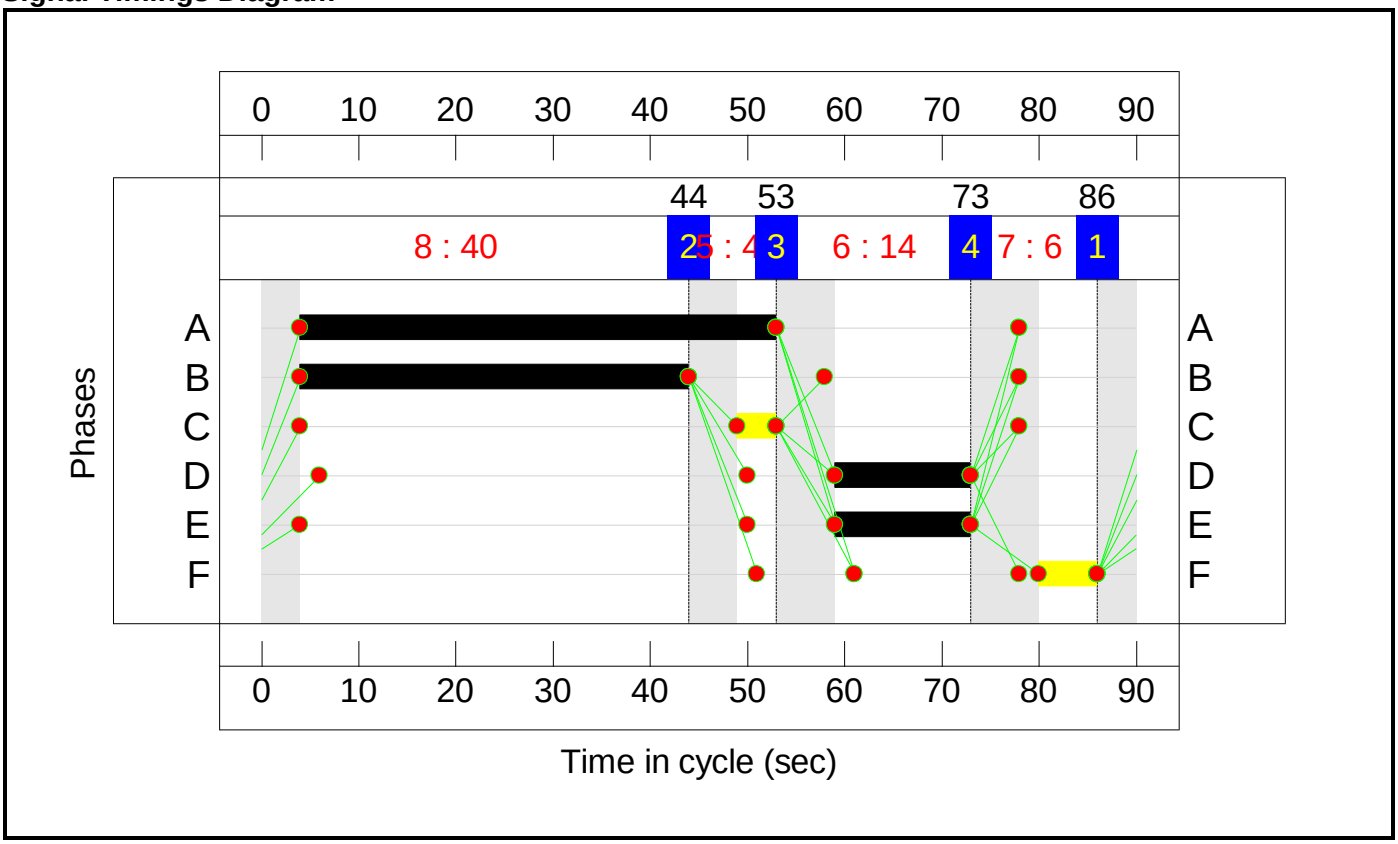


Full Input Data And Results

Stage Timings

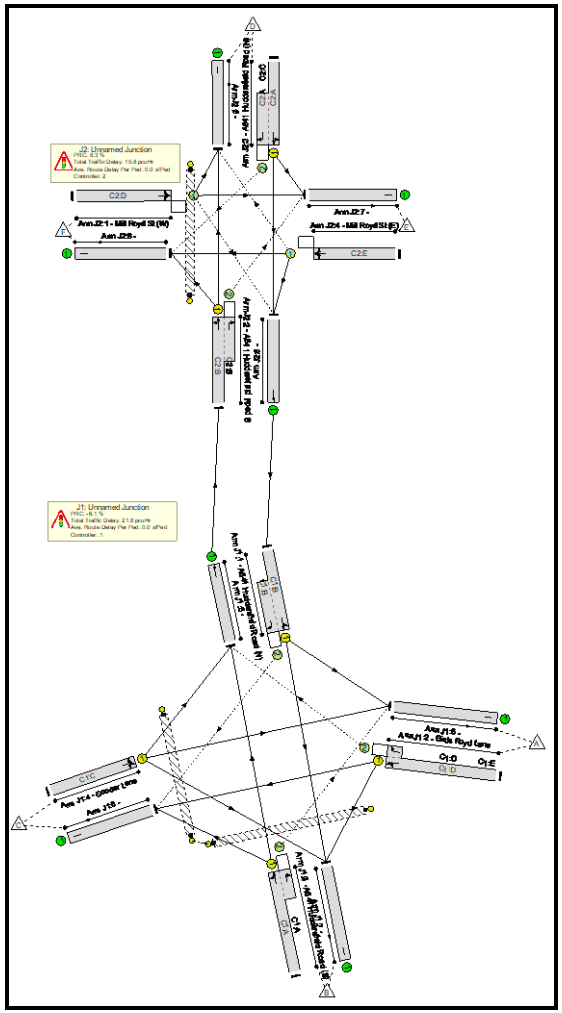
Stage	1	2	3	4
Duration	40	4	14	6
Change Point	86	44	53	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.5%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.5%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	47	-	1012	1952:1895	981+80	95.5 : 95.5%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	17	4	166	2015:2005	94+190	58.5 : 58.5%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	47	-	516	1932:1927	972+82	49.0 : 49.0%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	9	-	197	1914	213	92.6%
5/1	Ahead	U	N/A	N/A	-		-	-	-	689	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	288	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	816	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	98	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.1%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	14	-	267	1965	327	81.5%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	40	-	689	1915:2055	872+0	79.0 : 0.0%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	49	4	922	1915:2055	983+126	83.1 : 83.1%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	14	-	28	1915	195	14.4%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	666	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1012	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	223	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**421**	**110**	**6**	**17.2**	**19.6**	**0.8**	**37.6**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**126**	**99**	**2**	**8.4**	**13.2**	**0.2**	**21.8**	**-**	**-**	**-**	**-**
1/1+1/2	1012	1012	76	0	0	3.0	7.9	0.0	10.9	38.7	17.9	7.9	25.8
2/1+2/2	166	166	10	99	2	1.4	0.7	0.2	2.3	50.5	2.6	0.7	3.3
3/1+3/2	516	516	40	0	0	1.9	0.5	0.0	2.3	16.3	7.5	0.5	8.0
4/1	197	197	-	-	-	2.2	4.1	-	6.3	114.9	4.9	4.1	9.0
5/1	689	689	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	288	288	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	816	816	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	98	98	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**295**	**11**	**4**	**8.8**	**6.4**	**0.6**	**15.8**	**-**	**-**	**-**	**-**
1/1	267	267	190	0	0	2.7	2.1	0.1	4.8	65.0	6.4	2.1	8.4
2/1+2/2	689	689	0	0	0	1.9	1.8	0.0	3.7	19.3	9.1	1.8	10.9
3/1+3/2	922	922	91	11	2	4.0	2.4	0.5	7.0	27.1	17.8	2.4	20.2
4/1	28	28	13	0	2	0.2	0.1	0.0	0.3	42.9	0.6	0.1	0.7
5/1	666	666	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1012	1012	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	223	223	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

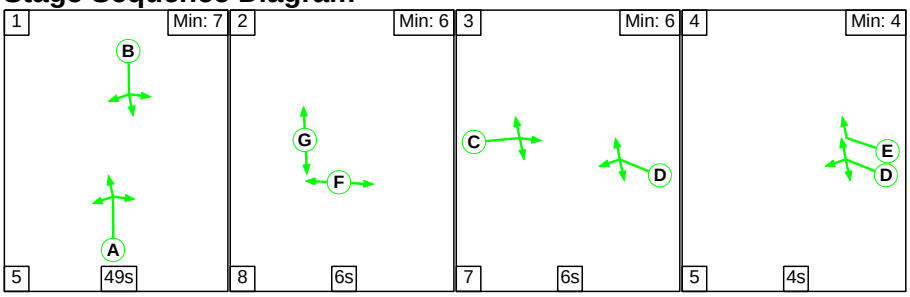
C1	PRC for Signalled Lanes (%):	-6.1	Total Delay for Signalled Lanes (pcuHr):	21.82	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	8.3	Total Delay for Signalled Lanes (pcuHr):	15.80	Cycle Time (s): 90
	PRC Over All Lanes (%):	-6.1	Total Delay Over All Lanes(pcuHr):	37.62	

Full Input Data And Results

Scenario 10: 'PM 2038-2039 Design' (FG10: 'PM 2038-2039 Design', Plan 1: 'AM Count')

