



South West Milton Keynes Consortium

TRANSPORT RESPONSE NOTE (TRN3)





South West Milton Keynes Consortium

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TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70069442

DATE: JANUARY 2021

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QUALITY CONTROL

Issue/revision	First Issue	Revision 1	Revision 2	Revision 3
Remarks	Final			
Date	29 January 2021			
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Signature				
Checked by	Steph Howard			
Signature				
Authorised by	Martin Paddle			
Signature				
Project number	70069442			
Report number	TRN3			
File reference	\\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\TRN3			

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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 highways Officers from MKC and Buckinghamshire Council (BC) and was also submitted to BC to support the planning application made to AVDC (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 (Highways) to BC Planning dated 2nd October 2020 a second Transport Response Note (TRN2) was prepared and submitted to BC in December 2020. TRN2 responded specifically to the comments made by BC which relate primarily to the BC highway network.
- 1.1.5. This third Transport Response Note (TRN3) broadly applies the methodology adopted in TRN2 to the remainder of the study area as well as responding to comments made by BC in their letter dated 2nd October 2020 regarding J5 – Tattenhoe Roundabout and J6 – Bottledump Roundabout. The letter from BC is included at **Appendix A**.
- 1.1.6. 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 TA¹ 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 and TRN3, which addresses particular matters raised by BC, is considered to be a reasonable one and has been adopted for the assessment of transport impacts on the local highway network. This has led to

¹ Updated TA (May 2020)



further refinement of the proposed mitigation. A summary is provided at the end of each section of this TRN3 to identify areas of the Updated TA that have been superseded through the adoption of this modified approach.

1.2 REPORT STRUCTURE

1.2.1. The remaining structure of this document is as follows:

- Chapter 2 – Base Model Validation and Calibration
- Chapter 3 – Trip Generation and Distribution
- Chapter 4 – Base Model Update; and
- Chapter 5 – Mitigation Modelling Update

1.2.2. Where appropriate, comments from BC as detailed in their letter of 2nd October 2020 are indicated in italics followed by WSP's response.

2 BASE MODEL VALIDATION AND CALIBRATION

2.1 MODEL VALIDATION AND CALIBRATION

2.1.1. Following discussion with BC, a modified approach to calibration and validation of the base junction models has been adopted. This modified approach to calibration and validation supersedes the approach adopted in the Updated TA. A summary of this process is outlined below:

- Initially the maximum mean interval queue length was identified from the queue length survey data for each arm of the junctions within the study area.
- A notional threshold of a five-vehicle difference between the observed and modelled queue length was adopted to highlight any arm of a junction where calibration might be required. 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.

2.1.2. **Table 2-1** provides a summary of the results of this calibration identification exercise with arms of junctions coded amber where the difference in maximum mean interval queue length was found to be greater than the notional five vehicle threshold and green where it was found to be less.

Table 2-1: Model Calibration Identification

Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			PM (17:00-18:00)		
				Observed Queue	Modelled Queue	Diff(O-M)	Observed Queue	Modelled Queue	Diff(O-M)
1	Buckingham Road/Water Eaton Road (lane simulation)	A - Sherwood Drive	A	12	34	-22	13	13	0
		B - B4034	B	11	3	8	38	67	-29
		C - Water Eaton Road	C	10	1	8	13	3	9
		D - B4034 Buckingham Road	D	30	149	-119	19	6	12
2	Buckingham Rd Shenley Rd Newton Rd	2E - Buckingham Road/ Shenley Road - A - Shenley Road	A	3	2	0	3	2	1

Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			PM (17:00-18:00)		
				Observed Queue	Modelled Queue	Diff(O-M)	Observed Queue	Modelled Queue	Diff(O-M)
		2E - Buckingham Road/ Shenley Road - B - Buckingham Road East	B	6	1	5	6	0	6
		2E - Buckingham Road/ Shenley Road - C - Buckingham Road West	C	7	4	3	4	3	1
		2W - Newton Road/ Buckingham Road - A - Buckingham Road East	A	6	1	4	6	1	5
		2W - Newton Road/ Buckingham Road - B - Newton Road	B	5	1	4	5	1	4
		2W - Newton Road/ Buckingham Road - C - Buckingham Road West	C	7	3	4	4	2	2
5	Tattenhoe Roundabout	Snelshall Street	A	20	40	20	18	4	14
		A421 Standing Way East	B	7	1	6	10	1	9
		Buckingham Road	C	7	1	6	8	1	7
		A421 Standing Way West	D	8	2	6	6	2	4
6	Bottledump Roundabout (lane simulation)	Buckingham Road (W)	C	5	6	1	5	3	2
		Standing Way E	A	6	7	1	13	25	12
		Whaddon Road	B	7	1	6	10	1	9
12	Kingsmead Roundabout	A - Snelshall Street (N)	A	5	2	3	4	1	4
		B - Chaffron Way	B	9	1	7	4	1	3

Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			PM (17:00-18:00)		
				Observed Queue	Modelled Queue	Diff(O-M)	Observed Queue	Modelled Queue	Diff(O-M)
		C - Snelshall Street (S)	C	5	1	4	4	1	2
		D - Hayton Way	D	2	0	2	2	0	2
13	Westcroft Roundabout	A - Tattenhoe Street (N)	A	8	1	7	6	1	5
		B - Chaffron Way (E)	B	9	1	8	4	1	4
		C - Tattenhoe Street (S)	C	11	2	9	7	1	6
		D - Chaffron Way (W)	D	6	1	5	10	1	9
14	Furzton Roundabout	A - Fulmer Street (N)	A	4	1	3	8	2	6
		B - Chaffron Way (E)	B	6	1	5	34	3	31
		C - Fulmer Street (S)	C	12	3	9	8	1	7
		D - Chaffron Way (W)	D	21	3	18	4	1	3
15	Bleak Hall Roundabout	A - Grafton Street (N)	A	19	1	18	46	2	44
		B - Standing Way (E)	B	49	5	45	22	4	19
		C - Grafton Street (S)	C	39	13	27	30	2	29
		D - Standing Way (W)	D	25	5	20	51	4	47
16	Elfield Park Roundabout	A - Watling Street (W)	A	15	32	-18	41	7	34
		B - Standing Way (N)	B	47	10	37	35	5	30
		C - Watling Street (E)	C	26	79	-53	40	16	24
		D - Standing Way (S)	D	32	3	29	53	2	50
17	Emerson Roundabout	A - Fulmer Street	A	15	3	12	14	1	12
		B - Standing Way (N)	B	23	1	22	18	3	15

Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			PM (17:00-18:00)		
				Observed Queue	Modelled Queue	Diff(O-M)	Observed Queue	Modelled Queue	Diff(O-M)
		C - Shenley Way	C	9	1	8	15	1	14
		D - Standing Way (S)	D	7	5	2	13	1	11
18	Windmill Hill Roundabout	A - Tattenhoe Street	A	22	7	14	12	2	11
		B - A421 Standing Way (N)	B	12	1	11	9	1	8
		C - Tattenhoe Lane	C	14	2	12	11	1	10
		D - A421 Standing Way (S)	D	20	2	18	10	1	9

2.1.3. For junctions where calibration was identified as being appropriate, a two-step calibration process was agreed with BC and adopted as follows:

- A review of the video survey data collected as part of the extensive data collection exercise in February 2020 was undertaken to determine any arms of a junction where site specific measurements for capacity correction could be undertaken in accordance with the procedure outlined within Appendix D of the Junctions 9 User Guide². Where videos were available that would successfully allow this approach to be adopted the methodology was followed and entry and circulating flows were input directly to the Junctions 9 software to provide a capacity correction.
- Where the video survey data did not meet the criteria required to allow the methodology outlined within Appendix D of the Junctions 9 User Guide to be followed a manual intercept adjustment approach was adopted. This involved two stages:
 - Lane usage was reviewed on each arm of each junction to identify whether unequal lane usage could impact upon the capacity of an arm of a junction. As the survey data had mostly been coded by arm and not by lane the lane usage was estimated based upon

² Page 343 – Appendix D – Junctions 9 User Guide (Issue D)

observations of usage made from the video surveys and any lane marking/signage. A notional threshold of 75% was agreed with BC as the threshold for consideration of application of a manual intercept adjustment with reference made to the Barbara Chard methodology³. Initially the Barbara Chard Methodology (method B) was applied to the arm. A review of the observed and modelled queue lengths was then undertaken. Where the observed and modelled queues still varied by more than five vehicles, further adjustments were made to the intercept adjustments.

- Where unequal lane usage was not identified, a manual intercept adjustment was made to bring the modelled queue length within a five vehicle difference of the observed queue length.

2.1.4. **Table 2-2** presents a comparison of the maximum mean interval queues and the modelled queue lengths and the methodology adopted for calibration.

³ ARCADY Health Warning: Account for Unequal Lane Usage or risk damaging the public purse! By Barbara Chard, Head of Junction Unit, Cornwall County Council (Case B: Unequal usage of lane/s on a roundabout approach)



Table 2-2: Model Calibration and Validation

Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			Calibration Method Applied AM	PM (17:00-18:00)			Calibration Method Applied PM
				Observed Queue	Modelled Queue	Diff(O-M)		Observed Queue	Modelled Queue	Diff(O-M)	
1	Buckingham Road/Water Eaton Road (lane simulation)	A - Sherwood Drive	A	12	9	3	Calibrated using queue length	13	9	3	Calibrated using queue length
		B - B4034	B	11	9	2	Calibrated using queue length	38	35	3	Calibrated using queue length
		C - Water Eaton Road	C	10	6	4	Calibrated using queue length	13	11	2	Calibrated using queue length
		D - B4034 Buckingham Road	D	30	27	3	Calibrated using queue length	19	16	3	Calibrated using queue length
2	Buckingham Rd Shenley Rd Newton Rd	2E - Buckingham Road/ Shenley Road - A - Shenley Road	A	3	2	0	No Calibration Required	3	1	1	No Calibration Required
		2E - Buckingham Road/ Shenley Road - B - Buckingham Road East	B	6	1	5	Calibrated using queue length	6	3	4	Calibrated using queue length
		2E - Buckingham Road/ Shenley Road - C - Buckingham Road West	C	7	6	1	No Calibration Required	4	1	3	No Calibration Required
		2W - Newford Road/ Buckingham Road - A - Buckingham Road East	A	6	1	5	No Calibration Required	6	3	3	No Calibration Required



Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			Calibration Method Applied AM	PM (17:00-18:00)			Calibration Method Applied PM
				Observed Queue	Modelled Queue	Diff(O-M)		Observed Queue	Modelled Queue	Diff(O-M)	
		2W - Newford Road/ Buckingham Road - B - Newton Road	B	5	2	3	No Calibration Required	5	1	4	No Calibration Required
		2W - Newford Road/ Buckingham Road - C - Buckingham Road West	C	7	2	5	No Calibration Required	4	1	3	No Calibration Required
5	Tattenhoe Roundabout	Snelshall Street	A	20	24	4	Calibrated using queue length	18	19	1	Calibrated using queue length
		A421 Standing Way East	B	7	6	1	Barbara Chard method	10	10	0	Barbara Chard Method
		Buckingham Road	C	7	6	1	No Calibration Required	8	6	2	No Calibration Required
		A421 Standing Way West	D	8	6	2	Barbara Chard method	6	6	0	Barbara Chard method
6	Bottledump Roundabout (lane simulation)	Buckingham Road (W)	C	5	5	0	No calibration Required	5	3	2	No Calibration required
		Standing Way E	A	6	5	1	Calibrated using queue length	13	20	7	Calibrated using queue length
		Whaddon Road	B	7	5	2	Calibrated using queue length	10	7	3	Calibrated using queue length
12	Kingsmead Roundabout	A - Snelshall Street (N)	A	5	1	4	No Calibration Required	4	1	4	No Calibration Required
		B - Chaffron Way	B	9	4	5	Calibrated using queue length	4	2	2	Calibrated using queue length
		C - Snelshall Street (S)	C	5	1	4	No Calibration Required	4	1	2	No Calibration Required



Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			Calibration Method Applied AM	PM (17:00-18:00)			Calibration Method Applied PM
				Observed Queue	Modelled Queue	Diff(O-M)		Observed Queue	Modelled Queue	Diff(O-M)	
		D - Hayton Way	D	2	0	2	No Calibration Required	2	0	2	No Calibration Required
13	Westcroft Roundabout	A - Tattenhoe Street (N)	A	8	3	5	Calibrated using queue length	6	1	5	No Calibration Required
		B - Chaffron Way (E)	B	9	4	5	Calibrated using queue length	4	1	3	No Calibration Required
		C - Tattenhoe Street (S)	C	11	6	5	Calibrated using queue length	7	2	5	Barbara Chard method
		D - Chaffron Way (W)	D	6	1	5	No calibration required	10	5	5	Calibrated using queue length
14	Furzton Roundabout	A - Fulmer Street (N)	A	4	1	4	No calibration required	8	3	5	Calibrated using queue length
		B - Chaffron Way (E)	B	6	2	5	Calibrated using queue length	34	29	5	Calibrated using queue length
		C - Fulmer Street (S)	C	12	7	5	Calibrated using queue length	8	3	5	Calibrated using queue length
		D - Chaffron Way (W)	D	21	15	6	Calibrated using video survey	4	1	3	No Calibration required
15	Bleak Hall Roundabout	A - Grafton Street (N)	A	19	33	-14	Calibrated using video survey	46	41	5	Calibrated using queue length
		B - Standing Way (E)	B	49	45	5	Calibrated using queue length	22	20	3	Calibrated using video survey
		C - Grafton Street (S)	C	39	35	5	Calibrated using queue length	30	26	5	Calibrated using queue length
		D - Standing Way (W)	D	25	32	-7	Calibrated using video survey	51	46	5	Calibrated using queue length



Junction	Location	Arm Description	Arm	AM Peak (07:45-08:45)			Calibration Method Applied AM	PM (17:00-18:00)			Calibration Method Applied PM
				Observed Queue	Modelled Queue	Diff(O-M)		Observed Queue	Modelled Queue	Diff(O-M)	
16	Elfield Park Roundabout	A - Watling Street (W)	A	15	10	5	Calibrated using queue length	41	36	5	Calibrated using queue length
		B - Standing Way (N)	B	47	42	5	Calibrated using queue length	35	31	4	Calibrated using queue length
		C - Watling Street (E)	C	26	21	5	Calibrated using queue length	40	36	4	Calibrated using queue length
		D - Standing Way (S)	D	32	27	5	Calibrated using queue length	53	48	5	Calibrated using queue length
17	Emerson Roundabout	A - Fulmer Street	A	15	10	5	Calibrated using queue length	14	7	7	Calibrated using video survey
		B - Standing Way (N)	B	23	19	5	Calibrated using queue length	18	13	5	Calibrated using queue length
		C - Shenley Way	C	9	13	-4	Calibrated using queue length	15	10	5	Calibrated using queue length
		D - Standing Way (S)	D	7	5	3	Calibrated using queue length	13	8	5	Calibrated using queue length
18	Windmill Hill Roundabout	A - Tattenhoe Street	A	22	17	5	Calibrated using queue length	12	8	4	Calibrated using queue length
		B - A421 Standing Way (N)	B	12	7	5	Calibrated using queue length	9	5	5	Calibrated using queue length
		C - Tattenhoe Lane	C	14	9	5	Calibrated using queue length	11	6	5	Calibrated using queue length
		D - A421 Standing Way (S)	D	20	16	5	Calibrated using queue length	10	6	5	Calibrated using queue length

2.1.5. Following calibration there are two arms of two junctions (Junction 6 - Standing Way East PM peak and Junction 17 – Fulmer Street PM peak) which show a difference in queue length greater than five vehicles where a manual intercept adjustment has been applied. However, as the difference is only seven vehicles this level of calibration is considered acceptable and is agreed with BC.

SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA

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

Table 2-3 – Elements of Updated TA that are changed by TRN3

Section of Updated TA	Description	Area of Difference
Section 6.10	Model Calibration and Validation	Modified model calibration and validation process outlined above supersedes the model calibration and validation in the Updated TA.

3 TRIP GENERATION AND DISTRIBUTION

3.1.1. Following discussions with BC, the trip generation and traffic flows used in TRN2 have been adopted for use in TRN3. The traffic flow diagrams presented in **Appendix B** have then been used in the modelling presented in **Sections 4 and 5** of this TRN3.

SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA

3.1.2. **Table 3-1** provides a summary of the changes presented in this Section when compared to the Updated TA.

Table 3-1 – Elements of Updated TA that are changed by TRN3

Section of Updated TA	Description	Area of Difference
Section 5.7 – Table 5.30-5.31	Trip Generation	BC have requested the use of a modified trip generation to consider higher employment numbers in 2033. These higher employment numbers supersede the employment numbers contained within the Updated TA.
Section 6.3	Trip Distribution	BC have requested the use of a modified trip distribution to consider the impacts of the development on the highway network. This modified trip distribution supersedes that presented in the Updated TA.

4 BASE MODEL UPDATES

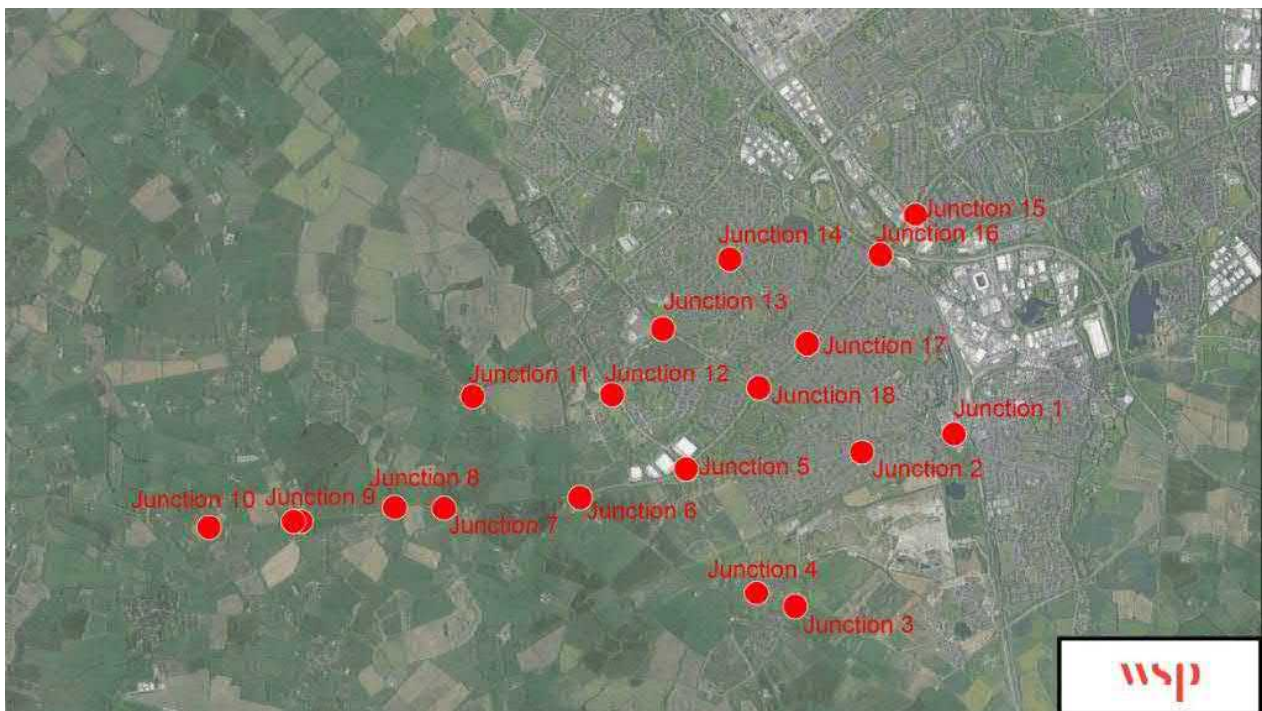
4.1 INTRODUCTION

4.1.1. This section provides an updated set of 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 indicate those areas which have been superseded.

4.2 JUNCTION CAPACITY ASSESSMENT RESULTS

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. TRN3 only considers the junctions within MKC as junctions within BC have been addressed in TRN2.

Figure 4-1 – Junction Location Plan



JUNCTION 1

Sherwood Drive/Water Eaton Road/B4034 Buckingham Road

4.2.2. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The junction has been assessed using Junctions 9 (ARCADY) in 'lane simulation' mode to accurately reflect the uneven usage of the lanes at this junction. The capacity assessment results are provided in **Table 4-1** with full modelling output provided in **Appendix C**.



**Table 4-1 – Junction 1 - Sherwood Drive/Water Eaton Road/B4034 Buckingham Road
Junction Capacity Assessment Results**

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	LOS	Queue (Veh)	Delay (s)	LOS
2020 Base						
A - Sherwood Drive	8.7	44.29	E	7.4	37.34	E
B - B4034	9.2	36.30	D	35.5	85.06	F
C - Water Eaton Road	5.8	50.17	F	9.2	72.57	F
D - B4034 Buckingham Road	27.0	77.80	F	15.8	67.11	F
2033 Do Nothing						
A - Sherwood Drive	28.5	117.55	F	27.7	115.38	F
B - B4034	29.9	95.93	F	136.0	373.16	F
C - Water Eaton Road	28.1	201.16	F	42.6	289.06	F
D - B4034 Buckingham Road	144.4	459.53	F	79.9	344.51	F
2033 Do Something 1						
A - Sherwood Drive	25.0	101.43	F	31.6	120.26	F
B - B4034	51.9	168.06	F	224.2	595.04	F
C - Water Eaton Road	40.4	315.81	F	55.2	397.92	F
D - B4034 Buckingham Road	255.6	773.83	F	146.0	647.15	F
2033 Do Something 2						
A - Sherwood Drive	26.1	110.35	F	30.1	120.83	F
B - B4034	45.7	152.08	F	206.9	554.01	F
C - Water Eaton Road	42.7	333.33	F	49.9	367.03	F
D - B4034 Buckingham Road	243.6	742.00	F	136.8	613.61	F
2033 Do Something 3						
A - Sherwood Drive	25.0	103.57	F	34.3	130.53	F
B - B4034	60.9	212.98	F	257.8	673.03	F
C - Water Eaton Road	47.4	376.45	F	58.6	466.43	F
D - B4034 Buckingham Road	323.9	948.63	F	172.7	747.73	F

4.2.3. The results presented in **Table 4-1** show that in the 2020 Base, Sherwood Drive, Buckingham Road and Water Eaton Road operate at/above capacity with a LoS of E/F. In the PM peak all the arms

operate at/above capacity with a LoS of E/F. By the future year of 2033 (Do Nothing) all arms operate with a LoS of F.

- 4.2.4. With the addition of the Proposed Development in the Do Something 1 scenario, performance of the junction reduces further.
- 4.2.5. Maximum queueing and delay are reduced in the Do Something 2 scenario (travel planning) but increase beyond those of the Do Something 1 in the Do Something 3 (Shenley Park) scenario.
- 4.2.6. The impact of the Proposed Development at this junction increases the LoS, queueing and delay to a degree that requires mitigation.
- 4.2.7. A package of mitigation is proposed within the Updated TA⁴. The mitigation is considered further in Section 5 of this TRN3.

JUNCTION 2

Shenley Road/Newton Road/B4034 Buckingham Road

- 4.2.8. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-2** with full modelling output provided in **Appendix C**.

