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Consulting Engineers



Proposed Lidl Foodstore,

Wakefield Road, Mapplewell.

Supplement to the Transport Assessment

August 2018

Ref: 2015-1-21 re03

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Document Control Sheet

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Site layout plan - 1744-P409 by HTC Architects.

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1 Introduction

1.1 Background

Lidl UK GmbH have appointed EJS Associates (EJSA) to assess the transport and highway implications of a proposed Lidl Foodstore at Wakefield Road, Mapplewell.

A planning application has been submitted, supported by a Transport Assessment (ref: 2015-1-21 re01, dated December 2017) and a Framework Travel Plan (ref: 2015-1-27 re02, also dated December 2017).

A planning application for a Residential development, proposed by Pipestone, of some 82 dwellings on the land immediately to the north of the Lidl site has also been submitted. To ensure compatibility, the residential development was referred to in the Transport Assessment report in detail, even though it does not form part of the Lidl planning application.

Comments have been made by AECOM on each of the planning applications, on behalf of Barnsley MBC.

This Supplement to the Transport Assessment for the Lidl Foodstore not only addresses the comments by AECOM on their planning application, but to ensure compatibility, it also addresses the comments made by AECOM on the proposed residential site. It also include slight amendments to the residential proposals.

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2 Comments on behalf of Barnsley MBC

2.1 Introduction

This chapter covers the comments issued by AECOM on behalf of Barnsley MBC, and addresses each of them in turn. AECOM's comments are attached in full at Appendix A.

2.2 Specific Points

2.2.1 Modal Split.

AECOM note "slight differences in the estimated modal split, particularly at the Saturday peak" and asks that "these be verified".

As the figures are only "estimates" made using TRICS data, and AECOM's suggestion is that the differences are "slight", there seems little point in further study. The surveys of actual customer transport modes, envisaged in the Travel Plan, will make these 'estimates' redundant.

AECOM's comment regarding "Saturday peak" is also noted - the Transport Assessment does not quote Modal Split at the peak hours - they are quoted for the full day (07.00-19.00), so perhaps, AECOM were mixing their statistics.

2.2.2 Ghost Island Dimension.

AECOM note what the ghost island dimensions should be.

These are noted.

2.2.3 Sight Lines.

AECOM ask what the sightlines are to be.

Currently, the speed limit changes from 30mph (to the south) to 40 mph (to the north), at a point just to the north of the proposed access. It is the intention of Lidl, (and of the developer of the residential site) to seek the re-location of the change point to a point to the north of the proposed residential access junction. Thus both development junctions would be covered by a 30mph speed limit. It is considered that this would be a significant improvement to road safety.

In that case, sightlines of 2.4m x 45m would be appropriate.

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2.2.4 Committed Development.

AECOM asked that further developments be included in the assessment - and since then Barnsley MBC have asked that a further one be included.

See below at Section 3.

2.2.5 Lidl Trip Generation - Saturday Peak.

AECOM suggested that the Saturday peak trip generation quoted was different to that currently shown in TRICS. EJSA accept this point in that new data had been recently added to TRICS.

See below at Section 3.

2.2.6 Travel Plan.

AECOM suggested that the Modal Splits should be clarified, and that a budget be included for the Travel Plan Co-ordinator (TPC).

The matter of Modal Splits is commented on above (at section 2.2.1) and does not need any further consideration.

Lidl are prepared to offer a budget of £1,000.00 for the TPC for the first year and £500.00 per annum thereafter.

2.3 Additional comments by Barnsley MBC

2.3.1 Tracking.

Barnsley MBC asked for a tracking assessment of the proposed Lidl development.

This is attached.

2.3.2 Car Park Layout.

Barnsley MBC asked Lidl to consider removing the access to the southern car park nearest to the site junction with Wakefield Road.

Lidl do not consider there to be any road safety or capacity issues with this junction or its location. Right-turners into the southern car park have sufficient width to wait (if necessary) and sightlines are very good. Therefore, Lidl will retain this as part of the site layout.

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3 Re-Assessment

3.1 Introduction

As noted in the Transport Assessment, the traffic assessment has been carried out including the residential site. To that end, the Appendices of Bryan G Hall's Transport Assessment Addendum have been included here, at Appendix B, for consistency and completeness.

3.2 Committed Development

An additional committed development was requested to be included in the assessment, not previously identified by AECOM (Ref 2017/0520). This development is for the erection of 193 dwellings on land to the West of Wakefield Road.

A search has been undertaken on BMBC planning portal for the relevant Transport Assessment for the development listed above. The Transport Assessment was not listed within the above application and through contacting BMBC. It is understood that the Transport Assessment being considered for this development is one submitted as part of an outline application for the same site in 2014 (Ref 2014/0249). That Transport Assessment was prepared for a residential development of up to 300 dwellings and is, therefore, considered robust.

The committed developments included within the original Transport Assessment, and the associated traffic flows, were reviewed and it is confirmed that the flows associated with the above “additional” committed development had already been included within the Transport Assessment. The committed development included instead of this one (2016/0337) in fact considered the flows associated with the TA submitted for reference 2014/0249. It is therefore concluded that the committed developments do not need updating as the 2023 Base scenario in the original TA did consider the trip generation associated with the Application Ref 2017/0520.

Therefore, nothing further is required on this point.

3.3 Trip Generation

The residential trip generations have been revised in answer to comments by AECOM on that Transport Assessment.

Also the trip generation rates for the Saturday Peak Hour for the Lidl Foodstore, set out in the AECOM review of the Transport Assessment, have been used to re-assess the impact.

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3.4 Re-Assessment

The following tables and accompanying text set out the operational assessments of the proposed Lidl foodstore (and for the proposed residential development) for the Saturday daytime peak period, following the updating of the trip generation.

3.4.1 A61 Wakefield Road/Lee Lane/Shaw Lane

2023	Saturday peak	
	RFC	Queue (PCU)
Shaw Lane left turn	0.27	0
Shaw Lane right turn	1.29	42
Wafield Road right turn to Lee Lane	0.36	1
Lee Lane left turn	0.30	0
Lee Lane right turn	1.17	27
Wakefield Road right turn to Shaw Lane	0.20	0

The results show that the junction is predicted to continue to operate above capacity with the Lidl and residential development related traffic. There are only small increases in queue length above what was previously modelled as part of the original Transport Assessment. The queue on Shaw Lane for right turning vehicles increased by 2 PCUs with the updated trip generation rate. The queue on Lee Lane for right turning vehicles increased by 3 PCUs above that modelled for the original TA.

3.4.2 A61 Wakefield Road/Paddock Road

2023	Saturday peak	
	RFC	Queue (PCU)
Paddock Road left turn	0.04	0
Paddock Road right turn	0.65	2
Right turn to Paddock Road	0.02	0

The results show that the junction is predicted to continue to operate within capacity during the Saturday peak period, with the Lidl and residential development related traffic.

3.4.3 A61 Wakefield Road/Bar Lane

2023	Saturday peak	
	DoS %	Queue (PCU)
Wakefield Road southbound	67.2	14
Wakefield Road northbound	98.1	39
Bar Lane	95.1	19

The results show that the junction is predicted to continue to operate within capacity with the Lidl and residential development related traffic. There are small increases in queue on top of the queues which were predicted as part of the original TA,

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specifically on Wakefield Road northbound where the queue increases from 32 PCUs to 39 PCUs.

3.4.4 *A61 Wakefield Road/Laithes Lane*

2023	Saturday peak	
	DoS %	Queue (PCU)
Wakefield Road south	94.5	39
Wakefield Road north	94.3	33
Laithes Lane	94.0	20

The results show that the junction is predicted to operate at capacity with the addition of the Lidl development related traffic. There are increases in queue length on top of what was previously modelled of an additional 8 PCUs on the Wakefield Road south approach to the junction.

3.4.5 *A61 Wakefield Road/Rotherham Road*

2023	Saturday peak	
	RFC	Queue (PCU)
A61 north	0.63	2
A633 Rotherham Road	0.82	2
A61 south	0.85	5

The results show that the junction is predicted to operate within capacity with the Lidl and residential development traffic.

3.5 Conclusion on Vehicular Access

It can be clearly seen that, even though the assessment has been very robust by assuming all Lidl related trips are "new" to the network, and including the full effects of the adjacent residential development, even with the revised trip rates etc the effects of the proposals are not "severe" in NPPF terms, and that there are no mitigation measures required, other than those already proposed (ie the access junction).

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4 Conclusions

4.1 Conclusions

This supplementary report has assessed the impact of a new Lidl Foodstore at Wakefield Road, Mapplewell and addressed all the comments by Barnsley MBC and their Consultants.

As assessment of the existing road network has shown that several junctions are already nearing their capacity at the design year of 2023.

A detailed, but very robust, numerical analysis of future traffic conditions with the Lidl and the adjacent residential development in place, has demonstrated that the proposed developments will have a minimal effect on existing junctions. Hence, no Highway Works are required other than to create the new accesses. There are no "severe" effects in terms of NPPF.

There are no Highways or Transportation grounds for refusing the planning application.

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DO NOT SCALE!
ALL DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE WORK COMMENCES

IN ACCORDANCE WITH LIDL SPECIFICATION 2017.3, RECEIVED 22.02.18

INLINE WITH TOPOGRAPHICAL SURVEY, LANDFORM SURVEY, DATED 03.07.17, DRAWING NUMBER 001

LIGHTING LAYOUT BASED ON PHILLIPS SCHEME **TBC**

TRACKING BASED ON EJSA PATHS MODEL 23.07.18

REFER TO JRP DRAWING 18 5212 SK06 - FEASIBILITY SKETCH LAYOUT - 10.07.18 FOR ALL INFORMATION REGARDING RESIDENTIAL SCHEME

N

APPROX. RETAINING HEIGHT: 1.5m (+/-)

APPROX. RETAINING HEIGHT: 1.22m (+/-)

APPROX. RETAINING HEIGHT: 1.20m (+/-)

APPROX. RETAINING HEIGHT: 1.27m (+/-)

APPROX. RETAINING HEIGHT: 3.1m (+/-)

APPROX. RETAINING HEIGHT: 1.4m (+/-)

APPROX. RETAINING HEIGHT: 0.0m (+/-)

APPROX. RETAINING HEIGHT: 1.0m (+/-)

APPROX. RETAINING HEIGHT: 0.5m (+/-)

APPROX. RETAINING HEIGHT: 0.0m (+/-)

APPROX RETAINING HEIGHT: 0.0m (+/-)

NEIGHBOURS PARKING AND WALL

127 CAR PARKING SPACES INCLUDING 9 DISABLED & 6 STAFF

Max Legal Length (UK) Articulated Vehicle (16.5m)

Dismantled Railway

Nursery School

Concrete

Building Rubble

Brick Wall

Tarmac

Bush

Pipe

Delapidated

Elec. Pylon

LF6 96.515

LF7 94.703

LF9 94.704

LF10 94.846

LF11 95.606

LF12

LF13 96.245

97.9m

SALES AREA

STAFF

MAINT. PREP AREA

CORRIDOR

CHILLER

FREEZER

WAREHOUSE

RECEIVE MAN

ENTRANCE LOBBY

WELFARE

OFFICE

MH

IC

REFER TO 1744 P407 FOR RESIDUAL RISKS INFORMATION

Rev.	Date	Description	Drawn

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client
Lidl UK GmbH

project
New Store
Wakefield Road
Mapplewell

drawing title
Tracking Overlay

date	August 2018		
status	Planning		
scale	1:500 @ A3		
drawn	LS	checked	MH
job no.	1744	dwg no.	P409 rev. /

Appendix A – Comments by AECOM.

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Lidl Food Store Development – Review of Transport Assessment

Specification No.	Client name	Project name	Date
01	Barnsley Metropolitan Borough Council	Lidl Development at Former William Freeman Site, Wakefield Road, Mapplewell	16 March 2018

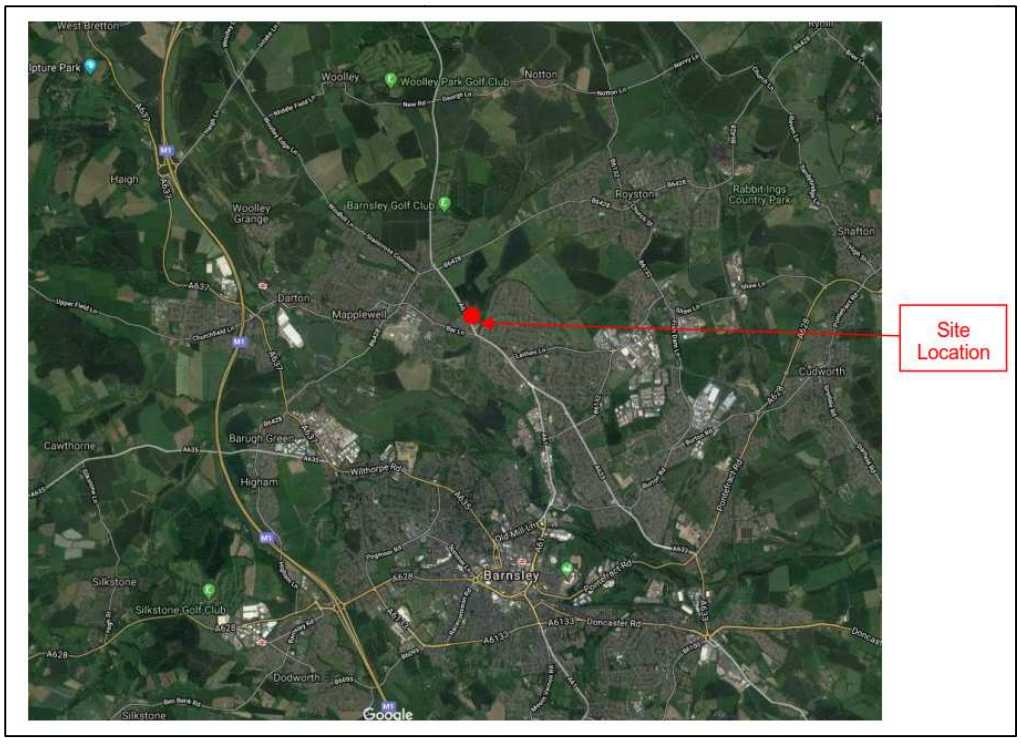
Prepared by	Checked & Approved by
Natasha Smithson	Stephen Moss

Introduction

AECOM have been commissioned on behalf of Barnsley Metropolitan Borough Council (BMBC) to provide a review of the Transport Assessment produced by EJS Associates (EJSA). The application reference is 2017/1716, and the proposals are for a Lidl Foodstore located on the southern section of the former William Freeman site along Wakefield Road in Mapplewell, Barnsley. The site location is shown in **Figure 1** as provided by EJSA.

The site will have a Gross Internal Area (GIA) of 2,125m^2 and Retail Sales Area of 1,325m^2 and will include 139 car parking spaces, of which 9 will be for disabled users. Access into the site will be taken from Wakefield Road.

Figure 1 – Site Location Plan



National and Local Planning Policy and Guidance

The following national and local planning policy and guidance documents were reviewed:

- National Planning Policy Framework (NPPF);
- Planning Policy Guidance;
- South Yorkshire Local Transport Plan 3;
- Barnsley Local Development Framework – Statuary Development Plan and Core Strategy; and
- The Unitary Development Plan.

It is considered that the proposals are in line with the above policies and guidance.

Existing Conditions

The site is located on the southern section of the former William Freeman Works brownfield site, located to the east of Wakefield Road in Mapplewell, Barnsley. The site is bounded by the remainder of the former William Freeman Works site to the north (it should be noted that an application has also been submitted for a residential site of up to 85 dwellings on this section of land), Wakefield Road to the west, a restaurant and warehouse property to the south and a disused railway line to the east beyond which there are residential properties.

The site currently takes access from the A61 Wakefield Road. It is a single-carriageway of approximately 8m wide with footpaths on both sides and a pedestrian crossing island approximately 100m south of the site. Wakefield Road joins Bar Lane approximately 150m south at a signalised T-junction. The speed limit of Wakefield Road is 30mph which changes to 40mph northwards approximately at the proposed access location. The A61 continues north-west connecting Barnsley to Wakefield. The M1 motorway can be reached approximately 4km to the west of the site.

Public Transport Accessibility

The nearest bus stops to the site are located on Bar Lane approximately 280m south of the site. The bus stops are served by the number 1 and X10 bus services. The number 1 bus provides a service every 10-12 minutes between Staincross and Barnsley Monday – Saturday and every 30 minutes on Sundays. The X10 bus operates an hourly service between Barnsley and Leeds.

Darton train station is approximately 3km west of the proposed site, though it is considered unlikely that this will form part of a journey to the site for customers.

The TA also considers taxis a useful source of transport that operates throughout the area.

Walking / Cycling Accessibility

The TRICS database was used to estimate the percentage of person trips by mode for land use category 'Retail – Discount Food Store' for geographical areas excluding London and Irish sites.

Table 1 shows the modal splits used by EJSA, and that derived by AECOM.

Table 1 – Modal Split

		Car Trips		Pedestrians		Cyclists		Public Transport	
		Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
EJSA Modal Split	Friday	70%	72%	24%	22%	1%	1%	5%	6%
	Saturday	56%	55%	37%	38%	1%	1%	6%	7%
AECOM Modal Split	Friday	78%	78%	20%	20%	1%	1%	0%	0%
	Saturday	81%	79%	16%	18%	0%	1%	3%	2%

There are slight differences in the estimated modal split, particularly in the Saturday peal, and we therefore ask that these be verified.

In terms of pedestrian accessibility, Wakefield Road currently has footways on both sides of the carriageway as well as most of the roads and streets on the local highway network, with crossing facilities at most junctions. There is also a pedestrian island on Wakefield Road approximately 100m south of the site. Guidance documents suggest that people are prepared to walk on average a distance of 1km, which includes a large proportion of Mapplewell, New Lodge and Athersley North.

It is considered that a cycle distance of 5km is acceptable and as such reaches areas including Royston, Barugh Green and the northern edge of Barnsley. The local roads are considered accessible and cycle parking will be provided at the food store.

Accident Analysis

Accident data was obtained from BMBC for the most recent five-year period (2012-2016) in the vicinity of the site. In total, there were 53 accidents reported in the study area, of which 44 were classified as slight and the remaining 9 were classified as serious. One of the accidents was located around the proposed site access and was due to a rear end shunt collision on the approach to the Wakefield Road / Bar Lane signalised junction. A cluster of accidents were also identified at the Wakefield Road / Laithes Lane junction, however it was considered that there were no highway safety issues with the road network in the vicinity of the site.

Proposed Development

The proposals include a Lidl food store with a Gross Internal Area (GIA) of 2,125m^2 and Retail Sales Area of 1,325m^2. There will be 139 car parking spaces provided, of which 9 will be for disabled users, 8 for parent & child and 3 for staff. Cycle parking will also be provided.

Access will be taken from Wakefield Road via a ghost island layout. The proposed site access is around the point at which the speed limit changes from 30mph to 40mph going north. Therefore, it is proposed that the 30mph be extended to cover the Lidl site access.

Parking standards are provided in the Supplementary Planning Document on Parking (March 2012) and states that for food retail outside of Barnsley town centre, 1 spaces per 14-20m^2 is required. With a GIA of 2,125m^2 there should be between 106 and 151 spaces required. There, 139 spaces are considered acceptable. The number of disabled parking bays should account for around 4% of the total number of spaces provided. Therefore the development should include 6 disabled car parking spaces as per the standards, and the proposals include for 9 disabled spaces and this is therefore considered acceptable.

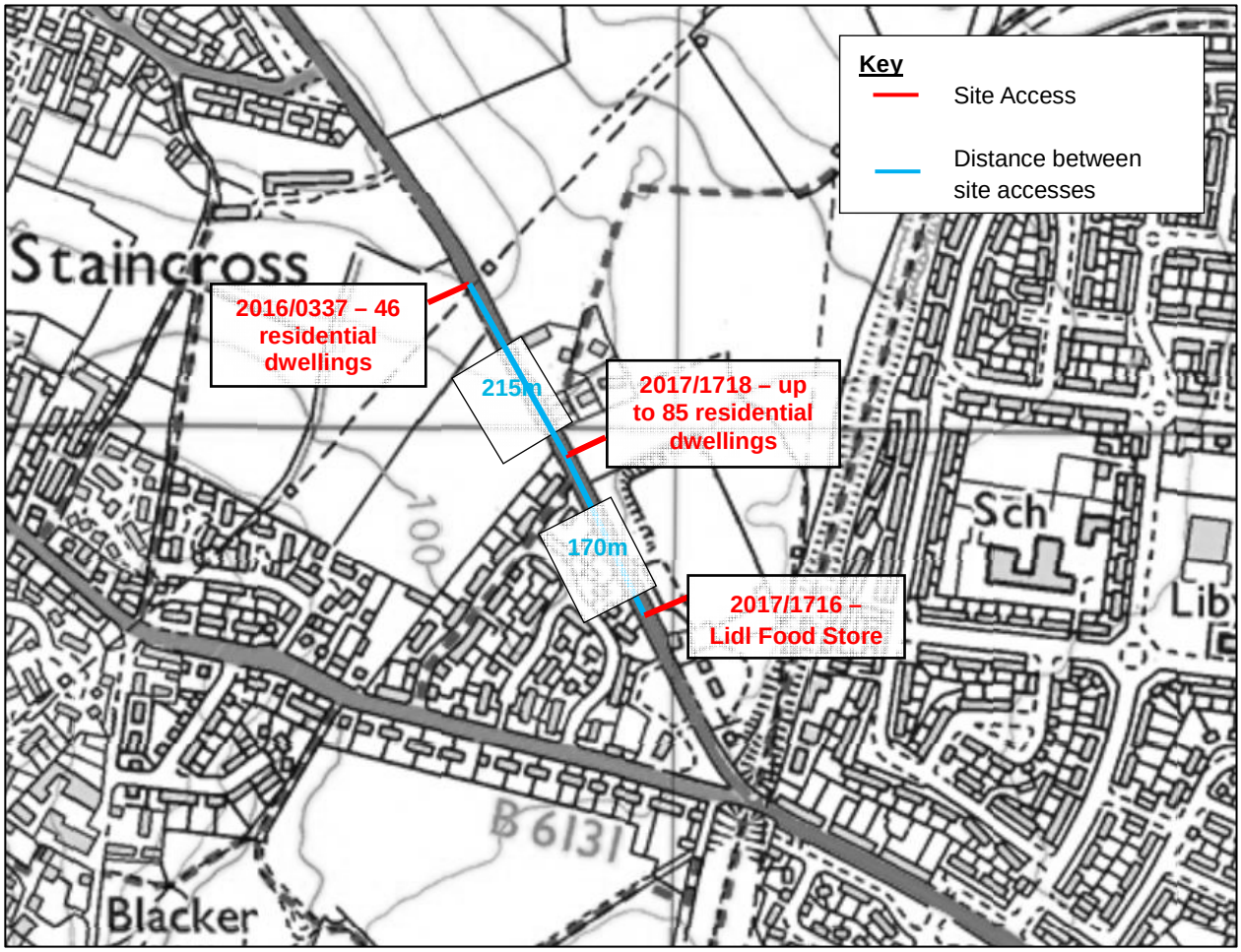
The Lidl site access is proposed to be in the form of a ghost island layout and be in line with DMRB standards. The following geometries should be used for a road with a speed limit of 30mph:

- Corner radii = 6.0m
- Right-turn lane width = 2.5m
- Right-turn lane length = 35m (25m deceleration length plus 10m turning length)
- Direct taper length = 5m
- Visibility splays = 70m from 2.4m of edge of carriageway

The proposed plan (drawing number: P400) showing the site access differs from these measurements. The right-turn lane length is shown as 30m though should be 35m and the ghost island taper length is shown on the drawing as 20m, but should be 60m. The visibility splays have also not been provided. We ask that these measurements be clarified.

In close proximity to the proposed residential site, there are two developments that are also planned to take access from Wakefield Road. Application ref: 2016/0337 is an already consented residential development with 46 dwellings, and application ref: 2017/1716 is a proposed Lidl food store. As such, the proposed site accesses will need to be considered together. **Figure 2** shows the location of each site access and the approximate distances between each.

Figure 2 – Review of Site Accesses



From the above, the consented site is on the opposite side of the road, and is then around 200m north of the proposed residential access. The proposed residential access is then around 180m north of the Lidl access on the same side of the road. Therefore as the right turns into the consented site will be from the north, this won't impact upon the two new sites.

There is then around 180m between the Lidl and the residential developments, so this will be enough to get the DMRB right-turn in without the residential site impacting on the Lidl access.

Committed Developments

The TA included the following committed developments in their assessments:

- 2016/0337 – approved reserved matters application for 46 residential dwellings on land west of Wakefield Road opposite the proposed site; and
- 2016/1490 – full consent for 164 residential dwellings on land north of Lee Lane.

Following a search on the planning portal, we would agree that these are acceptable and have been included in the Base 2023 assessments, though we would also suggest the following application be included as a committed development (as per the Bryan G Hall TA in support of the residential development):

- 2015/1015 – approved reserved matters application for up to 325 residential dwellings on land west of Wakefield Lane (North Gawber).

Whilst not yet a committed development, Lidl are aware that an application (ref: 2017/1718) for a residential development is planned immediately north of the proposed Lidl store and as such has also completed a sensitivity test to include the proposed development traffic.

Traffic Growth

As the counts were undertaken in 2017, and a decision on the application is likely to be made in 2018, 2023 was considered the most appropriate future year. Therefore, TEMPRO was used to find the following growth factors:

Table 2 – Growth Factors

2017-2023	EJSA Growth Factors	AECOM Growth Factors
Weekday AM	1.0954	1.0976
Weekday PM	1.0917	1.0938
Saturday	1.0938	1.0960

Whilst there are slight differences between the growth factors used by EJSA and that derived by AECOM, it is likely that this will result in a negligible impact and is therefore deemed acceptable.

Trip Generation

The TRICS database was used to derive trip rates and generations for land use category 'Retail – Discount Food Store' and **Table 3** shows a comparison between the trip rates and generations derived by EJSA in the TA and that derived by AECOM.

Table 3 – Trip Rates and Trip Generation

Retail – Discount Food Store (Retail Floor Area: 1,325m^2)		Friday PM peak (15:00 – 16:00)			Saturday peak (11:00 – 12:00)		
		Arrive	Depart	Two-way	Arrive	Depart	Two-way
EJSA	Trip Rate	6.792	7.019	13.811	5.811	5.283	11.094
	Trip Generation	90	93	183	77	70	147
AECOM	Trip Rate	6.815	6.696	13.511	11.041	10.098	21.139
	Trip Generation	90	89	179	146	134	280
Difference		**0**	**-4**	**-4**	**+69**	**+64**	**+133**

The assessments show that the trip rates and trip generations are quite similar in the Friday peak, whilst the Saturday peak differs significantly. We would therefore request that a check of the trip rates derived and is undertaken.

Trip Distribution

It is noted in the TA that many of the trips to the site are likely to be 'diverted', 'transferred' or 'pass-by', though for the most robust assessment, all trip will be considered as 'new'. AECOM agree with this approach.

The trip distribution has been based on the 2011 Census Journey to Work data for the Middle Super Output Area of Barnsley 004, resulting in the distributions shown in **Table 4**. AECOM completed a sensitivity test using the same data and Google Maps to find the most likely route taken, and to compare against the trip distributions provided by EJSA. These, as well as the resultant trip generations (EJSA trip generations used), are also provided in **Table 4**.

Table 4 – Trip Distributions

Direction	EJSA Distribution	AM Two Way Trips	PM Two Way Trips	AECOM Distribution	AM Two Way Trips	PM Two Way Trips
North of Site Access	37%	68	54	24%	44 (-24)	35 (-19)
South of Site Access	63%	115	93	76%	139 (+24)	112 (+19)
TOTAL	**100%**	**183**	**147**	**100%**	**183**	**147**

From the site access, EJSA show 37% of development traffic travelling north along Wakefield Road and 63% travelling south, whilst the trip distributions by AECOM estimate that 24% will travel north and 76% will travel south.

The result of this is 68 two-way vehicles travelling north during the AM peak using the EJSA distribution, compared to 44 two-way vehicles using the AECOM distribution. Travelling south, the EJSA distribution results in 115 two-way vehicles compared to 139 two-way vehicles during the AM peak.

The difference being around 20 two way trips which is potentially not material, but this should be viewed against the Retail Impact Assessment to ensure that it is consistent.