C1

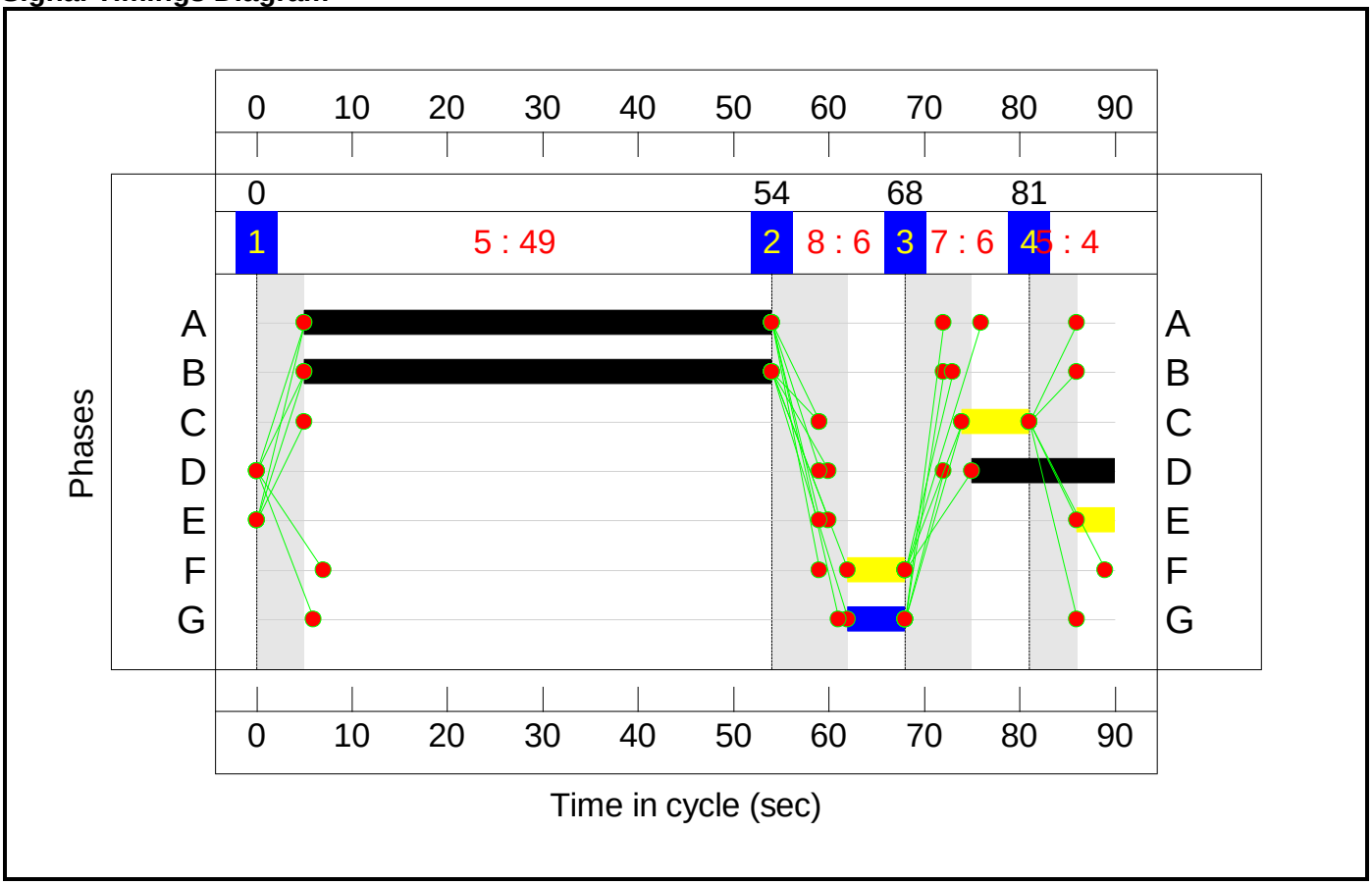
Stage Sequence Diagram



Stage Timings

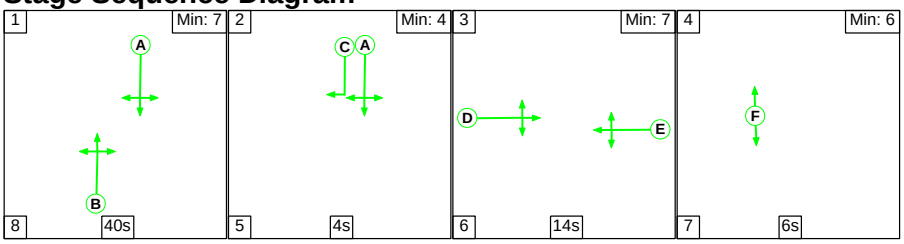
Stage	1	2	3	4
Duration	49	6	6	4
Change Point	0	54	68	81

Signal Timings Diagram



C2

Stage Sequence Diagram

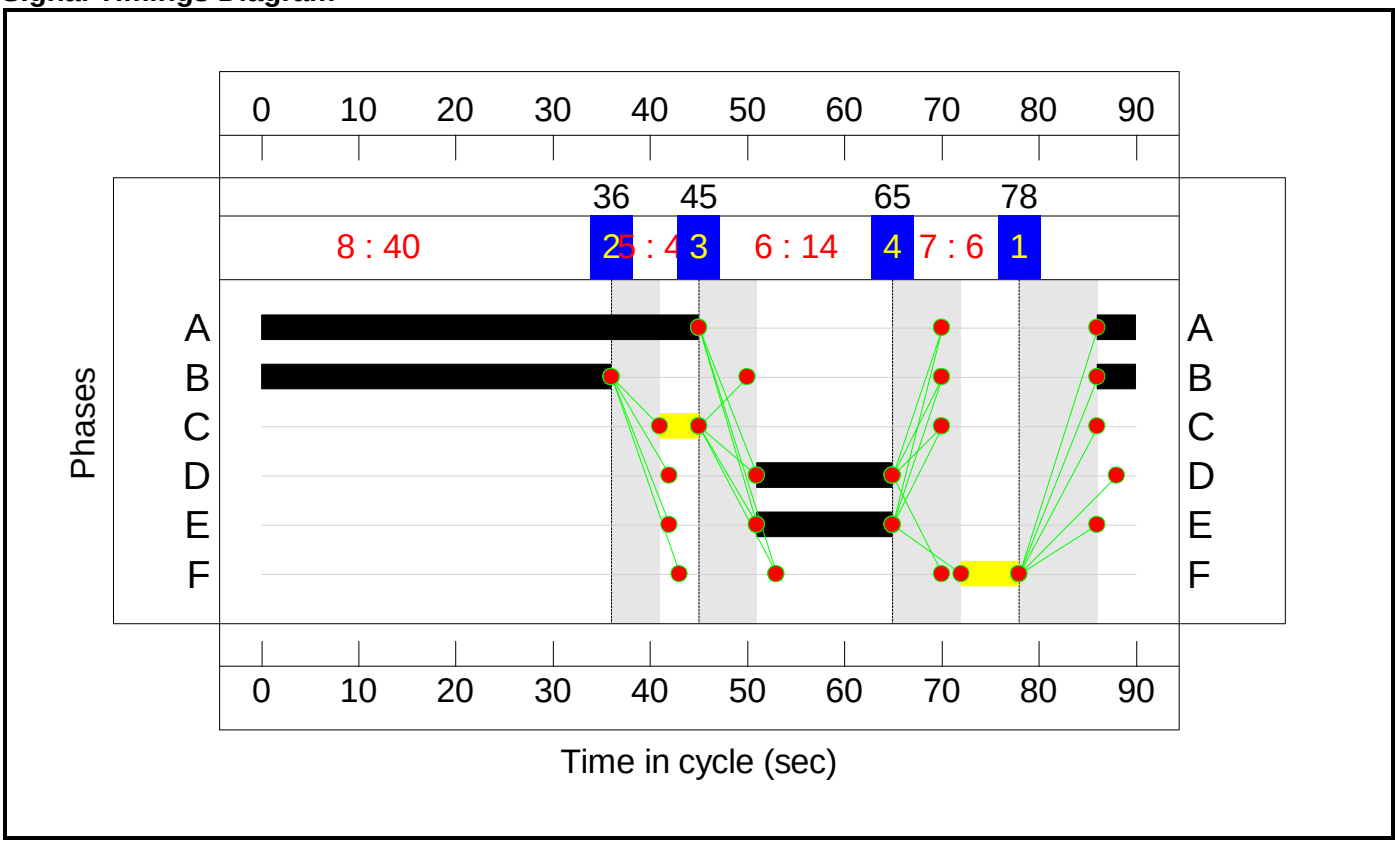


Full Input Data And Results

Stage Timings

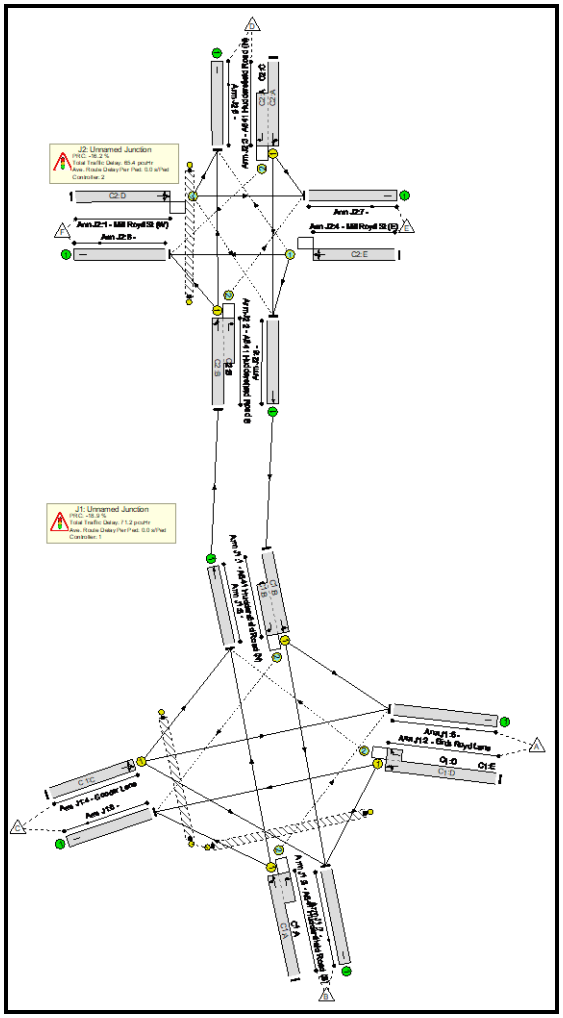
Stage	1	2	3	4
Duration	40	4	14	6
Change Point	78	36	45	65

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**107.0%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**107.0%**
1/1+1/2	A641 Huddersfield Road (N) Left Ahead Right	U+O	N/A	N/A	C1:B		1	49	-	1234	1952:1895	988+128	106.7 : 106.7%
2/1+2/2	Birds Royd Lane Right Left Ahead	U+O	N/A	N/A	C1:D	C1:E	1	15	4	216	2015:2005	79+175	85.0 : 85.0%
3/1+3/2	A641 Huddersfield Road (S) Ahead Right Left	U+O	N/A	N/A	C1:A		1	49	-	584	1932:1927	1064+22	53.8 : 53.8%
4/1	Gooder Lane Left Ahead Right	U	N/A	N/A	C1:C		1	7	-	182	1914	170	107.0%
5/1	Ahead	U	N/A	N/A	-		-	-	-	841	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	81	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1126	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	168	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C1:G		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C1:F		1	6	-	0	-	0	0.0%
J2: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**104.6%**
1/1	Mill Royd St (W) Left Right Ahead	O	N/A	N/A	C2:D		1	14	-	324	1965	327	98.9%
2/1+2/2	A641 Huddersfield Road S Ahead Right Left	U+O	N/A	N/A	C2:B		1	40	-	841	1915:2055	872+6	94.8 : 94.7%
3/1+3/2	A641 Huddersfield Road (N) Ahead Left Right	U+O	N/A	N/A	C2:A	C2:C	1	49	4	1175	1915:2055	959+164	104.6 : 104.6%
4/1	Mill Royd St (E) Right Left Ahead	O	N/A	N/A	C2:E		1	14	-	11	1915	263	4.2%