Table 4-2 – Junction 2 - Shenley Road/Newton Road/B4034 Buckingham Road Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
E – A - Shenley Road	2.1	21.64	0.69	1.2	13.34	0.56
E – B - Buckingham Road (E)	0.7	5.20	0.42	3.0	11.90	0.76
E – C - Buckingham Road (W)	5.7	23.02	0.86	1.3	7.73	0.56
W – A - Buckingham Road (E)	0.9	5.79	0.49	3.4	13.07	0.78
W – B - Newton Road	2.1	15.51	0.69	1.3	13.60	0.57
W – C - Buckingham Road (W)	1.7	12.11	0.63	0.6	6.03	0.36
2033 Do Nothing						
E – A - Shenley Road	3.8	33.94	0.81	4.5	39.91	0.86
E – B - Buckingham Road (E)	1.0	6.30	0.51	47.0	129.22	1.10

⁴ Paragraphs 8.3.21 to 8.3.29 of Updated TA (May 2020)

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
E – C - Buckingham Road (W)	5.9	24.05	0.87	2.1	10.55	0.68
W – A - Buckingham Road (E)	1.3	6.96	0.58	5.9	20.35	0.87
W – B - Newton Road	55.9	412.45	1.23	2.3	21.02	0.71
W – C - Buckingham Road (W)	59.8	411.56	1.23	0.9	7.54	0.47
2033 Do Something 1						
E – A - Shenley Road	4.7	42.89	0.84	10.0	76.89	1.01
E – B - Buckingham Road (E)	1.4	7.46	0.59	131.2	448.39	1.29
E – C - Buckingham Road (W)	5.9	23.19	0.87	3.0	13.86	0.76
W – A - Buckingham Road (E)	1.8	8.35	0.65	5.9	21.03	0.87
W – B - Newton Road	87.5	670.83	1.35	2.7	24.85	0.74
W – C - Buckingham Road (W)	141.9	933.69	1.41	1.3	9.42	0.57
2033 Do Something 2						
E – A - Shenley Road	4.5	41.35	0.84	9.0	70.45	0.99
E – B - Buckingham Road (E)	1.4	7.29	0.58	117.9	389.22	1.26
E – C - Buckingham Road (W)	5.9	23.19	0.88	2.9	13.19	0.75
W – A - Buckingham Road (E)	1.7	8.15	0.64	5.9	20.88	0.87
W – B - Newton Road	82.7	633.70	1.34	2.6	24.21	0.74
W – C - Buckingham Road (W)	129.5	843.48	1.38	1.2	9.06	0.56
2033 Do Something 3						
E – A - Shenley Road	5.3	48.70	0.86	9.8	76.09	1.00
E – B - Buckingham Road (E)	1.6	8.01	0.62	176.3	591.93	1.35
E – C - Buckingham Road (W)	5.9	23.24	0.87	3.4	15.15	0.78
W – A - Buckingham Road (E)	2.0	9.01	0.67	5.9	21.02	0.87
W – B - Newton Road	102.6	794.36	1.39	2.8	26.36	0.75
W – C - Buckingham Road (W)	199.6	1296.73	1.50	1.5	10.14	0.60

4.2.9. The results presented in **Table 4-2** show that in the 2020 Base, the junction operates with satisfactory performance with all arms operating within capacity (RFC of 1). In the future year of 2033 (Do Nothing), performance reduces with the Newton Road and Buckingham Road (west) arms

operating at/above capacity (RFC of 1) in the AM peak. In the PM peak the Buckingham Road (east) arm operates at/above capacity (RFC of 1).

- 4.2.10. With the addition of the development in the Do Something 1 scenario, performance of the junction reduces. The results indicate that the junction would operate with a maximum RFC of 1.41, a queue of 141 vehicles and a delay of 933 seconds in the AM peak on the Buckingham Road West arm.
- 4.2.11. Maximum RFCs are lower in the Do Something 2 (travel planning) scenario but indicate similar results in Do Something 3 (Shenley Park) to that of the Do Something 1 scenario.
- 4.2.12. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

JUNCTION 5

Tattenhoe Roundabout

- 4.2.13. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-3** with full modelling output provided in **Appendix C**.

Table 4-3 – Junction 5 – Tattenhoe Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V1 Snelshall Street	24.2	115.62	1.03	18.5	97.05	1.00
B - A421 Standing Way (E)	6.2	23.59	0.87	9.8	34.71	0.93
C – B4034 Buckingham Road	6.2	53.35	0.89	6.3	50.40	0.89
D - A421 Standing Way (W)	5.9	13.78	0.86	5.7	15.26	0.86
2033 Do Nothing						
A – V1 Snelshall Street	186.9	843.60	1.52	120.1	611.91	1.35
B - A421 Standing Way (E)	20.7	66.81	0.99	47.2	127.20	1.06
C – B4034 Buckingham Road	48.6	311.65	1.20	59.0	405.99	1.22
D - A421 Standing Way (W)	31.5	60.90	1.00	43.9	89.29	1.03
2033 Do Something 1						
A – V1 Snelshall Street	424.6	2352.72	1.92	325.2	1879.59	1.73
B - A421 Standing Way (E)	162.0	506.20	1.23	398.0	1216.96	1.44

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
C – B4034 Buckingham Road	559.1	4200.35	2.23	450.6	2828.96	1.86
D - A421 Standing Way (W)	110.0	181.68	1.11	99.5	193.47	1.11
2033 Do Something 2						
A – V1 Snelshall Street	389.6	2054.65	1.87	293.6	1710.20	1.67
B - A421 Standing Way (E)	136.4	423.67	1.20	323.1	969.81	1.38
C – B4034 Buckingham Road	477.2	3609.37	2.10	318.5	1953.72	1.65
D - A421 Standing Way (W)	97.5	157.19	1.09	101.5	201.82	1.11
2033 Do Something 3						
A – V1 Snelshall Street	348.7	2114.49	1.86	228.4	1309.65	1.65
B - A421 Standing Way (E)	177.7	551.58	1.25	409.7	1278.84	1.44
C – B4034 Buckingham Road	540.7	3745.24	2.11	468.7	2773.23	1.85
D - A421 Standing Way (W)	111.4	186.84	1.11	52.7	106.34	1.05

- 4.2.14. As shown in **Table 4-3**, the Tattenhoe roundabout junction currently operates at/above capacity (RFC of 1) in both peak hours with a maximum RFC of 1.03 on the Snelshall Street arm in the AM peak and 1 in the PM peak. In the future year of 2033 (Do Nothing) the performance of the junction reduces with all arms except Standing Way East in the AM peak operating at/above capacity (RFC of 1). With the addition of the development traffic (Do Something 1) the performance of the junction reduces further. The arms of the junction where congestion is most evident are V1 Snelshall Street and Buckingham Road.
- 4.2.15. As discussed in the Updated TA⁵, a review of the Plan:MK highway modelling evidence base⁶ indicates that the approaches to this junction would approach capacity (V/C over 85%) in both the AM and PM peaks in the 2031 (i.e. forecast year⁷ for the Milton Keynes Multi Modal Model). Notwithstanding, there is no specific mitigation scheme proposed by MKC at the Tattenhoe roundabout junction to account for the growth associated with Plan:MK.

⁵ Updated TA (May 2020) Section 8.3.31-8.3.32

⁶ Milton Keynes Multi Modal Model – Impacts of Plan:MK, AECOM, November 2017

⁷ Milton Keynes Multi Modal Model Update, High Model Traffic Forecasting Report, November 2017

4.2.16. A mitigation scheme in the form of ‘part-time’ traffic signals is proposed within the Updated TA⁸. A revised mitigation package was presented in the Proof of Evidence of Martin Paddle which has been further developed following the comments received from BC. This updated mitigation package is discussed in Section 5.

JUNCTION 6

Junction 6 Bottle Dump Roundabout

4.2.17. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-4** with full modelling output provided in **Appendix C**.

Table 4-4 – Junction 6 – Bottledump Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	LOS	Queue (Veh)	Delay (s)	LOS
2020 Base						
A – A421 Standing Way	5.2	14.35	B	19.9	44.86	E
B - Whaddon Road	4.5	37.88	E	6.5	67.84	F
C – A421 Buckingham Road	4.6	10.21	B	2.9	7.73	A
2033 Do Nothing						
A – A421 Standing Way	31.5	67.74	F	97.8	218.82	F
B - Whaddon Road	47.8	350.59	F	19.4	190.36	F
C – A421 Buckingham Road	11.2	22.18	C	4.9	10.61	B
2033 Do Something 1						
A – A421 Standing Way	40.5	85.75	F	125.4	305.45	F
B - Whaddon Road	108.9	658.39	F	31.3	273.81	F
C – A421 Buckingham Road	18.6	34.97	D	6.9	14.99	B
2033 Do Something 2						
A – A421 Standing Way	35.7	75.98	F	117.8	279.15	F
B - Whaddon Road	97.3	624.43	F	40.0	345.76	F
C – A421 Buckingham Road	18.2	31.58	D	6.5	13.12	B

⁸ Updated TA (May 2020) Paragraph 8.3.32

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	LOS	Queue (Veh)	Delay (s)	LOS
2033 Do Something 3						
A – A421 Standing Way	18.8	42.94	E	91.7	208.61	F
B - Whaddon Road	81.5	455.66	F	39.8	362.36	F
C – A421 Buckingham Road	23.1	40.60	E	4.8	11.32	B

- 4.2.18. The results presented in **Table 4-4** show that in the 2020 Base the junction operates at capacity (LoS E/F). In the future year of 2033 (Do Nothing), A421 Standing Way and Whaddon Road are operating at/above capacity in both the AM and PM peak with a LoS of F. In the AM peak maximum queueing of 48 vehicles with a corresponding delay of 351 seconds is evident on Whaddon Road. In the PM peak maximum queueing of 98 vehicles and a delay of 219 seconds on the Standing Way arm is evident.
- 4.2.19. With the addition of the Proposed Development (Do Something 1), performance of the junction decreases. A maximum increase in queueing of 109 vehicles and a delay of 658 seconds on Whaddon Road in the AM peak occurs.
- 4.2.20. Maximum queueing and delay are lower in the Do Something 2 (travel planning) scenario than in Do Something 1. In the Do Something 3 (Shenley Park) scenario, delay on A421 Standing Way reduces to a level below the Do Nothing scenario, as a result of the reduction in trips through the junction following the introduction of the new grid road V0.
- 4.2.21. The junction operates at/above capacity (LoS E/F) in the 2033 Do Nothing scenario in the PM peak, with an increase in queueing and delay as a result of the Proposed Development.
- 4.2.22. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

JUNCTION 12

Kingsmead Roundabout

- 4.2.23. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-5** with full modelling output provided in **Appendix C**.

Table 4-5 – Junction 12 – Kingsmead Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V1 Snelshall Street (N)	1.4	6.16	0.58	0.6	3.85	0.36
B – H7 Chaffron Way	3.5	27.18	0.79	2.3	17.07	0.71
C – V1 Snelshall Street (S)	0.8	5.38	0.45	1.1	6.27	0.54
D - Hayton Way	0.1	2.63	0.08	0	2.6	0.04
2033 Do Nothing						
A – V1 Snelshall Street (N)	4.8	19.16	0.84	1.0	5.42	0.50
B – H7 Chaffron Way	79.0	454.91	1.28	110.2	570.72	1.31
C – V1 Snelshall Street (S)	1.3	7.13	0.56	3.2	13.60	0.77
D - Hayton Way	0.7	4.22	0.42	0.2	3.16	0.18
2033 Do Something 1						
A – V1 Snelshall Street (N)	10.6	39.21	0.93	1.5	6.73	0.6
B – H7 Chaffron Way	120.0	770.76	1.46	168.7	935.63	1.49
C – V1 Snelshall Street (S)	2.0	9.32	0.67	5.4	20.97	0.85
D - Hayton Way	0.8	4.65	0.44	0.2	3.35	0.19
2033 Do Something 2						
A – V1 Snelshall Street (N)	9.5	35.44	0.92	1.2	5.89	0.54
B – H7 Chaffron Way	114.4	729.81	1.44	130.6	691.13	1.38
C – V1 Snelshall Street (S)	1.9	8.94	0.66	5.1	20.28	0.85
D - Hayton Way	0.8	4.59	0.44	0.2	3.34	0.19
2033 Do Something 3						
A – V1 Snelshall Street (N)	4.6	18.50	0.83	1.0	5.44	0.50
B – H7 Chaffron Way	84.9	490.73	1.30	114.0	590.86	1.32
C – V1 Snelshall Street (S)	1.4	7.51	0.59	2.9	12.63	0.75
D - Hayton Way	0.7	4.31	0.42	0.2	3.12	0.18

4.2.24. The results presented in **Table 4-5** show that in the 2020 Base, the junction operates with satisfactory performance (RFC below 0.85) in both the AM and PM peaks. By the future year of

2033 (Do Nothing), H7 Chaffron Way operates at/above capacity (RFC of 1) in both the AM and PM peaks.

