South West Milton Keynes Consortium

TRANSPORT RESPONSE NOTE TO BUCKINGHAMSHIRE COUNCIL COMMENTS (TRN2)

DECEMBER 2020

PUBLIC

South West Milton Keynes Consortium

TRANSPORT RESPONSE NOTE TO BUCKINGHAMSHIRE COUNCIL COMMENTS (TRN2)

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70069442

DATE: DECEMBER 2020

South West Milton Keynes Consortium

TRANSPORT RESPONSE NOTE TO BUCKINGHAMSHIRE COUNCIL COMMENTS (TRN2)

WSP

2 London Square
Cross Lanes
Guildford, Surrey
GU1 1UN

Phone: +44 148 352 8400

WSP.com

QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Draft	Draft for Client	Final Issue	
Date	November 2020	December 2020	December 2020	
Prepared by	Justin Sherlock	Justin Sherlock	Justin Sherlock	
Signature			Sherlock, Justin (UKJRS006) Digitally signed by Sherlock, Justin (UKJRS006) DN: cn=Sherlock, Justin (UKJRS006), ou=Guildford (London Square), email=Justin.Sherlock@wsp.com Date: 2020.12.18 20:15:07	
Checked by	Steph Howard	Steph Howard	Steph Howard	
Signature				
Authorised by	Martin Paddle	Martin Paddle	Martin Paddle	
Signature				
Project number	70069442	70069442	70069442	
Report number	TRN 2	TRN 2	TRN 2	
File reference	70069442-TRN2	70069442-TRN2	70069442-TRN2	

Contents

CONTENTS

TABLES

FIGURES

APPENDICES

APPENDIX A

BC RESPONSE TO TRN1

APPENDIX B

TRAFFIC FLOW DIAGRAMS

APPENDIX C

BASE JUNCTION CAPACITY ASSESSMENT RESULTS

APPENDIX D

MITIGATION DRAWINGS

APPENDIX E

MITIGATION JUNCTION CAPACITY ASSESSMENT RESULTS

APPENDIX F

SITE ACCESS CAPACITY ASSESSMENTS

1 INTRODUCTION

1.1 REPORT PURPOSE

1.1.1 WSP has been commissioned by the South West Milton Keynes Consortium (The Applicant) to provide transport advice for a residential led mixed-use development (the 'Proposed Development') on land referred to as South West Milton Keynes (the 'Site').

1.1.2 Planning permission for the Proposed Development was originally sought in 2015 from both Aylesbury Vale District Council (AVDC) (15/00314/AOP) and Milton Keynes Council (MKC) (15/00619/FUL).

1.1.3 In May 2020 a planning appeal was submitted against the decision to refuse planning permission for the Proposed Development by Milton Keynes Council (MKC) (planning application reference 15/00619/FUL). As part of the appeal submission, an Updated Transport Assessment (TA) was prepared to update the transport evidence base in accordance with good practice and as agreed with MKC and Buckinghamshire Council (BC)[1] and was also submitted to BC to support the planning application made to Aylesbury Vale District Council (15/00314/AOP).

1.1.4 In September 2020 a Transport Response Note (TRN1) was prepared to respond to comments made by BC in regard to the Updated TA (dated May 2020). Following further discussions and the response from BC dated 2nd October 2020, this Transport Response Note (TRN2) responds to the comments made by BC in their letter to BC Planning of 2nd October 2020 which relate primarily to the BC highway network. The response from BC also includes comments on two junctions within Milton Keynes (J5 – Tattenhoe Roundabout and J6 – Bottledump Roundabout) that are within the planning application red line boundary. A further review of these junctions will be considered in a subsequent TRN. The letter from BC is included at **Appendix A**.

1.1.5 Further to the submission of the Updated TA in May 2020, extensive discussions have been held with BC to seek agreement on technical matters and in particular, respond to their request for a modified approach to assess the impacts and determine appropriate mitigation. Whilst the Updated TA has been completed to an appropriately high technical standard and in accordance with previous scoping discussions with BC, the modified approach, as included within TRN2, is considered to be a reasonable one and has been adopted for the assessment of transport impacts on the local highway network which has led to the further refinement of the proposed mitigation. A summary is provided

---

[1] Updated TA May 2020 (Section 1.5)

at the end of each section of this TRN2 to identify where relevant areas of the Updated TA have been superseded using this modified approach.

1.2 REPORT STRUCTURE

1.2.1 Following this introduction, the remainder of the TRN2 is structured to respond directly to the comments received from BC. The comments from BC as indicated in their letter of 2nd October 2020 are indicated below in italics followed by WSP's response.

1.2.2 The remainder of the structure of this document is as follows:

- Chapter 2 – Base Model Calibration
- Chapter 3 – Trip Generation
- Chapter 4 – Base Model Update
- Chapter 5 – Mitigation Modelling Update
- Chapter 6 – Site Access Modelling
- Chapter 7 – Impact on Villages
- Chapter 8 – COBALT Analysis; and
- Chapter 9 – Travel Plan Action Plan

2 BASE MODEL CALIBRATION

2.1 MODEL CALIBRATION AND VALIDATION

BC Comment

> *'Further to the Bottledump calibration / model query detailed in Table 2 the following other items were raised in relation to the calibration:*
>
> *1. Junction 3 – Whaddon Road, discrepancies remain between and observed queues. It is noted that this is now modelled as one lane to restrict capacity as discussed but still likely to be underrepresenting queues and delays on this Arm.*
>
> *2. Junction 7 - Arms C and D seem to have a worse comparison between observed and modelled than non-calibrated model and should be clarified.*
>
> *3. Paragraph 6.3.8 of TRN1 lists the junctions where calibration has been applied. Junction 8 is not included in this list however it would appear that at least one arm has different modelled queues Table 6.2 (Observed modelled queues Length Comparison – Post Calibration).*
>
> *4. Junction 10 – Arms B + C seem to have a worse comparison between observed and modelled queues than non-calibrated model and should be clarified.'*
>
> *'Discussions were held with the Highway Consultant around the calibration of models compared to queue lengths. It was apparent that there had been a differing of opinion on the requirements detailed in our initial highway response. This is to be rectified with the base model calibration to be further reviewed and re-submitted by the Highway Consultant.'*

WSP Response

2.1.1 The maximum queue lengths presented in TRN1 have been considered in greater detail and maximum mean interval queues have been calculated as requested by BC. The maximum mean interval queue lengths have been used to re-calibrate the models as requested by BC for junctions within Buckinghamshire. The junction capacity assessments both with and without the mitigation measures have then been undertaken and are presented later in this TRN2. The following supplementary analysis considers a further review of the local highway network using a modified approach to calibration and validation to that presented in the Updated TA and TRN1. This modified approach adopts a methodology understood to be included within the TRL training guide for Junctions 9.

2.1.2 **Table 2-1** presents a comparison of the observed maximum queues, the maximum mean interval queues and the modelled queue lengths. The same methodology has been applied as adopted in the Updated TA[2], with a notional threshold of a five-vehicle difference between the observed and modelled queue length to highlight where calibration might be reasonably considered appropriate, although some higher variances may still be acceptable. Modelled queue lengths have been highlighted in green where they meet this threshold and amber where the difference is greater than the notional threshold set.

2.1.3 A five-vehicle difference was agreed with BC as representing a reasonable tolerance taking account of the observed queue lengths and allowance for daily fluctuations in queues that would be expected, noting that the queue lengths were observed over a three-day period. Notwithstanding, there may be instances where a higher tolerance may still be acceptable particularly on a congested network.

---

[2] Updated TA Section 6.10

Table 2-1 – Observed And Modelled Queue Length Comparison – Pre-Calibration

Jct #	Location	Description	Arm	AM Peak (07:45-08:45)	PM Peak (17:00-18:00)	AM Peak (07:45-08:45)	PM Peak (17:00-18:00)	AM Peak (07:45-08:45)	PM Peak (17:00-18:00)
				Observed Maximum Queue (as reported in TRN1) (vehicles)		Observed Average Maximum Interval (as requested by BC) (vehicles)		Modelled Queue Prior to Calibration (vehicles)	
3	Bletchley Road Stoke Road Drayton Road Whaddon Road	Whaddon Road	D	9	9	8	7	2	2
		Bletchley Road SB Right-Turn	A	2	1	1	1	0	0
		Stoke Road	B	12	11	10	10	13	6
		Drayton Road	C	1	1	0	0	0	0
4	Whaddon Rd - Westbrook End	Westbrook Road	B	2	1	2	1	0	0
		Whaddon Road (E)	C	2	3	1	2	0	0
7	Whaddon Crossroads	Coddimoor Lane	A	6	6	5	5	1	1
		A421 E	B	6	11	5	7	15	36
		Whaddon Road	C	14	19	12	14	1	1
		A421 W	D	16	14	12	9	12	6
8	Warren Road A421	Warren Road	B	5	3	4	2	6	1
		A421	C	0	0	0	0	0	0
9	A421 Shucklow Hill Little Horwood Road	Little Horwood Road	D	3	2	2	2	0	0
		A421 Standing Way (E)	A	1	2	1	1	0	0
		Shucklow Hill	B	4	3	3	2	0	0
		A421 Standing Way (W)	C	2	1	1	1	0	0
10	A421 Nash Rd Windslow	Winslow Road	D	4	4	3	3	1	1
		A421 E	A	17	14	7	9	4	5
		Nash Road	B	10	9	8	7	1	1
		A421 W	C	24	16	20	14	2	3
11	Stock Lane Coddimoor Lane Shenley Road	Shenley Road	B	2	3	1	2	0	0
		Coddimoor Lane Right-Turn	C	2	3	1	1	0	0

2.1.4 The modelled and observed queue data have been compared to identify locations where a difference is evident on any arm of a junction. Locations where the difference between the modelled and observed maximum queue on each arm is less than five vehicles are considered to validate satisfactorily and no calibration is necessary.

2.1.5 Locations where a five or more vehicle difference is observed have then been calibrated to achieve a more representative model. The junctions where model calibration is considered appropriate include the following, along with details of the various adjustments to geometric and capacity parameters that have been made in order to calibrate the models:

- Junction 3 – Whaddon Road entry width reduced from 3.98m to 2.5m;
- Junction 7 – Conflict angle on Whaddon Road adjusted from 17 to 42 degrees. The results in the base modelling are very sensitive to small adjustments in the intercept values for the AM and PM peaks. To provide correlated models, the AM and PM peaks have been split into two separate models with intercept adjustments of 200 on A421 East and -275 on Whaddon Road in the AM peak and 250 and -330 in the PM peak;
- Junction 10 – Intercept adjustment of -535 made to Nash Road and -370 to A421 West;

2.1.6 The queue length comparison was undertaken again following calibration to determine how well the models validated against the maximum interval queue values. The results are shown below in **Table 2-2.**

Table 2-2 – Observed And Modelled Queue Length Comparison – Post-Calibration

Jct #	Location	Description	Arm	AM Peak (07:45-08:45)	PM Peak (17:00-18:00)	AM Peak (07:45-08:45)	PM Peak (17:00-18:00)	AM Peak (07:45-08:45)	PM Peak (17:00-18:00)
				Observed Maximum Queue (as reported in TRN1) (vehicles)		Observed Average Maximum Interval (as requested by BC) (vehicles)		Modelled Queue Post Calibration (vehicles)	
3	**Bletchley Road Stoke Road Drayton Road Whaddon Road**	Whaddon Road	D	9	9	8	7	4	4
		Bletchley Road SB Right-Turn	A	2	1	1	1	0	0
		Stoke Road	B	12	11	10	10	13	6
		Drayton Road	C	1	1	0	0	0	0
4	**Whaddon Rd - Westbrook End**	Westbrook Road	B	2	1	2	1	0	0
		Whaddon Road (E)	C	2	3	1	2	0	0
7	**Whaddon Crossroads**	Coddimoor Lane	A	6	6	5	5	1	0
		A421 E	B	6	11	5	7	5	6
		Whaddon Road	C	14	19	12	14	10	13
		A421 W	D	16	14	12	9	12	6
8	**Warren Road A421**	Warren Road	B	5	3	4	2	6	1
		A421	C	0	0	0	0	0	0
9	**A421 Shucklow Hill Little Horwood Road**	Little Horwood Road	D	3	2	2	2	0	0
		A421 Standing Way (E)	A	1	2	1	1	0	0
		Shucklow Hill	B	4	3	3	2	0	0
		A421 Standing Way (W)	C	2	1	1	1	0	0
10	**A421 Nash Rd Winslow**	Winslow Road	D	4	4	3	3	0	0
		A421 E	A	17	14	7	9	4	5
		Nash Road	B	10	9	8	7	7	2
		A421 W	C	24	16	20	14	15	16
11	**Stock Lane Coddimoor Lane Shenley Road**	Shenley Road	B	2	3	1	2	0	0
		Coddimoor Lane Right-Turn	C	2	3	1	1	0	0

2.1.7 Following calibration using the modified approach as agreed with BC, it is evident that the observed and modelled queue lengths validate within the agreed five vehicle threshold.

2.1.8 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA AND TRN1

2.1.9 **Table 2-3** provides a summary of the changes presented in this Section when compared to the Updated TA and TRN1.

Table 2-3 – Elements of Updated TA and TRN1 that are changed by TRN2

Section of Updated TA	Section of TRN1	Description	Area of Difference
Section 6.10	Section 6.2	Model Calibration and Validation	Modified model calibration and validation process where relating to junctions 3,7 and 10 now supersedes the model calibration and validation in the Updated TA and TRN1

3 TRIP GENERATION

BC Comment

> *'It should be noted that the model review included an assessment of the Traffic Flow diagrams provided as part of the TRN1. On initial review and discussion with the Highway Consultant it was apparent that not all relevant diagrams for the reassessment in TRN1 were provided. Additional diagrams were sent detailing the process of the distribution of development flows, on further analysis not all flow information could be reconciled with further communication held with the Highway Consultant. The latest traffic flow diagrams were provided on Tuesday 29th September 2020 and are under review.'*

WSP Response

3.1.1 Following discussions with BC, the traffic flows used in TRN1 have been updated and a new set of traffic flow diagrams prepared which are presented in **Appendix B**. For completeness the trip generation tables used in this TRN2 are repeated in **Table 3-1** and **Table 3-2**. The small discrepancies between the tables in TRN1 and TRN2 are due to the application of rail re-assignment and rounding. The traffic flow diagrams presented in **Appendix B** have then been used in the modelling presented in **Section 4** and **5** of this TRN2.

3.1.2 The trip generation used in TRN2 has been updated to account for the changes requested by BC to address the treatment of employment trips.[3]

---

[3] Buckinghamshire Council Letter 29th July 2020 Reference 5.3.1 and Paragraphs 5.2.2 to 5.2.5 in TRN1

Table 3-1 - Total Development Trip Generation Rail Trips Re-assigned (Excluding Travel Planning)

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Rail	0	0	0	0	0	0
Bus	161	53	215	66	41	106
Taxi	6	9	15	10	8	18
Motorcycle	6	9	15	10	8	18
Car Driver reduced to account for servicing trips	530	729	1257	806	576	1382
Car Passenger	134	63	198	77	55	132
Cycle	19	18	37	22	16	38
Pedestrian	135	45	180	53	47	100
Servicing	19	15	34	9	9	18
Total – Person Trips	1010	940	1950	1053	759	1812
Vehicular Total – (sum of Taxi, Motorcycle and Car Driver and servicing)	563	763	1325	838	602	1440

Table 3-2 - Total Development Trip Generation Rail Trips Re-assigned (Including Travel Planning)

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Rail	0	0	0	0	0	0
Bus	197	108	306	133	87	220
Taxi	6	9	15	10	8	18
Motorcycle	6	9	15	10	8	18
Car Driver reduced to account for servicing trips	458	620	1077	673	484	1157
Car Passenger	134	63	198	77	55	132
Cycle	37	45	82	56	39	95
Pedestrian	153	71	224	84	70	154
Servicing	19	15	34	9	9	18
Total – Person Trips	1010	940	1950	1053	759	1812
Vehicular Total – (sum of Taxi, Motorcycle and Car Driver and servicing)	491	655	1144	705	510	1215

3.1.3 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA AND TRN1

3.1.4 **Table 3-3** provides a summary of the changes presented in this Section when compared to the Updated TA and TRN1.

Table 3-3 – Elements of Updated TA and TRN1 that are updated by TRN2

Section of Updated TA	Section of TRN1	Description	Area of Difference
Section 5.7 – Table 5.30-5.31	Table 5-2 and Table 5-3	Trip Generation	BC have requested the use of modified trip generation to consider higher employment numbers in 2033. These forecasts supersede those contained with the Updated TA and TRN1.

4 BASE MODEL UPDATE

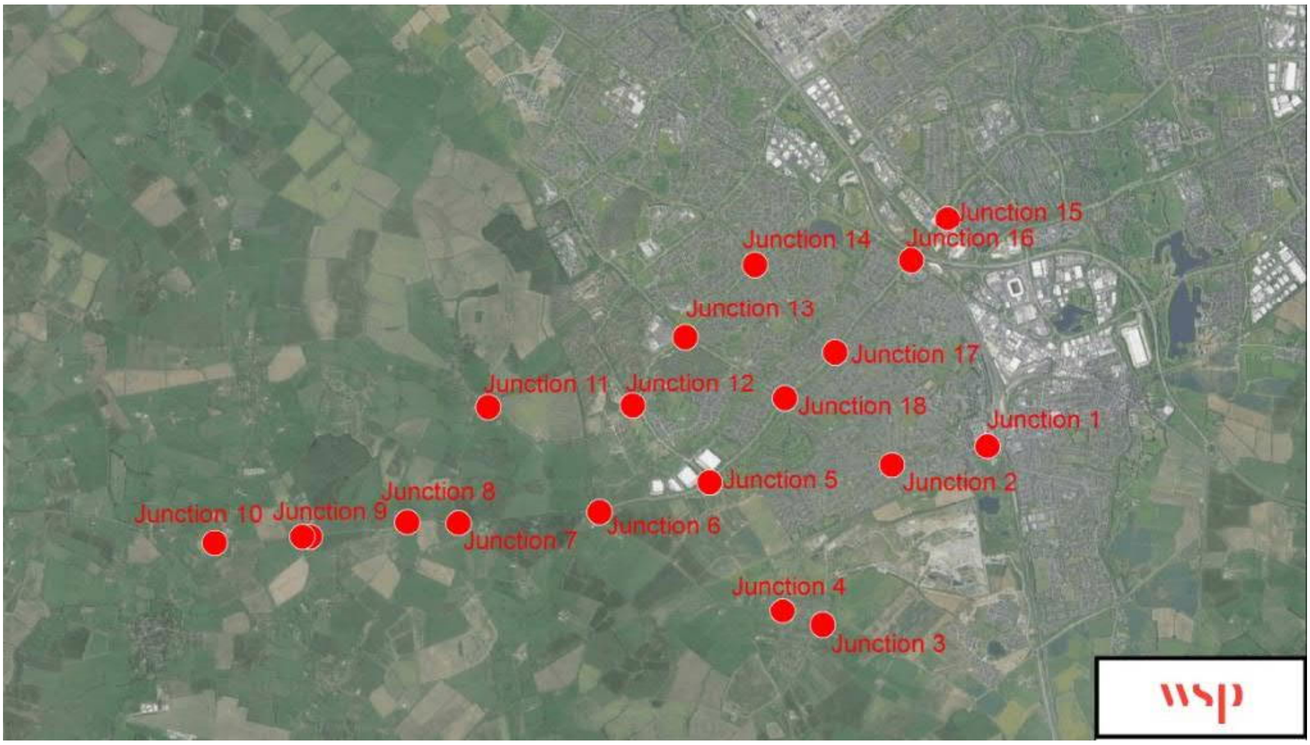
4.1 INTRODUCTION

4.1.1 This section provides an updated set of base model junction capacity assessments prior to consideration of any mitigation. A table is presented at the end of this Section to draw a comparison with the Updated TA and TRN1 and indicate those areas which have been superseded.

4.2 OFF-SITE JUNCTION CAPACITY ASSESSMENTS

4.2.1 To assist the understanding of this section, **Figure 4-1** provides a map of the junction locations considered in the Updated TA. TRN2 only considers the junctions within BC.

Figure 4-1 – Junction Location Plan



JUNCTION 3

BC Comment

> *'For the 2020 Base AM and PM scenarios the vehicle mix has been left as 'varies over time'. The use of the ONE HOUR profile would dictate that only one-hour data should be entered. The use of 'varies over time' will mean the model will use the entered first 15 minute of data as the whole period percentages and may impact on the results.'*

WSP Response

4.2.2 The junction capacity assessment for this junction has been reviewed to respond to the comments made by BC and the traffic flows updated to reflect the traffic flow diagrams in **Appendix B**. **Table 4-1** shows the alternative capacity assessment results for the AM and PM peaks following calibration and addressing the comments raised. Full modelling output is provided in **Appendix C.**

Table 4-1 – Junction 3 - Bletchley Road/Stoke Road/Drayton Road/Whaddon Road

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A- Bletchley Road	0.1	5.74	0.06	0.2	6.01	0.12
B-Stoke Road	12.9	113.5	0.99	6.1	60.99	0.89
C-Drayton Road	0.1	5.79	0.05	0	5.92	0.03
D-Whaddon Road	4.1	47.64	0.83	3.5	39.86	0.79
2033 Do Nothing						
A- Bletchley Road	0.1	5.69	0.08	0.2	6.05	0.14
B-Stoke Road	47.0	373.57	1.19	27.1	208.37	1.09
C-Drayton Road	0.1	5.79	0.06	0	5.93	0.03
D-Whaddon Road	16.1	147.23	1.02	9.9	98.01	0.96
2033 Do Something 1						
A- Bletchley Road	0.1	5.71	0.08	0.2	6.09	0.14
B-Stoke Road	72.5	614.15	1.30	52.9	437.38	1.22
C-Drayton Road	0.1	5.74	0.06	0	5.83	0.03
D-Whaddon Road	46.0	416.88	1.20	27.5	221.76	1.10
2033 Do Something 2						
A- Bletchley Road	0.1	5.71	0.08	0.2	6.08	0.14
B-Stoke Road	67.9	577.17	1.28	49.0	396.85	1.20
C-Drayton Road	0.1	5.75	0.06	0.0	5.84	0.03
D-Whaddon Road	41.4	366.06	1.18	24.1	199.11	1.08
2033 Do Something 3						
A- Bletchley Road	0.1	5.71	0.08	0.2	6.09	0.14
B-Stoke Road	79.7	672.66	1.32	60.1	507.85	1.25
C-Drayton Road	0.1	5.73	0.06	0.0	5.82	0.03
D-Whaddon Road	57.7	538.56	1.26	31.1	246.80	1.12

4.2.3 The results presented in **Table 4-1** show that in the 2020 Base, the Stoke Road arm is approaching capacity (RFC of 1) in the AM peak. In the future year of 2033 (Do Nothing) the Stoke Road arm operates at/above capacity (RFC of 1) in both peak hours with a maximum queue of 47 vehicles and a delay of 373 seconds in the AM peak.

4.2.4 With the addition of the Proposed Development (Do Something 1), performance of the junction decreases slightly with a maximum queue on Stoke Road of 73 vehicles and a delay of 614 seconds; an increase of 26 vehicles and 241 seconds in the AM peak. In the PM peak the delay increases from 208 seconds in the Do Nothing scenario to 437 seconds in Do Something 1; an increase of 229 seconds.

4.2.5 Whaddon Road is shown to operate within capacity in the 2020 base in both peak hours. By 2033 the arm operates at/above capacity (RFC of 1) in the AM peak hour and is approaching capacity in the PM peak. With the addition of the Proposed Development (Do Something 1), performance of the arm decreases with a maximum queue of 46 vehicles and a delay of 416 seconds in the AM peak. This represents an increase of 30 vehicles and a delay of 270 seconds.

4.2.6 Similar results are evident in both the travel planning (Do Something 2) and Shenley Park (Do Something 3) scenarios.

4.2.7 A package of mitigation is proposed within the Updated TA[4]. The mitigation is considered further in **Section 5** of this TRN2**.**

JUNCTION 4

BC Comment

> *'D3 scenario – The AM vehicle mix for arms B and C and the PM vehicle mix for Arms A, B and C do not match the traffic flow diagram or the previous demand set percentages, I presume this is a data entry issues or is there a reason why the vehicle mix varies for this scenario?'*

WSP Response

4.2.8 The junction modelling has been updated to incorporate the updated traffic flow diagrams provided in **Appendix B**. **Table 4-2** shows the alternative capacity assessment results for the AM and PM peaks. Full modelling output is contained in **Appendix C**.

---

[4] Updated TA (May 2020) paragraph 7.3.6

Table 4-2 – Junction 4 - Whaddon Road/Westbrook End

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
B-Westbrook End*	0.2	8.52	0.15	0.1	7.61	0.08
C-Whaddon Road	0.2	5.66	0.1	0.2	5.38	0.11
2033 Do Nothing						
B-Westbrook End*	0.2	9.21	0.18	0.1	8.05	0.10
C-Whaddon Road	0.3	5.60	0.13	0.3	5.33	0.14
2033 Do Something 1						
B-Westbrook End*	0.2	9.71	0.19	0.1	8.47	0.10
C-Whaddon Road	0.3	5.44	0.14	0.3	5.24	0.15
2033 Do Something 2						
B-Westbrook End*	0.2	9.63	0.19	0.1	8.40	0.1
C-Whaddon Road	0.3	5.46	0.14	0.3	5.26	0.15
2033 Do Something 3						
B-Westbrook End*	0.2	9.87	0.19	0.1	8.59	0.10
C-Whaddon Road	0.3	5.38	0.14	0.4	5.23	0.15

4.2.9 The results presented in **Table 4-2** show that the junction operates with satisfactory performance (i.e. RFC below 0.85) in all scenarios assessed.

4.2.10 The impacts of the Proposed Development are not considered to be significant at this junction and mitigation is therefore not necessary as the junction can accommodate traffic associated with the Proposed Development. This is consistent with the outcome in the Updated TA.[5]

---

[5] Updated TA (May 2020) Paragraphs 7.3.8 to 7.3.10

JUNCTION 7

BC Comment

> *'For the 2033 Base, 2033 DS1, 2033 DS2 and 2033 DS3 the Arm D to B vehicle mix is 4% in the AM, while the 2020 Base is 5% and all flow diagrams show 4.5%. Would expect these values to be match.'*

WSP Response

4.2.11 The junction capacity assessment for this location has been reviewed to reflect the comments made by BC and the traffic flows updated to reflect the traffic flow diagrams in **Appendix B.** The updated junction capacity assessment results are shown in **Table 4-3**. Full modelling output is contained in **Appendix C**.

Table 4-3 – Junction 7 – Whaddon Crossroads

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A - Coddimoor Ln	0.5	10.80	0.31	0.4	8.98	0.29
B - A421 (East)	4.9	14.67	0.84	6.0	16.69	0.87
C - Whaddon Rd	9.5	95.28	0.95	12.5	151.34	1.02
D - A421 (West)	11.7	36.14	0.94	5.5	17.49	0.86
2033 Do Nothing						
A - Coddimoor Ln	0.6	13.04	0.39	0.6	11.74	0.38
B - A421 (East)	21.8	55.28	0.99	33.6	74.74	1.01
C - Whaddon Rd	64.6	541.10	1.41	72.1	931.73	1.66
D - A421 (West)	56.7	131.20	1.06	18.6	50.69	0.98
2033 Do Something 1						
A - Coddimoor Ln	0.6	13.14	0.39	0.6	12.47	0.39
B - A421 (East)	42.9	94.53	1.03	55.6	112.02	1.05
C - Whaddon Rd	81.8	731.77	1.48	111.8	1325.61	1.84
D - A421 (West)	77.4	175.41	1.10	31.9	78.30	1.01
2033 Do Something 2						
A - Coddimoor Ln	0.6	13.12	0.39	0.6	12.38	0.39
B - A421 (East)	39.3	88.19	1.03	51.7	105.48	1.05
C - Whaddon Rd	78.4	705.45	1.47	108.2	1280.43	1.83
D - A421 (West)	74.8	168.69	1.09	29.3	73.26	1.01
2033 Do Something 3						
A - Coddimoor Ln	0.6	13.18	0.39	0.7	12.69	0.40
B - A421 (East)	56.9	119.14	1.06	60.6	120.43	1.06
C - Whaddon Rd	93.7	986.05	1.50	121.3	1420.79	1.88
D - A421 (West)	84.4	191.78	1.11	40.2	94.76	1.03

4.2.12 The results presented in **Table 4-3** show that in the 2020 AM Base, the western arm of A421 along with the Whaddon Road arm are approaching capacity (RFC of 1). In the 2020 PM Base, the Whaddon Road arm operates at/above capacity (RFC of 1). In the future year of 2033 (Do Nothing), the approaches of A421 and the Whaddon Road arm are operating at/above capacity (RFC of 1) in both the AM and PM peaks. Maximum queueing is 72 vehicles with a corresponding delay of 932 seconds on Whaddon Road in the PM peak.

4.2.13 With the addition of the Proposed Development (Do Something 1), performance of the junction decreases with both arms of A421 and Whaddon Road operating at/above capacity (RFC of 1) in the AM and PM peak. Maximum queueing is 112 vehicles with a corresponding delay of 1326 seconds on Whaddon Road in the PM peak representing an increase in queuing of 40 vehicles and delay of 394 seconds.

4.2.14 Similar results are evident in both the Do Something 2 (travel planning) and Do Something 3 (Shenley Park) scenarios.

4.2.15 A package of mitigation is proposed within the Updated TA[6]. The impacts of the proposed development in TRN1 were identified as being different and a modified package of mitigation previously identified. This modified package of mitigation has been further refined and is considered within **Section 5** of this TRN2.

JUNCTION 8

4.2.16 The junction capacity assessment for this location has been updated to reflect the traffic flow diagrams in **Appendix B.** The updated junction capacity assessment results are shown in **Table 4-4**. Full modelling output is contained in **Appendix C**.

---

[6] Updated TA (May 2020) Paragraphs 8.3.9 to 8.3.12

Table 4-4 – Junction 8 – A421/Warren Road

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
B-Warren Road	6.1	231.06	0.98	0.5	74.43	0.36
C-A421 (West)	0	8.63	0.01	0	9.19	0
2033 Do Nothing						
B-Warren Road	56.6	1796.20	9999	15.5	1519.60	9999
C-A421 (West)	0	10.01	0.01	0	10.87	0
2033 Do Something 1						
B-Warren Road	62.1	1469.68	9999	18.8	1598.89	9999
C-A421 (West)	0	10.49	0.01	0	11.37	0
2033 Do Something 2						
B-Warren Road	61.4	1434.12	9999	18.2	1582.52	9999
C-A421 (West)	0	10.43	0.01	0	11.27	0
2033 Do Something 3						
B-Warren Road	62.9	1566.32	9999	18.8	1617.35	9999
C-A421 (West)	0	10.72	0.01	0	11.46	0

4.2.17 The results presented in **Table 4-4** show that in the 2020 Base the junction operates approaching capacity (RFC of 1). In the future year of 2033 (Do Nothing), the Warren Road arm operates well above capacity (RFC of 1) in the AM peak with a maximum queue of 57 vehicles and a delay of 1796 seconds. The results indicate an RFC of 9999 which indicates that there is insufficient capacity on the arm to accommodate the demand flow.

4.2.18 With the addition of the Proposed Development (Do Something 1), performance of the junction decreases slightly with an increase in queuing of five vehicles (representing a queue of 62 vehicles) and a delay of 1470 seconds. It should be noted that delay actually decreases between the Do Nothing and Do Something 1 Scenarios in the AM Peak but increases in the PM Peak. Similar results are evident in both the travel planning (Do Something 2) and Shenley Park (Do Something 3) scenarios.

4.2.19 A package of mitigation is proposed within the Updated TA[7] and is considered further in **Section 5** of this TRN2.

JUNCTION 9

4.2.20 The junction capacity assessment for this location has been updated to reflect the traffic flow diagrams in **Appendix B.** The updated junction capacity assessment results are shown in **Table 4-5**. Full modelling output is contained in **Appendix C**.

---

[7] Updated TA (May 2020) Paragraphs 8.3.13 to 8.3.16

Table 4-5 – Junction 9 – A421/Warren Road

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A - A421 (East)	0.1	10.87	0.11	0.1	9.79	0.08
B – Shucklow Hill*	0.3	79.04	0.23	0.3	88.39	0.21
C - A421 (West)	0.1	10.41	0.11	0.1	10	0.08
D - Little Horwood Road	0.1	10.48	0.11	0.1	9.77	0.1
2033 Do Nothing						
A - A421 (East)	0.3	12.13	0.25	0.2	11.48	0.16
B – Shucklow Hill*	7.7	1546.81	9999	6.5	1479.70	9999
C - A421 (West)	0.3	11.69	0.22	0.1	11.87	0.10
D - Little Horwood Road	24.1	1414.26	9999	0.2	16.76	0.18
2033 Do Something 1						
A - A421 (East)	0.3	12.62	0.23	0.2	12.03	0.17
B – Shucklow Hill*	7.8	1625.52	9999	6.5	1513.04	9999
C - A421 (West)	0.3	12.20	0.23	0.1	12.33	0.11
D - Little Horwood Road	24.1	1417.14	9999	0.2	17.69	0.19
2033 Do Something 2						
A - A421 (East)	0.3	12.57	0.24	0.2	11.94	0.17
B – Shucklow Hill*	7.8	1614.79	9999	6.5	1506.71	9999
C - A421 (West)	0.3	12.13	0.23	0.1	12.25	0.11
D - Little Horwood Road	24.1	1416.72	9999	0.2	17.54	0.19
2033 Do Something 3						
A - A421 (East)	0.3	12.80	0.21	0.2	12.23	0.17
B – Shucklow Hill*	7.8	1675.60	9999	6.6	1524.92	9999
C - A421 (West)	0.3	12.49	0.23	0.1	12.43	0.11
D - Little Horwood Road	24.1	1419.15	9999	0.2	18.03	0.19

4.2.21 The results presented in **Table 4-5** show that in the 2020 Base the junction operates with satisfactory performance (RFC below 0.75[8]). In the future year of 2033 (Do Nothing) the Shucklow Hill and Little Horwood Road arms operate above capacity (RFC of 1) in the AM peak and the Shucklow Hill arm performs similarly in the PM peak. The results indicate an RFC of 9999 which indicates that there is insufficient capacity on the arm to accommodate the demand flow.

4.2.22 With the additional traffic associated with the Proposed Development (Do Something 1), performance of the junction decreases slightly, although it is evident from the Do Something 1 scenario that the impact of the Proposed Development is marginal.

4.2.23 Similar results are evident in both the travel planning (Do Something 2) and Shenley Park (Do Something 3) scenarios.

4.2.24 A package of mitigation was proposed within the Updated TA[9] and is considered further in **Section 5** of this TRN2.

JUNCTION 10

BC Comments

> *'For the 2033 Base, 2033 DS1, 2033 DS2 and 2033 DS3 the Arm B to A vehicle mix is 2% in the AM, while the 2020 Base is 3% and all flow diagrams show 2.5%. Would expect these values to be match.'*
>
> *'For the 2033 Base, 2033 DS1, 2033 DS2 and 2033 DS3 scenarios the Arm C to A vehicle mix is 3% in the PM, while 2020 Base is 4% and all flow diagrams show 3.5%. Would expect these values to be match.'*
>
> *'Junction 10 – Arms B + C seem to have a worse comparison between observed and modelled queues than non-calibrated model and should be clarified.'*

WSP Response

4.2.25 The junction capacity assessment for this location has been reviewed to reflect the comments made by BC and the traffic flows updated to reflect the traffic flow diagrams in **Appendix B.** The updated

---

[8] Appropriate RFC = 0.75 as this is priority junction on a high-speed road (50mph +) in accordance with the Junctions 9 User Guide.

[9] Updated TA (May 2020) Paragraphs 8.3.13 to 8.3.16

junction capacity assessment results are shown in **Table 4-6**. Full modelling output is contained in **Appendix C**.

Table 4-6 – Junction 10 – A421/Nash Road/Winslow Road Roundabout

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A - A421 (East)	3.8	12.94	0.80	4.6	14.57	0.83
B - B4033 Nash Road	7.0	71.79	0.91	1.8	24.57	0.65
C - A421 (West)	15.2	62.74	0.97	16.3	60.94	0.97
D - Winslow Rd	0.2	5.78	0.14	0.2	5.62	0.14
2033 Do Nothing						
A - A421 (East)	10.8	33.14	0.93	16.0	45.13	0.96
B - B4033 Nash Road	55.8	444.84	1.32	7.8	96.26	0.94
C - A421 (West)	58.1	212.53	1.10	88.1	286.65	1.15
D - Winslow Rd	0.2	6.09	0.16	0.2	6.00	0.17
2033 Do Something 1						
A - A421 (East)	16.2	47.31	0.97	23.5	61.89	0.99
B - B4033 Nash Road	69.5	569.75	1.43	11.5	132.75	1.01
C - A421 (West)	70.8	266.31	1.12	111.3	388.07	1.20
D - Winslow Rd	0.2	6.10	0.16	0.2	6.02	0.17
2033 Do Something 2						
A - A421 (East)	15.3	45.00	0.96	22.3	59.23	0.99
B - B4033 Nash Road	67.5	551.12	1.42	10.9	126.51	1.00
C - A421 (West)	68.7	257.56	1.12	107.5	371.45	1.19
D - Winslow Rd	0.2	6.10	0.16	0.2	6.01	0.17
2033 Do Something 3						
A - A421 (East)	20.6	57.77	0.98	25.6	66.18	1.00
B - B4033 Nash Road	75.2	636.97	1.48	12.5	141.86	1.02
C - A421 (West)	75.0	281.01	1.13	119.5	423.04	1.21
D - Winslow Rd	0.2	6.10	0.16	0.2	6.02	0.17

4.2.26 The results presented in **Table 4-8** show that in the 2020 Base the A421 western arm is approaching capacity (RFC of 1) in both the AM and PM peaks. In the future year of 2033 (Do Nothing) the A421 western arm and Nash Road arm are operating above capacity (RFC of 1) in the AM peak with the A421 Eastern arm approaching capacity in both peak hours (RFC of 1).

4.2.27 With the additional traffic associated with the Proposed Development (Do Something 1), the performance of the junction decreases slightly with an increase in queueing of 23 vehicles in the PM peak on the A421 western arm as a result of the junction operating with an RFC over 1. Similar results are evident in both the travel planning (Do Something 2) and Shenley Park (Do Something 3) scenarios. It is considered that the Proposed Development has very little impact on the operation of this junction.

4.2.28 A package of mitigation was proposed within the Updated TA and refined within TRN1 and is considered further in **Section 5** of this TRN2.

JUNCTION 11

4.2.29 The flows at this junction do not change as a result of the changes to the traffic flow diagrams made in TRN2. As such, the results remain as presented in the Updated TA.

4.2.30 The results presented in the Updated TA show that the junction operates with satisfactory performance (RFC below 0.85) in all scenarios assessed. No traffic generated by the Proposed Development would be routed via this junction within this TRN2 and therefore there is no impact as a result of the Proposed Development. Modelling of this junction and subsequent consideration of mitigation is therefore not considered necessary.

4.2.31 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA AND TRN1

4.2.32 **Table 4-7** provides a summary of the changes presented in this Section when compared to the Updated TA.

Table 4-7 – Elements of Updated TA and TRN1 that are updated by TRN2

Section of Updated TA	Section of TRN1	Description	Area of Difference
Paragraphs 7.3.2 to 7.3.7	Paragraphs 7.2.1 to 7.2.11	Junction 3 Baseline Modelling	The junction capacity assessment presents an updated set of results
Paragraphs 7.3.8 to 7.3.10	Paragraphs 7.2.12 to 7.2.19	Junction 4 Baseline Modelling	The junction capacity assessment presents an updated set of results
Paragraphs 7.3.11 to 7.3.16	Paragraphs 7.2.20 to 7.2.25	Junction 7 Baseline Modelling	The junction capacity assessment presents an updated set of results
Paragraphs 7.3.17 to 7.3.21	Paragraphs 7.2.26 to 7.2.32	Junction 8 Baseline Modelling	The junction capacity assessment presents an updated set of results
Paragraphs 7.3.22 to 7.3.28	Paragraphs 7.2.33 to 7.2.41	Junction 9 Baseline Modelling	The junction capacity assessment presents an updated set of results
Paragraphs 7.3.29 to 7.3.33	Paragraphs 7.2.42 to 7.2.47	Junction 10 Baseline Modelling	The junction capacity assessment presents an updated set of results

5 MITIGATION MODELLING UPDATE

5.1 INTRODUCTION

5.1.1 This section provides an updated set of mitigation junction capacity assessments and refined package of highway mitigation.

5.2 MITIGATION MODELLING

JUNCTION 3

BC Comments

> *'No comment.'*

WSP Response

5.2.1 The mitigation modelling for Junction 3 has been reviewed to reflect the updated traffic flow diagrams in **Appendix B**. A layout plan showing the mitigation measures proposed is contained in **Appendix D**. The results are presented in **Table 5-1** with full modelling results in **Appendix E.**

Table 5-1 – Junction 3 – Bletchley Road/Stoke Road/Drayton Road/Whaddon Road Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-mitigation)						
A- Bletchley Road	0.1	5.69	0.08	0.2	6.05	0.14
B-Stoke Road	47.0	373.57	1.19	27.1	208.11	1.09
C-Drayton Road	0.1	5.79	0.06	0	5.93	0.03
D-Whaddon Road	16.1	147.23	1.02	9.7	95.91	0.95
2033 Do Something 1 (Pre-mitigation)						
A- Bletchley Road	0.1	5.71	0.08	0.2	6.09	0.14
B-Stoke Road	72.5	614.15	1.30	52.9	437.38	1.22
C-Drayton Road	0.1	5.74	0.06	0	5.83	0.03
D-Whaddon Road	46.0	416.88	1.20	27.5	221.76	1.10
2033 Do Something 1 (Post-Mitigation)						
A - Bletchley Rd	0.7	8.82	0.40	0.6	8.30	0.38
B - Stoke Rd	2.6	18.61	0.73	2.5	18.28	0.72
C - Drayton Rd	0.4	7.92	0.31	0.3	7.05	0.22
D - Whaddon Rd	1.5	11.94	0.6	1.2	9.85	0.54
2033 Do Something 2 (Post-Mitigation)						
A - Bletchley Rd	0.6	8.72	0.39	0.6	8.22	0.38
B - Stoke Rd	2.6	18.14	0.73	2.4	17.61	0.71
C - Drayton Rd	0.4	7.83	0.31	0.3	6.97	0.22
D - Whaddon Rd	1.4	11.65	0.59	1.1	9.68	0.53
2033 Do Something 3 (Post-Mitigation)						
A - Bletchley Rd	0.7	9.07	0.40	0.6	8.39	0.38
B - Stoke Rd	2.8	19.44	0.74	2.7	19.57	0.74
C - Drayton Rd	0.5	8.02	0.32	0.3	7.19	0.23
D - Whaddon Rd	1.6	12.70	0.63	1.2	10.06	0.55

5.2.2 **Table 5-1** demonstrates that the junction operates within capacity (RFC less than 1) in all mitigation modelled scenarios.

5.2.3 The mitigation previously agreed with Buckinghamshire County Council (BCC) is included within the Updated TA[10]. It is understood that BC remain of the view that it would be beneficial to reduce the attractiveness of routes through Newton Longville by introducing additional journey time delay by incorporating appropriate highway design features as opposed to enhancing capacity at this junction.

5.2.4 A contribution towards a traffic calming scheme for Newton Longville as originally proposed in the Updated TA still remains the preferred mitigation by BC and is included in **Appendix D**.

JUNCTION 7

BC Comments

> *'Conflict angle of Arm C (Whaddon Road) uses the second methodology for this geometric parameter, which is not correct and different to the rest of the arms.'*
>
> *'Conflict angle of Arm C (Whaddon Road) uses the second methodology for this geometric parameter, which is not correct and different to the rest of the arms. Furthermore, this is a new scheme layout option but no sight of revised geometric measurement drawing to allow detailed review.'*

WSP Response

5.2.5 Based upon the modelling results for this junction presented in Section 4, the modified mitigation package for this junction developed as part of TRN1 has been tested. The layout for this mitigation proposal, incorporating minor revisions for the purposes of TRN2 is shown in **Appendix D.** The mitigation modelling has been reviewed to reflect the updated traffic flow diagrams presented in **Appendix B**. The results of this updated analysis are shown in **Table 5-2** with full modelling results presented in **Appendix E.**

---

[10] Updated TA (May 2020) Paragraphs 8.3.3 to 8.3.8

Table 5-2 – Junction 7 – Whaddon Crossroads Mitigation

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-mitigation)						
A - Coddimoor Ln	0.6	13.04	0.39	0.6	11.74	0.38
B - A421 (East)	21.8	55.28	0.99	33.6	74.74	1.01
C - Whaddon Rd	64.6	541.10	1.41	72.1	931.73	1.66
D - A421 (West)	56.7	131.20	1.06	18.6	50.69	0.98
2033 Do Something 1 (Pre-mitigation)						
A - Coddimoor Ln	0.6	13.14	0.39	0.6	12.47	0.39
B - A421 (East)	42.9	94.53	1.03	55.6	112.02	1.05
C - Whaddon Rd	81.8	731.77	1.48	111.8	1325.61	1.84
D - A421 (West)	77.4	175.41	1.10	31.9	78.30	1.01
2033 Do Something 1 (Post-mitigation)						
A - Coddimoor Ln	0.8	17.31	0.46	0.7	14.09	0.42
B - A421 (East)	3.7	8.91	0.79	4.2	9.39	0.81
C - Whaddon Rd	48.6	368.99	1.25	67.1	634.65	1.53
D - A421 (West)	33.1	78.16	1.02	11.8	31.36	0.94
2033 Do Something 2 (Post-mitigation)						
A - Coddimoor Ln	0.8	17.26	0.46	0.7	13.93	0.42
B - A421 (East)	3.6	8.70	0.79	4.0	9.16	0.81
C - Whaddon Rd	46.3	351.86	1.24	64.6	607.98	1.50
D - A421 (West)	31.8	75.77	1.01	11.2	29.97	0.93
2033 Do Something 3 (Post-mitigation)						
A - Coddimoor Ln	0.8	17.36	0.46	0.7	14.50	0.43
B - A421 (East)	4.2	9.75	0.81	4.3	9.69	0.82
C - Whaddon Rd	57.2	436.84	1.32	73.9	694.36	1.59
D - A421 (West)	36.1	83.55	1.02	13.2	34.85	0.95

5.2.6 The results presented in **Table 5-2** show that the proposed modified mitigation package will reduce queueing and delay on the key A421 and Whaddon Road arms of the junction below the levels identified in the 2033 Do Nothing Scenario. Small increases in queuing and delay will result on the Coddimoor Lane arm. However, overall the mitigation will provide a betterment in this location.