Full Input Data And Results

5/1		U	N/A	N/A	-		-	-	-	806	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1234	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	17	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	294	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C2:F		1	6	-	0	-	0	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	**-**	**-**	**376**	**294**	**28**	**28.6**	**107.0**	**1.0**	**136.6**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**140**	**146**	**3**	**13.7**	**57.4**	**0.2**	**71.2**	**-**	**-**	**-**	**-**
1/1+1/2	1190	1116	128	0	0	7.2	43.9	0.0	51.1	154.7	33.1	43.9	77.1
2/1+2/2	216	216	0	146	3	2.1	2.5	0.2	4.7	79.1	4.0	2.5	6.5
3/1+3/2	584	584	12	0	0	2.0	0.6	0.0	2.6	16.2	9.0	0.6	9.6
4/1	182	170	-	-	-	2.4	10.3	-	12.7	252.0	4.8	10.3	15.2
5/1	833	833	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	75	75	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1024	1024	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	155	155	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
J2: Unnamed Junction	**-**	**-**	**237**	**148**	**25**	**14.9**	**49.6**	**0.9**	**65.4**	**-**	**-**	**-**	**-**
1/1	324	324	228	0	8	3.4	8.2	0.0	11.6	128.6	8.0	8.2	16.2
2/1+2/2	833	833	0	0	6	2.8	7.0	0.1	9.8	42.5	12.0	7.0	19.0
3/1+3/2	1175	1123	5	148	11	8.7	34.4	0.8	43.9	134.4	31.4	34.4	65.8
4/1	11	11	3	0	1	0.1	0.0	0.0	0.1	39.2	0.2	0.0	0.3
5/1	799	799	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1190	1190	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	17	17	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	285	285	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-

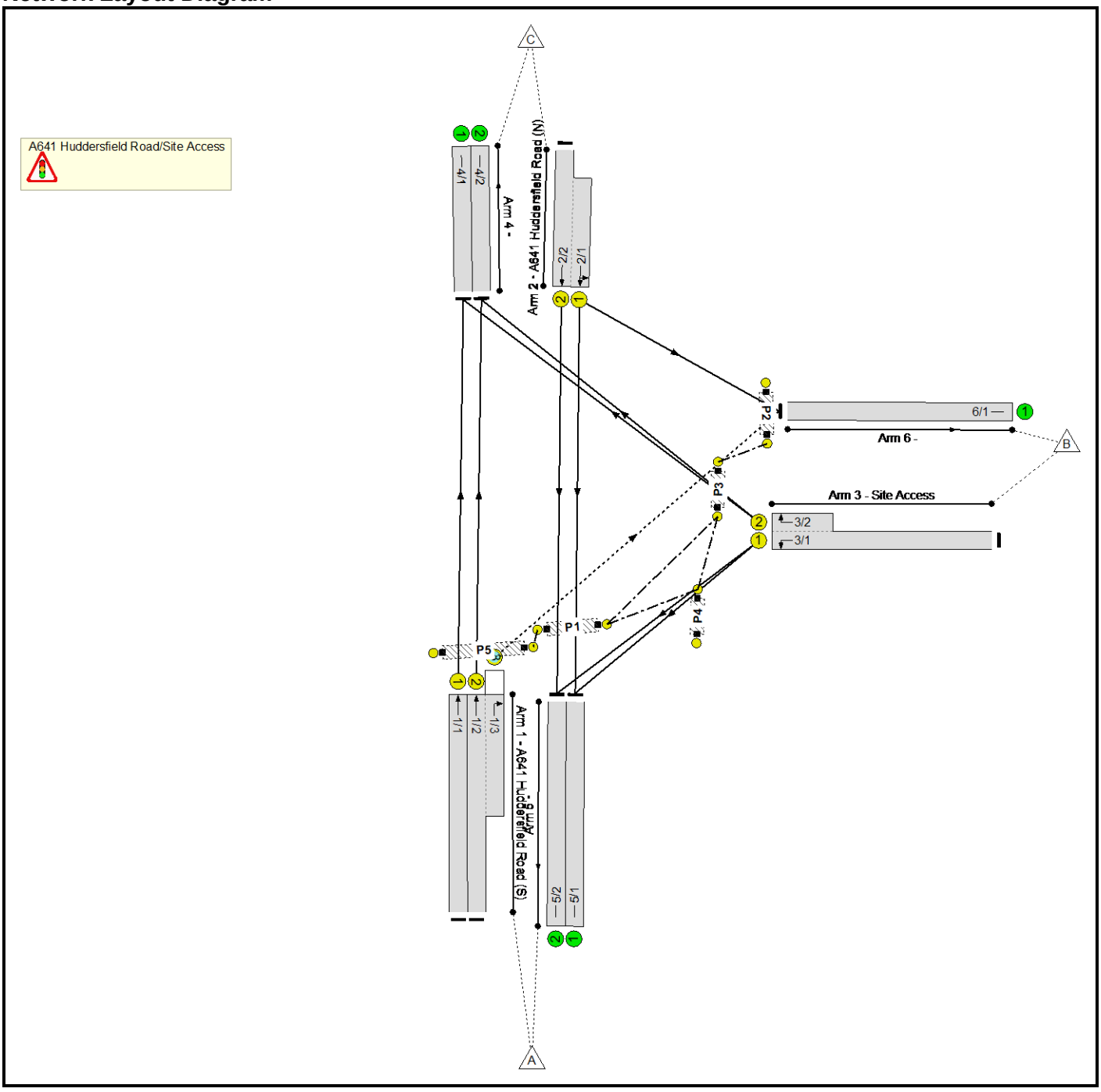
C1	PRC for Signalled Lanes (%):	-18.9	Total Delay for Signalled Lanes (pcuHr):	71.24	Cycle Time (s): 90
C2	PRC for Signalled Lanes (%):	-16.2	Total Delay for Signalled Lanes (pcuHr):	65.38	Cycle Time (s): 90
	PRC Over All Lanes (%):	-18.9	Total Delay Over All Lanes(pcuHr):	136.62	

Full Input Data And Results

User and Project Details

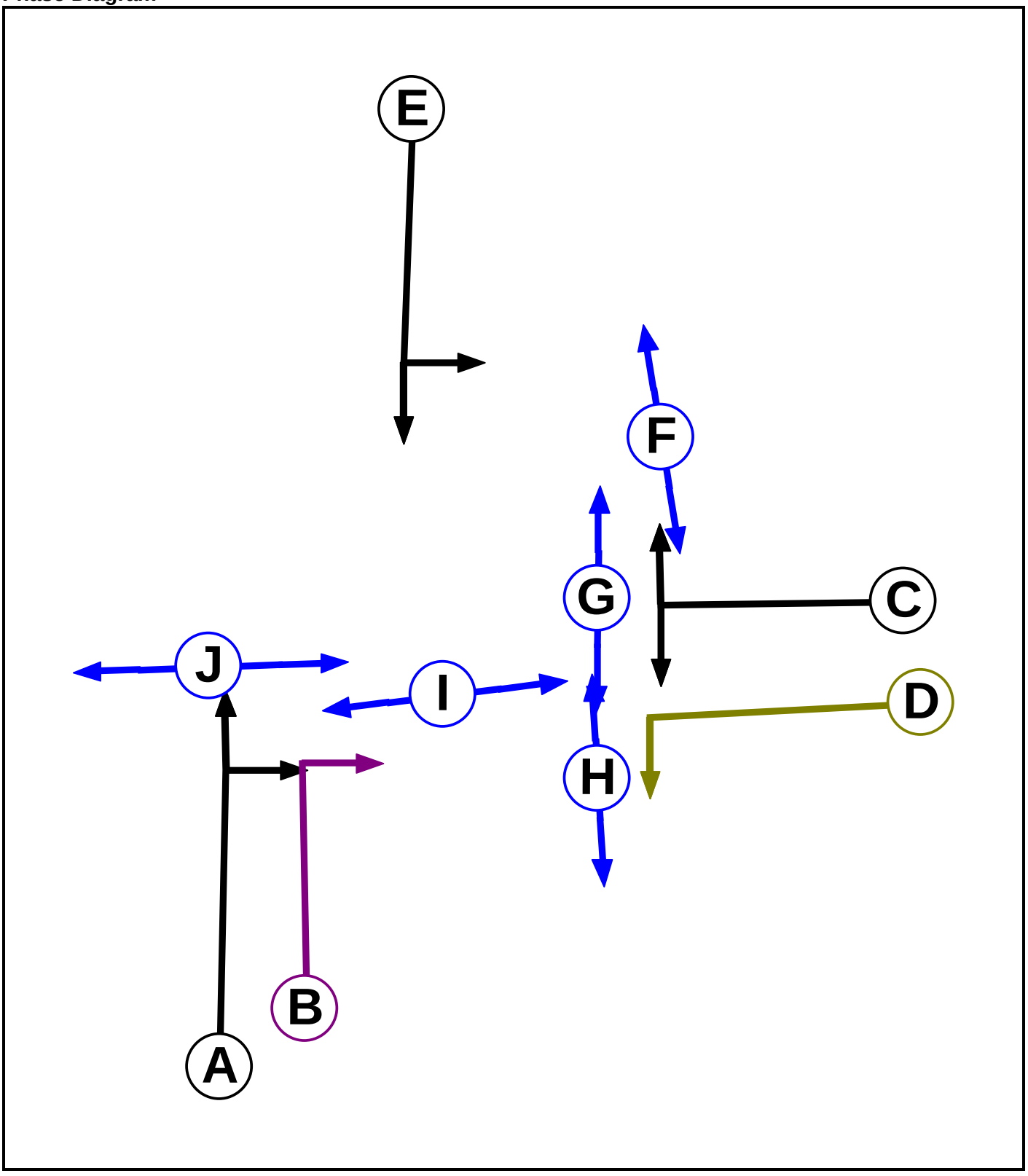
Project:	**A641 Huddersfield Road/Site Access**
Title:	**Woodhouse**
Location:	
Additional detail:	
File name:	Site Access-A641 Huddersfield Road.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



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	Ind. Arrow	A	4	4
C	Traffic		7	7
D	Filter	C	4	0
E	Traffic		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7
J	Pedestrian		7	7