- 4.2.25. With the addition of the Proposed Development (Do Something 1), the junction is shown to operate at/above capacity (RFC of 1) on H7 Chaffron Way in both peaks. The junction is also approaching capacity (RFC of 1) on V1 Snelshall Street (N) in the AM peak.
- 4.2.26. Maximum RFC's are lower in both the Do Something 2 (travel planning) and Do Something 3 (Shenley Park) scenarios with Chaffron Way operating at/above capacity (RFC of 1).
- 4.2.27. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

JUNCTION 13

Westcroft Roundabout

- 4.2.28. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-6** with full modelling output provided in **Appendix C**.

Table 4-6 – Junction 13 – Westcroft Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V2 Tattenhoe Street (N)	2.9	17.78	0.75	0.5	3.25	0.35
B – H7 Chaffron Way (E)	3.6	24.72	0.79	1.2	5.19	0.55
C – V2 Tattenhoe Street (S)	6	23.77	0.87	1.7	9.08	0.63
D – H7 Chaffron Way (W)	1.4	6.4	0.58	5.1	31.65	0.85
2033 Do Nothing						
A – V2 Tattenhoe Street (N)	57.4	275.31	1.18	0.7	3.72	0.42
B – H7 Chaffron Way (E)	30.6	150.11	1.06	3.6	11.42	0.79
C – V2 Tattenhoe Street (S)	43.5	130.51	1.06	7.1	34.09	0.89
D – H7 Chaffron Way (W)	8.1	26.28	0.9	84.2	378.17	1.24
2033 Do Something 1						
A – V2 Tattenhoe Street (N)	62.9	298.49	1.2	0.7	3.75	0.42
B – H7 Chaffron Way (E)	31.3	153.06	1.06	3.7	11.6	0.79

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
C – V2 Tattenhoe Street (S)	46.7	138.45	1.07	7.7	36.61	0.9
D – H7 Chaffron Way (W)	8.3	26.89	0.91	87.2	397.2	1.25
2033 Do Something 2						
A – V2 Tattenhoe Street (N)	64.2	303.76	1.20	0.7	3.74	0.42
B – H7 Chaffron Way (E)	31.2	153.56	1.06	3.6	11.56	0.79
C – V2 Tattenhoe Street (S)	46.8	138.65	1.07	7.7	36.95	0.90
D – H7 Chaffron Way (W)	8.3	26.87	0.91	88.6	405.81	1.25
2033 Do Something 3						
A – V2 Tattenhoe Street (N)	64.8	306.23	1.20	0.7	3.75	0.42
B – H7 Chaffron Way (E)	31.5	154.32	1.06	3.7	11.62	0.79
C – V2 Tattenhoe Street (S)	49.2	144.73	1.07	7.8	37.29	0.90
D – H7 Chaffron Way (W)	8.4	27.10	0.91	87.7	401.26	1.25

- 4.2.29. The results presented in **Table 4-6** show that in the 2020 Base, the junction operates with satisfactory performance (RFC below 0.85) in both the AM and PM peaks with the one exception of Tattenhoe Street South in the AM peak which is approaching capacity (RFC of 1). By the future year of 2033 (Do Nothing), H7 Chaffron Way is shown to be approaching capacity (RFC of 1) in the AM peak with all other arms in the AM and PM peaks operating at/above capacity.
- 4.2.30. With the addition of the Proposed Development in the Do Something 1 scenario, the junction is shown to operate at very similar levels to that of the 2033 Do Nothing scenario, indicating that the impact with the Proposed Development is negligible. Similar results are evident in both the Do Something 2 (travel planning) and Do Something 3 (Shenley Park) scenarios.
- 4.2.31. The residual cumulative impact of the Proposed Development in 2033 at this junction would not be severe and mitigation is therefore not required.

JUNCTION 14

Furzton Roundabout

- 4.2.32. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-7** with full modelling output provided in **Appendix C**.

Table 4-7 – Junction 14 – Furzton Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V3 Fulmer Street (N)	0.7	4.71	0.4	3.1	11.05	0.76
B – H7 Chaffron Way (E)	1.5	9.22	0.6	28.9	109.19	1.03
C – V3 Fulmer Street (S)	6.6	23.58	0.88	3.4	21.82	0.78
D – H7 Chaffron Way (W)	14.7	58.65	0.97	0.5	3.45	0.33
2033 Do Nothing						
A – V3 Fulmer Street (N)	0.9	5.59	0.48	12.2	29.90	0.94
B – H7 Chaffron Way (E)	3.5	17.40	0.78	289.9	1085.76	1.58
C – V3 Fulmer Street (S)	67	176.59	1.10	9.4	53.69	0.93
D – H7 Chaffron Way (W)	264.0	898.08	1.42	0.8	4.27	0.45
2033 Do Something 1						
A – V3 Fulmer Street (N)	0.9	5.77	0.48	14.9	48.10	0.96
B – H7 Chaffron Way (E)	4.3	20.66	0.82	349.0	1275.24	1.66
C – V3 Fulmer Street (S)	94.5	240.12	1.16	12.7	67.89	0.96
D – H7 Chaffron Way (W)	274.9	1021.28	1.43	0.8	4.37	0.46
2033 Do Something 2						
A – V3 Fulmer Street (N)	0.9	5.75	0.48	14.5	46.89	0.96
B – H7 Chaffron Way (E)	4.2	20.19	0.82	340.0	1246.27	1.64
C – V3 Fulmer Street (S)	90.2	230.06	1.15	12.2	65.91	0.96
D – H7 Chaffron Way (W)	273.3	1002.66	1.43	0.8	4.36	0.46
2033 Do Something 3						
A – V3 Fulmer Street (N)	0.9	5.62	0.48	15.1	48.72	0.96
B – H7 Chaffron Way (E)	4.4	20.99	0.82	350.0	1279.48	1.66
C – V3 Fulmer Street (S)	96.8	245.56	1.16	13.8	72.60	0.97
D – H7 Chaffron Way (W)	275.7	1037.51	1.43	0.8	4.39	0.46

4.2.33. The results presented in **Table 4-7** show that in the 2020 Base, Fulmer Street (south) and Chaffron Street (west) are approaching capacity (RFC of 1) in the AM peak. In the PM peak Chaffron Way operates at/above capacity (RFC of 1). By the future year of 2033 (Do Nothing), Chaffron Way

(west) and Fulmer Street (south) are shown to operate at/above capacity (RFC of 1) in the AM peak. Similarly, Chaffron Way (east) operates at/above capacity (RFC of 1) in the PM peak with Fulmer Street (north and south) approaching capacity (RFC of 1).

- 4.2.34. With the addition of the Proposed Development (Do Something 1), the results indicate an increase in queueing and delay, with the largest increase evident on Fulmer Street (south) in the AM peak and Chaffron Way (east) in the PM peak. Similar results are evident in both the Do Something 2 (travel planning) and Do Something 3 (Shenley Park) scenarios.
- 4.2.35. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

JUNCTION 15

Bleak Hall Roundabout

- 4.2.36. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-8** with full modelling output provided in **Appendix C**.

Table 4-8 – Junction 15 – Bleak Hall Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V6 Grafton Street (N)	33.4	117.36	1.05	41.2	130.15	1.07
B – A421 Standing Way (E)	44.9	109.16	1.05	20.0	59.55	0.99
C – V6 Grafton Street (S)	35.3	91.15	1.03	26.4	91.12	1.02
D – A421 Standing Way (W)	31.9	85.31	1.02	46.2	98.38	1.04
2033 Do Nothing						
A – V6 Grafton Street (N)	109.3	438.15	1.22	131.7	486.62	1.24
B – A421 Standing Way (E)	153.8	429.08	1.22	99.9	265.99	1.14
C – V6 Grafton Street (S)	132.7	365.66	1.19	121.1	456.99	1.23
D – A421 Standing Way (W)	138.2	394.63	1.20	165.6	390.12	1.2
2033 Do Something 1						
A – V6 Grafton Street (N)	157.8	621.85	1.28	214.4	767.85	1.34
B – A421 Standing Way (E)	245.4	653.69	1.3	300.1	830.28	1.36

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
C – V6 Grafton Street (S)	164.2	476.73	1.23	198.2	757.95	1.33
D – A421 Standing Way (W)	378.5	1050.39	1.42	311.2	689.96	1.31
2033 Do Something 2						
A – V6 Grafton Street (N)	151.8	599.78	1.27	200.9	719.95	1.32
B – A421 Standing Way (E)	232.9	624.16	1.29	262.6	721.02	1.32
C – V6 Grafton Street (S)	159.7	463.31	1.23	186.7	711.19	1.32
D – A421 Standing Way (W)	339.5	934.56	1.39	286.3	641.49	1.30
2033 Do Something 3						
A – V6 Grafton Street (N)	163.1	644.19	1.29	218.4	788.29	1.35
B – A421 Standing Way (E)	256.9	687.61	1.31	304.4	847.26	1.36
C – V6 Grafton Street (S)	170.9	491.02	1.24	217.0	834.92	1.36
D – A421 Standing Way (W)	406.4	1113.89	1.45	316.9	699.01	1.32

- 4.2.37. The results presented in **Table 4-8** show that in the 2020 Base, all arms operate at/above capacity (RFC of 1) in the AM peak and PM Peak with the exception of Standing Way (east) which is approaching capacity (RFC of 1) in the PM peak. By the future year of 2033 (Do Nothing), all arms operate at/above capacity (RFC of 1) in the AM and PM peak.
- 4.2.38. With the addition of the Proposed Development (Do Something 1) junction performance reduces further.
- 4.2.39. Maximum RFC's are lower in the Do Something 2 (travel planning) scenario but indicate similar results to that of the Do Something 1 scenario. In the Do Something 3 (Shenley Park) scenario results are similar to the Do Something 1 scenario.
- 4.2.40. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

JUNCTION 16

Elfield Park Roundabout

- 4.2.41. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-9** with full modelling output provided in **Appendix C**.

Table 4-9 – Junction 16 – Elfield Park Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V4 Watling Street (W)	9.7	75.94	0.95	36.2	165.84	1.09
B – A421 Standing Way (N)	41.6	98.86	1.04	30.7	68.01	1.01
C – Watling Street (E)	21.3	60.43	0.99	36.3	113.13	1.05
D – A421 Standing Way (S)	27.2	62.48	1.00	47.8	105.18	1.05
2033 Do Nothing						
A – V4 Watling Street (W)	38.9	266.70	1.13	106.4	566.78	1.27
B – A421 Standing Way (N)	150.8	400.19	1.21	153.9	338.51	1.18
C – Watling Street (E)	101.8	260.35	1.14	130.2	474.42	1.24
D – A421 Standing Way (S)	147.3	333.16	1.18	169.5	421.97	1.21
2033 Do Something 1						
A – V4 Watling Street (W)	51.2	394.29	1.18	119.4	640.35	1.29
B – A421 Standing Way (N)	252.1	628.11	1.29	437.4	960.99	1.40
C – Watling Street (E)	125.4	353.14	1.18	157.0	575.52	1.27
D – A421 Standing Way (S)	386.8	872.97	1.38	348.3	826.33	1.36
2033 Do Something 2						
A – V4 Watling Street (W)	49.6	387.65	1.17	117.8	631.01	1.28
B – A421 Standing Way (N)	237.3	597.08	1.28	386.8	839.51	1.36
C – Watling Street (E)	122.3	341.94	1.18	153.9	563.76	1.26
D – A421 Standing Way (S)	345.5	769.51	1.35	318.8	748.36	1.33
2033 Do Something 3						
A – V4 Watling Street (W)	60.4	473.21	1.21	122.4	651.99	1.29
B – A421 Standing Way (N)	258.6	638.41	1.30	459.0	1012.13	1.41
C – Watling Street (E)	128.1	364.61	1.19	158.3	580.78	1.27
D – A421 Standing Way (S)	403.8	917.51	1.39	359.1	858.22	1.37

4.2.42. The results presented in **Table 4-9** show that in the 2020 Base, V4 Watling Street (W) and V4 Watling Street (E) are approaching capacity (RFC of 1) in the AM peak with Standing Way (N) and (S) operating at/above capacity (RFC of 1). In the PM peak, all arm operate at/above capacity (RFC

of 1). By the future year of 2033 (Do Nothing), all arms operate at/above capacity (RFC of 1) in the AM peak and PM peak.

