

Technical Note

Project Number: T24544
Project: Market Bosworth
Title: TN01 – Response to LCC
Date: 24/06/2025
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APPENDICES

Appendix A Ashby Road	Junctions 11 PICADY Output – Bosworth Road/ A447/B585 Bosworth Ln/ A447
Appendix B	Geometries for Bosworth Road/ A447/B585 Bosworth Ln/ A447 Ashby Road

DRAWINGS

T24554.005	Proposed Track Access Junction
T24554 001	Proposed Site Access Junction

Introduction

- 1.1 Hub Transport Planning Ltd has been commissioned by Richborough to provide a technical note regarding the response submitted by LCC to the outline planning application for the proposed development off Station Road, Market Bosworth.
- 1.2 The proposed development is greenfield, located north of Station Road, to the west of Market Bosworth, approximately 1.2km away from the town centre, 6km from Newbold Verdon and 23km west of Leicester. The proposed development comprises up to 125 residential dwellings
- 1.3 This technical note aims to address the following points made by the local authority, which include the need for:
 - *“Further information in respect of the proposed track access as detailed above;*
 - *Provision of a ghost right turn lane at the main site access, which takes into consideration approved application reference 24/01157/HYB in terms of that site access and the proposed chicanes as well as bus stop/ raised kerb locations;*
 - *A Stage 1 Road Safety Audit of the site access and Designer’s Response to any problems raised;*
 - *Updated capacity assessment for the A447/ Bosworth Lane/ Bosworth Road/ Ashby Road Staggered junction which includes live application reference 24/01061/OUT and all live developments as part of a sensitivity test. As well as amended junction modelling as detailed; and*
 - *Provision of an updated Travel Plan;”*
- 1.4 The structure of the note is set out as follows:

Technical Note

- Site Access Design;
- Sensitivity Testing;
- Accident Data;
- Traffic Impact and Assessment;
- Summary and Conclusion.

Site Access Design

Track Access

- 1.5 As stated in the response by LCC, the existing track access, which lies west of the proposed vehicular access along Station Road, is a retention of an existing point of access. It is envisaged that a shared pedestrian and cycle pathway could be provided adjacent to the existing access.
- 1.6 **Drawing T24554.005** indicates the proposed changes to the existing track access. The access will be controlled to only be used by the residents of Wharf Farm, likely via use of a rising bollard in the indicated location.
- 1.7 LCC also stated, *“Furthermore, the use of the access can be controlled using a condition along the following lines:- “The existing private drive shown on drawing P24-1644_DE_0005_01 Rev C shall only be used for purposes associated with the property known as Wharf Farm.”*

The LHA advise the access proposals should be submitted at this stage to clearly outline how access would be restricted. In addition, it would still be beneficial for clarity in respect of the daily level of use as well as types of vehicles which would use the access. “

- 1.8 The level of activity is not envisaged to change, but no additional information about numbers or types of vehicles is available. As there is no adverse safety record in the location, and the private access is not being reconfigured, it is not anticipated that any change would be needed in this location from the proposed development, or be required to ensure highway safety, given the existing use of the access.

Ghost Island

- 1.9 The LHA stated the worst-case daily trip generation forecasting trips from the Kyngs Golf Club committed scheme and the proposed development. It is therefore understood that the site access requires a ghost island for right-turners in line with the CD 123 guidance document.
- 1.10 This is incorrect, as the DMRB guidance is intended to be applied to trunk road locations, serving strategic transport corridors, unlike the environment of Station Road. It is an inappropriate application of this DMRB guidance, and as stated in MfS2:

“It is therefore recommended that as a starting point for any scheme affecting non-trunk roads, designers should start with MfS.

- 1.3.3 *Where designers do refer to DMRB for detailed technical guidance on specific aspects, for example on strategic inter-urban non-trunk roads, it is recommended that they bear in mind the key principles of MfS, and apply DMRB in a way that respects local context. It is further recommended that DMRB or other standards and guidance is only used where the guidance contained in MfS is not sufficient or where particular evidence leads a designer to conclude that MfS is not applicable.*

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1.3.4 *The application of MfS advice to all 30mph speed limits as a starting point is in keeping with MfS1.”*

- 1.11 MfS2 also notes that *“The strict application of DMRB to non-trunk routes is rarely appropriate for highway design in built up areas, regardless of traffic volume.”*
- 1.12 The application of DMRB guidance in this way leads to a conclusion that any residential development of approximately 80+ dwellings would be expected to require a ghost island. This is clearly inappropriate on most non-trunk roads and does not conform to LCC highways design guide, which does not identify this approach, and references Manual for Streets as guidance which it aims to reflect (amongst others). It is also noted that this approach does not appear to have been consistently applied to other developments in the area.
- 1.13 However, the provision of a Ghost Island is possible in this location, and as LCC as highway authority have requested it, a revised site access design has been prepared and can be seen in **Drawing T24554 001 Rev D**, which shows the reconfigured highway, proposed bus stop locations, and the ghost island right turn lane.
- 1.14 Following LCC comments, a Stage 1 Road Safety Audit of this site access design is currently being undertaken and will be provided in due course.