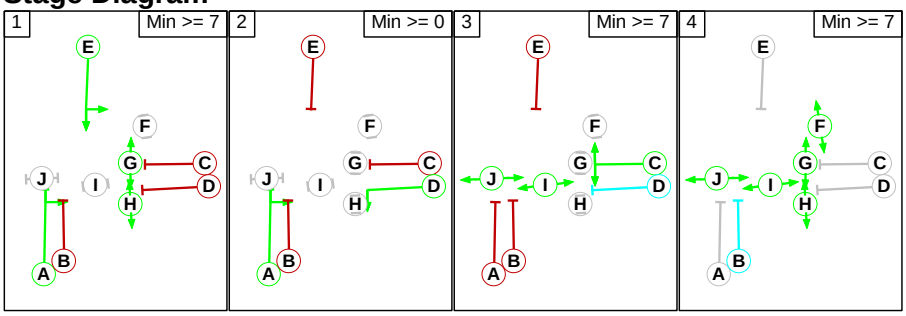
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J
A		-	7	-	-	-	-	-	-	-
B	-		5	7	7	-	-	-	-	-
C	7	5		-	7	-	-	-	-	-
D	-	7	-		7	-	-	-	-	-
E	-	7	7	7		-	-	-	-	-
F	-	-	-	-	-		-	-	-	-
G	-	-	-	-	-	-		-	-	-
H	-	-	-	-	-	-	-		-	-
I	-	-	-	-	-	-	-	-		-
J	-	-	-	-	-	-	-	-	-	

Phases in Stage

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

Stage Diagram



Full Input Data And Results

Phase Delays

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

Prohibited Stage Change

From Stage \ To Stage	1	2	3	4
1		7	7	0
2	X		7	X
3	7	7		0
4	2	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A641 Huddersfield Road/Site Access											
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)**
1/3 (A641 Huddersfield Road (S))	6/1 (Right)	1439	0	2/1	1.09	All	2.00	-	0.50	2	2.00
				2/2	1.09	All					

Full Input Data And Results

Lane Input Data

Junction: A641 Huddersfield Road/Site Access												
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 (A641 Huddersfield Road (S))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Ahead	Inf
1/2 (A641 Huddersfield Road (S))	U	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 4 Ahead	Inf
1/3 (A641 Huddersfield Road (S))	O	A B	2	3	10.0	Geom	-	3.00	0.00	N	Arm 6 Right	16.00
2/1 (A641 Huddersfield Road (N))	U	E	2	3	12.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Left	12.00
2/2 (A641 Huddersfield Road (N))	U	E	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
3/1 (Site Access)	U	C D	2	3	60.0	Geom	-	4.00	0.00	N	Arm 5 Left	15.00
3/2 (Site Access)	U	C	2	3	5.0	Geom	-	4.00	0.00	Y	Arm 4 Right	21.00
4/1	U		2	3	60.0	Geom	-	3.00	0.00	Y		
4/2	U		2	3	60.0	Geom	-	3.00	0.00	N		
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Geom	-	4.00	0.00	Y		

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2026-2027 Interim'	08:00	09:00	01:00	
2: 'PM 2026-2027 Interim'	17:00	18:00	01:00	
3: 'AM 2032-2033 Design'	08:00	09:00	01:00	
4: 'PM 2032-2033 Design'	17:00	18:00	01:00	

Scenario 1: 'AM 2026-2027 Interim' (FG1: 'AM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	20	1081	1101
	B	73	0	98	171
	C	1066	27	0	1093
	Tot.	1139	47	1179	2365

Traffic Lane Flows

Lane	Scenario 1: AM 2026-2027 Interim
Junction: A641 Huddersfield Road/Site Access	
1/1	512
1/2 (with short)	589(In) 569(Out)
1/3 (short)	20
2/1 (short)	526
2/2 (with short)	1093(In) 567(Out)
3/1 (with short)	171(In) 73(Out)
3/2 (short)	98
4/1	517
4/2	662
5/1	535
5/2	604
6/1	47

Lane Saturation Flows

Junction: A641 Huddersfield Road/Site Access								
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 (A641 Huddersfield Road (S))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 4 Ahead	Inf	100.0 %	2055	2055
1/3 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 6 Right	16.00	100.0 %	1879	1879
2/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm 5 Ahead	Inf	94.9 %	1903	1903
				Arm 6 Left	12.00	5.1 %		
2/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Site Access)	4.00	0.00	N	Arm 5 Left	15.00	100.0 %	1959	1959
3/2 (Site Access)	4.00	0.00	Y	Arm 4 Right	21.00	100.0 %	1881	1881
4/1	3.00	0.00	Y				1915	1915
4/2	3.00	0.00	N				2055	2055
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	4.00	0.00	Y				2015	2015

Scenario 2: 'PM 2026-2027 Interim' (FG2: 'PM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	52	1055	1107
	B	32	0	43	75
	C	1054	69	0	1123
	Tot.	1086	121	1098	2305

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM 2026-2027 Interim
Junction: A641 Huddersfield Road/Site Access	
1/1	498
1/2 (with short)	609(In) 557(Out)
1/3 (short)	52
2/1 (short)	537
2/2 (with short)	1123(In) 586(Out)
3/1 (with short)	75(In) 32(Out)
3/2 (short)	43
4/1	499
4/2	599
5/1	484
5/2	602
6/1	121

Lane Saturation Flows

Junction: A641 Huddersfield Road/Site Access								
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 (A641 Huddersfield Road (S))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 4 Ahead	Inf	100.0 %	2055	2055
1/3 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 6 Right	16.00	100.0 %	1879	1879
2/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm 5 Ahead	Inf	87.2 %	1885	1885
				Arm 6 Left	12.00	12.8 %		
2/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Site Access)	4.00	0.00	N	Arm 5 Left	15.00	100.0 %	1959	1959
3/2 (Site Access)	4.00	0.00	Y	Arm 4 Right	21.00	100.0 %	1881	1881
4/1	3.00	0.00	Y				1915	1915
4/2	3.00	0.00	N				2055	2055
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	4.00	0.00	Y				2015	2015

Full Input Data And Results

Scenario 3: 'AM 2032-2033 Design' (FG3: 'AM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	37	1174	1211
	B	135	0	181	316
	C	1124	49	0	1173
	Tot.	1259	86	1355	2700

Traffic Lane Flows

Lane	Scenario 3: AM 2032-2033 Design
Junction: A641 Huddersfield Road/Site Access	
1/1	562
1/2 (with short)	649(In) 612(Out)
1/3 (short)	37
2/1 (short)	563
2/2 (with short)	1173(In) 610(Out)
3/1 (with short)	316(In) 135(Out)
3/2 (short)	181
4/1	601
4/2	754
5/1	581
5/2	678
6/1	86

Lane Saturation Flows

Junction: A641 Huddersfield Road/Site Access								
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 (A641 Huddersfield Road (S))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 4 Ahead	Inf	100.0 %	2055	2055
1/3 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 6 Right	16.00	100.0 %	1879	1879
2/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm 5 Ahead	Inf	91.3 %	1894	1894
				Arm 6 Left	12.00	8.7 %		
2/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Site Access)	4.00	0.00	N	Arm 5 Left	15.00	100.0 %	1959	1959
3/2 (Site Access)	4.00	0.00	Y	Arm 4 Right	21.00	100.0 %	1881	1881
4/1	3.00	0.00	Y				1915	1915
4/2	3.00	0.00	N				2055	2055
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	4.00	0.00	Y				2015	2015

Scenario 4: 'PM 2032-2033 Design' (FG4: 'PM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	96	1116	1212
	B	59	0	79	138
	C	1128	128	0	1256
	Tot.	1187	224	1195	2606

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: PM 2032-2033 Design
Junction: A641 Huddersfield Road/Site Access	
1/1	535
1/2 (with short)	677(In) 581(Out)
1/3 (short)	96
2/1 (short)	598
2/2 (with short)	1256(In) 658(Out)
3/1 (with short)	138(In) 59(Out)
3/2 (short)	79
4/1	537
4/2	658
5/1	499
5/2	688
6/1	224

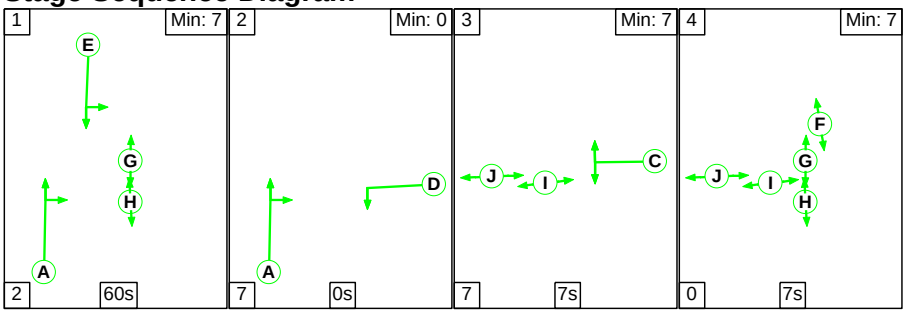
Lane Saturation Flows

Junction: A641 Huddersfield Road/Site Access								
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 (A641 Huddersfield Road (S))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 4 Ahead	Inf	100.0 %	2055	2055
1/3 (A641 Huddersfield Road (S))	3.00	0.00	N	Arm 6 Right	16.00	100.0 %	1879	1879
2/1 (A641 Huddersfield Road (N))	3.00	0.00	Y	Arm 5 Ahead	Inf	78.6 %	1865	1865
				Arm 6 Left	12.00	21.4 %		
2/2 (A641 Huddersfield Road (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Site Access)	4.00	0.00	N	Arm 5 Left	15.00	100.0 %	1959	1959
3/2 (Site Access)	4.00	0.00	Y	Arm 4 Right	21.00	100.0 %	1881	1881
4/1	3.00	0.00	Y				1915	1915
4/2	3.00	0.00	N				2055	2055
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	4.00	0.00	Y				2015	2015

Full Input Data And Results

Scenario 1: 'AM 2026-2027 Interim' (FG1: 'AM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