- 4.2.43. With the addition of the Proposed Development (Do Something 1) junction performance reduces further.
- 4.2.44. Maximum RFC's are lower in the Do Something 2 (travel planning) scenario but indicate similar results to that of the Do Something 1 scenario. In the Do Something 3 (Shenley Park) scenario the results show slightly higher RFCs than the Do Something 1 scenario.
- 4.2.45. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

JUNCTION 17

Emerson Roundabout

- 4.2.46. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-10** with full modelling output provided in **Appendix C**.

Table 4-10 – Junction 17 – Emerson Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V3 Fulmer Street	9.8	60.35	0.94	7.2	44.65	0.9
B – A421 Standing Way (N)	18.5	55.72	0.98	12.7	27.51	0.94
C - Shenley Way	12.6	82.61	0.98	9.6	69.79	0.95
D – A421 Standing Way (S)	4.8	9.43	0.83	8.0	22.79	0.90
2033 Do Nothing						
A – V3 Fulmer Street	99.1	482.61	1.38	55.4	282.68	1.17
B – A421 Standing Way (N)	78.4	210.98	1.1	106.8	168.11	1.1
C - Shenley Way	55.2	329.81	1.18	58.2	407.73	1.22
D – A421 Standing Way (S)	20.2	34.61	0.97	49	104.87	1.04
2033 Do Something 1						
A – V3 Fulmer Street	203.4	1488.88	1.61	111	645.34	1.3
B – A421 Standing Way (N)	173.5	487.84	1.23	366	675.9	1.31

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
C - Shenley Way	86.3	582.43	1.27	109.4	839.26	1.35
D – A421 Standing Way (S)	164.3	227.24	1.13	167.7	385.85	1.2
2033 Do Something 2						
A – V3 Fulmer Street	186.8	1227.63	1.59	100.3	587.32	1.28
B – A421 Standing Way (N)	158.7	439.63	1.21	313.1	585.85	1.28
C - Shenley Way	82.4	554.47	1.26	101.9	767.14	1.33
D – A421 Standing Way (S)	137.2	177.40	1.11	146.9	330.55	1.17
2033 Do Something 3						
A – V3 Fulmer Street	214.7	1604.55	1.63	112.2	651.26	1.30
B – A421 Standing Way (N)	181.8	499.23	1.24	377.3	695.40	1.32
C - Shenley Way	88.4	594.55	1.27	115.5	891.99	1.37
D – A421 Standing Way (S)	175.4	247.62	1.14	170.2	391.85	1.20

- 4.2.47. The results presented in **Table 4-10** show that in the 2020 Base, all arms are approaching capacity (RFC of 1) in the AM peak and PM peak with the exception of A421 Standing Way (south) in the AM peak which operates satisfactorily (RFC below 0.85). By the future year of 2033 (Do Nothing), all arms apart from A421 Standing Way (south) operate at/above capacity (RFC of 1) in the AM peak. In the PM peak all arms operate at/above capacity (RFC of 1).
- 4.2.48. With the addition of the Proposed Development (Do Something 1), all arms operate at/above capacity (RFC of 1) and in the AM peak and PM peak
- 4.2.49. Maximum RFC's are lower in the Do Something 2 (travel planning) scenario but indicate similar results to the Do Something 1 scenario. In the Do Something 3 (Shenley Park) scenario, the results show slightly higher RFCs than the Do Something 1 scenario.
- 4.2.50. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

JUNCTION 18

Windmill Hill Roundabout

- 4.2.51. The junction capacity assessment for this location has been updated to reflect the modified calibration methodology and the traffic flow diagrams in **Appendix B**. The capacity assessment results are provided in **Table 4-10** with full modelling output provided in **Appendix C**.

Table 4-11 – Junction 18 – Windmill Hill Roundabout Junction Capacity Assessment Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2020 Base						
A – V2 Tattenhoe Street	16.8	94.14	1.00	7.6	44.38	0.91
B - A421 Standing Way (N)	6.8	23.74	0.88	4.5	12.07	0.82
C - Tattenhoe Lane	8.8	66.29	0.93	6.4	62.68	0.90
D - A421 Standing Way (S)	15.6	37.58	0.96	5.8	19.71	0.86
2033 Do Nothing						
A –V2 Tattenhoe Street	87.4	502.27	1.26	59.6	257.18	1.17
B - A421 Standing Way (N)	29.1	81.43	1.01	17.7	41.22	0.97
C - Tattenhoe Lane	53.7	322.50	1.20	61.1	471.85	1.36
D - A421 Standing Way (S)	98.5	185.52	1.11	24.6	68.85	1.00
2033 Do Something 1						
A – V2 Tattenhoe Street	138.6	832.06	1.35	103.6	593.24	1.28
B - A421 Standing Way (N)	138.2	391.34	1.20	225.5	478.33	1.23
C - Tattenhoe Lane	99.2	744.73	1.34	151.5	1911.13	1.68
D - A421 Standing Way (S)	367.5	749.17	1.33	140.7	365.59	1.19
2033 Do Something 2						
A – V2 Tattenhoe Street	133.2	790.54	1.34	96.9	554.56	1.27
B - A421 Standing Way (N)	121.4	335.31	1.17	178.7	372.95	1.19
C - Tattenhoe Lane	93.4	700.73	1.32	140.4	1745.09	1.65
D - A421 Standing Way (S)	316.3	653.86	1.30	117.7	296.80	1.16
2033 Do Something 3						
A – V2 Tattenhoe Street	142.7	861.10	1.36	105.4	603.40	1.28
B - A421 Standing Way (N)	144.9	414.59	1.21	237.7	501.10	1.24
C - Tattenhoe Lane	104.5	784.59	1.35	154.5	1949.16	1.69
D - A421 Standing Way (S)	389.2	798.99	1.35	144.0	375.23	1.19

4.2.52. The results presented in **Table 4-11** show that in the 2020 Base, all arms are approaching capacity (RFC of 1) in the AM peak with V2 Tattenhoe Street operating at/above capacity (RFC of 1). In the PM peak all arms apart from A421 Standing Way (N) are approaching capacity (RFC of 1)

- 4.2.53. By the future year of 2033 (Do Nothing), all arms operate at/above capacity (RFC of 1) in the AM peak. In the PM peak, A421 Standing Way (N) is shown to be approaching capacity (RFC of 1) with all the remaining arms operating at/above capacity.
- 4.2.54. With the addition of the Proposed Development junction performance reduces.
- 4.2.55. Maximum RFC's are lower in the Do Something 2 (travel planning) scenario but indicate similar results to the Do Something 1 scenario. In the Do Something 3 (Shenley Park) scenario, the results show slightly higher RFCs than the Do Something 1 scenario.
- 4.2.56. The results of the junction capacity assessment indicate that mitigation would be appropriate and has therefore been explored in Section 5.

4.3 SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA

- 4.3.1. **Table 4-12** provides a summary of the changes presented in this Section when compared to the Updated TA.

Table 4-12 – Elements of Updated TA that are updated by TRN3

Section of Updated TA	Description	Area of Difference
Paragraphs 7.3.36 to 7.3.40	Junction 1 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.41 to 7.3.45	Junction 2 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.46 to 7.3.50	Junction 5 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.51 to 7.3.57	Junction 6 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.58 to 7.3.63	Junction 12 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.64 to 7.3.69	Junction 13 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA

Section of Updated TA	Description	Area of Difference
Paragraphs 7.3.70 to 7.3.75	Junction 14 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.76 to 7.3.80	Junction 15 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.81 to 7.3.85	Junction 16 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.86 to 7.3.90	Junction 17 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA
Paragraphs 7.3.91 to 7.3.95	Junction 18 Baseline Modelling	The junction capacity assessment presents an updated set of results which supersede the Updated TA

5 MITIGATION MODEL UPDATES

5.1 INTRODUCTION

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

5.2 MITIGATION MODELLING

JUNCTION 1

5.2.1. The mitigation modelling for Junction 1 presented within the Updated TA has been reviewed to reflect the updated traffic flow diagrams contained within **Appendix B** of this TRN3. Following the review of the revised base modelling and a review of the junction arrangement options, the mitigation proposed has been amended to retain the roundabout layout instead of the traffic signal layout presented in the Updated TA⁹ as it presents less delay through the junction. The mitigation involves providing two straight ahead lanes on the Buckingham Road (B4034) arms of the junction and minor kerb amendments to the Water Eaton Road and Sherwood Drive arms. The mitigation allows for retention of the bus stops on B4034 Buckingham Road (E) in a revised arrangement. 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 1 – Sherwood Drive/Water Eaton Road/B4034 Buckingham Road Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	LOS	Queue (Veh)	Delay (s)	LOS
2033 Do Nothing (Pre-Mitigation)						
A - Sherwood Drive	28.5	117.55	F	27.7	115.38	F
B - B4034	29.9	95.93	F	136.0	373.16	F
C - Water Eaton Road	28.1	201.16	F	42.6	289.06	F
D - B4034 Buckingham Rd	144.4	459.53	F	79.9	344.51	F
2033 Do Something 1 (Pre-Mitigation)						
A - Sherwood Drive	25.0	101.43	F	31.6	120.26	F
B - B4034	51.9	168.06	F	224.2	595.04	F
C - Water Eaton Road	40.4	315.81	F	55.2	397.92	F
D - B4034 Buckingham Rd	255.6	773.83	F	146.0	647.15	F

⁹ Paragraphs 8.3.21 to 8.3.29 Updated TA (May 2020)

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	LOS	Queue (Veh)	Delay (s)	LOS
2033 Do Something 1 (Post-Mitigation)						
A - Sherwood Drive	45.5	183.96	F	30.5	114.95	F
B - B4034	33.9	101.65	F	86.6	159.70	F
C - Water Eaton Road	15.9	109.84	F	58.6	489.88	F
D - B4034 Buckingham Rd	5.4	12.27	B	5.3	19.39	C
2033 Do Something 2 (Post-Mitigation)						
A - Sherwood Drive	42.1	171.14	F	27.0	105.09	F
B - B4034	30.0	89.36	F	74.2	137.83	F
C - Water Eaton Road	15.5	108.75	F	54.4	457.11	F
D - B4034 Buckingham Rd	5.0	12.81	B	5.5	19.50	C
2033 Do Something 3 (Post-Mitigation)						
A - Sherwood Drive	57.1	228.42	F	35.8	131.83	F
B - B4034	41.0	119.15	F	107.3	210.46	F
C - Water Eaton Road	18.1	123.88	F	68.7	587.73	F
D - B4034 Buckingham Rd	7.2	15.58	C	6.0	22.11	C

5.2.2. The results presented in **Table 5-1** show that with the provision of the proposed mitigation queueing and delay on B4034 Buckingham Road (W) (arm D) is significantly reduced when compared to the 2033 Do Nothing scenario in the AM peak. A minor increase in queueing and delay is evident on the B4034 Buckingham Road (E) arm (arm B) in the AM peak. In the PM queueing and delay is reduced on both Buckingham Road arms when compared to the 2033 Do Nothing scenario. Overall queueing and delay across the junction is reduced when compared to the 2033 Do Nothing scenario. The mitigation proposed therefore presents an improvement to the 2033 Base scenario and is considered to be acceptable.

5.2.3. At the request of BC, a sensitivity test has also been undertaken which removes the manual intercept adjustments on the Buckingham Road arms. This sensitivity test has been undertaken because the Junctions 9 User Guide¹⁰ states that intercept adjustments should remain if minor changes to the junction are made. Where more significant adjustments to the junction are made there may be a case to remove the intercept adjustments made. **Table 5-2** shows the results of the junction modelling for the Do Something 1 Scenario without the intercept adjustments. Full modelling results are contained in **Appendix E**.

¹⁰ Junctions 9 User Guide (Issue D) Page 185

Table 5-2 – Junction 1 – Sherwood Drive/Water Eaton Road/B4034 Buckingham Road Mitigation Results – Sensitivity Test

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	LOS	Queue (Veh)	Delay (s)	LOS
2033 Do Something 1 Scenario (Post-Mitigation)						
A - Sherwood Drive	37.4	146.30	F	29.9	111.96	F
B - B4034	4.5	14.39	B	156.3	372.09	F
C - Water Eaton Road	23.1	154.91	F	30.9	206.97	F
D - B4034 Buckingham Rd	44.1	93.56	F	3.5	12.27	B

- 5.2.4. The results presented in **Table 5-2** show that with the intercept adjustments removed, performance of the junction would still improve overall compared to the 2033 Do Nothing scenario and indicates that a small increase in queuing and delay occurs on Sherwood Drive in both the AM and PM peaks.
- 5.2.5. It should be noted that the impact of the Proposed Development adds only a small increase in traffic to the junction in 2033. The proposed mitigation is therefore considered to be proportionate and reasonably related in scale to the impact of the development, as required by the NPPF paragraph 56.