Accident Data

- 1.15 Regarding the safety of the staggered A447 crossroads with Brascote Road, LCC expressed concerns, stating, *“The LHA are aware of local concerns in respect of the current operation and safety of this junction and what the cumulative impact of further development in the area could be.”*
- 1.16 As such, a review of the Personal Injury Accident (PIA) data has been undertaken using the DfT database for the latest six-year period (from January 2019 up to December 2023). There were a total of two slight incidents which occurred; the first being along the A447 northbound and the second incident was along Bosworth Lane, dating back to 2019 and 2023 respectively.
- 1.17 Whilst all PIAs are regrettable, the quantity and severity of PIAs recorded along the staggered junction do not indicate any safety concerns, nor does the data suggest that there are any accident clusters in the vicinity of the location.

Sensitivity Testing

- 1.18 The traffic impact from the proposed development off Station Road, Market Bosworth, as well as other committed developments in near proximity, had previously been assessed.
- 1.19 Since that assessment in the initial outline application for the proposed development off Station Road, the LHA stated that *“application reference 24/01061/OUT requires consideration. Whilst application 24/00831/OUT has recently been refused by the LPA, it is strongly advised this application remains in consideration given the Applicant could appeal.”*
- 1.20 Therefore, the development within Newbold Verdon under the application 24/00831/OUT has been modelled as a sensitivity test and the effects on the junction have been explored as a worst-case scenario on the local highway network.
- 1.21 The planning application under reference number 24/01061/OUT is an outline planning application for the erection of up to 240 residential dwellings (Use Class C3), retention of the existing accesses off Barlestone Road and the creation of new accesses off Barlestone Road, a cemetery and a health centre (Use Class E(e)), public open space and associated infrastructure | Land North Of Barlestone Road Newbold Verdon).

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1.22 The traffic impact of the Barlestone Road development has been explored in further detail below.

Traffic Impact and Assessment

1.23 The traffic impact of the A447/ Bosworth Lane/ Bosworth Road/ Ashby Road staggered junction has been re-assessed in line with the comments made by LCC, which stated;

“The LHA advises the Applicant is required to consider the impact of application 24/01061/OUT within the capacity assessments for the junction. The LHA advise that a sensitivity test should be undertaken which differentiates between a scenario with the development and committed developments in place, alongside the development and all live/ refused applications in place in addition to committed developments....

- *After reviewing the junction modelling, the LHA can advise the following points:*
- *The main road widths entered should be reduced as they include the width of the right turn lanes. The right turn lane widths should be omitted as stated on page 370 of the user guide.*
- *It is advised that right turn blocking queue lengths are entered for the right turn lanes on the A447 (15 pcu for the north side, and 13 pcu for the south side).*
- *Bosworth Road – The hatching should not be assumed to be used as a flare lane (the guide states hatching should not be counted in any measurements of geometry). For this approach, the “Estimate Flare Length” box should be ticked with 5m interval side road widths entered that exclude hatching.*
- *Bosworth Lane – The acceleration lane should not be justification to model this approach as two lanes. The 5m interval side road widths should be entered, and the approach should be modelled as a single lane.*
- *Values in the Vehicle Mix table should be entered (HGV %).*

1.24 In line with the above comments, the geometries for the staggered junction have been revised, and the file outputs for the A447/ Bosworth Lane/ Bosworth Road/ Ashby Road junction assessment can be seen in **Appendix A**.

1.25 As the traffic counts information for additional assessments requested by LCC were taken from the Gladman’s TA affiliated with Land off Shenton Road, no HGV vehicle movements were available from the information provided.

1.26 The traffic impact of the development to the North of Barlestone Road can be seen in Appendix M/page 124 of the TA associated with the development under reference 24/01061/OUT.