JUNCTION 8 AND 9

5.2.7 The mitigation junction modelling for Junctions 8 and 9 have been reviewed to reflect the updated traffic flow diagrams presented in **Appendix B**. A refined mitigation layout is provided in **Appendix D**. The results of this updated analysis are shown in **Table 5-3** with full modelling results presented in **Appendix E.**

Table 5-3 – Junctions 8 and 9 - Warren Road/A421 And A421/Shucklow Hill/Little Horwood Road Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-Mitigation)						
8 B - Warren Road	56.6	1996.20	9999	15.5	1519.60	9999
8 C - A421 (West)	0	10.01	0.01	0	10.87	0
9 A - A421 (East)	0.3	12.13	0.25	0.2	11.48	0.16
9 B – Shucklow Hill*	7.7	1546.81	9999	6.5	1479.70	9999
9 C - A421 (West)	0.3	11.69	0.22	0.1	11.87	0.10
9 D - Little Horwood Road*	24.1	1414.26	9999	0.2	16.76	0.18
2033 Do Something 1 (Pre-Mitigation)						
8 B - Warren Road	62.1	1469.68	9999	18.8	1598.89	9999
8 C - A421 (West)	0	10.49	0.01	0	11.37	0
9 A - A421 (East)	0.3	12.62	0.23	0.2	12.03	0.17
9 B – Shucklow Hill*	7.8	1625.52	9999	6.5	1513.04	9999
9 C - A421 (West)	0.3	12.20	0.23	0.1	12.33	0.11
9 D - Little Horwood Road*	24.1	1417.14	9999	0.2	17.69	0.19

Junction	Arm	Lane Description	AM			PM		
			Mean Max Queue (PCU)	Delay (s/PCU)	Deg Sat (%)	Mean Max Queue (PCU)	Delay (s/PCU)	Deg Sat (%)

J8 - Warren Road/ A421			**2033 Do Something 1 (Post-Mitigation)**					
	1	A421 (West) Ahead Right	16.7	11.4	86.2%	17.0	12.1	87.3%
	2	A421 (East) Left Ahead	24.4	13.9	85.5%	29.6	17.9	90.1%
	3	Warren Road Right Left	3.6	68.8	65.1%	0.9	51.2	20.3%
J9 - A421/ Shucklow Hill/ Little Horwood	**1**	A421 (West) Ahead Left	24.1	13.8	85.3%	24.2	13.9	85.4%
	2	Little Horwood Road Left Right	1.4	53.7	29.8%	1.2	52.9	26.9%
	3	A421 (East) Ahead Right	7.8	11.4	85.1%	6.9	10.5	85.1%
	4	A421 (West) Right Ahead	7.9	12.5	87.4%	7.4	11.7	87.4%
	5	Shucklow Hill Left Right	2.4	59.1	48.0%	1.4	53.3	29.3%
	6	A421 (East) Ahead Left	13.0	8.6	81.4%	14.5	9.6	83.8%

Junction	**Arm**	**Lane Description**	**AM**			**PM**		
			Mean Max Queue (PCU)	**Delay (s/PCU)**	**Deg Sat (%)**	**Mean Max Queue (PCU)**	**Delay (s/PCU)**	**Deg Sat (%)**
J8 - Warren Road/ A421			**2033 Do Something 2 (Post-Mitigation)**					
	1	A421 (West) Ahead Right	16.1	11.2	85.9%	16.3	11.8	86.8%
	2	A421 (East) Left Ahead	23.9	13.7	85.1%	29.6	17.4	89.6%
	3	Warren Road Right Left	3.5	68.3	64.6%	0.9	51.1	19.8%
J9 - A421/ Shucklow Hill/ Little Horwood	**1**	A421 (West) Ahead Left	23.6	13.6	84.9%	23.6	13.6	85.0%
	2	Little Horwood Road Left Right	1.4	53.7	29.8%	1.2	52.9	26.9%
	3	A421 (East) Ahead Right	7.6	11.1	84.7%	6.5	10.2	84.8%
	4	A421 (West) Right Ahead	7.8	12.4	87.1%	7.7	11.6	86.9%
	5	Shucklow Hill Left Right	2.4	59.1	48.0%	1.4	53.3	29.3%
	6	A421 (East) Ahead Left	12.9	8.5	81.0%	14.4	9.5	83.5%

J8 - Warren Road/ A421	**2033 Do Something 3 (Post-Mitigation)**							
	1	A421 (West) Ahead Right	16.9	12.0	87.1%	17.9	12.9	88.3%
	2	A421 (East) Left Ahead	25.9	15.0	87.0%	30.4	18.6	90.6%
	3	Warren Road Right Left	3.6	68.8	65.1%	0.9	51.2	20.3%
J9 - A421/ Shucklow Hill/ Little Horwood	**1**	A421 (West) Ahead Left	24.9	14.4	86.1%	25.1	14.6	86.4%
	2	Little Horwood Road Left Right	1.4	53.7	29.8%	1.2	52.9	26.9%
	3	A421 (East) Ahead Right	8.6	12.0	86.0%	6.4	10.5	85.6%
	4	A421 (West) Right Ahead	8.6	13.3	88.3%	8.5	12.8	88.4%
	5	Shucklow Hill Left Right	2.4	59.1	48.0%	1.4	53.3	29.3%
	6	A421 (East) Ahead Left	13.7	9.2	82.9%	14.5	9.9	84.3%

5.2.8 The mitigation modelling for Junctions 8 and 9 indicates that in the Do Something 1 scenario queuing and delay is reduced to below the 2033 Do Nothing scenario. Both queueing and delay are lower on all arms when compared to the 2033 Do Nothing scenario. The mitigation proposed is therefore considered adequate to mitigate the impacts of the development.

JUNCTION 10

BC Comments

> *'Drawing in the Appendix shows amendment to A421 E but there are also geometric changes in the model to A421 W, but there is not clear evidence of any changes to this arm, is there a reason for the change in geometries for this arm.'*
>
> *'The intercept adjustments for both A421 arms have been removed, the drawing would indicate no change to the A421 West arm and by adjusting kerbline on the eastern arm I would envisage that the correction should be retained as per the guidance as outlined in the JUNCTIONS 9 user guide.'*
>
> *'This is a new scheme layout option but no sight of revised geometric measurement drawing to allow detailed review.'*

WSP Response

5.2.9 The mitigation junction modelling for Junction 10 has been reviewed to reflect the updated traffic flow diagrams presented in **Appendix B**. Based upon the modelling results for this junction presented in Section 4, the modified mitigation package for this junction developed as part of TRN1[11] has been tested. The layout for this mitigation proposal, incorporating minor revisions for the purposes of TRN2 is shown in **Appendix D**. The results of this updated analysis are shown in **Table 5-4** with full modelling results presented in **Appendix E.**

---

[11] TRN1 (September 2020 Paragraphs 8.1.20 to 8.1.22

Table 5-4 – Junction 10 - A421/Nash Road/Winslow Road Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-mitigation)						
A - A421 (East)	10.8	33.14	0.93	16.0	45.13	0.96
B - B4033 Nash Road	55.8	444.84	1.32	7.8	96.26	0.94
C - A421 (West)	58.1	212.53	1.10	88.1	286.65	1.15
D - Winslow Rd	0.2	6.09	0.16	0.2	6.00	0.17
2033 Do Something 1 (Pre-mitigation)						
A - A421 (East)	16.2	47.31	0.97	23.5	61.89	0.99
B - B4033 Nash Road	69.5	569.75	1.43	11.5	132.75	1.01
C - A421 (West)	70.8	266.31	1.12	111.3	388.07	1.20
D - Winslow Rd	0.2	6.10	0.16	0.2	6.02	0.17
2033 Do Something 1 (Post-Mitigation)						
A - A421 (East)	2.1	6.00	0.68	2.3	6.14	0.70
B - B4033 Nash Road	70.1	561.95	1.42	12.9	147.20	1.01
C - A421 (West)	8.6	30.52	0.91	17.1	52.81	0.97
D - Winslow Rd	0.2	6.83	0.18	0.2	7.21	0.19
2033 Do Something 2 (Post-Mitigation)						
A - A421 (East)	2.1	5.94	0.68	2.3	6.08	0.70
B - B4033 Nash Road	67.8	541.72	1.40	11.8	137.61	1.00
C - A421 (West)	8.4	29.79	0.91	16.0	50.05	0.97
D - Winslow Rd	0.2	6.80	0.18	0.2	7.17	0.19
2033 Do Something 3 (Post-Mitigation)						
A - A421 (East)	2.3	6.26	0.70	2.4	6.23	0.71
B - B4033 Nash Road	77.7	632.19	1.48	14.5	162.18	1.03
C - A421 (West)	9.0	31.68	0.91	19.7	59.27	0.98
D - Winslow Rd	0.2	6.84	0.18	0.2	7.29	0.20

5.2.10 The mitigation modelling for Junction 10 indicates that in the Do Something 1 scenario queuing and delay is reduced to below the 2033 Do Nothing scenario on the two A421 arms. There is a very small increase in queuing of one vehicle on Nash Road in the AM Peak and two vehicles in the PM peak. The mitigation proposed is therefore considered adequate to mitigate the impacts of the development.

5.3 MITIGATION SUMMARY

5.3.1 **Table 5-5** provides a summary of the proposed mitigation as a result of the modified analysis presented in TRN2; the table also identifies where the mitigation proposals originally identified in the Updated TA and TRN1 have been superseded.

Table 5-5 – Mitigation Summary

Junction	Mitigation proposed within TRN2	TRN2 compared with Updated TA and TRN1
Junction 3 – Bletchley Road/Stoke Road/Drayton Road/Whaddon Road Mitigation Results	Financial contribution to Traffic Calming through Newton Longville as shown on drawings 1067760-D027-D037-D	As per Updated TA[12] with minor amendments shown to the indicative Junction 3 layout in drawing 70069442-002-P02
Junction 7 – Whaddon Crossroads	Financial contribution to wider A421 corridor improvement in lieu of kerb realignments shown on drawing 70069442-005-P04	As previously proposed within the Updated TA[13] with additional mitigation included on Whaddon Road comprising narrowing of the splitter island to provide additional entry width as shown on drawing 70069442-005-P04
Junctions 8 and 9 - Warren Road/A421 And 421/Shucklow Hill/Little Horwood Road	Financial contribution to wider A421 corridor improvement in lieu of junction signalisation shown on drawings 70069442-006-P02 and 70069442-007-P02	As previously proposed within the Updated TA,[14] but also includes minor amendments to the Warren Road arm as shown on drawings 70069442-006-P02 and 70069442-007-P02

---

[12] Updated TA (May 2020) Paragraphs 8.3.3 to 8.3.8

[13] Updated TA (May 2020) Paragraphs 8.3.9 to 8.3.12

[14] Updated TA (May 2020) Paragraphs 8.3.13 to 8.3.16

Junction	Mitigation proposed within TRN2	TRN2 compared with Updated TA and TRN1
Junction 10 - A421/Nash Road/Winslow Road	Financial contribution to wider A421 corridor improvement in lieu of kerb realignment	As previously proposed within the Updated TA,[15] but includes additional mitigation in the form of splitter island narrowing to provide enhanced entry width to reduce queuing on Nash Road as shown on drawing 70069442-008-P04

5.3.2 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA AND TRN1

5.3.3 **Table 5-6** provides a summary of the changes presented in this Section when compared to the Updated TA and TRN1.

Table 5-6 – Elements of Updated TA and TRN1 that are updated by TRN2

Section of Updated TA	Section of TRN1	Description	Area of Difference
Table 8.2	Paragraphs 8.1.1 to 8.1.2	Junction 3 Mitigation Modelling	The TRN2 modelling presents a modified set of results. The proposed mitigation represents the refined and modified proposals and supersedes those identified in the Updated TA and TRN1.
Paragraphs 8.3.9-8.3.12	Paragraphs 8.1.5 to 8.1.11	Junction 7 Mitigation Modelling	The TRN2 modelling presents a modified set of results. The proposed mitigation represents the refined and modified proposals and supersedes

---

[15] Updated TA (May 2020) Paragraphs 8.3.17 to 8.3.20

Section of Updated TA	Section of TRN1	Description	Area of Difference
			those identified in the Updated TA and TRN1.
Paragraphs 8.3.13-8.3.16	Paragraphs 8.1.12 to 8.1.14	Junctions 8 and 9 Mitigation Modelling	The TRN2 modelling presents an alternative set of results. The proposed mitigation represents the refined and modified proposals and supersedes those identified in the Updated TA and TRN1.
Paragraphs 8.3.17-8.3.20	Paragraphs 8.1.15 to 8.1.24	Junction 10 Mitigation Modelling	The TRN2 modelling presents an alternative set of results. The proposed mitigation represents the refined and modified proposals and supersedes those identified in the Updated TA and TRN1.
Table 8.13	Table 8-8	Highway Mitigation Summary	Updated Table 5-5 supersedes that presented in the Updated TA and TRN1

6 SITE ACCESS MODELLING

6.1 INTRODUCTION

6.1.1 This section presents updated junction capacity assessments for the site access points taking account of the updated trip generation and distribution as shown on the traffic flow diagrams in **Appendix B**.

6.2 BUCKINGHAM ROAD ACCESS

6.2.1 **Table 6-1** shows the junction capacity assessment for the Buckingham Road Access to reflect the updated trip generation and trip distribution. Full model outputs can be found in **Appendix F**.

Table 6-1 – Buckingham Road Access Modelling

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Something 1						
Buckingham Road S	0.5	3.83	0.34	1.5	6.58	0.61
Access SW	0.2	4.24	0.13	0.1	5.37	0.09
Access NW	0.9	6.56	0.46	1.0	8.04	0.50
Buckingham Road N	1.4	7.09	0.59	2.0	8.36	0.66
2033 Do Something 2						
Buckingham Road S	0.5	3.73	0.33	1.4	6.08	0.58
Access SW	0.2	4.15	0.13	0.1	4.93	0.06
Access NW	0.6	5.73	0.38	0.8	6.99	0.43
Buckingham Road N	1.3	6.68	0.57	1.7	7.58	0.63
2033 Do Something 3						
Buckingham Road S	0.6	3.90	0.36	1.8	7.32	0.65
Access SW	0.2	4.32	0.14	0.1	5.84	0.10
Access NW	0.9	6.73	0.47	1.1	8.62	0.52
Buckingham Road N	1.8	8.04	0.64	2.2	9.00	0.69

6.2.2 **Table 6-1** shows that the junction continues to operate within capacity in all modelled scenarios once account is made of the updated trip generation.

6.3 WHADDON ROAD ACCESS

6.3.1 **Table 6-2** shows the junction capacity assessment for the Whaddon Road Access to reflect the updated trip generation and trip distribution. Full model outputs can be found in **Appendix F**.

Table 6-2 – Whaddon Road Access Modelling

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Something 1						
Site Access to Whaddon Road (S)	0.1	5.89	0.10	0.1	5.82	0.08
Site Access to Whaddon Road (N)	0.5	10.71	0.33	0.2	9.05	0.19
Whaddon Road (S) to Site Access	0.1	6.34	0.09	0.1	6.95	0.12
2033 Do Something 2						
Site Access to Whaddon Road (S)	0.1	5.74	0.08	0.1	5.61	0.07
Site Access to Whaddon Road (N)	0.4	9.88	0.28	0.2	8.42	0.15
Whaddon Road (S) to Site Access	0.1	6.28	0.08	0.1	6.48	0.10
2033 Do Something 3						
Site Access to Whaddon Road (S)	0.1	5.97	0.10	0.1	5.76	0.08
Site Access to Whaddon Road (N)	0.5	11.05	0.34	0.2	8.97	0.19
Whaddon Road (S) to Site Access	0.1	6.41	0.09	0.1	6.64	0.11

6.3.2 **Table 7-2** shows that the junction will operate within capacity in all modelled scenarios once account is made of the updated trip generation and distribution.

6.3.3 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA AND TRN1

6.3.4 **Table 6-3** provides a summary of the changes presented in this Section when compared to the Updated TA and TRN1.

Table 6-3 – Elements of Updated TA and TRN1 that are changed by TRN2

Section of Updated TA	Section of TRN1	Description	Area of Difference
Section 7.2	Section 7.1	Buckingham Road and Whaddon Road Site Accesses	Updated junction capacity assessments present a modified set of results that supersede those presented in the Updated TA and TRN1

7 IMPACT ON VILLAGES

7.1 INTRODUCTION

BC Comment

> *'On discussion with the Highway Consultant, it has been agreed that the following will be provided:*
>
> > *1. Updated assessment on the Impact on Villages taking into consideration the increased employment trips and revised distribution has outlined in TRN1.'*

WSP Response

7.1.1 The impact on villages was considered within the Updated TA with reference to the 'Guidelines for the Environmental Assessment of Road Traffic' (GEART) produced by the Institute of Environmental Assessment (1993). The GEART states that whilst traffic forecasting is not an exact science, a change in traffic flow of less than 10% creates no discernible environmental impact. As such two rules are presented within the GEART for screening whether a detailed assessment is required:

- Rule 1 – include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)
- Rule 2 – include any other specifically sensitive areas where traffic flows have increased by 10% or more.

7.1.2 Rule 1 and 2 have been used as an appropriate methodology to assess likely impacts through the local villages using the modified distribution as requested by BC.

7.2 IMPACT ASSESSMENT

7.2.1 **Table 7-1** and **Table 7-2** show the two 2033 Do Nothing scenarios that were previously considered and presented in the Updated TA[16]

Table 7-1 – 2033 Do Nothing (Updated TA)

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	135	104	239	82	110	192
2	Whaddon	154	220	374	138	120	258
3	Great Horwood	396	243	639	280	281	561
4	Little Horwood	103	76	179	30	103	133
5	Mursley	394	295	689	314	284	598
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	347	428	775	416	316	732

---

[16] Updated TA, May 2020; Section 7.4

Table 7-2 – 2033 Do Nothing Including Shenley Park (Updated TA)

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	135	104	239	82	110	192
2	Whaddon	154	220	374	138	120	258
3	Great Horwood	398	246	644	282	282	564
4	Little Horwood	103	76	179	30	103	133
5	Mursley	398	305	703	322	288	610
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	367	439	806	423	330	753

7.2.2 The increase in link flow through the Villages as a result of the Proposed Development is shown in **Table 7-3** for Do Something 1, **Table 7-4** for Do Something 2 and **Table 7-5** for Do Something 3.

Table 7-3 – 2033 Do Something 1

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	135	104	239	82	110	192
2	Whaddon	154	220	374	138	120	258
3	Great Horwood	404	250	654	287	288	575
4	Little Horwood	111	81	192	36	110	146
5	Mursley	404	314	718	340	296	636
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	406	478	884	465	379	844

Table 7-4 – 2033 Do Something 2

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	135	104	239	82	110	192
2	Whaddon	154	220	374	138	120	258
3	Great Horwood	403	249	652	286	287	573
4	Little Horwood	110	81	191	34	108	142
5	Mursley	401	311	712	339	294	633
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	398	472	870	458	369	827

Table 7-5 – 2033 Do Something 3

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	135	104	239	82	110	192
2	Whaddon	154	220	374	138	120	258
3	Great Horwood	407	253	660	289	288	577
4	Little Horwood	111	81	192	36	110	146
5	Mursley	406	323	729	347	299	646
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	427	489	916	473	393	866

7.2.3 The percentage change in traffic flows compared with the 2033 Do Nothing is presented in **Table 7-6** for Do Something 1 and **Table 7-7** for Do Something 2. The percentage change in traffic flows in

Table 7-8 for Do Something 3 is compared with the 2033 Do Nothing including Shenley Park allocation (Table 8-2).

Table 7-6 - 2033 Do Something 1 Percentage Change

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	0%	0%	0%	0%	0%	0%
2	Whaddon	0%	0%	0%	0%	0%	0%
3	Great Horwood	2%	3%	2%	3%	2%	2%
4	Little Horwood	8%	7%	7%	20%	7%	10%
5	Mursley	3%	6%	4%	8%	4%	6%
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	17%	12%	14%	12%	20%	15%

Table 7-7 - 2033 Do Something 2 Percentage Change

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	0%	0%	0%	0%	0%	0%
2	Whaddon	0%	0%	0%	0%	0%	0%
3	Great Horwood	2%	2%	2%	2%	2%	2%
4	Little Horwood	7%	7%	7%	13%	5%	7%
5	Mursley	2%	5%	3%	8%	4%	6%
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	15%	10%	12%	10%	17%	13%

Table 7-8 - 2033 Do Something 3 Percentage Change

Location		AM Peak			PM Peak		
		N/b	S/b	Total	N/b	S/b	Total
1	Nash	0%	0%	0%	0%	0%	0%
2	Whaddon	0%	0%	0%	0%	0%	0%
3	Great Horwood	2%	3%	2%	2%	2%	2%
4	Little Horwood	8%	7%	7%	20%	7%	10%
5	Mursley	2%	6%	4%	8%	4%	6%
		E/b	W/b	Total	E/b	W/b	Total
6	Newton Longville	16%	11%	14%	12%	19%	15%

7.2.4 The results of this revised assessment identify that the greatest increases in traffic flow would potentially be through Little Horwood (Do Something 1), with a forecast increase of 20% northbound in the PM peak. Little Horwood does have a conservation area and should therefore be considered ‘sensitive’ in nature and against the lower GEART threshold for impact (i.e. a 10% or more change in traffic flow in a specifically sensitive area). However, the actual change in traffic flow in the PM peak is only six vehicles northbound and seven vehicles southbound; a total of 13 vehicles. This level of change would be imperceptible and is not considered significant.

7.2.5 The forecast increases in traffic in 2033 through Newton Longville are shown to be 20% or less. Newton Longville does have a conservation area and should therefore be considered ‘sensitive’ in nature and against the lower GEART threshold for impact (i.e. a 10% or more change in traffic flow in a specifically sensitive area).

7.2.6 A scheme to introduce traffic calming through Newton Longville was previously developed and agreed with BC in 2016 to introduce additional delay to vehicles and minimise ‘through’ traffic. This package of mitigation (Included within **Appendix D**) is still proposed and will therefore provide mitigation.

7.2.7 Changes in traffic flow through the other villages are less than 8% with the exception of Little Horwood, which has very low volume increases (but a higher percentage due to the minimal traffic on the route). Therefore, no additional impacts have been identified that would require mitigation.

7.2.8 Whilst the results of this assessment are slightly different with greater impacts shown in Little Horwood and Newton Longville the conclusions reached are the same as that presented in the Updated TA[17].

7.2.9 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA AND TRN1

7.2.10 **Table 7-9** provides a summary of the changes presented in this Section when compared to the Updated TA and TRN1.

Table 7-9 – Elements of Updated TA and TRN1 that are updated by TRN2

Section of Updated TA	Section of TRN1	Description	Area of Difference
Section 7.4	Not considered in TRN1	Impact on Villages	Updated results for the assessment which incorporate the modified approach supersede those presented in the Updated TA

---

[17] Updated TA, May 2020; Section 7.4

8 COBALT ANALYSIS

8.1 INTRODUCTION

BC Comment

> *'On discussion with the Highway Consultant, it has been agreed that the following will be provided:*
>
> > *2. Updated assessment on Highway Safety using the Cobalt software taking into consideration the increased employment trips and revised distribution has outlined in TRN1.'*

WSP Response

8.1.1 Within the Updated TA[18] the impacts of the Proposed Development on collisions were assessed using the computer programme COBALT (Cost and Benefit to Accidents – Light Touch) developed by the Department of Transport (DfT).

8.1.2 COBALT is a computer program developed to undertake the analysis of the impact of a transport scheme on collisions as part of the economic appraisal of road schemes. The assessment is based on a comparison of collisions by severity and associated costs across an identified network in 'Without-Scheme/Development' and 'With-Scheme/Development' forecasts, using details of link and junction characteristics, relevant collision rates and costs and forecast traffic volumes by link and junction.

8.1.3 COBALT analysis provides a summary of the likely impact on collisions across a defined study area. Each link is coded by the degree to which the Proposed Development will provide benefits in terms of collisions. As the Proposed Development will result in an increase in traffic, the impact will always show negative values. However, the extent to which a negative value is derived will be dependent upon the volume of additional traffic that the Proposed Development would generate.

8.2 COBALT ANALYSIS

8.2.1 The COBALT analysis has been re-run with the updated trip generation and distribution to determine whether the impacts on Highway Safety have changed.

8.2.2 **Figure 8-1** shows that the majority of links across the study area will see very small changes in 'negative benefits' (as they are described in COBALT). The only links showing more than a very

---

[18] SWMK Updated TA (May 2020) Section 7.6

small change are B4034 Buckingham Road, A421 Standing Way to the east of the Site and to a lesser degree V1 Snelshall Street.

Figure 8-1 - COBALT Benefits

8.2.3 The main findings from the COBALT analysis show an increase of 140 collisions with 202 casualties over the 60-year appraisal period as a result of the Proposed Development, meaning on average there would be an additional 2.4 collisions with 3.4 casualties per year.

8.2.4 The increase in collisions by severity is shown in **Table 8-1.**

Table 8-1 - COBALT Collisions - Casualty Prediction Over 60 years

	Slight	Serious	Fatal	Total Casualties
Without Proposed Development	2,857	356	48	3,261
With Proposed Development	3,037	377	50	3,464
Difference (60 years)	+180	+21	+2	+203
Difference (average per year)	+3.0	+0.35	+0.033	+3.38

8.2.5 The results presented in this Section adopt the modified trip generation and distribution as agreed with BC. The overall results are very similar to those in the Updated TA and do not change the original conclusions[19].

8.2.6 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA AND TRN1

8.2.7 **Table 8-2** provides a summary of the changes presented in this Section when compared to the Updated TA.

Table 8-2 – Elements of Updated TA and TRN1 that are updated by TRN2

Section of Updated TA	Section of TRN1	Description	Area of Difference
Section 7.6	Not considered in TRN1	COBALT Analysis	Updated results for the assessment which supersede those presented in the Updated TA

---

[19] SWMK Updated TA (May 2020) Section 7.6

9 TRAVEL PLAN ACTION PLAN

9.1 INTRODUCTION

BC Comment

> *'On discussion with the Highway Consultant, it has been agreed that the following will be provided:*
>
> > *3. The provision of the costed Travel Plan as detailed in paragraph 4.2.16 to allow BC to review to determine appropriate levels of commitment.'*

WSP Response

9.1.1 **Table 9-1** presents a costed action plan for the residential element of the Framework Travel Plan (FTP) including the role of Travel Plan Manager. This cost has been provided for the life of the TP (i.e: based on the agreed FTP) which is assumed to be 14 years from first occupation of the development through to full occupation (anticipated in 2031) plus five years (i.e. 2036).

9.1.2 Costs are provided for the residential component of the proposed development only as the workplaces and schools will implement their own TPs.

9.2 ACTION PLAN

Table 9-1 – Travel Plan Action Plan

Measure/Initiative		Cost (£)	Cost (£)		Assumptions
		Initial Cost	Annual Cost	Total Costs Over 14 Year Life of Travel Plan	
Management	Cost for Residential Travel Plan Co-ordinator (including Travel Plan Manager Role to oversee all Travel Plans across site)	-	£15,000	£210,000	1/2 of a full time member of staff @ full time salary of £30,000 per year for 14 year lifespan of Travel Plan
	Personalised Travel Planning	-	-	£104,343.75	£75 per household (assume 75% participation for 1855 units) - provided by Residential Travel Plan Co-ordinator
	Travel Surveys	-	£6,000	£42,000.00	Surveys in years 1, 3, 5, 7, 9, 11, 13
	Annual Travel Plan Monitoring Fees	-	£1,000	£14,000	Annual monitoring for life of plan (14 years) - £1000 per annum fee from BC

Measure/Initiative		Cost (£)	Cost (£)		Assumptions
		Initial Cost	Annual Cost	Total Costs Over 14 Year Life of Travel Plan	
Information	Induction / Welcome Pack	-	-	£37,100	Folders / Design and printing costs at £20 per household Packs provided to the first occupiers of each household. Packs to include: - Sustainable Travel Website Details - Walking and Cycling Maps - Public Transport Map and Timetable Information - MKC Car Share Permit Details - Electric Vehicle Charge Point and Green Car Bay Map - Personalised Travel Planning Voucher - Cycle Safety Training Course Voucher - Cycle Voucher - Bus Pass Voucher - Details of Motorcycle Training - Local Taxi Company Details - Car Share Database Details - Car Club Details
	Bespoke Information Leaflets	-	£4,000.00	£56,000.00	Promotional materials and events budget per annum
	Promotional and Marketing: - quarterly newsletters/posters - events - such as Ride to Work Day, World Car Free Day etc	-			
	Community Notice Board	£5,000.00			
	Sustainable Travel Website	£8,000.00	£1,000.00	£14,000.00	Set up and design cost + ongoing maintenance

Measure/Initiative		Cost (£)	Cost (£)		Assumptions
		Initial Cost	Annual Cost	Total Costs Over 14 Year Life of Travel Plan	
Transport Incentives	Car Sharing Scheme Database	-	-	-	No cost - Buckinghamshire Car Share to be promoted through welcome packs and on notice boards
	Car Club	-	-	£108,080.00	Based on proposal obtained by WSP from Co-wheels for the provision of up to 4 vehicles at £27,020 per vehicle. Price paid in instalments with three annual payments made per vehicle. Price includes for each dwelling to receive a free annual membership to the car club and £15 driving credit.
	Cycle Skills Training Vouchers	-	-	£13,912.50	Training assuming two people for 75% of dwellings take up the training. Cost of £5 per person based upon MKC family and adult Bikeability Level 2 cycle training course: https://www.getsmartertravelmk.org/cycling/skills-training
	Bicycle User Group	-	-	-	Promotion of bicycle user group by TPC through the Community website and travel website
	Motorcycle Training Vouchers	-	-	£23,187.50	Available for £50 from https://mcia.co.uk/en/mcia-ride/tryride (assume 25% of dwellings take up)
	Bus 'Taster' Ticket Vouchers	-	-	£105,735.00	1-month Arriva monthly ticket at £57 per ticket (assuming 100% of dwellings take up offer of one ticket per household)

Measure/Initiative	Cost (£)	Cost (£)		Assumptions
	Initial Cost	Annual Cost	Total Costs Over 14 Year Life of Travel Plan	
Bicycle Equipment and Accessories Vouchers	-	-	£92,750.00	£50 voucher per household (assumed 100% take-up)
Sub Total	**£13,000**	**£27,000**	**£821,108.75**	
Total (£) rounded		**£834,110.00***		
Cost Per Dwelling		**£449.65***		

*Note – Costs based upon 2020 prices.

Appendix A

BC RESPONSE TO TRN1

Directorate for Planning Growth & Sustainability
Buckinghamshire Council,
Walton Street Offices,
Walton Street,
Aylesbury
HP20 1UA

highwaysdm@buckinghamshire.gov.uk
01296 382416
www.buckinghamshire.gov.uk

Directorate For Planning, Growth And Sustainability
The Gateway
Gatehouse Road
Aylesbury
HP19 8FF

Date: 2nd October 2020
Your ref: 15/00314/AOP

Sent to: devcontrol.av@buckinghamshire.gov.uk

Dear Sirs,

Re: South West Milton Keynes, Updated Transport Assessment
Location: Land South Of The A421 West Of Far Bletchley North Of The East West Rail Link And East Of Whaddon Road Newton Longville
Outline planning application with all matters reserved except for access for a mixed-use sustainable urban extension on land to the south west of Milton Keynes to provide up to 1,855 mixed tenure dwellings; an employment area (B1); a neighbourhood centre including retail (A1/A2/A3/A4/A5), community (D1/D2) and residential (C3) uses; a primary and a secondary school; a grid road reserve; multi-functional green space; a sustainable drainage system; and associated access, drainage and public transport infrastructure.

Thank you for your letter dated the 8th July 2020 in which you requested comment for the above application.

A review of the Transport Assessment and Travel Plan has been performed, alongside a review of the recently submitted Technical Note 1 (TRN1) which addressed initial highway comments raised in our response of 29th July 2020. Based on the review of TRN1 we have the following comments which require the provision of further information or amendments to allow us to complete our assessment.

On discussion with the Highway Consultant, it has been agreed that the following will be provided:

1. Updated assessment on the Impact on Villages taking into consideration the increased employment trips and revised distribution has outlined in TRN1.

2. Updated assessment on Highway Safety using the Cobalt software taking into consideration the increased employment trips and revised distribution has outlined in TRN1.

3. The provision of the costed Travel Plan as detailed in paragraph 4.2.16 to allow BC to review to determine appropriate levels of commitment.

TRN1 provided additional details on revised employment trips, distribution and junction models taking into consideration Buckinghamshire Council (BC) comments. A review of the employment trip data has shown this to be acceptable and the revised distribution within the BC area. However, several queries have been raised in the relation to the Base and Mitigation junctions detailed in the Tables 1 and 2 below.

It should be noted that the model review included an assessment of the Traffic Flow diagrams provided as part of the TRN1. On initial review and discussion with the Highway Consultant it was apparent that not all relevant diagrams for the reassessment in TRN1 were provided. Additional diagrams were sent detailing the process of the distribution of development flows, on further analysis not all flow information could be reconciled with further communication held with the Highway Consultant. The latest traffic flow diagrams were provided on Tuesday 29th September 2020 and are under review.

Table 1 – Base Model Review

Junction	Comment
J3	For the 2020 Base AM and PM scenarios the vehicle mix has been left as varies over time. The use of the ONE HOUR profile would dictate that only one-hour data should be entered. The use of varies over time will mean the model will use the entered first 15 minute of data as the whole period percentages and may impact on the results.
J4	D3 scenario – The AM vehicle mix for arms B and C and the PM vehicle mix for Arms A, B and C do not match the traffic flow diagram or the previous demand set percentages, I presume this is a data entry issues or is there a reason why the vehicle mix varies for this scenario?
J6	It has been noted that the approach width and entry width have been reduced on Whaddon Road compared to original Updated TA. These measurements were not originally queried and there is no reasoning provided for the change in TRN1. Also, if these have been changed for a reason it is anticipated that some of the other geometries for this arm would also have changed slightly such as flare length and conflict angle?
J6	Whaddon Road, Lane Level 1 storage. It is noted that this lane has had its storage reduced to 4 PCU as requested. Lane 2 is still showing as 5 PCU, generally lanes on the same level will have the same storage value and would expect both to be 4 PCU.
J6	The observed queue lengths seem high compared to my own quick assessment of these, the 'worst' average interval queues I get are AM 6 an PM 9 for Whaddon Road.
J6	The calibration has shown an increase in capacity for Arm A, which makes it less comparable. With a massive reduction on Arm B, Whaddon Road, which is nearly half the whole approach capacity. The results of which would not be helped by the additional capacity provided on Arm A. Such a large reduction in capacity would be unusal.
J6	The results for Whaddon Road may not be aided by a short flare, it has become more recently apparent that the negative impact of flare may be exacerbated when using lane simulation, as you are measuring flare and then adding flare by the lane creation. It may be necessary to amend by altering the approach width to the entry to ensure there is no double-counting of flare.
J7	For the 2033 Base, 2033 DS1, 2033 DS2 and 2033 DS3 the Arm D to B vehicle mix is 4% in the AM, while the 2020 Base is 5% and all flow diagrams show 4.5%. Would expect these values to be match.
J10	For the 2033 Base, 2033 DS1, 2033 DS2 and 2033 DS3 the Arm B to A vehicle mix is 2% in the AM, while the 2020 Base is 3% and all flow diagrams show 2.5%. Would expect these values to be match.
J10	For the 2033 Base, 2033 DS1, 2033 DS2 and 2033 DS3 scenarios the Arm C to A vehicle mix is 3% in the PM, while 2020 Base is 4% and all flow diagrams show 3.5%. Would expect these values to be match

Table 2 – Mitigation Model Review

Junction	Comment
J3	No comment
J6	The mitigation file has removed the capacity reductions and provides a much better set of results. It is not appropriate to remove the correction in this instance as in essence you are making a slight tweak to the entry width. Page 184 of the J9 user guide states that: '*A correction for a particular junction may still be appropriate in a new design, where minor changes are made at one or more junction entries, but only when these are made*

Junction	Comment
	to the geometric parameters used in the capacity calculations (an example of a minor change is the movement of a kerb line to increase entry width). The use of previously calculated corrections is not appropriate if changes are made which are not related to parameters used in the capacity calculations. Examples of such changes include altering the island size, changes in signing, re-marking of the junction or complete resurfacing.' If the correction were to still be applied, you will not get the positive impacts in the results that the mitigation scheme is showing.
J6	Standing Way (W) has an entry width of 4.21 m, this is a two-lane entry with previous submission of 9.6 m. What is the reason for the much-reduced entry width?
J6	It is evident that Standing Way (W) arm has changed from previous mitigation submitted, but no sight of revised geometric measurement drawing. The ICD is now smaller from previous submission and base but it is not clear how making amendments proposed to the width of central islands will impact on this compared to base model, especially as the lane measurements for the ICD on Standing Way E have the original ICD measurement?
J6	The lane storage on Whaddon Road, Lane Level 1 is 5 PCU for Lane 2. This should be 4 PCU to match adjacent Lane 1.
J6	The Demand Sets of DS1 AM and PM, DS2 AM and PM, DS3 AM and PM are missing the OD data for Arm C to Arm A (A421 E to A421 W.
J7	Conflict angle of Arm C (Whaddon Road) uses the second methodology for this geometric parameter, which is not correct and different to the rest of the arms
J7 Additional mitigation	Conflict angle of Arm C (Whaddon Road) uses the second methodology for this geometric parameter, which is not correct and different to the rest of the arms Furthermore, this is a new scheme layout option but no sight of revised geometric measurement drawing to allow detailed review.
J10	Drawing in the Appendix shows amendment to A421 E but there are also geometric changes in the model to A421 W, but there is not clear evidence of any changes to this arm, is there a reason for the change in geometries for this arm.
J10 / J10 Additional Mitigation	The intercept adjustments for both A421 arms have been removed, the drawing would indicate no change to the A421 West arm and by adjusting kerbline on the eastern arm I would envisage that the correction should be retained as per the guidance as outlined in the JUNCTIONS 9 user guide.
J10 Alternative Mitigation	This is a new scheme layout option but no sight of revised geometric measurement drawing to allow detailed review.

Further to the Bottledump calibration / model query detailed in Table 2 the following other items were raised in relation to the calibration:

1. Junction 3 – Whaddon Road, discrepancies remain between and observed queues. It is noted that this is now modelled as one lane to restrict capacity as discussed but still likely to be underrepresenting queues and delays on this Arm.
2. Junction 7 - Arms C and D seem to have a worse comparison between observed and modelled than non-calibrated model and should be clarified.
3. Paragraph 6.3.8 of TRN1 lists the junctions where calibration has been applied. Junction 8 is not included in this list however it would appear that at least one arm has different modelled queues Table 6.2 (Observed modelled queues Length Comparison – Post Calibration).

4. Junction 10 – Arms B + C seem to have a worse comparison between observed and modelled queues than non-calibrated model and should be clarified.

Discussions were held with the Highway Consultant around the calibration of models compared to queue lengths. It was apparent that there had been a differing of opinion on the requirements detailed in our initial highway response. This is to be rectified with the base model calibration to be further reviewed and re-submitted by the Highway Consultant.

As part of the recent Proof of Evidence for the upcoming Milton Keynes Council Appeal WSP provided revised modelling of the Tattenhoe Junction. Due to the potential for interaction with the development site access on Buckingham Road a review of the revised modelling has also been performed with the following comments for review and potential amendment by the Highway Consultant.

Table 3 – Tattenhoe Junction Model

Item	Comment
1	**Future Base ARCADY model**
1.1	The radius of 48.8 metres for the Standing Way West arm looks too low. The radius would appear to be at least 60 metres.
1.2	The ICD looks to be too small and does not extend to outer kerb lines of the junction outline.
1.3	For both Standing Way arms, the exclusive left turn lanes may be used less than the other two lanes due to the low left turn volumes, especially the eastern arm. Therefore, a negative intercept adjustment should be added to account for the lower use of the left turn lanes (making use of B. Chard methodology or use of lane simulation).
2.	**TA Mitigation Proposal (Part Signalisation)**
2.1	The Appendix is missing the Mean Max Queue, average delay per PCU, Practical Reserve Capacity and total network delay results for the 2033 Do Something Scenario 3.
2.2	Lane 1/1 (Standing Way West nearside) turning radius of 36 metres seems to low, a turning radius of 55 metres seems more appropriate.
2.3	The saturation flow the internal arm is 1800, this is not consistent with the 2000 saturation flow for the full signalisation mitigation option.
3	**Revised Mitigation Proposal (Full Signalisation)**
3.1	The average delay per PCU results in the Technical Note do not match the model or Appendix.
3.2	Lane 1/1 (Standing Way West nearside) is missing a turning radius for the left turn.
3.3	The saturation flow the internal arms is 2000, this is not consistent with the 1800 saturation flow for the part signalisation mitigation option.
3.4	Queues on the internal arms block back to the upstream junction entries, likely to result in worse results then shown.

Once we have resolved the remaining issues / been provided with the outstanding information we will then be able to provide a formal and final response to the application.

If you have any queries regarding any of the above, please do not hesitate to contact me.

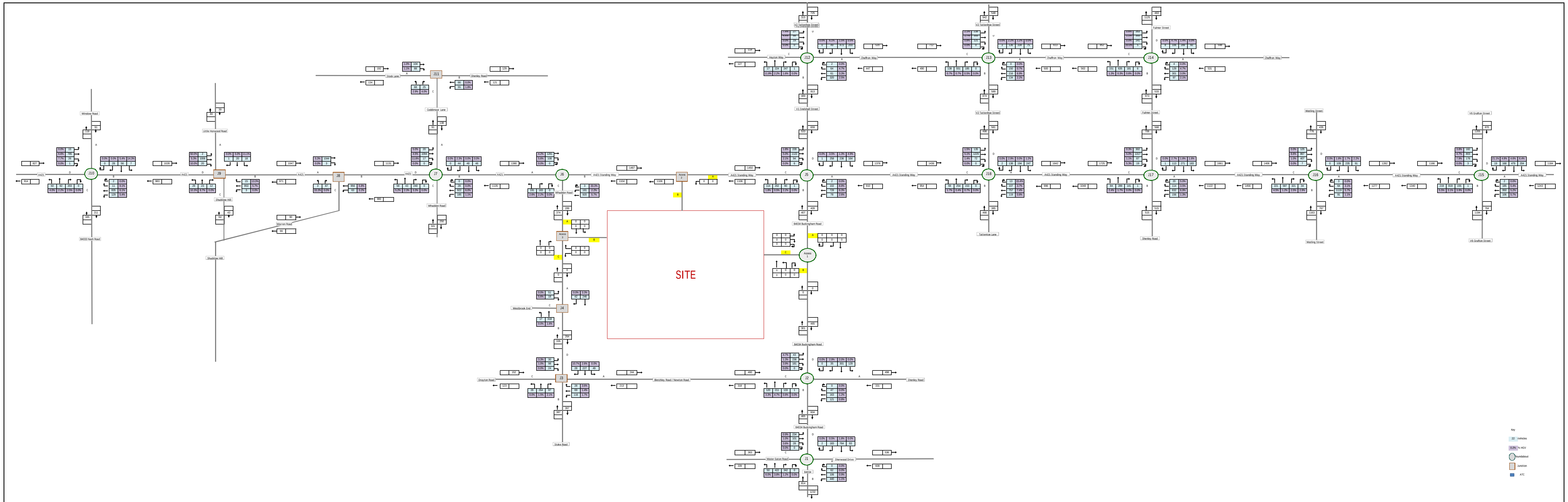
Yours sincerely

James Bedingfeld
Highways Development Management
Planning Growth & Sustainability

Please note:
This advice is given at officer level only and is based on the facts and information you have supplied. It must be understood that the final decision on any planning application that may be submitted in the future rests with the Planning Authority.

Appendix B

TRAFFIC FLOW DIAGRAMS

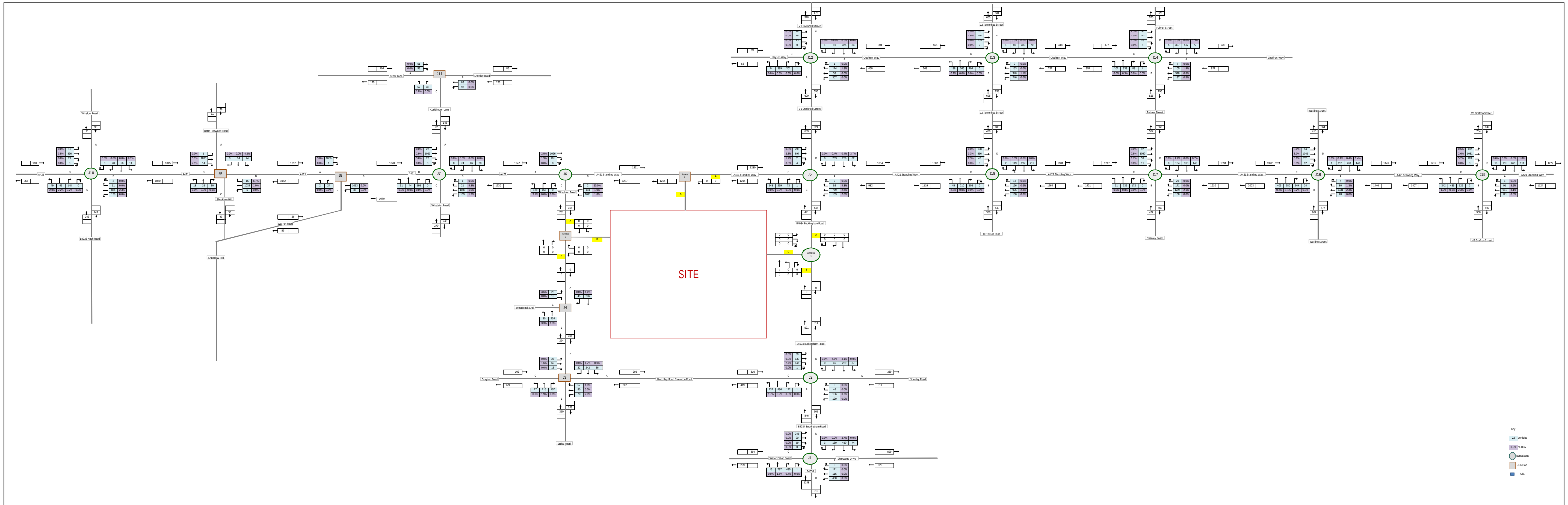


2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2020 Observed Flows AM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	01/10/2020				

Network Diagram & Matrices



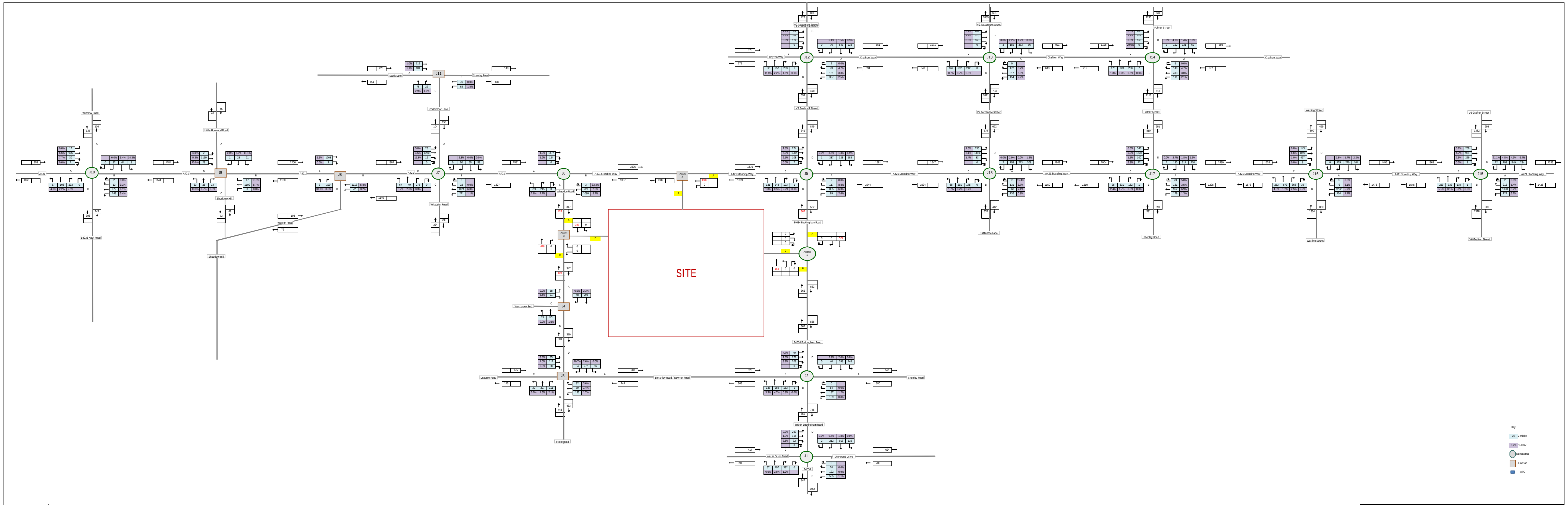
wsp

2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2020 Observed Flows PM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	01/10/2020				

Network Diagram & Matrices



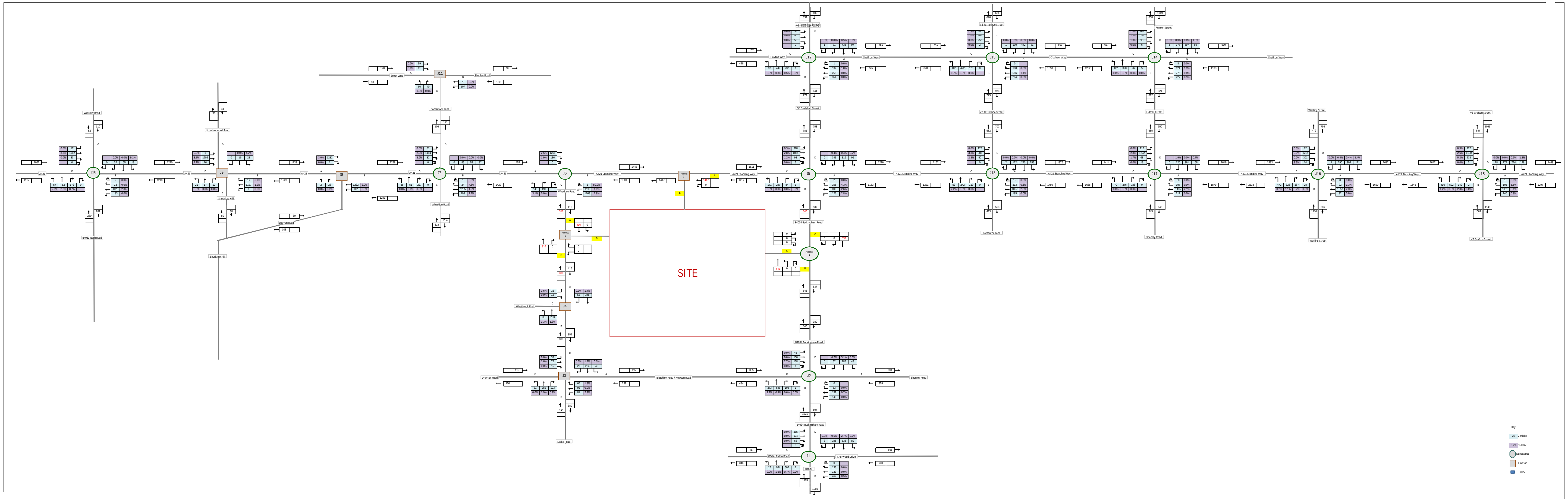
wsp

2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Nothing AM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	01/10/2020				