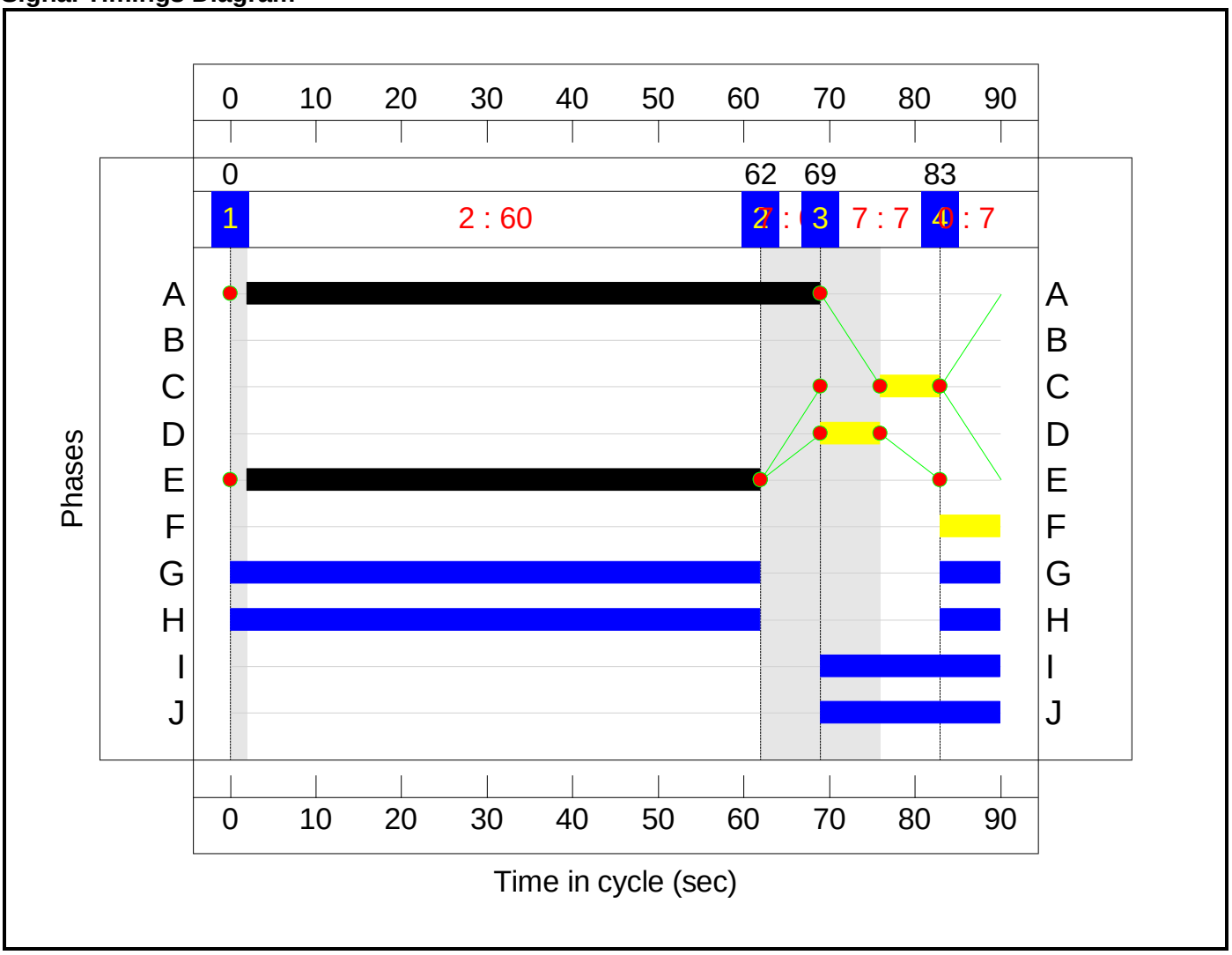
Stage Sequence Diagram



Stage Timings

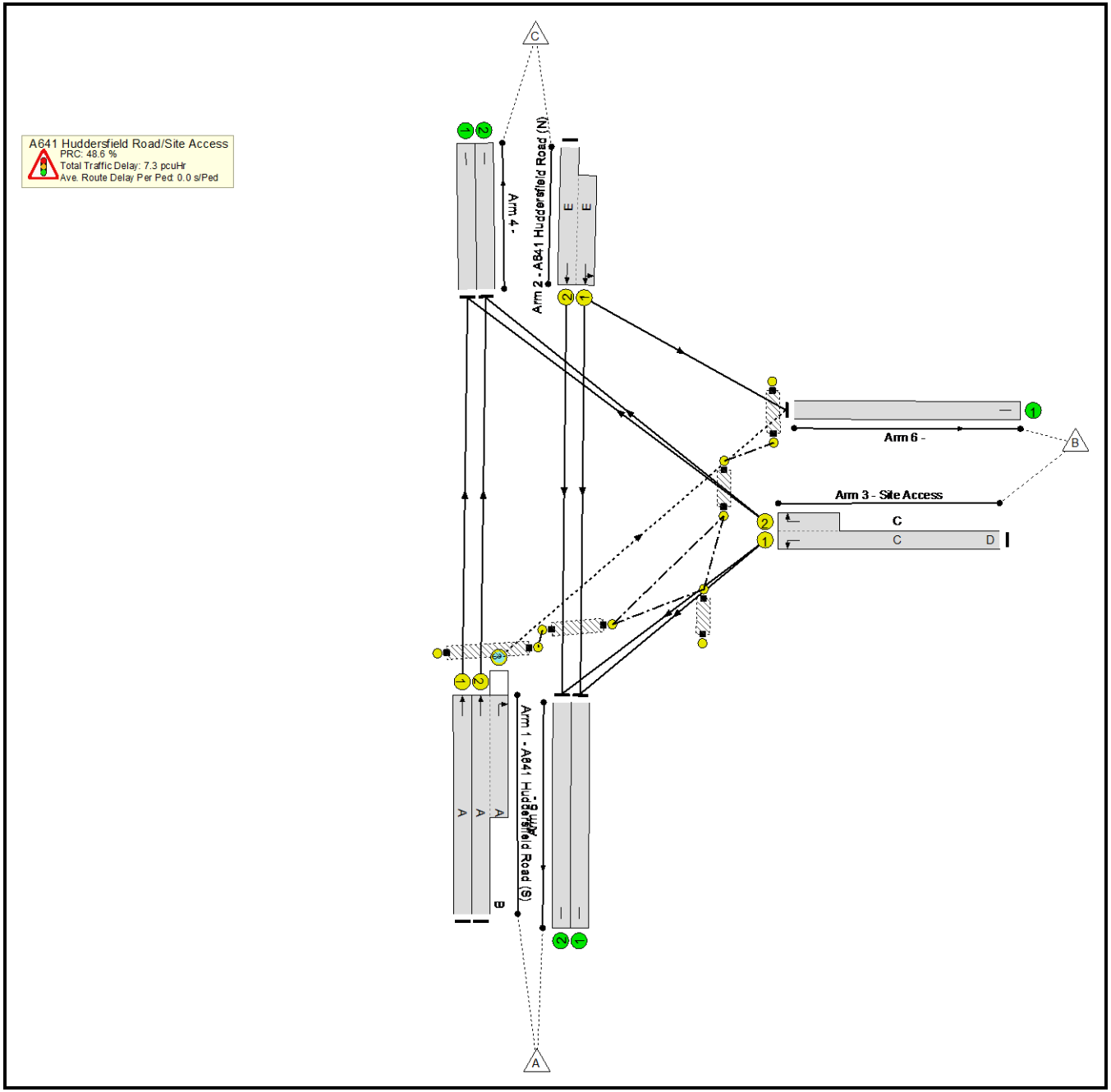
Stage	1	2	3	4
Duration	60	0	7	7
Change Point	0	62	69	83

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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: Woodhouse	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**60.6%**
A641 Huddersfield Road/Site Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**60.6%**
1/1	A641 Huddersfield Road (S) Ahead	U	N/A	N/A	A		1	67	-	512	1915	1447	35.4%
1/2+1/3	A641 Huddersfield Road (S) Ahead Right	U+O	N/A	N/A	A	B	1	67	0	589	2055:1879	1499+53	37.9 : 37.9%
2/2+2/1	A641 Huddersfield Road (N) Ahead Left	U	N/A	N/A	E		1	60	-	1093	2055:1903	936+869	60.6 : 60.6%
3/1+3/2	Site Access Right Left	U	N/A	N/A	C	D	1	14:7	7	171	1959:1881	125+167	58.6 : 58.6%
4/1		U	N/A	N/A	-		-	-	-	517	1915	1915	27.0%
4/2		U	N/A	N/A	-		-	-	-	662	2055	2055	32.2%
5/1		U	N/A	N/A	-		-	-	-	535	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	47	2015	2015	2.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	21	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	69	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	69	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	J		1	21	-	0	-	0	0.0%

Full Input Data And Results

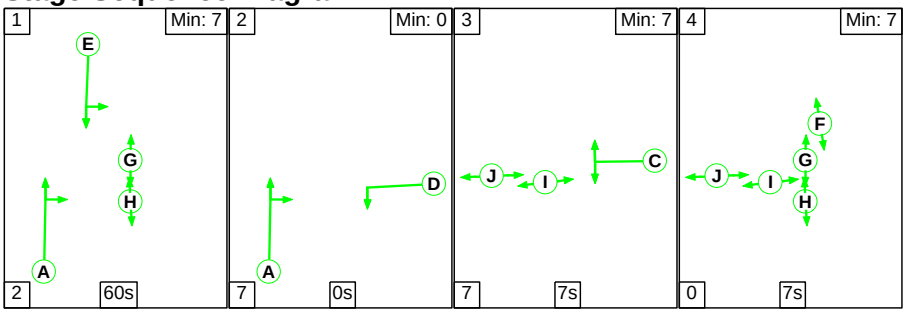
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Woodhouse	**-**	**-**	**18**	**1**	**0**	**4.8**	**2.5**	**0.0**	**7.3**	**-**	**-**	**-**	**-**
A641 Huddersfield Road/Site Access	**-**	**-**	**18**	**1**	**0**	**4.8**	**2.5**	**0.0**	**7.3**	**-**	**-**	**-**	**-**
1/1	512	512	-	-	-	0.5	0.3	-	0.8	5.6	4.3	0.3	4.5
1/2+1/3	589	589	18	1	0	0.6	0.3	0.0	0.9	5.7	4.7	0.3	5.0
2/2+2/1	1093	1093	-	-	-	2.0	0.8	-	2.7	9.0	6.3	0.8	7.1
3/1+3/2	171	171	-	-	-	1.7	0.7	-	2.4	51.2	2.3	0.7	3.0
4/1	517	517	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
4/2	662	662	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
5/1	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	47	47	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 48.6 Total Delay for Signalled Lanes (pcuHr): 6.89 Cycle Time (s): 90
PRC Over All Lanes (%): 48.6 Total Delay Over All Lanes(pcuHr): 7.32

Full Input Data And Results

Scenario 2: 'PM 2026-2027 Interim' (FG2: 'PM 2026-2027 Interim', Plan 1: 'Network Control Plan 1')