Therefore, whilst we agree with the method used of using the 2011 Census Journey to Work data, we would ask EJSA to provide clarification of the trip distribution assumptions made. We would also wish to understand how the distribution relates to the Retail Impact Assessment in terms of the likely catchment of the store.

Traffic Impact

A traffic count was undertaken on Friday 10th November and Saturday 11th November 2017 to determine the current traffic flow characteristics of the following junctions:

- Wakefield Road / Rotherham Road mini roundabout junction;
- Wakefield Road / Laithes Lane three-way signalised junction;
- Wakefield Road / Bar Lane three-way signalled junction;
- Wakefield Road / Paddock Road priority junction; and
- Wakefield Road / Lee Lane / Shaw Lane crossroads junction.

The peak hours were identified as 08:45 – 09:45 in the weekday AM, 16:45 – 17:45 in the weekday PM and 11:45 – 12:45 on a Saturday.

The above junctions were assessed using Junctions 8, Junctions 9 and Linsig V3 junction modelling software, and the maximum RFC / DoS and queue length results are summarised below. The geometries for the junctions were also checked and are considered acceptable.

These junctions were modelled in the following assessment scenarios.

- Base 2017;
- Base 2023, including committed developments; and
- Base 2023 + Lidl Development + Residential Development.

Whilst we would have some comments on the trip generation, we have reviewed the modelling results as given; however we will need further details before this can be agreed.

Table 5 shows the individual and cumulative development trips for the residential and Lidl food store developments.

Table 5 – Development Trips

Junction	Residential		Lidl		Residential + Lidl	
	AM	PM	AM	PM	AM	PM
Wakefield Road / Lee Lane / Shaw Lane	11	10	9	42	20	52
Wakefield Road / Paddock Road	17	16	12	67	29	83
Wakefield Road / Bar Lane	29	28	22	117	51	145
Wakefield Road / Laithes Lane	23	22	16	89	39	111
Wakefield Road / Rotherham Road	20	19	15	79	35	98

Wakefield Road / Rotherham Road

Table 6 shows the maximum results of the assessments.

Table 6 – Wakefield Road / Rotherham Road

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC	Queue	RFC	Queue	RFC	Queue
Base 2017	0.76	3	0.73	3	0.64	2
Base 2023	0.91	8	0.86	6	0.75	3
Base 2023 + Lidl	0.94	9	0.91	8	0.79	4

The results show the junction currently operates below capacity. The maximum RFC is 0.76 during the weekday AM peak along the Rotherham Road approach, with a queue of 3 vehicles. The Base 2023 scenario is expected to operate approaching capacity with an RFC of 0.91 and an associated queue of 8 vehicles along the Rotherham Road approach.

With the Lidl food store and residential development traffic, the junction is expected to operate approaching capacity. The maximum RFC recorded is 0.94 along the Rotherham Road approach with an additional 1 vehicle in the queue when compared to the Base 2023 scenario.

Wakefield Road / Laithes Lane

Table 7 shows the maximum results of the assessments.

Table 7 – Wakefield Road / Laithes Lane

Scenario	Weekday AM		Weekday PM		Saturday	
	DoS	Queue	DoS	Queue	DoS	Queue
Base 2017	88.0%	25	87.6%	17	79.6%	18
Base 2023	88.0%	25	87.6%	17	88.4%	25
Base 2023 + Lidl	99.7%	47	101.0%	32	91.4	32

The Wakefield Road / Laithes Lane junction currently operates within capacity. In the Base 2023 scenario, the results are very similar to those in the 2017 scenario. We ask that these be checked.

With the development of the Lidl food store and residential developments, the junction is expected to operate over capacity during the weekday PM peak. The maximum RFC is 101.0% and with an additional 15 vehicles queueing along the Laithes Lane approach when compared to the base 2023 scenario. It should also be noted there are long queues during the Friday PM peak along the Wakefield Road (S) approach, which has 27 vehicles queueing in the base 2023 scenario, and with the development of Lidl and the residential developments, there are an additional 30 vehicles queueing. This is considered to be significant.

Wakefield Road / Bar Lane

Table 8 shows the maximum results of the assessments.

Table 8 – Wakefield Road / Bar Lane

Scenario	Weekday AM		Weekday PM		Saturday	
	DoS	Queue	DoS	Queue	DoS	Queue
Base 2017	88.6%	16	83.5%	20	79.2%	12
Base 2023	97.4%	37	92.7%	17	88.6%	24
Base 2023 + Lidl	99.0%	41	97.9%	39	92.0%	17

The junction currently operates within capacity, though in 2023, it is likely the junction will operate approaching capacity during the weekday AM peak hour. The maximum Degree of Saturation (DoS) is 97.4% with an associated queue of 37 vehicles queuing along the Wakefield Road (N) approach.

During the Weekday AM peak, the result of the Lidl and residential development increases the DoS and queue lengths slightly, and will operate remaining at approaching capacity.

Wakefield Road / Paddock Road

Table 9 shows the maximum results of the assessments.

Table 9 – Wakefield Road / Paddock Road

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC	Queue	RFC	Queue	RFC	Queue
Base 2017	0.48	1	0.83	4	0.50	1
Base 2023	0.58	1	1.02	14	0.54	1
Base 2023 + Lidl	0.61	1	1.10	23	0.60	1

In the Base 2017 scenario (i.e. at present), the junction operates within capacity, with the maximum RFC of 0.83 recorded during the weekday PM peak along the Paddock Road approach, with an associated queue of 4 vehicles. In 2023, the junction is expected to operate over capacity during the weekday PM peak with an RFC of 1.02 and associated queue of 14 vehicles on the Paddock Road approach.

With the Lidl and Residential development traffic, the RFC and queue lengths increase slightly, particularly during the weekday PM peak. The maximum RFC is 1.10 and the queue length increases by 11 vehicles on the Paddock Road approach.

Wakefield Road / Lee Lane / Shaw Lane

It is understood by EJSA that as part of the Lee Lane application, an improvement scheme for the Wakefield Road / Lee Lane / Shaw Lane junction was proposed. The Bryan G. Hall TA states in the TA "*this improvement scheme involves widening the approach arms of Shaw Lane and Lee Lane to provide two lanes for a short section on approach to the junction*", and has therefore been assumed to be in place by 2023 and has been used in this assessment year.

We were unable to confirm the geometries for the improved Wakefield Road / Lee Lane / Shaw Lane junction as we were unable to locate a plan of the improved highway works. We therefore ask that this be provided. **Table 10** shows the maximum results of the assessments.

Table 10 – Wakefield Road / Lee Lane / Shaw Lane

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC	Queue	RFC	Queue	RFC	Queue
Base 2017	1.14	30	0.99	11	0.99	11
Base 2023	1.60	111	1.24	39	1.15	32
Base 2023 + Lidl	1.62	115	1.31	45	1.19	36

The results show that the junction currently operates over capacity, particularly during the weekday AM peak. The maximum RFC is 1.14 along the Lee Lane approach, and it should also be noted that the Shaw Lane approach operates with an RFC above 1.00. In 2023, the junction is expected to operate over capacity during all peak hours despite the improvements implemented.

With the Lidl and residential development traffic, the junction is likely to operate with a slight increase in RFC and queue lengths. During the weekday AM peak, the Lee Lane approach operates with an RFC of 1.62 and an additional 4 vehicles queueing.

Site Access

Table 11 shows the maximum results of the assessments.

Table 11 – Site Access

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC / DoS	Queue	RFC / DoS	Queue	RFC / DoS	Queue
Base 2023 + Lidl	0.180	0	0.289	0	0.199	0

The results show that the junction will operate well within capacity, also with the Lidl development traffic.

Whilst the Lidl development will result in an increase to queue lengths at all junctions, and whilst the RFC's also increase, the TA states that the assessment has been very robust by assuming all the Lidl related trips are "new" to the network, and including the full effects of the adjacent residential development, and that the effects are not "severe" in NPPF terms.

Summary and Conclusions

AECOM have reviewed the Transport Assessment produced by EJS Associates for a Lidl food store with GIA 1,325m^2 on the former William Freeman Works site along Wakefield Road in Mapplewell, Barnsley. The site has been identified as a potential development site within the emerging Barnsley Local Plan, due for adoption in Spring 2018.

The full comments for the Transport Assessment are summarised below:

- Committed developments have been included as part of the operational assessments, however we would suggest that the application ref: 2015/1015 should also be considered, to be consistent with the Bryan G. Hall TA.
- It is stated that as part of the Lee Lane committed development, improvements will be made to the Wakefield Road / Lee Lane / Shaw Lane junction. However, we have been unable to locate these improvements and ask that this be provided.
- Whilst the Friday PM trip rates and generations are considered acceptable, the Saturday trip rates should be checked and reviewed before they can be agreed.
- A sensitivity test was carried out by AECOM in order to confirm the trip distributions used by EJSA. Whilst we accept the method of using the 2011 Census Journey to Work data for Barnsley 004, we would ask for clarity on the assumptions made.
- We would suggest that the site access be designed in accordance with DMRB standards, however the site plan shows the right-turn lane width, and length, and the ghost island taper length do not accord with the standards. We would therefore request that the site access junction measurements to be checked and clarified, as well as noting that the junction can achieve visibility splays of 70m from 2.4m of edge of carriageway.
- The operational assessments show that some of the junctions are approaching capacity in the base 2023 scenario, and there are marginal increases in RFC / DoS and queue lengths when the development traffic is added. However, the impact cannot be agreed until the trip generations are confirmed.

Travel Plan

A Travel Plan was also submitted as part of the application, and has been reviewed by AECOM.

Objectives

The Travel Plan set the following objectives:

- To reduce the impact of the food store on local congestion and localised parking issues (should they arise);
- To reduce the environmental impact of store-related travel, and promote the company's commitment to environmental values;
- To reduce the need for unnecessary car travel through the promotion of suitable and reliable alternatives to the private car; and
- To raise awareness amongst staff and customers of the detrimental impacts of car use in order to encourage the use of alternatives.

Initiatives

The following initiatives have been provided in the Travel Plan:

- Initiative 1: Travel Plan information will be displayed on a prominently placed Travel Plan Notice Board within the store;
- Initiative 2: All prospective employees will be provided with sustainable travel information;
- Initiative 3: Employees will be offered Personalised Travel Planning information;
- Initiative 4: The store will participate in local and national events to promote sustainable travel;
- Initiative 5: Lidl will designate a Travel Plan Co-ordinator three months prior to the store becoming operational;
- Initiative 6: Lidl will identify a 'Sustainable Travel Assistant' within the store. The Assistant and Travel Plan Co-ordinator will meet bi-monthly and communicate regularly to ensure the Travel Plan is implemented to maximum effect, prior to first occupation.
- Initiative 7: The Travel Plan Co-ordinator will liaise with external bodies to ensure that issues raised by staff are addressed at the earliest opportunity.
- Initiative 8: The Travel Plan Co-ordinator will encourage off-site pedestrian routes that are well lit and maintained, communicating any deficiencies to the local authority.
- Initiative 9: All staff who use those modes of transport will be provided with a locker in which to store personal items, such as walking and cycling equipment.
- Initiative 10: The development will provide secure cycle parking in line with current local authority standards.
- Initiative 11: The Travel Plan Co-ordinator will promote cycling, providing staff with local cycle route maps (where available), within three months of store opening.
- Initiative 12: The Travel Plan Co-ordinator will investigate the potential for discounted public transport tickets / passes and season ticket loan agreements, prior to store opening.
- Initiative 13: The Travel Plan Co-ordinator will promote the facilities offered by any Community Transport operator in the area, prior to store opening.
- Initiative 14: The Travel Plan Co-ordinator will encourage informal car share arrangements within the store and publicise any local web site.
- Initiative 15: The Store Manager will administer a Guaranteed Ride Home scheme for employees.

These initiatives will be reviewed once the staff / customer travel survey has been undertaken. These are considered reasonable, however a budget for the TPC should be provided, as well as more certainty and commitment.

Targets and Monitoring

In the absence of a travel survey for the site, it is stated that the modal split have been taken from the Transport Assessment, though it should be noted that they do differ from those summarised in the Transport Assessment, as shown in **Table 12**.

Table 12 – Travel Plan Modal Splits

		Car Trips		Pedestrians		Cyclists		Public Transport	
		Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
EJSA Modal Split (TA)	Friday	70%	72%	24%	22%	1%	1%	5%	6%
	Saturday	56%	55%	37%	38%	1%	1%	6%	7%
EJSA Modal Split (TP)	Friday	83%	84%	14%	130%	1%	1%	3%	3%
	Saturday	64%	63%	33%	35%	1%	1%	1%	2%
AECOM Modal Split	Friday	93%	93%	7%	7%	0%	0%	0%	0%
	Saturday	81%	79%	16%	18%	0%	1%	3%	2%

Table 12 shows the differences between the Transport Assessment modal split and Travel Plan modal split, as well as with AECOM modal splits. We ask that these be checked and confirmed.

A target of 5% reduction in vehicular trips has been proposed in the Travel Plan and will be reviewed once the travel survey has been completed. This is considered acceptable.

In terms of monitoring, an initial survey will be undertaken within three months of occupation, with a snapshot survey carried out annually, and a full survey undertaken every other year. In order to validate the surveys, a traffic count survey will also be collected at the Lidl car park entrance on an annual basis.

Whilst not stated, we would suggest that the outcome of the monitoring be written up within three months of surveys and be shared with BMBC.

Summary

Having reviewed the report submitted, the key findings can be identified as follows:

- The Travel Plan outlines a target of 5% reduction in vehicular trips;
- The Travel Plan Co-ordinator should be in post 3 months prior to store opening;
- The initiatives are considered to be reasonable, though more commitment is required;
- Clarity should be provided on the modal splits; and
- A budget for the TPC should be outlined within the Travel Plan.

Appendix B – Appendices from Residential Site Transport Assessment Addendum by Bryan G Hall.

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APPENDIX BGH 1

Residential Development – Review of Transport Assessment

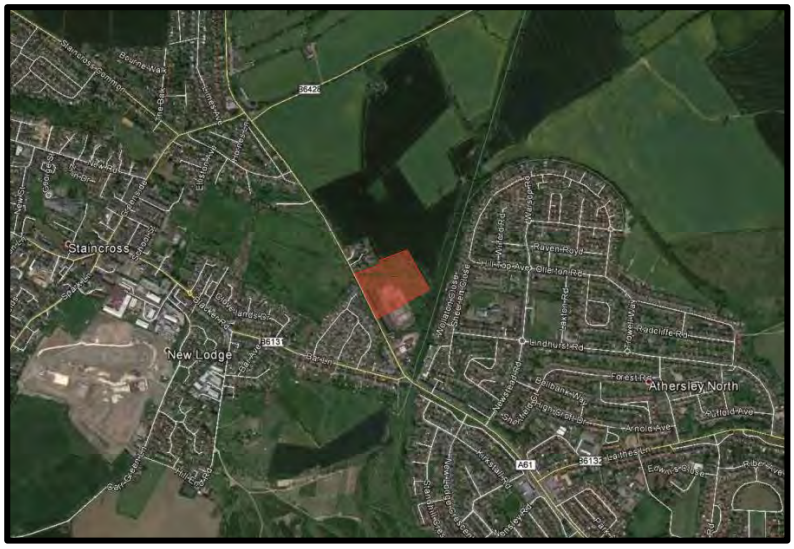
Specification No.	Client name	Project name	Date
02	Barnsley Metropolitan Borough Council	Residential Development at Former William Freeman Site, Wakefield Road, Mapplewell	16 March 2018

Prepared by	Checked & Approved by
Natasha Smithson	Stephen Moss

Introduction

AECOM have been commissioned on behalf of Barnsley Metropolitan Borough Council (BMBC) to provide a review of a Transport Assessment produced by Bryan G. Hall. The application reference is 2017/1718, and the proposals are for up to 85 residential dwellings located on the former William Freeman site along Wakefield Road in Mapplewell, Barnsley. The site location is shown in **Figure 1** as provided by Bryan G. Hall.

Figure 1 – Site Location Plan



AECOM reviewed the scoping email for the proposals of approximately 82 residential dwellings. The report dated 2 January 2018 concluded that the scope was generally acceptable and the main comments were:

- Suggestions were made regarding committed developments to be considered in the operational assessments;
- Accident data should be presented for the most recent five year period (2012 – 2017, inclusive);
- A growth factor from 2018 to 2023 (five years after submission) is to be used for the Barnsley 004 area;
- Conduct a sensitivity test of the discount food store to be located adjacent to the site; and
- The proposed site access should be designed to the appropriate DMRB standard, with visibility splays clearly shown.

It should also be noted that the site has been identified as a potential development site within the emerging Barnsley Local Plan currently at submission stage and due for adoption in Spring 2018, which will then replace the current Local Development Framework.

National and Local Planning Policy and Guidance

The following national and local planning policy and guidance documents were reviewed:

- National Planning Policy Framework (NPPF);
- Manual for Streets (MfS1);

- Manual for Street 2 (MfS2);
- Planning Practice Guidance;
- South Yorkshire Local Transport Plan;
- Barnsley Local Development Framework – Core Strategy; and
- Barnsley UDP and Emerging Barnsley Development Plan.

It was considered that the proposals are in line with the above policies and guidance.

Existing Site

The site is located on the northern section of the former William Freeman Works brownfield site, located to the east of Wakefield Road in Mapplewell, Barnsley. The site is bounded by the remainder of the former William Freeman Works site to the south (it should be noted that an application has also been submitted for a Lidl Foodstore on this section of land), Wakefield Road to the west, residential properties to the north and a disused railway line beyond which there are residential properties to the east.

The site currently takes access from Wakefield Road which is a two-way road that runs in a north-south direction. The carriageway is approximately 8m wide, there are pedestrian paths on both sides of the carriageway and there is street lighting. It has a speed limit of 40mph imposed which reduces to 30mph approximately 50m south of the existing site access.

Accident data was obtained from BMBC for the most recent five-year period (2012-2016) in the vicinity of the site. In total, there were 53 accidents reported in the study area, of which 44 were classified as slight and the remaining 9 were classified as serious. One of the accidents was located around the proposed site access and was due to a rear end shunt collision on the approach to the Wakefield Road / Bar Lane signalised junction. A cluster of accidents were also identified at the Wakefield Road / Laithes Lane junction, however it was considered that there were no highway safety issues with the road network in the vicinity of the site.

Sustainable Transport Accessibility

Wakefield Road currently has footways on both sides of the carriageway as well as most of the roads and streets on the local highway network, with crossing facilities at most junctions. Within a recommended maximum 2km walking distance, Athersley and Mapplewell are accessible with Athersley North Primary School located within 1km of the proposed site. There are also proposed plans for a Lidl food store located adjacent to the site.

A cycle isochrones map has been provided which shows that Barnsley town centre can be reached within a 5km cycle distance, and many of the suburbs are within an 8km cycle distance. There are a number of existing on and off road cycle routes in the vicinity of the site, including a shared pedestrian / cycle path along Laithes Lane. National Cycle Route 67 also runs between Derby and York and can be accessed via Lee Lane.

The nearest bus stops to the site are located on Bar Lane approximately 350m south of the site. The bus stops are served by the number 1 and X10 bus services. The number 1 bus provides a service every 10 minutes between Staincross and Barnsley Monday – Saturday and every 30 minutes on Sundays. The X10 bus operates an hourly service between Barnsley and Leeds.

Darton train station is approximately 3.6km west of the proposed site and Barnsley train station is approximately 4.4km south, and both are deemed accessible by cycle.

Proposed Development

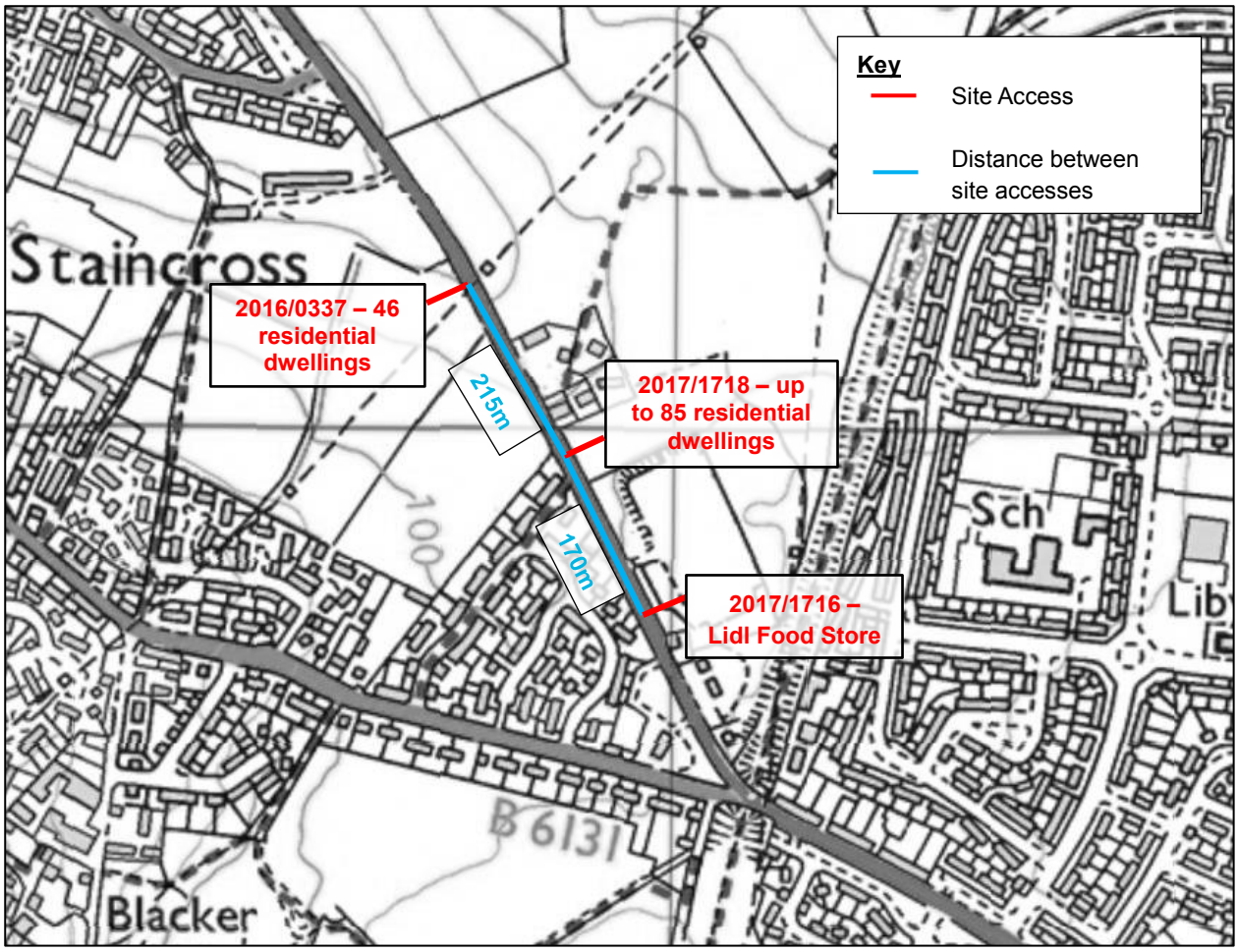
The development consists of up to 85 residential dwellings. Access to the site will be taken from Wakefield Road via a new priority right turn ghost island ‘T’ junction. AECOM requested in the scoping email response for the junction to be designed in accordance with DMRB standards. Therefore, the following geometries should be used for a road with a speed limit of 40mph:

- Corner radii = 6.0m
- Right-turn lane width = 3.5m
- Right-turn lane length = 50m (40m deceleration length plus 10m turning length)
- Direct taper length = 15m

- Visibility splays = 120m from 2.4m of edge of carriageway

In close proximity to the proposed residential site, there are two developments that are also planned to take access from Wakefield Road. Application ref: 2016/0337 is an already consented residential development with 46 dwellings, and application ref: 2017/1716 is a proposed Lidl food store. As such, the proposed site accesses will need to be considered together. **Figure 2** shows the location of each site access and the approximate distances between each.

Figure 2 – Review of Site Accesses



From the above, the consented site is on the opposite side of the road, and is then around 200m north of the proposed residential access. The proposed residential access is then around 180m north of the Lidl access on the same side of the road. Therefore as the right turns into the consented site will be from the north, this won't impact upon the two new sites.

There is then around 180m between the Lidl and the residential developments, so this will be enough to get the DMRB right-turn in without the residential site impacting on the Lidl access.

Car parking standards were taken from the 'Barnsley Local Development Framework – Supplementary Document – Parking' document which states that 1 space is to be provided for dwellings with 1 or 2 bedrooms and 2 spaces for dwellings with 3 or more bedrooms are to be provided. The TA states that parking will be provided in accordance with these standards.

Traffic Growth

AECOM suggested that the base traffic flows should be growthed to five years post submission. As the counts were undertaken in 2017, and a decision on the application is likely to be made in 2018, 2023 was considered the most appropriate future year. Therefore, TEMPRO was used to find the following growth factors:

Table 1 – Growth Factors

2017-2023	BGH Growth Factors	AECOM Growth Factors
Weekday AM	1.0954	1.0976
Weekday PM	1.0917	1.0938
Saturday	1.0938	1.0960

Whilst there are slight differences between the growth factors used by Bryan G. Hall and that derived by AECOM, it is likely that this will result in a negligible impact and is therefore deemed acceptable.

Committed Developments

The TA included the following committed developments in their assessments:

- 2015/1015 – approved reserved matters application for up to 325 residential dwellings on land west of Wakefield Lane (North Gawber);
- 2016/0337 – approved reserved matters application for 46 residential dwellings on land west of Wakefield Road opposite the proposed site; and
- 2016/1490 – full consent for 164 residential dwellings on land north of Lee Lane.

Following a search on the planning portal, we would agree that these are acceptable.

Trip Generation

The TRICS database was used to derive trip rates and generations for land use category 'Residential – Houses privately owned' and **Table 2** shows a comparison between the trip rates and generations derived by Bryan G. Hall in the TA and that derived by AECOM.

Table 2 – Trip Rates and Trip Generation

Residential – houses privately owned (up to 85 dwellings)		AM peak			PM peak		
		Arrive	Depart	Two-way	Arrive	Depart	Two-way
Bryan G. Hall	Trip Rate	0.156	0.384	0.540	0.355	0.175	0.530
	Trip Generation	13	33	46	30	15	45
AECOM	Trip Rate	0.165	0.378	0.543	0.354	0.177	0.531
	Trip Generation	14	32	46	30	15	45

The assessments show that the trip rates and trip generations are in-line with each other, and therefore the trip rates derived by Bryan G. Hall for the weekday AM and PM peaks are considered appropriate.

However, we would advise that a Saturday peak trip rate and trip generation be provided given that the Saturday peak has been assessed.

Trip Distribution

The trip distribution has been based on the 2011 Census Journey to Work data for the Middle Super Output Area of Barnsley 004, resulting in the distributions shown in **Table 3**. AECOM completed a sensitivity test using the same data and Google Maps to find the most likely route taken, and to compare against the trip distributions and resultant two-way trip generations provided by Bryan G. Hall. These are also provided in **Table 3**.

Table 3 – Trip Distributions and Two-Way Trip Generations

Direction	Bryan G. Hall Distribution	AM Two Way Trips	PM Two Way Trips	AECOM Distribution	AM Two Way Trips	PM Two Way Trips
North of Site Access	**36%**	**17**	**16**	**54%**	**25**	**24**
Wakefield Road (N)	20%	3	3	13%	3	3

Direction	Bryan G. Hall Distribution	AM Two Way Trips	PM Two Way Trips	AECOM Distribution	AM Two Way Trips	PM Two Way Trips
Lee Lane	3%	1	0	9%	2	2
Shaw Lane	0%	0	0	32%	8	8
Paddock Road	13%	2	2	0%	0	0
South of Site Access	**64%**	**29**	**29**	**46%**	**21**	**21**
Bar Lane	16%	5	5	5%	1	1
Laithes Lane	5%	1	1	9%	2	2
Rotherham Road	13%	4	4	11%	2	2
Wakefield Road (S)	30%	9	9	21%	4	4
TOTAL	**100%**	**46**	**45**	**100%**	**46**	**45**

From the site access, Bryan G. Hall show 36% of development traffic travelling north along Wakefield Road and 64% travelling south, whilst the trip distributions by AECOM estimate that 54% will travel north and 46% will travel south.