Network Diagram & Matrices

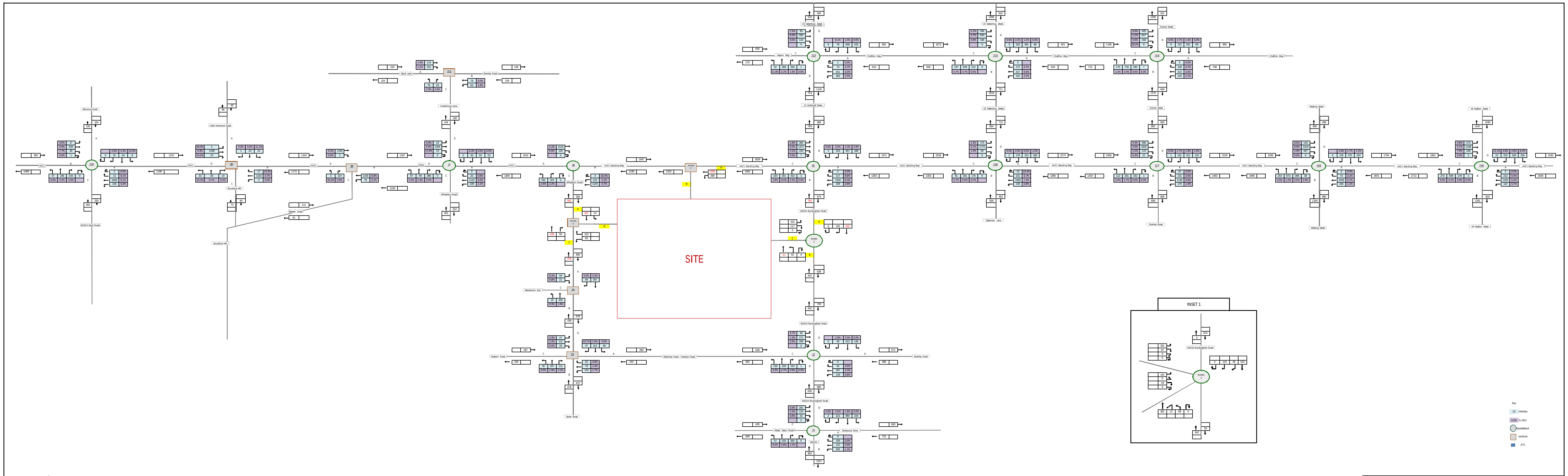


2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Nothing PM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	01/10/2020				

Network Diagram & Matrices

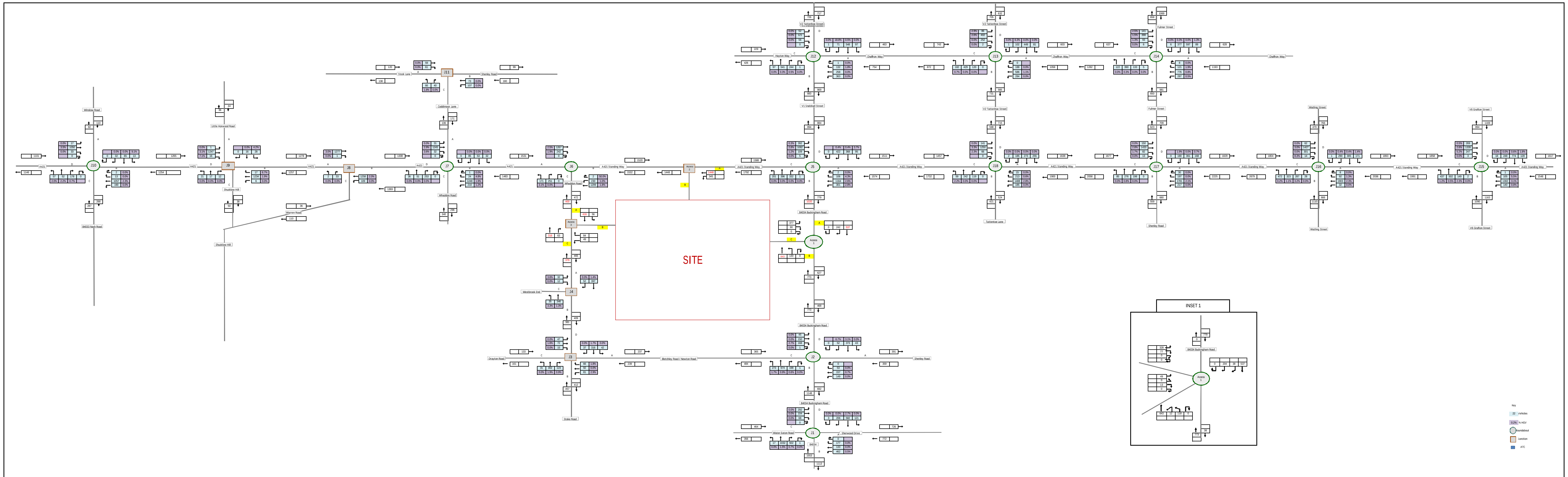


wsp
2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Something 1 AM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	10/12/2020				

Network Diagram & Matrices

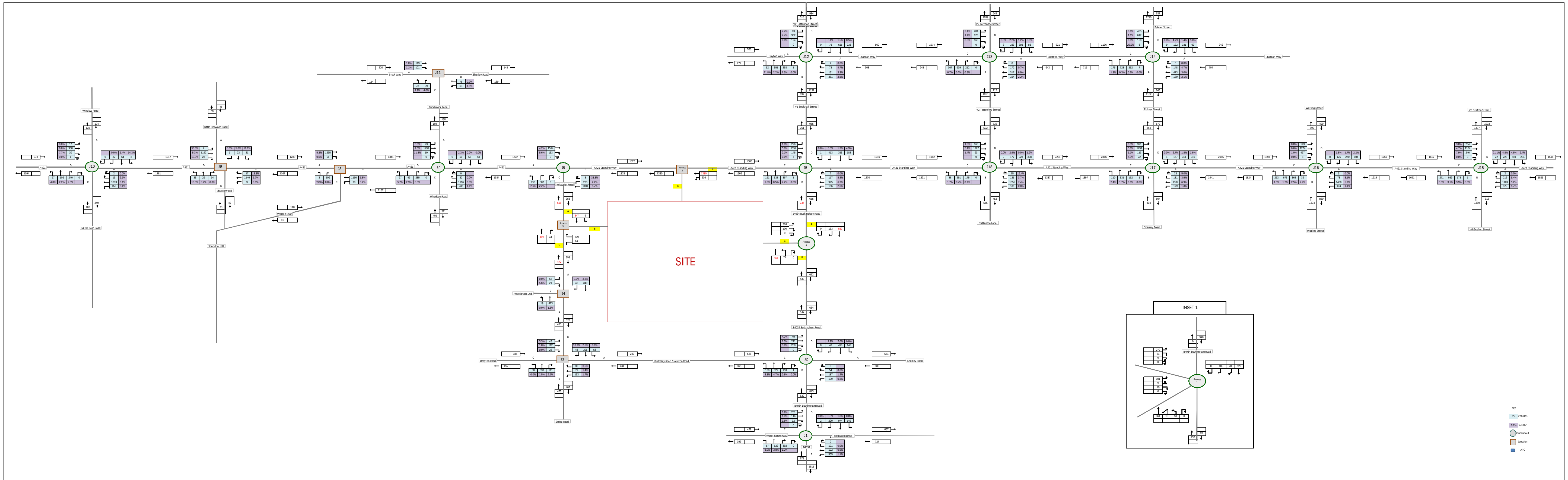


2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Something 1 PM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	10/12/2020				

Network Diagram & Matrices

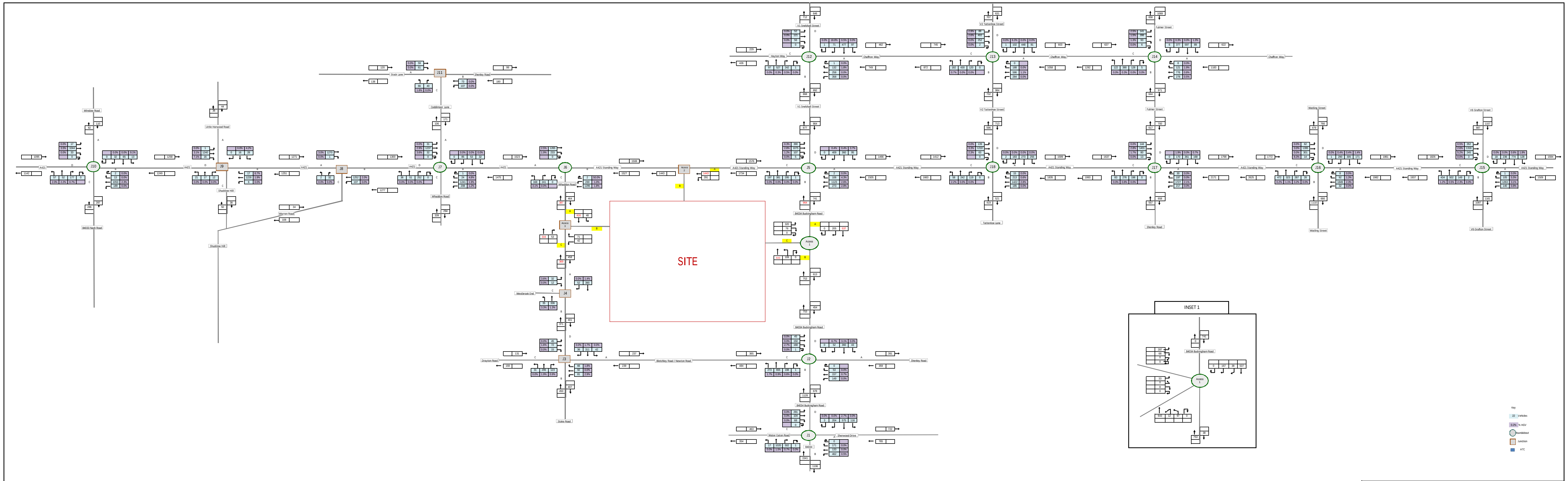


2 London Square, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Something 2 AM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	10/12/2020				

Network Diagram & Matrices

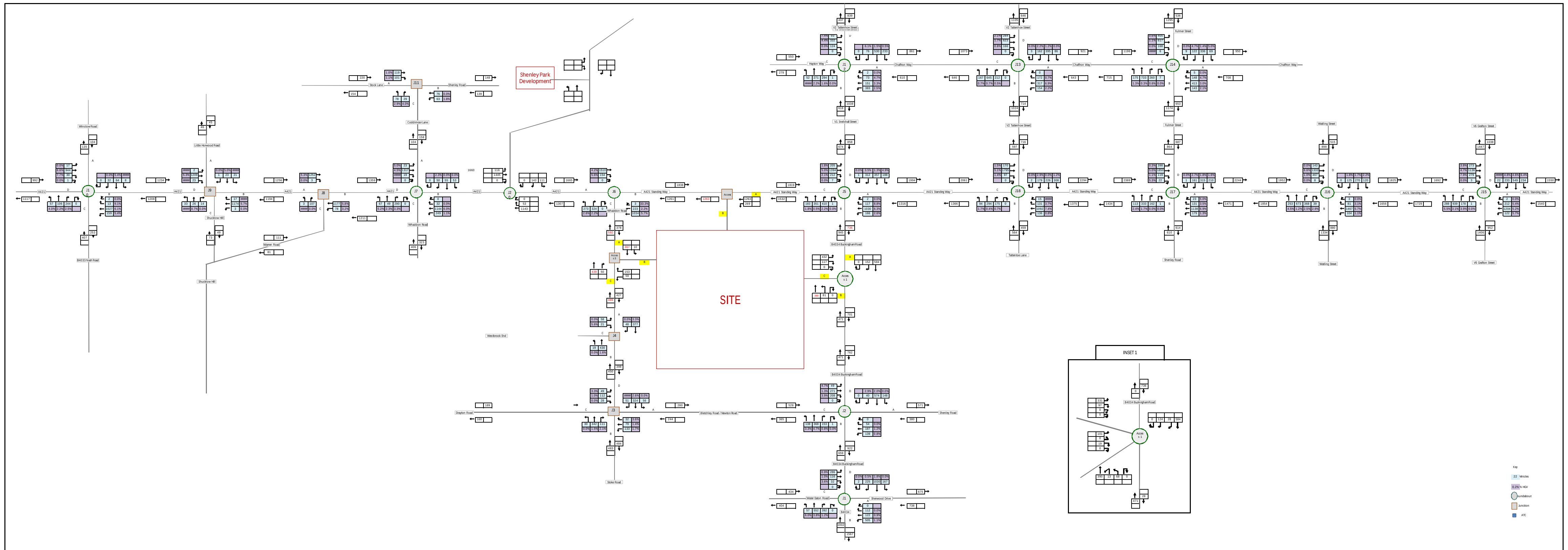


wsp
2 London Square, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Something 2 PM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	10/12/2020				

Network Diagram & Matrices

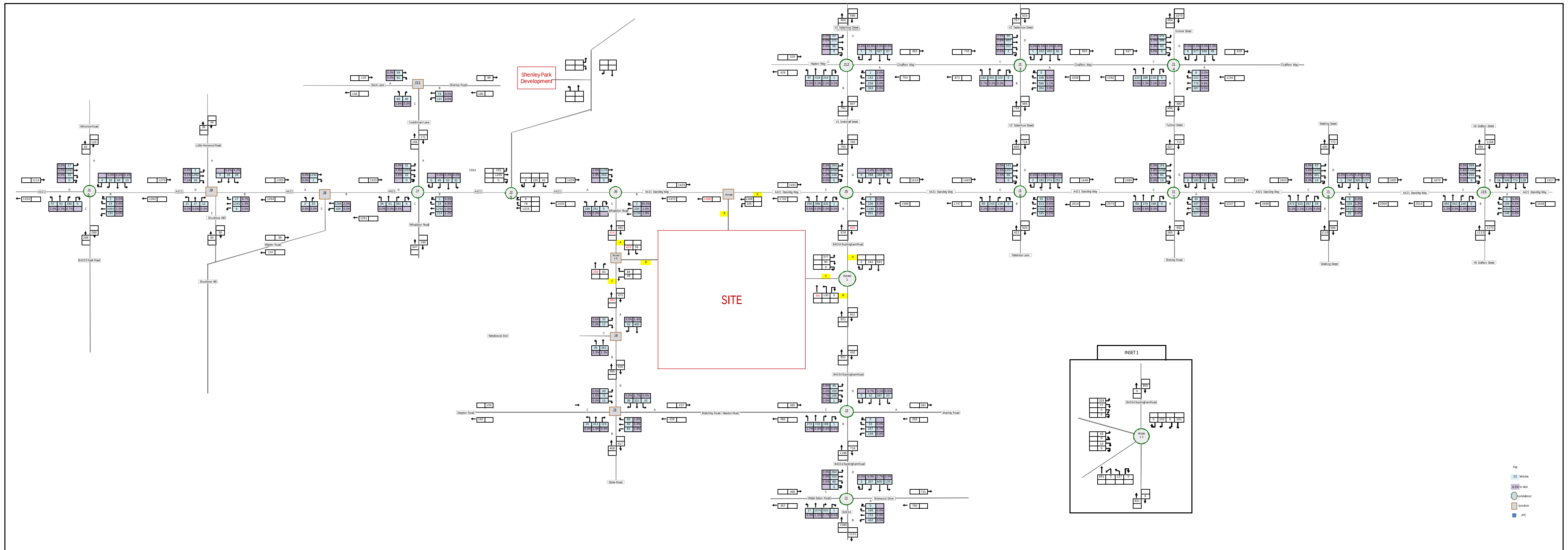


2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Something 3 AM Peak

Drawn by:	WF	**Checked by:**	JS	**Approved by:**	JS
Job No.:	70069442				
Date:	10/12/202				

Network Diagram & Matrices



wsp

2 London Sqaure, Cross Lanes, Guildford
GU1 1UN
T: 01483 528 400

2033 Do Something 3 PM Peak

Drawn by:	WF	Checked by:	JS	Approved by:	JS
Job No.:	#######				
Date:	#######				

Network Diagram & Matrices

Appendix C

BASE JUNCTION CAPACITY ASSESSMENT RESULTS

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

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

Filename: J3 - Post Calibration Adjustment.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J3
Report generation date: 18/12/2020 15:42:59

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2020 Base									
Stream B-ACD	D1	12.9	113.50	0.99	F	D2	6.1	60.99	0.89	F
Stream A-BCD		0.1	5.74	0.06	A		0.2	6.01	0.12	A
Stream D-ABC		4.1	47.64	0.83	E		3.5	39.86	0.79	E
Stream C-ABD		0.1	5.79	0.05	A		0.0	5.92	0.03	A
	2033 Base									
Stream B-ACD	D13	47.0	373.57	1.19	F	D14	27.1	208.37	1.09	F
Stream A-BCD		0.1	5.69	0.08	A		0.2	6.05	0.14	A
Stream D-ABC		16.1	147.23	1.02	F		9.9	98.01	0.96	F
Stream C-ABD		0.1	5.79	0.06	A		0.0	5.93	0.03	A
	2033 Base + CD + D									
Stream B-ACD	D15	72.5	614.15	1.30	F	D16	52.9	437.38	1.22	F
Stream A-BCD		0.1	5.71	0.08	A		0.2	6.09	0.14	A
Stream D-ABC		46.0	416.88	1.20	F		27.5	221.76	1.10	F
Stream C-ABD		0.1	5.74	0.06	A		0.0	5.83	0.03	A
	2033 Base + CD + D with TP									
Stream B-ACD	D17	67.9	577.17	1.28	F	D18	49.0	396.85	1.20	F
Stream A-BCD		0.1	5.71	0.08	A		0.2	6.08	0.14	A
Stream D-ABC		41.4	366.06	1.18	F		24.1	199.11	1.08	F
Stream C-ABD		0.1	5.75	0.06	A		0.0	5.84	0.03	A
	2033 Base + CD + D - ST									
Stream B-ACD	D19	79.7	672.66	1.32	F	D20	60.1	507.85	1.25	F
Stream A-BCD		0.1	5.71	0.08	A		0.2	6.09	0.14	A
Stream D-ABC		57.7	538.56	1.26	F		31.1	246.80	1.12	F
Stream C-ABD		0.1	5.73	0.06	A		0.0	5.82	0.03	A

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

File summary

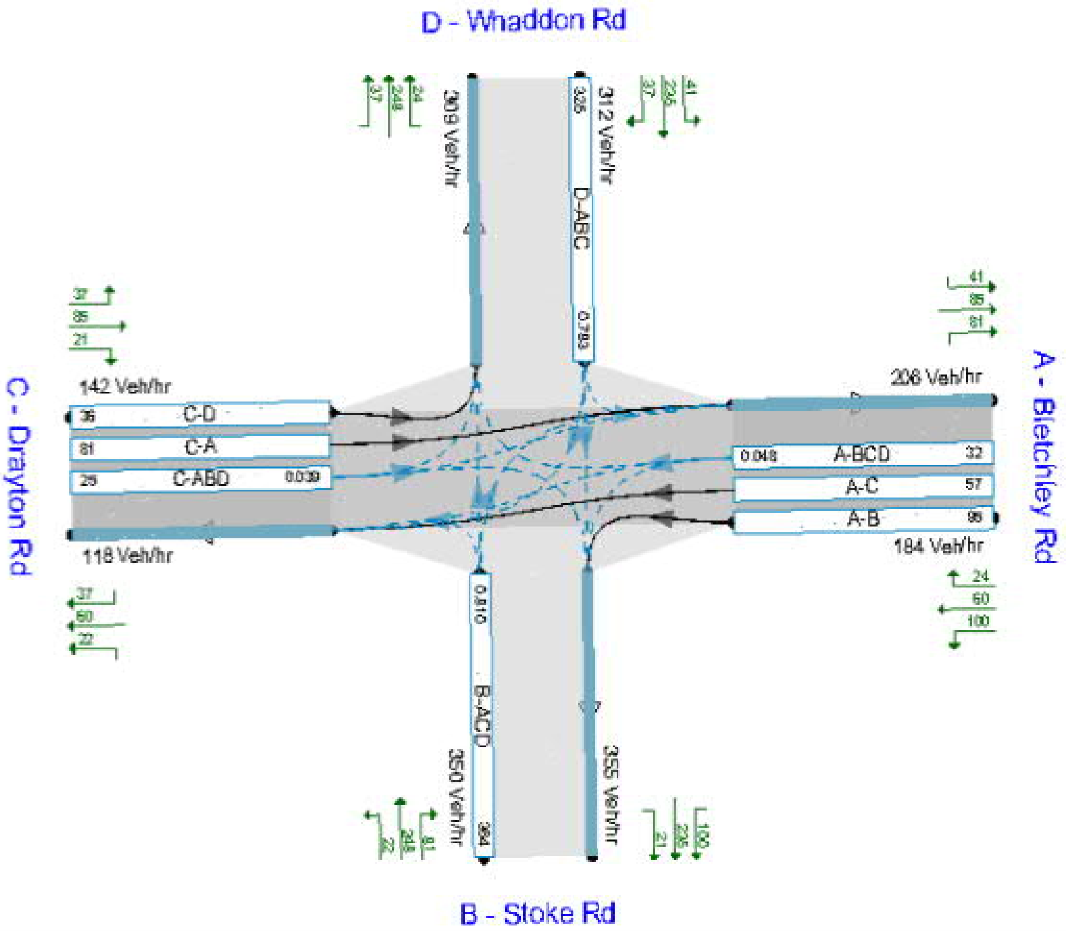
File Description

Title	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road
Location	51°58'28.41"N, 0°45'57.62"W
Site number	3
Date	03/12/2020
Version	

Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	Whaddon Road arm modelled as one lane and reduced width of 2.5m to calibrate against queue lengths

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	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D21	2033 Base + CD + D + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D22	2033 Base + CD + D + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓
D23	2033 Base + CD + SP	AM	ONE HOUR	07:30	09:00	15	✓
D24	2033 Base + CD + SP	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D2,D13,D14,D15,D16,D17,D18,D19,D20	100.000	100.000

2020 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		55.60	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Bletchley Rd		Major
B	Stoke Rd		Minor
C	Drayton Rd		Major
D	Whaddon Rd		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Bletchley Rd	6.00			59.0	✓	0.00
C - Drayton Rd	6.00			79.3	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Stoke Rd	One lane	3.40	16	41
D - Whaddon Rd	One lane	2.50	30	33

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
A-D	608	-	-	-	-	-	-	0.236	0.337	0.236	-	-	-
B-A	523	0.095	0.241	0.241	-	-	-	0.151	0.344	-	0.241	0.241	0.120
B-C	676	0.104	0.262	-	-	-	-	-	-	-	-	-	-
B-D, nearside lane	523	0.095	0.241	0.241	-	-	-	0.151	0.344	0.151	-	-	-
B-D, offside lane	523	0.095	0.241	0.241	-	-	-	0.151	0.344	0.151	-	-	-
C-B	620	0.240	0.240	0.343	-	-	-	-	-	-	-	-	-
D-A	612	-	-	-	-	-	-	0.237	-	0.094	-	-	-
D-B, nearside lane	478	0.139	0.139	0.315	-	-	-	0.220	0.220	0.087	-	-	-
D-B, offside lane	478	0.139	0.139	0.315	-	-	-	0.220	0.220	0.087	-	-	-
D-C	478	-	0.139	0.315	0.110	0.220	0.220	0.220	0.220	0.087	-	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	213	100.000
B - Stoke Rd		ONE HOUR	✓	387	100.000
C - Drayton Rd		ONE HOUR	✓	152	100.000
D - Whaddon Rd		ONE HOUR	✓	304	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	**B - Stoke Rd**	**C - Drayton Rd**	**D - Whaddon Rd**
From	**A - Bletchley Rd**	0	116	69	28
	B - Stoke Rd	97	0	26	264
	C - Drayton Rd	98	24	0	30
	D - Whaddon Rd	49	227	28	0

Proportions

		To			
		A - Bletchley Rd	**B - Stoke Rd**	**C - Drayton Rd**	**D - Whaddon Rd**
From	**A - Bletchley Rd**	0.00	0.54	0.32	0.13
	B - Stoke Rd	0.25	0.00	0.07	0.68
	C - Drayton Rd	0.64	0.16	0.00	0.20
	D - Whaddon Rd	0.16	0.75	0.09	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	**B - Stoke Rd**	**C - Drayton Rd**	**D - Whaddon Rd**
From	**A - Bletchley Rd**	0	2	1	4
	B - Stoke Rd	2	0	0	2
	C - Drayton Rd	1	0	0	3
	D - Whaddon Rd	0	3	11	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	**B - Stoke Rd**	**C - Drayton Rd**	**D - Whaddon Rd**
From	**A - Bletchley Rd**	1.000	1.022	1.014	1.036
	B - Stoke Rd	1.021	1.000	1.000	1.015
	C - Drayton Rd	1.010	1.000	1.000	1.033
	D - Whaddon Rd	1.000	1.026	1.107	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	**07:30-07:45**	160	164
	07:45-08:00	191	196
	08:00-08:15	235	240
	08:15-08:30	235	240
	08:30-08:45	191	196
	08:45-09:00	160	164
B - Stoke Rd	**07:30-07:45**	291	296
	07:45-08:00	348	353
	08:00-08:15	426	433
	08:15-08:30	426	433
	08:30-08:45	348	353
	08:45-09:00	291	296
C - Drayton Rd	**07:30-07:45**	114	116
	07:45-08:00	137	138
	08:00-08:15	167	170
	08:15-08:30	167	170
	08:30-08:45	137	138
	08:45-09:00	114	116
D - Whaddon Rd	**07:30-07:45**	229	236
	07:45-08:00	273	281
	08:00-08:15	335	345
	08:15-08:30	335	345
	08:30-08:45	273	281
	08:45-09:00	229	236

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.99	113.50	12.9	F	355	533
A-BCD	0.06	5.74	0.1	A	35	52
A-B					101	151
A-C					60	90
D-ABC	0.83	47.64	4.1	E	279	418
C-ABD	0.05	5.79	0.1	A	27	41
C-D					26	40
C-A					86	129

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	291	73	463	0.630	285	0.0	1.6	19.611	C
A-BCD	27	7	654	0.041	27	0.0	0.1	5.736	A
A-B	84	21			84				
A-C	50	12			50				
D-ABC	229	57	431	0.531	225	0.0	1.1	17.122	C
C-ABD	21	5	643	0.033	21	0.0	0.0	5.785	A
C-D	22	5			22				
C-A	71	18			71				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	348	87	450	0.773	342	1.6	3.0	31.756	D
A-BCD	34	8	668	0.050	34	0.1	0.1	5.681	A
A-B	99	25			99				
A-C	59	15			59				
D-ABC	273	68	420	0.650	271	1.1	1.7	23.604	C
C-ABD	26	7	648	0.041	26	0.0	0.1	5.786	A
C-D	26	6			26				
C-A	85	21			85				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	426	107	433	0.984	400	3.0	9.5	75.319	F
A-BCD	44	11	687	0.064	44	0.1	0.1	5.605	A
A-B	120	30			120				
A-C	71	18			71				
D-ABC	335	84	406	0.824	327	1.7	3.8	41.383	E
C-ABD	34	8	655	0.051	34	0.1	0.1	5.790	A
C-D	31	8			31				
C-A	102	26			102				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	426	107	432	0.985	412	9.5	12.9	113.498	F
A-BCD	44	11	687	0.064	44	0.1	0.1	5.603	A
A-B	119	30			119				
A-C	71	18			71				
D-ABC	335	84	405	0.826	333	3.8	4.1	47.639	E
C-ABD	34	8	655	0.051	34	0.1	0.1	5.791	A
C-D	31	8			31				
C-A	102	26			102				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	348	87	449	0.774	383	12.9	4.1	65.246	F
A-BCD	34	8	668	0.050	34	0.1	0.1	5.680	A
A-B	99	25			99				
A-C	59	15			59				
D-ABC	273	68	419	0.652	282	4.1	2.0	27.597	D

C-ABD	26	7	648	0.041	26	0.1	0.1	5.794	A
C-D	26	6			26				
C-A	84	21			84				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	291	73	462	0.631	300	4.1	1.8	23.361	C
A-BCD	27	7	654	0.041	27	0.1	0.1	5.739	A
A-B	84	21			84				
A-C	50	12			50				
D-ABC	229	57	430	0.532	232	2.0	1.2	18.467	C
C-ABD	21	5	643	0.033	21	0.1	0.0	5.791	A
C-D	22	5			22				
C-A	71	18			71				

2020 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		35.29	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	207	100.000
B - Stoke Rd		ONE HOUR	✓	350	100.000
C - Drayton Rd		ONE HOUR	✓	102	100.000
D - Whaddon Rd		ONE HOUR	✓	300	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	70	80	57
	B - Stoke Rd	107	0	27	216
	C - Drayton Rd	62	13	0	27
	D - Whaddon Rd	36	242	22	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.34	0.39	0.28
	B - Stoke Rd	0.31	0.00	0.08	0.62
	C - Drayton Rd	0.61	0.13	0.00	0.26
	D - Whaddon Rd	0.12	0.81	0.07	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	3	0	2
	B - Stoke Rd	1	0	0	2
	C - Drayton Rd	2	0	0	0
	D - Whaddon Rd	0	2	0	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.029	1.000	1.018
	B - Stoke Rd	1.009	1.000	1.000	1.019
	C - Drayton Rd	1.016	1.000	1.000	1.000
	D - Whaddon Rd	1.000	1.017	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	**16:45-17:00**	156	158
	17:00-17:15	186	189
	17:15-17:30	228	231
	17:30-17:45	228	231
	17:45-18:00	186	189
	18:00-18:15	156	158
B - Stoke Rd	**16:45-17:00**	263	267
	17:00-17:15	315	319
	17:15-17:30	385	391
	17:30-17:45	385	391
	17:45-18:00	315	319
	18:00-18:15	263	267
C - Drayton Rd	**16:45-17:00**	77	78
	17:00-17:15	92	93
	17:15-17:30	112	113
	17:30-17:45	112	113
	17:45-18:00	92	93
	18:00-18:15	77	78
D - Whaddon Rd	**16:45-17:00**	226	229
	17:00-17:15	270	273
	17:15-17:30	330	335
	17:30-17:45	330	335
	17:45-18:00	270	273
	18:00-18:15	226	229

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.89	60.99	6.1	F	321	482
A-BCD	0.12	6.01	0.2	A	66	100
A-B					58	86
A-C					66	99
D-ABC	0.79	39.86	3.5	E	275	413
C-ABD	0.03	5.92	0.0	A	14	21
C-D					24	36
C-A					56	83

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	263	66	465	0.566	258	0.0	1.2	17.026	C
A-BCD	52	13	655	0.079	51	0.0	0.1	5.967	A
A-B	49	12			49				
A-C	55	14			55				
D-ABC	226	56	439	0.514	222	0.0	1.0	16.266	C
C-ABD	11	3	623	0.018	11	0.0	0.0	5.884	A
C-D	20	5			20				
C-A	46	11			46				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	315	79	453	0.695	311	1.2	2.1	24.784	C
A-BCD	64	16	666	0.097	64	0.1	0.1	5.983	A
A-B	57	14			57				
A-C	65	16			65				
D-ABC	270	67	430	0.627	267	1.0	1.6	21.797	C
C-ABD	13	3	623	0.022	13	0.0	0.0	5.899	A
C-D	24	6			24				
C-A	55	14			55				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	385	96	436	0.884	373	2.1	5.2	49.064	E
A-BCD	83	21	682	0.122	83	0.1	0.2	6.010	A
A-B	68	17			68				
A-C	77	19			77				
D-ABC	330	83	418	0.791	324	1.6	3.2	35.981	E
C-ABD	17	4	625	0.027	17	0.0	0.0	5.920	A
C-D	29	7			29				
C-A	66	17			66				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	385	96	435	0.885	382	5.2	6.1	60.988	F
A-BCD	83	21	682	0.122	83	0.2	0.2	6.013	A
A-B	68	17			68				
A-C	77	19			77				
D-ABC	330	83	417	0.791	329	3.2	3.5	39.857	E
C-ABD	17	4	625	0.027	17	0.0	0.0	5.922	A
C-D	29	7			29				
C-A	66	17			66				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	315	79	452	0.696	329	6.1	2.5	31.873	D
A-BCD	64	16	666	0.097	65	0.2	0.1	5.990	A
A-B	57	14			57				
A-C	65	16			65				
D-ABC	270	67	430	0.628	276	3.5	1.8	24.377	C
C-ABD	13	3	623	0.022	13	0.0	0.0	5.903	A
C-D	24	6			24				
C-A	55	14			55				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	263	66	465	0.567	268	2.5	1.4	18.708	C
A-BCD	52	13	655	0.079	52	0.1	0.1	5.976	A
A-B	48	12			48				
A-C	55	14			55				
D-ABC	226	56	439	0.515	229	1.8	1.1	17.332	C
C-ABD	11	3	623	0.018	11	0.0	0.0	5.889	A
C-D	20	5			20				
C-A	46	11			46				

2033 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		179.71	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	244	100.000
B - Stoke Rd		ONE HOUR	✓	448	100.000
C - Drayton Rd		ONE HOUR	✓	175	100.000
D - Whaddon Rd		ONE HOUR	✓	362	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	133	79	32
	B - Stoke Rd	111	0	30	307
	C - Drayton Rd	112	28	0	35
	D - Whaddon Rd	56	272	34	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.54	0.32	0.13
	B - Stoke Rd	0.25	0.00	0.07	0.69
	C - Drayton Rd	0.64	0.16	0.00	0.20
	D - Whaddon Rd	0.16	0.75	0.09	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	2	1	4
	B - Stoke Rd	2	0	0	2
	C - Drayton Rd	1	0	0	3
	D - Whaddon Rd	0	3	11	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.017	1.014	1.036
	B - Stoke Rd	1.021	1.000	1.000	1.015
	C - Drayton Rd	1.010	1.000	1.000	1.033
	D - Whaddon Rd	1.000	1.026	1.107	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	**07:30-07:45**	184	187
	07:45-08:00	220	224
	08:00-08:15	269	274
	08:15-08:30	269	274
	08:30-08:45	220	224
	08:45-09:00	184	187
B - Stoke Rd	**07:30-07:45**	337	343
	07:45-08:00	403	409
	08:00-08:15	493	501
	08:15-08:30	493	501
	08:30-08:45	403	409
	08:45-09:00	337	343
C - Drayton Rd	**07:30-07:45**	132	133
	07:45-08:00	157	159
	08:00-08:15	193	195
	08:15-08:30	193	195
	08:30-08:45	157	159
	08:45-09:00	132	133
D - Whaddon Rd	**07:30-07:45**	273	281
	07:45-08:00	326	335
	08:00-08:15	399	411
	08:15-08:30	399	411
	08:30-08:45	326	335
	08:45-09:00	273	281

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.19	373.57	47.0	F	411	617
A-BCD	0.08	5.69	0.1	A	42	63
A-B					114	172
A-C					68	102
D-ABC	1.02	147.23	16.1	F	332	499
C-ABD	0.06	5.79	0.1	A	32	48
C-D					30	46
C-A					98	147

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	337	84	453	0.745	327	0.0	2.6	26.745	D
A-BCD	32	8	664	0.048	32	0.0	0.1	5.688	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	273	68	422	0.646	266	0.0	1.7	22.191	C
C-ABD	25	6	647	0.039	25	0.0	0.1	5.780	A
C-D	25	6			25				
C-A	81	20			81				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	403	101	438	0.919	387	2.6	6.5	57.448	F
A-BCD	40	10	680	0.059	40	0.1	0.1	5.630	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	326	81	410	0.794	319	1.7	3.3	37.213	E
C-ABD	31	8	653	0.048	31	0.1	0.1	5.785	A
C-D	30	7			30				
C-A	96	24			96				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	493	123	418	1.181	411	6.5	27.1	168.948	F
A-BCD	53	13	702	0.076	53	0.1	0.1	5.551	A
A-B	135	34			135				
A-C	81	20			81				
D-ABC	399	100	393	1.014	368	3.3	10.9	90.846	F
C-ABD	40	10	662	0.061	40	0.1	0.1	5.788	A
C-D	36	9			36				
C-A	116	29			116				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	493	123	415	1.188	414	27.1	47.0	336.012	F
A-BCD	53	13	702	0.076	53	0.1	0.1	5.551	A
A-B	135	34			135				
A-C	80	20			80				
D-ABC	399	100	390	1.022	378	10.9	16.1	147.235	F
C-ABD	40	10	662	0.061	40	0.1	0.1	5.792	A
C-D	36	9			36				
C-A	116	29			116				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	403	101	434	0.929	425	47.0	41.5	373.575	F
A-BCD	40	10	680	0.059	40	0.1	0.1	5.626	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	326	81	404	0.805	368	16.1	5.4	103.282	F
C-ABD	31	8	653	0.048	31	0.1	0.1	5.792	A
C-D	30	7			30				
C-A	96	24			96				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	337	84	451	0.748	441	41.5	15.7	240.753	F
A-BCD	32	8	664	0.048	32	0.1	0.1	5.692	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	273	68	417	0.654	286	5.4	2.0	29.800	D
C-ABD	25	6	647	0.039	25	0.1	0.1	5.788	A
C-D	25	6			25				
C-A	81	20			81				

2033 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		107.99	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	239	100.000
B - Stoke Rd		ONE HOUR	✓	414	100.000
C - Drayton Rd		ONE HOUR	✓	120	100.000
D - Whaddon Rd		ONE HOUR	✓	352	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	81	92	66
	B - Stoke Rd	123	0	31	259
	C - Drayton Rd	72	15	0	33
	D - Whaddon Rd	42	284	26	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.34	0.39	0.28
	B - Stoke Rd	0.30	0.00	0.08	0.63
	C - Drayton Rd	0.60	0.13	0.00	0.28
	D - Whaddon Rd	0.12	0.81	0.07	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	3	0	2
	B - Stoke Rd	1	0	0	2
	C - Drayton Rd	2	0	0	0
	D - Whaddon Rd	0	2	0	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.029	1.000	1.018
	B - Stoke Rd	1.009	1.000	1.000	1.019
	C - Drayton Rd	1.016	1.000	1.000	1.000
	D - Whaddon Rd	1.000	1.017	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	16:45-17:00	180	182
	17:00-17:15	215	218
	17:15-17:30	263	267
	17:30-17:45	263	267
	17:45-18:00	215	218
	18:00-18:15	180	182
B - Stoke Rd	16:45-17:00	311	316
	17:00-17:15	372	377
	17:15-17:30	455	462
	17:30-17:45	455	462
	17:45-18:00	372	377
	18:00-18:15	311	316
C - Drayton Rd	16:45-17:00	90	91
	17:00-17:15	107	109
	17:15-17:30	132	133
	17:30-17:45	132	133
	17:45-18:00	107	109
	18:00-18:15	90	91
D - Whaddon Rd	16:45-17:00	265	268
	17:00-17:15	316	320
	17:15-17:30	387	392
	17:30-17:45	387	392
	17:45-18:00	316	320
	18:00-18:15	265	268

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.09	208.37	27.1	F	380	569
A-BCD	0.14	6.05	0.2	A	80	119
A-B					65	98
A-C					74	112
D-ABC	0.96	98.01	9.9	F	323	484
C-ABD	0.03	5.93	0.0	A	16	25
C-D					29	44
C-A					64	96

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	311	78	456	0.683	303	0.0	2.0	22.624	C
A-BCD	62	15	663	0.093	61	0.0	0.1	5.975	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	265	66	432	0.613	259	0.0	1.5	20.180	C
C-ABD	13	3	624	0.021	13	0.0	0.0	5.887	A
C-D	24	6			24				
C-A	53	13			53				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	372	93	441	0.843	363	2.0	4.2	41.768	E
A-BCD	77	19	677	0.114	77	0.1	0.2	6.005	A
A-B	64	16			64				
A-C	74	18			74				
D-ABC	316	79	421	0.751	311	1.5	2.7	31.468	D
C-ABD	16	4	626	0.025	16	0.0	0.0	5.903	A
C-D	29	7			29				
C-A	63	16			63				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	455	114	421	1.082	405	4.2	16.7	115.032	F
A-BCD	100	25	695	0.144	100	0.2	0.2	6.050	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	387	97	406	0.953	367	2.7	7.7	69.101	F
C-ABD	20	5	628	0.032	20	0.0	0.0	5.925	A
C-D	35	9			35				
C-A	76	19			76				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	455	114	419	1.087	414	16.7	27.1	208.368	F
A-BCD	100	25	695	0.144	100	0.2	0.2	6.054	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	387	97	405	0.956	378	7.7	9.9	98.009	F
C-ABD	20	5	628	0.032	20	0.0	0.0	5.929	A
C-D	35	9			35				
C-A	76	19			76				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	372	93	438	0.849	422	27.1	14.5	183.129	F
A-BCD	77	19	677	0.114	77	0.2	0.2	6.010	A
A-B	64	16			64				
A-C	73	18			73				
D-ABC	316	79	419	0.755	342	9.9	3.6	54.521	F
C-ABD	16	4	625	0.025	16	0.0	0.0	5.907	A
C-D	29	7			29				
C-A	63	16			63				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	311	78	454	0.686	360	14.5	2.4	51.158	F
A-BCD	62	15	663	0.093	62	0.2	0.1	5.990	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	265	66	430	0.615	272	3.6	1.7	23.692	C
C-ABD	13	3	624	0.021	13	0.0	0.0	5.891	A
C-D	24	6			24				
C-A	53	13			53				

2033 Base + CD + D, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		352.95	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	244	100.000
B - Stoke Rd		ONE HOUR	✓	478	100.000
C - Drayton Rd		ONE HOUR	✓	187	100.000
D - Whaddon Rd		ONE HOUR	✓	415	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	133	79	32
	B - Stoke Rd	111	0	30	337
	C - Drayton Rd	112	28	0	47
	D - Whaddon Rd	56	312	47	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.54	0.32	0.13
	B - Stoke Rd	0.23	0.00	0.06	0.70
	C - Drayton Rd	0.60	0.15	0.00	0.25
	D - Whaddon Rd	0.14	0.75	0.11	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	2	1	4
	B - Stoke Rd	2	0	0	2
	C - Drayton Rd	1	0	0	3
	D - Whaddon Rd	0	3	11	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.017	1.014	1.036
	B - Stoke Rd	1.021	1.000	1.000	1.015
	C - Drayton Rd	1.010	1.000	1.000	1.033
	D - Whaddon Rd	1.000	1.026	1.107	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	**07:30-07:45**	184	187
	07:45-08:00	220	224
	08:00-08:15	269	274
	08:15-08:30	269	274
	08:30-08:45	220	224
	08:45-09:00	184	187
B - Stoke Rd	**07:30-07:45**	360	365
	07:45-08:00	430	436
	08:00-08:15	526	535
	08:15-08:30	526	535
	08:30-08:45	430	436
	08:45-09:00	360	365
C - Drayton Rd	**07:30-07:45**	141	143
	07:45-08:00	168	170
	08:00-08:15	205	208
	08:15-08:30	205	208
	08:30-08:45	168	170
	08:45-09:00	141	143
D - Whaddon Rd	**07:30-07:45**	313	323
	07:45-08:00	373	385
	08:00-08:15	457	472
	08:15-08:30	457	472
	08:30-08:45	373	385
	08:45-09:00	313	323

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.30	614.15	72.5	F	439	658
A-BCD	0.08	5.71	0.1	A	42	63
A-B					114	172
A-C					68	102
D-ABC	1.20	416.88	46.0	F	381	571
C-ABD	0.06	5.74	0.1	A	33	49
C-D					41	61
C-A					98	147

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	360	90	450	0.800	347	0.0	3.3	31.652	D
A-BCD	32	8	663	0.048	32	0.0	0.1	5.704	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	313	78	416	0.752	302	0.0	2.7	29.395	D
C-ABD	25	6	653	0.039	25	0.0	0.1	5.729	A
C-D	34	8			34				
C-A	81	20			81				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	430	107	434	0.989	403	3.3	10.0	78.921	F
A-BCD	40	10	678	0.059	40	0.1	0.1	5.647	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	373	93	403	0.926	357	2.7	6.6	63.100	F
C-ABD	32	8	661	0.048	32	0.1	0.1	5.722	A
C-D	40	10			40				
C-A	96	24			96				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	526	132	412	1.277	409	10.0	39.3	238.093	F
A-BCD	53	13	700	0.076	53	0.1	0.1	5.572	A
A-B	135	34			135				
A-C	80	20			80				
D-ABC	457	114	385	1.189	378	6.6	26.3	179.930	F
C-ABD	41	10	671	0.061	41	0.1	0.1	5.715	A
C-D	48	12			48				
C-A	116	29			116				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	526	132	405	1.299	405	39.3	69.7	494.281	F
A-BCD	53	13	700	0.076	53	0.1	0.1	5.572	A
A-B	135	34			135				
A-C	80	20			80				
D-ABC	457	114	380	1.204	378	26.3	46.0	359.674	F
C-ABD	41	10	671	0.061	41	0.1	0.1	5.717	A
C-D	48	12			48				
C-A	116	29			116				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	430	107	420	1.023	419	69.7	72.5	614.146	F
A-BCD	40	10	678	0.059	40	0.1	0.1	5.648	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	373	93	392	0.952	384	46.0	43.4	416.883	F
C-ABD	32	8	660	0.048	32	0.1	0.1	5.732	A
C-D	40	10			40				
C-A	96	24			96				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	360	90	437	0.824	431	72.5	54.8	533.999	F
A-BCD	32	8	663	0.048	32	0.1	0.1	5.710	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	313	78	405	0.772	396	43.4	22.6	305.024	F
C-ABD	25	6	653	0.039	26	0.1	0.1	5.737	A
C-D	34	8			34				
C-A	81	20			81				

2033 Base + CD + D, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		235.48	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	239	100.000
B - Stoke Rd		ONE HOUR	✓	457	100.000
C - Drayton Rd		ONE HOUR	✓	133	100.000
D - Whaddon Rd		ONE HOUR	✓	395	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	81	92	66
	B - Stoke Rd	123	0	31	302
	C - Drayton Rd	72	15	0	47
	D - Whaddon Rd	42	316	37	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.34	0.39	0.28
	B - Stoke Rd	0.27	0.00	0.07	0.66
	C - Drayton Rd	0.54	0.11	0.00	0.35
	D - Whaddon Rd	0.11	0.80	0.09	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	3	0	2
	B - Stoke Rd	1	0	0	2
	C - Drayton Rd	2	0	0	0
	D - Whaddon Rd	0	2	0	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.029	1.000	1.018
	B - Stoke Rd	1.009	1.000	1.000	1.019
	C - Drayton Rd	1.016	1.000	1.000	1.000
	D - Whaddon Rd	1.000	1.017	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	**16:45-17:00**	180	182
	17:00-17:15	215	218
	17:15-17:30	263	267
	17:30-17:45	263	267
	17:45-18:00	215	218
	18:00-18:15	180	182
B - Stoke Rd	**16:45-17:00**	344	349
	17:00-17:15	411	417
	17:15-17:30	503	510
	17:30-17:45	503	510
	17:45-18:00	411	417
	18:00-18:15	344	349
C - Drayton Rd	**16:45-17:00**	100	101
	17:00-17:15	120	121
	17:15-17:30	147	148
	17:30-17:45	147	148
	17:45-18:00	120	121
	18:00-18:15	100	101
D - Whaddon Rd	**16:45-17:00**	297	301
	17:00-17:15	355	360
	17:15-17:30	435	440
	17:30-17:45	435	440
	17:45-18:00	355	360
	18:00-18:15	297	301

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.22	437.38	52.9	F	419	629
A-BCD	0.14	6.09	0.2	A	80	119
A-B					65	98
A-C					74	112
D-ABC	1.10	221.76	27.5	F	362	543
C-ABD	0.03	5.83	0.0	A	17	25
C-D					42	63
C-A					64	96

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	344	86	453	0.759	333	0.0	2.8	27.821	D
A-BCD	62	15	661	0.093	61	0.0	0.1	5.995	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	297	74	427	0.696	289	0.0	2.1	24.729	C
C-ABD	13	3	631	0.021	13	0.0	0.0	5.822	A
C-D	34	9			34				
C-A	53	13			53				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	411	103	438	0.937	393	2.8	7.2	62.129	F
A-BCD	77	19	674	0.114	77	0.1	0.2	6.030	A
A-B	64	16			64				
A-C	73	18			73				
D-ABC	355	89	416	0.854	346	2.1	4.4	45.866	E
C-ABD	16	4	634	0.026	16	0.0	0.0	5.825	A
C-D	41	10			41				
C-A	63	16			63				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	503	126	417	1.206	411	7.2	30.1	185.052	F
A-BCD	100	25	692	0.145	100	0.2	0.2	6.081	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	435	109	399	1.088	385	4.4	16.8	121.916	F
C-ABD	21	5	638	0.033	21	0.0	0.0	5.829	A
C-D	50	12			50				
C-A	76	19			76				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	503	126	412	1.219	411	30.1	52.9	376.144	F
A-BCD	100	25	692	0.145	100	0.2	0.2	6.087	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	435	109	396	1.096	392	16.8	27.5	221.762	F
C-ABD	21	5	638	0.033	21	0.0	0.0	5.833	A
C-D	50	12			50				
C-A	76	19			76				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	411	103	429	0.957	421	52.9	50.3	437.384	F
A-BCD	77	19	674	0.114	77	0.2	0.2	6.034	A
A-B	64	16			64				
A-C	73	18			73				
D-ABC	355	89	410	0.866	395	27.5	17.4	208.453	F
C-ABD	16	4	634	0.026	16	0.0	0.0	5.832	A
C-D	41	10			41				
C-A	63	16			63				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	344	86	447	0.768	439	50.3	26.6	319.831	F
A-BCD	62	15	661	0.093	62	0.2	0.1	6.010	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	297	74	422	0.705	356	17.4	2.8	75.176	F
C-ABD	13	3	631	0.021	13	0.0	0.0	5.826	A
C-D	34	9			34				
C-A	53	13			53				