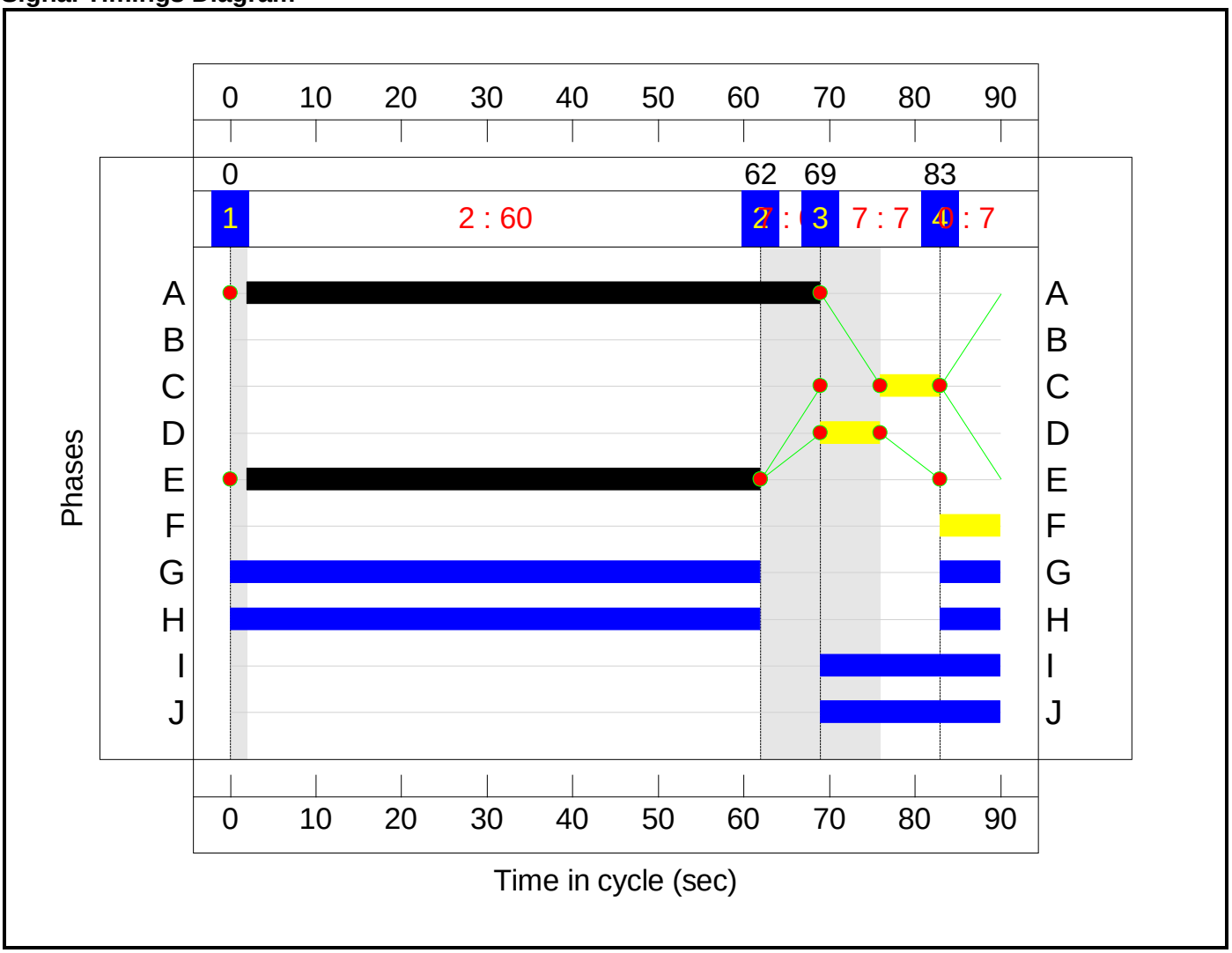
Stage Sequence Diagram



Stage Timings

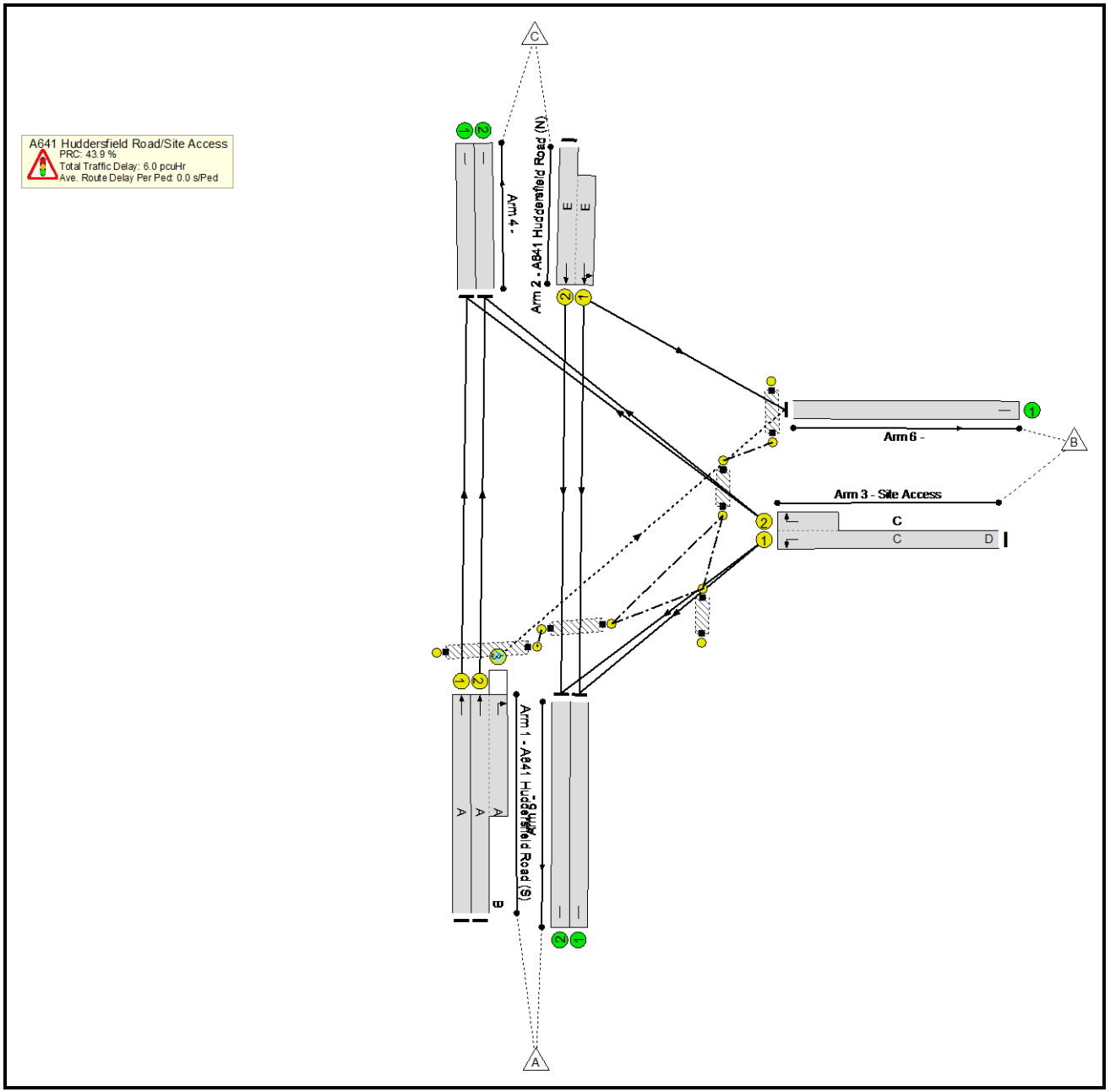
Stage	1	2	3	4
Duration	60	0	7	7
Change Point	0	62	69	83

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Woodhouse	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**62.5%**
A641 Huddersfield Road/Site Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**62.5%**
1/1	A641 Huddersfield Road (S) Ahead	U	N/A	N/A	A		1	67	-	498	1915	1447	34.4%
1/2+1/3	A641 Huddersfield Road (S) Ahead Right	U+O	N/A	N/A	A	B	1	67	0	609	2055:1879	1436+134	38.8 : 38.8%
2/2+2/1	A641 Huddersfield Road (N) Ahead Left	U	N/A	N/A	E		1	60	-	1123	2055:1885	937+859	62.5 : 62.5%
3/1+3/2	Site Access Right Left	U	N/A	N/A	C	D	1	14:7	7	75	1959:1881	124+167	25.7 : 25.7%
4/1		U	N/A	N/A	-		-	-	-	499	1915	1915	26.1%
4/2		U	N/A	N/A	-		-	-	-	599	2055	2055	29.1%
5/1		U	N/A	N/A	-		-	-	-	484	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	121	2015	2015	6.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	21	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	69	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	69	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	J		1	21	-	0	-	0	0.0%

Full Input Data And Results

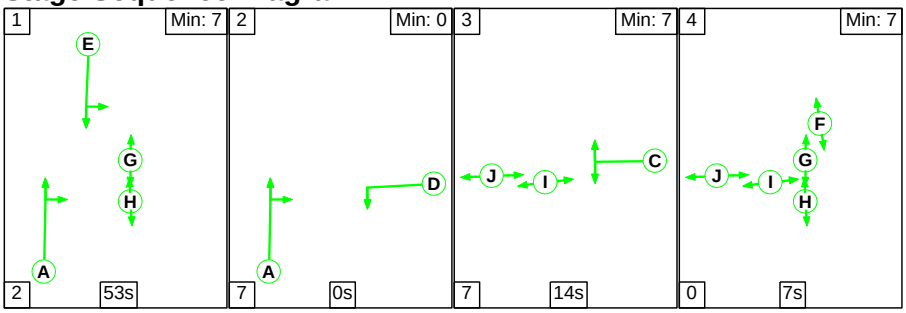
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Woodhouse	**-**	**-**	**48**	**3**	**1**	**3.9**	**2.0**	**0.1**	**6.0**	**-**	**-**	**-**	**-**
A641 Huddersfield Road/Site Access	**-**	**-**	**48**	**3**	**1**	**3.9**	**2.0**	**0.1**	**6.0**	**-**	**-**	**-**	**-**
1/1	498	498	-	-	-	0.5	0.3	-	0.8	5.5	4.0	0.3	4.3
1/2+1/3	609	609	48	3	1	0.6	0.3	0.1	1.0	6.0	4.6	0.3	5.0
2/2+2/1	1123	1123	-	-	-	2.0	0.8	-	2.9	9.2	6.5	0.8	7.3
3/1+3/2	75	75	-	-	-	0.7	0.2	-	0.9	43.8	1.0	0.2	1.2
4/1	499	499	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
4/2	599	599	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
5/1	484	484	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	121	121	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 43.9 Total Delay for Signalled Lanes (pcuHr): 5.56 Cycle Time (s): 90
PRC Over All Lanes (%): 43.9 Total Delay Over All Lanes(pcuHr): 5.97