1.27 The revised assessment for the proposed site North of Station Road considers the junction operation at 2033, for comparability with the 24/01061/OUT application. As such, this sensitivity test demonstrated the worst-case impact across the staggered junction and includes the Barlestone Road development along with the following committed development:

- Land East Of The Windmill Inn Brascote Lane Newbold Verdon Leicestershire (23/01037/OUT- outline application for 239 dwellings),
- Land off Bosworth Lane, Newbold Verdon (20/00143/FUL – full planning application for 116 dwellings), have been identified as committed developments.

1.28 Therefore, the scenarios tested are as follows:

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- 2033 Base (including 24/01061/OUT, 20/00143/FUL and 23/01037/OUT)
- 2033 Base + Proposed Richborough Development

1.29 The alternative sensitivity testing for the junction, showing capacity calculations is included in **Appendix A**, with the geometry calculations in **Appendix B**. The outputs can be seen in **Table 1** below.

Junction Capacity Assessments

Table 1 – Bosworth Road / A447/ B585 Bosworth Ln/ A447 Ashby Road Staggered Junction – PICADY Analysis

Approach	AM Peak 08:00-09:00			PM Peak 17:00-18:00		
	RFC	Queue	Delay (s)	RFC	Queue	Delay (s)
2033 Base						
Bosworth Road LT	0.95	3	202	1.05	5	280
Bosworth Road RT	0.95	8	121	1.05	16	186
A447 Ashby Rd (S) RT	0.36	1	13	0.35	1	11
B585 Bosworth Lane LT	0.96	6	122	0.30	0	14
B585 Bosworth Lane RT	0.92	6	130	0.66	2	42
A447 (N) RT	0.16	0	8	0.13	0	8
2033 Base + Dev Sensitivity Test						
Bosworth Road LT	1.03	5	270	1.09	6	332
Bosworth Road RT	1.02	13	172	1.08	19	220
A447 Ashby Rd (S) RT	0.36	1	13	0.35	1	11
B585 Bosworth Lane LT	0.99	7	153	0.32	1	15
B585 Bosworth Lane RT	0.97	8	157	0.70	2	48
A447 (N) RT	0.17	0	8	0.14	0	8

- 1.30 **Table 1** indicates that the staggered crossroads junction is forecast to operate with some queueing and delays. The addition of the site North of Station Road, Market Bosworth results in a maximum increase in delay of 68 seconds on the Bosworth Road left turn onto the A447.
- 1.31 **Table 1** shows that some levels of queueing and delay are preexisting at the junction, with the RFC values along Bosworth Road and Bosworth Lane being above 0.95 in the surveyed base. The addition of the proposed development has, a maximum increase in queue length of 5 along the Bosworth Lane right turning lane.

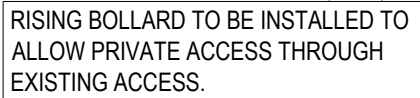
Summary and Conclusion

- 1.32 This technical note has been produced to address the requests made in the Substantive Response by LCC, stated in section 1.3 of the report.
- 1.33 The development's proposed access is provided via the existing Kyns Golf Club access and is set to include a right-turning ghost island. A Stage 1 Road Safety Audit of the site access is underway and the travel plan will also be updated in due course if required by LCC.

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- 1.34 Updated sensitivity testing and junction modelling forecast that the staggered crossroads junction on the A447 will operate with some queuing and delay in 2033 in the cumulative assessment scenario. This increases with the addition of the Site North of Station Road, Market Bosworth, but the impact on overall junction performance is negligible, with minor increases in queue lengths and delays.
- 1.35 Safety concerns have been addressed, noting that the PIA data indicating that the staggered junction does not currently have any accident clusters which would raise safety concerns regarding operation of the highway network.

Drawings



- | REV | DESCRIPTION | DATE | BY | AUTH |
|-----|-------------|------|----|------|
|-----|-------------|------|----|------|

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CLIENT
RICHBOROUGH

PROJECT
LAND NORTH OF STATION ROAD,
MARKET BOSWORTH

TITLE
PROPOSED CONTROL OF EXISTING
ACCESS

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
MJ	NB	1:500	A3	13.06.25

PROJECT NO. T24554	DRAWING NO. 005	REV -
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Appendix A –

Junctions 11 PICADY Output – Bosworth Road/ A447/B585 Bosworth Ln/ A447

Junctions 11									
PICADY 11 - Priority Intersection Module									
Version: 11.0.0.2177									
© Copyright TRL Software Limited, 2024									
For sales and distribution information, program advice and maintenance, contact TRL Software:									
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com									
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution									