2033 Base + CD + D with TP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		323.03	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	244	100.000
B - Stoke Rd		ONE HOUR	✓	474	100.000
C - Drayton Rd		ONE HOUR	✓	185	100.000
D - Whaddon Rd		ONE HOUR	✓	408	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	133	79	32
	B - Stoke Rd	111	0	30	333
	C - Drayton Rd	112	28	0	45
	D - Whaddon Rd	56	306	46	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.55	0.32	0.13
	B - Stoke Rd	0.23	0.00	0.06	0.70
	C - Drayton Rd	0.61	0.15	0.00	0.24
	D - Whaddon Rd	0.14	0.75	0.11	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	2	1	4
	B - Stoke Rd	2	0	0	2
	C - Drayton Rd	1	0	0	3
	D - Whaddon Rd	0	3	11	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.017	1.014	1.036
	B - Stoke Rd	1.021	1.000	1.000	1.015
	C - Drayton Rd	1.010	1.000	1.000	1.033
	D - Whaddon Rd	1.000	1.026	1.107	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	**07:30-07:45**	184	187
	07:45-08:00	219	223
	08:00-08:15	269	274
	08:15-08:30	269	274
	08:30-08:45	219	223
	08:45-09:00	184	187
B - Stoke Rd	**07:30-07:45**	357	362
	07:45-08:00	426	433
	08:00-08:15	522	530
	08:15-08:30	522	530
	08:30-08:45	426	433
	08:45-09:00	357	362
C - Drayton Rd	**07:30-07:45**	139	141
	07:45-08:00	166	169
	08:00-08:15	204	207
	08:15-08:30	204	207
	08:30-08:45	166	169
	08:45-09:00	139	141
D - Whaddon Rd	**07:30-07:45**	307	317
	07:45-08:00	367	378
	08:00-08:15	449	464
	08:15-08:30	449	464
	08:30-08:45	367	378
	08:45-09:00	307	317

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.28	577.17	67.9	F	435	652
A-BCD	0.08	5.71	0.1	A	42	62
A-B					114	172
A-C					68	102
D-ABC	1.18	366.06	41.4	F	374	562
C-ABD	0.06	5.75	0.1	A	33	50
C-D					39	59
C-A					97	146

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	357	89	451	0.792	344	0.0	3.2	30.882	D
A-BCD	32	8	663	0.048	31	0.0	0.1	5.702	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	307	77	416	0.738	297	0.0	2.5	28.252	D
C-ABD	26	6	652	0.039	26	0.0	0.1	5.742	A
C-D	33	8			33				
C-A	81	20			81				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	426	107	435	0.980	402	3.2	9.4	75.469	F
A-BCD	40	10	678	0.059	40	0.1	0.1	5.646	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	367	92	404	0.909	353	2.5	6.0	58.570	F
C-ABD	32	8	659	0.049	32	0.1	0.1	5.737	A
C-D	38	10			38				
C-A	96	24			96				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	522	130	413	1.263	410	9.4	37.4	227.086	F
A-BCD	53	13	700	0.076	53	0.1	0.1	5.570	A
A-B	135	34			135				
A-C	80	20			80				
D-ABC	449	112	385	1.166	378	6.0	23.8	165.334	F
C-ABD	42	10	669	0.062	42	0.1	0.1	5.734	A
C-D	46	12			46				
C-A	116	29			116				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	522	130	407	1.283	406	37.4	66.3	469.792	F
A-BCD	53	13	700	0.076	53	0.1	0.1	5.568	A
A-B	135	34			135				
A-C	80	20			80				
D-ABC	449	112	381	1.180	379	23.8	41.4	326.003	F
C-ABD	42	10	669	0.062	42	0.1	0.1	5.738	A
C-D	46	12			46				
C-A	116	29			116				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	426	107	422	1.009	420	66.3	67.9	577.171	F
A-BCD	40	10	678	0.059	40	0.1	0.1	5.645	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	367	92	394	0.932	384	41.4	37.0	366.060	F
C-ABD	32	8	659	0.049	32	0.1	0.1	5.745	A
C-D	38	10			38				
C-A	96	24			96				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	357	89	439	0.813	433	67.9	48.9	487.717	F
A-BCD	32	8	663	0.048	32	0.1	0.1	5.708	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	307	77	406	0.756	396	37.0	14.9	243.260	F
C-ABD	26	6	652	0.040	26	0.1	0.1	5.750	A
C-D	33	8			33				
C-A	81	20			81				

2033 Base + CD + D with TP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		212.48	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	239	100.000
B - Stoke Rd		ONE HOUR	✓	451	100.000
C - Drayton Rd		ONE HOUR	✓	132	100.000
D - Whaddon Rd		ONE HOUR	✓	389	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	81	92	66
	B - Stoke Rd	123	0	31	296
	C - Drayton Rd	72	15	0	45
	D - Whaddon Rd	42	311	36	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.34	0.39	0.28
	B - Stoke Rd	0.27	0.00	0.07	0.66
	C - Drayton Rd	0.54	0.11	0.00	0.34
	D - Whaddon Rd	0.11	0.80	0.09	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	3	0	2
	B - Stoke Rd	1	0	0	2
	C - Drayton Rd	2	0	0	0
	D - Whaddon Rd	0	2	0	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.029	1.000	1.018
	B - Stoke Rd	1.009	1.000	1.000	1.019
	C - Drayton Rd	1.016	1.000	1.000	1.000
	D - Whaddon Rd	1.000	1.017	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	16:45-17:00	180	182
	17:00-17:15	215	218
	17:15-17:30	263	267
	17:30-17:45	263	267
	17:45-18:00	215	218
	18:00-18:15	180	182
B - Stoke Rd	16:45-17:00	339	344
	17:00-17:15	405	411
	17:15-17:30	496	503
	17:30-17:45	496	503
	17:45-18:00	405	411
	18:00-18:15	339	344
C - Drayton Rd	16:45-17:00	99	100
	17:00-17:15	118	119
	17:15-17:30	145	146
	17:30-17:45	145	146
	17:45-18:00	118	119
	18:00-18:15	99	100
D - Whaddon Rd	16:45-17:00	293	296
	17:00-17:15	349	354
	17:15-17:30	428	433
	17:30-17:45	428	433
	17:45-18:00	349	354
	18:00-18:15	293	296

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.20	396.85	49.0	F	414	620
A-BCD	0.14	6.08	0.2	A	80	119
A-B					65	98
A-C					74	112
D-ABC	1.08	199.11	24.1	F	357	535
C-ABD	0.03	5.84	0.0	A	17	25
C-D					40	60
C-A					64	96

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	339	85	454	0.748	329	0.0	2.6	26.978	D
A-BCD	62	15	662	0.093	61	0.0	0.1	5.992	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	293	73	428	0.684	285	0.0	2.0	23.975	C
C-ABD	13	3	631	0.021	13	0.0	0.0	5.830	A
C-D	33	8			33				
C-A	53	13			53				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	405	101	438	0.924	389	2.6	6.7	58.609	F
A-BCD	77	19	675	0.114	77	0.1	0.2	6.024	A
A-B	64	16			64				
A-C	73	18			73				
D-ABC	349	87	416	0.839	341	2.0	4.1	43.246	E
C-ABD	16	4	633	0.026	16	0.0	0.0	5.835	A
C-D	39	10			39				
C-A	63	16			63				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	496	124	418	1.188	411	6.7	27.9	173.532	F
A-BCD	100	25	693	0.145	100	0.2	0.2	6.076	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	428	107	400	1.069	384	4.1	15.1	112.613	F
C-ABD	21	5	637	0.033	21	0.0	0.0	5.841	A
C-D	48	12			48				
C-A	76	19			76				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	496	124	413	1.200	412	27.9	49.0	349.422	F
A-BCD	100	25	693	0.145	100	0.2	0.2	6.081	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	428	107	398	1.076	392	15.1	24.1	199.114	F
C-ABD	21	5	637	0.033	21	0.0	0.0	5.843	A
C-D	48	12			48				
C-A	76	19			76				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	405	101	431	0.941	422	49.0	44.7	396.851	F
A-BCD	77	19	675	0.114	77	0.2	0.2	6.033	A
A-B	64	16			64				
A-C	73	18			73				
D-ABC	349	87	411	0.850	395	24.1	12.8	174.706	F
C-ABD	16	4	633	0.026	16	0.0	0.0	5.841	A
C-D	39	10			39				
C-A	63	16			63				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	339	85	449	0.755	439	44.7	19.7	269.703	F
A-BCD	62	15	662	0.093	62	0.2	0.1	6.005	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	293	73	423	0.692	334	12.8	2.5	52.033	F
C-ABD	13	3	630	0.021	13	0.0	0.0	5.834	A
C-D	33	8			33				
C-A	53	13			53				

2033 Base + CD + D - ST, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		414.17	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	244	100.000
B - Stoke Rd		ONE HOUR	✓	483	100.000
C - Drayton Rd		ONE HOUR	✓	189	100.000
D - Whaddon Rd		ONE HOUR	✓	431	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	133	79	32
	B - Stoke Rd	111	0	30	342
	C - Drayton Rd	112	28	0	49
	D - Whaddon Rd	56	324	51	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.54	0.32	0.13
	B - Stoke Rd	0.23	0.00	0.06	0.71
	C - Drayton Rd	0.59	0.15	0.00	0.26
	D - Whaddon Rd	0.13	0.75	0.12	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	2	1	4
	B - Stoke Rd	2	0	0	2
	C - Drayton Rd	1	0	0	3
	D - Whaddon Rd	0	3	11	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.017	1.014	1.036
	B - Stoke Rd	1.021	1.000	1.000	1.015
	C - Drayton Rd	1.010	1.000	1.000	1.033
	D - Whaddon Rd	1.000	1.026	1.107	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	07:30-07:45	184	187
	07:45-08:00	220	224
	08:00-08:15	269	274
	08:15-08:30	269	274
	08:30-08:45	220	224
	08:45-09:00	184	187
B - Stoke Rd	07:30-07:45	364	369
	07:45-08:00	434	441
	08:00-08:15	532	540
	08:15-08:30	532	540
	08:30-08:45	434	441
	08:45-09:00	364	369
C - Drayton Rd	07:30-07:45	143	145
	07:45-08:00	170	173
	08:00-08:15	208	212
	08:15-08:30	208	212
	08:30-08:45	170	173
	08:45-09:00	143	145
D - Whaddon Rd	07:30-07:45	325	335
	07:45-08:00	388	400
	08:00-08:15	475	490
	08:15-08:30	475	490
	08:30-08:45	388	400
	08:45-09:00	325	335

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.32	672.66	79.7	F	443	665
A-BCD	0.08	5.71	0.1	A	42	63
A-B					114	172
A-C					68	102
D-ABC	1.26	538.56	57.7	F	396	594
C-ABD	0.06	5.73	0.1	A	33	49
C-D					43	65
C-A					98	147

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	364	91	449	0.810	350	0.0	3.5	32.707	D
A-BCD	32	8	662	0.048	32	0.0	0.1	5.708	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	325	81	414	0.783	312	0.0	3.1	32.290	D
C-ABD	25	6	655	0.039	25	0.0	0.1	5.718	A
C-D	36	9			36				
C-A	81	20			81				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	434	109	433	1.003	405	3.5	10.8	83.785	F
A-BCD	40	10	677	0.059	40	0.1	0.1	5.651	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	388	97	401	0.966	366	3.1	8.4	75.162	F
C-ABD	32	8	662	0.048	32	0.1	0.1	5.708	A
C-D	42	11			42				
C-A	96	24			96				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	532	133	410	1.297	408	10.8	41.9	254.267	F
A-BCD	53	13	699	0.076	53	0.1	0.1	5.577	A
A-B	135	34			135				
A-C	80	20			80				
D-ABC	475	119	382	1.241	378	8.4	32.4	216.983	F
C-ABD	41	10	673	0.061	41	0.1	0.1	5.699	A
C-D	51	13			51				
C-A	116	29			116				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	532	133	402	1.325	401	41.9	74.6	531.842	F
A-BCD	53	13	699	0.076	53	0.1	0.1	5.579	A
A-B	135	34			135				
A-C	80	20			80				
D-ABC	475	119	377	1.260	376	32.4	57.1	441.685	F
C-ABD	41	10	673	0.061	41	0.1	0.1	5.701	A
C-D	51	13			51				
C-A	116	29			116				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	434	109	415	1.046	414	74.6	79.7	672.661	F
A-BCD	40	10	678	0.060	40	0.1	0.1	5.650	A
A-B	112	28			112				
A-C	67	17			67				
D-ABC	388	97	389	0.996	385	57.1	57.7	538.562	F
C-ABD	32	8	662	0.048	32	0.1	0.1	5.716	A
C-D	42	11			42				
C-A	96	24			96				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	364	91	431	0.844	426	79.7	64.2	609.620	F
A-BCD	32	8	662	0.048	32	0.1	0.1	5.712	A
A-B	95	24			95				
A-C	57	14			57				
D-ABC	325	81	402	0.808	395	57.7	40.2	448.798	F
C-ABD	26	6	655	0.039	26	0.1	0.1	5.725	A
C-D	36	9			36				
C-A	81	20			81				

2033 Base + CD + D - ST, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J3	Bletchley Road/ Stoke Road/ Drayton Road/ Whaddon Road	Crossroads	Two-way		271.48	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Bletchley Rd		ONE HOUR	✓	239	100.000
B - Stoke Rd		ONE HOUR	✓	468	100.000
C - Drayton Rd		ONE HOUR	✓	135	100.000
D - Whaddon Rd		ONE HOUR	✓	401	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	81	92	66
	B - Stoke Rd	123	0	31	313
	C - Drayton Rd	72	15	0	49
	D - Whaddon Rd	42	321	39	0

Proportions

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0.00	0.34	0.39	0.28
	B - Stoke Rd	0.26	0.00	0.07	0.67
	C - Drayton Rd	0.53	0.11	0.00	0.36
	D - Whaddon Rd	0.10	0.80	0.10	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	0	3	0	2
	B - Stoke Rd	1	0	0	2
	C - Drayton Rd	2	0	0	0
	D - Whaddon Rd	0	2	0	0

Average PCU Per Veh

		To			
		A - Bletchley Rd	B - Stoke Rd	C - Drayton Rd	D - Whaddon Rd
From	A - Bletchley Rd	1.000	1.029	1.000	1.018
	B - Stoke Rd	1.009	1.000	1.000	1.019
	C - Drayton Rd	1.016	1.000	1.000	1.000
	D - Whaddon Rd	1.000	1.017	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Bletchley Rd	**16:45-17:00**	180	182
	17:00-17:15	215	218
	17:15-17:30	263	267
	17:30-17:45	263	267
	17:45-18:00	215	218
	18:00-18:15	180	182
B - Stoke Rd	**16:45-17:00**	352	357
	17:00-17:15	420	427
	17:15-17:30	515	523
	17:30-17:45	515	523
	17:45-18:00	420	427
	18:00-18:15	352	357
C - Drayton Rd	**16:45-17:00**	102	103
	17:00-17:15	121	123
	17:15-17:30	149	150
	17:30-17:45	149	150
	17:45-18:00	121	123
	18:00-18:15	102	103
D - Whaddon Rd	**16:45-17:00**	302	306
	17:00-17:15	360	365
	17:15-17:30	441	447
	17:30-17:45	441	447
	17:45-18:00	360	365
	18:00-18:15	302	306

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	1.25	507.85	60.1	F	429	644
A-BCD	0.14	6.09	0.2	A	80	120
A-B					65	98
A-C					74	112
D-ABC	1.12	246.80	31.1	F	368	552
C-ABD	0.03	5.82	0.0	A	17	25
C-D					43	65
C-A					64	96

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	352	88	453	0.777	340	0.0	3.0	29.405	D
A-BCD	62	15	661	0.093	61	0.0	0.1	5.998	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	302	75	427	0.708	293	0.0	2.2	25.533	D
C-ABD	13	3	632	0.021	13	0.0	0.0	5.813	A
C-D	36	9			36				
C-A	53	13			53				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	420	105	438	0.960	399	3.0	8.3	68.872	F
A-BCD	77	19	674	0.114	77	0.1	0.2	6.034	A
A-B	64	16			64				
A-C	73	18			73				
D-ABC	360	90	415	0.869	350	2.2	4.8	48.757	E
C-ABD	16	4	635	0.026	16	0.0	0.0	5.815	A
C-D	43	11			43				
C-A	63	16			63				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	515	129	417	1.236	412	8.3	34.0	206.407	F
A-BCD	100	25	692	0.145	100	0.2	0.2	6.085	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	441	110	398	1.108	386	4.8	18.6	132.078	F
C-ABD	21	5	640	0.033	21	0.0	0.0	5.816	A
C-D	52	13			52				
C-A	76	19			76				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	515	129	411	1.251	411	34.0	60.1	423.594	F
A-BCD	100	25	692	0.145	100	0.2	0.2	6.090	A
A-B	76	19			76				
A-C	87	22			87				
D-ABC	441	110	395	1.118	391	18.6	31.1	246.786	F
C-ABD	21	5	640	0.033	21	0.0	0.0	5.820	A
C-D	52	13			52				
C-A	76	19			76				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	420	105	428	0.983	420	60.1	60.1	507.850	F
A-BCD	77	19	674	0.114	77	0.2	0.2	6.040	A
A-B	64	16			64				
A-C	73	18			73				
D-ABC	360	90	408	0.884	395	31.1	22.5	246.797	F
C-ABD	16	4	635	0.026	16	0.0	0.0	5.819	A
C-D	43	11			43				
C-A	63	16			63				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	352	88	446	0.790	438	60.1	38.5	407.901	F
A-BCD	62	15	661	0.093	62	0.2	0.1	6.013	A
A-B	55	14			55				
A-C	63	16			63				
D-ABC	302	75	420	0.719	379	22.5	3.2	110.232	F
C-ABD	13	3	632	0.021	13	0.0	0.0	5.817	A
C-D	36	9			36				
C-A	53	13			53				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

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

Filename: J4 - Post Calibration Adjusted.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J4
Report generation date: 18/12/2020 15:52:40

»2020 Base, AM
»2020 Base, PM
»2033 Base, AM
»2033 Base, PM
»2033 Base + CD + D, AM
»2033 Base + CD + D, PM
»2033 Base + CD + D with TP, AM
»2033 Base + CD + D with TP, PM
»2033 Base + CD + D - ST, AM
»2033 Base + CD + D - ST, PM

Summary of junction performance

	AM					PM				
	Set ID	**Queue (Veh)**	**Delay (s)**	**RFC**	**LOS**	**Set ID**	**Queue (Veh)**	**Delay (s)**	**RFC**	**LOS**
	2020 Base									
Stream B-AC	D1	0.2	8.52	0.15	A	D2	0.1	7.61	0.08	A
Stream C-AB		0.2	5.66	0.10	A		0.2	5.38	0.11	A
	2033 Base									
Stream B-AC	D13	0.2	9.21	0.18	A	D14	0.1	8.05	0.10	A
Stream C-AB		0.3	5.60	0.13	A		0.3	5.33	0.14	A
	2033 Base + CD + D									
Stream B-AC	D15	0.2	9.71	0.19	A	D16	0.1	8.47	0.10	A
Stream C-AB		0.3	5.44	0.14	A		0.3	5.24	0.15	A
	2033 Base + CD + D with TP									
Stream B-AC	D17	0.2	9.63	0.19	A	D18	0.1	8.40	0.10	A
Stream C-AB		0.3	5.46	0.14	A		0.3	5.26	0.15	A
	2033 Base + CD + D - ST									
Stream B-AC	D19	0.2	9.87	0.19	A	D20	0.1	8.59	0.10	A
Stream C-AB		0.3	5.38	0.14	A		0.4	5.23	0.15	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	Whaddon Road/ Westbrook End
Location	51°58'34.02"N, 0°46'21.76"W
Site number	4
Date	02/12/2020

Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D2,D13,D14,D15,D16,D17,D18,D19,D20	100.000	100.000

2020 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.36	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Whaddon Road (E)		Major
B	Westbrook End		Minor
C	Whaddon Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Whaddon Road (W)	5.80			71.9	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Westbrook End	One lane	3.38	24	44

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	526	0.097	0.244	0.154	0.349
B-C	676	0.105	0.264	-	-
C-B	616	0.241	0.241	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	335	100.000
B - Westbrook End		ONE HOUR	✓	69	100.000
C - Whaddon Road (W)		ONE HOUR	✓	288	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	17	318
	B - Westbrook End	18	0	51
	C - Whaddon Road (W)	246	42	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	0	2
	B - Westbrook End	6	0	0
	C - Whaddon Road (W)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.15	8.52	0.2	A	63	95
C-AB	0.10	5.66	0.2	A	58	87
C-A					206	309
A-B					16	23
A-C					292	438

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	537	0.097	52	0.0	0.1	7.407	A
C-AB	43	11	680	0.064	43	0.0	0.1	5.647	A
C-A	173	43			173				
A-B	13	3			13				
A-C	239	60			239				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	62	16	521	0.119	62	0.1	0.1	7.841	A
C-AB	56	14	694	0.080	55	0.1	0.1	5.633	A
C-A	203	51			203				
A-B	15	4			15				
A-C	286	71			286				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	19	498	0.152	76	0.1	0.2	8.515	A
C-AB	75	19	715	0.105	74	0.1	0.2	5.620	A
C-A	242	61			242				
A-B	19	5			19				
A-C	350	88			350				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	19	498	0.152	76	0.2	0.2	8.522	A
C-AB	75	19	715	0.105	75	0.2	0.2	5.629	A
C-A	242	61			242				
A-B	19	5			19				
A-C	350	88			350				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	62	16	521	0.119	62	0.2	0.1	7.850	A
C-AB	56	14	694	0.080	56	0.2	0.1	5.650	A
C-A	203	51			203				
A-B	15	4			15				
A-C	286	71			286				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	537	0.097	52	0.1	0.1	7.426	A
C-AB	44	11	680	0.064	44	0.1	0.1	5.662	A
C-A	173	43			173				
A-B	13	3			13				
A-C	239	60			239				

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	264	100.000
B - Westbrook End		ONE HOUR	✓	38	100.000
C - Whaddon Road (W)		ONE HOUR	✓	341	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	30	234
	B - Westbrook End	10	0	28
	C - Whaddon Road (W)	296	45	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	3	1
	B - Westbrook End	0	0	4

	C - Whaddon Road (W)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.08	7.61	0.1	A	35	52
C-AB	0.11	5.38	0.2	A	66	99
C-A					247	370
A-B					28	41
A-C					215	322

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	29	7	547	0.052	28	0.0	0.1	6.941	A
C-AB	49	12	719	0.068	49	0.0	0.1	5.368	A
C-A	208	52			208				
A-B	23	6			23				
A-C	176	44			176				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	34	9	534	0.064	34	0.1	0.1	7.208	A
C-AB	63	16	741	0.085	63	0.1	0.2	5.314	A
C-A	243	61			243				
A-B	27	7			27				
A-C	210	53			210				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	10	515	0.081	42	0.1	0.1	7.607	A
C-AB	86	22	771	0.112	86	0.2	0.2	5.256	A
C-A	289	72			289				
A-B	33	8			33				
A-C	258	64			258				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	10	515	0.081	42	0.1	0.1	7.607	A
C-AB	86	22	771	0.112	86	0.2	0.2	5.261	A
C-A	289	72			289				
A-B	33	8			33				
A-C	258	64			258				

17:45 - 18:00

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	34	9	533	0.064	34	0.1	0.1	7.213	A
C-AB	63	16	741	0.086	64	0.2	0.2	5.323	A
C-A	243	61			243				
A-B	27	7			27				
A-C	210	53			210				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	29	7	547	0.052	29	0.1	0.1	6.952	A
C-AB	49	12	719	0.069	49	0.2	0.1	5.379	A
C-A	207	52			207				
A-B	23	6			23				
A-C	176	44			176				

2033 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	389	100.000
B - Westbrook End		ONE HOUR	✓	79	100.000
C - Whaddon Road (W)		ONE HOUR	✓	346	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	19	370
	B - Westbrook End	21	0	58
	C - Whaddon Road (W)	298	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	0	2
	B - Westbrook End	6	0	0

	C - Whaddon Road (W)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.18	9.21	0.2	A	73	109
C-AB	0.13	5.60	0.3	A	73	109
C-A					245	367
A-B					18	27
A-C					340	509

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	524	0.114	59	0.0	0.1	7.735	A
C-AB	53	13	698	0.077	53	0.0	0.1	5.577	A
C-A	207	52			207				
A-B	15	4			15				
A-C	279	70			279				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	71	18	505	0.141	71	0.1	0.2	8.294	A
C-AB	69	17	717	0.097	69	0.1	0.2	5.559	A
C-A	242	60			242				
A-B	18	4			18				
A-C	333	83			333				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	478	0.182	87	0.2	0.2	9.196	A
C-AB	95	24	743	0.128	95	0.2	0.3	5.555	A
C-A	286	71			286				
A-B	21	5			21				
A-C	407	102			407				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	478	0.182	87	0.2	0.2	9.208	A
C-AB	95	24	743	0.129	95	0.3	0.3	5.566	A
C-A	286	71			286				
A-B	21	5			21				
A-C	407	102			407				

08:30 - 08:45

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	71	18	505	0.141	71	0.2	0.2	8.310	A
C-AB	70	17	717	0.097	70	0.3	0.2	5.580	A
C-A	242	60			242				
A-B	18	4			18				
A-C	333	83			333				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	524	0.114	60	0.2	0.1	7.758	A
C-AB	54	13	698	0.077	54	0.2	0.1	5.597	A
C-A	207	52			207				
A-B	15	4			15				
A-C	279	70			279				

2033 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	318	100.000
B - Westbrook End		ONE HOUR	✓	44	100.000
C - Whaddon Road (W)		ONE HOUR	✓	400	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	35	283
	B - Westbrook End	12	0	32
	C - Whaddon Road (W)	348	52	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	3	1
	B - Westbrook End	0	0	4

	C - Whaddon Road (W)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	8.05	0.1	A	40	60
C-AB	0.14	5.33	0.3	A	84	125
C-A					283	425
A-B					32	48
A-C					260	390

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	535	0.062	33	0.0	0.1	7.170	A
C-AB	61	15	737	0.082	60	0.0	0.1	5.318	A
C-A	240	60			240				
A-B	26	7			26				
A-C	213	53			213				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	10	518	0.076	39	0.1	0.1	7.514	A
C-AB	79	20	763	0.104	79	0.1	0.2	5.270	A
C-A	280	70			280				
A-B	31	8			31				
A-C	254	64			254				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	496	0.097	48	0.1	0.1	8.041	A
C-AB	110	28	799	0.138	110	0.2	0.3	5.227	A
C-A	330	83			330				
A-B	38	10			38				
A-C	312	78			312				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	496	0.097	48	0.1	0.1	8.045	A
C-AB	110	28	799	0.138	110	0.3	0.3	5.235	A
C-A	330	82			330				
A-B	38	10			38				
A-C	312	78			312				

17:45 - 18:00

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	39	10	518	0.076	40	0.1	0.1	7.521	A
C-AB	80	20	763	0.104	80	0.3	0.2	5.284	A
C-A	280	70			280				
A-B	31	8			31				
A-C	254	64			254				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	534	0.062	33	0.1	0.1	7.179	A
C-AB	61	15	737	0.083	61	0.2	0.2	5.334	A
C-A	240	60			240				
A-B	26	7			26				
A-C	213	53			213				

2033 Base + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	439	100.000
B - Westbrook End		ONE HOUR	✓	79	100.000
C - Whaddon Road (W)		ONE HOUR	✓	405	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	19	420
	B - Westbrook End	21	0	58
	C - Whaddon Road (W)	357	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	0	2
	B - Westbrook End	6	0	0

	C - Whaddon Road (W)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.19	9.71	0.2	A	73	109
C-AB	0.14	5.44	0.3	A	81	121
C-A					291	437
A-B					18	27
A-C					385	578

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	511	0.117	59	0.0	0.1	7.959	A
C-AB	58	14	721	0.080	57	0.0	0.1	5.422	A
C-A	247	62			247				
A-B	15	4			15				
A-C	316	79			316				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	71	18	489	0.146	71	0.1	0.2	8.610	A
C-AB	76	19	745	0.103	76	0.1	0.2	5.386	A
C-A	288	72			288				
A-B	18	4			18				
A-C	377	94			377				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	458	0.190	87	0.2	0.2	9.692	A
C-AB	108	27	779	0.138	107	0.2	0.3	5.364	A
C-A	338	85			338				
A-B	21	5			21				
A-C	462	116			462				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	458	0.190	87	0.2	0.2	9.706	A
C-AB	108	27	779	0.138	108	0.3	0.3	5.374	A
C-A	338	85			338				
A-B	21	5			21				
A-C	462	116			462				

08:30 - 08:45

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	71	18	489	0.146	71	0.2	0.2	8.629	A
C-AB	77	19	745	0.103	77	0.3	0.2	5.409	A
C-A	288	72			288				
A-B	18	4			18				
A-C	377	94			377				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	511	0.117	60	0.2	0.1	7.986	A
C-AB	58	15	721	0.081	58	0.2	0.2	5.444	A
C-A	247	62			247				
A-B	15	4			15				
A-C	316	79			316				

2033 Base + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	381	100.000
B - Westbrook End		ONE HOUR	✓	44	100.000
C - Whaddon Road (W)		ONE HOUR	✓	449	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	35	346
	B - Westbrook End	12	0	32
	C - Whaddon Road (W)	397	52	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	3	1
	B - Westbrook End	0	0	4

	C - Whaddon Road (W)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	8.47	0.1	A	40	60
C-AB	0.15	5.24	0.3	A	91	137
C-A					321	481
A-B					32	48
A-C					317	476

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	520	0.064	33	0.0	0.1	7.389	A
C-AB	65	16	753	0.086	64	0.0	0.2	5.228	A
C-A	273	68			273				
A-B	26	7			26				
A-C	260	65			260				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	10	500	0.079	39	0.1	0.1	7.806	A
C-AB	86	22	782	0.110	86	0.2	0.2	5.173	A
C-A	317	79			317				
A-B	31	8			31				
A-C	311	78			311				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	473	0.102	48	0.1	0.1	8.468	A
C-AB	122	31	824	0.148	122	0.2	0.3	5.129	A
C-A	372	93			372				
A-B	38	10			38				
A-C	381	95			381				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	473	0.102	48	0.1	0.1	8.472	A
C-AB	123	31	825	0.149	123	0.3	0.3	5.138	A
C-A	372	93			372				
A-B	38	10			38				
A-C	381	95			381				

17:45 - 18:00

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	39	10	500	0.079	40	0.1	0.1	7.814	A
C-AB	86	22	783	0.110	87	0.3	0.2	5.189	A
C-A	317	79			317				
A-B	31	8			31				
A-C	311	78			311				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	520	0.064	33	0.1	0.1	7.401	A
C-AB	65	16	753	0.087	65	0.2	0.2	5.244	A
C-A	273	68			273				
A-B	26	7			26				
A-C	260	65			260				

2033 Base + CD + D with TP, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	432	100.000
B - Westbrook End		ONE HOUR	✓	79	100.000
C - Whaddon Road (W)		ONE HOUR	✓	397	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	19	413
	B - Westbrook End	21	0	58
	C - Whaddon Road (W)	349	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	0	2
	B - Westbrook End	6	0	0

	C - Whaddon Road (W)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.19	9.63	0.2	A	73	109
C-AB	0.14	5.46	0.3	A	80	119
C-A					285	427
A-B					18	27
A-C					379	568

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	513	0.116	59	0.0	0.1	7.927	A
C-AB	57	14	718	0.080	57	0.0	0.1	5.442	A
C-A	242	60			242				
A-B	15	4			15				
A-C	311	78			311				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	71	18	491	0.145	71	0.1	0.2	8.565	A
C-AB	75	19	741	0.102	75	0.1	0.2	5.406	A
C-A	282	70			282				
A-B	18	4			18				
A-C	371	93			371				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	461	0.189	87	0.2	0.2	9.619	A
C-AB	106	26	774	0.137	105	0.2	0.3	5.386	A
C-A	331	83			331				
A-B	21	5			21				
A-C	455	114			455				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	461	0.189	87	0.2	0.2	9.633	A
C-AB	106	27	774	0.137	106	0.3	0.3	5.398	A
C-A	331	83			331				
A-B	21	5			21				
A-C	455	114			455				

08:30 - 08:45

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	71	18	491	0.145	71	0.2	0.2	8.581	A
C-AB	76	19	741	0.102	76	0.3	0.2	5.431	A
C-A	281	70			281				
A-B	18	4			18				
A-C	371	93			371				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	513	0.116	60	0.2	0.1	7.953	A
C-AB	57	14	718	0.080	58	0.2	0.2	5.462	A
C-A	242	60			242				
A-B	15	4			15				
A-C	311	78			311				

2033 Base + CD + D with TP, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	371	100.000
B - Westbrook End		ONE HOUR	✓	44	100.000
C - Whaddon Road (W)		ONE HOUR	✓	442	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	35	336
	B - Westbrook End	12	0	32
	C - Whaddon Road (W)	390	52	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	3	1
	B - Westbrook End	0	0	4

	C - Whaddon Road (W)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	8.40	0.1	A	40	60
C-AB	0.15	5.26	0.3	A	90	135
C-A					315	473
A-B					32	48
A-C					308	462

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	522	0.063	33	0.0	0.1	7.353	A
C-AB	64	16	751	0.086	64	0.0	0.2	5.240	A
C-A	268	67			268				
A-B	26	7			26				
A-C	253	63			253				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	10	503	0.078	39	0.1	0.1	7.758	A
C-AB	85	21	780	0.109	85	0.2	0.2	5.184	A
C-A	312	78			312				
A-B	31	8			31				
A-C	302	76			302				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	477	0.101	48	0.1	0.1	8.397	A
C-AB	120	30	821	0.147	120	0.2	0.3	5.139	A
C-A	366	92			366				
A-B	38	10			38				
A-C	370	92			370				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	477	0.101	48	0.1	0.1	8.401	A
C-AB	121	30	821	0.147	121	0.3	0.3	5.150	A
C-A	366	91			366				
A-B	38	10			38				
A-C	370	92			370				

17:45 - 18:00

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	39	10	503	0.078	40	0.1	0.1	7.764	A
C-AB	85	21	780	0.110	86	0.3	0.2	5.199	A
C-A	312	78			312				
A-B	31	8			31				
A-C	302	76			302				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	522	0.063	33	0.1	0.1	7.363	A
C-AB	65	16	751	0.086	65	0.2	0.2	5.255	A
C-A	268	67			268				
A-B	26	7			26				
A-C	253	63			253				

2033 Base + CD + D - ST, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	449	100.000
B - Westbrook End		ONE HOUR	✓	79	100.000
C - Whaddon Road (W)		ONE HOUR	✓	425	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	19	430
	B - Westbrook End	21	0	58
	C - Whaddon Road (W)	377	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	0	2
	B - Westbrook End	6	0	0

	C - Whaddon Road (W)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.19	9.87	0.2	A	73	109
C-AB	0.14	5.38	0.3	A	83	125
C-A					306	460
A-B					18	27
A-C					395	592

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	507	0.118	59	0.0	0.1	8.038	A
C-AB	59	15	730	0.081	59	0.0	0.2	5.364	A
C-A	261	65			261				
A-B	15	4			15				
A-C	324	81			324				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	71	18	484	0.147	71	0.1	0.2	8.718	A
C-AB	79	20	755	0.104	79	0.2	0.2	5.321	A
C-A	303	76			303				
A-B	18	4			18				
A-C	387	97			387				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	452	0.193	87	0.2	0.2	9.855	A
C-AB	112	28	792	0.141	112	0.2	0.3	5.293	A
C-A	356	89			356				
A-B	21	5			21				
A-C	473	118			473				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	87	22	452	0.193	87	0.2	0.2	9.870	A
C-AB	112	28	792	0.142	112	0.3	0.3	5.303	A
C-A	356	89			356				
A-B	21	5			21				
A-C	473	118			473				

08:30 - 08:45

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	71	18	484	0.147	71	0.2	0.2	8.733	A
C-AB	79	20	755	0.105	79	0.3	0.2	5.342	A
C-A	303	76			303				
A-B	18	4			18				
A-C	387	97			387				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	60	15	506	0.118	60	0.2	0.1	8.062	A
C-AB	60	15	730	0.082	60	0.2	0.2	5.384	A
C-A	260	65			260				
A-B	15	4			15				
A-C	324	81			324				

2033 Base + CD + D - ST, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Whaddon Road (W) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J4	Whaddon Road/ Westbrook End	T-Junction	Two-way		1.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Whaddon Road (E)		ONE HOUR	✓	396	100.000
B - Westbrook End		ONE HOUR	✓	44	100.000
C - Whaddon Road (W)		ONE HOUR	✓	457	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	35	361
	B - Westbrook End	12	0	32
	C - Whaddon Road (W)	405	52	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Whaddon Road (E)	**B - Westbrook End**	**C - Whaddon Road (W)**
From	**A - Whaddon Road (E)**	0	3	1
	B - Westbrook End	0	0	4

	C - Whaddon Road (W)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	8.59	0.1	A	40	60
C-AB	0.15	5.23	0.4	A	93	139
C-A					326	490
A-B					32	48
A-C					331	497

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	515	0.064	33	0.0	0.1	7.457	A
C-AB	66	16	755	0.087	65	0.0	0.2	5.217	A
C-A	278	70			278				
A-B	26	7			26				
A-C	272	68			272				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	10	495	0.080	39	0.1	0.1	7.891	A
C-AB	87	22	785	0.111	87	0.2	0.2	5.162	A
C-A	323	81			323				
A-B	31	8			31				
A-C	325	81			325				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	467	0.103	48	0.1	0.1	8.585	A
C-AB	124	31	828	0.150	124	0.2	0.3	5.119	A
C-A	378	95			378				
A-B	38	10			38				
A-C	397	99			397				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	12	467	0.103	48	0.1	0.1	8.589	A
C-AB	125	31	828	0.150	125	0.3	0.4	5.127	A
C-A	378	95			378				
A-B	38	10			38				
A-C	397	99			397				

17:45 - 18:00

Stream	Total Demand	Junction Arrivals	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue	End queue (Veh)	Delay (s)	Unsignalised level of service

	(Veh/hr)	(Veh)				(Veh)			
B-AC	39	10	495	0.080	40	0.1	0.1	7.899	A
C-AB	88	22	785	0.112	88	0.4	0.2	5.174	A
C-A	323	81			323				
A-B	31	8			31				
A-C	325	81			325				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	33	8	515	0.064	33	0.1	0.1	7.469	A
C-AB	66	16	755	0.087	66	0.2	0.2	5.232	A
C-A	278	69			278				
A-B	26	7			26				
A-C	272	68			272				

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

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

Filename: J7 -Post Calibration (AM) Adjustment.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J7
Report generation date: 18/12/2020 15:59:03

- »2020 Base, AM
- »2033 Base, AM
- »2033 Base + CD + D, AM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D - ST, AM

Summary of junction performance

	AM				
	Set ID	**Queue (Veh)**	**Delay (s)**	**RFC**	**LOS**
	2020 Base				
A - Coddimor Ln	D1	0.5	10.80	0.31	B
B - A421 (East)		4.9	14.67	0.84	B
C - Whaddon Rd		9.5	95.28	0.95	F
D - A421 (West)		11.7	36.14	0.94	E
	2033 Base				
A - Coddimor Ln	D13	0.6	13.04	0.39	B
B - A421 (East)		21.8	55.28	0.99	F
C - Whaddon Rd		64.6	541.10	1.41	F
D - A421 (West)		56.7	131.20	1.06	F
	2033 Base + CD + D				
A - Coddimor Ln	D15	0.6	13.14	0.39	B
B - A421 (East)		42.9	94.53	1.03	F
C - Whaddon Rd		81.8	731.77	1.48	F
D - A421 (West)		77.4	175.41	1.10	F
	2033 Base + CD + D with TP				
A - Coddimor Ln	D17	0.6	13.12	0.39	B
B - A421 (East)		39.3	88.19	1.03	F
C - Whaddon Rd		78.4	705.45	1.47	F
D - A421 (West)		74.8	168.69	1.09	F
	2033 Base + CD + D - ST				
A - Coddimor Ln	D19	0.6	13.18	0.39	B
B - A421 (East)		56.9	119.14	1.06	F
C - Whaddon Rd		93.7	986.05	1.50	F
D - A421 (West)		84.4	191.78	1.11	F

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	Whaddon Crossroads
Location	51°59'6.32"N, 0°49'39.55"W
Site number	7
Date	02/12/2020
Version	
Status	(new file)
Identifier	

Client	
Jobnumber	
Enumerator	Will Forster
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D13,D15,D17,D19	100.000	100.000

2020 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	33.27	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Coddimor Ln	
B	A421 (East)	
C	Whaddon Rd	
D	A421 (West)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Coddimor Ln	2.80	6.70	8.5	21.5	50.6	40.0	
B - A421 (East)	2.90	7.70	8.6	26.3	50.6	25.5	
C - Whaddon Rd	2.90	6.10	9.0	19.7	50.6	42.0	
D - A421 (West)	3.10	7.50	12.9	28.0	50.6	32.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Coddimor Ln	None		
B - A421 (East)	Direct	Calibration against queue lengths	200
C - Whaddon Rd	Direct	Calibration against queue lengths	-275
D - A421 (West)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Coddimor Ln	0.519	1287
B - A421 (East)	0.564	1637
C - Whaddon Rd	0.514	1001
D - A421 (West)	0.587	1588

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	138	100.000
B - A421 (East)		ONE HOUR	✓	1135	100.000
C - Whaddon Rd		ONE HOUR	✓	341	100.000
D - A421 (West)		ONE HOUR	✓	1131	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	46	48	44
	B - A421 (East)	28	0	185	922
	C - Whaddon Rd	43	240	0	58
	D - A421 (West)	20	1094	17	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0.00	0.33	0.35	0.32
	B - A421 (East)	0.02	0.00	0.16	0.81
	C - Whaddon Rd	0.13	0.70	0.00	0.17
	D - A421 (West)	0.02	0.97	0.02	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	0	0	2
	B - A421 (East)	0	0	1	6
	C - Whaddon Rd	2	3	0	5
	D - A421 (West)	5	5	12	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	1.000	1.000	1.000	1.023
	B - A421 (East)	1.000	1.000	1.011	1.060
	C - Whaddon Rd	1.023	1.033	1.000	1.052
	D - A421 (West)	1.050	1.045	1.118	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - Coddimor Ln	104	105
	B - A421 (East)	854	898
	C - Whaddon Rd	257	266
	D - A421 (West)	851	891
07:45-08:00	A - Coddimor Ln	124	125
	B - A421 (East)	1020	1072
	C - Whaddon Rd	307	317
	D - A421 (West)	1017	1064
08:00-08:15	A - Coddimor Ln	152	153
	B - A421 (East)	1250	1313
	C - Whaddon Rd	375	389
	D - A421 (West)	1245	1303
08:15-08:30	A - Coddimor Ln	152	153
	B - A421 (East)	1250	1313
	C - Whaddon Rd	375	389
	D - A421 (West)	1245	1303
08:30-08:45	A - Coddimor Ln	124	125
	B - A421 (East)	1020	1072
	C - Whaddon Rd	307	317
	D - A421 (West)	1017	1064
08:45-09:00	A - Coddimor Ln	104	105
	B - A421 (East)	854	898
	C - Whaddon Rd	257	266
	D - A421 (West)	851	891

Results

Results Summary for whole modelled period

					Average Demand	Total Junction

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	(Veh/hr)	Arrivals (Veh)
A - Coddimor Ln	0.31	10.80	0.5	B	127	190
B - A421 (East)	0.84	14.67	4.9	B	1041	1562
C - Whaddon Rd	0.95	95.28	9.5	F	313	469
D - A421 (West)	0.94	36.14	11.7	E	1038	1557

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	104	26	1009	735	0.141	103	68	0.0	0.2	5.695	A
B - A421 (East)	854	214	82	1513	0.565	849	1030	0.0	1.3	5.382	A
C - Whaddon Rd	257	64	744	577	0.445	254	187	0.0	0.8	11.037	B
D - A421 (West)	851	213	231	1384	0.615	845	766	0.0	1.6	6.605	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	124	31	1207	628	0.198	124	81	0.2	0.2	7.136	A
B - A421 (East)	1020	255	98	1504	0.678	1017	1233	1.3	2.1	7.343	A
C - Whaddon Rd	307	77	891	500	0.614	304	224	0.8	1.5	18.101	C
D - A421 (West)	1017	254	277	1358	0.749	1012	917	1.6	2.9	10.243	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	152	38	1445	500	0.304	151	97	0.2	0.4	10.292	B
B - A421 (East)	1250	312	119	1493	0.837	1239	1477	2.1	4.7	13.650	B
C - Whaddon Rd	375	94	1085	398	0.944	353	273	1.5	7.1	62.657	F
D - A421 (West)	1245	311	324	1331	0.936	1217	1115	2.9	9.8	26.819	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	152	38	1473	485	0.313	152	99	0.4	0.5	10.804	B
B - A421 (East)	1250	312	120	1492	0.838	1249	1505	4.7	4.9	14.671	B
C - Whaddon Rd	375	94	1094	393	0.955	366	275	7.1	9.5	95.279	F
D - A421 (West)	1245	311	334	1325	0.940	1238	1125	9.8	11.7	36.145	E

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	124	31	1269	595	0.209	125	87	0.5	0.3	7.676	A
B - A421 (East)	1020	255	99	1504	0.679	1031	1295	4.9	2.2	7.792	A
C - Whaddon Rd	307	77	903	493	0.622	337	227	9.5	1.7	27.135	D
D - A421 (West)	1017	254	306	1341	0.758	1050	935	11.7	3.3	13.654	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	104	26	1026	725	0.143	104	69	0.3	0.2	5.801	A
B - A421 (East)	854	214	82	1513	0.565	858	1048	2.2	1.3	5.526	A
C - Whaddon Rd	257	64	751	573	0.448	260	189	1.7	0.8	11.652	B
D - A421 (West)	851	213	237	1381	0.617	858	774	3.3	1.6	6.972	A

2033 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	143.97	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	158	100.000
B - A421 (East)		ONE HOUR	✓	1327	100.000
C - Whaddon Rd		ONE HOUR	✓	394	100.000
D - A421 (West)		ONE HOUR	✓	1302	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	0	53	55	50
	B - A421 (East)	32	0	221	1074
	C - Whaddon Rd	49	278	0	67
	D - A421 (West)	23	1260	19	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	0.00	0.33	0.35	0.32
	B - A421 (East)	0.02	0.00	0.17	0.81
	C - Whaddon Rd	0.13	0.71	0.00	0.17
	D - A421 (West)	0.02	0.97	0.01	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	0	0	0	2
	B - A421 (East)	0	0	1	6
	C - Whaddon Rd	2	3	0	5
	D - A421 (West)	5	4	12	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	1.000	1.000	1.000	1.023
	B - A421 (East)	1.000	1.000	1.011	1.060
	C - Whaddon Rd	1.023	1.033	1.000	1.052
	D - A421 (West)	1.050	1.045	1.118	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - Coddimor Ln	119	120
	B - A421 (East)	999	1049
	C - Whaddon Rd	297	307
	D - A421 (West)	981	1026
07:45-08:00	A - Coddimor Ln	142	143
	B - A421 (East)	1193	1253
	C - Whaddon Rd	354	367
	D - A421 (West)	1171	1225
08:00-08:15	A - Coddimor Ln	174	176
	B - A421 (East)	1461	1535
	C - Whaddon Rd	434	449
	D - A421 (West)	1434	1500
08:15-08:30	A - Coddimor Ln	174	176
	B - A421 (East)	1461	1535
	C - Whaddon Rd	434	449
	D - A421 (West)	1434	1500
08:30-08:45	A - Coddimor Ln	142	143
	B - A421 (East)	1193	1253
	C - Whaddon Rd	354	367
	D - A421 (West)	1171	1225
08:45-09:00	A - Coddimor Ln	119	120
	B - A421 (East)	999	1049
	C - Whaddon Rd	297	307
	D - A421 (West)	981	1026

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.39	13.04	0.6	B	145	218
B - A421 (East)	0.99	55.28	21.8	F	1218	1827
C - Whaddon Rd	1.41	541.10	64.6	F	361	542
D - A421 (West)	1.06	131.20	56.7	F	1195	1793

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1159	654	0.182	118	78	0.0	0.2	6.710	A
B - A421 (East)	999	250	93	1507	0.663	991	1184	0.0	1.9	6.886	A
C - Whaddon Rd	297	74	864	514	0.577	291	221	0.0	1.3	15.849	C
D - A421 (West)	981	245	266	1364	0.719	971	889	0.0	2.5	8.933	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1379	536	0.266	142	92	0.2	0.4	9.120	A
B - A421 (East)	1193	298	112	1497	0.797	1186	1408	1.9	3.7	11.322	B
C - Whaddon Rd	354	89	1034	425	0.834	343	264	1.3	4.0	40.056	E
D - A421 (West)	1171	293	314	1337	0.876	1156	1063	2.5	6.1	18.612	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1522	459	0.380	173	97	0.4	0.6	12.577	B
B - A421 (East)	1461	365	135	1484	0.985	1410	1560	3.7	16.4	35.388	E
C - Whaddon Rd	434	108	1231	321	1.350	317	315	4.0	33.2	237.055	F
D - A421 (West)	1434	359	297	1347	1.065	1322	1250	6.1	34.2	66.277	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1537	450	0.387	174	97	0.6	0.6	13.041	B
B - A421 (East)	1461	365	136	1483	0.985	1439	1575	16.4	21.8	55.283	F
C - Whaddon Rd	434	108	1255	308	1.406	308	320	33.2	64.6	541.100	F
D - A421 (West)	1434	359	291	1350	1.062	1344	1272	34.2	56.7	131.200	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1542	448	0.318	143	102	0.6	0.5	11.817	B
B - A421 (East)	1193	298	115	1495	0.798	1263	1570	21.8	4.2	19.536	C
C - Whaddon Rd	354	89	1099	390	0.907	385	279	64.6	57.0	531.024	F
D - A421 (West)	1171	293	350	1316	0.890	1293	1133	56.7	26.2	118.875	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1403	524	0.228	120	106	0.5	0.3	8.932	A
B - A421 (East)	999	250	96	1505	0.664	1008	1426	4.2	2.0	7.360	A
C - Whaddon Rd	297	74	878	506	0.586	497	226	57.0	6.8	239.443	F
D - A421 (West)	981	245	438	1265	0.775	1070	938	26.2	3.7	25.780	D