The result of this is 29 two-way vehicles travelling south during the AM peak using the BGH distribution, compared to 21 two-way vehicles using the AECOM distribution. Travelling north, the BGH distribution results in 17 two way vehicles compared to 25 two way vehicles during the AM peak. The results of the PM peak are similar.

Whilst we agree with the method used of using the 2011 Census Journey to Work data, the difference in resultant trip generations is considered negligible, and therefore accepts the derived trip distribution by Bryan G. Hall.

Operational Assessments

Fully classified counts were undertaken on Friday 10th and Saturday 11th November 2017 during the morning (07:00-08:00), evening (15:00-19:00) and Saturday (08:00-18:00) peaks to determine the peak hours. The peak hours were identified as 07:45-08:45 in the morning peak, 16:45-17:45 in the evening peak and 11:45-12:45 on the Saturday. The following junctions were surveyed and assessed in the base 2017 scenario:

- Wakefield Road / Paddock Road priority junction (600m north);
- Wakefield Road / Lee Lane / Shaw Lane staggered crossroads junction (800m north);
- Wakefield Road / Bar Lane signalised junction (250m south);
- Wakefield Road / Laithes Lane signalised junction (800m south); and
- Wakefield Road / Rotherham Road mini-roundabout junction (1.2km south).

The above junctions were assessed using Junctions 8, Junctions 9 and Linsig V3 junction modelling software, and the maximum RFC / DoS and queue length results are summarised below. The geometries for the junctions were also checked and are considered acceptable.

These junctions were modelled in the following assessment scenarios:

- Base 2017;
- Base 2023; and
- Base 2023 + Development.

Bryan G. Hall also conducted a sensitivity test to allow for the Lidl store located adjacent to the site. The results are summarised for each junction below. However, the trip generation for the Saturday peak has not been provided and this will need to be confirmed.

Table 4 shows the individual and cumulative development trips for the residential and Lidl food store developments.

Table 4 – Development Trips

Junction	Residential		Lidl		Residential + Lidl	
	AM	PM	AM	PM	AM	PM
Wakefield Road / Lee Lane / Shaw Lane	11	10	9	42	20	52
Wakefield Road / Paddock Road	17	16	12	67	29	83
Wakefield Road / Bar Lane	29	28	22	117	51	145
Wakefield Road / Laithes Lane	23	22	16	89	39	111
Wakefield Road / Rotherham Road	20	19	15	79	35	98

Wakefield Road / Paddock Road Priority Junction

Table 5 shows the maximum results of the assessments.

Table 5 – Wakefield Road / Paddock Road

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC	Queue	RFC	Queue	RFC	Queue
Base 2017	0.48	1	0.83	4	0.50	1
Base 2023	0.59	1	1.03	15	0.55	1
Base 2023 + Dev	0.60	1	1.05	17	0.56	0
Base 2023 + Dev + Lidl	0.62	2	1.12	24	0.61	1

In the Base 2017 scenario (i.e. at present), the junction operates within capacity, with the maximum RFC of 0.83 recorded during the weekday PM peak along the Paddock Road approach, with an associated queue of 4 vehicles. In 2023, the junction is expected to operate over capacity during the weekday PM peak with an RFC of 1.03 and associated queue of 15 vehicles on the Paddock Road approach.

With the development traffic, the junction is still expected to operate over capacity, during the weekday PM peak. The RFC and queue length increase slightly to an RFC of 1.05 and an additional 2 vehicles. The addition of the proposed Lidl development also increases the RFC and queue length, particularly along the Paddock Road approach.

Wakefield Road / Lee Lane / Shaw Lane

It is understood by Bryan G. Hall that as part of the Lee Lane application, an improvement scheme for the Wakefield Road / Lee Lane / Shaw Lane junction was proposed. Bryan G. Hall state in the TA "*this improvement scheme involves widening the approach arms of Shaw Lane and Lee Lane to provide two lanes for a short section on approach to the junction*", and has therefore been assumed to be in place by 2023 and has been used in this assessment year.

We were unable to confirm the geometries for the improved Wakefield Road / Lee Lane / Shaw Lane junction as we were unable to locate a plan of the improved highway works. We therefore ask that this be provided. **Table 6** shows the maximum results of the assessments.

Table 6 – Wakefield Rood / Lee Lane / Shaw Lane

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC	Queue	RFC	Queue	RFC	Queue
Base 2017	1.14	30	0.99	11	0.99	11
Base 2023	1.62	115	1.27	42	1.17	34
Base 2023 + Dev	1.64	117	1.28	43	1.18	35
Base 2023 + Dev + Lidl	1.65	119	1.35	48	1.21	39

The results show that the junction currently operates over capacity, particularly during the weekday AM peak. The maximum RFC is 1.14 along the Lee Lane approach and queues of 115 vehicles, and it should also be noted that the Shaw Lane approach operates with an RFC above 1.00 and queues of 41 vehicles. In 2023, the junction is expected to operate over capacity during all peak hours despite the improvements implemented.

With the residential development traffic, the junction is likely to operate with a slight increase in RFC and queue lengths. During the weekday AM peak, the Lee Lane approach operates with an RFC of 1.64 and an additional 2 vehicles queueing. With the Lidl development traffic, the RFCs and queue lengths increase slightly with an RFC of 1.65 and an additional 4 vehicles queueing compared to the Base 2023 scenario.

Wakefield Road / Bar Lane

Table 7 shows the maximum results of the assessments.

Table 7 – Wakefield Road / Bar Lane

Scenario	Weekday AM		Weekday PM		Saturday	
	DoS	Queue	DoS	Queue	DoS	Queue
Base 2017	88.6%	16	83.5%	12	79.2%	12
Base 2023	101.5%	30	96.1%	18	90.8%	16
Base 2023 + Dev	101.8%	31	97.4%	19	91.3%	17
Base 2023 + Dev + Lidl	102.4%	32	100.7%	26	94.8%	18

The junction currently operates within capacity, though in 2023, it is likely the junction will operate over capacity during the weekday AM peak hour. The maximum Degree of Saturation (DoS) is 101.5% on the Bar Lane approach with an associated queue of 30 vehicles during the Weekday AM peak.The Wakefield Road Northbound approach operates with an RFC under 90%, but with long queue lengths of maximum 24 vehicles, identified during the Weekday AM peak.

The result of the residential development increases the DoS and queue lengths slightly along all approaches. The weekday AM peak operates with a DoS of 101.8% along the Bar Lane approach. The Wakefield Road Northbound approach also operates with a DoS above 100% and an associated queue of 46 vehicles. With the Lidl development, the DoS and queue lengths increase slightly, and the junction is likely to operate above capacity in the weekday AM and PM peaks.

Wakefield Road / Laithes Lane

Table 8 shows the maximum results of the assessments.

Table 8 – Wakefield Road / Laithes Lane

Scenario	Weekday AM		Weekday PM		Saturday	
	DoS	Queue	DoS	Queue	DoS	Queue
Base 2017	88.0%	25	87.6%	17	79.6%	18
Base 2023	99.6%	48	99.3%	49	89.8%	29
Base 2023 + Dev	101.0%	56	99.9%	52	90.5%	17
Base 2023 + Dev + Lidl	101.5%	59	103.2%	75	92.9%	33

The Wakefield Road / Laithes Lane junction currently operates within capacity. In the Base 2023 scenario, the junction is likely to operate approaching capacity with a DoS of 99.6% recorded during the weekday AM peak and an associated queue of 48 vehicles along the Wakefield Road (N) approach.

With the residential development, the junction is expected to operate over capacity during the weekday AM peak which has a DoS of 101.0% along the Wakefield Road (N) approach. The queue length also increases by 9 vehicles. The impact of the Lidl development is small with the DoS increasing slightly along all approaches though the queue lengths, particularly in the Weekday PM peak increase by 23 vehicles queueing which is considered significant.

Wakefield Road / Rotherham Road

Table 9 shows the maximum results of the assessments.

Table 9 – Wakefield Road / Rotherham Road

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC	Queue	RFC	Queue	RFC	Queue
Base 2017	0.76	3	0.73	3	0.64	2
Base 2023	0.94	10	0.89	7	0.78	4
Base 2023 + Dev	0.96	11	0.90	8	0.79	4
Base 2023 + Dev + Lidl	0.97	12	0.94	12	0.82	4

The results show the junction currently operates below capacity. The maximum RFC is 0.76 during the weekday AM peak along the Rotherham Road approach, with a queue of 3 vehicles. The base 2023 scenario is expected to operate approaching capacity with an RFC of 0.94 and an associated queue of 10 vehicles along the Rotherham Road approach.

The impact of the residential development traffic and the Lidl development traffic increases the RFC and queue lengths slightly along all approaches, though it is still expected to operate approaching capacity.

Site Access

Given that the junction will not exist until the development is brought forward, the site access junction has only been modelled in the Base 2023 scenario. **Table 10** shows the maximum results of the assessments.

Table 10 – Site Access

Scenario	Weekday AM		Weekday PM		Saturday	
	RFC	Queue	RFC	Queue	RFC	Queue
Base 2023 + Dev	0.10	0	0.05	0	0.09	0
Base 2023 + Dev + Lidl	0.10	0	0.05	0	0.10	0

The results show that the junction will operate well within capacity, also with the Lidl development traffic.

Bryan G. Hall state that the addition of the development traffic is not deemed to result in "*material ham to the safe and free flow operation of any of the junctions assessed*".

Summary and Conclusions

AECOM have reviewed the Transport Assessment produced by Bryan G. Hall for a residential development of up to 85 dwellings on the former William Freeman site along Wakefield Road in Mapplewell, Barnsley. The site has been identified as a potential development site within the emerging Barnsley Local Plan, due for adoption in Spring 2018.

AECOM also reviewed the scoping email for the proposals of approximately 82 dwellings in a report dated 2 January 2018. It concluded that the scope was generally acceptable with a few recommendations made.

The full comments for the Transport Assessment are summarised below:

- It is stated that as part of the Lee Lane committed development, improvements will be made to the Wakefield Road / Lee Lane / Shaw Lane junction. However, we have been unable to locate these improvements and ask that this be provided.
- Whilst the weekday trip rates and generations are considered acceptable, the Saturday trip rates and generations should be provided given that this scenario has been modelled.
- A sensitivity test was carried out by AECOM in order to confirm the trip distributions used by Bryan G. Hall. We accept the method of using the 2011 Census Journey to Work data for Barnsley 004.
- AECOM asked in the scoping email review that the site access be designed in accordance with DMRB, however the minor road carriageway width and ghost island taper length appear to be slightly shorter than the DMRB standards. We would require the site access junction measurements to be checked and clarified.
- a number of the junctions are predicted to operate above capacity, and this is then made worse with the cumulative Lidl development.

Framework Travel Plan

A Framework Travel Plan was also submitted as part of the application, and has been reviewed by AECOM.

The Travel Plan states that the overall aim "*is to influence the travel choice of residents to achieve a positive modal shift and reduce the impact the development has on the local network*" and therefore sets the following objectives:

- To increase awareness of the advantages and potential for travel by environmentally friendly modes;
- To reduce the number of single occupancy car trips; and
- To encourage residents to adopt sustainable modes of travel for most of their journeys to and from the site.

Following occupation of the development, the Framework Travel Plan will be developed into a full Travel Plan.

A Travel Plan Co-ordinator (TPC) will be assigned prior to marketing the site and will be in place for a minimum of 5 years post full occupation. They will be responsible for the overall management and implementation of the Framework Travel Plan.

A dedicated budget will be available for the TPC and this will be provided by the developer, though an exact amount is not stated.

As the site has no travel survey data for the development, data was taken from the 2011 Census Method of Travel to Work for Barnsley 004 Middle Super Output Area (MSOA). A preliminary target of a 5% reduction in single-occupancy vehicle trips and corresponding increase in sustainable travel modes has been assumed. The target will be reviewed following an initial survey to take place within three months of meaningful occupation. These have been assumed as follows:

Table 11 – Modal Split Summary

Mode of Travel	Number	Modal Split (%)	Target Modal Split (%)
Train	54	2%	2%
Bus	167	5%	7%
Driving or Passenger (Car / Van)	2,892	84%	79%
Bicycle	25	1%	2%
On foot	273	8%	10%
Total	**3,411**	**100%**	**100%**

AECOM verified the modal splits and consider it, as well as the target, to be acceptable.

The Framework Travel Plan includes a number of measures that are summarised below:

- Measure 1 – Site Specific Travel Guide; this will be prepared, agreed with BMBC and provided to all new residents. It will include site specific travel information, details of local initiatives and contact details of the TPC.
- Measure 2 – Personalised Travel Planning; a letter will be sent to each resident within one month of occupation to offer each property personalised travel planning with the TPC to help guide people through their travel options.
- Measure 3 – Trial Public Transport Ticket; a trial public transport ticket will be provided via the residents travel guide to show how easy it can be to utilise public transport.
- Measure 4 – Promote Walking and Cycling; all residents will be offered a pedometer or gold standard cycle D-lock as an incentive to encourage walking and cycling. This will be advertised through the travel guide and an associated letter.
- Measure 5 – Promote Car Sharing; the TPC will inform residents of the local web-based scheme ‘Car Share South Yorkshire’.
- Measure 6 – Reducing the Need to Travel; the TPC will promote through the travel guide the advantages of internet use and home delivery to reduce the need to travel.

In terms of monitoring and review of the Travel Plan, residents will be encouraged to participate in a travel survey, the first of which will be undertaken within three months of meaningful occupation of the site (to be determined and agreed with BMBC), and then every 2 years hence for a minimum period of 5 years (i.e. years one, three and five). A snapshot survey will take place in years two and four. The results of the travel survey will be reviewed and shared with BMBC within three months of each survey.

APPENDIX BGH 2

Calculation Reference: AUDIT-604801-180525-0502

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

VEHICLES

Selected regions and areas:

05	**EAST MIDLANDS**		
	NR	NORTHAMPTONSHIRE	1 days
08	**NORTH WEST**		
	MS	MERSEYSIDE	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 31 to 102 (units:)
Range Selected by User: 5 to 4334 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 27/11/17

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

Selected survey days:

Saturday	1 days
Sunday	1 days

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

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2

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

Selected Location Sub Categories:

Residential Zone	2

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

Secondary Filtering selection:

Use Class:

C3	2 days

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

Secondary Filtering selection (Cont.):

Population within 1 mile:

20,001 to 25,000	2 days

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

Population within 5 miles:

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

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	1 days

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

Travel Plan:

No	2 days

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

PTAL Rating:

No PTAL Present	2 days

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

LIST OF SITES relevant to selection parameters

1	**MS-03-A-02**	**DETACHED**		**MERSEYSIDE**
	RIVERSIDE DRIVE			
	AIGBURTH			
	LIVERPOOL			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		31	
	Survey date: SUNDAY		*05/09/10*	*Survey Type: MANUAL*
2	**NR-03-A-01**	**HOUSES**		**NORTHAMPTONSHIRE**
	BOUGHTON GREEN ROAD			
	KINGSTHORPE			
	NORTHAMPTON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		102	
	Survey date: SATURDAY		*22/09/12*	*Survey Type: MANUAL*

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	67	0.023	2	67	0.030	2	67	0.053
08:00 - 09:00	2	67	0.053	2	67	0.105	2	67	0.158
09:00 - 10:00	2	67	0.083	2	67	0.120	2	67	0.203
10:00 - 11:00	2	67	0.143	2	67	0.173	2	67	0.316
11:00 - 12:00	2	67	0.060	**2**	**67**	**0.218**	2	67	0.278
12:00 - 13:00	2	67	0.165	2	67	0.203	2	67	0.368
13:00 - 14:00	2	67	0.165	2	67	0.120	2	67	0.285
14:00 - 15:00	2	67	0.150	2	67	0.150	2	67	0.300
15:00 - 16:00	**2**	**67**	**0.226**	2	67	0.143	2	67	0.369
16:00 - 17:00	2	67	0.211	2	67	0.165	**2**	**67**	**0.376**
17:00 - 18:00	2	67	0.188	2	67	0.165	2	67	0.353
18:00 - 19:00	2	67	0.143	2	67	0.120	2	67	0.263
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.610			1.712			3.322

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

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

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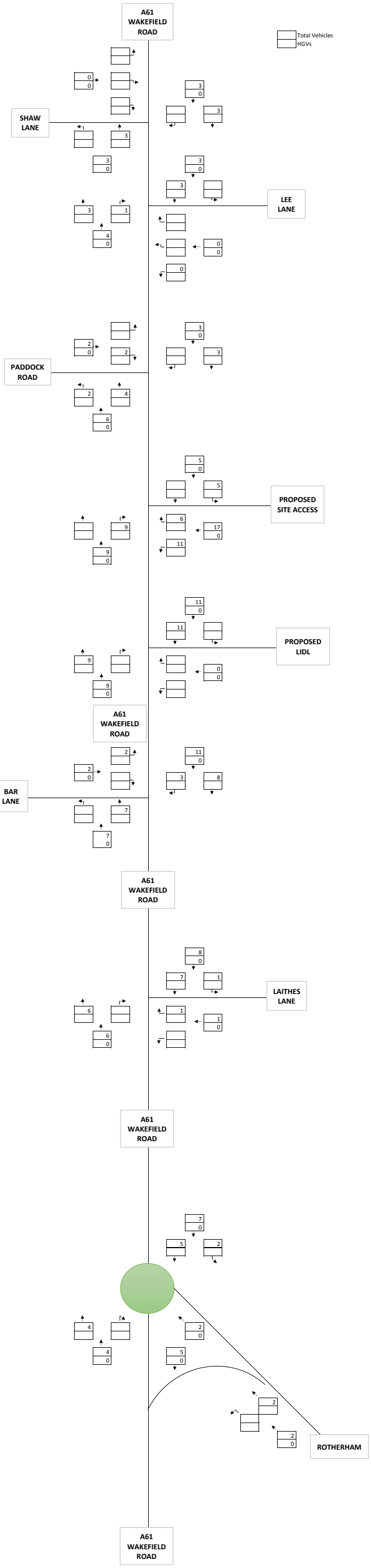
Parameter summary

Trip rate parameter range selected:	31 - 102 (units:)
Survey date date range:	01/01/10 - 27/11/17
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	1
Number of Sundays:	1
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

APPENDIX BGH 3

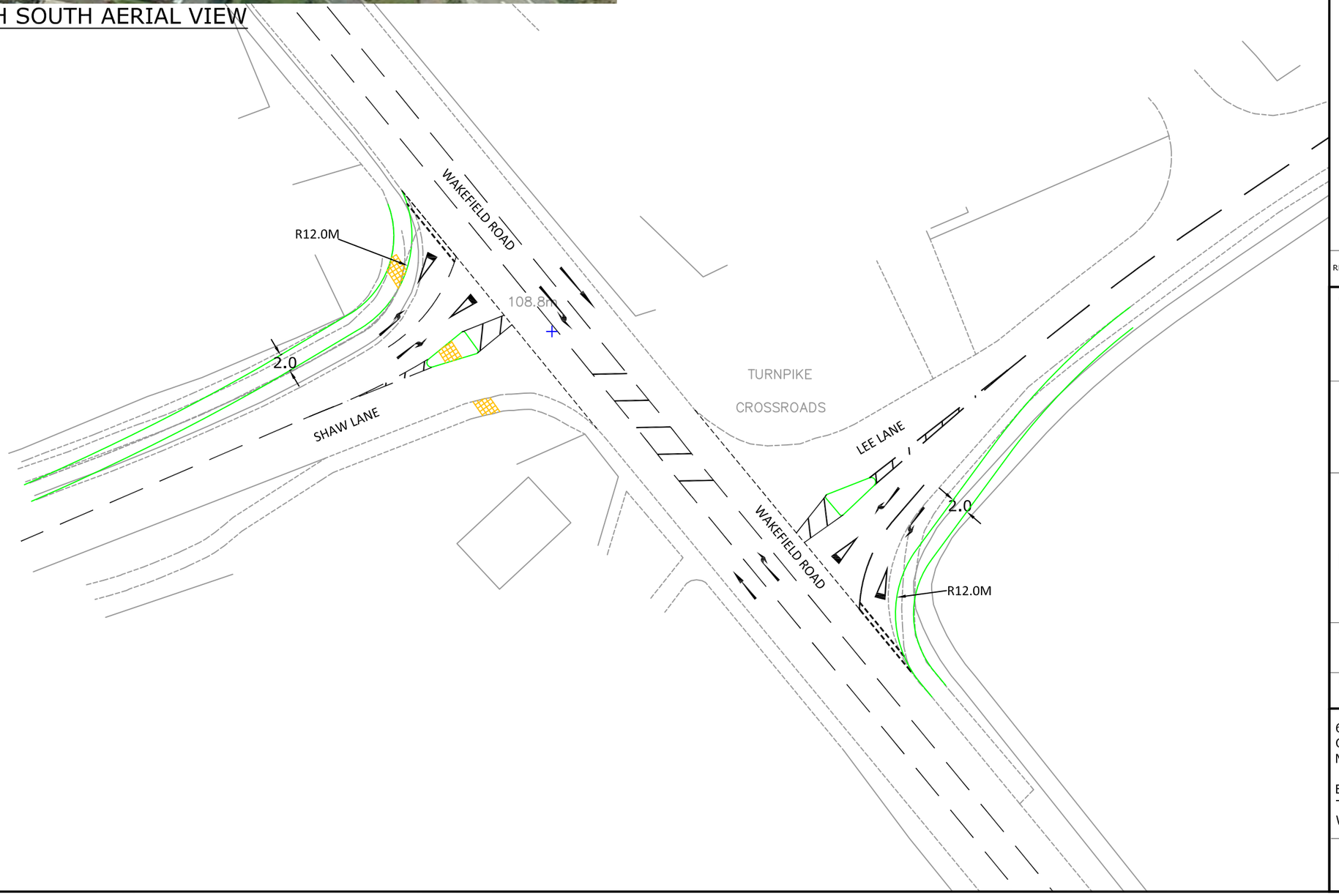
TRIP GENERATION
PROPOSED RESIDENTIAL DEVELOPMENT, WAKEFIELD ROAD, MAPPLEWELL
SATURDAY 11TH NOVEMBER
11:45 - 12:45
SATURDAY PEAK



APPENDIX BGH 4



NORTH SOUTH AERIAL VIEW



NOTES

REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

STRATEGIC LAND GROUP

PROJECT:

LEE LANE, ROYSTON

DRAWING TITLE:

POTENTIAL JUNCTION IMPROVEMENTS AT WAKEFIELD ROAD/SHAW LANE & WAKEFIELD ROAD/LEE LANE

SCALES:

1:250 @ A3

DRAWN:	CHECKED:	DATE:
JC	TSB	FEB 14

6th Floor, Quay House
Quay Street
Manchester, M3 3JE

Email: info@croftts.co.uk
Tel: 0161 827 1740
Web: www.croftts.co.uk

croft
Transport Solutions

DRAWING NUMBER: 0255-06

REVISION: A

Z:\projects\0255 Lee Lane, Royston\CAD\Croft Drawings\0255-06A.dwg

APPENDIX BGH 5

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]
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Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

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Filename: Wakefield Road - Lee Lane - Shaw Lane Committed Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Wakefield Road - Lee Lane - Shaw Lane Committed Scheme
Report generation date: 29/08/2018 15:02:23

« Committed Layout - 2023 Predicted, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	Committed Layout - 2023 Predicted			
Stream B-C	0.35	11.56	0.26	B
Stream B-AD	35.05	317.41	1.18	F
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-
Stream A-D	0.50	11.23	0.34	B
Stream D-A	0.39	11.73	0.28	B
Stream D-BC	20.64	220.14	1.10	F
Stream C-D	-	-	-	-
Stream C-A	-	-	-	-
Stream C-B	0.24	8.32	0.20	A

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

"D4 - 2023 Base, AM" model duration: 07:30 - 09:00
"D5 - 2023 Base, PM" model duration: 16:30 - 18:00
"D6 - 2023 Base, Saturday" model duration: 11:30 - 13:00
"D7 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D8 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D9 - 2023 Predicted, Saturday " model duration: 11:30 - 13:00
"D10 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D11 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D12 - 2023 Predicted with Lidl, Saturday" model duration: 11:30 - 13:00
"D13 - 2023 Predicted Lidl Only, AM" model duration: 07:30 - 09:00
"D14 - 2023 Predicted Lidl Only, PM" model duration: 16:30 - 18:00
"D15 - 2023 Predicted Lidl Only, Saturday" model duration: 11:30 - 13:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:02:22

File summary

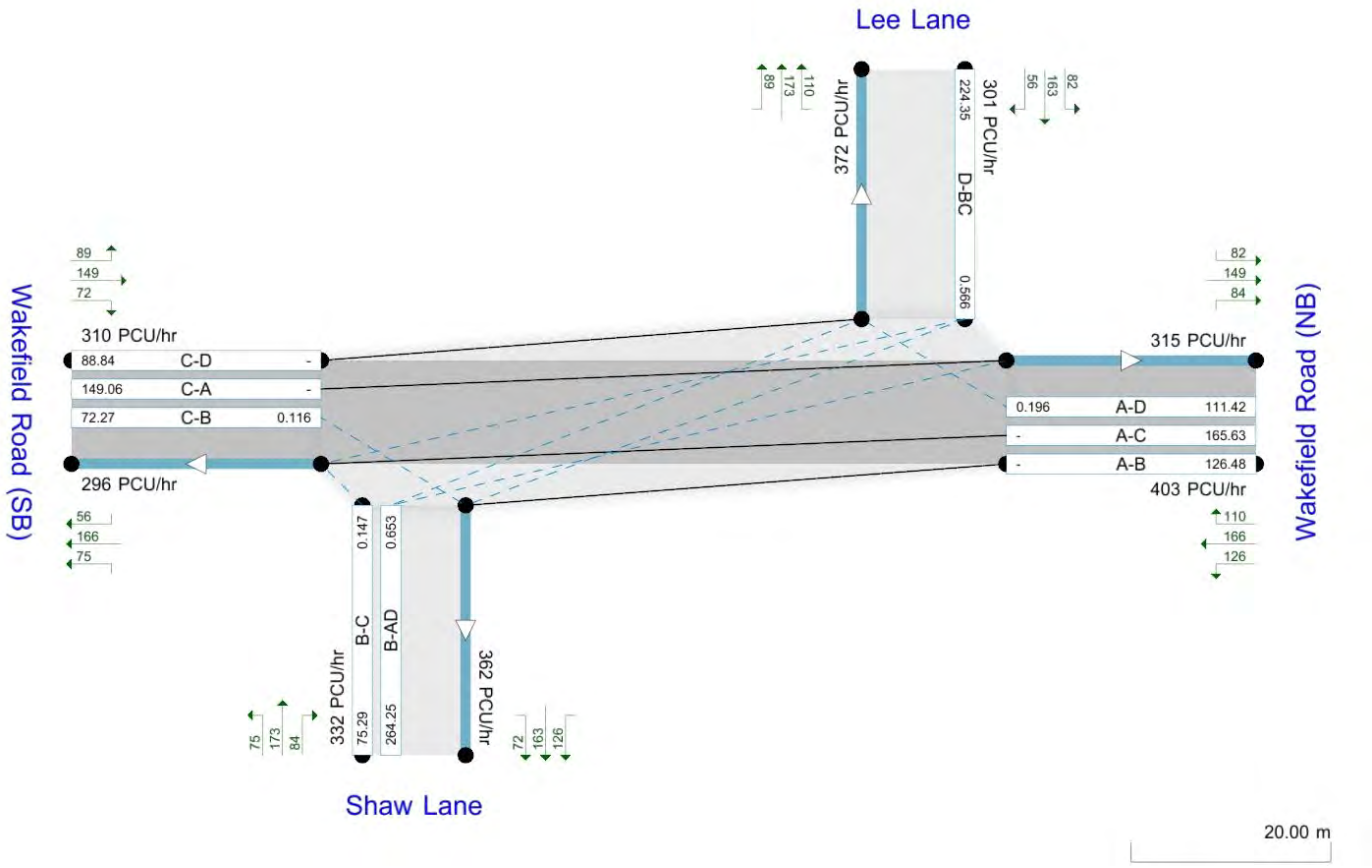
Title	Mapplewell, Barnsley
Location	Wakefield Road, Lee Lane, Shaw Lane Stagger
Site Number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14-114
Enumerator	BRYANGHALL\JTurner
Description	

Analysis Options

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

Units

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



Showing modelled flow through junction (PCU/hr).
Streams (upstreams) show Total Demand (PCU/hr). Streams (downstreams) show RFC ()
Time Segment: (11:30-11:45)
Showing Analysis Set "A1 - Committed Layout "; Demand Set "D9 - 2023 Predicted, Saturday "

The junction diagram reflects the last run of ARCADY.