Full Input Data And Results

Scenario 3: 'AM 2032-2033 Design' (FG3: 'AM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

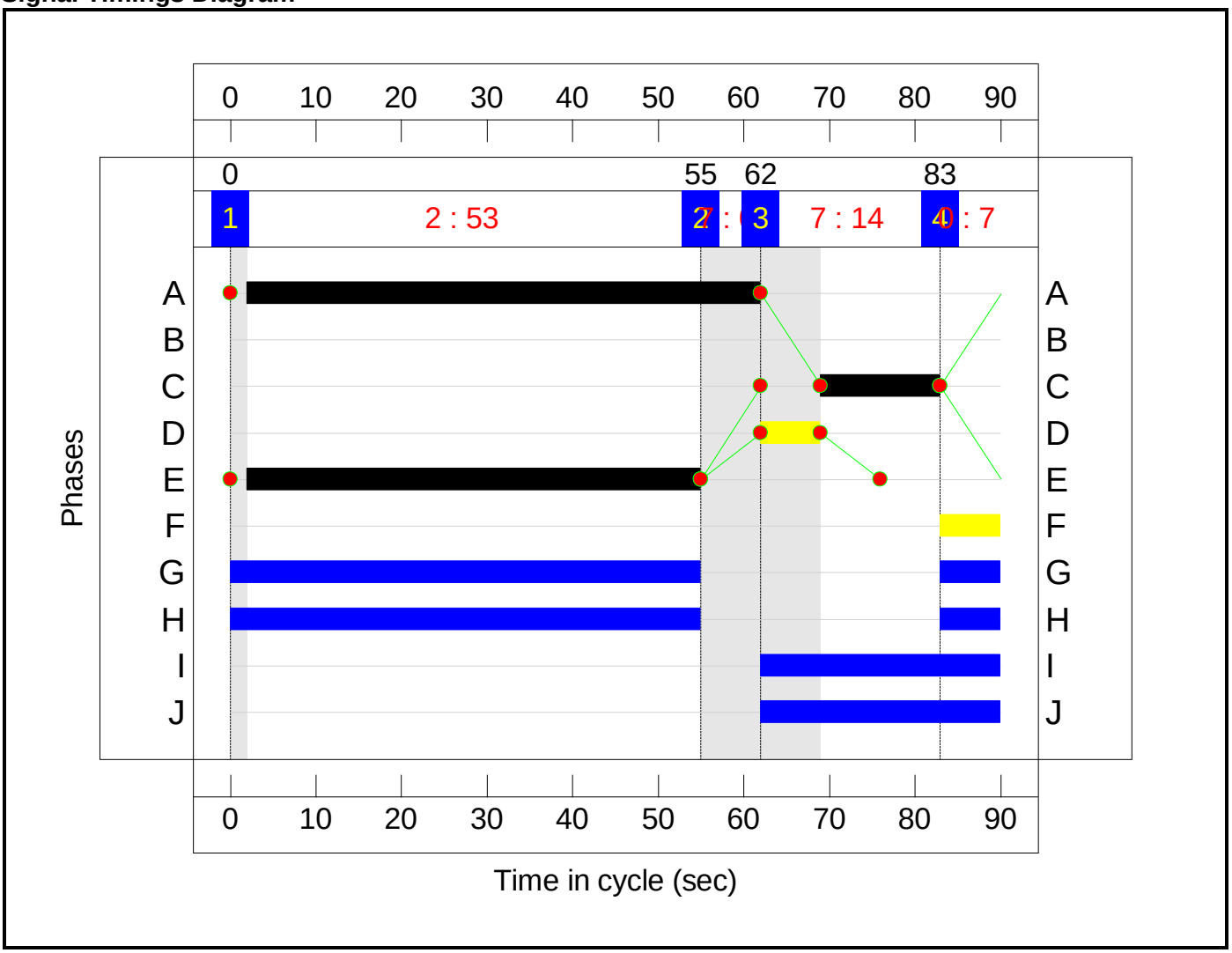
Stage Sequence Diagram



Stage Timings

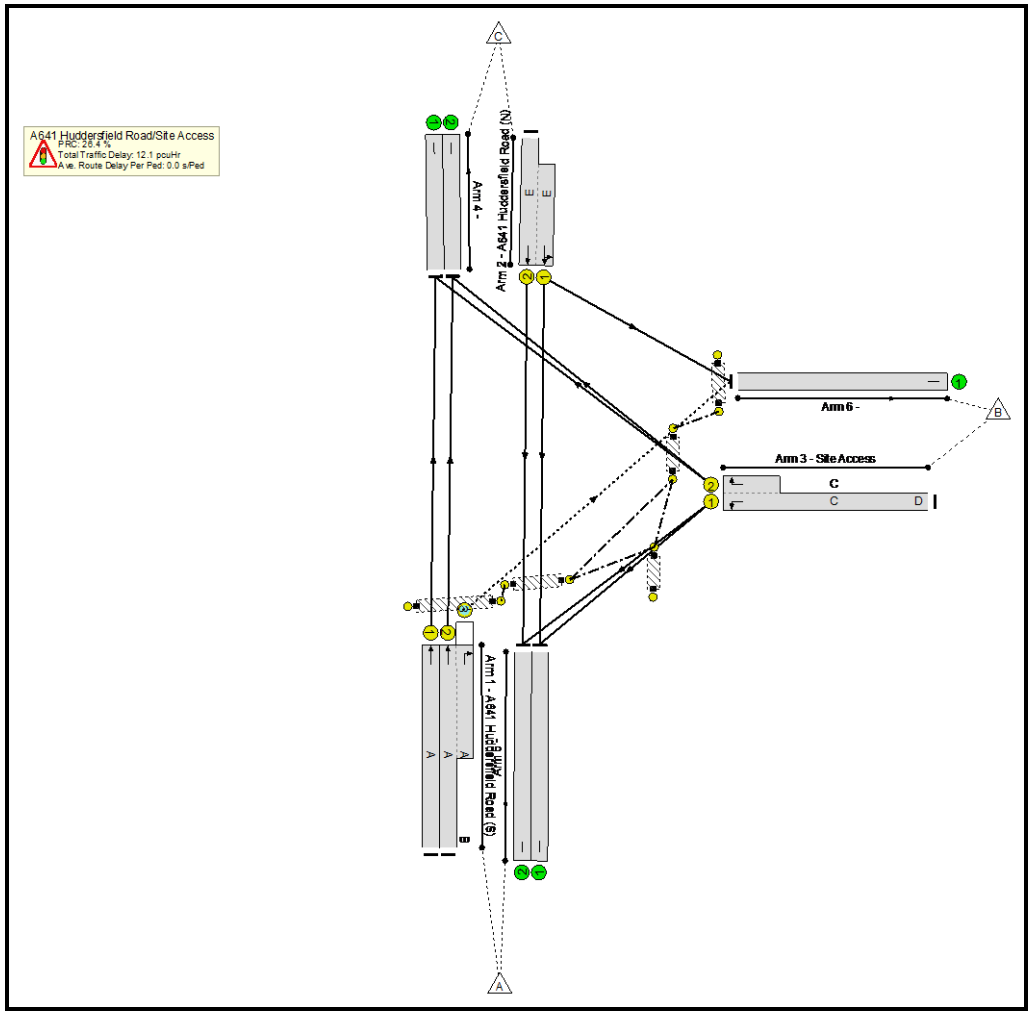
Stage	1	2	3	4
Duration	53	0	14	7
Change Point	0	55	62	83

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Woodhouse	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.2%**
A641 Huddersfield Road/Site Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.2%**
1/1	A641 Huddersfield Road (S) Ahead	U	N/A	N/A	A		1	60	-	562	1915	1298	43.3%
1/2+1/3	A641 Huddersfield Road (S) Ahead Right	U+O	N/A	N/A	A	B	1	60	0	649	2055:1879	1321+80	46.3 : 46.3%
2/2+2/1	A641 Huddersfield Road (N) Ahead Left	U	N/A	N/A	E		1	53	-	1173	2055:1894	856+790	71.2 : 71.2%
3/1+3/2	Site Access Right Left	U	N/A	N/A	C	D	1	21:14	7	316	1959:1881	195+261	69.4 : 69.4%
4/1		U	N/A	N/A	-		-	-	-	601	1915	1915	31.4%
4/2		U	N/A	N/A	-		-	-	-	754	2055	2055	36.7%
5/1		U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	678	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	86	2015	2015	4.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	28	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	62	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	62	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	J		1	28	-	0	-	0	0.0%

Full Input Data And Results

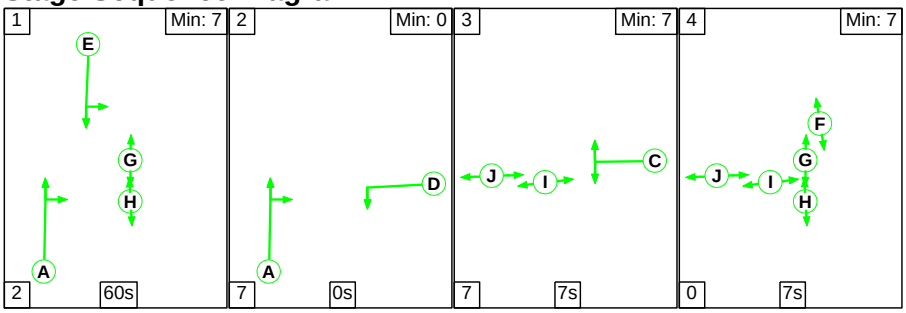
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Woodhouse	**-**	**-**	**34**	**2**	**1**	**8.3**	**3.7**	**0.1**	**12.1**	**-**	**-**	**-**	**-**
A641 Huddersfield Road/Site Access	**-**	**-**	**34**	**2**	**1**	**8.3**	**3.7**	**0.1**	**12.1**	**-**	**-**	**-**	**-**
1/1	562	562	-	-	-	1.0	0.4	-	1.4	9.1	6.4	0.4	6.8
1/2+1/3	649	649	34	2	1	1.2	0.4	0.1	1.7	9.5	7.0	0.4	7.4
2/2+2/1	1173	1173	-	-	-	3.3	1.2	-	4.6	14.0	8.6	1.2	9.9
3/1+3/2	316	316	-	-	-	2.8	1.1	-	3.9	44.3	4.1	1.1	5.2
4/1	601	601	-	-	-	0.0	0.2	-	0.2	1.4	0.0	0.2	0.2
4/2	754	754	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3
5/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	678	678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	86	86	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 26.4 Total Delay for Signalled Lanes (pcuHr): 11.58 Cycle Time (s): 90
PRC Over All Lanes (%): 26.4 Total Delay Over All Lanes(pcuHr): 12.12