JUNCTION 2

- 5.2.6. No mitigation was proposed within the Updated TA for Junction 2. Following review of the baseline capacity assessment results it is evident that the Proposed Development could have an impact in this location. Mitigation in the form of kerb widening on all arms of the mini-roundabout has therefore been explored. A layout plan showing the mitigation measures proposed is contained in **Appendix D**. Junction capacity assessment results using the traffic flows contained within **Appendix B** are presented in **Table 5-3** with full modelling results in **Appendix E**.



Table 5-3 – Junction 2 - Shenley Road/Newton Road/B4034 Buckingham Road Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-Mitigation)						
E – A - Shenley Road	3.8	33.94	0.81	4.5	39.91	0.86
E – B - Buckingham Road (E)	1.0	6.30	0.51	47.0	129.22	1.10
E – C - Buckingham Road (W)	5.9	24.05	0.87	2.1	10.55	0.68
W – A - Buckingham Road (E)	1.3	6.96	0.58	5.9	20.35	0.87
W – B - Newton Road	55.9	412.45	1.23	2.3	21.02	0.71
W – C - Buckingham Road (W)	59.8	411.56	1.23	0.9	7.54	0.47
2033 Do Something 1 (Pre-Mitigation)						
E – A - Shenley Road	4.7	42.89	0.84	10.0	76.89	1.01
E – B - Buckingham Road (E)	1.4	7.46	0.59	131.2	448.39	1.29
E – C - Buckingham Road (W)	5.9	23.19	0.87	3.0	13.86	0.76
W – A - Buckingham Road (E)	1.8	8.35	0.65	5.9	21.03	0.87
W – B - Newton Road	87.5	670.83	1.35	2.7	24.85	0.74
W – C - Buckingham Road (W)	141.9	933.69	1.41	1.3	9.42	0.57
2033 Do Something 1 (Post-Mitigation)						
E – A - Shenley Road	1.2	10.32	0.55	2.4	21.74	0.72
E – B - Buckingham Road (E)	1.0	5.46	0.51	133.5	448.74	1.28
E – C - Buckingham Road (W)	5.9	18.70	0.87	1.6	6.98	0.61
W – A - Buckingham Road (E)	1.8	8.53	0.65	5.9	21.13	0.87
W – B - Newton Road	28.7	163.44	1.10	1.9	17.26	0.66
W – C - Buckingham Road (W)	32.5	137.80	1.08	0.9	6.05	0.46
2033 Do Something 2 (Post-Mitigation)						
E – A - Shenley Road	1.2	10.17	0.54	6.9	54.90	0.94
E – B - Buckingham Road (E)	1.0	5.37	0.51	120.0	392.42	1.27
E – C - Buckingham Road (W)	5.9	18.69	0.87	1.5	6.79	0.60
W – A - Buckingham Road (E)	1.8	8.32	0.64	5.9	20.98	0.87
W – B - Newton Road	24.7	140.86	1.08	1.9	16.93	0.66

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
W – C - Buckingham Road (W)	26.9	117.25	1.06	0.8	5.89	0.45
2033 Do Something 3 (Post-Mitigation)						
E – A - Shenley Road	1.2	10.84	0.56	0.9	8.04	0.47
E – B - Buckingham Road (E)	1.1	5.75	0.54	179.6	603.73	1.34
E – C - Buckingham Road (W)	5.9	18.93	0.87	1.7	7.30	0.63
W – A - Buckingham Road (E)	2.1	9.22	0.68	5.9	20.40	0.87
W – B - Newton Road	41.5	255.30	1.16	2.0	17.99	0.67
W – C - Buckingham Road (W)	57.1	262.31	1.16	0.9	6.33	0.49

- 5.2.7. The results presented in **Table 5-3** show that with the provision of the proposed mitigation, queueing and delay is reduced on all arms of the junction in the AM peak with the exception of Buckingham Road East (western junction) where there is a negligible difference when compared to the 2033 Do Nothing scenario. The overall delay at the junction in the AM peak reduces by 551 seconds which is a considerable improvement over the 2033 Do Nothing scenario. In the PM peak queueing and delay is reduced on the majority of arms with the exception of Buckingham Road East (eastern junction) where queueing and delay increase by 83.5 vehicles and 293 seconds respectively.
- 5.2.8. Notwithstanding this increase in delay through the junction during the PM peak on Buckingham Road East (eastern arm), there is a considerable improvement in the AM peak. When considered with the high traffic growth forecasts to 2033, and the small increase in traffic as a result of the Proposed Development that is assigned through the junction, the residual cumulative impact across the junction as a whole would not be severe. The mitigation is considered to be proportionate and reasonably related in scale to the impact of the development, as required by paragraph 56 of the NPPF.

JUNCTION 5

BC Comments

Updated TA Mitigation Proposal (Part Signalisation)

'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.'

'Lane 1/1 (Standing Way West nearside) turning radius of 36 metres seems to low, a turning radius of 55 metres seems more appropriate.'

'The saturation flow the internal arm is 1800, this is not consistent with the 2000 saturation flow for the full signalisation mitigation option.'

Revised Mitigation Proposal (Full Signalisation)

'The average delay per PCU results in the Technical Note do not match the model or Appendix.'

'Lane 1/1 (Standing Way West nearside) is missing a turning radius for the left turn.'

'The saturation flow the internal arms is 2000, this is not consistent with the 1800 saturation flow for the part signalisation mitigation option.'

'Queues on the internal arms block back to the upstream junction entries, likely to result in worse results then shown.'

WSP Comments

5.2.9. The mitigation modelling for Junction 5 has been reviewed to reflect the updated traffic flow diagrams contained within **Appendix B** of this TRN3. In addition, the Linsig modelling and mitigation proposal has been refined following the comments received from BC. A layout plan showing the mitigation measures proposed is contained in **Appendix D**. The results are presented in **Table 5-4** with full modelling results in **Appendix E**.

Table 5-4 – Junction 5 – Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-Mitigation)						
A – V1 Snelshall Street	186.9	843.60	1.52	120.1	611.91	1.35
B - A421 Standing Way (E)	20.7	66.81	0.99	47.2	127.20	1.06
C – B4034 Buckingham Road	48.6	311.65	1.20	59.0	405.99	1.22
D - A421 Standing Way (W)	31.5	60.90	1.00	43.9	89.29	1.03
2033 Do Something 1 (Pre-Mitigation)						
A – V1 Snelshall Street	424.6	2352.72	1.92	325.2	1879.59	1.73
B - A421 Standing Way (E)	162.0	506.20	1.23	398.0	1216.96	1.44
C – B4034 Buckingham Road	559.1	4200.35	2.23	450.6	2828.96	1.86
D - A421 Standing Way (W)	110.0	181.68	1.11	99.5	193.47	1.11

Arm & Lane Description		AM			PM		
		MMQ (PCU)	Delay (s/PCU)	Deg Sat (%)	MMQ (PCU)	Delay (s/PCU)	Deg Sat (%)
2033 Do Something 1 (Post-Mitigation)							
1	A421 Standing Way (W) Left Ahead	12.5	22.2	89.0%	8.6	16.7	75.8%
	A421 Standing Way (W) Ahead	12.5	24.6	87.1%	8.8	18.0	68.8%
2	V1 Snelshall Street Left Ahead	178.6	626.8	147.4%	108.8	423.7	125.9%
3	A421 Standing Way (E) Ahead Left	8.0	16.9	74.9%	9.2	16.6	76.5%
	A421 Standing Way (E) Ahead	7.5	17.7	70.7%	9.2	17.5	69.8%
4	B4034 Buckingham Road Ahead Left	8.3	23.5	83.6%	20.3	58.3	97.7%
2033 Do Something 2 (Post-Mitigation)							
1	A421 Standing Way (W) Left Ahead	10.2	15.6	81.0%	8.0	15.4	73.5%
	A421 Standing Way (W) Ahead	11.3	17.8	79.3%	8.2	16.4	65.3%
2	V1 Snelshall Street Left Ahead	174.8	623.1	145.9%	96.8	385.3	122.7%
3	A421 Standing Way (E) Ahead Left	7.3	13.8	66.8%	8.4	14.8	72.4%
	A421 Standing Way (E) Ahead	6.9	14.3	61.6%	8.1	15.4	64.1%
4	B4034 Buckingham Road Ahead Left	8.9	26.2	84.0%	12.7	36.0	91.2%
2033 Do Something 3 (Post-Mitigation)							
1	A421 Standing Way (W) Left Ahead	15.2	25.9	90.6%	8.9	17.1	74.8%
	A421 Standing Way (W) Ahead	15.2	28.5	89.9%	9.2	18.4	70.0%
2	V1 Snelshall Street Left Ahead	155.4	619.1	145.4%	20.0	73.8	98.7%
3	A421 Standing Way (E) Ahead Left	7.6	14.2	68.8%	35.6	14.6	92.5%
	A421 Standing Way (E) Ahead	7.3	14.8	63.8%	44.8	15.4	92.8%
4	B4034 Buckingham Road Ahead Left	9.5	24.6	85.0%	21.3	55.2	97.6%

5.2.10. The mitigation modelling for Junction 5 indicates that in the Do Something 1 scenario queuing and delay on Snelshall Street can be reduced to below the 2033 Do Nothing scenario with the introduction of traffic signals. Both queuing and delay are lower on all other arms when compared to the 2033 Do Nothing scenario. The mitigation proposed is therefore considered adequate to mitigate the impacts of the development.

5.2.11. Concern has been raised by BC about the level of queueing on the internal links of the junction and the available capacity for vehicles to queue without ‘blocking back’ (i.e. a queue that extends from one stop line to the preceding stop line). A review of the Linsig modelling identifies the queueing anticipated at the start of the ‘green’ time during a particular cycle in the signal staging. The level of queueing on the internal links at the start of the ‘green’ time for the three scenarios tested is shown in **Table 5-5**.

Table 5-5 – Junction 5 – Vehicle Queuing on Internal Links at Start of Green Time

Arm	Lane	2033 Do Something 1			
		AM Peak Hour		PM Peak Hour	
		Back of Uniform Queue (UQ) at start of Green Time	Mean Max Queue (MMQ) as shown in Linsig	Back of UQ at start of Green Time	Mean Max Queue (MMQ) as shown in Linsig
Arm 5 - Gyrotory W	Lane 1	3.13	6.3	1.65	2.5
	Lane 2	3.07	6.7	2.44	4.7
	Lane 3	0.45	0.5	0.01	0.1
Arm 8 - Gyrotory N	Lane 1	1.36	1.7	2.89	3.4
	Lane 2	0.23	1.0	2.6	2.02
Arm 9 - Gyrotory E	Lane 1	2.37	4.4	2.48	5.9
	Lane 2	2.52	4.5	2.15	5.8
Arm 6 - Gyrotory S	Lane 1	1.72	3.0	2.15	2.8
	Lane 2	0.09	1.0	0.09	0.5

5.2.12. **Table 5-4** shows that at the beginning of the ‘green time’ on all the internal links, the maximum queue would be 3.1 PCUs (as demonstrated in **Table 5-5**) which occurs in lane one of the western internal link. Sufficient space within the layout exists to accommodate this level of queueing. Whilst the MMQ indicates that queues will get longer, by the end of the green time they will have dissipated during each cycle. To provide additional traffic management, ‘Keep Clear’ road markings have been added to the layout to ensure that ‘through’ traffic movements are not blocked by any queueing within the junction. The proposed layout (shown in **Appendix E**) is therefore considered sufficient to accommodate the demand generated by the Proposed Development in 2033 and as such the residual cumulative impact would not be severe.

JUNCTION 6

BC Comments

'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 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.'

'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?'

'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?'

'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.'

'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).'