Committed Layout - 2023 Predicted, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Committed Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted, Saturday	2023 Predicted	Saturday		ONE HOUR	11:30	13:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Wakefield Road - Lee Lane - Shaw Lane	OS-NS Stagger (UK RL Stagger)	Two-way	A,B,C,D	164.93	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Wakefield Road (NB)	A	Wakefield Road (NB)		Major
Shaw Lane	B	Shaw Lane		Minor
Wakefield Road (SB)	C	Wakefield Road (SB)		Major
Lee Lane	D	Lee Lane		Minor

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Wakefield Road (NB)	6.00		0.00	✓	3.00	130.00		
Wakefield Road (SB)	6.00		0.00	✓	3.00	250.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Shaw Lane	Two lanes		3.90	3.85						✓		55	35
Lee Lane	Two lanes		3.88	4.06						✓		40	65

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	705.776	-	-	-	0.273	0.273	0.273	-	0.273	-	-
1	B-AD	556.295	0.101	0.256	-	-	-	0.161	0.366	0.161	0.101	0.256
1	B-C	704.176	0.108	0.273	-	-	-	-	-	-	0.108	0.273
1	C-B	781.320	0.303	0.303	-	-	-	-	-	-	0.303	0.303
1	D-A	723.432	-	-	-	0.280	0.111	0.280	-	0.111	-	-
1	D-BC	578.082	0.167	0.167	0.380	0.266	0.105	0.266	-	0.105	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Wakefield Road (NB)	ONE HOUR	✓	536.00	100.000
Shaw Lane	ONE HOUR	✓	451.00	100.000
Wakefield Road (SB)	ONE HOUR	✓	412.00	100.000
Lee Lane	ONE HOUR	✓	408.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	0.000	168.000	220.000	148.000
	Shaw Lane	115.000	0.000	100.000	236.000
	Wakefield Road (SB)	198.000	96.000	0.000	118.000
	Lee Lane	110.000	222.000	76.000	0.000

Turning Proportions (PCU) - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	0.00	0.31	0.41	0.28
	Shaw Lane	0.25	0.00	0.22	0.52
	Wakefield Road (SB)	0.48	0.23	0.00	0.29
	Lee Lane	0.27	0.54	0.19	0.00

Vehicle Mix

Average PCU Per Vehicle - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	1.000	1.010	1.022	1.000
	Shaw Lane	1.010	1.000	1.000	1.006
	Wakefield Road (SB)	1.028	1.000	1.000	1.000
	Lee Lane	1.000	1.010	1.000	1.000

Heavy Vehicle Percentages - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	0.0	1.0	2.2	0.0
	Shaw Lane	1.0	0.0	0.0	0.6
	Wakefield Road (SB)	2.8	0.0	0.0	0.0
	Lee Lane	0.0	1.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.26	11.56	0.35	B
B-AD	1.18	317.41	35.05	F
A-B	-	-	-	-
A-C	-	-	-	-
A-D	0.34	11.23	0.50	B
D-A	0.28	11.73	0.39	B
D-BC	1.10	220.14	20.64	F
C-D	-	-	-	-
C-A	-	-	-	-
C-B	0.20	8.32	0.24	A

Main Results for each time segment

Main results: (11:30-11:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	75.29	74.60	0.00	511.84	0.147	0.17	8.222	A
B-AD	264.25	257.22	0.00	404.70	0.653	1.76	23.606	C
A-B	126.48	126.48	0.00	-	-	-	-	-
A-C	165.63	165.63	0.00	-	-	-	-	-
A-D	111.42	110.46	0.00	568.46	0.196	0.24	7.844	A
D-A	82.81	82.09	0.00	538.92	0.154	0.18	7.881	A
D-BC	224.35	219.35	0.00	396.04	0.566	1.25	20.011	C
C-D	88.84	88.84	0.00	-	-	-	-	-
C-A	149.06	149.06	0.00	-	-	-	-	-
C-B	72.27	71.76	0.00	624.98	0.116	0.13	6.502	A

Main results: (11:45-12:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	89.90	89.63	0.00	465.26	0.193	0.24	9.577	A
B-AD	315.54	306.18	0.00	374.39	0.843	4.10	47.537	E
A-B	151.03	151.03	0.00	-	-	-	-	-
A-C	197.78	197.78	0.00	-	-	-	-	-
A-D	133.05	132.72	0.00	539.89	0.246	0.32	8.834	A
D-A	98.89	98.61	0.00	492.62	0.201	0.25	9.130	A
D-BC	267.90	262.59	0.00	359.23	0.746	2.58	35.651	E
C-D	106.08	106.08	0.00	-	-	-	-	-
C-A	178.00	178.00	0.00	-	-	-	-	-
C-B	86.30	86.15	0.00	593.12	0.146	0.17	7.099	A

Main results: (12:00-12:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	110.10	109.67	0.00	425.52	0.259	0.34	11.381	B
B-AD	386.46	323.61	0.00	332.90	1.161	19.81	158.946	F
A-B	184.97	184.97	0.00	-	-	-	-	-
A-C	242.22	242.22	0.00	-	-	-	-	-
A-D	162.95	162.34	0.00	500.47	0.326	0.47	10.627	B
D-A	121.11	120.59	0.00	435.67	0.278	0.38	11.406	B
D-BC	328.10	290.78	0.00	308.78	1.063	11.91	116.080	F
C-D	129.92	129.92	0.00	-	-	-	-	-
C-A	218.00	218.00	0.00	-	-	-	-	-
C-B	105.70	105.43	0.00	549.55	0.192	0.24	8.101	A

Main results: (12:15-12:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	110.10	110.08	0.00	421.33	0.261	0.35	11.564	B
B-AD	386.46	325.50	0.00	327.55	1.180	35.05	317.410	F
A-B	184.97	184.97	0.00	-	-	-	-	-
A-C	242.22	242.22	0.00	-	-	-	-	-
A-D	162.95	162.85	0.00	483.29	0.337	0.50	11.228	B
D-A	121.11	121.07	0.00	427.82	0.283	0.39	11.732	B
D-BC	328.10	293.19	0.00	298.62	1.099	20.64	220.135	F
C-D	129.92	129.92	0.00	-	-	-	-	-
C-A	218.00	218.00	0.00	-	-	-	-	-
C-B	105.70	105.67	0.00	538.25	0.196	0.24	8.322	A

Main results: (12:30-12:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	89.90	90.24	0.00	436.01	0.206	0.26	10.423	B
B-AD	315.54	353.16	0.00	363.31	0.869	25.65	308.554	F
A-B	151.03	151.03	0.00	-	-	-	-	-
A-C	197.78	197.78	0.00	-	-	-	-	-
A-D	133.05	133.60	0.00	503.47	0.264	0.36	9.747	A
D-A	98.89	99.27	0.00	439.46	0.225	0.29	10.593	B
D-BC	267.90	323.88	0.00	337.80	0.793	6.64	165.912	F
C-D	106.08	106.08	0.00	-	-	-	-	-
C-A	178.00	178.00	0.00	-	-	-	-	-
C-B	86.30	86.55	0.00	569.64	0.152	0.18	7.454	A

Main results: (12:45-13:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	75.29	75.56	0.00	468.62	0.161	0.19	9.165	A
B-AD	264.25	357.40	0.00	400.70	0.659	2.36	120.129	F
A-B	126.48	126.48	0.00	-	-	-	-	-
A-C	165.63	165.63	0.00	-	-	-	-	-
A-D	111.42	111.83	0.00	540.41	0.206	0.26	8.409	A
D-A	82.81	83.21	0.00	509.75	0.162	0.20	8.449	A
D-BC	224.35	244.69	0.00	379.28	0.592	1.56	30.385	D
C-D	88.84	88.84	0.00	-	-	-	-	-
C-A	149.06	149.06	0.00	-	-	-	-	-
C-B	72.27	72.46	0.00	616.94	0.117	0.13	6.615	A

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]
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Filename: Wakefield Road - Paddock Road Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Wakefield Road - Paddock Road
Report generation date: 29/08/2018 15:05:45

« Existing Layout - 2023 Predicted, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2023 Predicted			
Stream B-C	0.04	11.21	0.04	B
Stream B-A	1.24	23.26	0.56	C
Stream C-AB	0.03	4.58	0.02	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2017 Existing, AM" model duration: 07:30 - 09:00
"D2 - 2017 Existing, PM" model duration: 16:30 - 18:00
"D3 - 2017 Existing, Saturday" model duration: 11:30 - 13:00
"D4 - 2023 Base, AM" model duration: 07:30 - 09:00
"D5 - 2023 Base, PM" model duration: 16:30 - 18:00
"D6 - 2023 Base, Saturday" model duration: 11:30 - 13:00
"D7 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D8 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D9 - 2023 Predicted, Saturday " model duration: 11:30 - 13:00
"D10 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D11 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D12 - 2023 Predicted with Lidl, Saturday" model duration: 11:30 - 13:00
"D13 - 2023 Predicted Lidl Only, AM" model duration: 07:30 - 09:00
"D14 - 2023 Predicted Lidl Only, PM" model duration: 16:30 - 18:00
"D15 - 2023 Predicted Lidl Only, Saturday" model duration: 11:30 - 13:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:05:44

File summary

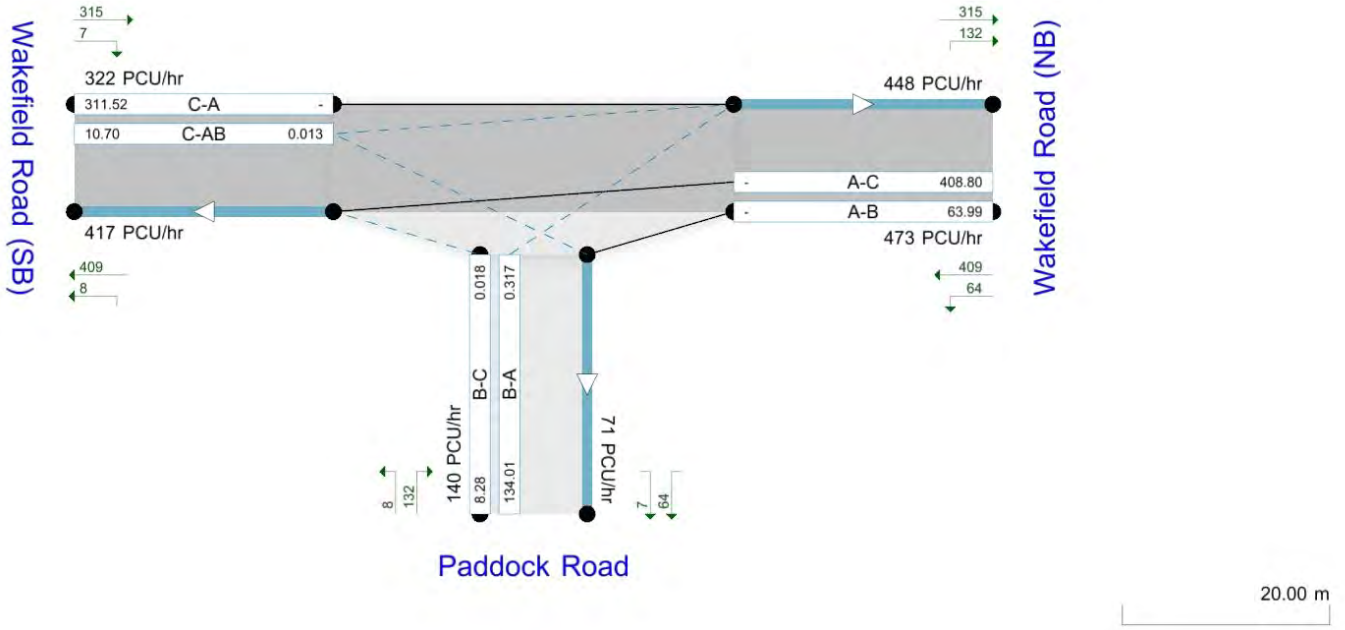
Title	Mapplewell, Barnsley
Location	Wakefield Road - Paddock Road
Site Number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14/114
Enumerator	BRYANGHALL\JTurner
Description	

Analysis Options

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

Units

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



Value Comparison Overlay Boxes Enabled
Showing modelled flow through junction (PCU/hr).
Streams (upstreams) show Total Demand (PCU/hr). Streams (downstreams) show RFC ()
Time Segment: (11:30-11:45)
Showing Analysis Set "A1 - Existing Layout "; Demand Set "D9 - 2023 Predicted, Saturday "

The junction diagram reflects the last run of ARCADY.

Existing Layout - 2023 Predicted, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted, Saturday	2023 Predicted	Saturday		ONE HOUR	11:30	13:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	A,B,C	21.15	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Wakefield Road (NB)	A	Wakefield Road (NB)		Major
Paddock Road	B	Paddock Road		Minor
Wakefield Road (SB)	C	Wakefield Road (SB)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Wakefield Road (SB)	7.90		0.00		2.20	250.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Paddock Road	One lane plus flare				10.00	6.00	4.40	3.00	3.00		1.00	30	80

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	580.881	0.097	0.245	0.154	0.350
1	B-C	612.553	0.086	0.218	-	-
1	C-B	718.741	0.255	0.255	-	-

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

Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Wakefield Road (NB)	ONE HOUR	✓	628.00	100.000
Paddock Road	ONE HOUR	✓	189.00	100.000
Wakefield Road (SB)	ONE HOUR	✓	428.00	100.000

Turning Proportions

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

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	0.000	85.000	543.000
	Paddock Road	178.000	0.000	11.000
	Wakefield Road (SB)	419.000	9.000	0.000

Turning Proportions (PCU) - Site Access (for whole period)

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	0.00	0.14	0.86
	Paddock Road	0.94	0.00	0.06
	Wakefield Road (SB)	0.98	0.02	0.00

Vehicle Mix

Average PCU Per Vehicle - Site Access (for whole period)

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	1.000	1.000	1.016
	Paddock Road	1.000	1.000	1.000
	Wakefield Road (SB)	1.022	1.000	1.000

Heavy Vehicle Percentages - Site Access (for whole period)

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	0.0	0.0	1.6
	Paddock Road	0.0	0.0	0.0
	Wakefield Road (SB)	2.2	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.04	11.21	0.04	B
B-A	0.56	23.26	1.24	C
C-AB	0.02	4.58	0.03	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (11:30-11:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	8.28	8.21	0.00	462.61	0.018	0.02	7.921	A
B-A	134.01	132.19	0.00	423.29	0.317	0.45	12.293	B
C-AB	10.70	10.64	0.00	803.25	0.013	0.02	4.578	A
C-A	311.52	311.52	0.00	-	-	-	-	-
A-B	63.99	63.99	0.00	-	-	-	-	-
A-C	408.80	408.80	0.00	-	-	-	-	-

Main results: (11:45-12:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.89	9.87	0.00	418.28	0.024	0.02	8.814	A
B-A	160.02	159.16	0.00	392.66	0.408	0.67	15.357	C
C-AB	14.03	14.01	0.00	822.02	0.017	0.02	4.493	A
C-A	370.74	370.74	0.00	-	-	-	-	-
A-B	76.41	76.41	0.00	-	-	-	-	-
A-C	488.15	488.15	0.00	-	-	-	-	-

Main results: (12:00-12:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	12.11	12.06	0.00	336.29	0.036	0.04	11.102	B
B-A	195.98	193.84	0.00	350.28	0.560	1.20	22.697	C
C-AB	19.53	19.49	0.00	848.50	0.023	0.03	4.386	A
C-A	451.71	451.71	0.00	-	-	-	-	-
A-B	93.59	93.59	0.00	-	-	-	-	-
A-C	597.85	597.85	0.00	-	-	-	-	-

Main results: (12:15-12:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	12.11	12.11	0.00	333.35	0.036	0.04	11.206	B
B-A	195.98	195.86	0.00	350.28	0.560	1.24	23.260	C
C-AB	19.54	19.54	0.00	848.51	0.023	0.03	4.389	A
C-A	451.70	451.70	0.00	-	-	-	-	-
A-B	93.59	93.59	0.00	-	-	-	-	-
A-C	597.85	597.85	0.00	-	-	-	-	-

Main results: (12:30-12:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.89	9.94	0.00	415.54	0.024	0.02	8.876	A
B-A	160.02	162.13	0.00	392.67	0.408	0.71	15.755	C
C-AB	14.04	14.07	0.00	822.04	0.017	0.02	4.502	A
C-A	370.72	370.72	0.00	-	-	-	-	-
A-B	76.41	76.41	0.00	-	-	-	-	-
A-C	488.15	488.15	0.00	-	-	-	-	-

Main results: (12:45-13:00)

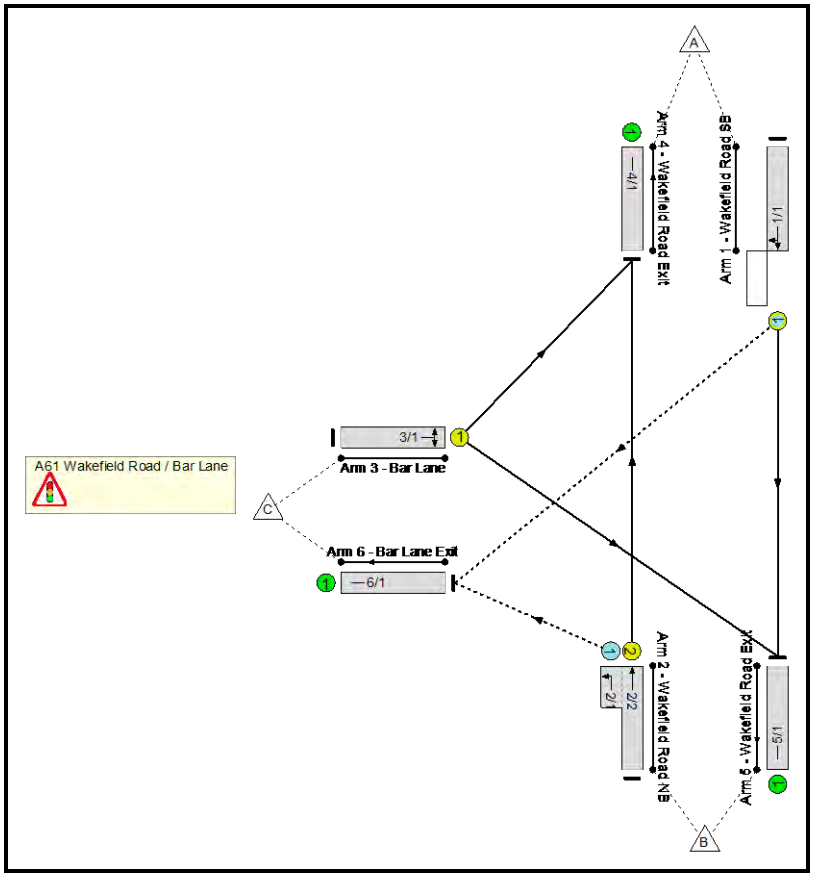
Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	8.28	8.31	0.00	460.80	0.018	0.02	7.957	A
B-A	134.01	134.95	0.00	423.28	0.317	0.47	12.525	B
C-AB	10.72	10.74	0.00	803.27	0.013	0.02	4.581	A
C-A	311.50	311.50	0.00	-	-	-	-	-
A-B	63.99	63.99	0.00	-	-	-	-	-
A-C	408.80	408.80	0.00	-	-	-	-	-

Full Input Data And Results

User and Project Details

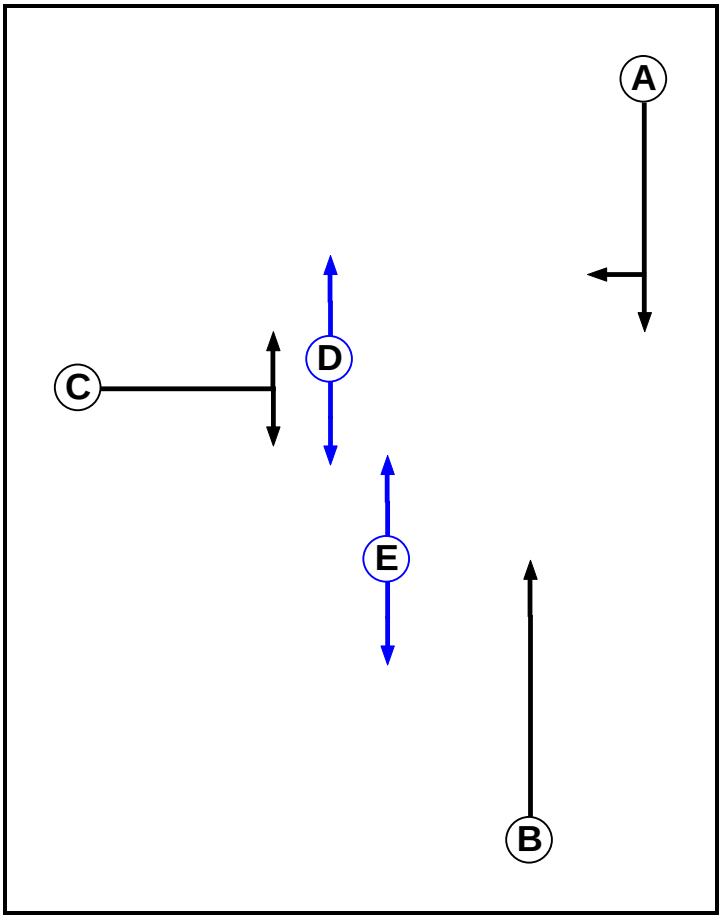
Project:	**Wakefield Road, Mapplewell**
Title:	**2017 Existing**
Location:	
File name:	Wakefield Road - Bar Lane Rev A.lsg3x
Author:	John Turner
Company:	Bryan G Hall
Address:	
Notes:	Wakefield Road/Bar Lane

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Pedestrian		6	6
E	Pedestrian		6	6

Phase Intergreens Matrix

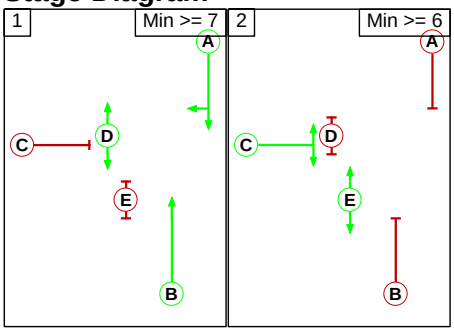
		Starting Phase				
		A	B	C	D	E
Terminating Phase	A		-	5	-	9
	B	-		6	-	-
	C	5	5		5	-
	D	-	-	7		-
	E	8	-	-	-	

Phases in Stage

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

Full Input Data And Results

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage	To Stage 1	To Stage 2
1		9
2	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A61 Wakefield Road / Bar Lane											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Wakefield Road SB)	6/1 (Right)	1439	0	2/2	1.09	All	4.00	4.00	0.50	4	2.00
2/1 (Wakefield Road NB)	6/1 (Left)	1439	0	1/1	1.09	To 6/1 (Right)	-	-	-	-	-

Full Input Data And Results

Lane Input Data

Junction: A61 Wakefield Road / Bar Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Wakefield Road SB)	O	A	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	12.50
2/1 (Wakefield Road NB)	O		2	3	3.0	Geom	-	4.00	0.00	Y	Arm 6 Left	100.00
2/2 (Wakefield Road NB)	U	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 4 Ahead	Inf
3/1 (Bar Lane)	U	C	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 4 Left	12.50
											Arm 5 Right	8.00
4/1 (Wakefield Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Wakefield Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Bar Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
9: '2023 Predicted Saturday'	11:45	12:45	01:00	

Scenario 9: '2023 Predicted Saturday' (FG9: '2023 Predicted Saturday', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	554	40	594
	B	598	0	517	1115
	C	37	474	0	511
	Tot.	635	1028	557	2220

Full Input Data And Results

Traffic Lane Flows

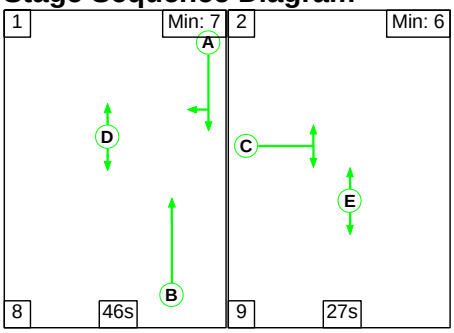
Lane	Scenario 9: 2023 Predicted Saturday
Junction: A61 Wakefield Road / Bar Lane	
1/1	594
2/1 (short)	517
2/2 (with short)	1115(In) 598(Out)
3/1	511
4/1	635
5/1	1028
6/1	557

Lane Saturation Flows

Junction: A61 Wakefield Road / Bar Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Wakefield Road SB)	3.40	0.00	Y	Arm 5 Ahead	Inf	93.3 %	1939	1939
				Arm 6 Right	12.50	6.7 %		
2/1 (Wakefield Road NB)	4.00	0.00	Y	Arm 6 Left	100.00	100.0 %	1985	1985
2/2 (Wakefield Road NB)	3.80	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1995	1995
3/1 (Bar Lane)	3.70	0.00	Y	Arm 4 Left	12.50	7.2 %	1678	1678
				Arm 5 Right	8.00	92.8 %		
4/1 (Wakefield Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Wakefield Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Bar Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2023 Predicted Saturday' (FG9: '2023 Predicted Saturday', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