Filename: T24554 - Bosworth Rd, A447, B585 Bosworth Ln Stagger Sensitivity BARLESTONE.j11

Path: C:\Users\JasminRema\Hub Transport Planning Ltd\Hub Transport Planning - General\Projects\T24554 Station Road, Market Bosworth\Modelling\Picady

Report generation date: 24/06/2025 16:08:03

- »2033 | Future Year Base | AM
- »2033 | Future Year Base | PM
- »2033 | Future Year Base + Dev Sensitivity | AM
- »2033 | Future Year Base + Dev Sensitivity | PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2033 - Future Year Base									
Stream B-C	D1	3.4	201.88	0.95	F	D2	5.4	279.82	1.05	F
Stream B-AD		7.8	120.51	0.95	F		15.7	185.57	1.05	F
Stream A-BCD		0.5	12.89	0.36	B		0.5	11.31	0.35	B
Stream D-A		5.6	121.77	0.96	F		0.4	13.69	0.30	B
Stream D-BC		5.9	129.32	0.92	F		1.8	42.03	0.66	E
Stream C-ABD		0.2	8.23	0.16	A		0.2	7.74	0.13	A
	2033 - Future Year Base + Dev Sensitivity									
Stream B-C	D3	4.5	270.09	1.03	F	D4	6.1	332.47	1.09	F
Stream B-AD		12.5	172.25	1.02	F		19.6	220.32	1.08	F
Stream A-BCD		0.6	13.18	0.36	B		0.5	11.45	0.35	B
Stream D-A		6.8	152.70	0.99	F		0.5	15.33	0.32	C
Stream D-BC		7.6	157.03	0.97	F		2.2	47.73	0.70	E
Stream C-ABD		0.2	8.30	0.17	A		0.2	7.81	0.14	A

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

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

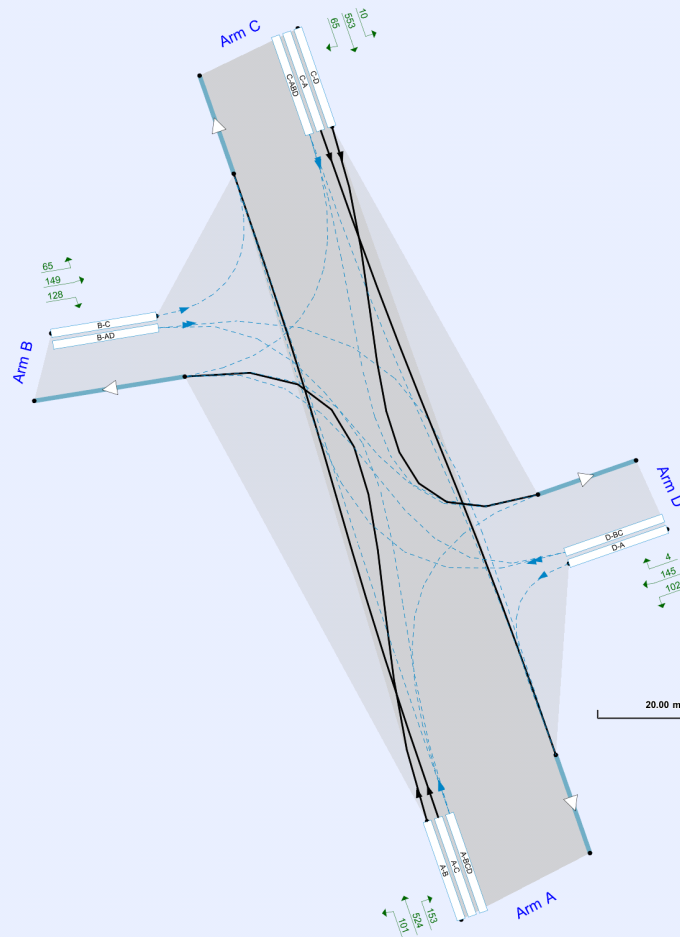
File summary

File Description

Title	Market Bosworth
Location	Bosworth Rd, A447, B585 Bosworth Ln
Site number	
Date	12/02/2025
Version	
Status	(new file)
Identifier	
Client	Richborough
Jobnumber	T24554
Enumerator	AzureAD\JasminRema
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



Flows show original traffic demand (PCU/hr)
Streams (downstream end) show RFC (s)