Full Input Data And Results

Scenario 4: 'PM 2032-2033 Design' (FG4: 'PM 2032-2033 Design', Plan 1: 'Network Control Plan 1')

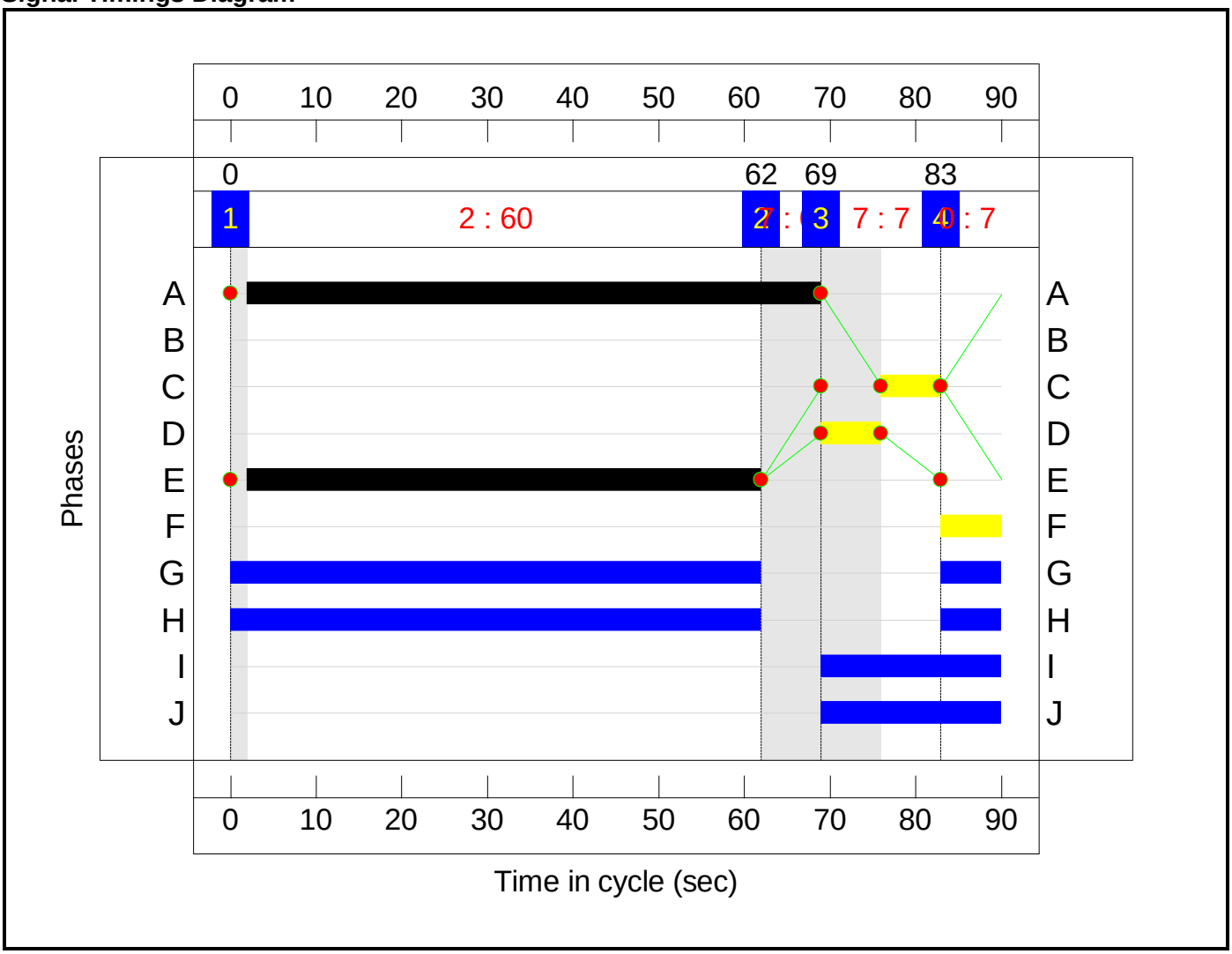
Stage Sequence Diagram



Stage Timings

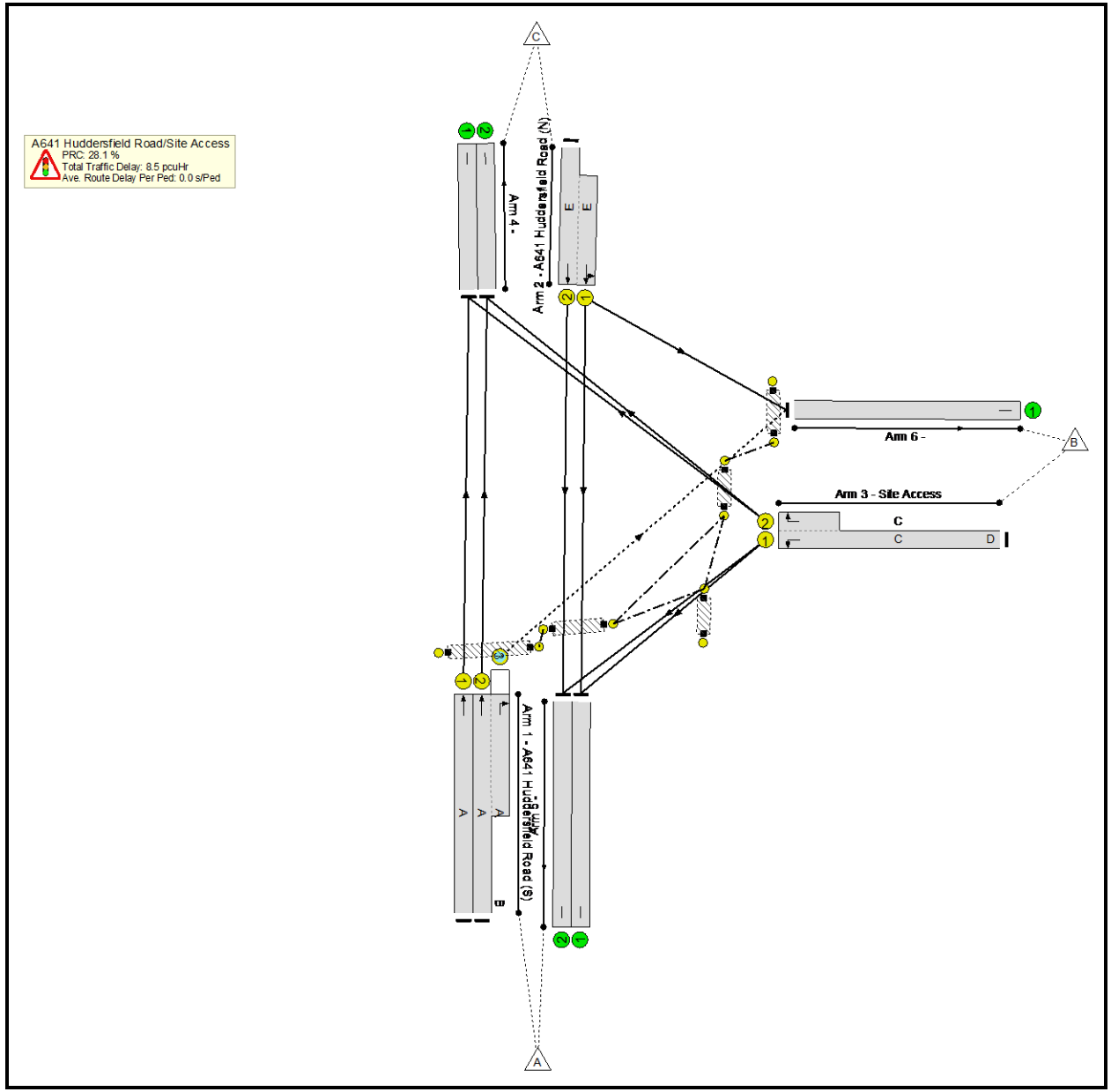
Stage	1	2	3	4
Duration	60	0	7	7
Change Point	0	62	69	83

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Woodhouse	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.3%**
A641 Huddersfield Road/Site Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.3%**
1/1	A641 Huddersfield Road (S) Ahead	U	N/A	N/A	A		1	67	-	535	1915	1447	37.0%
1/2+1/3	A641 Huddersfield Road (S) Ahead Right	U+O	N/A	N/A	A	B	1	67	0	677	2055:1879	1367+221	42.5 : 43.5%
2/2+2/1	A641 Huddersfield Road (N) Ahead Left	U	N/A	N/A	E		1	60	-	1256	2055:1865	936+851	70.3 : 70.3%
3/1+3/2	Site Access Right Left	U	N/A	N/A	C	D	1	14:7	7	138	1959:1881	125+167	47.2 : 47.2%
4/1		U	N/A	N/A	-		-	-	-	537	1915	1915	28.0%
4/2		U	N/A	N/A	-		-	-	-	658	2055	2055	32.0%
5/1		U	N/A	N/A	-		-	-	-	499	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	688	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	224	2015	2015	11.1%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	21	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	69	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	69	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	N/A	-	J		1	21	-	0	-	0	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: Woodhouse	**-**	**-**	**36**	**57**	**2**	**5.0**	**2.8**	**0.7**	**8.5**	**-**	**-**	**-**	**-**
A641 Huddersfield Road/Site Access	**-**	**-**	**36**	**57**	**2**	**5.0**	**2.8**	**0.7**	**8.5**	**-**	**-**	**-**	**-**
1/1	535	535	-	-	-	0.6	0.3	-	0.8	5.7	4.5	0.3	4.8
1/2+1/3	677	677	36	57	2	0.7	0.4	0.7	1.8	9.5	4.8	0.4	5.2
2/2+2/1	1256	1256	-	-	-	2.4	1.2	-	3.6	10.3	7.7	1.2	8.9
3/1+3/2	138	138	-	-	-	1.4	0.4	-	1.8	47.7	1.9	0.4	2.3
4/1	537	537	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
4/2	658	658	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
5/1	499	499	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	688	688	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	224	224	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 28.1 Total Delay for Signalled Lanes (pcuHr): 8.03 Cycle Time (s): 90
PRC Over All Lanes (%): 28.1 Total Delay Over All Lanes(pcuHr): 8.53