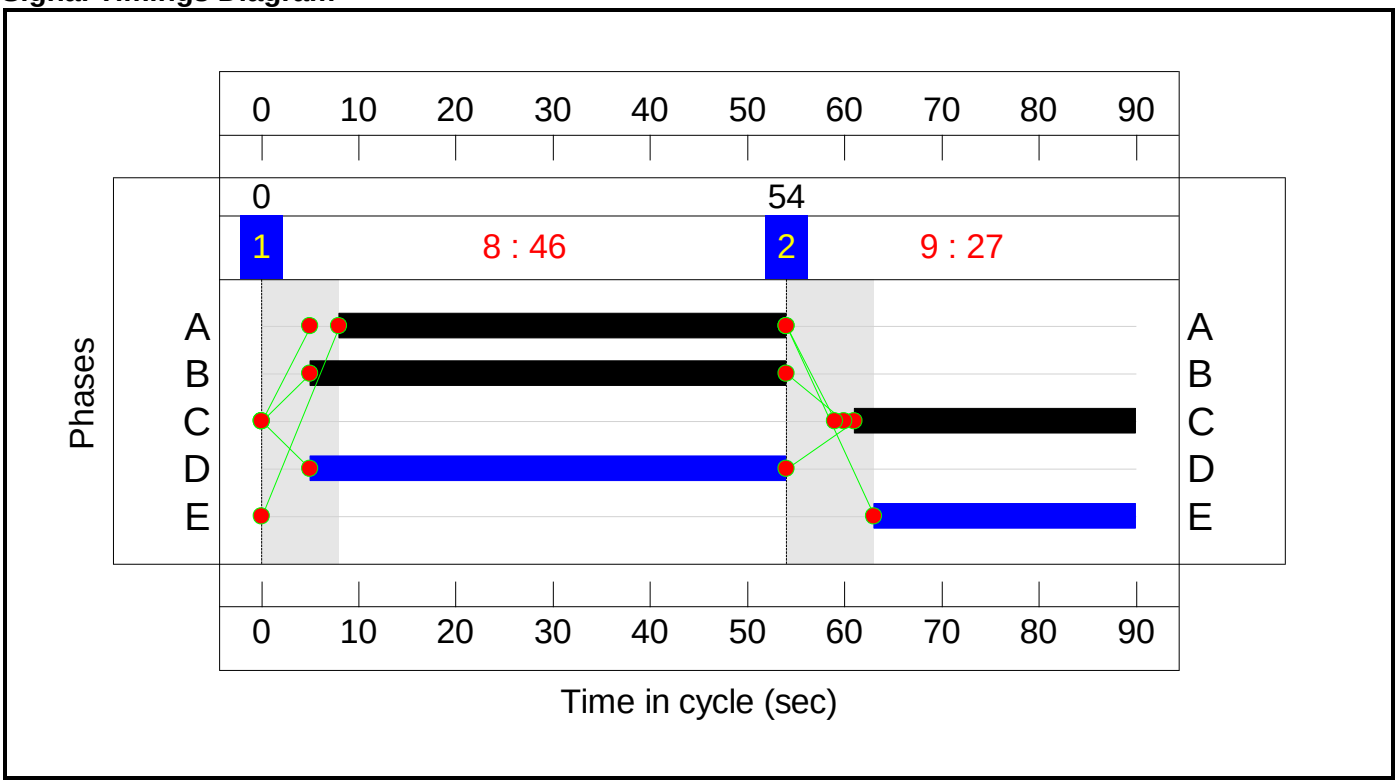


Full Input Data And Results

Stage Timings

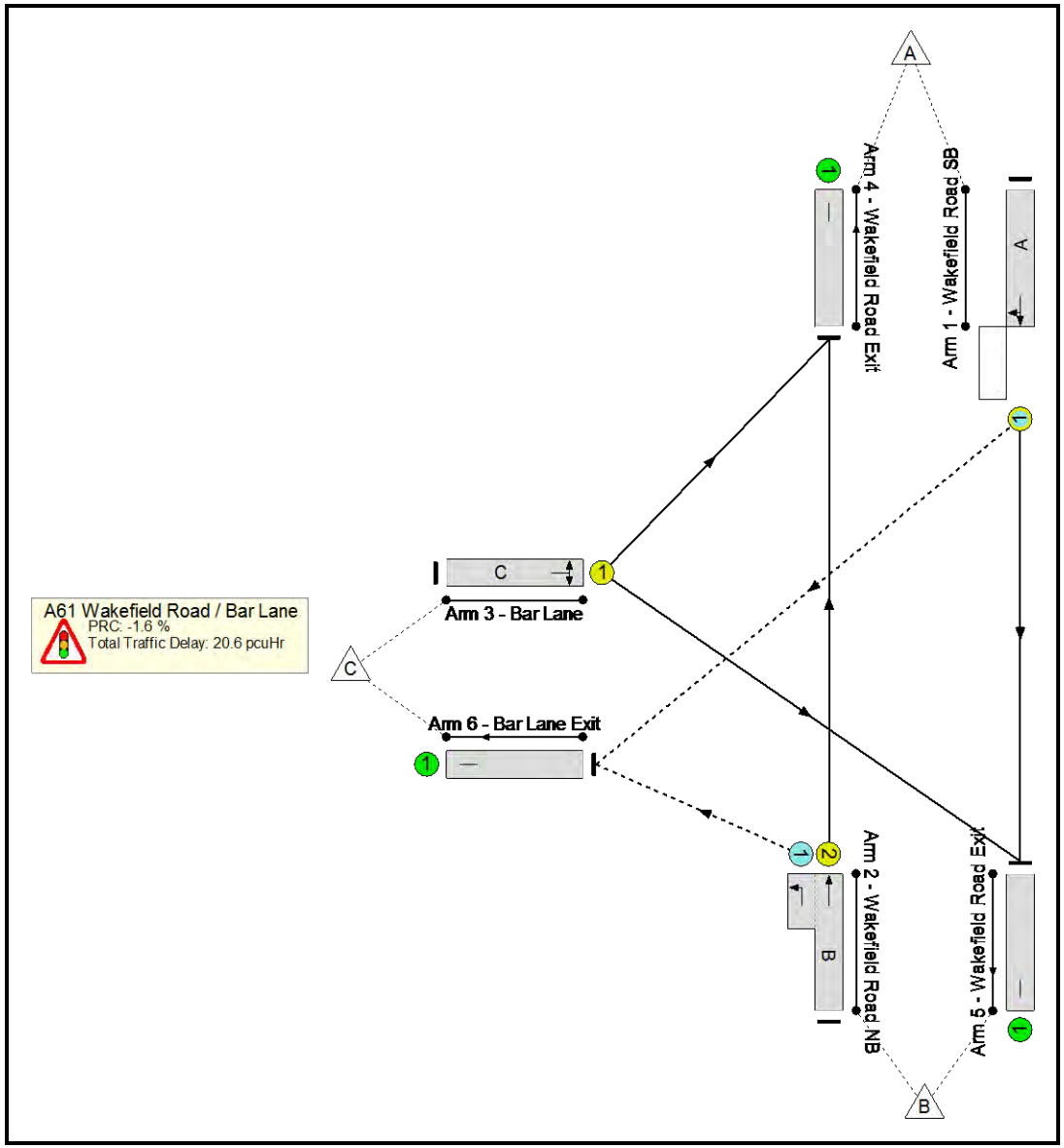
Stage	1	2
Duration	46	27
Change Point	0	54

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: 2017 Existing	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.5%**
A61 Wakefield Road / Bar Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.5%**
1/1	Wakefield Road SB Ahead Right	O	N/A	N/A	A		1	46	-	594	1939	1013	58.7%
2/2+2/1	Wakefield Road NB Ahead Left	U+O	N/A	N/A	B -		1	49	-	1115	1995:1985	1219	91.5%
3/1	Bar Lane Left Right	U	N/A	N/A	C		1	29	-	511	1678	559	91.4%

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: 2017 Existing	**-**	**-**	**464**	**92**	**1**	**10.5**	**10.1**	**0.0**	**20.6**	**-**	**-**	**-**	**-**
A61 Wakefield Road / Bar Lane	**-**	**-**	**464**	**92**	**1**	**10.5**	**10.1**	**0.0**	**20.6**	**-**	**-**	**-**	**-**
1/1	594	594	39	0	1	2.4	0.7	0.0	3.2	19.1	10.1	0.7	10.8
2/2+2/1	1115	1115	425	92	0	4.0	4.9	-	8.9	28.6	22.2	4.9	27.1
3/1	511	511	-	-	-	4.1	4.5	-	8.5	60.2	12.2	4.5	16.7

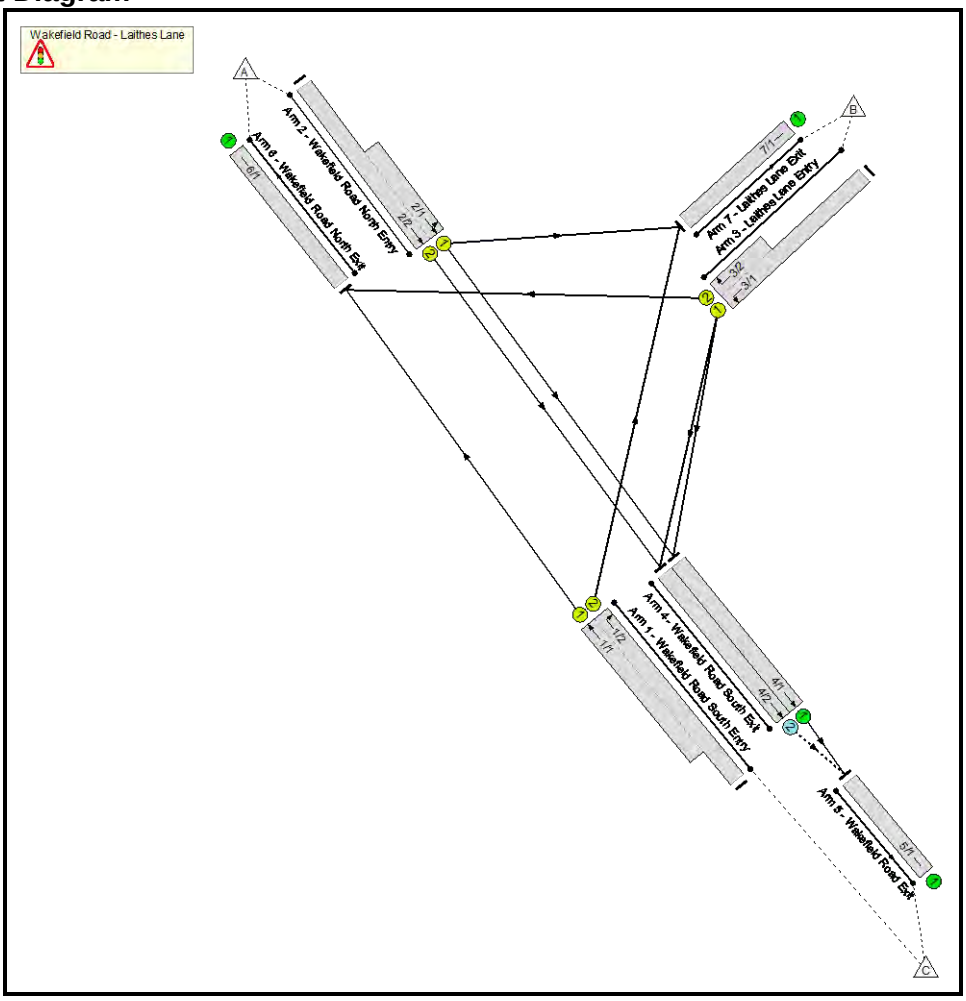
C1 PRC for Signalled Lanes (%): -1.6 Total Delay for Signalled Lanes (pcuHr): 20.56 Cycle Time (s): 90
PRC Over All Lanes (%): -1.6 Total Delay Over All Lanes(pcuHr): 20.56

Full Input Data And Results

User and Project Details

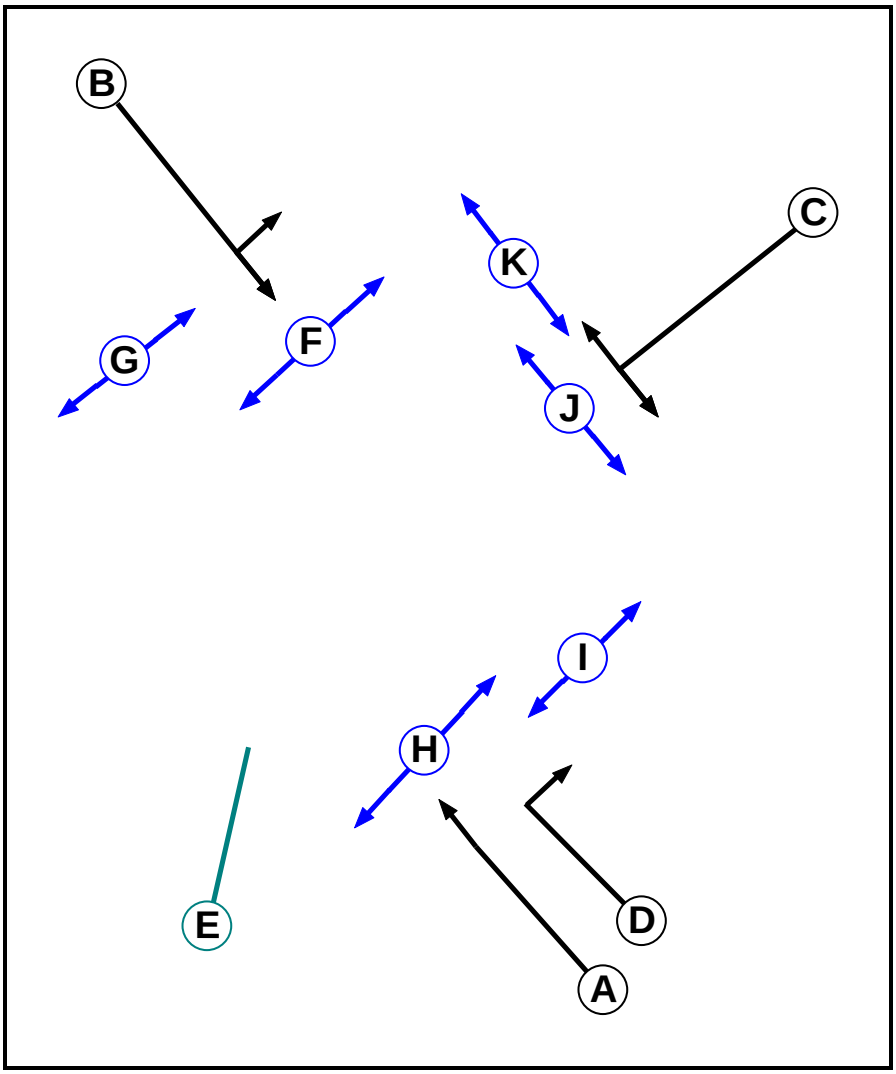
Project:	**Former William Freeman Works, Wakefield Road**
Title:	**Wakefield Road - Laithes Lane**
Location:	
File name:	Wakefield Road - Laithes Lane Rev A.lsg3x
Author:	John Turner
Company:	Bryan G Hall
Address:	
Notes:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Dummy		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7
J	Pedestrian		7	7
K	Pedestrian		7	7

Full Input Data And Results

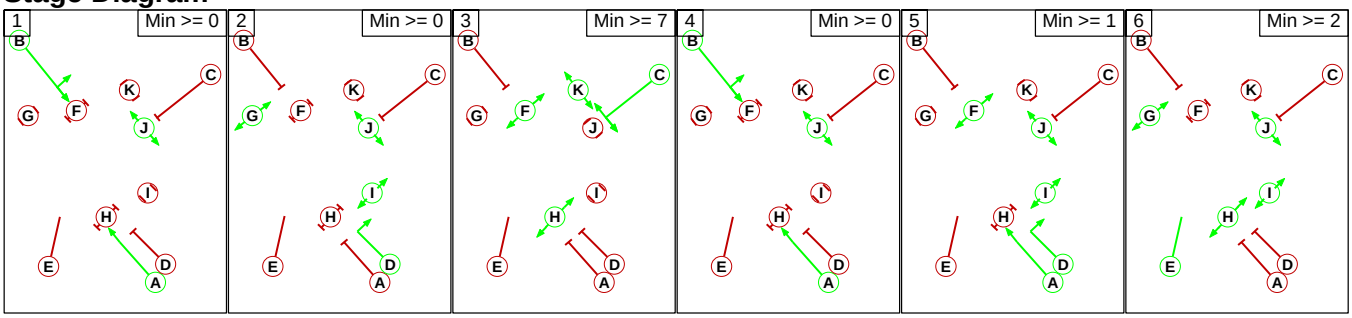
Phase Intergreens Matrix

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

Phases in Stage

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

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	5	6
	1		9	8	0	9	9
	2	7		7	7	6	5
	3	8	10		8	8	10
	4	0	9	8		9	9
	5	8	10	7	8		10
	6	8	6	7	8	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Wakefield Road - Laithes Lane											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
4/2 (Wakefield Road South Exit)	5/1 (Ahead)	1439	0	4/1	1.09	All	-	-	-	-	-

Full Input Data And Results

Lane Input Data

Junction: Wakefield Road - Laithes Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Wakefield Road South Entry)	U	A	2	3	22.6	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
1/2 (Wakefield Road South Entry)	U	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 7 Right	17.00
2/1 (Wakefield Road North Entry)	U	B	2	3	9.6	Geom	-	3.50	0.00	Y	Arm 4 Ahead	Inf
											Arm 7 Left	20.00
2/2 (Wakefield Road North Entry)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Ahead	Inf
3/1 (Laithes Lane Entry)	U	C	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 4 Left	14.00
3/2 (Laithes Lane Entry)	U	C	2	3	6.1	Geom	-	3.30	0.00	Y	Arm 6 Right	18.00
4/1 (Wakefield Road South Exit)	U		2	3	17.4	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
4/2 (Wakefield Road South Exit)	O		2	3	17.4	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
5/1 (Wakefield Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Wakefield Road North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Laithes Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
9: '2023 Predicted Saturday'	11:45	12:45	01:00	

Full Input Data And Results

Scenario 9: '2023 Predicted Saturday' (FG9: '2023 Predicted Saturday', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	298	772	1070
	B	285	0	178	463
	C	828	206	0	1034
	Tot.	1113	504	950	2567

Traffic Lane Flows

Lane	Scenario 9: 2023 Predicted Saturday
Junction: Wakefield Road - Laithes Lane	
1/1 (short)	828
1/2 (with short)	1034(In) 206(Out)
2/1 (short)	535
2/2 (with short)	1070(In) 535(Out)
3/1 (with short)	463(In) 178(Out)
3/2 (short)	285
4/1	326
4/2	624
5/1	950
6/1	1113
7/1	504

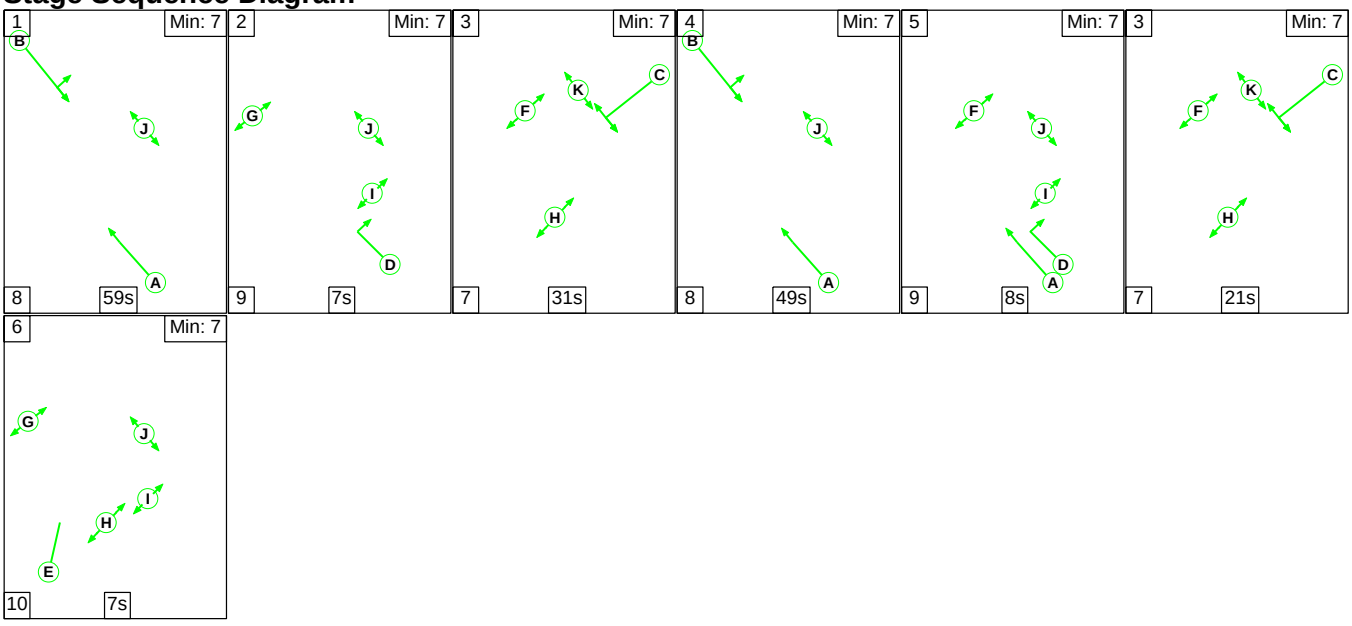
Full Input Data And Results

Lane Saturation Flows

Junction: Wakefield Road - Laithes Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Wakefield Road South Entry)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
1/2 (Wakefield Road South Entry)	3.25	0.00	Y	Arm 7 Right	17.00	100.0 %	1783	1783
2/1 (Wakefield Road North Entry)	3.50	0.00	Y	Arm 4 Ahead Arm 7 Left	Inf 20.00	44.3 % 55.7 %	1886	1886
2/2 (Wakefield Road North Entry)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
3/1 (Laithes Lane Entry)	3.30	0.00	Y	Arm 4 Left	14.00	100.0 %	1757	1757
3/2 (Laithes Lane Entry)	3.30	0.00	Y	Arm 6 Right	18.00	100.0 %	1795	1795
4/1 (Wakefield Road South Exit)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
4/2 (Wakefield Road South Exit)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
5/1 (Wakefield Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Wakefield Road North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Laithes Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2023 Predicted Saturday' (FG9: '2023 Predicted Saturday', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

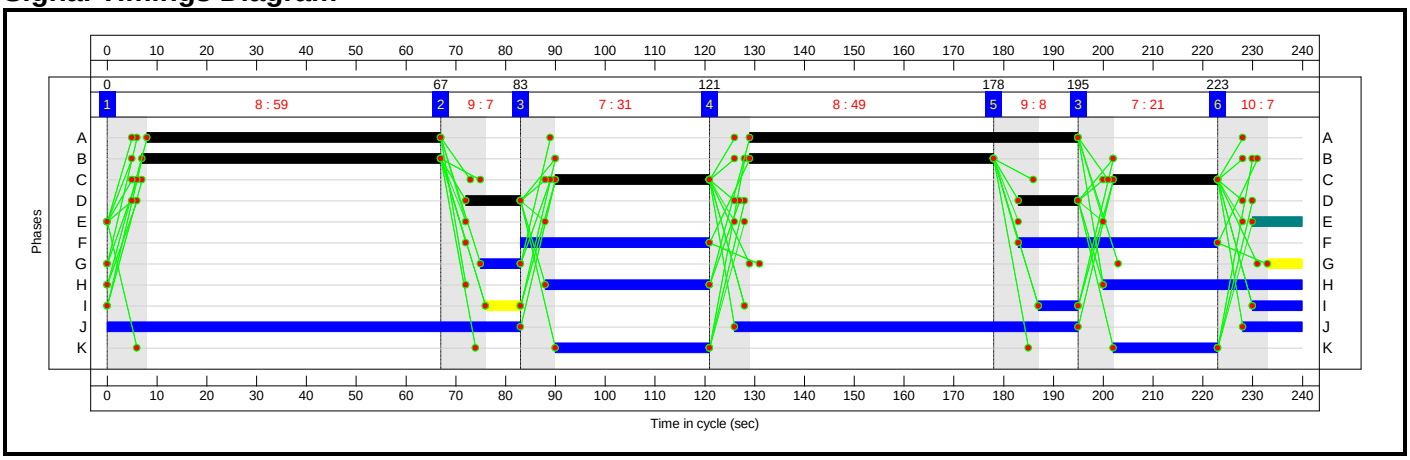


Full Input Data And Results

Stage Timings

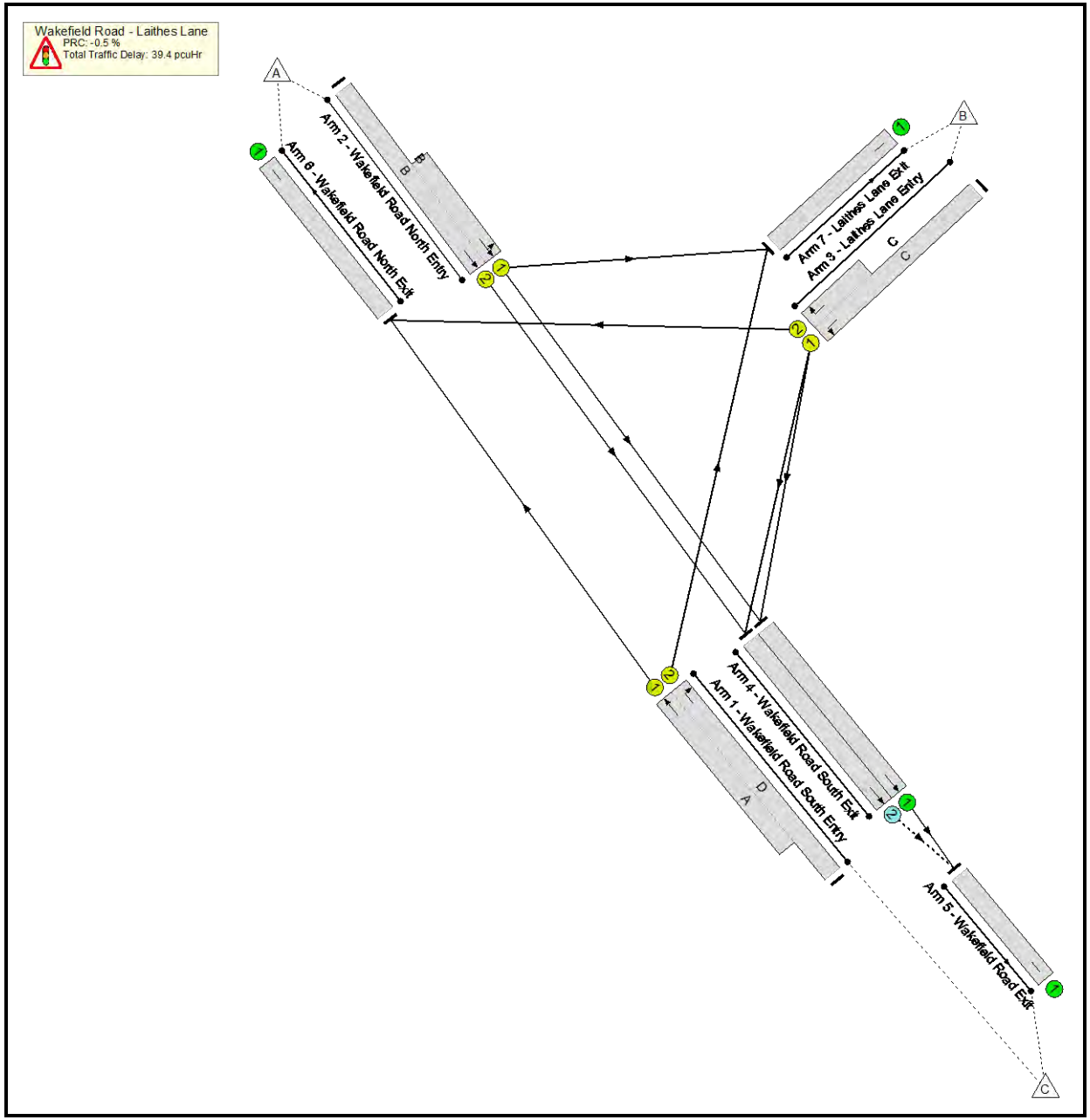
Stage	1	2	3	4	5	3	6
Duration	59	7	31	49	8	21	7
Change Point	0	67	83	121	178	195	223

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: Wakefield Road - Laithes Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**90.5%**
Wakefield Road - Laithes Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**90.5%**
1/2+1/1	Wakefield Road South Entry Ahead Right	U	N/A	N/A	D A		2	23:125	-	1034	1783:1940	1143	90.5%
2/2+2/1	Wakefield Road North Entry Ahead Left	U	N/A	N/A	B		2	109	-	1070	1965:1886	1187	90.2%
3/1+3/2	Laithes Lane Entry Left Right	U	N/A	N/A	C		2	52	-	463	1757:1795	519	89.2%
4/1	Wakefield Road South Exit Ahead	U	N/A	N/A	-		-	-	-	326	1935	1935	16.8%
4/2	Wakefield Road South Exit Ahead	O	N/A	N/A	-		-	-	-	624	1935	1084	57.6%

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: Wakefield Road - Laithes Lane	**-**	**-**	**624**	**0**	**0**	**26.3**	**13.1**	**0.0**	**39.4**	**-**	**-**	**-**	**-**
Wakefield Road - Laithes Lane	**-**	**-**	**624**	**0**	**0**	**26.3**	**13.1**	**0.0**	**39.4**	**-**	**-**	**-**	**-**
1/2+1/1	1034	1014	-	-	-	10.7	4.4	-	15.1	52.6	25.2	4.4	29.6
2/2+2/1	1070	1070	-	-	-	7.4	4.3	-	11.7	39.4	23.4	4.3	27.7
3/1+3/2	463	463	-	-	-	5.6	3.7	-	9.3	72.2	13.2	3.7	16.8
4/1	326	326	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
4/2	624	624	624	0	0	2.5	0.7	-	3.2	18.2	18.6	0.7	19.3

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	-0.5	Total Delay for Signalled Lanes (pcuHr):	36.13	Cycle Time (s):	240
	PRC Over All Lanes (%):	-0.5	Total Delay Over All Lanes(pcuHr):	39.38		

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: A61 Wakefield Road-A633 Rotherham Road mini-Roundabout.j9
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junction 9\A61 Wakefield Road A633 Rotherham Road
Report generation date: 29/08/2018 15:39:46

«2023 Predicted, Saturday
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	2023 Predicted			
1 - A61 North	1.4	4.75	0.59	A
2 - A633 Rotherham Road	2.8	24.17	0.74	C
3 - A61 South	3.6	16.61	0.79	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	A61 Wakefield Road/A633 Rotherham Road
Location	Mapplewell, Barnsley
Site number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14-114
Enumerator	BRYANGHALL\design
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

Mini-roundabout model	Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9			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	2023 Predicted	Saturday	ONE HOUR	11:30	13:00	15