The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2033	Future Year Base	AM	Sensitivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev)	ONE HOUR	07:45	09:15	15
D2	2033	Future Year Base	PM	Sensitivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev)	ONE HOUR	16:45	18:15	15
D3	2033	Future Year Base + Dev Sensitivity	AM	Sensitivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev) + dev	ONE HOUR	07:45	09:15	15
D4	2033	Future Year Base + Dev Sensitivity	PM	Sensitivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev) + dev	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2033 | Future Year Base | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	Two-way	Two-way	Two-way		34.00	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	34.00	D

Arms

Arms

Arm	Name	Description	Arm type
A	A447 Ashby Rd (S)		Major
B	Bosworth Rd		Minor
C	A447 (N)		Major
D	B585 Bosworth Ln		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	10.20		✓	2.80	145.0	✓	13.00
C	9.80		✓	3.10	177.0	✓	15.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	6.30	4.40	3.00	3.00	✓	1.00	25	48
D	One lane plus flare	10.00	8.80	5.30	3.00	3.00	✓	2.00	32	106

Minor Arm Geometry Notes

Arm	Notes
B	actual flare is approximately 120m in width, with hatchings acting as a slip northbound
D	

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

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
A-D	701	-	-	-	0.222	0.222	0.222	-	0.222	-	-
B-AD	556	0.084	0.214	-	-	-	0.134	0.305	0.134	0.084	0.214
B-C	614	0.078	0.198	-	-	-	-	-	-	0.078	0.198
C-B	743	0.240	0.240	-	-	-	-	-	-	0.240	0.240
D-A	752	-	-	-	0.238	0.094	0.238	-	0.094	-	-
D-BC	602	0.142	0.142	0.323	0.226	0.090	0.226	-	0.090	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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

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

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2033	Future Year Base	AM	Sensivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev)	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	794	100.000
B		✓	278	100.000
C		✓	927	100.000
D		✓	302	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	250	404	140
	B	87	0	53	138
	C	836	78	0	13
	D	143	153	6	0

Vehicle Mix

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.95	201.88	3.4	F
B-AD	0.95	120.51	7.8	F
ABCD	0.36	12.89	0.5	B
A-B				
A-C				
D-A	0.96	121.77	5.6	F
D-BC	0.92	129.32	5.9	F
C-ABD	0.16	8.23	0.2	A
C-D				
C-A				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	0.00	423	0.094	39	0.1	9.376	A
B-AD	169	0.00	359	0.471	166	0.9	18.316	C
ABCD	105	0.00	521	0.202	104	0.3	8.612	A
A-B	188	0.00			188			
A-C	304	0.00			304			
D-A	108	0.00	518	0.208	107	0.3	8.739	A
D-BC	120	0.00	329	0.363	117	0.6	16.827	C
C-ABD	59	0.00	596	0.099	58	0.1	6.692	A
C-D	10	0.00			10			
C-A	629	0.00			629			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	48	0.00	330	0.144	47	0.2	12.737	B
B-AD	202	0.00	320	0.632	199	1.6	29.152	D
ABCD	126	0.00	486	0.259	125	0.3	9.980	A
A-B	225	0.00			225			
A-C	363	0.00			363			
D-A	129	0.00	445	0.289	128	0.4	11.332	B
D-BC	143	0.00	275	0.521	141	1.0	26.580	D
C-ABD	70	0.00	567	0.124	70	0.1	7.246	A
C-D	12	0.00			12			
C-A	752	0.00			752			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	58	0.00	93	0.630	54	1.3	84.810	F
B-AD	248	0.00	264	0.939	230	5.9	82.319	F
ABCD	154	0.00	437	0.353	153	0.5	12.657	B
AB	275	0.00			275			
AC	445	0.00			445			
D-A	157	0.00	220	0.714	151	2.1	47.869	E
D-BC	175	0.00	194	0.901	162	4.4	87.829	F
C-ABD	86	0.00	527	0.163	86	0.2	8.159	A
C-D	14	0.00			14			
C-A	920	0.00			920			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	58	0.00	61	0.950	50	3.4	201.876	F
B-AD	248	0.00	262	0.947	240	7.8	120.506	F
ABCD	154	0.00	433	0.356	154	0.5	12.894	B
AB	275	0.00			275			
AC	445	0.00			445			
D-A	157	0.00	163	0.964	144	5.6	121.770	F
D-BC	175	0.00	190	0.922	169	5.9	129.319	F
C-ABD	86	0.00	523	0.164	86	0.2	8.226	A
C-D	14	0.00			14			
C-A	920	0.00			920			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	48	0.00	273	0.175	60	0.2	17.891	C
B-AD	202	0.00	315	0.642	226	2.0	47.552	E
ABCD	126	0.00	480	0.262	127	0.4	10.216	B
AB	225	0.00			225			
AC	363	0.00			363			
D-A	129	0.00	410	0.313	149	0.5	14.827	B
D-BC	143	0.00	268	0.534	162	1.2	38.877	E
C-ABD	70	0.00	561	0.125	70	0.1	7.331	A
C-D	12	0.00			12			
C-A	752	0.00			752			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	0.00	413	0.097	40	0.1	9.664	A
B-AD	169	0.00	359	0.472	174	0.9	19.858	C
ABCD	105	0.00	520	0.203	106	0.3	8.706	A
AB	188	0.00			188			
AC	304	0.00			304			
D-A	108	0.00	512	0.210	108	0.3	8.942	A
D-BC	120	0.00	328	0.364	122	0.6	17.664	C
C-ABD	59	0.00	595	0.099	59	0.1	6.721	A
C-D	10	0.00			10			
C-A	629	0.00			629			