2033 Base + CD + D, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	200.69	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	158	100.000
B - A421 (East)		ONE HOUR	✓	1393	100.000
C - Whaddon Rd		ONE HOUR	✓	402	100.000
D - A421 (West)		ONE HOUR	✓	1346	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	53	55	50
	B - A421 (East)	32	0	239	1122
	C - Whaddon Rd	49	286	0	67
	D - A421 (West)	23	1304	19	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0.00	0.33	0.35	0.32
	B - A421 (East)	0.02	0.00	0.17	0.81
	C - Whaddon Rd	0.12	0.71	0.00	0.17
	D - A421 (West)	0.02	0.97	0.01	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	0	0	2
	B - A421 (East)	0	0	1	6
	C - Whaddon Rd	2	3	0	5
	D - A421 (West)	5	5	12	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	1.000	1.000	1.000	1.023
	B - A421 (East)	1.000	1.000	1.011	1.060
	C - Whaddon Rd	1.023	1.033	1.000	1.052
	D - A421 (West)	1.050	1.045	1.118	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - Coddimor Ln	119	120
	B - A421 (East)	1049	1101
	C - Whaddon Rd	302	313
	D - A421 (West)	1014	1060
07:45-08:00	A - Coddimor Ln	142	143
	B - A421 (East)	1252	1315
	C - Whaddon Rd	361	374
	D - A421 (West)	1210	1266
08:00-08:15	A - Coddimor Ln	174	176
	B - A421 (East)	1534	1610
	C - Whaddon Rd	442	458
	D - A421 (West)	1482	1551
08:15-08:30	A - Coddimor Ln	174	176
	B - A421 (East)	1534	1610
	C - Whaddon Rd	442	458
	D - A421 (West)	1482	1551
08:30-08:45	A - Coddimor Ln	142	143
	B - A421 (East)	1252	1315
	C - Whaddon Rd	361	374
	D - A421 (West)	1210	1266
08:45-09:00	A - Coddimor Ln	119	120
	B - A421 (East)	1049	1101
	C - Whaddon Rd	302	313
	D - A421 (West)	1014	1060

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.39	13.14	0.6	B	145	218
B - A421 (East)	1.03	94.53	42.9	F	1278	1918
C - Whaddon Rd	1.48	731.77	81.8	F	369	553
D - A421 (West)	1.10	175.41	77.4	F	1236	1853

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1196	634	0.188	118	77	0.0	0.2	6.969	A
B - A421 (East)	1049	262	93	1508	0.696	1040	1221	0.0	2.2	7.561	A
C - Whaddon Rd	302	76	899	495	0.611	296	234	0.0	1.5	17.622	C
D - A421 (West)	1014	253	271	1361	0.745	1002	924	0.0	2.8	9.754	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1416	515	0.276	142	91	0.2	0.4	9.616	A
B - A421 (East)	1252	313	112	1497	0.836	1243	1446	2.2	4.7	13.605	B
C - Whaddon Rd	361	90	1075	403	0.895	345	280	1.5	5.4	52.142	F
D - A421 (West)	1210	303	317	1335	0.907	1191	1103	2.8	7.7	22.407	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1531	454	0.384	173	94	0.4	0.6	12.797	B
B - A421 (East)	1534	383	135	1485	1.033	1444	1569	4.7	27.0	50.345	F
C - Whaddon Rd	442	111	1252	310	1.425	308	327	5.4	39.1	287.411	F
D - A421 (West)	1482	371	290	1351	1.098	1335	1270	7.7	44.7	81.691	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1541	448	0.389	174	94	0.6	0.6	13.136	B
B - A421 (East)	1534	383	136	1484	1.033	1471	1579	27.0	42.9	94.527	F
C - Whaddon Rd	442	111	1274	299	1.480	299	332	39.1	75.0	672.662	F
D - A421 (West)	1482	371	283	1355	1.094	1351	1289	44.7	77.4	171.067	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1537	451	0.316	143	96	0.6	0.5	11.724	B
B - A421 (East)	1252	313	114	1496	0.837	1399	1565	42.9	6.1	52.798	F
C - Whaddon Rd	361	90	1205	335	1.078	334	309	75.0	81.8	731.767	F
D - A421 (West)	1210	303	311	1338	0.904	1321	1228	77.4	49.7	175.411	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1514	463	0.257	120	104	0.5	0.4	10.492	B
B - A421 (East)	1049	262	97	1505	0.697	1064	1537	6.1	2.4	8.409	A
C - Whaddon Rd	302	76	919	485	0.624	479	241	81.8	37.6	452.695	F
D - A421 (West)	1014	253	424	1273	0.796	1194	974	49.7	4.6	69.959	F

2033 Base + CD + D with TP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	192.20	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	158	100.000
B - A421 (East)		ONE HOUR	✓	1384	100.000
C - Whaddon Rd		ONE HOUR	✓	400	100.000
D - A421 (West)		ONE HOUR	✓	1341	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	53	55	50
	B - A421 (East)	32	0	236	1116
	C - Whaddon Rd	49	285	0	67
	D - A421 (West)	23	1299	19	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0.00	0.33	0.35	0.32
	B - A421 (East)	0.02	0.00	0.17	0.81
	C - Whaddon Rd	0.12	0.71	0.00	0.17
	D - A421 (West)	0.02	0.97	0.01	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	0	0	2
	B - A421 (East)	0	0	1	6
	C - Whaddon Rd	2	3	0	5
	D - A421 (West)	5	5	12	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	1.000	1.000	1.000	1.023
	B - A421 (East)	1.000	1.000	1.011	1.060
	C - Whaddon Rd	1.023	1.033	1.000	1.052
	D - A421 (West)	1.050	1.045	1.118	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - Coddimor Ln	119	120
	B - A421 (East)	1042	1094
	C - Whaddon Rd	301	312
	D - A421 (West)	1010	1057
07:45-08:00	A - Coddimor Ln	142	143
	B - A421 (East)	1244	1306
	C - Whaddon Rd	360	373
	D - A421 (West)	1206	1262
08:00-08:15	A - Coddimor Ln	174	176
	B - A421 (East)	1523	1600
	C - Whaddon Rd	441	456
	D - A421 (West)	1477	1545
08:15-08:30	A - Coddimor Ln	174	176
	B - A421 (East)	1523	1600
	C - Whaddon Rd	441	456
	D - A421 (West)	1477	1545
08:30-08:45	A - Coddimor Ln	142	143
	B - A421 (East)	1244	1306
	C - Whaddon Rd	360	373
	D - A421 (West)	1206	1262
08:45-09:00	A - Coddimor Ln	119	120
	B - A421 (East)	1042	1094
	C - Whaddon Rd	301	312
	D - A421 (West)	1010	1057

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.39	13.12	0.6	B	145	218
B - A421 (East)	1.03	88.19	39.3	F	1270	1905
C - Whaddon Rd	1.47	705.45	78.4	F	367	551
D - A421 (West)	1.09	168.69	74.8	F	1231	1846

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1192	636	0.187	118	77	0.0	0.2	6.939	A
B - A421 (East)	1042	260	93	1507	0.691	1033	1217	0.0	2.2	7.462	A
C - Whaddon Rd	301	75	895	497	0.606	296	232	0.0	1.5	17.373	C
D - A421 (West)	1010	252	270	1362	0.742	999	920	0.0	2.8	9.650	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1412	518	0.275	142	91	0.2	0.4	9.558	A
B - A421 (East)	1244	311	112	1497	0.831	1234	1442	2.2	4.5	13.247	B
C - Whaddon Rd	360	90	1070	406	0.887	345	277	1.5	5.2	50.326	F
D - A421 (West)	1206	301	316	1335	0.903	1187	1098	2.8	7.5	21.912	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1530	454	0.384	173	94	0.4	0.6	12.770	B
B - A421 (East)	1523	381	135	1484	1.026	1440	1568	4.5	25.3	48.029	E
C - Whaddon Rd	441	110	1250	311	1.418	308	325	5.2	38.4	281.698	F
D - A421 (West)	1477	369	290	1350	1.094	1333	1268	7.5	43.3	79.721	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1540	448	0.389	174	94	0.6	0.6	13.121	B
B - A421 (East)	1523	381	136	1484	1.027	1468	1579	25.3	39.3	88.189	F
C - Whaddon Rd	441	110	1273	299	1.475	299	330	38.4	74.0	656.278	F
D - A421 (West)	1477	369	283	1355	1.090	1351	1289	43.3	74.8	165.997	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1538	450	0.316	143	97	0.6	0.5	11.747	B
B - A421 (East)	1244	311	114	1495	0.832	1378	1566	39.3	5.7	45.231	E
C - Whaddon Rd	360	90	1189	343	1.050	342	303	74.0	78.4	705.446	F
D - A421 (West)	1206	301	317	1335	0.903	1317	1214	74.8	47.0	168.687	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1502	470	0.254	120	104	0.5	0.3	10.291	B
B - A421 (East)	1042	260	97	1505	0.692	1055	1525	5.7	2.3	8.235	A
C - Whaddon Rd	301	75	914	488	0.618	481	238	78.4	33.4	422.588	F
D - A421 (West)	1010	252	426	1272	0.794	1180	969	47.0	4.5	63.275	F

2033 Base + CD + D - ST, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	247.98	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	158	100.000
B - A421 (East)		ONE HOUR	✓	1425	100.000
C - Whaddon Rd		ONE HOUR	✓	406	100.000
D - A421 (West)		ONE HOUR	✓	1360	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	53	55	50
	B - A421 (East)	32	0	249	1144
	C - Whaddon Rd	49	290	0	67
	D - A421 (West)	23	1317	19	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0.00	0.33	0.35	0.32
	B - A421 (East)	0.02	0.00	0.17	0.80
	C - Whaddon Rd	0.12	0.71	0.00	0.16
	D - A421 (West)	0.02	0.97	0.01	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	0	0	2
	B - A421 (East)	0	0	1	6
	C - Whaddon Rd	2	3	0	5
	D - A421 (West)	5	5	12	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	1.000	1.000	1.000	1.023
	B - A421 (East)	1.000	1.000	1.011	1.060
	C - Whaddon Rd	1.023	1.033	1.000	1.052
	D - A421 (West)	1.050	1.045	1.118	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - Coddimor Ln	119	120
	B - A421 (East)	1073	1126
	C - Whaddon Rd	306	316
	D - A421 (West)	1024	1071
07:45-08:00	A - Coddimor Ln	142	143
	B - A421 (East)	1281	1345
	C - Whaddon Rd	365	378
	D - A421 (West)	1222	1279
08:00-08:15	A - Coddimor Ln	174	176
	B - A421 (East)	1569	1647
	C - Whaddon Rd	447	463
	D - A421 (West)	1497	1566
08:15-08:30	A - Coddimor Ln	174	176
	B - A421 (East)	1569	1647
	C - Whaddon Rd	447	463
	D - A421 (West)	1497	1566
08:30-08:45	A - Coddimor Ln	142	143
	B - A421 (East)	1281	1345
	C - Whaddon Rd	365	378
	D - A421 (West)	1222	1279
08:45-09:00	A - Coddimor Ln	119	120
	B - A421 (East)	1073	1126
	C - Whaddon Rd	306	316
	D - A421 (West)	1024	1071

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.39	13.18	0.6	B	145	218
B - A421 (East)	1.06	119.14	56.9	F	1307	1961
C - Whaddon Rd	1.50	986.05	93.7	F	373	559
D - A421 (West)	1.11	191.78	84.4	F	1248	1872

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1209	627	0.190	118	77	0.0	0.2	7.062	A
B - A421 (East)	1073	268	93	1507	0.712	1063	1234	0.0	2.4	7.941	A
C - Whaddon Rd	306	76	915	487	0.628	299	241	0.0	1.6	18.622	C
D - A421 (West)	1024	256	274	1360	0.753	1012	940	0.0	2.9	10.050	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1428	509	0.279	142	91	0.2	0.4	9.776	A
B - A421 (East)	1281	320	112	1497	0.855	1269	1458	2.4	5.3	15.044	C
C - Whaddon Rd	365	91	1093	394	0.927	346	288	1.6	6.4	59.785	F
D - A421 (West)	1222	306	318	1335	0.916	1201	1121	2.9	8.3	23.789	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1533	452	0.385	173	92	0.4	0.6	12.866	B
B - A421 (East)	1569	392	135	1485	1.057	1455	1572	5.3	33.8	59.248	F
C - Whaddon Rd	447	112	1256	308	1.451	306	334	6.4	41.7	309.980	F
D - A421 (West)	1497	374	288	1352	1.108	1337	1273	8.3	48.2	86.995	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	174	44	1543	447	0.390	174	92	0.6	0.6	13.181	B
B - A421 (East)	1569	392	136	1484	1.057	1477	1581	33.8	56.9	119.139	F
C - Whaddon Rd	447	112	1274	299	1.498	298	338	41.7	79.0	737.787	F
D - A421 (West)	1497	374	283	1355	1.105	1352	1290	48.2	84.4	184.566	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	142	36	1532	453	0.314	143	93	0.6	0.5	11.626	B
B - A421 (East)	1281	320	114	1496	0.856	1471	1560	56.9	9.4	87.058	F
C - Whaddon Rd	365	91	1259	306	1.193	306	326	79.0	93.7	986.052	F
D - A421 (West)	1222	306	289	1351	0.905	1335	1276	84.4	56.2	191.776	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	119	30	1540	449	0.265	120	102	0.5	0.4	10.932	B
B - A421 (East)	1073	268	97	1505	0.713	1100	1562	9.4	2.6	9.451	A
C - Whaddon Rd	306	76	946	471	0.650	466	251	93.7	53.7	572.957	F
D - A421 (West)	1024	256	414	1279	0.801	1228	997	56.2	5.1	86.013	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

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

Filename: J7 -Post Calibration (PM) Adjustment.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J7
Report generation date: 18/12/2020 16:07:30

- »2020 Base, PM
- »2033 Base, PM
- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, PM

Summary of junction performance

	PM				
	Set ID	**Queue (Veh)**	**Delay (s)**	**RFC**	**LOS**
	2020 Base				
A - Coddimor Ln	D2	0.4	8.98	0.29	A
B - A421 (East)		6.0	16.69	0.87	C
C - Whaddon Rd		12.5	151.34	1.02	F
D - A421 (West)		5.5	17.49	0.86	C
	2033 Base				
A - Coddimor Ln	D14	0.6	11.74	0.38	B
B - A421 (East)		33.6	74.74	1.01	F
C - Whaddon Rd		72.1	931.73	1.66	F
D - A421 (West)		18.6	50.69	0.98	F
	2033 Base + CD + D				
A - Coddimor Ln	D16	0.6	12.47	0.39	B
B - A421 (East)		55.6	112.02	1.05	F
C - Whaddon Rd		111.8	1325.61	1.84	F
D - A421 (West)		31.9	78.30	1.01	F
	2033 Base + CD + D with TP				
A - Coddimor Ln	D18	0.6	12.38	0.39	B
B - A421 (East)		51.7	105.48	1.05	F
C - Whaddon Rd		108.2	1280.43	1.83	F
D - A421 (West)		29.3	73.26	1.01	F
	2033 Base + CD + D - ST				
A - Coddimor Ln	D20	0.7	12.69	0.40	B
B - A421 (East)		60.6	120.43	1.06	F
C - Whaddon Rd		121.3	1420.79	1.88	F
D - A421 (West)		40.2	94.76	1.03	F

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	Whaddon Crossroads
Location	51°59'6.32"N, 0°49'39.55"W
Site number	7
Date	02/12/2020
Version	
Status	(new file)
Identifier	

Client	
Jobnumber	
Enumerator	Will Forster
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D2,D14,D16,D18,D20	100.000	100.000

2020 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	29.68	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Coddimor Ln	
B	A421 (East)	
C	Whaddon Rd	
D	A421 (West)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Coddimor Ln	2.80	6.70	8.5	21.5	50.6	40.0	
B - A421 (East)	2.90	7.70	8.6	26.3	50.6	25.5	
C - Whaddon Rd	2.90	6.10	9.0	19.7	50.6	42.0	
D - A421 (West)	3.10	7.50	12.9	28.0	50.6	32.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Coddimor Ln	None		
B - A421 (East)	Direct	Calibration against queue lengths	250
C - Whaddon Rd	Direct	Calibration against queue lengths	-330
D - A421 (West)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Coddimor Ln	0.519	1287
B - A421 (East)	0.564	1687
C - Whaddon Rd	0.514	946
D - A421 (West)	0.587	1588

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	148	100.000
B - A421 (East)		ONE HOUR	✓	1230	100.000
C - Whaddon Rd		ONE HOUR	✓	270	100.000
D - A421 (West)		ONE HOUR	✓	1078	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	28	46	74
	B - A421 (East)	21	1	169	1039
	C - Whaddon Rd	44	195	0	31
	D - A421 (West)	27	1023	28	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0.00	0.19	0.31	0.50
	B - A421 (East)	0.02	0.00	0.14	0.84
	C - Whaddon Rd	0.16	0.72	0.00	0.11
	D - A421 (West)	0.03	0.95	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	0	0	0
	B - A421 (East)	5	0	1	2
	C - Whaddon Rd	0	0	0	0
	D - A421 (West)	0	3	4	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	1.000	1.000	1.000	1.000
	B - A421 (East)	1.048	1.000	1.012	1.019
	C - Whaddon Rd	1.000	1.000	1.000	1.000
	D - A421 (West)	1.000	1.029	1.036	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - Coddimor Ln**	111	111
	B - A421 (East)	926	943
	C - Whaddon Rd	203	203
	D - A421 (West)	812	835
17:00-17:15	**A - Coddimor Ln**	133	133
	B - A421 (East)	1106	1126
	C - Whaddon Rd	243	243
	D - A421 (West)	969	997
17:15-17:30	**A - Coddimor Ln**	163	163
	B - A421 (East)	1354	1379
	C - Whaddon Rd	297	297
	D - A421 (West)	1187	1221
17:30-17:45	**A - Coddimor Ln**	163	163
	B - A421 (East)	1354	1379
	C - Whaddon Rd	297	297
	D - A421 (West)	1187	1221
17:45-18:00	**A - Coddimor Ln**	133	133
	B - A421 (East)	1106	1126
	C - Whaddon Rd	243	243
	D - A421 (West)	969	997
18:00-18:15	**A - Coddimor Ln**	111	111
	B - A421 (East)	926	943
	C - Whaddon Rd	203	203
	D - A421 (West)	812	835

Results

Results Summary for whole modelled period

					Average Demand	Total Junction

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	(Veh/hr)	Arrivals (Veh)
A - Coddimor Ln	0.29	8.98	0.4	A	136	204
B - A421 (East)	0.87	16.69	6.0	C	1129	1693
C - Whaddon Rd	1.02	151.34	12.5	F	248	372
D - A421 (West)	0.86	17.49	5.5	C	989	1484

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	111	28	932	791	0.141	111	69	0.0	0.2	5.288	A
B - A421 (East)	926	232	111	1595	0.581	921	932	0.0	1.4	5.300	A
C - Whaddon Rd	203	51	849	501	0.405	201	182	0.0	0.7	11.869	B
D - A421 (West)	812	203	194	1433	0.566	806	856	0.0	1.3	5.701	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	133	33	1116	693	0.192	133	82	0.2	0.2	6.420	A
B - A421 (East)	1106	276	133	1582	0.699	1102	1116	1.4	2.3	7.440	A
C - Whaddon Rd	243	61	1017	414	0.587	240	218	0.7	1.3	20.417	C
D - A421 (West)	969	242	232	1411	0.687	966	1025	1.3	2.1	8.023	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	163	41	1341	573	0.284	162	96	0.2	0.4	8.753	A
B - A421 (East)	1354	339	162	1566	0.865	1340	1342	2.3	5.7	15.115	C
C - Whaddon Rd	297	74	1237	298	0.997	270	265	1.3	8.2	88.411	F
D - A421 (West)	1187	297	263	1393	0.852	1175	1244	2.1	5.2	15.665	C

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	163	41	1359	564	0.289	163	98	0.4	0.4	8.981	A
B - A421 (East)	1354	339	163	1566	0.865	1353	1359	5.7	6.0	16.689	C
C - Whaddon Rd	297	74	1249	293	1.016	280	267	8.2	12.5	151.340	F
D - A421 (West)	1187	297	272	1388	0.855	1185	1257	5.2	5.5	17.488	C

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	133	33	1165	668	0.199	134	90	0.4	0.3	6.752	A
B - A421 (East)	1106	276	134	1582	0.699	1120	1165	6.0	2.4	8.035	A
C - Whaddon Rd	243	61	1033	405	0.599	286	221	12.5	1.6	39.873	E
D - A421 (West)	969	242	274	1387	0.699	982	1046	5.5	2.4	9.130	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	111	28	946	784	0.142	112	70	0.3	0.2	5.361	A
B - A421 (East)	926	232	112	1594	0.581	930	945	2.4	1.4	5.452	A
C - Whaddon Rd	203	51	858	497	0.409	207	184	1.6	0.7	12.563	B
D - A421 (West)	812	203	200	1430	0.568	816	865	2.4	1.3	5.904	A

2033 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	144.92	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	171	100.000
B - A421 (East)		ONE HOUR	✓	1428	100.000
C - Whaddon Rd		ONE HOUR	✓	314	100.000
D - A421 (West)		ONE HOUR	✓	1257	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	0	32	53	85
	B - A421 (East)	24	1	198	1205
	C - Whaddon Rd	51	227	0	36
	D - A421 (West)	31	1194	32	0

Proportions

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	0.00	0.19	0.31	0.50
	B - A421 (East)	0.02	0.00	0.14	0.84
	C - Whaddon Rd	0.16	0.72	0.00	0.11
	D - A421 (West)	0.02	0.95	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	0	0	0	0
	B - A421 (East)	5	0	1	2
	C - Whaddon Rd	0	0	0	0
	D - A421 (West)	0	3	4	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	1.000	1.000	1.000	1.000
	B - A421 (East)	1.048	1.000	1.012	1.019
	C - Whaddon Rd	1.000	1.000	1.000	1.000
	D - A421 (West)	1.000	1.029	1.036	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - Coddimor Ln**	129	129
	B - A421 (East)	1075	1095
	C - Whaddon Rd	236	236
	D - A421 (West)	947	974
17:00-17:15	**A - Coddimor Ln**	154	154
	B - A421 (East)	1284	1308
	C - Whaddon Rd	282	282
	D - A421 (West)	1130	1163
17:15-17:30	**A - Coddimor Ln**	188	188
	B - A421 (East)	1573	1602
	C - Whaddon Rd	345	345
	D - A421 (West)	1385	1424
17:30-17:45	**A - Coddimor Ln**	188	188
	B - A421 (East)	1573	1602
	C - Whaddon Rd	345	345
	D - A421 (West)	1385	1424
17:45-18:00	**A - Coddimor Ln**	154	154
	B - A421 (East)	1284	1308
	C - Whaddon Rd	282	282
	D - A421 (West)	1130	1163
18:00-18:15	**A - Coddimor Ln**	129	129
	B - A421 (East)	1075	1095
	C - Whaddon Rd	236	236
	D - A421 (West)	947	974

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.38	11.74	0.6	B	157	235
B - A421 (East)	1.01	74.74	33.6	F	1311	1966
C - Whaddon Rd	1.66	931.73	72.1	F	288	432
D - A421 (West)	0.98	50.69	18.6	F	1154	1731

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1084	710	0.181	128	79	0.0	0.2	6.172	A
B - A421 (East)	1075	269	128	1585	0.678	1067	1084	0.0	2.1	6.845	A
C - Whaddon Rd	236	59	983	431	0.547	231	212	0.0	1.2	17.626	C
D - A421 (West)	947	237	224	1416	0.669	939	990	0.0	2.0	7.433	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1291	600	0.256	153	93	0.2	0.3	8.047	A
B - A421 (East)	1284	321	153	1571	0.817	1276	1291	2.1	4.2	11.847	B
C - Whaddon Rd	282	70	1175	331	0.852	270	253	1.2	4.1	51.660	F
D - A421 (West)	1130	283	262	1394	0.811	1122	1183	2.0	4.0	12.877	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1467	505	0.372	187	94	0.3	0.6	11.280	B
B - A421 (East)	1573	393	186	1553	1.013	1499	1468	4.2	22.6	42.437	E
C - Whaddon Rd	345	86	1385	221	1.560	219	300	4.1	35.7	364.263	F
D - A421 (West)	1385	346	221	1417	0.977	1341	1383	4.0	14.9	34.960	D

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1487	494	0.380	188	93	0.6	0.6	11.741	B
B - A421 (East)	1573	393	188	1552	1.013	1529	1488	22.6	33.6	74.737	F
C - Whaddon Rd	345	86	1411	208	1.662	207	306	35.7	70.1	816.877	F
D - A421 (West)	1385	346	211	1423	0.973	1370	1407	14.9	18.6	50.691	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1356	565	0.272	154	97	0.6	0.4	8.781	A
B - A421 (East)	1284	321	156	1570	0.818	1399	1355	33.6	5.0	30.913	D
C - Whaddon Rd	282	70	1282	275	1.025	274	272	70.1	72.1	931.733	F
D - A421 (West)	1130	283	268	1391	0.813	1186	1288	18.6	4.7	21.286	C

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1234	632	0.203	129	110	0.4	0.3	7.165	A
B - A421 (East)	1075	269	129	1584	0.679	1087	1234	5.0	2.2	7.389	A
C - Whaddon Rd	236	59	1001	422	0.559	417	215	72.1	27.0	433.634	F
D - A421 (West)	947	237	388	1322	0.716	955	1029	4.7	2.6	10.034	B

2033 Base + CD + D, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	215.89	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	171	100.000
B - A421 (East)		ONE HOUR	✓	1483	100.000
C - Whaddon Rd		ONE HOUR	✓	340	100.000
D - A421 (West)		ONE HOUR	✓	1308	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	0	32	53	85
	B - A421 (East)	24	1	210	1248
	C - Whaddon Rd	51	253	0	36
	D - A421 (West)	31	1245	32	0

Proportions

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	0.00	0.19	0.31	0.50
	B - A421 (East)	0.02	0.00	0.14	0.84
	C - Whaddon Rd	0.15	0.75	0.00	0.11
	D - A421 (West)	0.02	0.95	0.02	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	0	0	0	0
	B - A421 (East)	5	0	1	2
	C - Whaddon Rd	0	0	0	0
	D - A421 (West)	0	3	4	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	**B - A421 (East)**	**C - Whaddon Rd**	**D - A421 (West)**
From	**A - Coddimor Ln**	1.000	1.000	1.000	1.000
	B - A421 (East)	1.048	1.000	1.012	1.019
	C - Whaddon Rd	1.000	1.000	1.000	1.000
	D - A421 (West)	1.000	1.029	1.036	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - Coddimor Ln	129	129
	B - A421 (East)	1117	1137
	C - Whaddon Rd	256	256
	D - A421 (West)	985	1013
17:00-17:15	A - Coddimor Ln	154	154
	B - A421 (East)	1333	1358
	C - Whaddon Rd	305	305
	D - A421 (West)	1176	1210
17:15-17:30	A - Coddimor Ln	188	188
	B - A421 (East)	1633	1663
	C - Whaddon Rd	374	374
	D - A421 (West)	1441	1482
17:30-17:45	A - Coddimor Ln	188	188
	B - A421 (East)	1633	1663
	C - Whaddon Rd	374	374
	D - A421 (West)	1441	1482
17:45-18:00	A - Coddimor Ln	154	154
	B - A421 (East)	1333	1358
	C - Whaddon Rd	305	305
	D - A421 (West)	1176	1210
18:00-18:15	A - Coddimor Ln	129	129
	B - A421 (East)	1117	1137
	C - Whaddon Rd	256	256
	D - A421 (West)	985	1013

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.39	12.47	0.6	B	157	235
B - A421 (East)	1.05	112.02	55.6	F	1361	2041
C - Whaddon Rd	1.84	1325.61	111.8	F	312	467
D - A421 (West)	1.01	78.30	31.9	F	1201	1801

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1140	681	0.189	128	79	0.0	0.2	6.499	A
B - A421 (East)	1117	279	128	1585	0.704	1107	1140	0.0	2.3	7.396	A
C - Whaddon Rd	256	64	1014	415	0.616	250	221	0.0	1.5	21.071	C
D - A421 (West)	985	246	242	1405	0.701	976	1022	0.0	2.3	8.224	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1348	570	0.269	153	91	0.2	0.4	8.623	A
B - A421 (East)	1333	333	153	1571	0.849	1322	1348	2.3	5.1	13.859	B
C - Whaddon Rd	305	76	1211	312	0.979	281	264	1.5	7.7	84.676	F
D - A421 (West)	1176	294	274	1387	0.848	1165	1218	2.3	5.0	15.488	C

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1499	488	0.385	187	89	0.4	0.6	11.915	B
B - A421 (East)	1633	408	186	1553	1.051	1520	1501	5.1	33.2	55.952	F
C - Whaddon Rd	374	93	1399	214	1.747	213	307	7.7	47.9	508.848	F
D - A421 (West)	1441	360	217	1420	1.015	1372	1395	5.0	22.2	46.488	E

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1521	476	0.395	188	89	0.6	0.6	12.471	B
B - A421 (East)	1633	408	187	1552	1.052	1544	1522	33.2	55.6	112.020	F
C - Whaddon Rd	374	93	1419	203	1.838	203	312	47.9	90.5	1134.185	F
D - A421 (West)	1441	360	208	1424	1.011	1402	1414	22.2	31.9	78.296	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1416	533	0.288	154	88	0.6	0.4	9.544	A
B - A421 (East)	1333	333	157	1569	0.850	1525	1414	55.6	7.6	75.838	F
C - Whaddon Rd	305	76	1386	220	1.386	220	296	90.5	111.8	1325.606	F
D - A421 (West)	1176	294	223	1416	0.831	1282	1383	31.9	5.6	37.784	E

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1269	613	0.210	129	102	0.4	0.3	7.444	A
B - A421 (East)	1117	279	129	1584	0.705	1137	1269	7.6	2.5	8.405	A
C - Whaddon Rd	256	64	1041	401	0.637	398	226	111.8	76.3	853.696	F
D - A421 (West)	985	246	375	1329	0.741	995	1063	5.6	3.0	11.098	B

2033 Base + CD + D with TP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	206.66	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	171	100.000
B - A421 (East)		ONE HOUR	✓	1474	100.000
C - Whaddon Rd		ONE HOUR	✓	339	100.000
D - A421 (West)		ONE HOUR	✓	1300	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	32	53	85
	B - A421 (East)	24	1	208	1241
	C - Whaddon Rd	51	252	0	36
	D - A421 (West)	31	1237	32	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0.00	0.19	0.31	0.50
	B - A421 (East)	0.02	0.00	0.14	0.84
	C - Whaddon Rd	0.15	0.74	0.00	0.11
	D - A421 (West)	0.02	0.95	0.02	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	0	0	0	0
	B - A421 (East)	5	0	1	2
	C - Whaddon Rd	0	0	0	0
	D - A421 (West)	0	3	4	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	A - Coddimor Ln	1.000	1.000	1.000	1.000
	B - A421 (East)	1.048	1.000	1.012	1.019
	C - Whaddon Rd	1.000	1.000	1.000	1.000
	D - A421 (West)	1.000	1.029	1.036	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - Coddimor Ln	129	129
	B - A421 (East)	1110	1130
	C - Whaddon Rd	255	255
	D - A421 (West)	979	1007
17:00-17:15	A - Coddimor Ln	154	154
	B - A421 (East)	1325	1350
	C - Whaddon Rd	304	304
	D - A421 (West)	1169	1202
17:15-17:30	A - Coddimor Ln	188	188
	B - A421 (East)	1623	1653
	C - Whaddon Rd	373	373
	D - A421 (West)	1432	1473
17:30-17:45	A - Coddimor Ln	188	188
	B - A421 (East)	1623	1653
	C - Whaddon Rd	373	373
	D - A421 (West)	1432	1473
17:45-18:00	A - Coddimor Ln	154	154
	B - A421 (East)	1325	1350
	C - Whaddon Rd	304	304
	D - A421 (West)	1169	1202
18:00-18:15	A - Coddimor Ln	129	129
	B - A421 (East)	1110	1130
	C - Whaddon Rd	255	255
	D - A421 (West)	979	1007

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.39	12.38	0.6	B	157	235
B - A421 (East)	1.05	105.48	51.7	F	1353	2029
C - Whaddon Rd	1.83	1280.43	108.2	F	311	466
D - A421 (West)	1.01	73.26	29.3	F	1193	1790

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1133	684	0.188	128	79	0.0	0.2	6.458	A
B - A421 (East)	1110	277	128	1585	0.700	1101	1133	0.0	2.3	7.301	A
C - Whaddon Rd	255	64	1009	418	0.610	249	219	0.0	1.5	20.696	C
D - A421 (West)	979	245	242	1406	0.697	970	1017	0.0	2.2	8.105	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1341	573	0.268	153	92	0.2	0.4	8.554	A
B - A421 (East)	1325	331	153	1571	0.844	1315	1341	2.3	4.9	13.496	B
C - Whaddon Rd	304	76	1206	315	0.967	281	262	1.5	7.3	78.679	F
D - A421 (West)	1169	292	274	1387	0.843	1159	1213	2.2	4.9	15.097	C

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1495	490	0.384	187	90	0.4	0.6	11.835	B
B - A421 (East)	1623	406	186	1553	1.045	1518	1497	4.9	31.4	53.612	F
C - Whaddon Rd	373	93	1397	215	1.735	214	306	7.3	47.0	496.218	F
D - A421 (West)	1432	358	217	1419	1.009	1368	1394	4.9	20.9	44.518	E

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1517	478	0.393	188	89	0.6	0.6	12.384	B
B - A421 (East)	1623	406	187	1552	1.046	1542	1518	31.4	51.7	105.482	F
C - Whaddon Rd	373	93	1419	204	1.831	204	311	47.0	89.3	1101.450	F
D - A421 (West)	1432	358	209	1424	1.005	1398	1413	20.9	29.3	73.260	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1406	538	0.285	154	89	0.6	0.4	9.406	A
B - A421 (East)	1325	331	157	1569	0.845	1505	1404	51.7	6.8	66.486	F
C - Whaddon Rd	304	76	1370	229	1.329	229	292	89.3	108.2	1280.427	F
D - A421 (West)	1169	292	231	1412	0.828	1265	1368	29.3	5.4	33.887	D

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1265	615	0.209	129	102	0.4	0.3	7.411	A
B - A421 (East)	1110	277	129	1584	0.701	1128	1265	6.8	2.4	8.174	A
C - Whaddon Rd	255	64	1033	405	0.629	401	224	108.2	71.5	807.968	F
D - A421 (West)	979	245	378	1327	0.738	989	1056	5.4	2.9	10.933	B

2033 Base + CD + D - ST, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J7	Whaddon Crossroads	Standard Roundabout		A, B, C, D	237.30	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Coddimor Ln		ONE HOUR	✓	171	100.000
B - A421 (East)		ONE HOUR	✓	1494	100.000
C - Whaddon Rd		ONE HOUR	✓	348	100.000
D - A421 (West)		ONE HOUR	✓	1322	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	0	32	53	85
	B - A421 (East)	24	1	214	1255
	C - Whaddon Rd	51	261	0	36
	D - A421 (West)	31	1259	32	0

Proportions

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	0.00	0.19	0.31	0.50
	B - A421 (East)	0.02	0.00	0.14	0.84
	C - Whaddon Rd	0.15	0.75	0.00	0.10
	D - A421 (West)	0.02	0.95	0.02	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	0	0	0	0
	B - A421 (East)	5	0	1	2
	C - Whaddon Rd	0	0	0	0
	D - A421 (West)	0	4	3	0

Average PCU Per Veh

		To			
		A - Coddimor Ln	B - A421 (East)	C - Whaddon Rd	D - A421 (West)
From	**A - Coddimor Ln**	1.000	1.000	1.000	1.000
	B - A421 (East)	1.048	1.000	1.012	1.019
	C - Whaddon Rd	1.000	1.000	1.000	1.000
	D - A421 (West)	1.000	1.036	1.029	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - Coddimor Ln**	129	129
	B - A421 (East)	1125	1146
	C - Whaddon Rd	262	262
	D - A421 (West)	996	1030
17:00-17:15	**A - Coddimor Ln**	154	154
	B - A421 (East)	1343	1368
	C - Whaddon Rd	312	312
	D - A421 (West)	1189	1230
17:15-17:30	**A - Coddimor Ln**	188	188
	B - A421 (East)	1645	1676
	C - Whaddon Rd	383	383
	D - A421 (West)	1456	1507
17:30-17:45	**A - Coddimor Ln**	188	188
	B - A421 (East)	1645	1676
	C - Whaddon Rd	383	383
	D - A421 (West)	1456	1507
17:45-18:00	**A - Coddimor Ln**	154	154
	B - A421 (East)	1343	1368
	C - Whaddon Rd	312	312
	D - A421 (West)	1189	1230
18:00-18:15	**A - Coddimor Ln**	129	129
	B - A421 (East)	1125	1146
	C - Whaddon Rd	262	262
	D - A421 (West)	996	1030

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Coddimor Ln	0.40	12.69	0.7	B	157	235
B - A421 (East)	1.06	120.43	60.6	F	1371	2057
C - Whaddon Rd	1.88	1420.79	121.3	F	319	478
D - A421 (West)	1.03	94.76	40.2	F	1214	1820

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1155	669	0.192	128	79	0.0	0.2	6.638	A
B - A421 (East)	1125	281	128	1585	0.710	1115	1155	0.0	2.4	7.517	A
C - Whaddon Rd	262	65	1020	412	0.635	255	223	0.0	1.6	22.102	C
D - A421 (West)	996	249	248	1393	0.715	986	1027	0.0	2.4	8.648	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1362	558	0.275	153	91	0.2	0.4	8.867	A
B - A421 (East)	1343	336	153	1571	0.855	1331	1362	2.4	5.3	14.335	B
C - Whaddon Rd	312	78	1217	309	1.012	283	267	1.6	9.1	95.701	F
D - A421 (West)	1189	297	276	1377	0.863	1176	1224	2.4	5.6	16.936	C

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1502	482	0.390	187	88	0.4	0.6	12.151	B
B - A421 (East)	1645	411	185	1553	1.059	1524	1504	5.3	35.7	58.958	F
C - Whaddon Rd	383	96	1399	214	1.790	213	310	9.1	51.5	551.072	F
D - A421 (West)	1456	364	217	1411	1.032	1373	1395	5.6	26.4	52.974	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	188	47	1522	471	0.399	188	88	0.6	0.7	12.692	B
B - A421 (East)	1645	411	187	1553	1.060	1545	1523	35.7	60.6	120.426	F
C - Whaddon Rd	383	96	1418	204	1.878	204	314	51.5	96.2	1328.388	F
D - A421 (West)	1456	364	209	1415	1.029	1401	1413	26.4	40.2	94.755	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	154	38	1453	508	0.302	154	87	0.7	0.4	10.200	B
B - A421 (East)	1343	336	158	1569	0.856	1546	1450	60.6	10.0	88.405	F
C - Whaddon Rd	312	78	1402	212	1.472	212	302	96.2	121.3	1420.790	F
D - A421 (West)	1189	297	217	1411	0.843	1324	1397	40.2	6.5	55.270	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Coddimor Ln	129	32	1280	604	0.213	129	100	0.4	0.3	7.589	A
B - A421 (East)	1125	281	129	1584	0.710	1155	1279	10.0	2.5	8.928	A
C - Whaddon Rd	262	65	1054	394	0.664	391	230	121.3	89.0	969.703	F
D - A421 (West)	996	249	370	1324	0.752	1009	1075	6.5	3.2	11.869	B

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

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

Filename: J8 - Post Calibration Adjustment.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J8
Report generation date: 18/12/2020 16:13:10

- »2020 Base, AM
- »2020 Base, PM
- »2033 Base, AM
- »2033 Base, PM
- »2033 Base + CD + D, AM
- »2033 Base + CD + D, PM
- »2033 Base + CD + D with TP, AM
- »2033 Base + CD + D with TP, PM
- »2033 Base + CD + D - ST, AM
- »2033 Base + CD + D - ST, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2020 Base									
Stream B-C	D1	0.7	1425.86	0.99	F	D2	0.0	11.49	0.01	B
Stream B-A		6.1	231.06	0.98	F		0.5	74.43	0.36	F
Stream C-AB		0.0	8.63	0.01	A		0.0	9.19	0.00	A
	2033 Base									
Stream B-C	D13	1.9	1644.92	9999999999.00	F	D14	1.3	1374.10	9999999999.00	F
Stream B-A		56.6	1796.20	9999999999.00	F		15.5	1519.60	9999999999.00	F
Stream C-AB		0.0	10.01	0.01	B		0.0	10.87	0.00	B
	2033 Base + CD + D									
Stream B-C	D15	2.0	2010.96	9999999999.00	F	D16	1.3	1628.91	9999999999.00	F
Stream B-A		62.1	1469.68	9999999999.00	F		18.8	1598.89	9999999999.00	F
Stream C-AB		0.0	10.49	0.01	B		0.0	11.37	0.00	B
	2033 Base + CD + D with TP									
Stream B-C	D17	2.0	1963.54	9999999999.00	F	D18	1.3	1549.51	9999999999.00	F
Stream B-A		61.4	1434.12	9999999999.00	F		18.2	1582.52	9999999999.00	F
Stream C-AB		0.0	10.43	0.01	B		0.0	11.27	0.00	B
	2033 Base + CD + D - ST									
Stream B-C	D19	1.9	2210.10	9999999999.00	F	D20	1.3	1709.44	9999999999.00	F
Stream B-A		62.9	1566.32	9999999999.00	F		18.8	1617.35	9999999999.00	F
Stream C-AB		0.0	10.72	0.01	B		0.0	11.46	0.00	B

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

File summary

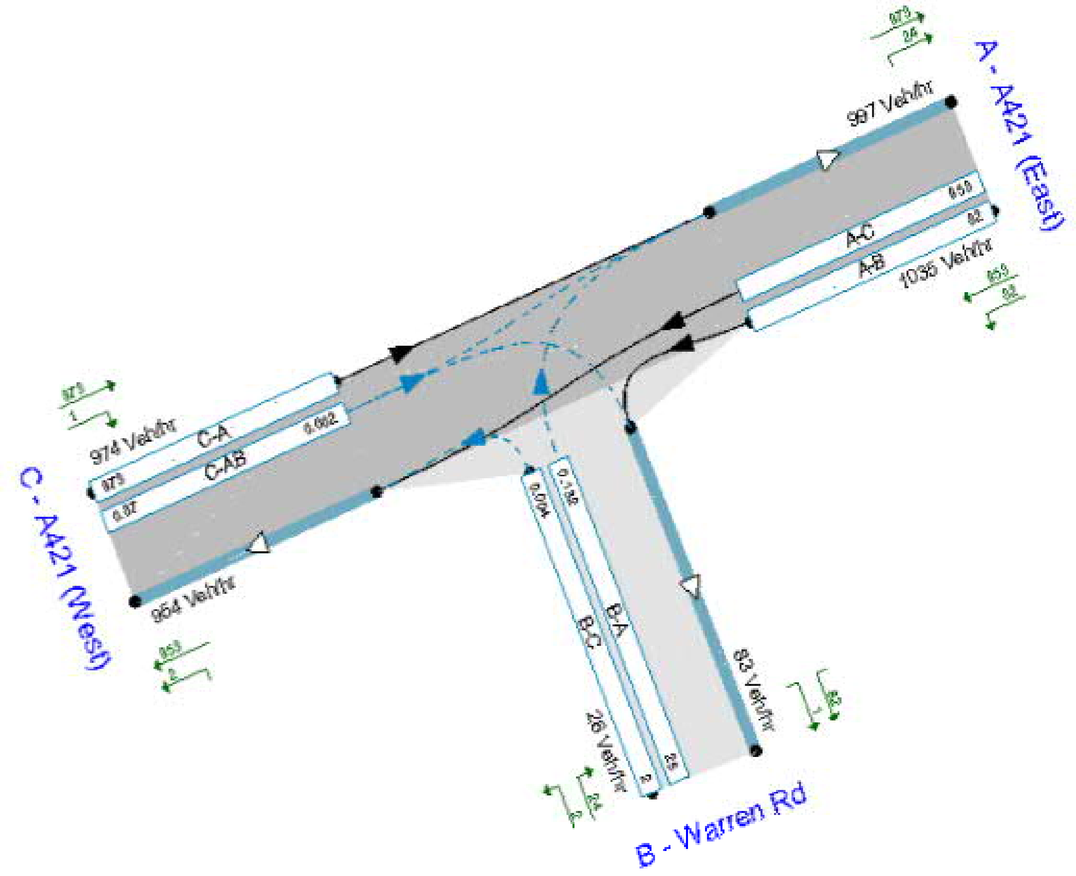
File Description

Title	Warren Road/ A421
Location	51°59'6.85"N, 0°50'10.28"W
Site number	8
Date	30/11/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster

Description	Warren Road ,odelled as one lane to calibrate model against queue length data

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	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D2,D13,D14,D15,D16,D17,D18,D19,D20	100.000	100.000

2020 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		11.38	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A421 (East)		Major
B	Warren Rd		Minor
C	A421 (West)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - A421 (West)	6.25		✓	3.62	161.3	✓	9.25

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 - Warren Rd	One lane plus flare	10.00	10.00	6.40	5.20	4.90	✓	3.00	250	122

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	746	0.134	0.340	0.214	0.485
B-C	656	0.100	0.252	-	-
C-B	771	0.295	0.295	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1019	100.000
B - Warren Rd		ONE HOUR	✓	90	100.000

C - A421 (West)		ONE HOUR	✓	1047	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	63	956
	B - Warren Rd	87	0	3
	C - A421 (West)	1044	3	0

Proportions

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0.00	0.06	0.94
	B - Warren Rd	0.97	0.00	0.03
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	3	6
	B - Warren Rd	0	0	33
	C - A421 (West)	5	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	1.000	1.032	1.058
	B - Warren Rd	1.000	1.000	1.333
	C - A421 (West)	1.053	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	**07:30-07:45**	767	810
	07:45-08:00	916	968
	08:00-08:15	1122	1185
	08:15-08:30	1122	1185
	08:30-08:45	916	968
	08:45-09:00	767	810
B - Warren Rd	**07:30-07:45**	68	69
	07:45-08:00	81	82
	08:00-08:15	99	100
	08:15-08:30	99	100
	08:30-08:45	81	82
	08:45-09:00	68	69
C - A421 (West)	**07:30-07:45**	788	830
	07:45-08:00	941	991
	08:00-08:15	1153	1214
	08:15-08:30	1153	1214
	08:30-08:45	941	991
	08:45-09:00	788	830

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.99	1425.86	0.7	F	3	4
B-A	0.98	231.06	6.1	F	80	120
C-AB	0.01	8.63	0.0	A	3	4
C-A					958	1437
A-B					58	87
A-C					877	1316

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.56	326	0.007	2	0.0	0.0	11.121	B

B-A	65	16	303	0.216	64	0.0	0.3	15.039	C
C-AB	2	0.56	531	0.004	2	0.0	0.0	6.805	A
C-A	786	196			786				
A-B	47	12			47				
A-C	720	180			720				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.67	284	0.010	3	0.0	0.0	12.814	B
B-A	78	20	217	0.361	77	0.3	0.5	25.590	D
C-AB	3	0.67	485	0.006	3	0.0	0.0	7.467	A
C-A	939	235			939				
A-B	57	14			57				
A-C	859	215			859				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	3	0.990	1	0.0	0.5	1425.860	F
B-A	96	24	98	0.980	81	0.5	4.3	154.698	F
C-AB	3	0.83	421	0.008	3	0.0	0.0	8.628	A
C-A	1149	287			1149				
A-B	69	17			69				
A-C	1053	263			1053				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	5	0.700	2	0.5	0.7	1303.670	F
B-A	96	24	98	0.982	89	4.3	6.1	231.058	F
C-AB	3	0.83	421	0.008	3	0.0	0.0	8.628	A
C-A	1149	287			1149				
A-B	69	17			69				
A-C	1053	263			1053				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.67	269	0.010	6	0.7	0.0	13.816	B
B-A	78	20	216	0.362	100	6.1	0.6	36.569	E
C-AB	3	0.67	485	0.006	3	0.0	0.0	7.467	A
C-A	939	235			939				
A-B	57	14			57				
A-C	859	215			859				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.56	325	0.007	2	0.0	0.0	11.150	B
B-A	65	16	303	0.216	67	0.6	0.3	15.333	C
C-AB	2	0.56	531	0.004	2	0.0	0.0	6.805	A
C-A	786	196			786				
A-B	47	12			47				
A-C	720	180			720				