2023 Predicted, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 81% of the total flow for the roundabout for one or more time segments]
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	12.43	B

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
1	A61 North	
2	A633 Rotherham Road	
3	A61 South	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - A61 North	4.50	4.50	6.50	27.0	20.00	20.00	0.0	✓
2 - A633 Rotherham Road	4.00	4.00	6.20	6.0	9.70	2.00	0.0	✓
3 - A61 South	4.20	4.20	5.10	1.5	20.00	20.00	0.0	✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A61 North	0.901	1905
2 - A633 Rotherham Road	0.556	970
3 - A61 South	0.840	1381

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 - A61 North		✓	995	100.000
2 - A633 Rotherham Road		✓	390	100.000
3 - A61 South		✓	732	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - A61 North	2 - A633 Rotherham Road	3 - A61 South
From	1 - A61 North	0	352	643
	2 - A633 Rotherham Road	390	0	0
	3 - A61 South	679	53	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - A61 North	2 - A633 Rotherham Road	3 - A61 South
From	1 - A61 North	0	0	0
	2 - A633 Rotherham Road	0	0	0
	3 - A61 South	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1 - A61 North	0.59	4.75	1.4	A
2 - A633 Rotherham Road	0.74	24.17	2.8	C
3 - A61 South	0.79	16.61	3.6	C

Main Results for each time segment

11:30 - 11:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	749	40	1869	0.401	746	0.7	3.196	A
2 - A633 Rotherham Road	294	482	702	0.418	291	0.7	8.700	A
3 - A61 South	551	291	1136	0.485	547	0.9	6.074	A

11:45 - 12:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	894	47	1862	0.480	893	0.9	3.712	A
2 - A633 Rotherham Road	351	577	649	0.540	349	1.1	11.921	B
3 - A61 South	658	349	1088	0.605	656	1.5	8.291	A

12:00 - 12:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	1096	58	1853	0.591	1093	1.4	4.727	A
2 - A633 Rotherham Road	429	707	577	0.744	423	2.7	22.547	C
3 - A61 South	806	423	1025	0.786	798	3.4	15.376	C

12:15 - 12:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	1096	58	1853	0.591	1095	1.4	4.754	A
2 - A633 Rotherham Road	429	708	577	0.745	429	2.8	24.172	C
3 - A61 South	806	429	1020	0.790	805	3.6	16.605	C

12:30 - 12:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	894	48	1862	0.480	897	0.9	3.736	A
2 - A633 Rotherham Road	351	579	648	0.541	357	1.2	12.614	B
3 - A61 South	658	357	1081	0.609	666	1.6	8.836	A

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	749	40	1869	0.401	750	0.7	3.222	A
2 - A633 Rotherham Road	294	485	701	0.419	296	0.7	8.931	A
3 - A61 South	551	296	1132	0.487	554	1.0	6.247	A

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]
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Filename: Left Turn from Rotherham Road to Wakefield Road Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Left Turn from Rotherham Road to Wakefield Road
Report generation date: 29/08/2018 15:18:38

« (Default Analysis Set) - 2023 Predicted, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2023 Predicted			
Stream B-AC	0.16	7.30	0.14	A
Stream C-A	-	-	-	-
Stream C-B	0.00	0.00	0.00	A
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2017 Existing, AM" model duration: 07:30 - 09:00
"D2 - 2017 Existing, PM" model duration: 16:30 - 18:00
"D3 - 2017 Existing, Saturday" model duration: 16:30 - 18:00
"D4 - 2023 Base, AM" model duration: 07:30 - 09:00
"D5 - 2023 Base, PM" model duration: 16:30 - 18:00
"D6 - 2023 Base, Saturday" model duration: 16:30 - 18:00
"D7 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D8 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D9 - 2023 Predicted, Saturday " model duration: 16:30 - 18:00
"D10 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D11 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D12 - 2023 Predicted with Lidl, Saturday" model duration: 16:30 - 18:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:18:38

File summary

Title	Left Turn from Rotherham Road to Wakefield Road Southbound
Location	Mapplewell, Barnsley
Site Number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14-114
Enumerator	johnturner
Description	

Analysis Options

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

Units

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

(Default Analysis Set) - 2023 Predicted, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted, Saturday	2023 Predicted	Saturday		ONE HOUR	16:30	18:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	7.30	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A61 North	A	A61 North		Major
Rotherham Road Left Turn	B	Rotherham Road Left Turn		Minor
A61 South	C	A61 South		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A61 South	8.00		0.00		2.20	0.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Rotherham Road Left Turn	One lane	5.00										0	15

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	582.214	0.097	0.245	0.154	0.350
1	B-C	760.204	0.106	0.269	-	-
1	C-B	573.963	0.203	0.203	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A61 North	ONE HOUR	✓	643.00	100.000
Rotherham Road Left Turn	ONE HOUR	✓	70.00	100.000
A61 South	ONE HOUR	✓	679.00	100.000

Turning Proportions

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	0.000	0.000	643.000
	Rotherham Road Left Turn	0.000	0.000	70.000
	A61 South	679.000	0.000	0.000

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	0.00	0.00	1.00
	Rotherham Road Left Turn	0.00	0.00	1.00
	A61 South	1.00	0.00	0.00

Vehicle Mix

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	1.000	1.000	1.000
	Rotherham Road Left Turn	1.000	1.000	1.000
	A61 South	1.000	1.000	1.000

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	0.0	0.0	0.0
	Rotherham Road Left Turn	0.0	0.0	0.0
	A61 South	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.14	7.30	0.16	A
C-A	-	-	-	-
C-B	0.00	0.00	0.00	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	52.70	52.34	0.00	630.03	0.084	0.09	6.227	A
C-A	511.19	511.19	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	475.68	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	484.08	484.08	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	62.93	62.83	0.00	604.76	0.104	0.12	6.643	A
C-A	610.41	610.41	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	456.60	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	578.04	578.04	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	77.07	76.91	0.00	569.82	0.135	0.15	7.302	A
C-A	747.59	747.59	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	430.22	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	707.96	707.96	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	77.07	77.07	0.00	569.82	0.135	0.16	7.304	A
C-A	747.59	747.59	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	430.22	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	707.96	707.96	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	62.93	63.08	0.00	604.76	0.104	0.12	6.647	A
C-A	610.41	610.41	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	456.60	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	578.04	578.04	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	52.70	52.80	0.00	630.03	0.084	0.09	6.239	A
C-A	511.19	511.19	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	475.68	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	484.08	484.08	0.00	-	-	-	-	-

Junctions 8

PICADY 8 - Priority Intersection Module

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Filename: Site Access-Wakefield Road Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Site Access - Wakefield Road
Report generation date: 29/08/2018 15:19:53

« (Default Analysis Set) - 2023 Predicted, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2023 Predicted			
Stream B-AC	0.07	10.60	0.07	B
Stream C-A	-	-	-	-
Stream C-B	0.02	7.13	0.02	A
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D2 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D3 - 2023 Predicted, Saturday " model duration: 11:30 - 13:00
"D4 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D5 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D6 - 2023 Predicted with Lidl, Saturday" model duration: 11:30 - 13:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:19:53

File summary

Title	Site Access junction with Wakefield Road
Location	Wakefield Road, Mapplewell
Site Number	
Date	05/12/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	14-114
Enumerator	johnturner
Description	

Analysis Options

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

Units

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

(Default Analysis Set) - 2023 Predicted, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted, Saturday	2023 Predicted	Saturday		ONE HOUR	11:30	13:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	9.44	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Wakefield Road North	A	Wakefield Road North		Major
Site Access	B	Site Access		Minor
Wakefield Road South	C	Wakefield Road South		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Wakefield Road South	6.00		0.00	✓	3.00	100.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Site Access	One lane	2.75										50	50

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	505.529	0.092	0.233	0.146	0.332
1	B-C	639.009	0.098	0.248	-	-
1	C-B	686.890	0.266	0.266	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Wakefield Road North	ONE HOUR	✓	581.00	100.000
Site Access	ONE HOUR	✓	22.00	100.000
Wakefield Road South	ONE HOUR	✓	623.00	100.000

Turning Proportions

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	0.000	6.000	575.000
	Site Access	8.000	0.000	14.000
	Wakefield Road South	612.000	11.000	0.000

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	0.00	0.01	0.99
	Site Access	0.36	0.00	0.64
	Wakefield Road South	0.98	0.02	0.00

Vehicle Mix

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	Wakefield Road South	1.000	1.000	1.000

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	Wakefield Road South	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.07	10.60	0.07	B
C-A	-	-	-	-
C-B	0.02	7.13	0.02	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (11:30-11:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	16.56	16.41	0.00	437.49	0.038	0.04	8.547	A
C-A	460.75	460.75	0.00	-	-	-	-	-
C-B	8.28	8.22	0.00	570.48	0.015	0.01	6.402	A
A-B	4.52	4.52	0.00	-	-	-	-	-
A-C	432.89	432.89	0.00	-	-	-	-	-

Main results: (11:45-12:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	19.78	19.73	0.00	407.30	0.049	0.05	9.287	A
C-A	550.18	550.18	0.00	-	-	-	-	-
C-B	9.89	9.87	0.00	547.88	0.018	0.02	6.690	A
A-B	5.39	5.39	0.00	-	-	-	-	-
A-C	516.91	516.91	0.00	-	-	-	-	-

Main results: (12:00-12:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	24.22	24.14	0.00	363.90	0.067	0.07	10.593	B
C-A	673.82	673.82	0.00	-	-	-	-	-
C-B	12.11	12.09	0.00	516.64	0.023	0.02	7.134	A
A-B	6.61	6.61	0.00	-	-	-	-	-
A-C	633.09	633.09	0.00	-	-	-	-	-

Main results: (12:15-12:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	24.22	24.22	0.00	363.89	0.067	0.07	10.598	B
C-A	673.82	673.82	0.00	-	-	-	-	-
C-B	12.11	12.11	0.00	516.64	0.023	0.02	7.134	A
A-B	6.61	6.61	0.00	-	-	-	-	-
A-C	633.09	633.09	0.00	-	-	-	-	-

Main results: (12:30-12:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	19.78	19.85	0.00	407.30	0.049	0.05	9.295	A
C-A	550.18	550.18	0.00	-	-	-	-	-
C-B	9.89	9.91	0.00	547.88	0.018	0.02	6.693	A
A-B	5.39	5.39	0.00	-	-	-	-	-
A-C	516.91	516.91	0.00	-	-	-	-	-

Main results: (12:45-13:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	16.56	16.61	0.00	437.47	0.038	0.04	8.556	A
C-A	460.75	460.75	0.00	-	-	-	-	-
C-B	8.28	8.30	0.00	570.48	0.015	0.01	6.405	A
A-B	4.52	4.52	0.00	-	-	-	-	-
A-C	432.89	432.89	0.00	-	-	-	-	-

APPENDIX BGH 6

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]
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Filename: Wakefield Road - Lee Lane - Shaw Lane Committed Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Wakefield Road - Lee Lane - Shaw Lane Committed Scheme
Report generation date: 29/08/2018 15:03:21

« Committed Layout - 2023 Predicted with Lidl, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	Committed Layout - 2023 Predicted with Lidl			
Stream B-C	0.36	11.84	0.27	B
Stream B-AD	41.61	399.52	1.23	F
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-
Stream A-D	0.54	11.84	0.36	B
Stream D-A	0.43	12.28	0.30	B
Stream D-BC	27.16	288.05	1.17	F
Stream C-D	-	-	-	-
Stream C-A	-	-	-	-
Stream C-B	0.25	8.57	0.20	A

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

"D4 - 2023 Base, AM" model duration: 07:30 - 09:00
"D5 - 2023 Base, PM" model duration: 16:30 - 18:00
"D6 - 2023 Base, Saturday" model duration: 11:30 - 13:00
"D7 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D8 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D9 - 2023 Predicted, Saturday" model duration: 11:30 - 13:00
"D10 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D11 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D12 - 2023 Predicted with Lidl, Saturday " model duration: 11:30 - 13:00
"D13 - 2023 Predicted Lidl Only, AM" model duration: 07:30 - 09:00
"D14 - 2023 Predicted Lidl Only, PM" model duration: 16:30 - 18:00
"D15 - 2023 Predicted Lidl Only, Saturday" model duration: 11:30 - 13:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:03:20

File summary

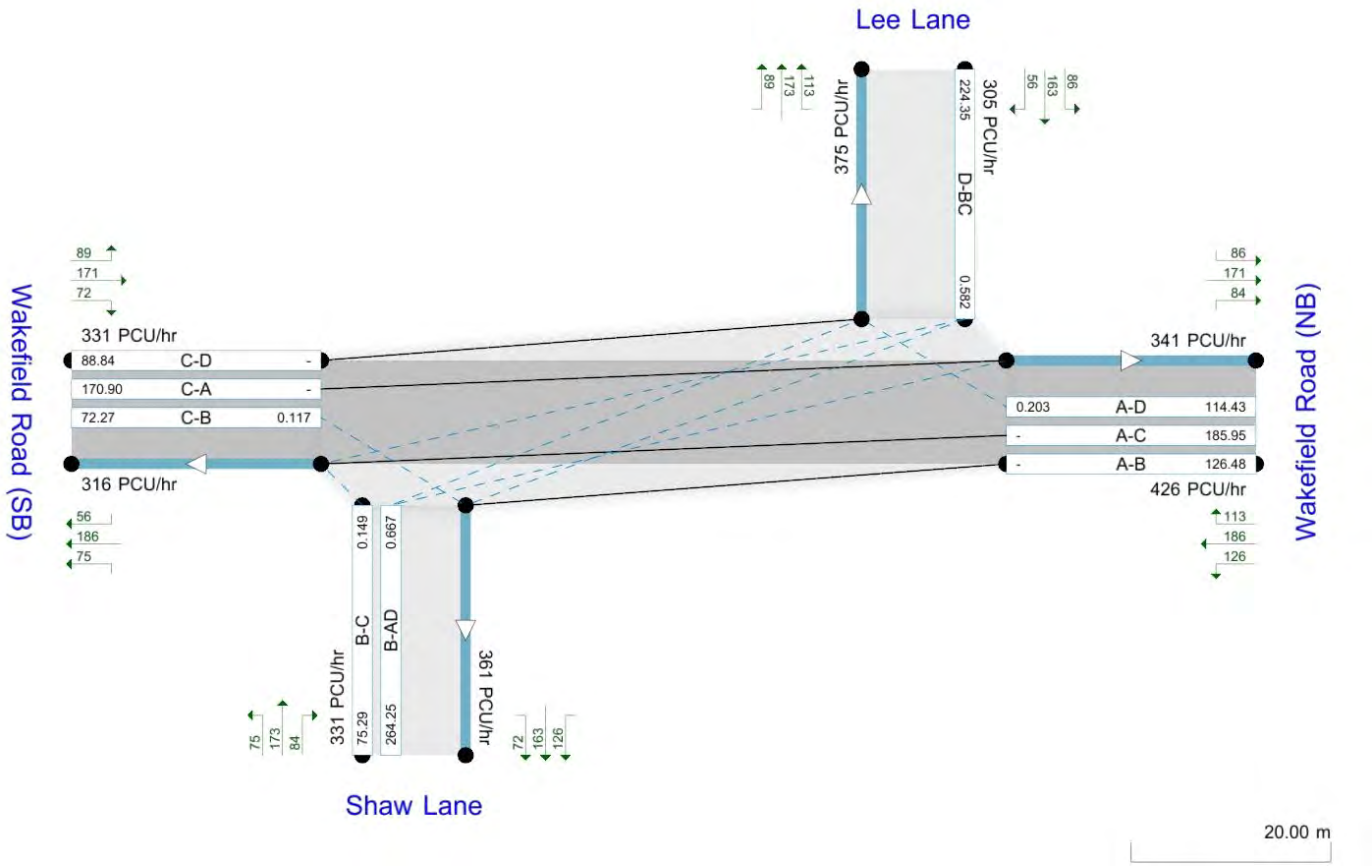
Title	Mapplewell, Barnsley
Location	Wakefield Road, Lee Lane, Shaw Lane Stagger
Site Number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14-114
Enumerator	BRYANGHALL\JTurner
Description	

Analysis Options

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

Units

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



Showing modelled flow through junction (PCU/hr).
Streams (upstreams) show Total Demand (PCU/hr). Streams (downstreams) show RFC ()
Time Segment: (11:30-11:45)
Showing Analysis Set "A1 - Committed Layout "; Demand Set "D12 - 2023 Predicted with Lidl, Saturday "

The junction diagram reflects the last run of ARCADY.

Committed Layout - 2023 Predicted with Lidl, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Committed Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted with Lidl, Saturday	2023 Predicted with Lidl	Saturday		ONE HOUR	11:30	13:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Wakefield Road - Lee Lane - Shaw Lane	OS-NS Stagger (UK RL Stagger)	Two-way	A,B,C,D	207.99	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Wakefield Road (NB)	A	Wakefield Road (NB)		Major
Shaw Lane	B	Shaw Lane		Minor
Wakefield Road (SB)	C	Wakefield Road (SB)		Major
Lee Lane	D	Lee Lane		Minor

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Wakefield Road (NB)	6.00		0.00	✓	3.00	130.00		
Wakefield Road (SB)	6.00		0.00	✓	3.00	250.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Shaw Lane	Two lanes		3.90	3.85						✓		55	35
Lee Lane	Two lanes		3.88	4.06						✓		40	65

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	705.776	-	-	-	0.273	0.273	0.273	-	0.273	-	-
1	B-AD	556.295	0.101	0.256	-	-	-	0.161	0.366	0.161	0.101	0.256
1	B-C	704.176	0.108	0.273	-	-	-	-	-	-	0.108	0.273
1	C-B	781.320	0.303	0.303	-	-	-	-	-	-	0.303	0.303
1	D-A	723.432	-	-	-	0.280	0.111	0.280	-	0.111	-	-
1	D-BC	578.082	0.167	0.167	0.380	0.266	0.105	0.266	-	0.105	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Wakefield Road (NB)	ONE HOUR	✓	567.00	100.000
Shaw Lane	ONE HOUR	✓	451.00	100.000
Wakefield Road (SB)	ONE HOUR	✓	441.00	100.000
Lee Lane	ONE HOUR	✓	413.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	0.000	168.000	247.000	152.000
	Shaw Lane	115.000	0.000	100.000	236.000
	Wakefield Road (SB)	227.000	96.000	0.000	118.000
	Lee Lane	115.000	222.000	76.000	0.000

Turning Proportions (PCU) - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	0.00	0.30	0.44	0.27
	Shaw Lane	0.25	0.00	0.22	0.52
	Wakefield Road (SB)	0.51	0.22	0.00	0.27
	Lee Lane	0.28	0.54	0.18	0.00

Vehicle Mix

Average PCU Per Vehicle - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	1.000	1.010	1.022	1.000
	Shaw Lane	1.010	1.000	1.000	1.006
	Wakefield Road (SB)	1.028	1.000	1.000	1.000
	Lee Lane	1.000	1.010	1.000	1.000

Heavy Vehicle Percentages - Wakefield Road - Lee Lane - Shaw Lane (for whole period)

		To			
		Wakefield Road (NB)	Shaw Lane	Wakefield Road (SB)	Lee Lane
From	Wakefield Road (NB)	0.0	1.0	2.2	0.0
	Shaw Lane	1.0	0.0	0.0	0.6
	Wakefield Road (SB)	2.8	0.0	0.0	0.0
	Lee Lane	0.0	1.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.27	11.84	0.36	B
B-AD	1.23	399.52	41.61	F
A-B	-	-	-	-
A-C	-	-	-	-
A-D	0.36	11.84	0.54	B
D-A	0.30	12.28	0.43	B
D-BC	1.17	288.05	27.16	F
C-D	-	-	-	-
C-A	-	-	-	-
C-B	0.20	8.57	0.25	A

Main Results for each time segment

Main results: (11:30-11:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	75.29	74.59	0.00	505.02	0.149	0.17	8.350	A
B-AD	264.25	256.82	0.00	395.98	0.667	1.86	24.909	C
A-B	126.48	126.48	0.00	-	-	-	-	-
A-C	185.95	185.95	0.00	-	-	-	-	-
A-D	114.43	113.42	0.00	562.49	0.203	0.25	7.999	A
D-A	86.58	85.81	0.00	531.30	0.163	0.19	8.067	A
D-BC	224.35	219.05	0.00	385.68	0.582	1.32	21.159	C
C-D	88.84	88.84	0.00	-	-	-	-	-
C-A	170.90	170.90	0.00	-	-	-	-	-
C-B	72.27	71.75	0.00	618.82	0.117	0.13	6.575	A

Main results: (11:45-12:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	89.90	89.62	0.00	456.23	0.197	0.24	9.813	A
B-AD	315.54	304.53	0.00	363.93	0.867	4.61	53.049	F
A-B	151.03	151.03	0.00	-	-	-	-	-
A-C	222.05	222.05	0.00	-	-	-	-	-
A-D	136.64	136.29	0.00	532.64	0.257	0.34	9.074	A
D-A	103.38	103.08	0.00	482.42	0.214	0.27	9.482	A
D-BC	267.90	261.63	0.00	346.78	0.773	2.89	39.872	E
C-D	106.08	106.08	0.00	-	-	-	-	-
C-A	204.07	204.07	0.00	-	-	-	-	-
C-B	86.30	86.14	0.00	585.68	0.147	0.17	7.205	A

Main results: (12:00-12:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	110.10	109.67	0.00	419.30	0.263	0.35	11.610	B
B-AD	386.46	313.06	0.00	319.96	1.208	22.96	185.159	F
A-B	184.97	184.97	0.00	-	-	-	-	-
A-C	271.95	271.95	0.00	-	-	-	-	-
A-D	167.36	166.69	0.00	491.18	0.341	0.51	11.070	B
D-A	126.62	126.05	0.00	428.70	0.295	0.41	11.872	B
D-BC	328.10	280.53	0.00	293.28	1.119	14.78	141.629	F
C-D	129.92	129.92	0.00	-	-	-	-	-
C-A	249.93	249.93	0.00	-	-	-	-	-
C-B	105.70	105.42	0.00	540.17	0.196	0.24	8.275	A

Main results: (12:15-12:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	110.10	110.07	0.00	413.95	0.266	0.36	11.845	B
B-AD	386.46	311.88	0.00	313.16	1.234	41.61	382.520	F
A-B	184.97	184.97	0.00	-	-	-	-	-
A-C	271.95	271.95	0.00	-	-	-	-	-
A-D	167.36	167.22	0.00	471.11	0.355	0.54	11.839	B
D-A	126.62	126.56	0.00	419.54	0.302	0.43	12.284	B
D-BC	328.10	278.58	0.00	281.42	1.166	27.16	288.050	F
C-D	129.92	129.92	0.00	-	-	-	-	-
C-A	249.93	249.93	0.00	-	-	-	-	-
C-B	105.70	105.66	0.00	525.77	0.201	0.25	8.567	A

Main results: (12:30-12:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	89.90	90.25	0.00	428.11	0.210	0.27	10.666	B
B-AD	315.54	340.95	0.00	349.20	0.904	35.25	399.517	F
A-B	151.03	151.03	0.00	-	-	-	-	-
A-C	222.05	222.05	0.00	-	-	-	-	-
A-D	136.64	137.24	0.00	489.17	0.279	0.39	10.248	B
D-A	103.38	103.80	0.00	430.71	0.240	0.32	11.028	B
D-BC	267.90	309.74	0.00	321.22	0.834	16.70	257.663	F
C-D	106.08	106.08	0.00	-	-	-	-	-
C-A	204.07	204.07	0.00	-	-	-	-	-
C-B	86.30	86.55	0.00	554.39	0.156	0.19	7.700	A

Main results: (12:45-13:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	75.29	75.54	0.00	447.09	0.168	0.21	9.697	A
B-AD	264.25	375.57	0.00	386.30	0.684	7.42	215.368	F
A-B	126.48	126.48	0.00	-	-	-	-	-
A-C	185.95	185.95	0.00	-	-	-	-	-
A-D	114.43	114.88	0.00	523.93	0.218	0.28	8.811	A
D-A	86.58	86.97	0.00	478.22	0.181	0.22	9.209	A
D-BC	224.35	283.88	0.00	362.81	0.618	1.82	69.104	F
C-D	88.84	88.84	0.00	-	-	-	-	-
C-A	170.90	170.90	0.00	-	-	-	-	-
C-B	72.27	72.46	0.00	598.60	0.121	0.14	6.844	A

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]
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Filename: Wakefield Road - Paddock Road Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Wakefield Road - Paddock Road
Report generation date: 29/08/2018 15:06:14

« Existing Layout - 2023 Predicted with Lidl, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2023 Predicted with Lidl			
Stream B-C	0.05	13.74	0.04	B
Stream B-A	1.79	30.65	0.65	D
Stream C-AB	0.03	4.54	0.02	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2017 Existing, AM" model duration: 07:30 - 09:00
"D2 - 2017 Existing, PM" model duration: 16:30 - 18:00
"D3 - 2017 Existing, Saturday" model duration: 11:30 - 13:00
"D4 - 2023 Base, AM" model duration: 07:30 - 09:00
"D5 - 2023 Base, PM" model duration: 16:30 - 18:00
"D6 - 2023 Base, Saturday" model duration: 11:30 - 13:00
"D7 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D8 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D9 - 2023 Predicted, Saturday" model duration: 11:30 - 13:00
"D10 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D11 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D12 - 2023 Predicted with Lidl, Saturday " model duration: 11:30 - 13:00
"D13 - 2023 Predicted Lidl Only, AM" model duration: 07:30 - 09:00
"D14 - 2023 Predicted Lidl Only, PM" model duration: 16:30 - 18:00
"D15 - 2023 Predicted Lidl Only, Saturday" model duration: 11:30 - 13:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:06:13

File summary

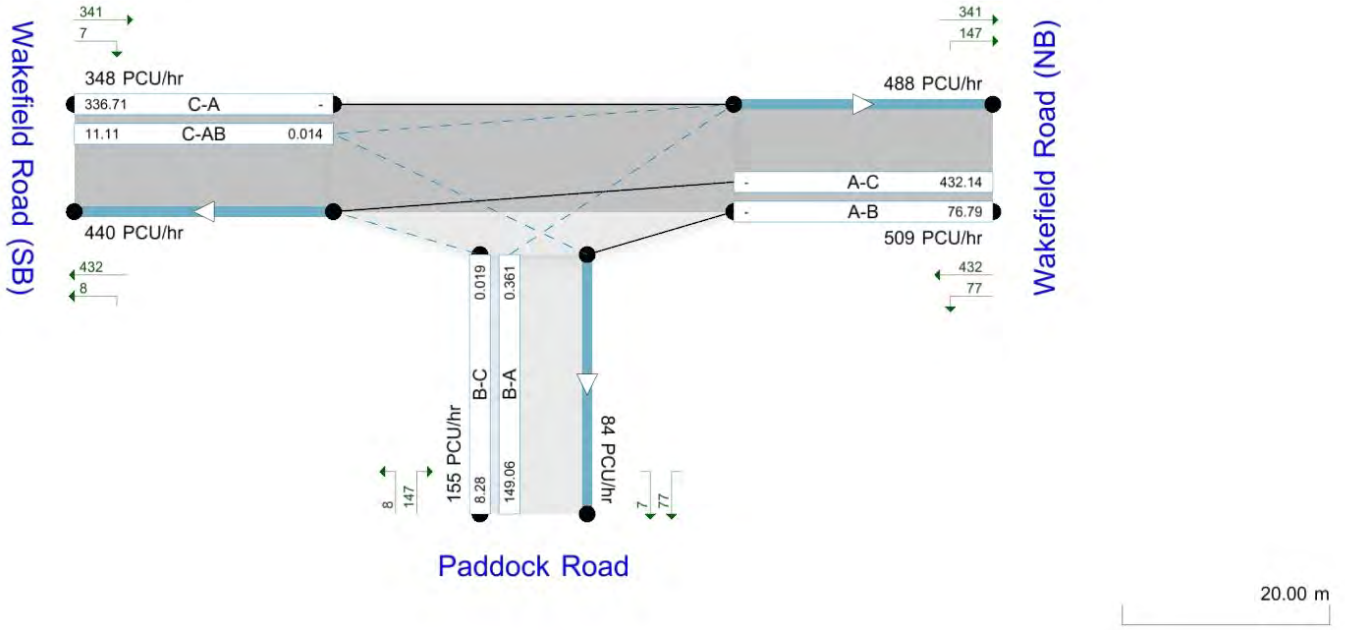
Title	Mapplewell, Barnsley
Location	Wakefield Road - Paddock Road
Site Number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14/114
Enumerator	BRYANGHALL\JTurner
Description	

Analysis Options

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

Units

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



Value Comparison Overlay Boxes Enabled
Showing modelled flow through junction (PCU/hr).
Streams (upstreams) show Total Demand (PCU/hr). Streams (downstreams) show RFC ()
Time Segment: (11:30-11:45)
Showing Analysis Set "A1 - Existing Layout "; Demand Set "D12 - 2023 Predicted with Lidl, Saturday "

The junction diagram reflects the last run of ARCADY.