2033 | Future Year Base | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	Two-way	Two-way	Two-way		39.76	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	39.76	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2033	Future Year Base	PM	Sensivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev)	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	778	100.000
B		✓	342	100.000
C		✓	628	100.000
D		✓	251	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	101	524	153
	B	128	0	65	149
	C	553	65	0	10
	D	102	145	4	0

Vehicle Mix

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.05	279.82	5.4	F
B-AD	1.05	185.57	15.7	F
A-BCD	0.35	11.31	0.5	B
A-B				
A-C				
D-A	0.30	13.69	0.4	B
D-BC	0.66	42.03	1.8	E
C-ABD	0.13	7.74	0.2	A
C-D				
C-A				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	0.00	385	0.127	48	0.1	10.676	B
B-AD	209	0.00	381	0.547	204	1.2	19.841	C
A-BCD	115	0.00	561	0.205	114	0.3	8.046	A
A-B	76	0.00			76			
A-C	394	0.00			394			
D-A	77	0.00	554	0.139	76	0.2	7.519	A
D-BC	112	0.00	360	0.311	110	0.4	14.319	B
C-ABD	49	0.00	603	0.081	49	0.1	6.491	A
C-D	8	0.00			8			
C-A	416	0.00			416			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	58	0.00	271	0.215	58	0.3	16.853	C
B-AD	249	0.00	345	0.722	244	2.3	34.264	D
ABCD	138	0.00	532	0.258	137	0.3	9.103	A
AB	91	0.00			91			
AC	471	0.00			471			
D-A	92	0.00	504	0.182	91	0.2	8.717	A
D-BC	134	0.00	315	0.425	133	0.7	19.621	C
C-ABD	58	0.00	575	0.102	58	0.1	6.965	A
C-D	9	0.00			9			
C-A	497	0.00			497			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	72	0.00	68	1.053	56	4.2	203.721	F
B-AD	305	0.00	294	1.038	273	10.2	108.452	F
ABCD	168	0.00	494	0.341	168	0.5	11.026	B
AB	111	0.00			111			
AC	577	0.00			577			
D-A	112	0.00	393	0.286	112	0.4	12.754	B
D-BC	164	0.00	253	0.649	160	1.7	37.458	E
C-ABD	72	0.00	537	0.133	71	0.2	7.724	A
C-D	11	0.00			11			
C-A	609	0.00			609			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	72	0.00	75	0.960	67	5.4	279.816	F
B-AD	305	0.00	291	1.047	283	15.7	185.572	F
ABCD	168	0.00	487	0.346	168	0.5	11.311	B
AB	111	0.00			111			
AC	577	0.00			577			
D-A	112	0.00	375	0.299	112	0.4	13.687	B
D-BC	164	0.00	248	0.662	163	1.8	42.032	E
C-ABD	72	0.00	536	0.133	72	0.2	7.743	A
C-D	11	0.00			11			
C-A	609	0.00			609			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	58	0.00	143	0.409	77	0.8	66.420	F
B-AD	249	0.00	337	0.739	298	3.6	106.501	F
ABCD	138	0.00	519	0.265	138	0.4	9.460	A
AB	91	0.00			91			
AC	471	0.00			471			
D-A	92	0.00	487	0.188	92	0.2	9.131	A
D-BC	134	0.00	306	0.437	138	0.8	21.854	C
C-ABD	58	0.00	574	0.102	59	0.1	6.988	A
C-D	9	0.00			9			
C-A	497	0.00			497			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	0.00	366	0.134	51	0.2	11.509	B
B-AD	209	0.00	380	0.548	218	1.3	23.243	C
ABCD	115	0.00	557	0.207	116	0.3	8.157	A
AB	76	0.00			76			
AC	394	0.00			394			
D-A	77	0.00	550	0.140	77	0.2	7.619	A
D-BC	112	0.00	358	0.314	114	0.5	14.825	B
C-ABD	49	0.00	602	0.081	49	0.1	6.510	A
C-D	8	0.00			8			
C-A	416	0.00			416			