2020 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		0.80	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1141	100.000
B - Warren Rd		ONE HOUR	✓	26	100.000
C - A421 (West)		ONE HOUR	✓	1057	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	**A - A421 (East)**	0	88	1053
	B - Warren Rd	24	0	2
	C - A421 (West)	1056	1	0

Proportions

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	**A - A421 (East)**	0.00	0.08	0.92
	B - Warren Rd	0.92	0.00	0.08
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	**A - A421 (East)**	0	0	2
	B - Warren Rd	0	0	0
	C - A421 (West)	3	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	**A - A421 (East)**	1.000	1.000	1.020
	B - Warren Rd	1.000	1.000	1.000
	C - A421 (West)	1.030	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	**16:45-17:00**	859	875
	17:00-17:15	1026	1045
	17:15-17:30	1256	1279
	17:30-17:45	1256	1279
	17:45-18:00	1026	1045

	18:00-18:15	859	875
B - Warren Rd	**16:45-17:00**	20	20
	17:00-17:15	23	23
	17:15-17:30	29	29
	17:30-17:45	29	29
	17:45-18:00	23	23
	18:00-18:15	20	20
C - A421 (West)	**16:45-17:00**	796	820
	17:00-17:15	950	979
	17:15-17:30	1164	1199
	17:30-17:45	1164	1199
	17:45-18:00	950	979
	18:00-18:15	796	820

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.01	11.49	0.0	B	2	3
B-A	0.36	74.43	0.5	F	22	33
C-AB	0.00	9.19	0.0	A	0.92	1
C-A					969	1454
A-B					81	121
A-C					966	1449

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	442	0.003	1	0.0	0.0	8.163	A
B-A	18	5	285	0.063	18	0.0	0.1	13.437	B
C-AB	0.75	0.19	512	0.001	0.75	0.0	0.0	7.038	A
C-A	795	199			795				
A-B	66	17			66				
A-C	793	198			793				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	397	0.005	2	0.0	0.0	9.105	A
B-A	22	5	197	0.110	21	0.1	0.1	20.488	C
C-AB	0.90	0.22	462	0.002	0.90	0.0	0.0	7.806	A
C-A	949	237			949				
A-B	79	20			79				
A-C	947	237			947				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	318	0.007	2	0.0	0.0	11.400	B
B-A	26	7	74	0.355	25	0.1	0.5	70.978	F
C-AB	1	0.28	393	0.003	1	0.0	0.0	9.192	A
C-A	1163	291			1163				
A-B	97	24			97				
A-C	1159	290			1159				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.55	315	0.007	2	0.0	0.0	11.493	B
B-A	26	7	74	0.355	26	0.5	0.5	74.429	F
C-AB	1	0.28	393	0.003	1	0.0	0.0	9.192	A
C-A	1163	291			1163				
A-B	97	24			97				
A-C	1159	290			1159				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.45	396	0.005	2	0.0	0.0	9.136	A
B-A	22	5	197	0.110	23	0.5	0.1	20.879	C
C-AB	0.90	0.22	462	0.002	0.90	0.0	0.0	7.806	A
C-A	949	237			949				
A-B	79	20			79				
A-C	947	237			947				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.38	442	0.003	2	0.0	0.0	8.169	A
B-A	18	5	285	0.063	18	0.1	0.1	13.485	B
C-AB	0.75	0.19	512	0.001	0.75	0.0	0.0	7.038	A
C-A	795	199			795				
A-B	66	17			66				
A-C	793	198			793				

2033 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		71.12	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1185	100.000
B - Warren Rd		ONE HOUR	✓	103	100.000
C - A421 (West)		ONE HOUR	✓	1206	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	72	1113
	B - Warren Rd	100	0	3
	C - A421 (West)	1203	3	0

Proportions

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0.00	0.06	0.94
	B - Warren Rd	0.97	0.00	0.03
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	3	6
	B - Warren Rd	0	0	33
	C - A421 (West)	5	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	1.000	1.032	1.058
	B - Warren Rd	1.000	1.000	1.333
	C - A421 (West)	1.053	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	**07:30-07:45**	892	943
	07:45-08:00	1066	1126
	08:00-08:15	1305	1379
	08:15-08:30	1305	1379
	08:30-08:45	1066	1126

	08:45-09:00	892	943
B - Warren Rd	**07:30-07:45**	78	79
	07:45-08:00	93	94
	08:00-08:15	114	115
	08:15-08:30	114	115
	08:30-08:45	93	94
	08:45-09:00	78	79
C - A421 (West)	**07:30-07:45**	908	956
	07:45-08:00	1085	1142
	08:00-08:15	1328	1399
	08:15-08:30	1328	1399
	08:30-08:45	1085	1142
	08:45-09:00	908	956

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	1644.92	1.9	F	3	5
B-A	9999999999.00	1796.20	56.6	F	92	137
C-AB	0.01	10.01	0.0	B	3	5
C-A					1104	1656
A-B					66	99
A-C					1021	1532

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.65	293	0.009	3	0.0	0.0	12.410	B
B-A	75	19	232	0.324	73	0.0	0.5	22.408	C
C-AB	3	0.65	492	0.005	3	0.0	0.0	7.352	A
C-A	906	226			906				
A-B	54	14			54				
A-C	838	209			838				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	189	0.016	3	0.0	0.0	19.313	C
B-A	90	22	132	0.677	85	0.5	1.7	69.727	F
C-AB	3	0.77	438	0.007	3	0.0	0.0	8.274	A
C-A	1081	270			1081				
A-B	65	16			65				
A-C	1001	250			1001				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	0	9999999999.000	0	0.0	1.0	-1873.839	?
B-A	110	27	0	9999999999.000	0	1.7	29.2	1796.204	F
C-AB	4	0.95	363	0.010	4	0.0	0.0	10.009	B
C-A	1325	331			1325				
A-B	80	20			80				
A-C	1225	306			1225				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	0	9999999999.000	0	1.0	1.9	-1775.406	?
B-A	110	27	0	9999999999.000	0	29.2	56.6	-682.555	?
C-AB	4	0.95	363	0.010	4	0.0	0.0	10.009	B
C-A	1325	331			1325				
A-B	80	20			80				
A-C	1225	306			1225				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	4	0.688	3	1.9	1.9	1644.922	F
B-A	90	22	132	0.677	130	56.6	46.5	1203.036	F
C-AB	3	0.77	438	0.007	3	0.0	0.0	8.277	A
C-A	1081	270			1081				
A-B	65	16			65				
A-C	1001	250			1001				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.65	9	0.285	6	1.9	1.1	1007.207	F
B-A	75	19	232	0.324	227	46.5	8.5	448.520	F
C-AB	3	0.65	492	0.005	3	0.0	0.0	7.355	A
C-A	906	226			906				
A-B	54	14			54				
A-C	838	209			838				

2033 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		17.09	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1324	100.000
B - Warren Rd		ONE HOUR	✓	30	100.000
C - A421 (West)		ONE HOUR	✓	1233	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	102	1222
	B - Warren Rd	28	0	2
	C - A421 (West)	1232	1	0

Proportions

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0.00	0.08	0.92
	B - Warren Rd	0.92	0.00	0.08
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	0	2
	B - Warren Rd	0	0	0
	C - A421 (West)	3	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	1.000	1.000	1.020
	B - Warren Rd	1.000	1.000	1.000
	C - A421 (West)	1.030	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	**16:45-17:00**	996	1015
	17:00-17:15	1190	1212
	17:15-17:30	1457	1484
	17:30-17:45	1457	1484
	17:45-18:00	1190	1212

	18:00-18:15	996	1015
B - Warren Rd	**16:45-17:00**	23	23
	17:00-17:15	27	27
	17:15-17:30	33	33
	17:30-17:45	33	33
	17:45-18:00	27	27
	18:00-18:15	23	23
C - A421 (West)	**16:45-17:00**	928	956
	17:00-17:15	1109	1142
	17:15-17:30	1358	1399
	17:30-17:45	1358	1399
	17:45-18:00	1109	1142
	18:00-18:15	928	956

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	1374.10	1.3	F	2	3
B-A	9999999999.00	1519.60	15.5	F	25	38
C-AB	0.00	10.87	0.0	B	1	2
C-A					1131	1696
A-B					93	140
A-C					1121	1682

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	405	0.004	2	0.0	0.0	8.917	A
B-A	21	5	211	0.099	20	0.0	0.1	18.838	C
C-AB	0.87	0.22	471	0.002	0.86	0.0	0.0	7.658	A
C-A	928	232			928				
A-B	76	19			76				
A-C	920	230			920				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	346	0.006	2	0.0	0.0	10.460	B
B-A	25	6	108	0.230	24	0.1	0.3	42.553	E
C-AB	1	0.26	413	0.003	1	0.0	0.0	8.744	A
C-A	1108	277			1108				
A-B	91	23			91				
A-C	1099	275			1099				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.0	0.6	1374.096	F
B-A	30	8	0	9999999999.000	0	0.3	7.9	1519.601	F
C-AB	1	0.32	332	0.004	1	0.0	0.0	10.875	B
C-A	1356	339			1356				
A-B	112	28			112				
A-C	1345	336			1345				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.6	1.3	485.661	F
B-A	30	8	0	9999999999.000	0	7.9	15.5	-8465.203	?
C-AB	1	0.32	332	0.004	1	0.0	0.0	10.875	B
C-A	1356	339			1356				
A-B	112	28			112				
A-C	1345	336			1345				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	198	0.010	7	1.3	0.0	19.357	C
B-A	25	6	108	0.230	86	15.5	0.4	261.291	F
C-AB	1	0.26	413	0.003	1	0.0	0.0	8.745	A
C-A	1108	277			1108				
A-B	91	23			91				
A-C	1099	275			1099				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	404	0.004	2	0.0	0.0	8.940	A
B-A	21	5	211	0.099	22	0.4	0.1	19.105	C
C-AB	0.87	0.22	471	0.002	0.87	0.0	0.0	7.658	A
C-A	928	232			928				
A-B	76	19			76				
A-C	920	230			920				

2033 Base + CD + D, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		61.14	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1233	100.000
B - Warren Rd		ONE HOUR	✓	110	100.000
C - A421 (West)		ONE HOUR	✓	1243	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	78	1155
	B - Warren Rd	107	0	3
	C - A421 (West)	1240	3	0

Proportions

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0.00	0.06	0.94
	B - Warren Rd	0.97	0.00	0.03
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	3	6
	B - Warren Rd	0	0	33
	C - A421 (West)	5	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	1.000	1.032	1.058
	B - Warren Rd	1.000	1.000	1.333
	C - A421 (West)	1.053	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	07:30-07:45	929	981
	07:45-08:00	1109	1171
	08:00-08:15	1358	1434
	08:15-08:30	1358	1434

	08:30-08:45	1109	1171
	08:45-09:00	929	981
B - Warren Rd	**07:30-07:45**	83	84
	07:45-08:00	99	100
	08:00-08:15	122	123
	08:15-08:30	122	123
	08:30-08:45	99	100
	08:45-09:00	83	84
C - A421 (West)	**07:30-07:45**	936	986
	07:45-08:00	1118	1177
	08:00-08:15	1369	1441
	08:15-08:30	1369	1441
	08:30-08:45	1118	1177
	08:45-09:00	936	986

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	2010.96	2.0	F	3	5
B-A	9999999999.00	1469.68	62.1	F	98	147
C-AB	0.01	10.49	0.0	B	3	5
C-A					1138	1707
A-B					72	108
A-C					1060	1590

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.65	280	0.009	3	0.0	0.0	12.966	B
B-A	81	20	214	0.376	78	0.0	0.6	26.113	D
C-AB	3	0.65	481	0.005	3	0.0	0.0	7.525	A
C-A	934	233			934				
A-B	59	15			59				
A-C	870	217			870				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	87	0.035	3	0.0	0.0	42.583	E
B-A	96	24	111	0.869	86	0.6	3.2	117.056	F
C-AB	3	0.77	425	0.007	3	0.0	0.0	8.539	A
C-A	1115	279			1115				
A-B	70	18			70				
A-C	1038	260			1038				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	0	9999999999.000	0	0.0	1.0	160.014	F
B-A	118	29	0	9999999999.000	0	3.2	32.6	86.700	F
C-AB	4	0.95	347	0.011	4	0.0	0.0	10.490	B
C-A	1365	341			1365				
A-B	86	22			86				
A-C	1272	318			1272				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	0	9999999999.000	0	1.0	1.9	124.573	F
B-A	118	29	0	9999999999.000	0	32.6	62.1	62.447	F
C-AB	4	0.95	347	0.011	4	0.0	0.0	10.490	B
C-A	1365	341			1365				
A-B	86	22			86				

A-C	1272	318			1272				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	3	0.890	3	1.9	2.0	2010.961	F
B-A	96	24	111	0.869	109	62.1	58.9	1469.677	F
C-AB	3	0.77	425	0.007	3	0.0	0.0	8.541	A
C-A	1115	279			1115				
A-B	70	18			70				
A-C	1038	260			1038				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.65	7	0.357	5	2.0	1.5	1377.380	F
B-A	81	20	214	0.376	210	58.9	26.4	736.830	F
C-AB	3	0.65	481	0.005	3	0.0	0.0	7.528	A
C-A	934	233			934				
A-B	59	15			59				
A-C	870	217			870				

2033 Base + CD + D, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		20.77	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1367	100.000
B - Warren Rd		ONE HOUR	✓	36	100.000
C - A421 (West)		ONE HOUR	✓	1278	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	109	1258
	B - Warren Rd	33	0	2
	C - A421 (West)	1277	1	0

Proportions

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0.00	0.08	0.92
	B - Warren Rd	0.94	0.00	0.06
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	0	2
	B - Warren Rd	0	0	0
	C - A421 (West)	3	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	1.000	1.000	1.020
	B - Warren Rd	1.000	1.000	1.000
	C - A421 (West)	1.030	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	**16:45-17:00**	1029	1048
	17:00-17:15	1229	1251
	17:15-17:30	1505	1533
	17:30-17:45	1505	1533

	17:45-18:00	1229	1251
	18:00-18:15	1029	1048
B - Warren Rd	**16:45-17:00**	27	27
	17:00-17:15	32	32
	17:15-17:30	39	39
	17:30-17:45	39	39
	17:45-18:00	32	32
	18:00-18:15	27	27
C - A421 (West)	**16:45-17:00**	962	991
	17:00-17:15	1149	1183
	17:15-17:30	1407	1449
	17:30-17:45	1407	1449
	17:45-18:00	1149	1183
	18:00-18:15	962	991

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	1628.91	1.3	F	2	3
B-A	9999999999.00	1598.89	18.8	F	31	46
C-AB	0.00	11.37	0.0	B	1	2
C-A					1171	1757
A-B					100	150
A-C					1154	1731

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	394	0.004	2	0.0	0.0	9.178	A
B-A	25	6	194	0.129	24	0.0	0.1	21.151	C
C-AB	0.87	0.22	461	0.002	0.86	0.0	0.0	7.822	A
C-A	961	240			961				
A-B	82	21			82				
A-C	947	237			947				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	325	0.006	2	0.0	0.0	11.138	B
B-A	30	7	88	0.342	29	0.1	0.5	59.873	F
C-AB	1	0.26	401	0.003	1	0.0	0.0	9.000	A
C-A	1148	287			1148				
A-B	98	25			98				
A-C	1131	283			1131				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.0	0.6	434.013	F
B-A	37	9	0	9999999999.000	0	0.5	9.6	1598.895	F
C-AB	1	0.32	318	0.004	1	0.0	0.0	11.366	B
C-A	1406	351			1406				
A-B	120	30			120				
A-C	1385	346			1385				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.6	1.3	1628.907	F
B-A	37	9	0	9999999999.000	0	9.6	18.8	-4538.381	?
C-AB	1	0.32	318	0.004	1	0.0	0.0	11.366	B
C-A	1406	351			1406				
A-B	120	30			120				

A-C	1385	346			1385				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	6	0.347	3	1.3	0.9	907.271	F
B-A	30	7	88	0.342	83	18.8	5.5	492.550	F
C-AB	1	0.26	401	0.003	1	0.0	0.0	9.002	A
C-A	1148	287			1148				
A-B	98	25			98				
A-C	1131	283			1131				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	385	0.005	5	0.9	0.0	9.570	A
B-A	25	6	193	0.130	46	5.5	0.2	28.154	D
C-AB	0.87	0.22	461	0.002	0.87	0.0	0.0	7.822	A
C-A	961	240			961				
A-B	82	21			82				
A-C	947	237			947				

2033 Base + CD + D with TP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		59.49	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1228	100.000
B - Warren Rd		ONE HOUR	✓	110	100.000
C - A421 (West)		ONE HOUR	✓	1238	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	78	1150
	B - Warren Rd	106	0	3
	C - A421 (West)	1235	3	0

Proportions

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0.00	0.06	0.94
	B - Warren Rd	0.97	0.00	0.03
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	3	6
	B - Warren Rd	0	0	33
	C - A421 (West)	5	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	1.000	1.032	1.058
	B - Warren Rd	1.000	1.000	1.333
	C - A421 (West)	1.053	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	**07:30-07:45**	925	977
	07:45-08:00	1104	1166
	08:00-08:15	1352	1428
	08:15-08:30	1352	1428

	08:30-08:45	1104	1166
	08:45-09:00	925	977
B - Warren Rd	**07:30-07:45**	83	83
	07:45-08:00	99	100
	08:00-08:15	121	122
	08:15-08:30	121	122
	08:30-08:45	99	100
	08:45-09:00	83	83
C - A421 (West)	**07:30-07:45**	932	982
	07:45-08:00	1113	1172
	08:00-08:15	1364	1436
	08:15-08:30	1364	1436
	08:30-08:45	1113	1172
	08:45-09:00	932	982

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	1963.54	2.0	F	3	5
B-A	9999999999.00	1434.12	61.4	F	97	146
C-AB	0.01	10.43	0.0	B	3	5
C-A					1133	1700
A-B					72	107
A-C					1055	1583

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.65	282	0.009	3	0.0	0.0	12.894	B
B-A	80	20	216	0.370	78	0.0	0.6	25.597	D
C-AB	3	0.65	482	0.005	3	0.0	0.0	7.506	A
C-A	930	232			930				
A-B	59	15			59				
A-C	866	216			866				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	105	0.029	3	0.0	0.0	35.204	E
B-A	95	24	113	0.842	86	0.6	2.9	109.172	F
C-AB	3	0.77	426	0.007	3	0.0	0.0	8.508	A
C-A	1110	278			1110				
A-B	70	18			70				
A-C	1034	258			1034				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	0	9999999999.000	0	0.0	1.0	100.250	F
B-A	117	29	0	9999999999.000	0	2.9	32.1	42.392	E
C-AB	4	0.95	349	0.011	4	0.0	0.0	10.434	B
C-A	1360	340			1360				
A-B	86	21			86				
A-C	1266	317			1266				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	4	1	0	9999999999.000	0	1.0	1.9	76.992	F
B-A	117	29	0	9999999999.000	0	32.1	61.4	29.998	D
C-AB	4	0.95	349	0.011	4	0.0	0.0	10.434	B
C-A	1360	340			1360				
A-B	86	21			86				

A-C	1266	317			1266				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	4	0.862	3	1.9	2.0	1963.541	F
B-A	95	24	113	0.842	112	61.4	57.3	1434.122	F
C-AB	3	0.77	426	0.007	3	0.0	0.0	8.511	A
C-A	1110	278			1110				
A-B	70	18			70				
A-C	1034	258			1034				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.65	7	0.349	5	2.0	1.4	1329.383	F
B-A	80	20	216	0.370	212	57.3	24.2	698.380	F
C-AB	3	0.65	482	0.005	3	0.0	0.0	7.506	A
C-A	930	232			930				
A-B	59	15			59				
A-C	866	216			866				

2033 Base + CD + D with TP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		20.02	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1359	100.000
B - Warren Rd		ONE HOUR	✓	35	100.000
C - A421 (West)		ONE HOUR	✓	1271	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	107	1252
	B - Warren Rd	32	0	2
	C - A421 (West)	1270	1	0

Proportions

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0.00	0.08	0.92
	B - Warren Rd	0.93	0.00	0.07
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	0	0	2
	B - Warren Rd	0	0	0
	C - A421 (West)	3	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	**B - Warren Rd**	**C - A421 (West)**
From	**A - A421 (East)**	1.000	1.000	1.020
	B - Warren Rd	1.000	1.000	1.000
	C - A421 (West)	1.030	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	**16:45-17:00**	1023	1042
	17:00-17:15	1222	1244
	17:15-17:30	1496	1524
	17:30-17:45	1496	1524

	17:45-18:00	1222	1244
	18:00-18:15	1023	1042
B - Warren Rd	**16:45-17:00**	26	26
	17:00-17:15	31	31
	17:15-17:30	38	38
	17:30-17:45	38	38
	17:45-18:00	31	31
	18:00-18:15	26	26
C - A421 (West)	**16:45-17:00**	957	986
	17:00-17:15	1143	1177
	17:15-17:30	1400	1442
	17:30-17:45	1400	1442
	17:45-18:00	1143	1177
	18:00-18:15	957	986

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	1549.51	1.3	F	2	3
B-A	9999999999.00	1582.52	18.2	F	30	44
C-AB	0.00	11.27	0.0	B	1	2
C-A					1165	1748
A-B					98	147
A-C					1149	1723

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	396	0.004	2	0.0	0.0	9.132	A
B-A	24	6	197	0.123	24	0.0	0.1	20.730	C
C-AB	0.87	0.22	463	0.002	0.86	0.0	0.0	7.792	A
C-A	956	239			956				
A-B	81	20			81				
A-C	943	236			943				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	329	0.006	2	0.0	0.0	10.999	B
B-A	29	7	91	0.319	28	0.1	0.4	56.149	F
C-AB	1	0.26	403	0.003	1	0.0	0.0	8.952	A
C-A	1142	285			1142				
A-B	96	24			96				
A-C	1126	281			1126				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.0	0.6	107.980	F
B-A	36	9	0	9999999999.000	0	0.4	9.3	1582.523	F
C-AB	1	0.32	321	0.004	1	0.0	0.0	11.274	B
C-A	1398	350			1398				
A-B	118	29			118				
A-C	1378	345			1378				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.6	1.3	1549.506	F
B-A	36	9	0	9999999999.000	0	9.3	18.2	-5106.816	?
C-AB	1	0.32	321	0.004	1	0.0	0.0	11.274	B
C-A	1398	350			1398				
A-B	118	29			118				

A-C	1378	345			1378				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	6	0.323	4	1.3	0.9	905.825	F
B-A	29	7	91	0.319	86	18.2	3.9	455.629	F
C-AB	1	0.26	403	0.003	1	0.0	0.0	8.954	A
C-A	1142	285			1142				
A-B	96	24			96				
A-C	1126	281			1126				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	392	0.004	5	0.9	0.0	9.399	A
B-A	24	6	195	0.124	39	3.9	0.1	25.239	D
C-AB	0.87	0.22	463	0.002	0.87	0.0	0.0	7.794	A
C-A	956	239			956				
A-B	81	20			81				
A-C	943	236			943				

2033 Base + CD + D - ST, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		63.97	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1255	100.000
B - Warren Rd		ONE HOUR	✓	110	100.000
C - A421 (West)		ONE HOUR	✓	1255	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	78	1177
	B - Warren Rd	107	0	3
	C - A421 (West)	1252	3	0

Proportions

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0.00	0.06	0.94
	B - Warren Rd	0.97	0.00	0.03
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	3	6
	B - Warren Rd	0	0	33
	C - A421 (West)	5	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	1.000	1.032	1.058
	B - Warren Rd	1.000	1.000	1.333
	C - A421 (West)	1.053	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	07:30-07:45	945	998
	07:45-08:00	1128	1192
	08:00-08:15	1382	1460
	08:15-08:30	1382	1460

	08:30-08:45	1128	1192
	08:45-09:00	945	998
B - Warren Rd	**07:30-07:45**	83	84
	07:45-08:00	99	100
	08:00-08:15	121	122
	08:15-08:30	121	122
	08:30-08:45	99	100
	08:45-09:00	83	84
C - A421 (West)	**07:30-07:45**	945	995
	07:45-08:00	1129	1188
	08:00-08:15	1382	1455
	08:15-08:30	1382	1455
	08:30-08:45	1129	1188
	08:45-09:00	945	995

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	2210.10	1.9	F	3	4
B-A	9999999999.00	1566.32	62.9	F	98	147
C-AB	0.01	10.72	0.0	B	3	5
C-A					1149	1723
A-B					72	108
A-C					1080	1620

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.56	275	0.008	2	0.0	0.0	13.189	B
B-A	81	20	206	0.391	78	0.0	0.6	27.610	D
C-AB	3	0.65	476	0.005	3	0.0	0.0	7.606	A
C-A	943	236			943				
A-B	59	15			59				
A-C	886	221			886				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.67	25	0.106	2	0.0	0.1	153.897	F
B-A	96	24	101	0.949	83	0.6	4.0	304.521	F
C-AB	3	0.77	419	0.007	3	0.0	0.0	8.664	A
C-A	1126	281			1126				
A-B	70	18			70				
A-C	1058	264			1058				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	0	9999999999.000	0	0.1	0.9	306.196	F
B-A	118	29	0	9999999999.000	0	4.0	33.4	215.437	F
C-AB	4	0.95	339	0.011	4	0.0	0.0	10.723	B
C-A	1378	345			1378				
A-B	86	22			86				
A-C	1296	324			1296				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	1	0	9999999999.000	0	0.9	1.8	246.520	F
B-A	118	29	0	9999999999.000	0	33.4	62.9	161.560	F
C-AB	4	0.95	339	0.011	4	0.0	0.0	10.723	B
C-A	1378	345			1378				
A-B	86	22			86				

A-C	1296	324			1296				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.67	3	0.954	2	1.8	1.9	2210.102	F
B-A	96	24	101	0.949	100	62.9	62.0	1566.317	F
C-AB	3	0.77	419	0.007	3	0.0	0.0	8.666	A
C-A	1126	281			1126				
A-B	70	18			70				
A-C	1058	264			1058				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.56	6	0.368	4	1.9	1.4	1572.767	F
B-A	81	20	206	0.391	203	62.0	31.4	834.454	F
C-AB	3	0.65	476	0.005	3	0.0	0.0	7.610	A
C-A	943	236			943				
A-B	59	15			59				
A-C	886	221			886				

2033 Base + CD + D - ST, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J8	Warren Road/ A421	T-Junction	Two-way		20.88	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1375	100.000
B - Warren Rd		ONE HOUR	✓	36	100.000
C - A421 (West)		ONE HOUR	✓	1293	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	109	1266
	B - Warren Rd	33	0	2
	C - A421 (West)	1292	1	0

Proportions

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0.00	0.08	0.92
	B - Warren Rd	0.94	0.00	0.06
	C - A421 (West)	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	0	0	2
	B - Warren Rd	0	0	0
	C - A421 (West)	3	0	0

Average PCU Per Veh

		To		
		A - A421 (East)	B - Warren Rd	C - A421 (West)
From	A - A421 (East)	1.000	1.000	1.020
	B - Warren Rd	1.000	1.000	1.000
	C - A421 (West)	1.030	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - A421 (East)	16:45-17:00	1035	1054
	17:00-17:15	1236	1258
	17:15-17:30	1514	1541
	17:30-17:45	1514	1541

	17:45-18:00	1236	1258
	18:00-18:15	1035	1054
B - Warren Rd	**16:45-17:00**	27	27
	17:00-17:15	32	32
	17:15-17:30	39	39
	17:30-17:45	39	39
	17:45-18:00	32	32
	18:00-18:15	27	27
C - A421 (West)	**16:45-17:00**	974	1003
	17:00-17:15	1163	1198
	17:15-17:30	1424	1467
	17:30-17:45	1424	1467
	17:45-18:00	1163	1198
	18:00-18:15	974	1003

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	9999999999.00	1709.44	1.3	F	2	3
B-A	9999999999.00	1617.35	18.8	F	31	46
C-AB	0.00	11.46	0.0	B	1	2
C-A					1186	1778
A-B					100	150
A-C					1161	1742

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	392	0.004	2	0.0	0.0	9.220	A
B-A	25	6	190	0.132	24	0.0	0.1	21.731	C
C-AB	0.87	0.22	459	0.002	0.86	0.0	0.0	7.852	A
C-A	973	243			973				
A-B	82	21			82				
A-C	953	238			953				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	321	0.006	2	0.0	0.0	11.290	B
B-A	30	7	82	0.365	28	0.1	0.5	65.515	F
C-AB	1	0.26	399	0.003	1	0.0	0.0	9.048	A
C-A	1161	290			1161				
A-B	98	25			98				
A-C	1138	284			1138				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.0	0.6	744.845	F
B-A	37	9	0	9999999999.000	0	0.5	9.7	1617.354	F
C-AB	1	0.32	315	0.004	1	0.0	0.0	11.460	B
C-A	1423	356			1423				
A-B	120	30			120				
A-C	1393	348			1393				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3	0.64	0	9999999999.000	0	0.6	1.3	1709.441	F
B-A	37	9	0	9999999999.000	0	9.7	18.8	-4045.763	?
C-AB	1	0.32	315	0.004	1	0.0	0.0	11.460	B
C-A	1423	356			1423				
A-B	120	30			120				

A-C	1393	348			1393				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.52	6	0.370	3	1.3	1.0	908.383	F
B-A	30	7	82	0.365	78	18.8	6.8	524.164	F
C-AB	1	0.26	399	0.003	1	0.0	0.0	9.050	A
C-A	1161	290			1161				
A-B	98	25			98				
A-C	1138	284			1138				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	2	0.43	380	0.005	6	1.0	0.0	9.727	A
B-A	25	6	188	0.133	52	6.8	0.2	31.579	D
C-AB	0.87	0.22	459	0.002	0.87	0.0	0.0	7.854	A
C-A	973	243			973				
A-B	82	21			82				
A-C	953	238			953				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

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

Filename: J9 - Post Calibration Adjustment.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J9
Report generation date: 18/12/2020 16:23:23

»2020 Base, AM
»2020 Base, PM
»2033 Base, AM
»2033 Base, PM
»2033 Base + CD + D, AM
»2033 Base + CD + D, PM
»2033 Base + CD + D with TP, AM
»2033 Base + CD + D with TP, PM
»2033 Base + CD + D - ST, AM
»2033 Base + CD + D - ST, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2020 Base									
Stream B-CD	D1	0.2	10.60	0.14	B	D2	0.1	9.47	0.09	A
Stream B-A		0.3	79.04	0.23	F		0.3	88.39	0.21	F
Stream AB-CD		0.1	10.87	0.11	B		0.1	9.79	0.08	A
Stream D-AB		0.1	10.48	0.11	B		0.1	9.77	0.10	A
Stream D-C		0.0	83.66	0.02	F		0.0	0.00	0.00	A
Stream CD-AB		0.1	10.41	0.11	B		0.1	10.00	0.08	A
	2033 Base									
Stream B-CD	D13	33.0	1460.48	9999999999.00	F	D14	21.0	1406.63	9999999999.00	F
Stream B-A		7.7	1546.81	9999999999.00	F		6.5	1479.70	9999999999.00	F
Stream AB-CD		0.3	12.13	0.25	B		0.2	11.48	0.16	B
Stream D-AB		24.1	1414.26	9999999999.00	F		0.2	16.76	0.18	C
Stream D-C		0.6	1465.42	9999999999.00	F		0.0	0.00	0.00	A
Stream CD-AB		0.3	11.69	0.22	B		0.1	11.87	0.10	B
	2033 Base + CD + D									
Stream B-CD	D15	33.0	1545.17	9999999999.00	F	D16	21.0	1411.86	9999999999.00	F
Stream B-A		7.8	1625.52	9999999999.00	F		6.5	1513.04	9999999999.00	F
Stream AB-CD		0.3	12.62	0.23	B		0.2	12.03	0.17	B
Stream D-AB		24.1	1417.14	9999999999.00	F		0.2	17.69	0.19	C
Stream D-C		0.6	1545.21	9999999999.00	F		0.0	0.00	0.00	A
Stream CD-AB		0.3	12.20	0.23	B		0.1	12.33	0.11	B
	2033 Base + CD + D with TP									
Stream B-CD	D17	33.0	1537.82	9999999999.00	F	D18	21.0	1410.72	9999999999.00	F
Stream B-A		7.8	1614.79	9999999999.00	F		6.5	1506.71	9999999999.00	F
Stream AB-CD		0.3	12.57	0.24	B		0.2	11.94	0.17	B
Stream D-AB		24.1	1416.72	9999999999.00	F		0.2	17.54	0.19	C
Stream D-C		0.6	1530.51	9999999999.00	F		0.0	0.00	0.00	A
Stream CD-AB		0.3	12.13	0.23	B		0.1	12.25	0.11	B
	2033 Base + CD + D - ST									
Stream B-CD	D19	33.0	1579.34	9999999999.00	F	D20	21.1	1414.16	9999999999.00	F
Stream B-A		7.8	1675.60	9999999999.00	F		6.6	1524.92	9999999999.00	F
Stream AB-CD		0.3	12.80	0.21	B		0.2	12.23	0.17	B
Stream D-AB		24.1	1419.15	9999999999.00	F		0.2	18.03	0.19	C
Stream D-C		0.7	1625.87	9999999999.00	F		0.0	0.00	0.00	A
Stream CD-AB		0.3	12.49	0.23	B		0.1	12.43	0.11	B

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	A421/ Shucklow Hill/ Little Horwood Rd
Location	51°59'1.51"N, 0°51'11.19"W
Site number	9
Date	30/11/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D2,D13,D14,D15,D16,D17,D18,D19,D20	100.000	100.000

2020 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		0.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A421 (East)		Major
B	Shucklow Hill		Minor
C	A421 (West)		Major
D	Little Horwood Rd		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - A421 (East)	5.85		✓	3.48	177.9	✓	6.85
C - A421 (West)	6.15		✓	3.15	170.9	✓	8.00

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 - Shucklow Hill	One lane plus flare	10.00	10.00	6.80	5.70	5.40	✓	3.00	38	111
D - Little Horwood Rd	One lane plus flare	10.00	8.80	5.50	4.30	4.00	✓	2.00	41	74

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B
AB-D	771	-	-	-	-	-	0.301	0.301	0.301	-	-
B-A	531	0.096	0.243	0.243	-	-	0.153	0.347	-	0.153	0.347
B-CD	821	0.125	0.316	0.316	-	-	-	-	-	-	-
CD-B	743	0.286	0.286	0.286	-	-	-	-	-	-	-
D-AB	782	-	-	-	-	-	0.305	0.305	0.121	-	-
D-C	533	-	0.155	0.353	0.155	0.353	0.247	0.247	0.098	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	971	100.000
B - Shucklow Hill		ONE HOUR	✓	64	100.000
C - A421 (West)		ONE HOUR	✓	1028	100.000
D - Little Horwood Rd		ONE HOUR	✓	39	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0	3	953	15
	B - Shucklow Hill	12	0	29	23
	C - A421 (West)	1006	20	0	2
	D - Little Horwood Rd	18	20	1	0

Proportions

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0.00	0.00	0.98	0.02
	B - Shucklow Hill	0.19	0.00	0.45	0.36
	C - A421 (West)	0.98	0.02	0.00	0.00
	D - Little Horwood Rd	0.46	0.51	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0	0	6	13
	B - Shucklow Hill	0	0	10	9
	C - A421 (West)	5	10	0	50
	D - Little Horwood Rd	11	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	1.000	1.000	1.057	1.133
	B - Shucklow Hill	1.000	1.000	1.103	1.087
	C - A421 (West)	1.053	1.100	1.000	1.500
	D - Little Horwood Rd	1.111	1.050	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - A421 (East)	731	773
	B - Shucklow Hill	48	52
	C - A421 (West)	774	816
	D - Little Horwood Rd	29	32
07:45-08:00	A - A421 (East)	873	924
	B - Shucklow Hill	58	62
	C - A421 (West)	924	975
	D - Little Horwood Rd	35	38
08:00-08:15	A - A421 (East)	1069	1131
	B - Shucklow Hill	70	76
	C - A421 (West)	1132	1194
	D - Little Horwood Rd	43	46
08:15-08:30	A - A421 (East)	1069	1131
	B - Shucklow Hill	70	76
	C - A421 (West)	1132	1194
	D - Little Horwood Rd	43	46
08:30-08:45	A - A421 (East)	873	924
	B - Shucklow Hill	58	62
	C - A421 (West)	924	975
	D - Little Horwood Rd	35	38
08:45-09:00	A - A421 (East)	731	773
	B - Shucklow Hill	48	52
	C - A421 (West)	774	816
	D - Little Horwood Rd	29	32

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.14	10.60	0.2	B	48	72
B-A	0.23	79.04	0.3	F	11	17
A-B					3	4
A-C					874	1312
A-D					14	21
AB-CD	0.11	10.87	0.1	B	35	52
AB-C					901	1352
D-AB	0.11	10.48	0.1	B	35	52
D-C	0.02	83.66	0.0	F	0.92	1
C-D					2	3
C-A					923	1385
C-B					18	28
CD-AB	0.11	10.41	0.1	B	37	55
CD-A					940	1409

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	39	10	521	0.075	39	0.0	0.1	7.462	A
B-A	9	2	208	0.043	9	0.0	0.0	18.061	C
A-B	2	0.56			2				
A-C	717	179			717				
A-D	11	3			11				
AB-CD	28	7	476	0.060	28	0.0	0.1	8.041	A
AB-C	739	185			739				
D-AB	29	7	494	0.058	28	0.0	0.1	7.726	A
D-C	0.75	0.19	199	0.004	0.74	0.0	0.0	18.170	C
C-D	2	0.38			2				
C-A	757	189			757				
C-B	15	4			15				
CD-AB	30	7	485	0.062	30	0.0	0.1	7.903	A
CD-A	771	193			771				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	47	12	474	0.099	47	0.1	0.1	8.419	A
B-A	11	3	145	0.074	11	0.0	0.1	26.717	D
A-B	3	0.67			3				
A-C	857	214			857				
A-D	13	3			13				
AB-CD	34	9	433	0.079	34	0.1	0.1	9.030	A
AB-C	883	221			883				
D-AB	34	9	449	0.076	34	0.1	0.1	8.672	A
D-C	0.90	0.22	134	0.007	0.89	0.0	0.0	27.067	D
C-D	2	0.45			2				
C-A	904	226			904				
C-B	18	4			18				
CD-AB	36	9	445	0.081	36	0.1	0.1	8.793	A
CD-A	921	230			921				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	57	14	399	0.144	57	0.1	0.2	10.527	B
B-A	13	3	59	0.226	12	0.1	0.3	76.987	F
A-B	3	0.83			3				
A-C	1049	262			1049				
A-D	17	4			17				
AB-CD	42	10	373	0.112	42	0.1	0.1	10.859	B
AB-C	1081	270			1081				
D-AB	42	10	386	0.109	42	0.1	0.1	10.466	B
D-C	1	0.28	44	0.025	1	0.0	0.0	83.200	F
C-D	2	0.55			2				
C-A	1108	277			1108				

C-B	22	6			22				
CD-AB	44	11	390	0.113	44	0.1	0.1	10.395	B
CD-A	1127	282			1127				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	57	14	397	0.144	57	0.2	0.2	10.600	B
B-A	13	3	59	0.226	13	0.3	0.3	79.044	F
A-B	3	0.83			3				
A-C	1049	262			1049				
A-D	17	4			17				
AB-CD	42	10	373	0.112	42	0.1	0.1	10.871	B
AB-C	1081	270			1081				
D-AB	42	10	385	0.109	42	0.1	0.1	10.479	B
D-C	1	0.28	44	0.025	1	0.0	0.0	83.660	F
C-D	2	0.55			2				
C-A	1108	277			1108				
C-B	22	6			22				
CD-AB	44	11	390	0.113	44	0.1	0.1	10.406	B
CD-A	1127	282			1127				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	47	12	472	0.099	47	0.2	0.1	8.467	A
B-A	11	3	145	0.074	12	0.3	0.1	27.024	D
A-B	3	0.67			3				
A-C	857	214			857				
A-D	13	3			13				
AB-CD	34	9	433	0.079	34	0.1	0.1	9.043	A
AB-C	883	221			883				
D-AB	34	9	449	0.076	34	0.1	0.1	8.684	A
D-C	0.90	0.22	134	0.007	0.97	0.0	0.0	27.138	D
C-D	2	0.45			2				
C-A	904	226			904				
C-B	18	4			18				
CD-AB	36	9	445	0.081	36	0.1	0.1	8.806	A
CD-A	921	230			921				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	39	10	520	0.075	39	0.1	0.1	7.486	A
B-A	9	2	208	0.043	9	0.1	0.0	18.121	C
A-B	2	0.56			2				
A-C	717	179			717				
A-D	11	3			11				
AB-CD	29	7	476	0.060	29	0.1	0.1	8.056	A
AB-C	739	185			739				
D-AB	29	7	494	0.058	29	0.1	0.1	7.738	A
D-C	0.75	0.19	199	0.004	0.77	0.0	0.0	18.197	C
C-D	2	0.38			2				
C-A	757	189			757				
C-B	15	4			15				
CD-AB	30	8	485	0.062	30	0.1	0.1	7.917	A
CD-A	771	193			771				

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		0.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1052	100.000
B - Shucklow Hill		ONE HOUR	✓	43	100.000
C - A421 (West)		ONE HOUR	✓	1045	100.000
D - Little Horwood Rd		ONE HOUR	✓	38	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	5	1032	15
	B - Shucklow Hill	10	0	18	15
	C - A421 (West)	1030	14	0	1
	D - Little Horwood Rd	24	14	0	0

Proportions

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.23	0.00	0.42	0.35
	C - A421 (West)	0.99	0.01	0.00	0.00
	D - Little Horwood Rd	0.63	0.37	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	0	2	7
	B - Shucklow Hill	0	0	0	0
	C - A421 (West)	3	7	0	0
	D - Little Horwood Rd	4	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	1.000	1.000	1.020	1.070
	B - Shucklow Hill	1.000	1.000	1.000	1.000
	C - A421 (West)	1.030	1.070	1.000	1.000
	D - Little Horwood Rd	1.040	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - A421 (East)**	792	808
	B - Shucklow Hill	32	32
	C - A421 (West)	787	811
	D - Little Horwood Rd	29	29
17:00-17:15	**A - A421 (East)**	946	965
	B - Shucklow Hill	39	39
	C - A421 (West)	939	968
	D - Little Horwood Rd	34	35
17:15-17:30	**A - A421 (East)**	1158	1182
	B - Shucklow Hill	47	47
	C - A421 (West)	1151	1186
	D - Little Horwood Rd	42	43
17:30-17:45	**A - A421 (East)**	1158	1182
	B - Shucklow Hill	47	47
	C - A421 (West)	1151	1186
	D - Little Horwood Rd	42	43
17:45-18:00	**A - A421 (East)**	946	965
	B - Shucklow Hill	39	39
	C - A421 (West)	939	968
	D - Little Horwood Rd	34	35
18:00-18:15	**A - A421 (East)**	792	808
	B - Shucklow Hill	32	32
	C - A421 (West)	787	811
	D - Little Horwood Rd	29	29

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.09	9.47	0.1	A	30	45
B-A	0.21	88.39	0.3	F	9	14
A-B					5	7
A-C					947	1420
A-D					14	21
AB-CD	0.08	9.79	0.1	A	28	41
AB-C					963	1445
D-AB	0.10	9.77	0.1	A	35	52
D-C	0.00	0.00	0.0	A	0	0
C-D					0.92	1
C-A					945	1418
C-B					13	19
CD-AB	0.08	10.00	0.1	A	26	39
CD-A					967	1451

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	25	6	555	0.045	25	0.0	0.0	6.786	A
B-A	8	2	205	0.037	7	0.0	0.0	18.167	C
A-B	4	0.94			4				
A-C	777	194			777				
A-D	11	3			11				
AB-CD	23	6	510	0.044	22	0.0	0.0	7.387	A
AB-C	790	198			790				
D-AB	29	7	522	0.055	28	0.0	0.1	7.293	A
D-C	0	0	199	0.000	0	0.0	0.0	0.000	A
C-D	0.75	0.19			0.75				
C-A	775	194			775				
C-B	11	3			11				
CD-AB	21	5	494	0.042	21	0.0	0.0	7.605	A
CD-A	793	198			793				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	30	7	503	0.059	30	0.0	0.1	7.608	A
B-A	9	2	141	0.064	9	0.0	0.1	27.262	D
A-B	4	1			4				
A-C	928	232			928				
A-D	13	3			13				
AB-CD	27	7	464	0.058	27	0.0	0.1	8.238	A
AB-C	944	236			944				
D-AB	34	9	475	0.072	34	0.1	0.1	8.164	A
D-C	0	0	134	0.000	0	0.0	0.0	0.000	A
C-D	0.90	0.22			0.90				
C-A	926	231			926				
C-B	13	3			13				
CD-AB	25	6	451	0.056	25	0.0	0.1	8.455	A
CD-A	947	237			947				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	36	9	419	0.087	36	0.1	0.1	9.402	A
B-A	11	3	52	0.214	10	0.1	0.2	86.062	F
A-B	6	1			6				
A-C	1136	284			1136				
A-D	17	4			17				
AB-CD	33	8	401	0.082	33	0.1	0.1	9.785	A
AB-C	1156	289			1156				
D-AB	42	10	410	0.102	42	0.1	0.1	9.759	A
D-C	0	0	45	0.000	0	0.0	0.0	0.000	A
C-D	1	0.28			1				
C-A	1134	284			1134				
C-B	15	4			15				
CD-AB	31	8	391	0.079	31	0.1	0.1	9.989	A
CD-A	1160	290			1160				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	36	9	417	0.087	36	0.1	0.1	9.466	A
B-A	11	3	52	0.214	11	0.2	0.3	88.391	F
A-B	6	1			6				
A-C	1136	284			1136				
A-D	17	4			17				
AB-CD	33	8	401	0.082	33	0.1	0.1	9.792	A
AB-C	1156	289			1156				
D-AB	42	10	410	0.102	42	0.1	0.1	9.769	A
D-C	0	0	45	0.000	0	0.0	0.0	0.000	A
C-D	1	0.28			1				
C-A	1134	284			1134				
C-B	15	4			15				
CD-AB	31	8	391	0.079	31	0.1	0.1	9.996	A
CD-A	1160	290			1160				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	30	7	501	0.059	30	0.1	0.1	7.651	A
B-A	9	2	141	0.064	10	0.3	0.1	27.529	D
A-B	4	1			4				
A-C	928	232			928				
A-D	13	3			13				
AB-CD	27	7	464	0.058	27	0.1	0.1	8.246	A
AB-C	944	236			944				
D-AB	34	9	475	0.072	34	0.1	0.1	8.172	A
D-C	0	0	134	0.000	0	0.0	0.0	0.000	A
C-D	0.90	0.22			0.90				
C-A	926	231			926				
C-B	13	3			13				
CD-AB	25	6	451	0.056	25	0.1	0.1	8.461	A
CD-A	948	237			948				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

B-CD	25	6	554	0.045	25	0.1	0.0	6.802	A
B-A	8	2	205	0.037	8	0.1	0.0	18.211	C
A-B	4	0.94			4				
A-C	777	194			777				
A-D	11	3			11				
AB-CD	23	6	510	0.044	23	0.1	0.0	7.392	A
AB-C	791	198			791				
D-AB	29	7	522	0.055	29	0.1	0.1	7.301	A
D-C	0	0	199	0.000	0	0.0	0.0	0.000	A
C-D	0.75	0.19			0.75				
C-A	775	194			775				
C-B	11	3			11				
CD-AB	21	5	494	0.043	21	0.1	0.0	7.613	A
CD-A	794	198			794				

2033 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		36.35	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1130	100.000
B - Shucklow Hill		ONE HOUR	✓	73	100.000
C - A421 (West)		ONE HOUR	✓	1184	100.000
D - Little Horwood Rd		ONE HOUR	✓	45	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0	3	1109	17
	B - Shucklow Hill	14	0	33	26
	C - A421 (West)	1159	23	0	2
	D - Little Horwood Rd	21	23	1	0

Proportions

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0.00	0.00	0.98	0.02
	B - Shucklow Hill	0.19	0.00	0.45	0.36
	C - A421 (West)	0.98	0.02	0.00	0.00
	D - Little Horwood Rd	0.46	0.51	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0	0	6	13
	B - Shucklow Hill	0	0	10	9
	C - A421 (West)	5	10	0	50
	D - Little Horwood Rd	11	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	1.000	1.000	1.057	1.133
	B - Shucklow Hill	1.000	1.000	1.103	1.087
	C - A421 (West)	1.053	1.100	1.000	1.500
	D - Little Horwood Rd	1.111	1.050	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	**A - A421 (East)**	850	899
	B - Shucklow Hill	55	60
	C - A421 (West)	892	940
	D - Little Horwood Rd	34	36
07:45-08:00	**A - A421 (East)**	1016	1074
	B - Shucklow Hill	66	71
	C - A421 (West)	1065	1123
	D - Little Horwood Rd	40	43
08:00-08:15	**A - A421 (East)**	1244	1315
	B - Shucklow Hill	81	87
	C - A421 (West)	1304	1375
	D - Little Horwood Rd	49	53
08:15-08:30	**A - A421 (East)**	1244	1315
	B - Shucklow Hill	81	87
	C - A421 (West)	1304	1375
	D - Little Horwood Rd	49	53
08:30-08:45	**A - A421 (East)**	1016	1074
	B - Shucklow Hill	66	71
	C - A421 (West)	1065	1123
	D - Little Horwood Rd	40	43
08:45-09:00	**A - A421 (East)**	850	899
	B - Shucklow Hill	55	60
	C - A421 (West)	892	940
	D - Little Horwood Rd	34	36