Existing Layout - 2023 Predicted with Lidl, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted with Lidl, Saturday	2023 Predicted with Lidl	Saturday		ONE HOUR	11:30	13:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	A,B,C	27.88	D

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Wakefield Road (NB)	A	Wakefield Road (NB)		Major
Paddock Road	B	Paddock Road		Minor
Wakefield Road (SB)	C	Wakefield Road (SB)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Wakefield Road (SB)	7.90		0.00		2.20	250.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Paddock Road	One lane plus flare				10.00	6.00	4.40	3.00	3.00		1.00	30	80

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	581.139	0.097	0.245	0.154	0.351
1	B-C	612.002	0.086	0.218	-	-
1	C-B	718.741	0.255	0.255	-	-

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

Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Wakefield Road (NB)	ONE HOUR	✓	676.00	100.000
Paddock Road	ONE HOUR	✓	209.00	100.000
Wakefield Road (SB)	ONE HOUR	✓	462.00	100.000

Turning Proportions

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

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	0.000	102.000	574.000
	Paddock Road	198.000	0.000	11.000
	Wakefield Road (SB)	453.000	9.000	0.000

Turning Proportions (PCU) - Site Access (for whole period)

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	0.00	0.15	0.85
	Paddock Road	0.95	0.00	0.05
	Wakefield Road (SB)	0.98	0.02	0.00

Vehicle Mix

Average PCU Per Vehicle - Site Access (for whole period)

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	1.000	1.000	1.016
	Paddock Road	1.000	1.000	1.000
	Wakefield Road (SB)	1.022	1.000	1.000

Heavy Vehicle Percentages - Site Access (for whole period)

		To		
		Wakefield Road (NB)	Paddock Road	Wakefield Road (SB)
From	Wakefield Road (NB)	0.0	0.0	1.6
	Paddock Road	0.0	0.0	0.0
	Wakefield Road (SB)	2.2	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.04	13.74	0.05	B
B-A	0.65	30.65	1.79	D
C-AB	0.02	4.54	0.03	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (11:30-11:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	8.28	8.21	0.00	444.20	0.019	0.02	8.256	A
B-A	149.06	146.85	0.00	412.55	0.361	0.55	13.443	B
C-AB	11.11	11.05	0.00	811.50	0.014	0.02	4.535	A
C-A	336.71	336.71	0.00	-	-	-	-	-
A-B	76.79	76.79	0.00	-	-	-	-	-
A-C	432.14	432.14	0.00	-	-	-	-	-

Main results: (11:45-12:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.89	9.86	0.00	389.17	0.025	0.03	9.491	A
B-A	178.00	176.80	0.00	379.78	0.469	0.85	17.626	C
C-AB	14.68	14.66	0.00	832.05	0.018	0.02	4.444	A
C-A	400.65	400.65	0.00	-	-	-	-	-
A-B	91.70	91.70	0.00	-	-	-	-	-
A-C	516.01	516.01	0.00	-	-	-	-	-

Main results: (12:00-12:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	12.11	12.04	0.00	280.22	0.043	0.04	13.421	B
B-A	218.00	214.53	0.00	334.42	0.652	1.72	29.197	D
C-AB	20.66	20.62	0.00	860.94	0.024	0.03	4.329	A
C-A	488.01	488.01	0.00	-	-	-	-	-
A-B	112.30	112.30	0.00	-	-	-	-	-
A-C	631.99	631.99	0.00	-	-	-	-	-

Main results: (12:15-12:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	12.11	12.11	0.00	274.18	0.044	0.05	13.736	B
B-A	218.00	217.73	0.00	334.42	0.652	1.79	30.652	D
C-AB	20.67	20.67	0.00	860.96	0.024	0.03	4.332	A
C-A	488.00	488.00	0.00	-	-	-	-	-
A-B	112.30	112.30	0.00	-	-	-	-	-
A-C	631.99	631.99	0.00	-	-	-	-	-

Main results: (12:30-12:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.89	9.96	0.00	383.93	0.026	0.03	9.628	A
B-A	178.00	181.50	0.00	379.78	0.469	0.91	18.458	C
C-AB	14.70	14.73	0.00	832.08	0.018	0.02	4.451	A
C-A	400.63	400.63	0.00	-	-	-	-	-
A-B	91.70	91.70	0.00	-	-	-	-	-
A-C	516.01	516.01	0.00	-	-	-	-	-

Main results: (12:45-13:00)

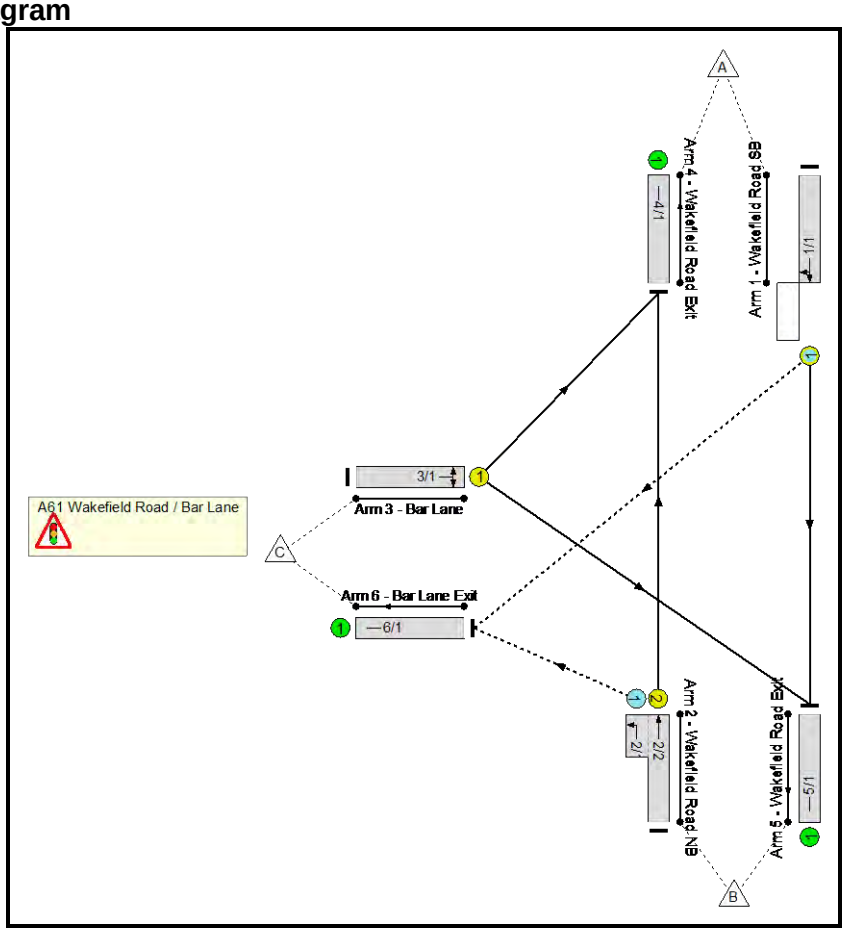
Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	8.28	8.31	0.00	441.49	0.019	0.02	8.310	A
B-A	149.06	150.40	0.00	412.54	0.361	0.58	13.801	B
C-AB	11.14	11.16	0.00	811.53	0.014	0.02	4.541	A
C-A	336.68	336.68	0.00	-	-	-	-	-
A-B	76.79	76.79	0.00	-	-	-	-	-
A-C	432.14	432.14	0.00	-	-	-	-	-

Full Input Data And Results

User and Project Details

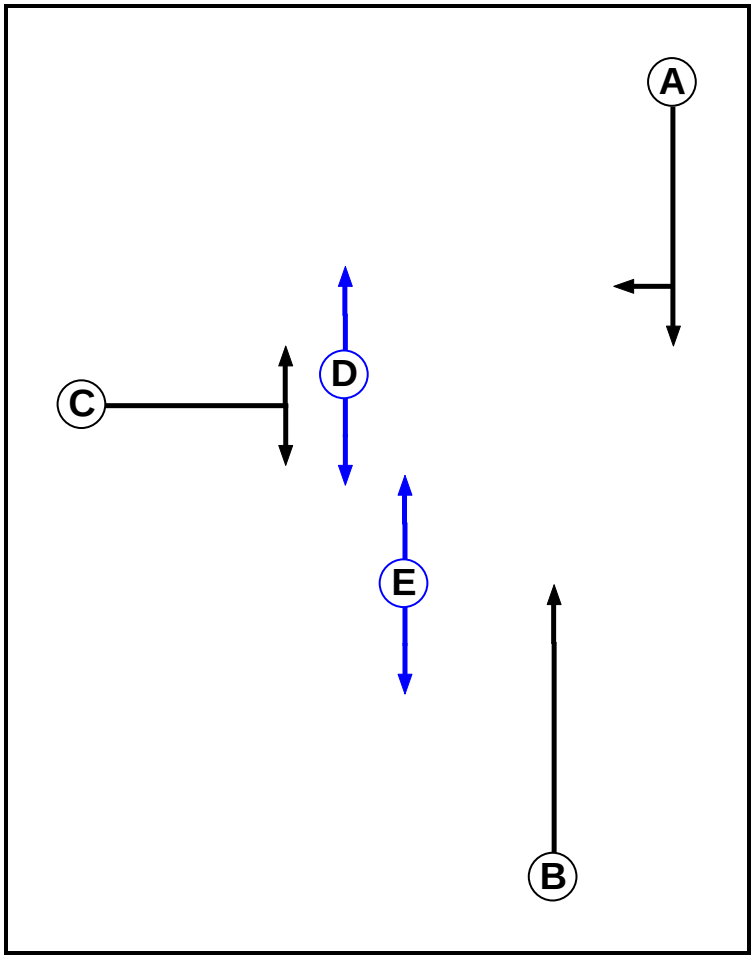
Project:	**Wakefield Road, Mapplewell**
Title:	**2017 Existing**
Location:	
File name:	Wakefield Road - Bar Lane Rev A.lsg3x
Author:	John Turner
Company:	Bryan G Hall
Address:	
Notes:	Wakefield Road/Bar Lane

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Pedestrian		6	6
E	Pedestrian		6	6

Full Input Data And Results

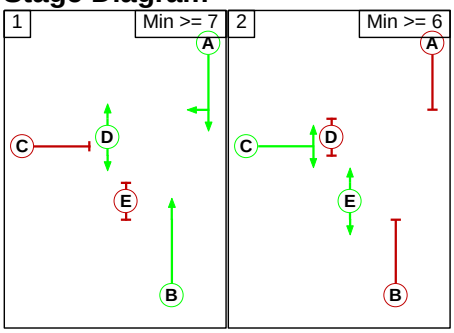
Phase Intergreens Matrix

Terminating Phase	Starting Phase					
		A	B	C	D	E
	A		-	5	-	9
	B	-		6	-	-
	C	5	5		5	-
	D	-	-	7		-
	E	8	-	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage	To Stage	
	1	2
1		9
2	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A61 Wakefield Road / Bar Lane											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Wakefield Road SB)	6/1 (Right)	1439	0	2/2	1.09	All	4.00	4.00	0.50	4	2.00
2/1 (Wakefield Road NB)	6/1 (Left)	1439	0	1/1	1.09	To 6/1 (Right)	-	-	-	-	-

Full Input Data And Results

Lane Input Data

Junction: A61 Wakefield Road / Bar Lane												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Wakefield Road SB)	O	A	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	12.50
2/1 (Wakefield Road NB)	O		2	3	3.0	Geom	-	4.00	0.00	Y	Arm 6 Left	100.00
2/2 (Wakefield Road NB)	U	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 4 Ahead	Inf
3/1 (Bar Lane)	U	C	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 4 Left	12.50
											Arm 5 Right	8.00
4/1 (Wakefield Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Wakefield Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Bar Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
12: '2023 Predicted with Lidl Saturday'	11:45	12:45	01:00	

Scenario 12: '2023 Predicted with Lidl Saturday' (FG12: '2023 Predicted with Lidl Saturday', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	618	61	679
	B	668	0	517	1185
	C	59	474	0	533
	Tot.	727	1092	578	2397

Full Input Data And Results

Traffic Lane Flows

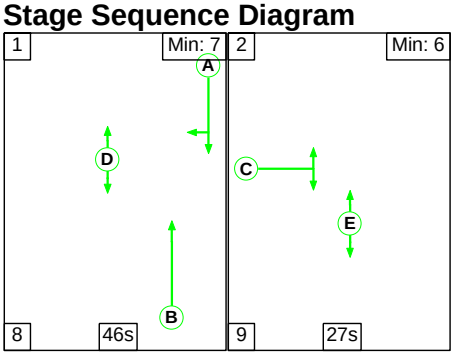
Lane	Scenario 12: 2023 Predicted with Lidl Saturday
Junction: A61 Wakefield Road / Bar Lane	
1/1	679
2/1 (short)	517
2/2 (with short)	1185(In) 668(Out)
3/1	533
4/1	727
5/1	1092
6/1	578

Lane Saturation Flows

Junction: A61 Wakefield Road / Bar Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Wakefield Road SB)	3.40	0.00	Y	Arm 5 Ahead	Inf	91.0 %	1934	1934
				Arm 6 Right	12.50	9.0 %		
2/1 (Wakefield Road NB)	4.00	0.00	Y	Arm 6 Left	100.00	100.0 %	1985	1985
2/2 (Wakefield Road NB)	3.80	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1995	1995
3/1 (Bar Lane)	3.70	0.00	Y	Arm 4 Left	12.50	11.1 %	1682	1682
				Arm 5 Right	8.00	88.9 %		
4/1 (Wakefield Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Wakefield Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Bar Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 12: '2023 Predicted with Lidl Saturday' (FG12: '2023 Predicted with Lidl Saturday', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

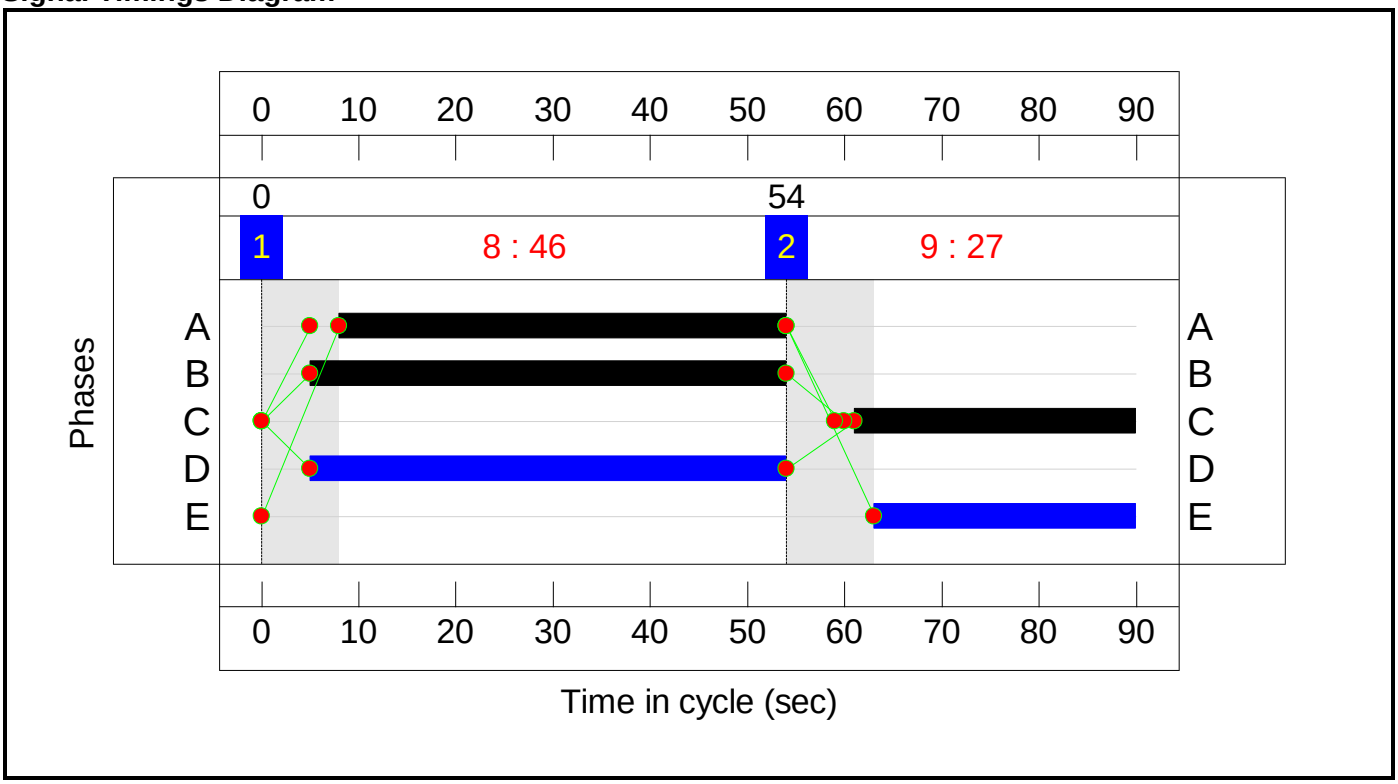


Full Input Data And Results

Stage Timings

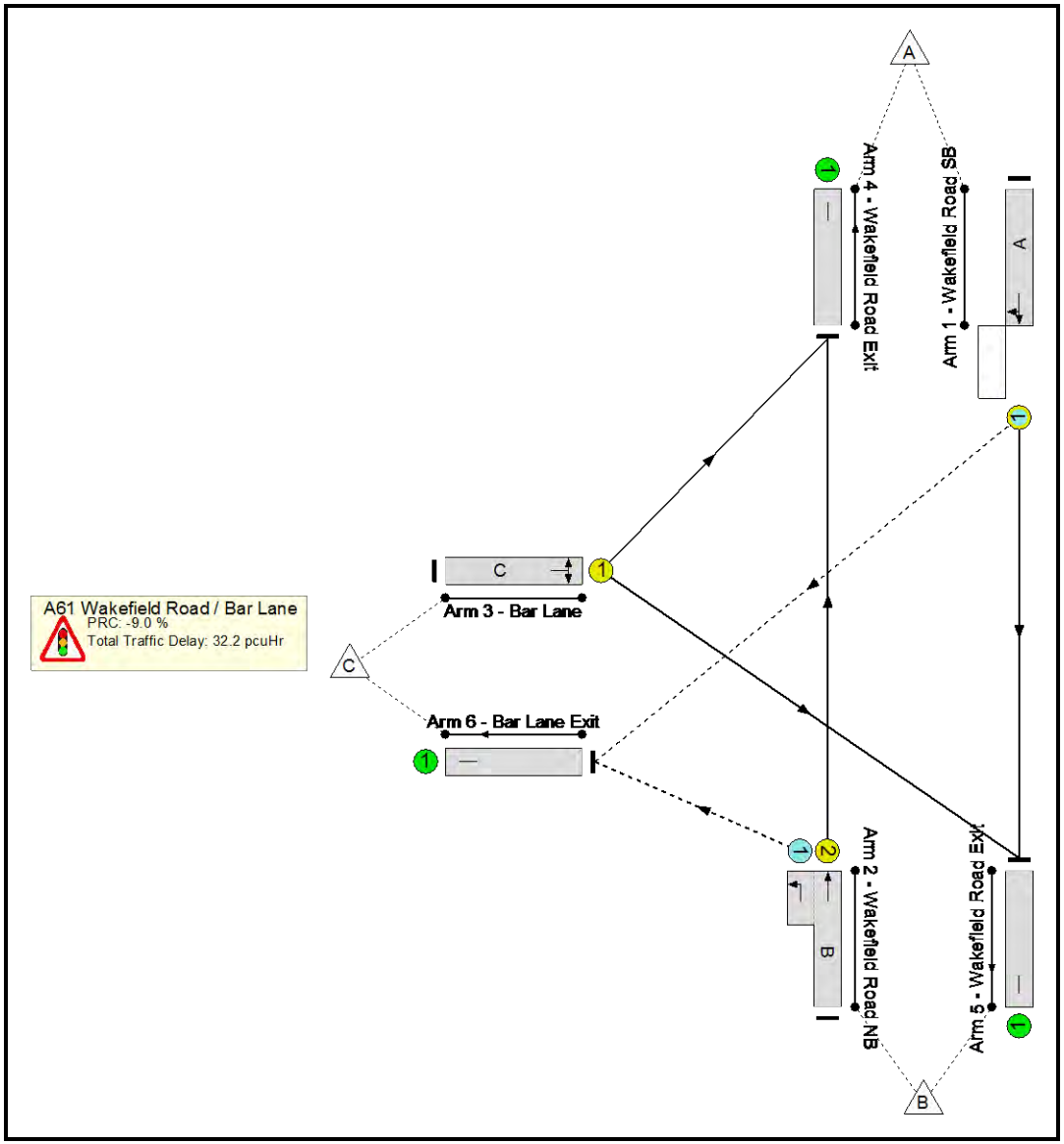
Stage	1	2
Duration	46	27
Change Point	0	54

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: 2017 Existing	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**98.1%**
A61 Wakefield Road / Bar Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**98.1%**
1/1	Wakefield Road SB Ahead Right	O	N/A	N/A	A		1	46	-	679	1934	1010	67.2%
2/2+2/1	Wakefield Road NB Ahead Left	U+O	N/A	N/A	B -		1	49	-	1185	1995:1985	1208	98.1%
3/1	Bar Lane Left Right	U	N/A	N/A	C		1	29	-	533	1682	561	95.1%

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: 2017 Existing	**-**	**-**	**495**	**81**	**1**	**12.2**	**19.9**	**0.0**	**32.2**	**-**	**-**	**-**	**-**
A61 Wakefield Road / Bar Lane	**-**	**-**	**495**	**81**	**1**	**12.2**	**19.9**	**0.0**	**32.2**	**-**	**-**	**-**	**-**
1/1	679	679	60	0	1	3.0	1.0	0.0	4.0	21.2	12.4	1.0	13.5
2/2+2/1	1185	1185	436	81	0	4.9	12.4	-	17.3	52.5	26.7	12.4	39.1
3/1	533	533	-	-	-	4.3	6.5	-	10.9	73.5	12.9	6.5	19.4

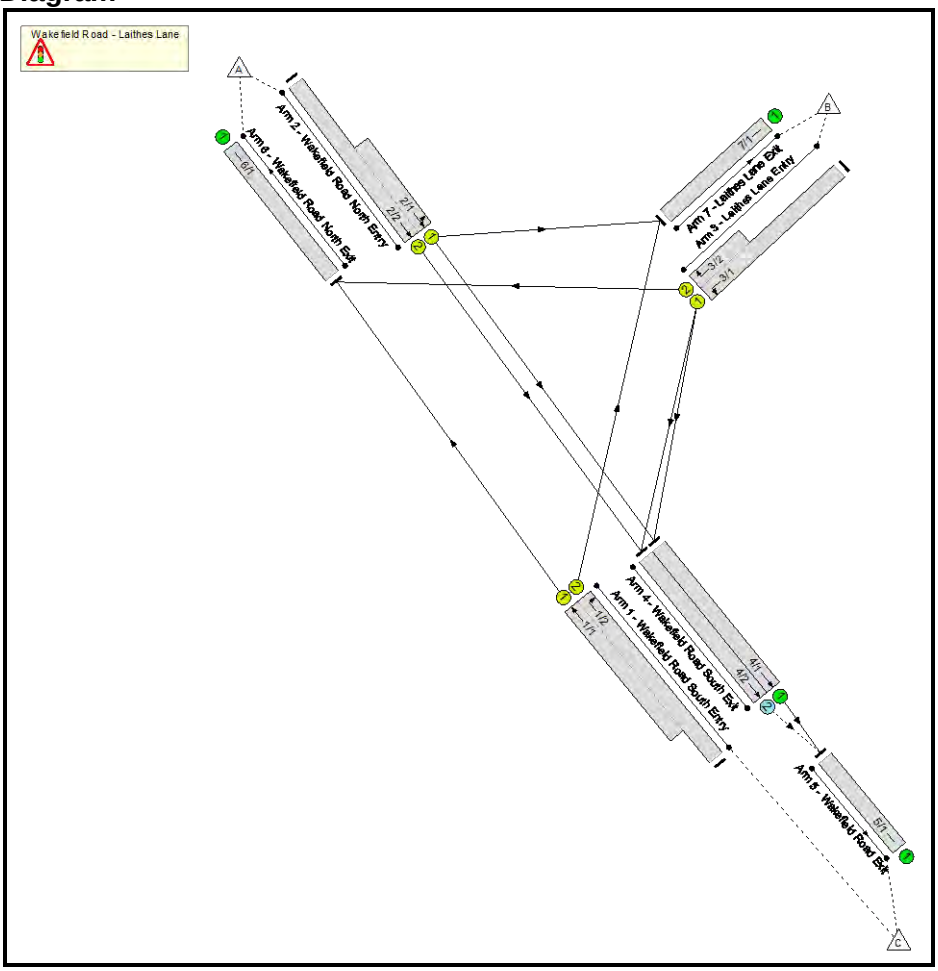
C1 PRC for Signalled Lanes (%): -9.0 Total Delay for Signalled Lanes (pcuHr): 32.16 Cycle Time (s): 90
PRC Over All Lanes (%): -9.0 Total Delay Over All Lanes(pcuHr): 32.16

Full Input Data And Results

User and Project Details

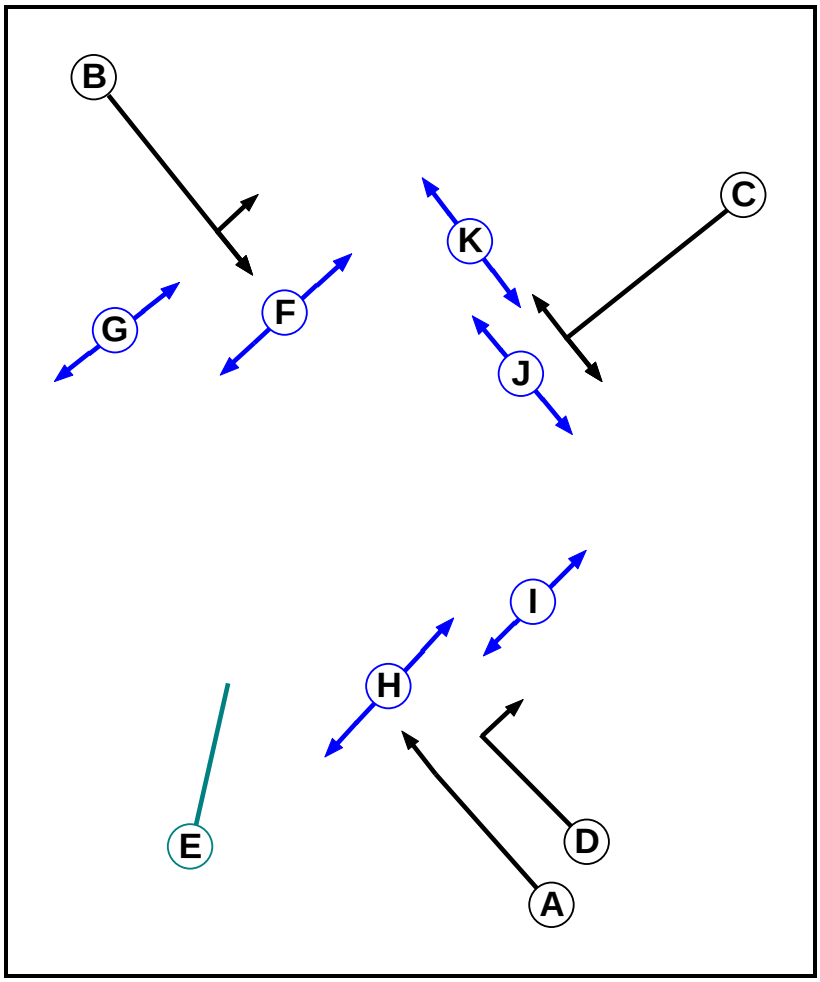
Project:	**Former William Freeman Works, Wakefield Road**
Title:	**Wakefield Road - Laithes Lane**
Location:	
File name:	Wakefield Road - Laithes Lane Rev A.lsg3x
Author:	John Turner
Company:	Bryan G Hall
Address:	
Notes:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Dummy		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7
J	Pedestrian		7	7
K	Pedestrian		7	7