2033 | Future Year Base + Dev Sensitivity | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	Two-way	Two-way	Two-way		45.82	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	45.82	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2033	Future Year Base + Dev Sensitivity	AM	Sensiivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev) + dev	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	795	100.000
B		✓	296	100.000
C		✓	928	100.000
D		✓	308	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	251	404	140
	B	89	0	55	152
	C	836	79	0	13
	D	143	159	6	0

Vehicle Mix

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.03	270.09	4.5	F
B-AD	1.02	172.25	12.5	F
ABCD	0.36	13.18	0.6	B
AB				
AC				
D-A	0.99	152.70	6.8	F
D-BC	0.97	157.03	7.6	F
C-ABD	0.17	8.30	0.2	A
C-D				
C-A				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	0.00	408	0.101	41	0.1	9.789	A
B-AD	181	0.00	359	0.506	178	1.0	19.494	C
ABCD	105	0.00	519	0.203	104	0.3	8.667	A
AB	189	0.00			189			
AC	304	0.00			304			
D-A	108	0.00	511	0.211	107	0.3	8.873	A
D-BC	124	0.00	329	0.377	122	0.6	17.182	C
C-ABD	59	0.00	594	0.100	59	0.1	6.718	A
C-D	10	0.00			10			
C-A	629	0.00			629			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	0.00	301	0.164	49	0.2	14.295	B
B-AD	217	0.00	319	0.680	213	1.9	32.861	D
A-BCD	126	0.00	483	0.261	125	0.3	10.070	B
A-B	226	0.00			226			
A-C	363	0.00			363			
D-A	129	0.00	435	0.296	128	0.4	11.700	B
D-BC	148	0.00	274	0.542	146	1.1	27.773	D
C-ABD	71	0.00	565	0.126	71	0.1	7.282	A
C-D	12	0.00			12			
C-A	752	0.00			752			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	0.00	59	1.027	47	3.6	210.327	F
B-AD	265	0.00	263	1.011	240	8.4	104.188	F
A-BCD	154	0.00	433	0.356	153	0.5	12.845	B
A-B	276	0.00			276			
A-C	445	0.00			445			
D-A	157	0.00	184	0.858	145	3.6	77.586	F
D-BC	182	0.00	192	0.947	165	5.3	100.013	F
C-ABD	87	0.00	525	0.166	87	0.2	8.214	A
C-D	14	0.00			14			
C-A	920	0.00			920			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	0.00	65	0.929	57	4.5	270.092	F
B-AD	265	0.00	259	1.023	249	12.5	172.250	F
A-BCD	154	0.00	427	0.361	154	0.6	13.179	B
A-B	276	0.00			276			
A-C	445	0.00			445			
D-A	157	0.00	158	0.994	144	6.8	152.695	F
D-BC	182	0.00	187	0.970	172	7.6	157.028	F
C-ABD	87	0.00	521	0.167	87	0.2	8.298	A
C-D	14	0.00			14			
C-A	920	0.00			920			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	0.00	192	0.257	66	0.4	32.070	D
B-AD	217	0.00	312	0.695	256	2.7	82.134	F
A-BCD	126	0.00	472	0.266	127	0.4	10.435	B
A-B	226	0.00			226			
A-C	363	0.00			363			
D-A	129	0.00	382	0.336	154	0.5	17.504	C
D-BC	148	0.00	263	0.563	173	1.4	48.397	E
C-ABD	71	0.00	558	0.127	71	0.1	7.395	A
C-D	12	0.00			12			
C-A	752	0.00			752			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	0.00	394	0.105	42	0.1	10.270	B
B-AD	181	0.00	358	0.507	188	1.1	21.911	C
ABCD	105	0.00	516	0.204	106	0.3	8.779	A
AB	189	0.00			189			
AC	304	0.00			304			
D-A	108	0.00	504	0.213	109	0.3	9.119	A
D-BC	124	0.00	328	0.379	127	0.6	18.208	C
C-ABD	59	0.00	593	0.100	60	0.1	6.751	A
C-D	10	0.00			10			
C-A	629	0.00			629			