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1460.48	33.0	F	55	82
B-A	9999999999.00	1546.81	7.7	F	13	19
A-B					3	5
A-C					1018	1526
A-D					16	24
AB-CD	0.25	12.13	0.3	B	40	60
AB-C					1048	1572
D-AB	9999999999.00	1414.26	24.1	F	40	60
D-C	9999999999.00	1465.42	0.6	F	1	2
C-D					2	3
C-A					1064	1595
C-B					21	32
CD-AB	0.22	11.69	0.3	B	42	63
CD-A					1082	1624

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	45	11	482	0.093	44	0.0	0.1	8.218	A
B-A	10	3	157	0.066	10	0.0	0.1	24.461	C
A-B	3	0.65			3				
A-C	835	209			835				
A-D	13	3			13				
AB-CD	33	8	442	0.074	32	0.0	0.1	8.782	A
AB-C	860	215			860				
D-AB	33	8	459	0.072	33	0.0	0.1	8.437	A
D-C	0.86	0.22	147	0.006	0.84	0.0	0.0	24.638	C
C-D	2	0.43			2				
C-A	873	218			873				
C-B	17	4			17				
CD-AB	34	9	452	0.076	34	0.0	0.1	8.624	A
CD-A	888	222			888				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	423	0.127	53	0.1	0.1	9.730	A
B-A	12	3	84	0.147	12	0.1	0.2	49.559	E
A-B	3	0.77			3				
A-C	997	249			997				
A-D	15	4			15				
AB-CD	39	10	392	0.100	39	0.1	0.1	10.185	B
AB-C	1027	257			1027				
D-AB	39	10	407	0.096	39	0.1	0.1	9.792	A
D-C	1	0.26	72	0.014	1.00	0.0	0.0	50.802	F
C-D	2	0.52			2				
C-A	1042	260			1042				
C-B	21	5			21				
CD-AB	41	10	405	0.102	41	0.1	0.1	9.885	A
CD-A	1060	265			1060				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	0.1	16.6	1460.475	F
B-A	15	4	0	9999999999.000	0	0.2	4.0	1546.815	F
A-B	4	0.95			4				
A-C	1221	305			1221				
A-D	19	5			19				
AB-CD	19	5	316	0.060	19	0.1	0.1	11.931	B
AB-C	1221	305			1221				
D-AB	48	12	0	9999999999.000	0	0.1	12.1	1414.263	F
D-C	1	0.32	0	9999999999.000	0	0.0	0.3	1465.417	F
C-D	3	0.63			3				
C-A	1276	319			1276				
C-B	25	6			25				
CD-AB	25	6	333	0.076	25	0.1	0.1	11.522	B
CD-A	1276	319			1276				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	16.6	33.0	-11081.629	?
B-A	15	4	0	9999999999.000	0	4.0	7.7	-9452.169	?
A-B	4	0.95			4				
A-C	1221	305			1221				
A-D	19	5			19				
AB-CD	19	5	316	0.060	19	0.1	0.1	12.132	B
AB-C	1221	305			1221				
D-AB	48	12	0	9999999999.000	0	12.1	24.1	-23554.641	?
D-C	1	0.32	0	9999999999.000	0	0.3	0.6	596.517	F
C-D	3	0.63			3				
C-A	1276	319			1276				
C-B	25	6			25				
CD-AB	25	6	333	0.076	25	0.1	0.1	11.689	B
CD-A	1276	319			1276				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	305	0.176	185	33.0	0.2	89.774	F
B-A	12	3	56	0.221	42	7.7	0.4	306.820	F
A-B	3	0.77			3				
A-C	997	249			997				
A-D	15	4			15				
AB-CD	97	24	396	0.245	96	0.1	0.3	12.041	B
AB-C	1100	275			1100				
D-AB	39	10	398	0.098	135	24.1	0.1	20.448	C
D-C	1	0.26	37	0.028	3	0.6	0.0	113.910	F
C-D	2	0.52			2				
C-A	1042	260			1042				
C-B	21	5			21				
CD-AB	92	23	410	0.224	91	0.1	0.3	11.353	B
CD-A	1106	276			1106				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

B-CD	45	11	479	0.094	45	0.2	0.1	8.304	A
B-A	10	3	157	0.066	12	0.4	0.1	24.930	C
A-B	3	0.65			3				
A-C	835	209			835				
A-D	13	3			13				
AB-CD	33	8	442	0.075	34	0.3	0.1	8.773	A
AB-C	860	215			860				
D-AB	33	8	459	0.072	33	0.1	0.1	8.457	A
D-C	0.86	0.22	146	0.006	0.97	0.0	0.0	24.806	C
C-D	2	0.43			2				
C-A	873	218			873				
C-B	17	4			17				
CD-AB	35	9	452	0.077	35	0.3	0.1	8.579	A
CD-A	888	222			888				

2033 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		13.95	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1220	100.000
B - Shucklow Hill		ONE HOUR	✓	50	100.000
C - A421 (West)		ONE HOUR	✓	1219	100.000
D - Little Horwood Rd		ONE HOUR	✓	44	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	6	1197	17
	B - Shucklow Hill	12	0	21	17
	C - A421 (West)	1202	16	0	1
	D - Little Horwood Rd	28	16	0	0

Proportions

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.23	0.00	0.42	0.35
	C - A421 (West)	0.99	0.01	0.00	0.00
	D - Little Horwood Rd	0.63	0.37	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	0	2	7
	B - Shucklow Hill	0	0	0	0
	C - A421 (West)	3	7	0	0
	D - Little Horwood Rd	4	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	1.000	1.000	1.019	1.067
	B - Shucklow Hill	1.000	1.000	1.000	1.000
	C - A421 (West)	1.031	1.071	1.000	1.000
	D - Little Horwood Rd	1.042	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - A421 (East)**	919	937
	B - Shucklow Hill	37	37
	C - A421 (West)	918	947
	D - Little Horwood Rd	33	34
17:00-17:15	**A - A421 (East)**	1097	1119
	B - Shucklow Hill	45	45
	C - A421 (West)	1096	1131
	D - Little Horwood Rd	39	40
17:15-17:30	**A - A421 (East)**	1343	1370
	B - Shucklow Hill	55	55
	C - A421 (West)	1342	1385
	D - Little Horwood Rd	48	50
17:30-17:45	**A - A421 (East)**	1343	1370
	B - Shucklow Hill	55	55
	C - A421 (West)	1342	1385
	D - Little Horwood Rd	48	50
17:45-18:00	**A - A421 (East)**	1097	1119
	B - Shucklow Hill	45	45
	C - A421 (West)	1096	1131
	D - Little Horwood Rd	39	40
18:00-18:15	**A - A421 (East)**	919	937
	B - Shucklow Hill	37	37
	C - A421 (West)	918	947
	D - Little Horwood Rd	33	34

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1406.63	21.0	F	35	52
B-A	9999999999.00	1479.70	6.5	F	11	16
A-B					5	8
A-C					1098	1648
A-D					16	24
AB-CD	0.16	11.48	0.2	B	32	48
AB-C					1117	1676
D-AB	0.18	16.76	0.2	C	40	60
D-C	0.00	0.00	0.0	A	0	0
C-D					1	2
C-A					1103	1654
C-B					15	22
CD-AB	0.10	11.87	0.1	B	30	44
CD-A					1128	1693

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	29	7	513	0.056	28	0.0	0.1	7.431	A
B-A	9	2	151	0.057	8	0.0	0.1	25.142	D
A-B	4	1			4				
A-C	901	225			901				
A-D	13	3			13				
AB-CD	26	6	471	0.055	26	0.0	0.1	8.086	A
AB-C	917	229			917				
D-AB	33	8	481	0.069	33	0.0	0.1	8.030	A
D-C	0	0	144	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	905	226			905				
C-B	12	3			12				
CD-AB	24	6	458	0.053	24	0.0	0.1	8.284	A
CD-A	926	231			926				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	447	0.077	34	0.1	0.1	8.716	A
B-A	10	3	76	0.136	10	0.1	0.1	54.025	F
A-B	5	1			5				
A-C	1076	269			1076				
A-D	16	4			16				
AB-CD	31	8	417	0.074	31	0.1	0.1	9.318	A
AB-C	1095	274			1095				
D-AB	39	10	426	0.093	39	0.1	0.1	9.301	A
D-C	0	0	69	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1081	270			1081				
C-B	15	4			15				
CD-AB	29	7	408	0.071	29	0.1	0.1	9.490	A
CD-A	1105	276			1105				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	0.1	10.6	1406.634	F
B-A	13	3	0	9999999999.000	0	0.1	3.3	1479.702	F
A-B	6	2			6				
A-C	1318	329			1318				
A-D	19	5			19				
AB-CD	19	5	333	0.057	19	0.1	0.1	11.252	B
AB-C	1318	329			1318				
D-AB	48	12	263	0.184	48	0.1	0.2	16.689	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1323	331			1323				
C-B	18	4			18				
CD-AB	35	9	339	0.105	35	0.1	0.1	11.854	B
CD-A	1354	338			1354				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	10.6	21.0	-27705.037	?
B-A	13	3	0	9999999999.000	0	3.3	6.5	-19562.187	?
A-B	6	2			6				
A-C	1318	329			1318				
A-D	19	5			19				
AB-CD	19	5	333	0.057	19	0.1	0.1	11.482	B
AB-C	1318	329			1318				
D-AB	48	12	263	0.184	48	0.2	0.2	16.762	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1323	331			1323				
C-B	18	4			18				
CD-AB	36	9	339	0.105	36	0.1	0.1	11.872	B
CD-A	1354	338			1354				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	402	0.085	118	21.0	0.1	17.403	C
B-A	10	3	76	0.137	36	6.5	0.2	130.530	F
A-B	5	1			5				
A-C	1076	269			1076				
A-D	16	4			16				
AB-CD	69	17	425	0.163	69	0.1	0.2	10.226	B
AB-C	1140	285			1140				
D-AB	39	10	426	0.093	40	0.2	0.1	9.331	A
D-C	0	0	48	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1081	270			1081				
C-B	15	4			15				
CD-AB	29	7	408	0.072	29	0.1	0.1	9.507	A
CD-A	1106	276			1106				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

B-CD	29	7	511	0.056	29	0.1	0.1	7.471	A
B-A	9	2	152	0.057	9	0.2	0.1	25.343	D
A-B	4	1			4				
A-C	901	225			901				
A-D	13	3			13				
AB-CD	26	7	471	0.055	27	0.2	0.1	8.004	A
AB-C	917	229			917				
D-AB	33	8	481	0.069	33	0.1	0.1	8.043	A
D-C	0	0	144	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	905	226			905				
C-B	12	3			12				
CD-AB	24	6	458	0.053	24	0.1	0.1	8.298	A
CD-A	926	231			926				

2033 Base + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Last Run	Last Run	Stream B-CD	Capacity of Minor Stream B-CD has been reduced in timesegment(s) 4 due to traffic queuing at the center of the junction.
Last Run	Last Run	Stream D-AB	Capacity of Minor Stream D-AB has been reduced in timesegment(s) 4 due to traffic queuing at the center of the junction.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		36.50	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1172	100.000
B - Shucklow Hill		ONE HOUR	✓	73	100.000
C - A421 (West)		ONE HOUR	✓	1222	100.000
D - Little Horwood Rd		ONE HOUR	✓	45	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0	3	1152	17
	B - Shucklow Hill	14	0	33	26
	C - A421 (West)	1196	23	0	2
	D - Little Horwood Rd	21	23	1	0

Proportions

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.19	0.00	0.45	0.36
	C - A421 (West)	0.98	0.02	0.00	0.00
	D - Little Horwood Rd	0.46	0.51	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0	0	6	13
	B - Shucklow Hill	0	0	10	9
	C - A421 (West)	5	10	0	50
	D - Little Horwood Rd	11	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	1.000	1.000	1.057	1.133
	B - Shucklow Hill	1.000	1.000	1.103	1.087
	C - A421 (West)	1.053	1.100	1.000	1.500
	D - Little Horwood Rd	1.111	1.050	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	**A - A421 (East)**	883	933
	B - Shucklow Hill	55	60
	C - A421 (West)	920	970
	D - Little Horwood Rd	34	36
07:45-08:00	**A - A421 (East)**	1054	1115
	B - Shucklow Hill	66	71
	C - A421 (West)	1098	1158
	D - Little Horwood Rd	40	43
08:00-08:15	**A - A421 (East)**	1291	1365
	B - Shucklow Hill	81	87
	C - A421 (West)	1345	1418
	D - Little Horwood Rd	49	53
08:15-08:30	**A - A421 (East)**	1291	1365
	B - Shucklow Hill	81	87
	C - A421 (West)	1345	1418
	D - Little Horwood Rd	49	53
08:30-08:45	**A - A421 (East)**	1054	1115
	B - Shucklow Hill	66	71
	C - A421 (West)	1098	1158
	D - Little Horwood Rd	40	43
08:45-09:00	**A - A421 (East)**	883	933
	B - Shucklow Hill	55	60
	C - A421 (West)	920	970
	D - Little Horwood Rd	34	36

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1545.17	33.0	F	55	82
B-A	9999999999.00	1625.52	7.8	F	13	19
A-B					3	5
A-C					1057	1585
A-D					16	24
AB-CD	0.23	12.62	0.3	B	40	60
AB-C					1087	1631
D-AB	9999999999.00	1417.14	24.1	F	40	60
D-C	9999999999.00	1545.21	0.6	F	1	2
C-D					2	3
C-A					1098	1647
C-B					21	32
CD-AB	0.23	12.20	0.3	B	42	63
CD-A					1117	1675

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	45	11	472	0.095	44	0.0	0.1	8.417	A
B-A	10	3	144	0.072	10	0.0	0.1	26.774	D
A-B	3	0.65			3				
A-C	867	217			867				
A-D	13	3			13				
AB-CD	33	8	434	0.075	32	0.0	0.1	8.957	A
AB-C	892	223			892				
D-AB	33	8	450	0.073	33	0.0	0.1	8.607	A
D-C	0.86	0.22	134	0.006	0.84	0.0	0.0	26.960	D
C-D	2	0.43			2				
C-A	901	225			901				

C-B	17	4			17				
CD-AB	34	9	442	0.078	34	0.0	0.1	8.806	A
CD-A	916	229			916				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	408	0.131	53	0.1	0.1	10.137	B
B-A	12	3	69	0.179	12	0.1	0.2	62.450	F
A-B	3	0.77			3				
A-C	1035	259			1035				
A-D	15	4			15				
AB-CD	39	10	383	0.102	39	0.1	0.1	10.471	B
AB-C	1065	266			1065				
D-AB	39	10	396	0.099	39	0.1	0.1	10.076	B
D-C	1	0.26	57	0.018	0.99	0.0	0.0	64.448	F
C-D	2	0.52			2				
C-A	1076	269			1076				
C-B	21	5			21				
CD-AB	41	10	394	0.104	41	0.1	0.1	10.187	B
CD-A	1094	274			1094				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	0.1	16.6	1545.171	F
B-A	15	4	0	9999999999.000	0	0.2	4.0	1625.519	F
A-B	4	0.95			4				
A-C	1268	317			1268				
A-D	19	5			19				
AB-CD	19	5	304	0.062	19	0.1	0.1	12.412	B
AB-C	1268	317			1268				
D-AB	48	12	0	9999999999.000	0	0.1	12.1	1417.142	F
D-C	1	0.32	0	9999999999.000	0	0.0	0.3	1545.208	F
C-D	3	0.63			3				
C-A	1317	329			1317				
C-B	25	6			25				
CD-AB	25	6	320	0.079	25	0.1	0.1	12.023	B
CD-A	1317	329			1317				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	16.6	33.0	-4817.430	?
B-A	15	4	0	9999999999.000	0	4.0	7.8	-5688.090	?
A-B	4	0.95			4				
A-C	1268	317			1268				
A-D	19	5			19				
AB-CD	19	5	304	0.062	19	0.1	0.1	12.621	B
AB-C	1268	317			1268				
D-AB	48	12	0	9999999999.000	0	12.1	24.1	-22363.848	?
D-C	1	0.32	0	9999999999.000	0	0.3	0.6	697.653	F
C-D	3	0.63			3				
C-A	1317	329			1317				
C-B	25	6			25				
CD-AB	25	6	320	0.079	25	0.1	0.1	12.200	B
CD-A	1317	329			1317				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	173	0.311	168	33.0	4.5	404.320	F
B-A	12	3	40	0.306	36	7.8	1.9	467.798	F
A-B	3	0.77			3				
A-C	1035	259			1035				
A-D	15	4			15				
AB-CD	90	22	386	0.232	89	0.1	0.3	12.149	B
AB-C	1129	282			1129				
D-AB	39	10	381	0.103	135	24.1	0.1	22.488	C
D-C	1	0.26	22	0.048	3	0.6	0.1	206.783	F
C-D	2	0.52			2				
C-A	1076	269			1076				
C-B	21	5			21				

CD-AB	92	23	399	0.230	91	0.1	0.3	11.754	B
CD-A	1140	285			1140				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	45	11	463	0.097	62	4.5	0.1	9.393	A
B-A	10	3	145	0.072	18	1.9	0.1	29.828	D
A-B	3	0.65			3				
A-C	867	217			867				
A-D	13	3			13				
AB-CD	41	10	435	0.093	41	0.3	0.1	9.112	A
AB-C	902	225			902				
D-AB	33	8	450	0.073	33	0.1	0.1	8.630	A
D-C	0.86	0.22	129	0.007	1	0.1	0.0	28.159	D
C-D	2	0.43			2				
C-A	901	225			901				
C-B	17	4			17				
CD-AB	35	9	443	0.078	35	0.3	0.1	8.771	A
CD-A	916	229			916				

2033 Base + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		13.64	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1257	100.000
B - Shucklow Hill		ONE HOUR	✓	50	100.000
C - A421 (West)		ONE HOUR	✓	1264	100.000
D - Little Horwood Rd		ONE HOUR	✓	44	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0	6	1234	17
	B - Shucklow Hill	12	0	21	17
	C - A421 (West)	1247	16	0	1
	D - Little Horwood Rd	28	16	0	0

Proportions

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.23	0.00	0.42	0.35
	C - A421 (West)	0.99	0.01	0.00	0.00
	D - Little Horwood Rd	0.63	0.37	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	0	0	2	7
	B - Shucklow Hill	0	0	0	0
	C - A421 (West)	3	7	0	0
	D - Little Horwood Rd	4	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	**A - A421 (East)**	1.000	1.000	1.019	1.067
	B - Shucklow Hill	1.000	1.000	1.000	1.000
	C - A421 (West)	1.031	1.071	1.000	1.000
	D - Little Horwood Rd	1.042	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - A421 (East)**	946	965
	B - Shucklow Hill	37	37
	C - A421 (West)	951	982
	D - Little Horwood Rd	33	34
17:00-17:15	**A - A421 (East)**	1130	1152
	B - Shucklow Hill	45	45
	C - A421 (West)	1136	1172
	D - Little Horwood Rd	39	40
17:15-17:30	**A - A421 (East)**	1384	1411
	B - Shucklow Hill	55	55
	C - A421 (West)	1392	1435
	D - Little Horwood Rd	48	50
17:30-17:45	**A - A421 (East)**	1384	1411
	B - Shucklow Hill	55	55
	C - A421 (West)	1392	1435
	D - Little Horwood Rd	48	50
17:45-18:00	**A - A421 (East)**	1130	1152
	B - Shucklow Hill	45	45
	C - A421 (West)	1136	1172
	D - Little Horwood Rd	39	40
18:00-18:15	**A - A421 (East)**	946	965
	B - Shucklow Hill	37	37
	C - A421 (West)	951	982
	D - Little Horwood Rd	33	34

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1411.86	21.0	F	35	52
B-A	9999999999.00	1513.04	6.5	F	11	16
A-B					5	8
A-C					1132	1698
A-D					16	24
AB-CD	0.17	12.03	0.2	B	32	48
AB-C					1151	1726
D-AB	0.19	17.69	0.2	C	40	60
D-C	0.00	0.00	0.0	A	0	0
C-D					1	2
C-A					1144	1716
C-B					15	22
CD-AB	0.11	12.33	0.1	B	30	44
CD-A					1169	1754

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	29	7	503	0.057	28	0.0	0.1	7.577	A
B-A	9	2	139	0.062	8	0.0	0.1	27.482	D
A-B	4	1			4				
A-C	929	232			929				
A-D	13	3			13				
AB-CD	26	6	461	0.056	26	0.0	0.1	8.273	A
AB-C	944	236			944				
D-AB	33	8	471	0.070	33	0.0	0.1	8.218	A
D-C	0	0	132	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	938	235			938				
C-B	12	3			12				
CD-AB	24	6	451	0.054	24	0.0	0.1	8.435	A
CD-A	959	240			959				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	433	0.079	34	0.1	0.1	9.021	A
B-A	10	3	62	0.168	10	0.1	0.2	68.911	F
A-B	5	1			5				
A-C	1109	277			1109				
A-D	16	4			16				
AB-CD	31	8	405	0.077	31	0.1	0.1	9.617	A
AB-C	1128	282			1128				
D-AB	39	10	414	0.095	39	0.1	0.1	9.606	A
D-C	0	0	54	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1121	280			1121				
C-B	15	4			15				
CD-AB	29	7	399	0.073	29	0.1	0.1	9.727	A
CD-A	1145	286			1145				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	0.1	10.6	1411.857	F
B-A	13	3	0	9999999999.000	0	0.2	3.4	1513.041	F
A-B	6	2			6				
A-C	1358	340			1358				
A-D	19	5			19				
AB-CD	19	5	318	0.060	19	0.1	0.1	11.788	B
AB-C	1358	340			1358				
D-AB	48	12	252	0.192	48	0.1	0.2	17.605	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1372	343			1372				
C-B	18	4			18				
CD-AB	35	9	327	0.108	35	0.1	0.1	12.314	B
CD-A	1403	351			1403				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	10.6	21.0	-24891.090	?
B-A	13	3	0	9999999999.000	0	3.4	6.5	-14621.673	?
A-B	6	2			6				
A-C	1358	340			1358				
A-D	19	5			19				
AB-CD	19	5	318	0.060	19	0.1	0.1	12.029	B
AB-C	1358	340			1358				
D-AB	48	12	252	0.192	48	0.2	0.2	17.687	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1372	343			1372				
C-B	18	4			18				
CD-AB	36	9	328	0.109	36	0.1	0.1	12.332	B
CD-A	1403	351			1403				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	368	0.093	118	21.0	0.1	20.638	C
B-A	10	3	61	0.169	36	6.5	0.2	200.944	F
A-B	5	1			5				
A-C	1109	277			1109				
A-D	16	4			16				
AB-CD	69	17	413	0.168	69	0.1	0.2	10.589	B
AB-C	1173	293			1173				
D-AB	39	10	414	0.095	40	0.2	0.1	9.640	A
D-C	0	0	33	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1121	280			1121				
C-B	15	4			15				
CD-AB	29	7	399	0.073	29	0.1	0.1	9.746	A
CD-A	1146	286			1146				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

B-CD	29	7	501	0.057	29	0.1	0.1	7.627	A
B-A	9	2	139	0.062	9	0.2	0.1	27.800	D
A-B	4	1			4				
A-C	929	232			929				
A-D	13	3			13				
AB-CD	26	7	461	0.057	27	0.2	0.1	8.192	A
AB-C	944	236			944				
D-AB	33	8	471	0.070	33	0.1	0.1	8.234	A
D-C	0	0	131	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	938	235			938				
C-B	12	3			12				
CD-AB	24	6	451	0.054	24	0.1	0.1	8.448	A
CD-A	959	240			959				

2033 Base + CD + D with TP, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Last Run	Last Run	Stream B-CD	Capacity of Minor Stream B-CD has been reduced in timesegment(s) 4 due to traffic queuing at the center of the junction.
Last Run	Last Run	Stream D-AB	Capacity of Minor Stream D-AB has been reduced in timesegment(s) 4 due to traffic queuing at the center of the junction.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		36.51	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1167	100.000
B - Shucklow Hill		ONE HOUR	✓	73	100.000
C - A421 (West)		ONE HOUR	✓	1217	100.000
D - Little Horwood Rd		ONE HOUR	✓	45	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0	3	1146	17
	B - Shucklow Hill	14	0	33	26
	C - A421 (West)	1192	23	0	2
	D - Little Horwood Rd	21	23	1	0

Proportions

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.19	0.00	0.45	0.36
	C - A421 (West)	0.98	0.02	0.00	0.00
	D - Little Horwood Rd	0.46	0.51	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0	0	6	13
	B - Shucklow Hill	0	0	10	9
	C - A421 (West)	5	10	0	50
	D - Little Horwood Rd	11	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	1.000	1.000	1.057	1.133
	B - Shucklow Hill	1.000	1.000	1.103	1.087
	C - A421 (West)	1.053	1.100	1.000	1.500
	D - Little Horwood Rd	1.111	1.050	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - A421 (East)	878	929
	B - Shucklow Hill	55	60
	C - A421 (West)	916	967
	D - Little Horwood Rd	34	36
07:45-08:00	A - A421 (East)	1049	1109
	B - Shucklow Hill	66	71
	C - A421 (West)	1094	1154
	D - Little Horwood Rd	40	43
08:00-08:15	A - A421 (East)	1285	1359
	B - Shucklow Hill	81	87
	C - A421 (West)	1340	1414
	D - Little Horwood Rd	49	53
08:15-08:30	A - A421 (East)	1285	1359
	B - Shucklow Hill	81	87
	C - A421 (West)	1340	1414
	D - Little Horwood Rd	49	53
08:30-08:45	A - A421 (East)	1049	1109
	B - Shucklow Hill	66	71
	C - A421 (West)	1094	1154
	D - Little Horwood Rd	40	43
08:45-09:00	A - A421 (East)	878	929
	B - Shucklow Hill	55	60
	C - A421 (West)	916	967
	D - Little Horwood Rd	34	36

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1537.82	33.0	F	55	82
B-A	9999999999.00	1614.79	7.8	F	13	19
A-B					3	5
A-C					1052	1577
A-D					16	24
AB-CD	0.24	12.57	0.3	B	40	60
AB-C					1082	1623
D-AB	9999999999.00	1416.72	24.1	F	40	60
D-C	9999999999.00	1530.51	0.6	F	1	2
C-D					2	3
C-A					1094	1641
C-B					21	32
CD-AB	0.23	12.13	0.3	B	42	63
CD-A					1113	1669

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	45	11	473	0.095	44	0.0	0.1	8.390	A
B-A	10	3	146	0.071	10	0.0	0.1	26.465	D
A-B	3	0.65			3				
A-C	863	216			863				
A-D	13	3			13				
AB-CD	33	8	435	0.075	32	0.0	0.1	8.931	A
AB-C	888	222			888				
D-AB	33	8	451	0.073	33	0.0	0.1	8.588	A
D-C	0.86	0.22	136	0.006	0.84	0.0	0.0	26.663	D
C-D	2	0.43			2				
C-A	897	224			897				

C-B	17	4			17				
CD-AB	34	9	444	0.077	34	0.0	0.1	8.781	A
CD-A	913	228			913				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	410	0.131	53	0.1	0.1	10.080	B
B-A	12	3	71	0.174	12	0.1	0.2	60.513	F
A-B	3	0.77			3				
A-C	1030	258			1030				
A-D	15	4			15				
AB-CD	39	10	384	0.102	39	0.1	0.1	10.439	B
AB-C	1060	265			1060				
D-AB	39	10	397	0.099	39	0.1	0.1	10.044	B
D-C	1	0.26	59	0.018	0.99	0.0	0.0	62.469	F
C-D	2	0.52			2				
C-A	1072	268			1072				
C-B	21	5			21				
CD-AB	41	10	396	0.104	41	0.1	0.1	10.146	B
CD-A	1090	273			1090				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	0.1	16.6	1537.816	F
B-A	15	4	0	9999999999.000	0	0.2	4.0	1614.789	F
A-B	4	0.95			4				
A-C	1262	315			1262				
A-D	19	5			19				
AB-CD	19	5	306	0.062	19	0.1	0.1	12.361	B
AB-C	1262	315			1262				
D-AB	48	12	0	9999999999.000	0	0.1	12.1	1416.718	F
D-C	1	0.32	0	9999999999.000	0	0.0	0.3	1530.511	F
C-D	3	0.63			3				
C-A	1312	328			1312				
C-B	25	6			25				
CD-AB	25	6	322	0.078	25	0.1	0.1	11.956	B
CD-A	1312	328			1312				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	16.6	33.0	-5127.507	?
B-A	15	4	0	9999999999.000	0	4.0	7.8	-6054.398	?
A-B	4	0.95			4				
A-C	1262	315			1262				
A-D	19	5			19				
AB-CD	19	5	305	0.062	19	0.1	0.1	12.566	B
AB-C	1262	315			1262				
D-AB	48	12	0	9999999999.000	0	12.1	24.1	-22535.076	?
D-C	1	0.32	0	9999999999.000	0	0.3	0.6	679.029	F
C-D	3	0.63			3				
C-A	1312	328			1312				
C-B	25	6			25				
CD-AB	25	6	322	0.078	25	0.1	0.1	12.129	B
CD-A	1312	328			1312				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	179	0.299	174	33.0	2.9	380.926	F
B-A	12	3	42	0.295	37	7.8	1.6	451.958	F
A-B	3	0.77			3				
A-C	1030	258			1030				
A-D	15	4			15				
AB-CD	92	23	388	0.239	92	0.1	0.3	12.215	B
AB-C	1127	282			1127				
D-AB	39	10	383	0.102	135	24.1	0.1	22.173	C
D-C	1	0.26	23	0.044	3	0.6	0.1	188.997	F
C-D	2	0.52			2				
C-A	1072	268			1072				
C-B	21	5			21				

CD-AB	92	23	401	0.229	91	0.1	0.3	11.699	B
CD-A	1136	284			1136				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	45	11	465	0.097	56	2.9	0.1	9.041	A
B-A	10	3	147	0.071	16	1.6	0.1	28.793	D
A-B	3	0.65			3				
A-C	863	216			863				
A-D	13	3			13				
AB-CD	38	9	436	0.087	39	0.3	0.1	9.031	A
AB-C	894	223			894				
D-AB	33	8	451	0.073	33	0.1	0.1	8.612	A
D-C	0.86	0.22	132	0.007	1	0.1	0.0	27.462	D
C-D	2	0.43			2				
C-A	897	224			897				
C-B	17	4			17				
CD-AB	35	9	444	0.078	35	0.3	0.1	8.745	A
CD-A	913	228			913				

2033 Base + CD + D with TP, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		13.68	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1251	100.000
B - Shucklow Hill		ONE HOUR	✓	50	100.000
C - A421 (West)		ONE HOUR	✓	1257	100.000
D - Little Horwood Rd		ONE HOUR	✓	44	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	6	1228	17
	B - Shucklow Hill	12	0	21	17
	C - A421 (West)	1240	16	0	1
	D - Little Horwood Rd	28	16	0	0

Proportions

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.23	0.00	0.42	0.35
	C - A421 (West)	0.99	0.01	0.00	0.00
	D - Little Horwood Rd	0.63	0.37	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	0	2	7
	B - Shucklow Hill	0	0	0	0
	C - A421 (West)	3	7	0	0
	D - Little Horwood Rd	4	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	1.000	1.000	1.019	1.067
	B - Shucklow Hill	1.000	1.000	1.000	1.000
	C - A421 (West)	1.031	1.071	1.000	1.000
	D - Little Horwood Rd	1.042	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - A421 (East)	942	960
	B - Shucklow Hill	37	37
	C - A421 (West)	947	976
	D - Little Horwood Rd	33	34
17:00-17:15	A - A421 (East)	1125	1147
	B - Shucklow Hill	45	45
	C - A421 (West)	1130	1166
	D - Little Horwood Rd	39	40
17:15-17:30	A - A421 (East)	1377	1404
	B - Shucklow Hill	55	55
	C - A421 (West)	1384	1428
	D - Little Horwood Rd	48	50
17:30-17:45	A - A421 (East)	1377	1404
	B - Shucklow Hill	55	55
	C - A421 (West)	1384	1428
	D - Little Horwood Rd	48	50
17:45-18:00	A - A421 (East)	1125	1147
	B - Shucklow Hill	45	45
	C - A421 (West)	1130	1166
	D - Little Horwood Rd	39	40
18:00-18:15	A - A421 (East)	942	960
	B - Shucklow Hill	37	37
	C - A421 (West)	947	976
	D - Little Horwood Rd	33	34

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1410.72	21.0	F	35	52
B-A	9999999999.00	1506.71	6.5	F	11	16
A-B					5	8
A-C					1127	1690
A-D					16	24
AB-CD	0.17	11.94	0.2	B	32	48
AB-C					1146	1719
D-AB	0.19	17.54	0.2	C	40	60
D-C	0.00	0.00	0.0	A	0	0
C-D					1	2
C-A					1138	1707
C-B					15	22
CD-AB	0.11	12.25	0.1	B	30	44
CD-A					1163	1745

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	29	7	505	0.057	28	0.0	0.1	7.552	A
B-A	9	2	141	0.062	8	0.0	0.1	27.084	D
A-B	4	1			4				
A-C	925	231			925				
A-D	13	3			13				
AB-CD	26	6	462	0.056	26	0.0	0.1	8.244	A
AB-C	940	235			940				
D-AB	33	8	472	0.070	33	0.0	0.1	8.190	A
D-C	0	0	134	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	934	233			934				
C-B	12	3			12				
CD-AB	24	6	452	0.054	24	0.0	0.1	8.410	A
CD-A	954	239			954				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	435	0.079	34	0.1	0.1	8.968	A
B-A	10	3	64	0.162	10	0.1	0.2	66.064	F
A-B	5	1			5				
A-C	1104	276			1104				
A-D	16	4			16				
AB-CD	31	8	407	0.076	31	0.1	0.1	9.572	A
AB-C	1123	281			1123				
D-AB	39	10	416	0.095	39	0.1	0.1	9.560	A
D-C	0	0	56	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1115	279			1115				
C-B	15	4			15				
CD-AB	29	7	400	0.072	29	0.1	0.1	9.688	A
CD-A	1140	285			1140				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	0.1	10.6	1410.720	F
B-A	13	3	0	9999999999.000	0	0.2	3.4	1506.710	F
A-B	6	2			6				
A-C	1352	338			1352				
A-D	19	5			19				
AB-CD	19	5	321	0.059	19	0.1	0.1	11.707	B
AB-C	1352	338			1352				
D-AB	48	12	253	0.191	48	0.1	0.2	17.463	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1365	341			1365				
C-B	18	4			18				
CD-AB	35	9	329	0.107	35	0.1	0.1	12.235	B
CD-A	1395	349			1395				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	10.6	21.0	-25463.535	?
B-A	13	3	0	9999999999.000	0	3.4	6.5	-15387.098	?
A-B	6	2			6				
A-C	1352	338			1352				
A-D	19	5			19				
AB-CD	19	5	320	0.059	19	0.1	0.1	11.944	B
AB-C	1352	338			1352				
D-AB	48	12	253	0.191	48	0.2	0.2	17.542	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1365	341			1365				
C-B	18	4			18				
CD-AB	36	9	329	0.108	36	0.1	0.1	12.254	B
CD-A	1396	349			1396				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	375	0.091	118	21.0	0.1	19.890	C
B-A	10	3	64	0.163	36	6.5	0.2	186.628	F
A-B	5	1			5				
A-C	1104	276			1104				
A-D	16	4			16				
AB-CD	69	17	414	0.167	69	0.1	0.2	10.533	B
AB-C	1168	292			1168				
D-AB	39	10	416	0.095	40	0.2	0.1	9.591	A
D-C	0	0	35	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1115	279			1115				
C-B	15	4			15				
CD-AB	29	7	401	0.073	29	0.1	0.1	9.706	A
CD-A	1140	285			1140				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

B-CD	29	7	503	0.057	29	0.1	0.1	7.600	A
B-A	9	2	141	0.061	9	0.2	0.1	27.382	D
A-B	4	1			4				
A-C	925	231			925				
A-D	13	3			13				
AB-CD	26	7	462	0.057	27	0.2	0.1	8.162	A
AB-C	940	235			940				
D-AB	33	8	472	0.070	33	0.1	0.1	8.205	A
D-C	0	0	133	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	934	233			934				
C-B	12	3			12				
CD-AB	24	6	452	0.054	24	0.1	0.1	8.422	A
CD-A	954	239			954				

2033 Base + CD + D - ST, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Last Run	Last Run	Stream B-CD	Capacity of Minor Stream B-CD has been reduced in timesegment(s) 4 due to traffic queuing at the center of the junction.
Last Run	Last Run	Stream D-AB	Capacity of Minor Stream D-AB has been reduced in timesegment(s) 4 due to traffic queuing at the center of the junction.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		36.57	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1195	100.000
B - Shucklow Hill		ONE HOUR	✓	73	100.000
C - A421 (West)		ONE HOUR	✓	1234	100.000
D - Little Horwood Rd		ONE HOUR	✓	45	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0	3	1174	17
	B - Shucklow Hill	14	0	33	26
	C - A421 (West)	1209	23	0	2
	D - Little Horwood Rd	21	23	1	0

Proportions

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.19	0.00	0.45	0.36
	C - A421 (West)	0.98	0.02	0.00	0.00
	D - Little Horwood Rd	0.46	0.51	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	0	0	6	13
	B - Shucklow Hill	0	0	10	9
	C - A421 (West)	5	10	0	50
	D - Little Horwood Rd	11	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - Shucklow Hill	C - A421 (West)	D - Little Horwood Rd
From	A - A421 (East)	1.000	1.000	1.057	1.133
	B - Shucklow Hill	1.000	1.000	1.103	1.087
	C - A421 (West)	1.053	1.100	1.000	1.500
	D - Little Horwood Rd	1.111	1.050	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	**A - A421 (East)**	899	951
	B - Shucklow Hill	55	60
	C - A421 (West)	929	980
	D - Little Horwood Rd	34	36
07:45-08:00	**A - A421 (East)**	1074	1136
	B - Shucklow Hill	66	71
	C - A421 (West)	1109	1170
	D - Little Horwood Rd	40	43
08:00-08:15	**A - A421 (East)**	1315	1392
	B - Shucklow Hill	81	87
	C - A421 (West)	1359	1433
	D - Little Horwood Rd	49	53
08:15-08:30	**A - A421 (East)**	1315	1392
	B - Shucklow Hill	81	87
	C - A421 (West)	1359	1433
	D - Little Horwood Rd	49	53
08:30-08:45	**A - A421 (East)**	1074	1136
	B - Shucklow Hill	66	71
	C - A421 (West)	1109	1170
	D - Little Horwood Rd	40	43
08:45-09:00	**A - A421 (East)**	899	951
	B - Shucklow Hill	55	60
	C - A421 (West)	929	980
	D - Little Horwood Rd	34	36

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1579.34	33.0	F	55	82
B-A	9999999999.00	1675.60	7.8	F	13	19
A-B					3	5
A-C					1077	1616
A-D					16	24
AB-CD	0.21	12.80	0.3	B	40	60
AB-C					1108	1662
D-AB	9999999999.00	1419.15	24.1	F	40	60
D-C	9999999999.00	1625.87	0.7	F	1	2
C-D					2	3
C-A					1109	1664
C-B					21	32
CD-AB	0.23	12.49	0.3	B	42	63
CD-A					1128	1692

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	45	11	466	0.096	44	0.0	0.1	8.525	A
B-A	10	3	138	0.075	10	0.0	0.1	28.009	D
A-B	3	0.65			3				
A-C	884	221			884				
A-D	13	3			13				
AB-CD	33	8	431	0.076	32	0.0	0.1	9.018	A
AB-C	909	227			909				
D-AB	33	8	448	0.073	33	0.0	0.1	8.668	A
D-C	0.86	0.22	129	0.007	0.84	0.0	0.0	28.075	D
C-D	2	0.43			2				
C-A	910	228			910				

C-B	17	4			17				
CD-AB	34	9	438	0.079	34	0.0	0.1	8.911	A
CD-A	926	231			926				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	400	0.134	53	0.1	0.2	10.378	B
B-A	12	3	62	0.200	12	0.1	0.2	71.008	F
A-B	3	0.77			3				
A-C	1055	264			1055				
A-D	15	4			15				
AB-CD	39	10	379	0.103	39	0.1	0.1	10.575	B
AB-C	1085	271			1085				
D-AB	39	10	393	0.100	39	0.1	0.1	10.181	B
D-C	1	0.26	50	0.020	0.98	0.0	0.0	72.725	F
C-D	2	0.52			2				
C-A	1087	272			1087				
C-B	21	5			21				
CD-AB	41	10	389	0.106	41	0.1	0.1	10.358	B
CD-A	1105	276			1105				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	0.2	16.6	1579.340	F
B-A	15	4	0	9999999999.000	0	0.2	4.0	1675.602	F
A-B	4	0.95			4				
A-C	1293	323			1293				
A-D	19	5			19				
AB-CD	19	5	300	0.063	19	0.1	0.1	12.586	B
AB-C	1293	323			1293				
D-AB	48	12	0	9999999999.000	0	0.1	12.1	1419.146	F
D-C	1	0.32	0	9999999999.000	0	0.0	0.3	1625.870	F
C-D	3	0.63			3				
C-A	1331	333			1331				
C-B	25	6			25				
CD-AB	25	6	314	0.081	25	0.1	0.1	12.312	B
CD-A	1331	333			1331				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	66	16	0	9999999999.000	0	16.6	33.0	-3644.948	?
B-A	15	4	0	9999999999.000	0	4.0	7.8	-4305.829	?
A-B	4	0.95			4				
A-C	1293	323			1293				
A-D	19	5			19				
AB-CD	19	5	300	0.063	19	0.1	0.1	12.795	B
AB-C	1293	323			1293				
D-AB	48	12	0	9999999999.000	0	12.1	24.1	-21570.707	?
D-C	1	0.32	0	9999999999.000	0	0.3	0.7	799.857	F
C-D	3	0.63			3				
C-A	1331	333			1331				
C-B	25	6			25				
CD-AB	25	6	313	0.081	25	0.1	0.1	12.490	B
CD-A	1331	333			1331				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	54	13	147	0.365	143	33.0	10.7	484.669	F
B-A	12	3	35	0.358	31	7.8	3.2	846.349	F
A-B	3	0.77			3				
A-C	1055	264			1055				
A-D	15	4			15				
AB-CD	79	20	383	0.205	78	0.1	0.3	11.877	B
AB-C	1135	284			1135				
D-AB	39	10	370	0.106	135	24.1	0.1	24.027	C
D-C	1	0.26	15	0.067	3	0.7	0.1	308.686	F
C-D	2	0.52			2				
C-A	1087	272			1087				
C-B	21	5			21				

CD-AB	92	23	394	0.233	91	0.1	0.3	11.978	B
CD-A	1151	288			1151				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	45	11	453	0.099	87	10.7	0.1	11.056	B
B-A	10	3	138	0.075	23	3.2	0.1	34.423	D
A-B	3	0.65			3				
A-C	884	221			884				
A-D	13	3			13				
AB-CD	52	13	434	0.119	52	0.3	0.1	9.427	A
AB-C	933	233			933				
D-AB	33	8	447	0.073	33	0.1	0.1	8.696	A
D-C	0.86	0.22	117	0.007	1	0.1	0.0	31.112	D
C-D	2	0.43			2				
C-A	910	228			910				
C-B	17	4			17				
CD-AB	35	9	438	0.079	35	0.3	0.1	8.877	A
CD-A	926	231			926				

2033 Base + CD + D - ST, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - A421 (East) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J9	A421/ Shucklow Hill/ Little Horwood Rd	Left-Right Stagger	Two-way		13.57	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1264	100.000
B - Shucklow Hill		ONE HOUR	✓	50	100.000
C - A421 (West)		ONE HOUR	✓	1279	100.000
D - Little Horwood Rd		ONE HOUR	✓	44	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	6	1241	17
	B - Shucklow Hill	12	0	21	17
	C - A421 (West)	1262	16	0	1
	D - Little Horwood Rd	28	16	0	0

Proportions

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0.00	0.00	0.98	0.01
	B - Shucklow Hill	0.23	0.00	0.42	0.35
	C - A421 (West)	0.99	0.01	0.00	0.00
	D - Little Horwood Rd	0.63	0.37	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	0	0	2	7
	B - Shucklow Hill	0	0	0	0
	C - A421 (West)	3	7	0	0
	D - Little Horwood Rd	4	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - Shucklow Hill**	**C - A421 (West)**	**D - Little Horwood Rd**
From	**A - A421 (East)**	1.000	1.000	1.019	1.067
	B - Shucklow Hill	1.000	1.000	1.000	1.000
	C - A421 (West)	1.031	1.071	1.000	1.000
	D - Little Horwood Rd	1.042	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - A421 (East)**	952	971
	B - Shucklow Hill	37	37
	C - A421 (West)	963	993
	D - Little Horwood Rd	33	34
17:00-17:15	**A - A421 (East)**	1137	1159
	B - Shucklow Hill	45	45
	C - A421 (West)	1150	1186
	D - Little Horwood Rd	39	40
17:15-17:30	**A - A421 (East)**	1392	1419
	B - Shucklow Hill	55	55
	C - A421 (West)	1409	1453
	D - Little Horwood Rd	48	50
17:30-17:45	**A - A421 (East)**	1392	1419
	B - Shucklow Hill	55	55
	C - A421 (West)	1409	1453
	D - Little Horwood Rd	48	50
17:45-18:00	**A - A421 (East)**	1137	1159
	B - Shucklow Hill	45	45
	C - A421 (West)	1150	1186
	D - Little Horwood Rd	39	40
18:00-18:15	**A - A421 (East)**	952	971
	B - Shucklow Hill	37	37
	C - A421 (West)	963	993
	D - Little Horwood Rd	33	34

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	9999999999.00	1414.16	21.1	F	35	52
B-A	9999999999.00	1524.92	6.6	F	11	16
A-B					5	8
A-C					1139	1709
A-D					16	24
AB-CD	0.17	12.23	0.2	B	32	48
AB-C					1158	1737
D-AB	0.19	18.03	0.2	C	40	60
D-C	0.00	0.00	0.0	A	0	0
C-D					1	2
C-A					1158	1737
C-B					15	22
CD-AB	0.11	12.43	0.1	B	30	44
CD-A					1183	1775

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	29	7	501	0.057	28	0.0	0.1	7.607	A
B-A	9	2	136	0.064	8	0.0	0.1	28.174	D
A-B	4	1			4				
A-C	935	234			935				
A-D	13	3			13				
AB-CD	26	6	457	0.057	26	0.0	0.1	8.341	A
AB-C	950	238			950				
D-AB	33	8	467	0.071	33	0.0	0.1	8.284	A
D-C	0	0	128	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	950	238			950				
C-B	12	3			12				
CD-AB	24	6	449	0.054	24	0.0	0.1	8.465	A
CD-A	971	243			971				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	430	0.080	34	0.1	0.1	9.097	A
B-A	10	3	58	0.179	10	0.1	0.2	74.278	F
A-B	5	1			5				
A-C	1116	279			1116				
A-D	16	4			16				
AB-CD	31	8	401	0.077	31	0.1	0.1	9.727	A
AB-C	1135	284			1135				
D-AB	39	10	410	0.096	39	0.1	0.1	9.716	A
D-C	0	0	49	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1135	284			1135				
C-B	15	4			15				
CD-AB	29	7	397	0.073	29	0.1	0.1	9.776	A
CD-A	1159	290			1159				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	0.1	10.6	1414.156	F
B-A	13	3	0	9999999999.000	0	0.2	3.4	1524.921	F
A-B	6	2			6				
A-C	1367	342			1367				
A-D	19	5			19				
AB-CD	19	5	313	0.061	19	0.1	0.1	11.987	B
AB-C	1367	342			1367				
D-AB	48	12	248	0.195	48	0.1	0.2	17.942	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1389	347			1389				
C-B	18	4			18				
CD-AB	35	9	325	0.109	35	0.1	0.1	12.405	B
CD-A	1420	355			1420				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	10	0	9999999999.000	0	10.6	21.1	-23790.727	?
B-A	13	3	0	9999999999.000	0	3.4	6.6	-13344.931	?
A-B	6	2			6				
A-C	1367	342			1367				
A-D	19	5			19				
AB-CD	19	5	313	0.061	19	0.1	0.1	12.234	B
AB-C	1367	342			1367				
D-AB	48	12	248	0.195	48	0.2	0.2	18.032	C
D-C	0	0	0	0.000	0	0.0	0.0	0.000	A
C-D	1	0.32			1				
C-A	1389	347			1389				
C-B	18	4			18				
CD-AB	36	9	325	0.109	36	0.1	0.1	12.429	B
CD-A	1420	355			1420				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	34	9	355	0.096	118	21.1	0.1	22.235	C
B-A	10	3	57	0.181	36	6.6	0.3	228.745	F
A-B	5	1			5				
A-C	1116	279			1116				
A-D	16	4			16				
AB-CD	69	17	408	0.169	69	0.1	0.2	10.722	B
AB-C	1180	295			1180				
D-AB	39	10	410	0.096	40	0.2	0.1	9.751	A
D-C	0	0	28	0.000	0	0.0	0.0	0.000	A
C-D	1	0.26			1				
C-A	1135	284			1135				
C-B	15	4			15				
CD-AB	29	7	397	0.074	29	0.1	0.1	9.793	A
CD-A	1160	290			1160				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