WSP Comments

- 5.2.13. Based upon the modelling results presented in Section 4 of this TRN3, an alternative package of mitigation has been derived. This revised package of mitigation facilitates two lanes of traffic to travel straight ahead between the A421 Standing Way and A421 Buckingham Road. The layout for this mitigation proposal 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 5-6** with full modelling results presented in **Appendix E**.

Table 5-6 – Junction 6 – Bottledump Roundabout Mitigation Capacity Assessment

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	LOS	Queue (Veh)	Delay (s)	LOS
2033 Nothing (Pre-Mitigation)						
A – A421 Standing Way	31.5	67.74	F	97.8	218.82	F
B - Whaddon Road	47.8	350.59	F	19.4	190.36	F
C – A421 Buckingham Road	11.2	22.18	C	4.9	10.61	B
2033 Do Something 1 (Pre-Mitigation)						
A – A421 Standing Way	40.5	85.75	F	125.4	305.45	F
B - Whaddon Road	108.9	658.39	F	31.3	273.81	F
C – A421 Buckingham Road	18.6	34.97	D	6.9	14.99	B
2033 Do Something 1 (Post-Mitigation)						
A – A421 Standing Way	2.9	6.67	A	4.5	8.63	A
B - Whaddon Road	1.3	7.35	A	1.0	6.77	A
C – A421 Buckingham Road	28.1	48.61	E	4.9	12.40	B
2033 Do Something 2 (Post-Mitigation)						
A – A421 Standing Way	3.0	6.57	A	4.2	8.41	A
B - Whaddon Road	1.3	7.29	A	0.9	6.56	A
C – A421 Buckingham Road	24.2	42.51	E	5.0	10.90	B
2033 Do Something 3 (Post-Mitigation)						
A – A421 Standing Way	2.6	6.36	A	3.5	8.06	A
B - Whaddon Road	1.2	7.17	A	1.1	5.56	A
C – A421 Buckingham Road	32.1	55.86	F	4.2	9.63	A

5.2.14. **Table 5-6** shows that with the revised mitigation measures in place significant improvements in queueing and delay are evident on the Whaddon Road and Standing Way arms of the junction. However, a minor increase in queueing and delay on the Buckingham Road arm results. Queueing on Buckingham Road increases from 11 vehicles in the 2033 Do Nothing Scenario to 28 in Do Something 1 Post Mitigation: an increase of 17 vehicles. Delay increases from 22 seconds to 49 seconds: an increase of 27 seconds. However, overall across the junction queueing and delay decrease and therefore the proposals are considered appropriate to mitigate the impacts of the Proposed Development and as such, the residual cumulative impact would not be severe.

JUNCTION 12

5.2.15. No mitigation was proposed within the Updated TA for Junction 12. Following review of the baseline capacity assessment results it is evident that the Proposed Development could have an impact in this location. Mitigation in the form of widening on Chaffron Way has been explored. A layout plan

showing the mitigation measures proposed is contained in **Appendix D**. Junction capacity assessment results using the traffic flows contained within **Appendix B** are presented in **Table 5-7** with full modelling results in **Appendix E**.

Table 5-7 – Junction 12 - Kingsmead Roundabout Mitigation Capacity Assessment

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-Mitigation)						
A – V1 Snelshall Street (N)	4.8	19.16	0.84	1.0	5.42	0.50
B – H7 Chaffron Way	79.0	454.91	1.28	110.2	570.72	1.31
C – V1 Snelshall Street (S)	1.3	7.13	0.56	3.2	13.60	0.77
D - Hayton Way	0.7	4.22	0.42	0.2	3.16	0.18
2033 Do Something 1 (Pre-Mitigation)						
A – V1 Snelshall Street (N)	10.6	39.21	0.93	1.5	6.73	0.6
B – H7 Chaffron Way	121.0	770.76	1.46	168.7	935.63	1.49
C – V1 Snelshall Street (S)	2.0	9.32	0.67	5.4	20.97	0.85
D - Hayton Way	0.8	4.65	0.44	0.2	3.35	0.19
2033 Do Something 1 (Post-Mitigation)						
A – V1 Snelshall Street (N)	11.0	40.80	0.94	1.5	6.73	0.60
B – H7 Chaffron Way	72.9	390.88	1.25	104.1	501.33	1.29
C – V1 Snelshall Street (S)	2.1	9.67	0.68	6.1	23.94	0.87
D - Hayton Way	0.8	4.69	0.44	0.2	3.39	0.19
2033 Do Something 2 (Post-Mitigation)						
A – V1 Snelshall Street (N)	9.4	36.81	0.93	1.2	5.89	0.54
B – H7 Chaffron Way	69.0	359.63	1.24	79.1	343.04	1.21
C – V1 Snelshall Street (S)	1.9	9.27	0.66	5.8	23.11	0.86
D - Hayton Way	0.8	4.62	0.44	0.2	3.37	0.19

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Something 3 (Post-Mitigation)						
A – V1 Snelshall Street (N)	4.7	18.94	0.83	1.0	5.44	0.50
B – H7 Chaffron Way	45.5	226.57	1.13	67.3	272.27	1.17
C – V1 Snelshall Street (S)	1.4	7.74	0.59	3.1	13.74	0.76
D - Hayton Way	0.7	4.34	0.42	0.2	3.15	0.18

5.2.16. **Table 5-7** shows that with the proposed mitigation measures in place improvements in queuing and delay are evident on the Chaffron Way arm of the junction when compared to the 2033 Do Nothing scenario in both the AM and PM peaks. Minor increases in queuing and delay are evident on the other arms of the junction but overall the mitigation measures would provide an improvement when compared to the 2033 Do Nothing scenario, therefore the residual cumulative impact would not be severe.

JUNCTION 14

5.2.17. No mitigation was proposed within the Updated TA for Junction 14. Following review of the baseline capacity assessment results it is evident that the Proposed Development could have an impact in this location. Mitigation in the form of widening on Fulmer Street and Chaffron Way has been explored. A layout plan showing the mitigation measures proposed is contained in **Appendix D**. Junction capacity assessment results using the traffic flows contained within **Appendix B** are presented in **Table 5-8** with full modelling results in **Appendix E**.

Table 5-8 – Junction 14 - Furzton Roundabout Mitigation Capacity Assessment

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-Mitigation)						
A – V3 Fulmer Street (N)	0.9	5.59	0.48	12.2	29.90	0.94
B – H7 Chaffron Way (E)	3.5	17.40	0.78	289.9	1085.76	1.58
C – V3 Fulmer Street (S)	67	176.59	1.1	9.4	53.69	0.93
D – H7 Chaffron Way (W)	264.0	898.08	1.42	0.8	4.27	0.45
2033 Do Something 1 (Pre-Mitigation)						
A – V3 Fulmer Street (N)	0.9	5.77	0.48	14.9	48.10	0.96

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
B – H7 Chaffron Way (E)	4.3	20.66	0.82	349.0	1275.24	1.66
C – V3 Fulmer Street (S)	94.5	240.12	1.16	12.7	67.89	0.96
D – H7 Chaffron Way (W)	274.9	1021.28	1.43	0.8	4.37	0.46
2033 Do Something 1 (Post-Mitigation)						
A – V3 Fulmer Street (N)	1	6.28	0.51	15.2	48.87	0.96
B – H7 Chaffron Way (E)	1.7	7.84	0.63	128.4	356.18	1.23
C – V3 Fulmer Street (S)	24.2	67.88	1	8.3	44.71	0.91
D – H7 Chaffron Way (W)	162.6	514.34	1.31	0.7	3.69	0.42
2033 Do Something 2 (Post-Mitigation)						
A – V3 Fulmer Street (N)	1	6.25	0.51	14.7	47.60	0.96
B – H7 Chaffron Way (E)	1.7	7.77	0.63	123.5	338.58	1.22
C – V3 Fulmer Street (S)	22.1	63.16	0.99	8.1	44.01	0.91
D – H7 Chaffron Way (W)	160.7	501.73	1.31	0.7	3.68	0.42
2033 Do Something 3 (Post-Mitigation)						
A – V3 Fulmer Street (N)	1.0	6.33	0.51	15.4	49.55	0.96
B – H7 Chaffron Way (E)	1.7	7.89	0.63	128.8	358.43	1.23
C – V3 Fulmer Street (S)	25.4	70.47	1.00	8.9	47.35	0.92
D – H7 Chaffron Way (W)	163.6	520.99	1.31	0.7	3.71	0.42

5.2.18. **Table 5-8** shows that with the proposed mitigation measures in place significant improvements in queuing and delay are evident on both Chaffron Way arms and the Fulmer Street southern arm of the junction when compared to the 2033 Do Nothing scenario in both the AM and PM peaks. Negligible increases in queuing and delay are evident on the Fulmer Street northern arm but overall the mitigation measures would provide a betterment in this location, with the overall whole junction queuing and delay reducing considerably compared to the 2033 Do Nothing scenario, and as such the residual cumulative impact would not be severe.

JUNCTION 15

- 5.2.19. Mitigation in the form of widening by narrowing the central island on Grafton Street North and South and Standing Way was proposed within the Updated TA¹¹ for Junction 15. Junction capacity assessment results using the traffic flows contained within **Appendix B** showed that the mitigation measures proposed within the Updated TA would result in significant improvements in queueing and delay on both Grafton Street arms of the junction when compared to the 2033 Do Nothing but increases in queueing and delay were evident on the Standing Way arms .
- 5.2.20. An additional package of mitigation was therefore investigated for this junction. A layout plan showing the additional mitigation measures proposed in this TRN3 is contained in **Appendix D**. Junction capacity assessment results using the traffic flows contained within **Appendix B** are presented in **Table 5-9** with full modelling results in **Appendix E**.

Table 5-9 – Junction 15 - Bleak Hall Roundabout Additional Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-Mitigation)						
A – V6 Grafton Street (N)	109.3	438.15	1.22	131.7	486.62	1.24
B – A421 Standing Way (E)	153.8	429.08	1.22	99.9	265.99	1.14
C – V6 Grafton Street (S)	132.7	365.66	1.19	121.1	456.99	1.23
D – A421 Standing Way (W)	138.2	394.63	1.20	165.6	390.12	1.2
2033 Do Something 1 (Pre-Mitigation)						
A – V6 Grafton Street (N)	157.8	621.85	1.28	214.4	767.85	1.34
B – A421 Standing Way (E)	245.4	653.69	1.3	300.1	830.28	1.36
C – V6 Grafton Street (S)	164.2	476.73	1.23	198.2	757.95	1.33
D – A421 Standing Way (W)	378.5	1050.39	1.42	311.2	689.96	1.31
2033 Do Something 1 (Post-Mitigation)						
A – V6 Grafton Street (N)	112.2	441.54	1.21	206.9	720.32	1.36
B – A421 Standing Way (E)	119.6	265.99	1.15	136.4	323.06	1.17
C – V6 Grafton Street (S)	65.89	139.57	1.08	67.0	185.02	1.11
D – A421 Standing Way (W)	196.7	465.51	1.25	121.3	206.81	1.12

¹¹ Paragraphs 8.3.43 to 8.3.49 Updated TA (May 2020)

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Something 2 (Post-Mitigation)						
A – V6 Grafton Street (N)	106.7	412.22	1.20	192.8	658.14	1.34
B – A421 Standing Way (E)	112.4	247.14	1.14	113.9	258.81	1.14
C – V6 Grafton Street (S)	62.9	133.47	1.07	60.2	164.72	1.09
D – A421 Standing Way (W)	168.3	404.34	1.22	107.8	176.47	1.11
2033 Do Something 3 (Post-Mitigation)						
A – V6 Grafton Street (N)	117.6	467.00	1.22	211.9	744.95	1.37
B – A421 Standing Way (E)	127.3	292.58	1.16	139.4	322.53	1.17
C – V6 Grafton Street (S)	68.8	143.92	1.08	76.8	221.67	1.13
D – A421 Standing Way (W)	219.7	511.31	1.27	124.2	212.55	1.12

- 5.2.21. **Table 5-9** shows that with the proposed additional mitigation measures in place queuing and delay is reduced on the Standing Way (E) and Grafton Street (S) arms in the AM peak when compared to the 2033 Do Nothing scenario. In the PM peak queuing and delay is reduced on the Grafton Street (S) and Standing Way (W) arms when compared to the 2033 Do Nothing scenario. Increases in queuing and delay are evident on the other arms of the junction when compared to the 2033 Do Nothing scenario, however the junction operates significantly over-capacity in the 2033 Do Nothing scenario which exaggerates the likely impact of the Proposed Development.
- 5.2.22. Over the junction as a whole, delay is reduced by 315 seconds in the AM peak when compared to the Do Nothing scenario. In the PM peak, delay is reduced by 165 seconds with a negligible increase in queuing of 13 vehicles. It is therefore considered that as the mitigation provides an overall improvement at the junction, it would mitigate the impact of the Proposed Development and in doing so, the residual cumulative impact would not be severe.
- 5.2.23. It should also be noted that Junction 15 is highlighted within MKC’s LTP4 Transport Infrastructure Development Plan (TIDP), October 2019, Options Proforma as a junction to be upgraded as part of ‘Concept 67 – Pinch Point Junction Capacity Improvements’, which has the objective of delivering physical highway capacity improvements at junctions identified as pinch points on the road network. Improvements suggested in the TIDP include junction widening to provide additional approach lanes and the introduction of traffic signals to reduce congestion and vehicle delay.
- 5.2.24. Junction 15 is also highlighted as a junction with performance over capacity in 2031 within the MK Multi Modal Model Impacts of Plan MK report, November 2017. The report identifies that the

junction would be operating over capacity in the 2031 Reference Case¹² and would potentially require mitigation as a result of the cumulative increase in traffic on the network.