2033 | Future Year Base + Dev Sensitivity | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	Two-way	Two-way	Two-way		47.69	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	47.69	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2033	Future Year Base + Dev Sensitivity	PM	Sensiivity in this instance is the testing of Land North of Barlestone Road Derived from TA affiliated with Land North of Barlestone Rd = 2033 Base Land North of Barlestone Road - Richborough Development in their TA (includes comm dev) + dev	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	779	100.000
B		✓	352	100.000
C		✓	629	100.000
D		✓	259	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	102	524	153
	B	129	0	66	157
	C	553	66	0	10
	D	102	153	4	0

Vehicle Mix

Heavy Vehicle %

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.09	332.47	6.1	F
B-AD	1.08	220.32	19.6	F
A-BCD	0.35	11.45	0.5	B
A-B				
A-C				
D-A	0.32	15.33	0.5	C
D-BC	0.70	47.73	2.2	E
C-ABD	0.14	7.81	0.2	A
C-D				
C-A				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	50	0.00	375	0.132	49	0.2	11.010	B
B-AD	215	0.00	380	0.566	210	1.2	20.643	C
A-BCD	115	0.00	559	0.206	114	0.3	8.074	A
A-B	77	0.00			77			
A-C	394	0.00			394			
D-A	77	0.00	549	0.140	76	0.2	7.603	A
D-BC	118	0.00	360	0.329	116	0.5	14.678	B
C-ABD	50	0.00	601	0.083	49	0.1	6.519	A
C-D	8	0.00			8			
C-A	416	0.00			416			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	0.00	253	0.234	59	0.3	18.467	C
B-AD	257	0.00	344	0.748	252	2.6	37.101	E
ABCD	138	0.00	530	0.259	137	0.3	9.147	A
AB	92	0.00			92			
AC	471	0.00			471			
D-A	92	0.00	496	0.185	91	0.2	8.899	A
D-BC	141	0.00	315	0.449	140	0.8	20.466	C
C-ABD	59	0.00	573	0.104	59	0.1	7.002	A
C-D	9	0.00			9			
C-A	497	0.00			497			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	73	0.00	67	1.092	55	4.6	218.065	F
B-AD	315	0.00	293	1.075	277	12.1	122.653	F
ABCD	168	0.00	491	0.343	168	0.5	11.109	B
AB	112	0.00			112			
AC	577	0.00			577			
D-A	112	0.00	371	0.303	112	0.4	13.829	B
D-BC	173	0.00	252	0.687	168	1.9	41.147	E
C-ABD	73	0.00	535	0.136	73	0.2	7.783	A
C-D	11	0.00			11			
C-A	609	0.00			609			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	73	0.00	73	0.998	67	6.1	332.467	F
B-AD	315	0.00	291	1.084	285	19.6	220.322	F
ABCD	168	0.00	483	0.349	168	0.5	11.452	B
AB	112	0.00			112			
AC	577	0.00			577			
D-A	112	0.00	347	0.324	112	0.5	15.333	C
D-BC	173	0.00	246	0.704	172	2.2	47.731	E
C-ABD	73	0.00	534	0.136	73	0.2	7.806	A
C-D	11	0.00			11			
C-A	609	0.00			609			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	0.00	83	0.712	70	3.5	238.488	F
B-AD	257	0.00	334	0.771	315	5.0	151.060	F
ABCD	138	0.00	514	0.268	138	0.4	9.594	A
AB	92	0.00			92			
AC	471	0.00			471			
D-A	92	0.00	474	0.193	93	0.2	9.460	A
D-BC	141	0.00	303	0.465	146	0.9	23.530	C
C-ABD	59	0.00	572	0.104	59	0.1	7.031	A
C-D	9	0.00			9			
C-A	497	0.00			497			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	50	0.00	349	0.142	63	0.2	13.136	B
B-AD	215	0.00	377	0.571	230	1.4	26.560	D
ABCD	115	0.00	555	0.208	116	0.3	8.208	A
AB	77	0.00			77			
AC	394	0.00			394			
D-A	77	0.00	543	0.141	77	0.2	7.729	A
D-BC	118	0.00	356	0.332	120	0.5	15.310	C
C-ABD	50	0.00	600	0.083	50	0.1	6.542	A
C-D	8	0.00			8			
C-A	416	0.00			416			

Appendix B –

Geometries for Bosworth Road/ A447/B585 Bosworth Ln/ A447 Ashby Road



Legend

Distance

Geometries for Staggered Crossroad





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