B-CD	29	7	499	0.057	29	0.1	0.1	7.664	A
B-A	9	2	136	0.064	9	0.3	0.1	28.543	D
A-B	4	1			4				
A-C	935	234			935				
A-D	13	3			13				
AB-CD	26	7	457	0.057	27	0.2	0.1	8.260	A
AB-C	950	238			950				
D-AB	33	8	467	0.071	33	0.1	0.1	8.300	A
D-C	0	0	127	0.000	0	0.0	0.0	0.000	A
C-D	0.87	0.22			0.87				
C-A	950	238			950				
C-B	12	3			12				
CD-AB	24	6	449	0.054	24	0.1	0.1	8.479	A
CD-A	971	243			971				

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

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

Filename: J10 - Post Calibration Adjustment.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J10
Report generation date: 18/12/2020 16:31:57

»2020 Base, AM
»2020 Base, PM
»2033 Base, AM
»2033 Base, PM
»2033 Base + CD + D, AM
»2033 Base + CD + D, PM
»2033 Base + CD + D with TP, AM
»2033 Base + CD + D with TP, PM
»2033 Base + CD + D - ST, AM
»2033 Base + CD + D - ST, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2020 Base									
A - A421 (East)	D1	3.8	12.94	0.80	B	D2	4.6	14.57	0.83	B
B - B4033 Nash Road		7.0	71.79	0.91	F		1.8	24.57	0.65	C
C - A421 (West)		15.2	62.74	0.97	F		16.3	60.93	0.97	F
D - Winslow Rd		0.2	5.78	0.14	A		0.2	5.62	0.14	A
	2033 Base									
A - A421 (East)	D13	10.8	33.14	0.93	D	D14	16.0	45.13	0.96	E
B - B4033 Nash Road		55.8	444.84	1.32	F		7.8	96.26	0.94	F
C - A421 (West)		58.1	212.53	1.10	F		88.1	286.65	1.15	F
D - Winslow Rd		0.2	6.09	0.16	A		0.2	6.00	0.17	A
	2033 Base + CD + D									
A - A421 (East)	D15	16.2	47.31	0.97	E	D16	23.5	61.89	0.99	F
B - B4033 Nash Road		69.5	569.75	1.43	F		11.5	132.75	1.01	F
C - A421 (West)		70.8	266.31	1.12	F		111.3	388.07	1.20	F
D - Winslow Rd		0.2	6.10	0.16	A		0.2	6.02	0.17	A
	2033 Base + CD + D with TP									
A - A421 (East)	D17	15.3	45.00	0.96	E	D18	22.3	59.23	0.99	F
B - B4033 Nash Road		67.5	551.12	1.42	F		10.9	126.51	1.00	F
C - A421 (West)		68.7	257.56	1.12	F		107.5	371.45	1.19	F
D - Winslow Rd		0.2	6.10	0.16	A		0.2	6.01	0.17	A
	2033 Base + CD + D - ST									
A - A421 (East)	D19	20.6	57.77	0.98	F	D20	25.6	66.18	1.00	F
B - B4033 Nash Road		75.2	636.97	1.48	F		12.5	141.86	1.02	F
C - A421 (West)		75.0	281.01	1.13	F		119.5	423.04	1.21	F
D - Winslow Rd		0.2	6.10	0.16	A		0.2	6.02	0.17	A

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	A421 Nash Road/ Windslow Road
Location	51°58'59.42"N, 0°52'6.64"W

Site number	10
Date	30/11/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D2,D13,D14,D15,D16,D17,D18,D19,D20	100.000	100.000

2020 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	40.00	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A421 (East)	
B	B4033 Nash Road	
C	A421 (West)	
D	Winslow Rd	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - A421 (East)	3.80	8.30	6.0	28.6	50.1	43.0	
B - B4033 Nash Road	3.40	6.60	18.3	13.9	50.1	45.0	
C - A421 (West)	3.80	7.20	8.9	21.6	50.1	40.0	
D - Winslow Rd	3.40	7.20	6.7	20.1	50.1	42.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - A421 (East)	None		
B - B4033 Nash Road	Direct	Calibration against queue lengths	-535
C - A421 (West)	Direct	Calibration against queue lengths	-370
D - Winslow Rd	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - A421 (East)	0.563	1505
B - B4033 Nash Road	0.555	995
C - A421 (West)	0.574	1195
D - Winslow Rd	0.536	1380

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	977	100.000
B - B4033 Nash Road		ONE HOUR	✓	345	100.000
C - A421 (West)		ONE HOUR	✓	827	100.000
D - Winslow Rd		ONE HOUR	✓	91	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	2	129	835	11
	B - B4033 Nash Road	203	0	50	92
	C - A421 (West)	785	26	1	15
	D - Winslow Rd	7	56	28	0

Proportions

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0.00	0.13	0.85	0.01
	B - B4033 Nash Road	0.59	0.00	0.14	0.27
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.08	0.62	0.31	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0	5	6	9
	B - B4033 Nash Road	3	0	4	2
	C - A421 (West)	7	8	0	0
	D - Winslow Rd	14	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	1.000	1.054	1.061	1.091
	B - B4033 Nash Road	1.025	1.000	1.040	1.022
	C - A421 (West)	1.066	1.077	1.000	1.000
	D - Winslow Rd	1.143	1.054	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	**A - A421 (East)**	736	780
	B - B4033 Nash Road	260	267
	C - A421 (West)	623	663
	D - Winslow Rd	69	72
07:45-08:00	**A - A421 (East)**	878	931
	B - B4033 Nash Road	310	318
	C - A421 (West)	743	792
	D - Winslow Rd	82	85
08:00-08:15	**A - A421 (East)**	1076	1141
	B - B4033 Nash Road	380	390
	C - A421 (West)	911	970
	D - Winslow Rd	100	105
08:15-08:30	**A - A421 (East)**	1076	1141
	B - B4033 Nash Road	380	390
	C - A421 (West)	911	970
	D - Winslow Rd	100	105
08:30-08:45	**A - A421 (East)**	878	931
	B - B4033 Nash Road	310	318
	C - A421 (West)	743	792
	D - Winslow Rd	82	85
08:45-09:00	**A - A421 (East)**	736	780
	B - B4033 Nash Road	260	267
	C - A421 (West)	623	663
	D - Winslow Rd	69	72

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.80	12.94	3.8	B	897	1345
B - B4033 Nash Road	0.91	71.79	7.0	F	317	475
C - A421 (West)	0.97	62.74	15.2	F	759	1138
D - Winslow Rd	0.14	5.78	0.2	A	84	125

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	736	184	83	1374	0.535	731	743	0.0	1.1	5.564	A
B - B4033 Nash Road	260	65	656	594	0.437	257	158	0.0	0.8	10.579	B
C - A421 (West)	623	156	229	995	0.626	616	684	0.0	1.6	9.341	A
D - Winslow Rd	69	17	757	910	0.075	68	88	0.0	0.1	4.276	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	878	220	99	1364	0.644	876	889	1.1	1.8	7.328	A
B - B4033 Nash Road	310	78	786	520	0.597	308	189	0.8	1.4	16.763	C
C - A421 (West)	743	186	275	970	0.766	738	819	1.6	3.1	15.104	C
D - Winslow Rd	82	20	907	829	0.099	82	105	0.1	0.1	4.817	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1076	269	121	1353	0.795	1068	1056	1.8	3.6	12.335	B
B - B4033 Nash Road	380	95	959	421	0.903	363	230	1.4	5.7	51.620	F
C - A421 (West)	911	228	324	943	0.966	877	997	3.1	11.5	41.543	E
D - Winslow Rd	100	25	1077	737	0.136	100	125	0.1	0.2	5.650	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1076	269	122	1352	0.796	1075	1080	3.6	3.8	12.942	B
B - B4033 Nash Road	380	95	965	417	0.911	375	232	5.7	7.0	71.789	F
C - A421 (West)	911	228	335	937	0.972	896	1005	11.5	15.2	62.739	F
D - Winslow Rd	100	25	1102	723	0.139	100	128	0.2	0.2	5.777	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	878	220	101	1363	0.644	886	953	3.8	1.9	7.656	A
B - B4033 Nash Road	310	78	795	514	0.603	332	192	7.0	1.6	21.812	C
C - A421 (West)	743	186	296	959	0.776	789	831	15.2	3.8	25.688	D
D - Winslow Rd	82	20	972	794	0.103	82	113	0.2	0.1	5.058	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	736	184	84	1373	0.536	738	760	1.9	1.2	5.696	A
B - B4033 Nash Road	260	65	663	590	0.440	263	160	1.6	0.8	11.095	B
C - A421 (West)	623	156	235	992	0.627	631	691	3.8	1.7	10.168	B
D - Winslow Rd	69	17	776	900	0.076	69	90	0.1	0.1	4.330	A

2020 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	33.73	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1057	100.000
B - B4033 Nash Road		ONE HOUR	✓	242	100.000
C - A421 (West)		ONE HOUR	✓	910	100.000
D - Winslow Rd		ONE HOUR	✓	95	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	2	158	886	11
	B - B4033 Nash Road	148	0	49	45
	C - A421 (West)	866	29	0	15
	D - Winslow Rd	11	56	28	0

Proportions

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	0.00	0.15	0.84	0.01
	B - B4033 Nash Road	0.61	0.00	0.20	0.19
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.12	0.59	0.29	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	0	0	2	0
	B - B4033 Nash Road	1	0	2	2
	C - A421 (West)	4	0	0	0
	D - Winslow Rd	9	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	1.000	1.000	1.023	1.000
	B - B4033 Nash Road	1.007	1.000	1.020	1.022
	C - A421 (West)	1.035	1.000	1.000	1.000
	D - Winslow Rd	1.091	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - A421 (East)**	796	811
	B - B4033 Nash Road	182	184
	C - A421 (West)	685	708
	D - Winslow Rd	72	72
17:00-17:15	**A - A421 (East)**	950	969
	B - B4033 Nash Road	218	220
	C - A421 (West)	818	845
	D - Winslow Rd	85	86
17:15-17:30	**A - A421 (East)**	1164	1186
	B - B4033 Nash Road	266	270
	C - A421 (West)	1002	1035
	D - Winslow Rd	105	106
17:30-17:45	**A - A421 (East)**	1164	1186
	B - B4033 Nash Road	266	270
	C - A421 (West)	1002	1035
	D - Winslow Rd	105	106
17:45-18:00	**A - A421 (East)**	950	969
	B - B4033 Nash Road	218	220
	C - A421 (West)	818	845
	D - Winslow Rd	85	86
18:00-18:15	**A - A421 (East)**	796	811
	B - B4033 Nash Road	182	184
	C - A421 (West)	685	708
	D - Winslow Rd	72	72

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.83	14.57	4.6	B	970	1455
B - B4033 Nash Road	0.65	24.57	1.8	C	222	333
C - A421 (West)	0.97	60.93	16.3	F	835	1253
D - Winslow Rd	0.14	5.62	0.2	A	87	131

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	796	199	85	1430	0.556	791	765	0.0	1.2	5.590	A
B - B4033 Nash Road	182	46	694	595	0.306	180	182	0.0	0.4	8.654	A
C - A421 (West)	685	171	154	1070	0.640	678	720	0.0	1.7	9.027	A
D - Winslow Rd	72	18	779	940	0.076	71	53	0.0	0.1	4.143	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	950	238	101	1421	0.669	947	917	1.2	2.0	7.601	A
B - B4033 Nash Road	218	54	831	518	0.420	216	218	0.4	0.7	11.901	B
C - A421 (West)	818	205	184	1053	0.777	812	863	1.7	3.3	14.553	B
D - Winslow Rd	85	21	933	856	0.100	85	63	0.1	0.1	4.671	A

17:15 - 17:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1164	291	123	1409	0.826	1154	1093	2.0	4.4	13.636	B
B - B4033 Nash Road	266	67	1012	416	0.640	263	265	0.7	1.7	22.904	C
C - A421 (West)	1002	250	224	1031	0.972	965	1051	3.3	12.5	40.707	E
D - Winslow Rd	105	26	1112	758	0.138	104	77	0.1	0.2	5.504	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1164	291	124	1408	0.826	1163	1116	4.4	4.6	14.565	B
B - B4033 Nash Road	266	67	1020	412	0.647	266	267	1.7	1.8	24.566	C
C - A421 (West)	1002	250	227	1030	0.973	987	1060	12.5	16.3	60.934	F
D - Winslow Rd	105	26	1136	745	0.140	105	78	0.2	0.2	5.618	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	950	238	103	1420	0.669	960	973	4.6	2.1	7.995	A
B - B4033 Nash Road	218	54	842	512	0.425	222	222	1.8	0.8	12.571	B
C - A421 (West)	818	205	188	1051	0.779	868	875	16.3	3.8	23.917	C
D - Winslow Rd	85	21	991	824	0.104	86	65	0.2	0.1	4.876	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	796	199	85	1430	0.557	799	781	2.1	1.3	5.738	A
B - B4033 Nash Road	182	46	701	591	0.308	183	184	0.8	0.5	8.865	A
C - A421 (West)	685	171	156	1069	0.641	693	728	3.8	1.8	9.766	A
D - Winslow Rd	72	18	795	931	0.077	72	54	0.1	0.1	4.190	A

2033 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	159.83	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1136	100.000
B - B4033 Nash Road		ONE HOUR	✓	396	100.000
C - A421 (West)		ONE HOUR	✓	953	100.000
D - Winslow Rd		ONE HOUR	✓	104	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	2	149	972	13
	B - B4033 Nash Road	233	0	57	106
	C - A421 (West)	905	30	1	17
	D - Winslow Rd	8	64	32	0

Proportions

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	0.00	0.13	0.86	0.01
	B - B4033 Nash Road	0.59	0.00	0.14	0.27
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.08	0.62	0.31	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	0	5	6	9
	B - B4033 Nash Road	3	0	4	2
	C - A421 (West)	7	8	0	0
	D - Winslow Rd	14	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	A - A421 (East)	1.000	1.054	1.061	1.091
	B - B4033 Nash Road	1.025	1.000	1.040	1.022
	C - A421 (West)	1.066	1.077	1.000	1.000
	D - Winslow Rd	1.143	1.054	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	**A - A421 (East)**	855	907
	B - B4033 Nash Road	298	306
	C - A421 (West)	718	764
	D - Winslow Rd	79	82
07:45-08:00	**A - A421 (East)**	1021	1083
	B - B4033 Nash Road	356	365
	C - A421 (West)	857	913
	D - Winslow Rd	94	98
08:00-08:15	**A - A421 (East)**	1251	1326
	B - B4033 Nash Road	436	447
	C - A421 (West)	1049	1118
	D - Winslow Rd	115	120
08:15-08:30	**A - A421 (East)**	1251	1326
	B - B4033 Nash Road	436	447
	C - A421 (West)	1049	1118
	D - Winslow Rd	115	120
08:30-08:45	**A - A421 (East)**	1021	1083
	B - B4033 Nash Road	356	365
	C - A421 (West)	857	913
	D - Winslow Rd	94	98
08:45-09:00	**A - A421 (East)**	855	907
	B - B4033 Nash Road	298	306
	C - A421 (West)	718	764
	D - Winslow Rd	79	82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.93	33.14	10.8	D	1042	1564
B - B4033 Nash Road	1.32	444.84	55.8	F	363	545
C - A421 (West)	1.10	212.53	58.1	F	875	1312
D - Winslow Rd	0.16	6.09	0.2	A	96	144

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	855	214	95	1367	0.626	849	852	0.0	1.6	6.865	A
B - B4033 Nash Road	298	75	762	533	0.559	293	182	0.0	1.2	14.714	B
C - A421 (West)	718	179	262	977	0.734	707	794	0.0	2.6	12.876	B
D - Winslow Rd	79	20	869	850	0.092	78	100	0.0	0.1	4.662	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1021	255	114	1356	0.753	1016	1011	1.6	2.9	10.417	B
B - B4033 Nash Road	356	89	913	447	0.796	348	217	1.2	3.3	33.676	D
C - A421 (West)	857	214	311	950	0.902	840	950	2.6	6.9	28.756	D
D - Winslow Rd	94	23	1031	762	0.123	94	119	0.1	0.1	5.386	A

08:00 - 08:15

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1251	313	136	1344	0.931	1225	1100	2.9	9.4	25.865	D
B - B4033 Nash Road	436	109	1100	340	1.284	333	261	3.3	29.0	198.942	F
C - A421 (West)	1049	262	301	955	1.098	940	1133	6.9	34.2	92.521	F
D - Winslow Rd	115	29	1122	712	0.161	115	119	0.1	0.2	6.027	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1251	313	137	1344	0.931	1245	1111	9.4	10.8	33.142	D
B - B4033 Nash Road	436	109	1118	329	1.324	329	264	29.0	55.8	444.837	F
C - A421 (West)	1049	262	297	958	1.096	954	1150	34.2	58.1	186.008	F
D - Winslow Rd	115	29	1133	706	0.163	115	119	0.2	0.2	6.089	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1021	255	116	1355	0.754	1051	1112	10.8	3.2	12.919	B
B - B4033 Nash Road	356	89	944	429	0.829	422	224	55.8	39.3	394.625	F
C - A421 (West)	857	214	375	915	0.936	900	991	58.1	47.4	212.535	F
D - Winslow Rd	94	23	1134	707	0.133	94	140	0.2	0.2	5.879	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	855	214	101	1363	0.627	861	1111	3.2	1.7	7.251	A
B - B4033 Nash Road	298	75	773	527	0.566	450	189	39.3	1.4	108.452	F
C - A421 (West)	718	179	396	903	0.794	883	827	47.4	6.0	115.955	F
D - Winslow Rd	79	20	1134	707	0.111	79	145	0.2	0.1	5.733	A

2033 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	145.58	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1226	100.000
B - B4033 Nash Road		ONE HOUR	✓	279	100.000
C - A421 (West)		ONE HOUR	✓	1063	100.000
D - Winslow Rd		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	2	183	1028	13
	B - B4033 Nash Road	171	0	57	52
	C - A421 (West)	1012	33	0	17
	D - Winslow Rd	13	65	32	0

Proportions

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0.00	0.15	0.84	0.01
	B - B4033 Nash Road	0.61	0.00	0.20	0.19
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.12	0.59	0.29	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0	0	2	0
	B - B4033 Nash Road	1	0	2	2
	C - A421 (West)	4	0	0	0
	D - Winslow Rd	9	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	1.000	1.000	1.023	1.000
	B - B4033 Nash Road	1.007	1.000	1.020	1.022
	C - A421 (West)	1.035	1.000	1.000	1.000
	D - Winslow Rd	1.091	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - A421 (East)	923	940
	B - B4033 Nash Road	210	213
	C - A421 (West)	800	827
	D - Winslow Rd	83	83
17:00-17:15	A - A421 (East)	1102	1123
	B - B4033 Nash Road	251	254
	C - A421 (West)	955	987
	D - Winslow Rd	99	100
17:15-17:30	A - A421 (East)	1350	1375
	B - B4033 Nash Road	308	312
	C - A421 (West)	1170	1209
	D - Winslow Rd	121	122
17:30-17:45	A - A421 (East)	1350	1375
	B - B4033 Nash Road	308	312
	C - A421 (West)	1170	1209
	D - Winslow Rd	121	122
17:45-18:00	A - A421 (East)	1102	1123
	B - B4033 Nash Road	251	254
	C - A421 (West)	955	987
	D - Winslow Rd	99	100
18:00-18:15	A - A421 (East)	923	940
	B - B4033 Nash Road	210	213
	C - A421 (West)	800	827
	D - Winslow Rd	83	83

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.96	45.13	16.0	E	1125	1687
B - B4033 Nash Road	0.94	96.26	7.8	F	256	385
C - A421 (West)	1.15	286.65	88.1	F	975	1463
D - Winslow Rd	0.17	6.00	0.2	A	101	151

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	923	231	97	1423	0.648	916	889	0.0	1.8	6.995	A
B - B4033 Nash Road	210	53	803	533	0.394	208	210	0.0	0.6	10.975	B
C - A421 (West)	800	200	177	1057	0.757	788	834	0.0	2.9	12.883	B
D - Winslow Rd	83	21	904	871	0.095	82	61	0.0	0.1	4.559	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1102	276	116	1413	0.780	1096	1055	1.8	3.4	11.133	B
B - B4033 Nash Road	251	63	961	445	0.565	249	251	0.6	1.2	18.139	C
C - A421 (West)	955	239	212	1038	0.921	934	998	2.9	8.2	29.998	D
D - Winslow Rd	99	25	1074	779	0.126	98	73	0.1	0.1	5.286	A

17:15 - 17:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1350	337	138	1401	0.964	1311	1154	3.4	13.0	31.510	D
B - B4033 Nash Road	308	77	1151	339	0.909	291	299	1.2	5.5	61.119	F
C - A421 (West)	1170	293	248	1018	1.150	1008	1194	8.2	48.7	114.011	F
D - Winslow Rd	121	30	1172	725	0.166	120	84	0.1	0.2	5.949	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1350	337	139	1401	0.964	1338	1163	13.0	16.0	45.125	E
B - B4033 Nash Road	308	77	1173	326	0.944	298	303	5.5	7.8	96.255	F
C - A421 (West)	1170	293	254	1014	1.154	1012	1217	48.7	88.1	251.469	F
D - Winslow Rd	121	30	1181	721	0.167	121	86	0.2	0.2	5.999	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1102	276	119	1411	0.781	1151	1148	16.0	3.8	16.104	C
B - B4033 Nash Road	251	63	1008	419	0.600	276	262	7.8	1.6	29.114	D
C - A421 (West)	955	239	234	1025	0.932	1014	1050	88.1	73.5	286.650	F
D - Winslow Rd	99	25	1168	728	0.135	99	80	0.2	0.2	5.726	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	923	231	106	1419	0.651	931	1133	3.8	1.9	7.484	A
B - B4033 Nash Road	210	53	816	526	0.400	214	220	1.6	0.7	11.662	B
C - A421 (West)	800	200	182	1054	0.759	1040	848	73.5	13.5	155.861	F
D - Winslow Rd	83	21	1156	734	0.113	83	66	0.2	0.1	5.530	A

2033 Base + CD + D, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	203.87	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1178	100.000
B - B4033 Nash Road		ONE HOUR	✓	404	100.000
C - A421 (West)		ONE HOUR	✓	982	100.000
D - Winslow Rd		ONE HOUR	✓	104	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	**A - A421 (East)**	2	156	1008	13
	B - B4033 Nash Road	242	0	57	106
	C - A421 (West)	934	30	1	17
	D - Winslow Rd	8	64	32	0

Proportions

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	**A - A421 (East)**	0.00	0.13	0.86	0.01
	B - B4033 Nash Road	0.60	0.00	0.14	0.26
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.08	0.62	0.31	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	**A - A421 (East)**	0	5	6	9
	B - B4033 Nash Road	3	0	4	2
	C - A421 (West)	7	8	0	0
	D - Winslow Rd	14	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	B - B4033 Nash Road	C - A421 (West)	D - Winslow Rd
From	**A - A421 (East)**	1.000	1.054	1.061	1.091
	B - B4033 Nash Road	1.025	1.000	1.040	1.022
	C - A421 (West)	1.066	1.077	1.000	1.000
	D - Winslow Rd	1.143	1.054	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - A421 (East)	887	941
	B - B4033 Nash Road	304	313
	C - A421 (West)	739	788
	D - Winslow Rd	79	82
07:45-08:00	A - A421 (East)	1059	1123
	B - B4033 Nash Road	364	373
	C - A421 (West)	883	940
	D - Winslow Rd	94	98
08:00-08:15	A - A421 (East)	1297	1376
	B - B4033 Nash Road	445	457
	C - A421 (West)	1081	1152
	D - Winslow Rd	115	120
08:15-08:30	A - A421 (East)	1297	1376
	B - B4033 Nash Road	445	457
	C - A421 (West)	1081	1152
	D - Winslow Rd	115	120
08:30-08:45	A - A421 (East)	1059	1123
	B - B4033 Nash Road	364	373
	C - A421 (West)	883	940
	D - Winslow Rd	94	98
08:45-09:00	A - A421 (East)	887	941
	B - B4033 Nash Road	304	313
	C - A421 (West)	739	788
	D - Winslow Rd	79	82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.97	47.31	16.2	E	1081	1622
B - B4033 Nash Road	1.43	569.75	69.5	F	371	557
C - A421 (West)	1.12	266.31	70.8	F	901	1352
D - Winslow Rd	0.16	6.10	0.2	A	96	144

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	887	222	95	1367	0.649	880	878	0.0	1.8	7.289	A
B - B4033 Nash Road	304	76	788	518	0.587	299	187	0.0	1.4	16.050	C
C - A421 (West)	739	185	268	974	0.759	728	820	0.0	3.0	14.013	B
D - Winslow Rd	79	20	895	835	0.094	78	100	0.0	0.1	4.752	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1059	265	114	1357	0.781	1053	1037	1.8	3.4	11.619	B
B - B4033 Nash Road	364	91	944	429	0.847	352	223	1.4	4.2	41.575	E
C - A421 (West)	883	221	316	948	0.932	860	980	3.0	8.7	34.235	D
D - Winslow Rd	94	23	1057	748	0.126	94	118	0.1	0.1	5.504	A

08:00 - 08:15

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1297	324	136	1344	0.965	1259	1106	3.4	13.0	32.781	D
B - B4033 Nash Road	445	111	1129	323	1.377	319	266	4.2	35.7	251.135	F
C - A421 (West)	1081	270	290	962	1.125	951	1158	8.7	41.3	108.001	F
D - Winslow Rd	115	29	1128	709	0.162	115	113	0.1	0.2	6.060	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1297	324	136	1344	0.965	1285	1113	13.0	16.2	47.306	E
B - B4033 Nash Road	445	111	1151	311	1.434	310	270	35.7	69.5	569.746	F
C - A421 (West)	1081	270	282	966	1.120	963	1179	41.3	70.8	220.817	F
D - Winslow Rd	115	29	1134	705	0.163	115	112	0.2	0.2	6.102	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1059	265	116	1356	0.782	1109	1115	16.2	3.8	17.122	C
B - B4033 Nash Road	364	91	992	402	0.905	396	232	69.5	61.4	556.064	F
C - A421 (West)	883	221	354	926	0.953	914	1034	70.8	63.1	266.309	F
D - Winslow Rd	94	23	1136	705	0.133	94	131	0.2	0.2	5.896	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	887	222	100	1364	0.650	895	1129	3.8	1.9	7.791	A
B - B4033 Nash Road	304	76	802	511	0.596	503	193	61.4	11.9	270.037	F
C - A421 (West)	739	185	443	878	0.843	864	862	63.1	32.0	201.342	F
D - Winslow Rd	79	20	1151	698	0.113	79	156	0.2	0.1	5.810	A

2033 Base + CD + D, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	198.32	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1262	100.000
B - B4033 Nash Road		ONE HOUR	✓	287	100.000
C - A421 (West)		ONE HOUR	✓	1101	100.000
D - Winslow Rd		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	2	190	1057	13
	B - B4033 Nash Road	178	0	57	52
	C - A421 (West)	1050	33	0	17
	D - Winslow Rd	13	65	32	0

Proportions

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0.00	0.15	0.84	0.01
	B - B4033 Nash Road	0.62	0.00	0.20	0.18
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.12	0.59	0.29	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0	0	2	0
	B - B4033 Nash Road	1	0	2	2
	C - A421 (West)	4	0	0	0
	D - Winslow Rd	9	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	1.000	1.000	1.023	1.000
	B - B4033 Nash Road	1.007	1.000	1.020	1.022
	C - A421 (West)	1.035	1.000	1.000	1.000
	D - Winslow Rd	1.091	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - A421 (East)**	950	968
	B - B4033 Nash Road	216	218
	C - A421 (West)	829	856
	D - Winslow Rd	83	83
17:00-17:15	**A - A421 (East)**	1135	1156
	B - B4033 Nash Road	258	261
	C - A421 (West)	990	1023
	D - Winslow Rd	99	100
17:15-17:30	**A - A421 (East)**	1390	1416
	B - B4033 Nash Road	316	319
	C - A421 (West)	1212	1252
	D - Winslow Rd	121	122
17:30-17:45	**A - A421 (East)**	1390	1416
	B - B4033 Nash Road	316	319
	C - A421 (West)	1212	1252
	D - Winslow Rd	121	122
17:45-18:00	**A - A421 (East)**	1135	1156
	B - B4033 Nash Road	258	261
	C - A421 (West)	990	1023
	D - Winslow Rd	99	100
18:00-18:15	**A - A421 (East)**	950	968
	B - B4033 Nash Road	216	218
	C - A421 (West)	829	856
	D - Winslow Rd	83	83

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.99	61.89	23.5	F	1158	1737
B - B4033 Nash Road	1.01	132.75	11.5	F	263	394
C - A421 (West)	1.20	388.07	111.3	F	1010	1515
D - Winslow Rd	0.17	6.02	0.2	A	101	151

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	950	238	97	1423	0.668	942	921	0.0	2.0	7.374	A
B - B4033 Nash Road	216	54	825	521	0.414	213	215	0.0	0.7	11.580	B
C - A421 (West)	829	207	182	1054	0.786	815	856	0.0	3.4	14.334	B
D - Winslow Rd	83	21	936	854	0.097	82	61	0.0	0.1	4.662	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1135	284	116	1413	0.803	1127	1087	2.0	3.8	12.287	B
B - B4033 Nash Road	258	64	987	431	0.598	255	257	0.7	1.4	20.152	C
C - A421 (West)	990	247	218	1034	0.957	959	1024	3.4	11.0	37.572	E
D - Winslow Rd	99	25	1104	762	0.129	98	73	0.1	0.1	5.420	A

17:15 - 17:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1390	347	137	1401	0.992	1336	1162	3.8	17.2	38.643	E
B - B4033 Nash Road	316	79	1171	328	0.963	292	303	1.4	7.2	75.559	F
C - A421 (West)	1212	303	250	1016	1.193	1010	1212	11.0	61.4	140.828	F
D - Winslow Rd	121	30	1179	722	0.167	120	82	0.1	0.2	5.984	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1390	347	137	1401	0.992	1364	1168	17.2	23.5	61.893	F
B - B4033 Nash Road	316	79	1195	314	1.005	298	307	7.2	11.5	132.751	F
C - A421 (West)	1212	303	256	1013	1.196	1012	1238	61.4	111.3	315.008	F
D - Winslow Rd	121	30	1184	719	0.168	121	84	0.2	0.2	6.017	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1135	284	118	1412	0.804	1211	1157	23.5	4.4	23.343	C
B - B4033 Nash Road	258	64	1058	391	0.660	295	271	11.5	2.1	48.299	E
C - A421 (West)	990	247	251	1015	0.974	1006	1102	111.3	107.1	388.065	F
D - Winslow Rd	99	25	1176	723	0.136	99	82	0.2	0.2	5.765	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	950	238	105	1419	0.670	960	1142	4.4	2.1	7.993	A
B - B4033 Nash Road	216	54	840	513	0.421	221	225	2.1	0.7	12.576	B
C - A421 (West)	829	207	189	1050	0.789	1041	872	107.1	54.1	281.006	F
D - Winslow Rd	83	21	1164	730	0.113	83	66	0.2	0.1	5.565	A

2033 Base + CD + D with TP, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	196.89	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1173	100.000
B - B4033 Nash Road		ONE HOUR	✓	403	100.000
C - A421 (West)		ONE HOUR	✓	978	100.000
D - Winslow Rd		ONE HOUR	✓	104	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	2	155	1003	13
	B - B4033 Nash Road	240	0	57	106
	C - A421 (West)	930	30	1	17
	D - Winslow Rd	8	64	32	0

Proportions

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0.00	0.13	0.86	0.01
	B - B4033 Nash Road	0.60	0.00	0.14	0.26
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.08	0.62	0.31	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0	5	6	9
	B - B4033 Nash Road	3	0	4	2
	C - A421 (West)	7	8	0	0
	D - Winslow Rd	14	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	1.000	1.054	1.061	1.091
	B - B4033 Nash Road	1.025	1.000	1.040	1.022
	C - A421 (West)	1.066	1.077	1.000	1.000
	D - Winslow Rd	1.143	1.054	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A - A421 (East)	883	936
	B - B4033 Nash Road	303	311
	C - A421 (West)	736	784
	D - Winslow Rd	79	82
07:45-08:00	A - A421 (East)	1054	1118
	B - B4033 Nash Road	362	372
	C - A421 (West)	879	936
	D - Winslow Rd	94	98
08:00-08:15	A - A421 (East)	1291	1369
	B - B4033 Nash Road	444	455
	C - A421 (West)	1077	1147
	D - Winslow Rd	115	120
08:15-08:30	A - A421 (East)	1291	1369
	B - B4033 Nash Road	444	455
	C - A421 (West)	1077	1147
	D - Winslow Rd	115	120
08:30-08:45	A - A421 (East)	1054	1118
	B - B4033 Nash Road	362	372
	C - A421 (West)	879	936
	D - Winslow Rd	94	98
08:45-09:00	A - A421 (East)	883	936
	B - B4033 Nash Road	303	311
	C - A421 (West)	736	784
	D - Winslow Rd	79	82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.96	45.00	15.3	E	1076	1614
B - B4033 Nash Road	1.42	551.12	67.5	F	370	555
C - A421 (West)	1.12	257.56	68.7	F	897	1346
D - Winslow Rd	0.16	6.10	0.2	A	96	144

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	883	221	95	1367	0.646	876	874	0.0	1.8	7.230	A
B - B4033 Nash Road	303	76	785	520	0.583	298	186	0.0	1.3	15.840	C
C - A421 (West)	736	184	267	975	0.755	725	816	0.0	2.9	13.823	B
D - Winslow Rd	79	20	891	838	0.094	78	100	0.0	0.1	4.738	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1054	264	114	1357	0.777	1048	1033	1.8	3.3	11.441	B
B - B4033 Nash Road	362	91	940	432	0.839	351	222	1.3	4.1	40.249	E
C - A421 (West)	879	220	315	948	0.927	857	976	2.9	8.4	33.303	D
D - Winslow Rd	94	23	1053	750	0.125	94	118	0.1	0.1	5.486	A

08:00 - 08:15

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1291	323	136	1344	0.960	1255	1105	3.3	12.4	31.731	D
B - B4033 Nash Road	444	111	1126	325	1.364	321	265	4.1	34.7	243.183	F
C - A421 (West)	1077	269	291	961	1.120	950	1155	8.4	40.1	105.388	F
D - Winslow Rd	115	29	1127	709	0.162	115	114	0.1	0.2	6.055	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1291	323	137	1344	0.961	1280	1112	12.4	15.3	44.999	E
B - B4033 Nash Road	444	111	1147	313	1.418	312	269	34.7	67.5	551.122	F
C - A421 (West)	1077	269	284	965	1.116	962	1175	40.1	68.7	214.999	F
D - Winslow Rd	115	29	1134	705	0.163	115	113	0.2	0.2	6.100	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1054	264	116	1356	0.778	1100	1114	15.3	3.7	16.336	C
B - B4033 Nash Road	362	91	985	406	0.893	400	231	67.5	58.1	531.898	F
C - A421 (West)	879	220	357	925	0.950	912	1028	68.7	60.5	257.563	F
D - Winslow Rd	94	23	1136	705	0.133	94	133	0.2	0.2	5.893	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	883	221	100	1364	0.647	890	1128	3.7	1.9	7.710	A
B - B4033 Nash Road	303	76	798	513	0.591	504	192	58.1	7.9	244.090	F
C - A421 (West)	736	184	444	877	0.839	863	858	60.5	28.9	190.114	F
D - Winslow Rd	79	20	1150	699	0.112	79	157	0.2	0.1	5.805	A

2033 Base + CD + D with TP, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	189.65	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1257	100.000
B - B4033 Nash Road		ONE HOUR	✓	285	100.000
C - A421 (West)		ONE HOUR	✓	1095	100.000
D - Winslow Rd		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	2	189	1053	13
	B - B4033 Nash Road	177	0	57	52
	C - A421 (West)	1044	33	0	17
	D - Winslow Rd	13	65	32	0

Proportions

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0.00	0.15	0.84	0.01
	B - B4033 Nash Road	0.62	0.00	0.20	0.18
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.12	0.59	0.29	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0	0	2	0
	B - B4033 Nash Road	1	0	2	2
	C - A421 (West)	4	0	0	0
	D - Winslow Rd	9	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	1.000	1.000	1.023	1.000
	B - B4033 Nash Road	1.007	1.000	1.020	1.022
	C - A421 (West)	1.035	1.000	1.000	1.000
	D - Winslow Rd	1.091	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	**A - A421 (East)**	946	965
	B - B4033 Nash Road	215	217
	C - A421 (West)	824	852
	D - Winslow Rd	83	83
17:00-17:15	**A - A421 (East)**	1130	1152
	B - B4033 Nash Road	257	260
	C - A421 (West)	984	1017
	D - Winslow Rd	99	100
17:15-17:30	**A - A421 (East)**	1384	1411
	B - B4033 Nash Road	314	318
	C - A421 (West)	1205	1246
	D - Winslow Rd	121	122
17:30-17:45	**A - A421 (East)**	1384	1411
	B - B4033 Nash Road	314	318
	C - A421 (West)	1205	1246
	D - Winslow Rd	121	122
17:45-18:00	**A - A421 (East)**	1130	1152
	B - B4033 Nash Road	257	260
	C - A421 (West)	984	1017
	D - Winslow Rd	99	100
18:00-18:15	**A - A421 (East)**	946	965
	B - B4033 Nash Road	215	217
	C - A421 (West)	824	852
	D - Winslow Rd	83	83

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.99	59.23	22.3	F	1153	1730
B - B4033 Nash Road	1.00	126.51	10.9	F	262	393
C - A421 (West)	1.19	371.45	107.5	F	1005	1507
D - Winslow Rd	0.17	6.01	0.2	A	101	151

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	946	237	97	1423	0.665	939	916	0.0	1.9	7.321	A
B - B4033 Nash Road	215	54	822	523	0.411	212	214	0.0	0.7	11.482	B
C - A421 (West)	824	206	181	1055	0.781	811	852	0.0	3.3	14.082	B
D - Winslow Rd	83	21	931	857	0.096	82	61	0.0	0.1	4.645	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1130	283	116	1413	0.800	1123	1082	1.9	3.8	12.115	B
B - B4033 Nash Road	257	64	983	433	0.593	254	256	0.7	1.4	19.812	C
C - A421 (West)	984	246	217	1035	0.951	955	1020	3.3	10.5	36.222	E
D - Winslow Rd	99	25	1100	765	0.129	98	73	0.1	0.1	5.400	A

17:15 - 17:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1384	346	137	1401	0.988	1333	1161	3.8	16.6	37.563	E
B - B4033 Nash Road	314	79	1168	329	0.955	292	302	1.4	6.9	73.125	F
C - A421 (West)	1205	301	250	1016	1.186	1010	1210	10.5	59.3	136.259	F
D - Winslow Rd	121	30	1178	722	0.167	120	83	0.1	0.2	5.979	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1384	346	138	1401	0.988	1361	1167	16.6	22.3	59.233	F
B - B4033 Nash Road	314	79	1192	315	0.996	298	307	6.9	10.9	126.513	F
C - A421 (West)	1205	301	256	1013	1.190	1012	1235	59.3	107.5	304.537	F
D - Winslow Rd	121	30	1184	719	0.168	121	84	0.2	0.2	6.014	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1130	283	118	1412	0.801	1202	1156	22.3	4.3	21.921	C
B - B4033 Nash Road	257	64	1050	395	0.650	292	270	10.9	2.0	43.938	E
C - A421 (West)	984	246	248	1017	0.968	1008	1094	107.5	101.6	371.454	F
D - Winslow Rd	99	25	1175	724	0.136	99	81	0.2	0.2	5.759	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	946	237	105	1419	0.667	956	1140	4.3	2.1	7.917	A
B - B4033 Nash Road	215	54	836	515	0.417	220	224	2.0	0.7	12.416	B
C - A421 (West)	824	206	188	1051	0.784	1041	868	101.6	47.5	260.329	F
D - Winslow Rd	83	21	1163	730	0.113	83	66	0.2	0.1	5.560	A

2033 Base + CD + D - ST, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	223.05	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1201	100.000
B - B4033 Nash Road		ONE HOUR	✓	407	100.000
C - A421 (West)		ONE HOUR	✓	992	100.000
D - Winslow Rd		ONE HOUR	✓	104	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	2	159	1027	13
	B - B4033 Nash Road	244	0	57	106
	C - A421 (West)	944	30	1	17
	D - Winslow Rd	8	64	32	0

Proportions

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0.00	0.13	0.86	0.01
	B - B4033 Nash Road	0.60	0.00	0.14	0.26
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.08	0.62	0.31	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0	5	6	9
	B - B4033 Nash Road	3	0	4	2
	C - A421 (West)	7	8	0	0
	D - Winslow Rd	14	5	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	1.000	1.054	1.061	1.091
	B - B4033 Nash Road	1.025	1.000	1.040	1.022
	C - A421 (West)	1.066	1.077	1.000	1.000
	D - Winslow Rd	1.143	1.054	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	**A - A421 (East)**	904	959
	B - B4033 Nash Road	306	314
	C - A421 (West)	747	796
	D - Winslow Rd	79	82
07:45-08:00	**A - A421 (East)**	1080	1145
	B - B4033 Nash Road	366	375
	C - A421 (West)	892	950
	D - Winslow Rd	94	98
08:00-08:15	**A - A421 (East)**	1322	1402
	B - B4033 Nash Road	448	460
	C - A421 (West)	1093	1164
	D - Winslow Rd	115	120
08:15-08:30	**A - A421 (East)**	1322	1402
	B - B4033 Nash Road	448	460
	C - A421 (West)	1093	1164
	D - Winslow Rd	115	120
08:30-08:45	**A - A421 (East)**	1080	1145
	B - B4033 Nash Road	366	375
	C - A421 (West)	892	950
	D - Winslow Rd	94	98
08:45-09:00	**A - A421 (East)**	904	959
	B - B4033 Nash Road	306	314
	C - A421 (West)	747	796
	D - Winslow Rd	79	82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	0.98	57.77	20.6	F	1102	1653
B - B4033 Nash Road	1.48	636.97	75.2	F	373	560
C - A421 (West)	1.13	281.01	75.0	F	911	1366
D - Winslow Rd	0.16	6.10	0.2	A	96	144

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	904	226	95	1367	0.661	896	887	0.0	1.9	7.535	A
B - B4033 Nash Road	306	77	803	510	0.600	301	189	0.0	1.4	16.753	C
C - A421 (West)	747	187	269	973	0.768	735	834	0.0	3.1	14.441	B
D - Winslow Rd	79	20	904	831	0.095	78	100	0.0	0.1	4.782	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1080	270	114	1357	0.796	1073	1045	1.9	3.7	12.361	B
B - B4033 Nash Road	366	91	960	420	0.871	352	226	1.4	4.8	46.263	E
C - A421 (West)	892	223	316	947	0.942	867	997	3.1	9.5	36.328	E
D - Winslow Rd	94	23	1065	743	0.126	94	118	0.1	0.1	5.539	A

08:00 - 08:15

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1322	331	136	1344	0.983	1275	1108	3.7	15.5	37.300	E
B - B4033 Nash Road	448	112	1142	316	1.419	312	268	4.8	38.7	277.130	F
C - A421 (West)	1093	273	284	965	1.132	955	1171	9.5	43.8	113.353	F
D - Winslow Rd	115	29	1129	708	0.162	115	111	0.1	0.2	6.067	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1322	331	136	1344	0.984	1302	1113	15.5	20.6	57.774	F
B - B4033 Nash Road	448	112	1166	302	1.483	302	272	38.7	75.2	631.288	F
C - A421 (West)	1093	273	275	970	1.127	968	1192	43.8	75.0	232.017	F
D - Winslow Rd	115	29	1134	705	0.163	115	109	0.2	0.2	6.102	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1080	270	116	1356	0.796	1145	1114	20.6	4.2	21.448	C
B - B4033 Nash Road	366	91	1023	384	0.953	379	237	75.2	72.0	636.973	F
C - A421 (West)	892	223	339	934	0.955	922	1063	75.0	67.5	281.009	F
D - Winslow Rd	94	23	1135	705	0.133	94	126	0.2	0.2	5.891	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	904	226	100	1364	0.663	913	1130	4.2	2.0	8.124	A
B - B4033 Nash Road	306	77	817	502	0.610	495	195	72.0	24.8	357.202	F
C - A421 (West)	747	187	436	881	0.848	868	876	67.5	37.2	219.894	F
D - Winslow Rd	79	20	1151	698	0.113	79	153	0.2	0.1	5.815	A

2033 Base + CD + D - ST, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J10	A421 Nash Road/ Winslow Road	Standard Roundabout		A, B, C, D	215.82	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - A421 (East)		ONE HOUR	✓	1270	100.000
B - B4033 Nash Road		ONE HOUR	✓	288	100.000
C - A421 (West)		ONE HOUR	✓	1114	100.000
D - Winslow Rd		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	2	191	1064	13
	B - B4033 Nash Road	180	0	57	52
	C - A421 (West)	1063	33	0	17
	D - Winslow Rd	13	65	32	0

Proportions

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0.00	0.15	0.84	0.01
	B - B4033 Nash Road	0.62	0.00	0.20	0.18
	C - A421 (West)	0.95	0.03	0.00	0.02
	D - Winslow Rd	0.12	0.59	0.29	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	0	0	2	0
	B - B4033 Nash Road	1	0	2	2
	C - A421 (West)	4	0	0	0
	D - Winslow Rd	9	0	0	0

Average PCU Per Veh

		To			
		A - A421 (East)	**B - B4033 Nash Road**	**C - A421 (West)**	**D - Winslow Rd**
From	**A - A421 (East)**	1.000	1.000	1.023	1.000
	B - B4033 Nash Road	1.007	1.000	1.020	1.022
	C - A421 (West)	1.035	1.000	1.000	1.000
	D - Winslow Rd	1.091	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - A421 (East)	956	974
	B - B4033 Nash Road	217	220
	C - A421 (West)	839	867
	D - Winslow Rd	83	83
17:00-17:15	A - A421 (East)	1142	1164
	B - B4033 Nash Road	259	262
	C - A421 (West)	1001	1035
	D - Winslow Rd	99	100
17:15-17:30	A - A421 (East)	1398	1425
	B - B4033 Nash Road	317	321
	C - A421 (West)	1226	1267
	D - Winslow Rd	121	122
17:30-17:45	A - A421 (East)	1398	1425
	B - B4033 Nash Road	317	321
	C - A421 (West)	1226	1267
	D - Winslow Rd	121	122
17:45-18:00	A - A421 (East)	1142	1164
	B - B4033 Nash Road	259	262
	C - A421 (West)	1001	1035
	D - Winslow Rd	99	100
18:00-18:15	A - A421 (East)	956	974
	B - B4033 Nash Road	217	220
	C - A421 (West)	839	867
	D - Winslow Rd	83	83

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A421 (East)	1.00	66.18	25.6	F	1165	1748
B - B4033 Nash Road	1.02	141.86	12.5	F	264	397
C - A421 (West)	1.21	423.04	119.5	F	1022	1533
D - Winslow Rd	0.17	6.02	0.2	A	101	151

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	956	239	97	1423	0.672	948	931	0.0	2.0	7.459	A
B - B4033 Nash Road	217	54	830	518	0.418	214	216	0.0	0.7	11.725	B
C - A421 (West)	839	210	183	1054	0.796	824	861	0.0	3.6	14.876	B
D - Winslow Rd	83	21	947	848	0.097	82	61	0.0	0.1	4.696	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1142	285	116	1413	0.808	1134	1096	2.0	3.9	12.560	B
B - B4033 Nash Road	259	65	993	427	0.606	256	257	0.7	1.5	20.657	C
C - A421 (West)	1001	250	219	1034	0.969	967	1029	3.6	12.3	40.563	E
D - Winslow Rd	99	25	1113	757	0.130	98	72	0.1	0.1	5.460	A

17:15 - 17:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)	(s)	service
A - A421 (East)	1398	350	137	1401	0.998	1341	1164	3.9	18.3	40.352	E
B - B4033 Nash Road	317	79	1175	325	0.975	292	303	1.5	7.7	79.300	F
C - A421 (West)	1226	307	251	1016	1.207	1011	1216	12.3	66.0	150.849	F
D - Winslow Rd	121	30	1180	721	0.167	121	82	0.1	0.2	5.992	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1398	350	137	1401	0.998	1369	1169	18.3	25.6	66.177	F
B - B4033 Nash Road	317	79	1199	312	1.018	298	307	7.7	12.5	141.856	F
C - A421 (West)	1226	307	256	1013	1.210	1012	1241	66.0	119.5	337.589	F
D - Winslow Rd	121	30	1185	719	0.168	121	83	0.2	0.2	6.021	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	1142	285	117	1412	0.809	1225	1159	25.6	4.6	25.895	D
B - B4033 Nash Road	259	65	1070	384	0.675	300	272	12.5	2.3	55.996	F
C - A421 (West)	1001	250	255	1013	0.988	1004	1115	119.5	118.8	423.039	F
D - Winslow Rd	99	25	1177	723	0.136	99	82	0.2	0.2	5.772	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A421 (East)	956	239	104	1419	0.674	966	1144	4.6	2.1	8.112	A
B - B4033 Nash Road	217	54	845	510	0.425	223	225	2.3	0.8	12.821	B
C - A421 (West)	839	210	191	1049	0.799	1041	878	118.8	68.3	325.305	F
D - Winslow Rd	83	21	1165	729	0.113	83	66	0.2	0.1	5.576	A