Full Input Data And Results

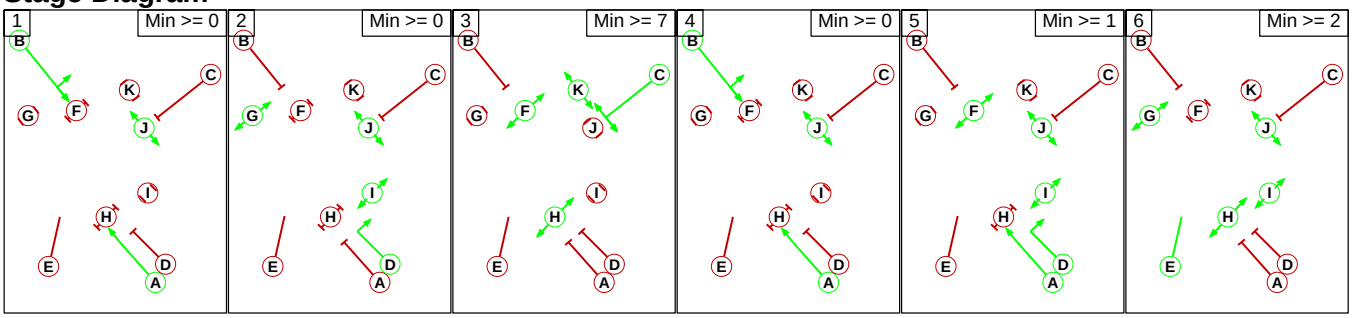
Phase Intergreens Matrix

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

Phases in Stage

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

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	5	6
	1		9	8	0	9	9
	2	7		7	7	6	5
	3	8	10		8	8	10
	4	0	9	8		9	9
	5	8	10	7	8		10
	6	8	6	7	8	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Wakefield Road - Laithes Lane											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
4/2 (Wakefield Road South Exit)	5/1 (Ahead)	1439	0	4/1	1.09	All	-	-	-	-	-

Full Input Data And Results

Lane Input Data

Junction: Wakefield Road - Laithes Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Wakefield Road South Entry)	U	A	2	3	22.6	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
1/2 (Wakefield Road South Entry)	U	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 7 Right	17.00
2/1 (Wakefield Road North Entry)	U	B	2	3	9.6	Geom	-	3.50	0.00	Y	Arm 4 Ahead	Inf
											Arm 7 Left	20.00
2/2 (Wakefield Road North Entry)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Ahead	Inf
3/1 (Laithes Lane Entry)	U	C	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 4 Left	14.00
3/2 (Laithes Lane Entry)	U	C	2	3	6.1	Geom	-	3.30	0.00	Y	Arm 6 Right	18.00
4/1 (Wakefield Road South Exit)	U		2	3	17.4	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
4/2 (Wakefield Road South Exit)	O		2	3	17.4	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
5/1 (Wakefield Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Wakefield Road North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Laithes Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
12: '2023 Predicted with Lidl Saturday'	11:45	12:45	01:00	

Full Input Data And Results

Scenario 12: '2023 Predicted with Lidl Saturday' (FG12: '2023 Predicted with Lidl Saturday', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	304	830	1134
	B	293	0	178	471
	C	891	206	0	1097
	Tot.	1184	510	1008	2702

Traffic Lane Flows

Lane	Scenario 12: 2023 Predicted with Lidl Saturday
Junction: Wakefield Road - Laithes Lane	
1/1 (short)	891
1/2 (with short)	1097(In) 206(Out)
2/1 (short)	567
2/2 (with short)	1134(In) 567(Out)
3/1 (with short)	471(In) 178(Out)
3/2 (short)	293
4/1	352
4/2	656
5/1	1008
6/1	1184
7/1	510

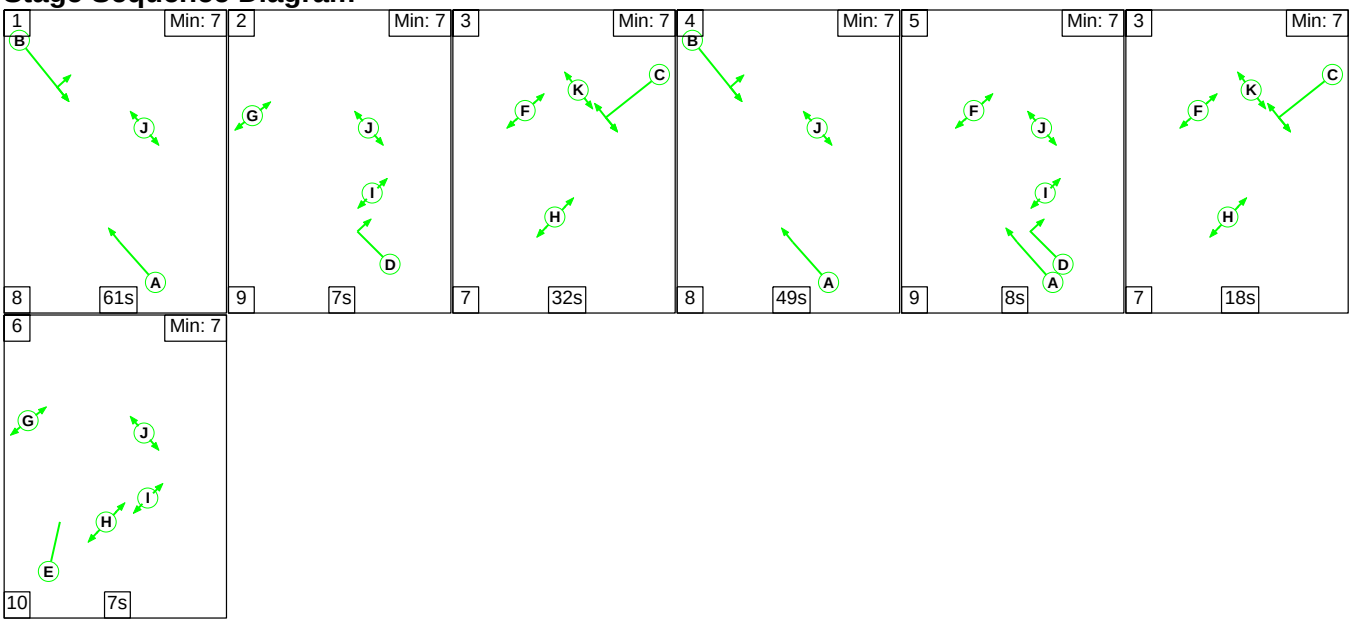
Full Input Data And Results

Lane Saturation Flows

Junction: Wakefield Road - Laithes Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Wakefield Road South Entry)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
1/2 (Wakefield Road South Entry)	3.25	0.00	Y	Arm 7 Right	17.00	100.0 %	1783	1783
2/1 (Wakefield Road North Entry)	3.50	0.00	Y	Arm 4 Ahead Arm 7 Left	Inf 20.00	46.4 % 53.6 %	1889	1889
2/2 (Wakefield Road North Entry)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
3/1 (Laithes Lane Entry)	3.30	0.00	Y	Arm 4 Left	14.00	100.0 %	1757	1757
3/2 (Laithes Lane Entry)	3.30	0.00	Y	Arm 6 Right	18.00	100.0 %	1795	1795
4/1 (Wakefield Road South Exit)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
4/2 (Wakefield Road South Exit)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
5/1 (Wakefield Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Wakefield Road North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Laithes Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 12: '2023 Predicted with Lidl Saturday' (FG12: '2023 Predicted with Lidl Saturday', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

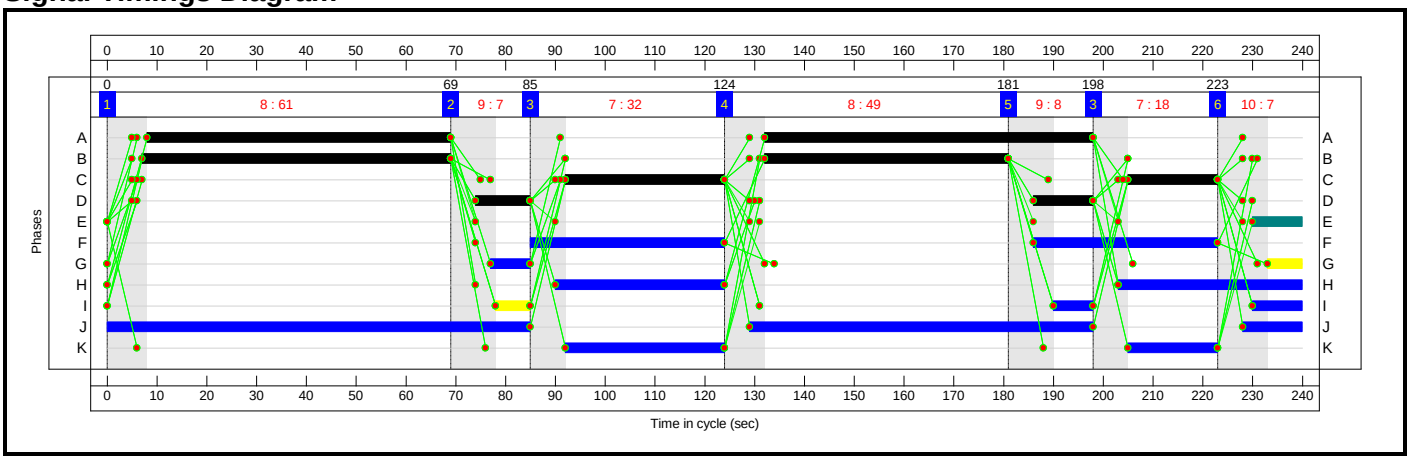


Full Input Data And Results

Stage Timings

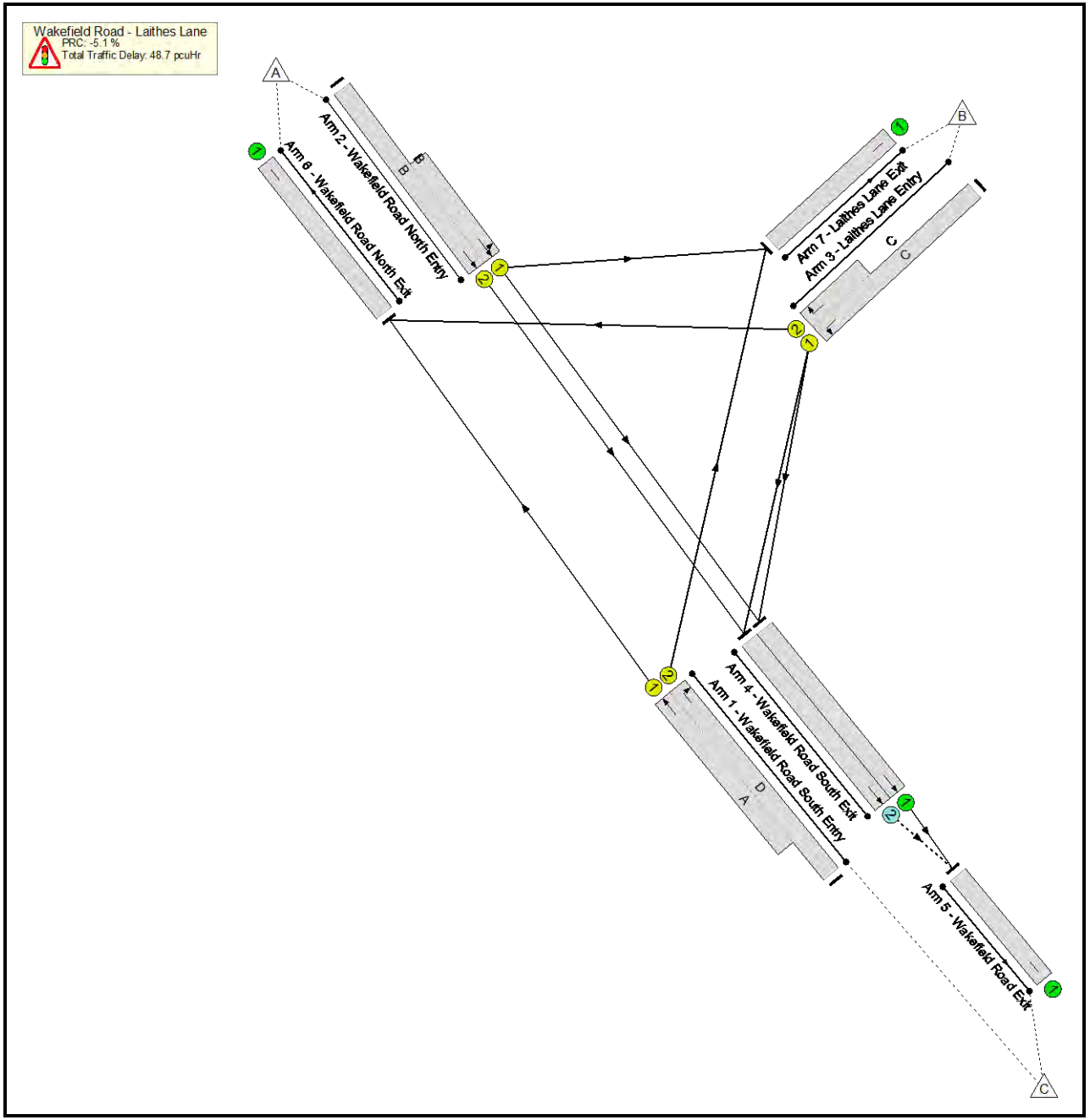
Stage	1	2	3	4	5	3	6
Duration	61	7	32	49	8	18	7
Change Point	0	69	85	124	181	198	223

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: Wakefield Road - Laithes Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**94.5%**
Wakefield Road - Laithes Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**94.5%**
1/2+1/1	Wakefield Road South Entry Ahead Right	U	N/A	N/A	D A		2	23:127	-	1097	1783:1940	1160	94.5%
2/2+2/1	Wakefield Road North Entry Ahead Left	U	N/A	N/A	B		2	111	-	1134	1965:1889	1203	94.3%
3/1+3/2	Laithes Lane Entry Left Right	U	N/A	N/A	C		2	50	-	471	1757:1795	501	94.0%
4/1	Wakefield Road South Exit Ahead	U	N/A	N/A	-		-	-	-	352	1935	1935	18.2%
4/2	Wakefield Road South Exit Ahead	O	N/A	N/A	-		-	-	-	656	1935	1055	62.2%

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: Wakefield Road - Laithes Lane	**-**	**-**	**656**	**0**	**0**	**28.1**	**20.6**	**0.0**	**48.7**	**-**	**-**	**-**	**-**
Wakefield Road - Laithes Lane	**-**	**-**	**656**	**0**	**0**	**28.1**	**20.6**	**0.0**	**48.7**	**-**	**-**	**-**	**-**
1/2+1/1	1097	1077	-	-	-	11.3	7.1	-	18.4	60.4	31.4	7.1	38.5
2/2+2/1	1134	1134	-	-	-	8.0	6.8	-	14.8	47.1	26.0	6.8	32.8
3/1+3/2	471	471	-	-	-	5.9	5.7	-	11.6	88.7	14.1	5.7	19.8
4/1	352	352	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
4/2	656	656	656	0	0	2.9	0.8	-	3.7	20.5	19.6	0.8	20.4

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	-5.1	Total Delay for Signalled Lanes (pcuHr):	44.85	Cycle Time (s):	240
	PRC Over All Lanes (%):	-5.1	Total Delay Over All Lanes(pcuHr):	48.70		

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: A61 Wakefield Road-A633 Rotherham Road mini-Roundabout.j9
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junction 9\A61 Wakefield Road A633 Rotherham Road
Report generation date: 29/08/2018 15:41:29

«2023 Predicted with Lidl, Saturday
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	2023 Predicted with Lidl			
1 - A61 North	1.7	5.18	0.63	A
2 - A633 Rotherham Road	4.1	34.37	0.82	D
3 - A61 South	5.3	23.41	0.85	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	A61 Wakefield Road/A633 Rotherham Road
Location	Mapplewell, Barnsley
Site number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14-114
Enumerator	BRYANGHALL\design
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

Mini-roundabout model	Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9			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)
D12	2023 Predicted with Lidl	Saturday	ONE HOUR	11:30	13:00	15

2023 Predicted with Lidl, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 81% of the total flow for the roundabout for one or more time segments]
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	16.85	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
1	A61 North	
2	A633 Rotherham Road	
3	A61 South	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - A61 North	4.50	4.50	6.50	27.0	20.00	20.00	0.0	✓
2 - A633 Rotherham Road	4.00	4.00	6.20	6.0	9.70	2.00	0.0	✓
3 - A61 South	4.20	4.20	5.10	1.5	20.00	20.00	0.0	✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A61 North	0.901	1905
2 - A633 Rotherham Road	0.556	970
3 - A61 South	0.840	1381

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 - A61 North		✓	1052	100.000
2 - A633 Rotherham Road		✓	410	100.000
3 - A61 South		✓	776	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - A61 North	2 - A633 Rotherham Road	3 - A61 South
From	1 - A61 North	0	369	683
	2 - A633 Rotherham Road	410	0	0
	3 - A61 South	723	53	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - A61 North	2 - A633 Rotherham Road	3 - A61 South
From	1 - A61 North	0	0	0
	2 - A633 Rotherham Road	0	0	0
	3 - A61 South	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1 - A61 North	0.63	5.18	1.7	A
2 - A633 Rotherham Road	0.82	34.37	4.1	D
3 - A61 South	0.85	23.41	5.3	C

Main Results for each time segment

11:30 - 11:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	792	40	1869	0.424	789	0.7	3.324	A
2 - A633 Rotherham Road	309	512	685	0.450	305	0.8	9.402	A
3 - A61 South	584	305	1124	0.520	580	1.1	6.565	A

11:45 - 12:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	946	47	1862	0.508	945	1.0	3.917	A
2 - A633 Rotherham Road	369	613	629	0.586	366	1.4	13.579	B
3 - A61 South	698	366	1073	0.650	695	1.8	9.440	A

12:00 - 12:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	1158	58	1853	0.625	1156	1.6	5.142	A
2 - A633 Rotherham Road	451	750	553	0.816	442	3.8	30.098	D
3 - A61 South	854	442	1010	0.846	842	4.8	20.219	C

12:15 - 12:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	1158	58	1853	0.625	1158	1.7	5.183	A
2 - A633 Rotherham Road	451	752	552	0.818	450	4.1	34.373	D
3 - A61 South	854	450	1002	0.852	853	5.3	23.411	C

12:30 - 12:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	946	49	1861	0.508	948	1.0	3.953	A
2 - A633 Rotherham Road	369	616	628	0.587	379	1.5	15.023	C
3 - A61 South	698	379	1062	0.657	711	2.0	10.602	B

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1 - A61 North	792	40	1869	0.424	793	0.7	3.351	A
2 - A633 Rotherham Road	309	515	684	0.451	311	0.8	9.727	A
3 - A61 South	584	311	1119	0.522	588	1.1	6.816	A

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]
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Filename: Left Turn from Rotherham Road to Wakefield Road Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Left Turn from Rotherham Road to Wakefield Road
Report generation date: 29/08/2018 15:19:04

« (Default Analysis Set) - 2023 Predicted with Lidl, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2023 Predicted with Lidl			
Stream B-AC	0.16	7.48	0.14	A
Stream C-A	-	-	-	-
Stream C-B	0.00	0.00	0.00	A
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2017 Existing, AM" model duration: 07:30 - 09:00
"D2 - 2017 Existing, PM" model duration: 16:30 - 18:00
"D3 - 2017 Existing, Saturday" model duration: 16:30 - 18:00
"D4 - 2023 Base, AM" model duration: 07:30 - 09:00
"D5 - 2023 Base, PM" model duration: 16:30 - 18:00
"D6 - 2023 Base, Saturday" model duration: 16:30 - 18:00
"D7 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D8 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D9 - 2023 Predicted, Saturday" model duration: 16:30 - 18:00
"D10 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D11 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D12 - 2023 Predicted with Lidl, Saturday " model duration: 16:30 - 18:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:19:04

File summary

Title	Left Turn from Rotherham Road to Wakefield Road Southbound
Location	Mapplewell, Barnsley
Site Number	
Date	29/11/2017
Version	
Status	(new file)
Identifier	
Client	Netherton Building and Construction
Jobnumber	14-114
Enumerator	johnturner
Description	

Analysis Options

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

Units

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

(Default Analysis Set) - 2023 Predicted with Lidl, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted with Lidl, Saturday	2023 Predicted with Lidl	Saturday		ONE HOUR	16:30	18:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	7.48	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A61 North	A	A61 North		Major
Rotherham Road Left Turn	B	Rotherham Road Left Turn		Minor
A61 South	C	A61 South		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A61 South	8.00		0.00		2.20	0.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Rotherham Road Left Turn	One lane	5.00										0	15

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	582.214	0.097	0.245	0.154	0.350
1	B-C	760.204	0.106	0.269	-	-
1	C-B	573.963	0.203	0.203	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A61 North	ONE HOUR	✓	683.00	100.000
Rotherham Road Left Turn	ONE HOUR	✓	70.00	100.000
A61 South	ONE HOUR	✓	723.00	100.000

Turning Proportions

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	0.000	0.000	683.000
	Rotherham Road Left Turn	0.000	0.000	70.000
	A61 South	723.000	0.000	0.000

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	0.00	0.00	1.00
	Rotherham Road Left Turn	0.00	0.00	1.00
	A61 South	1.00	0.00	0.00

Vehicle Mix

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	1.000	1.000	1.000
	Rotherham Road Left Turn	1.000	1.000	1.000
	A61 South	1.000	1.000	1.000

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

		To		
		A61 North	Rotherham Road Left Turn	A61 South
From	A61 North	0.0	0.0	0.0
	Rotherham Road Left Turn	0.0	0.0	0.0
	A61 South	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.14	7.48	0.16	A
C-A	-	-	-	-
C-B	0.00	0.00	0.00	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	52.70	52.33	0.00	621.93	0.085	0.09	6.316	A
C-A	544.31	544.31	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	469.56	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	514.20	514.20	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	62.93	62.83	0.00	595.09	0.106	0.12	6.764	A
C-A	649.96	649.96	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	449.30	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	614.00	614.00	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	77.07	76.91	0.00	557.98	0.138	0.16	7.481	A
C-A	796.04	796.04	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	421.28	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	752.00	752.00	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	77.07	77.07	0.00	557.98	0.138	0.16	7.484	A
C-A	796.04	796.04	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	421.28	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	752.00	752.00	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	62.93	63.09	0.00	595.09	0.106	0.12	6.768	A
C-A	649.96	649.96	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	449.30	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	614.00	614.00	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	52.70	52.80	0.00	621.93	0.085	0.09	6.328	A
C-A	544.31	544.31	0.00	-	-	-	-	-
C-B	0.00	0.00	0.00	469.56	0.000	0.00	0.000	A
A-B	0.00	0.00	0.00	-	-	-	-	-
A-C	514.20	514.20	0.00	-	-	-	-	-

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]
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Filename: Site Access-Wakefield Road Rev A.arc8
Path: Y:\2014\14-101 to 14-125\14-114 Former William Freeman Works, Mapplewell\Technical\2017 Transport Assessment\Junction Modelling Rev A\Junctions 8\Site Access - Wakefield Road
Report generation date: 29/08/2018 15:20:28

« (Default Analysis Set) - 2023 Predicted with Lidl, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2023 Predicted with Lidl			
Stream B-AC	0.08	11.31	0.07	B
Stream C-A	-	-	-	-
Stream C-B	0.02	7.36	0.02	A
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2023 Predicted, AM" model duration: 07:30 - 09:00
"D2 - 2023 Predicted, PM" model duration: 16:30 - 18:00
"D3 - 2023 Predicted, Saturday" model duration: 11:30 - 13:00
"D4 - 2023 Predicted with Lidl, AM" model duration: 07:30 - 09:00
"D5 - 2023 Predicted with Lidl, PM" model duration: 16:30 - 18:00
"D6 - 2023 Predicted with Lidl, Saturday " model duration: 11:30 - 13:00

Run using Junctions 8.0.5.523 at 29/08/2018 15:20:28

File summary

Title	Site Access junction with Wakefield Road
Location	Wakefield Road, Mapplewell
Site Number	
Date	05/12/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	14-114
Enumerator	johnturner
Description	

Analysis Options

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

Units

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

(Default Analysis Set) - 2023 Predicted with Lidl, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2023 Predicted with Lidl, Saturday	2023 Predicted with Lidl	Saturday		ONE HOUR	11:30	13:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	9.99	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Wakefield Road North	A	Wakefield Road North		Major
Site Access	B	Site Access		Minor
Wakefield Road South	C	Wakefield Road South		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Wakefield Road South	6.00		0.00	✓	3.00	100.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Site Access	One lane	2.75										50	50

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	505.529	0.092	0.233	0.146	0.332
1	B-C	639.009	0.098	0.248	-	-
1	C-B	686.890	0.266	0.266	-	-

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

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

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Wakefield Road North	ONE HOUR	✓	634.00	100.000
Site Access	ONE HOUR	✓	22.00	100.000
Wakefield Road South	ONE HOUR	✓	672.00	100.000

Turning Proportions

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	0.000	6.000	628.000
	Site Access	8.000	0.000	14.000
	Wakefield Road South	661.000	11.000	0.000

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	0.00	0.01	0.99
	Site Access	0.36	0.00	0.64
	Wakefield Road South	0.98	0.02	0.00

Vehicle Mix

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	Wakefield Road South	1.000	1.000	1.000

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

		To		
		Wakefield Road North	Site Access	Wakefield Road South
From	Wakefield Road North	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	Wakefield Road South	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.07	11.31	0.08	B
C-A	-	-	-	-
C-B	0.02	7.36	0.02	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (11:30-11:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	16.56	16.40	0.00	424.00	0.039	0.04	8.825	A
C-A	497.64	497.64	0.00	-	-	-	-	-
C-B	8.28	8.22	0.00	559.86	0.015	0.01	6.525	A
A-B	4.52	4.52	0.00	-	-	-	-	-
A-C	472.79	472.79	0.00	-	-	-	-	-

Main results: (11:45-12:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	19.78	19.73	0.00	390.71	0.051	0.05	9.703	A
C-A	594.23	594.23	0.00	-	-	-	-	-
C-B	9.89	9.87	0.00	535.20	0.018	0.02	6.852	A
A-B	5.39	5.39	0.00	-	-	-	-	-
A-C	564.56	564.56	0.00	-	-	-	-	-

Main results: (12:00-12:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	24.22	24.13	0.00	342.44	0.071	0.08	11.307	B
C-A	727.77	727.77	0.00	-	-	-	-	-
C-B	12.11	12.09	0.00	501.11	0.024	0.02	7.360	A
A-B	6.61	6.61	0.00	-	-	-	-	-
A-C	691.44	691.44	0.00	-	-	-	-	-

Main results: (12:15-12:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	24.22	24.22	0.00	342.43	0.071	0.08	11.312	B
C-A	727.77	727.77	0.00	-	-	-	-	-
C-B	12.11	12.11	0.00	501.11	0.024	0.02	7.360	A
A-B	6.61	6.61	0.00	-	-	-	-	-
A-C	691.44	691.44	0.00	-	-	-	-	-

Main results: (12:30-12:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	19.78	19.86	0.00	390.70	0.051	0.05	9.711	A
C-A	594.23	594.23	0.00	-	-	-	-	-
C-B	9.89	9.91	0.00	535.20	0.018	0.02	6.852	A
A-B	5.39	5.39	0.00	-	-	-	-	-
A-C	564.56	564.56	0.00	-	-	-	-	-

Main results: (12:45-13:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	16.56	16.61	0.00	423.98	0.039	0.04	8.839	A
C-A	497.64	497.64	0.00	-	-	-	-	-
C-B	8.28	8.30	0.00	559.86	0.015	0.02	6.528	A
A-B	4.52	4.52	0.00	-	-	-	-	-
A-C	472.79	472.79	0.00	-	-	-	-	-