JUNCTION 16

- 5.2.25. Mitigation in the form of widening by narrowing the central island on all arms of the junction was proposed within the Updated TA¹³ for Junction 16. Junction capacity assessment results using the traffic flows contained within **Appendix B** showed that with the mitigation measures proposed within the Updated TA in place, significant improvements in queueing and delay occur on the Standing Way arms in the AM peak. However, increases in queueing and delay are evident on the Watling Street arms in both the AM and PM peaks and on the Standing Way northern arm in the PM peak.
- 5.2.26. An additional package of mitigation was therefore investigated for this junction. A layout plan showing the additional mitigation measures proposed in this TRN3 is contained in **Appendix D**. Junction capacity assessment results using the traffic flows contained within **Appendix B** are presented in **Table 5-10** with full modelling results in **Appendix E**.

Table 5-10 – Junction 16 - Elfield Park Roundabout Additional Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing (Pre-Mitigation)						
A – V4 Watling Street (W)	38.9	266.70	1.13	106.4	566.78	1.27
B – A421 Standing Way (N)	150.8	400.19	1.21	153.9	338.51	1.18
C – Watling Street (E)	101.8	260.35	1.14	130.2	474.42	1.24
D – A421 Standing Way (S)	147.3	333.16	1.18	169.5	421.97	1.21
2033 Do Something 1 (Pre-Mitigation)						
A – V4 Watling Street (W)	51.2	394.29	1.18	119.4	640.35	1.29
B – A421 Standing Way (N)	252.1	628.11	1.29	437.4	960.99	1.40
C – Watling Street (E)	125.4	353.14	1.18	157.0	575.52	1.27
D – A421 Standing Way (S)	386.8	872.97	1.38	348.3	826.33	1.36
2033 Do Something 1 (Post-Mitigation)						
A – V4 Watling Street (W)	6.9	48.47	0.90	51.9	216.86	1.12

¹² MKMMM Reference Case includes SWMK Proposed Development, as described at paragraph 1.6.7 to 1.6.11, pages 4 and 5

¹³ Paragraphs 8.3.50 to 8.3.57 Updated TA (May 2020)

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
B – A421 Standing Way (N)	140.5	290.58	1.17	292.2	581.67	1.28
C – Watling Street (E)	68.3	151.08	1.09	99.2	329.49	1.17
D – A421 Standing Way (S)	243.6	499.37	1.26	152.3	302.90	1.17
2033 Do Something 2 (Post-Mitigation)						
A – V4 Watling Street (W)	6.6	46.61	0.89	50.5	208.17	1.11
B – A421 Standing Way (N)	131.8	268.50	1.16	247.9	503.26	1.25
C – Watling Street (E)	65.4	144.78	1.08	96.4	316.98	1.16
D – A421 Standing Way (S)	209.8	438.38	1.24	135.5	261.75	1.15
2033 Something 3 (Post-Mitigation)						
A – V4 Watling Street (W)	8.4	57.35	0.92	53.1	222.15	1.12
B – A421 Standing Way (N)	147.5	309.47	1.18	311.8	616.44	1.30
C – Watling Street (E)	70.0	155.02	1.09	100.4	334.86	1.17
D – A421 Standing Way (S)	259.7	529.51	1.27	159.2	321.49	1.17

- 5.2.27. **Table 5-10** shows that with the proposed additional mitigation measures in place significant improvements in queueing and delay are evident on all arms of the junction in the AM peak hour when compared to the 2033 Do Nothing scenario with the exception of the A421 Standing Way southern arm
- 5.2.28. In the PM peak improvements in queueing and delay are evident on both Watling Street arms and the A421 Standing Way southern arm when compared to the 2033 Do Nothing scenario.
- 5.2.29. Over the junction as a whole, delay is reduced when compared to the 2033 Do Nothing scenario by 271 seconds in the AM peak and by 371 seconds in the PM peak. It is therefore considered that the mitigation adequately mitigates the impacts of the Proposed Development and as such the residual cumulative impact is not severe.
- 5.2.30. It should also be noted that Junction 16 is highlighted within MKC’s LTP4 Transport Infrastructure Development Plan (TIDP), October 2019, Options Proforma as a junction to be upgraded as part of ‘Concept 67 – Pinch Point Junction Capacity Improvements’, which has the objective of delivering physical highway capacity improvements at junctions identified as pinch points on the road network. Improvements suggested in the TIDP include junction widening to provide additional approach lanes and the introduction of traffic signals to reduce congestion and vehicle delay.
- 5.2.31. Junction 16 is also highlighted as a junction with performance over capacity in 2031 within the MK Multi Modal Model Impacts of Plan MK report, November 2017. The report identifies that the

junction would be operating over capacity in the 2031 Reference Case and would potentially require mitigation as a result of the cumulative increase in traffic on the network.

JUNCTION 17

- 5.2.32. Mitigation in the form of widening by narrowing the central island on Shenley Road, Fulmer Street and Standing Way southern arms was proposed within the Updated TA¹⁴ for Junction 17. Junction capacity assessment results using the traffic flows contained within **Appendix B** showed that with the mitigation measures proposed within the Updated TA in place, significant improvements in queueing and delay are evident on the Shenley Way arm in the AM peak when compared to the 2033 Do Nothing scenario. In the PM peak improvements are evident on both Shenley Way and Fulmer Street. However, increases in queueing and delay are evident on the Standing Way and Fulmer Street arms in the AM peak and on the Standing Way arms in the PM peak.
- 5.2.33. An additional package of mitigation was therefore investigated for this junction. A layout plan showing the additional mitigation measures proposed in this TRN3 is contained in **Appendix D**. Junction capacity assessment results using the traffic flows contained within **Appendix B** are presented in **Table 5-10** with full modelling results in **Appendix E**.

Table 5-10 – Junction 17 - Emerson Roundabout Additional Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Nothing (Pre-Mitigation)						
A – V3 Fulmer Street	99.1	482.61	1.38	55.4	282.68	1.17
B – A421 Standing Way (N)	78.4	210.98	1.1	106.8	168.11	1.1
C - Shenley Way	55.2	329.81	1.18	58.2	407.73	1.22
D – A421 Standing Way (S)	20.2	34.61	0.97	49	104.87	1.04
2033 Do Something 1 (Pre-Mitigation)						
A – V3 Fulmer Street	203.4	1488.88	1.61	111	645.34	1.3
B – A421 Standing Way (N)	173.5	487.84	1.23	366	675.9	1.31
C - Shenley Way	86.3	582.43	1.27	109.4	839.26	1.35
D – A421 Standing Way (S)	164.3	227.24	1.13	167.7	385.85	1.2
2033 Do Something 1 (Post-Mitigation)						

¹⁴ Paragraphs 8.3.58 to 8.3.65 Updated TA (May 2020)

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
A – V3 Fulmer Street	70.6	313.99	1.23	21.1	95.01	1.02
B – A421 Standing Way (N)	96.0	223.51	1.12	242.5	425.54	1.23
C - Shenley Way	45.8	246.53	1.13	62.9	464.09	1.21
D – A421 Standing Way (S)	59.9	75.68	1.03	52.2	93.74	1.04
2033 Do Something 2 (Post-Mitigation)						
A – V3 Fulmer Street	62.7	273.14	1.20	16.6	77.97	0.99
B – A421 Standing Way (N)	86.6	204.61	1.11	207.6	348.22	1.20
C - Shenley Way	42.7	216.52	1.12	57.4	422.17	1.19
D – A421 Standing Way (S)	41.8	56.87	1.01	39.0	74.44	1.02
2033 Do Something 3 (Post-Mitigation)						
A – V3 Fulmer Street	74.9	349.78	1.24	21.5	96.81	1.02
B – A421 Standing Way (N)	101.0	234.65	1.13	249.9	441.45	1.24
C - Shenley Way	47.0	257.03	1.14	67.6	496.69	1.23
D – A421 Standing Way (S)	68.3	84.28	1.04	53.8	96.02	1.04

- 5.2.34. **Table 5-10** shows that with the proposed additional mitigation measures in place, significant improvements in queueing and delay are evident on the V3 Fulmer Way northern arm and Shenley Way arm of the junction in the AM peak hour when compared to the 2033 Do Nothing scenario.
- 5.2.35. In the PM peak improvements in queueing and delay are evident on V3 Fulmer Street and Standing Way southern arm when compared to the 2033 Do Nothing scenario.
- 5.2.36. Over the junction as a whole, delay is reduced in the AM peak by 198 seconds. Queueing does increase but this is minimal in the AM peak (20 vehicles) although there is an increase in the PM peak of 109 vehicles. However, as the junction operates significantly over capacity in the 2033 Do Nothing scenario the level of impact of the Proposed Development is exaggerated. Overall, it is considered that the mitigation measures proposed offer appropriate mitigation for the impacts of the Proposed Development when compared with the operational performance of the junction in the 2033 Do Nothing scenario and paragraph 56 of the NPPF. Hence, the residual cumulative impact at this junction would not be severe.

JUNCTION 18

- 5.2.37. Mitigation in the form of widening to provide an additional lane on the Tattenhoe Street arm was proposed within the Updated TA¹⁵ for Junction 17. Junction capacity assessment results using the traffic flows contained within **Appendix B** showed that with the mitigation measures proposed within the Updated TA in place significant improvements in queueing and delay are evident on the Tattenhoe Street and Tattenhoe Lane arms in both the AM and PM peaks when compared to the 2033 Do Nothing scenario. However, increases in queueing and delay are evident on the Standing Way arms in the AM and PM peaks.
- 5.2.38. An additional package of mitigation was therefore investigated for this junction. A layout plan showing the additional mitigation measures proposed in this TRN3 is contained in **Appendix D**. Junction capacity assessment results using the traffic flows contained within **Appendix B** are presented in **Table 5-11** with full modelling results in **Appendix E**.

Table 5-11 – Junction 18 - Windmill Hill Roundabout Additional Mitigation Results

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2033 Do Nothing – (Pre-Mitigation)						
A – V2 Tattenhoe Street	87.4	502.27	1.26	59.6	257.18	1.17
B - A421 Standing Way (N)	29.1	81.43	1.01	17.7	41.22	0.97
C - Tattenhoe Lane	53.7	322.50	1.20	61.1	471.85	1.36
D - A421 Standing Way (S)	98.5	185.52	1.11	24.6	68.85	1.00
2033 Do Something 1 – (Pre-Mitigation)						
A – V2 Tattenhoe Street	138.6	832.06	1.35	103.6	593.24	1.28
B - A421 Standing Way (N)	138.2	391.34	1.20	225.5	478.33	1.23
C - Tattenhoe Lane	99.2	744.73	1.34	151.5	1911.13	1.68
D - A421 Standing Way (S)	367.5	749.17	1.33	140.7	365.59	1.19
2033 Do Something 1 (Post-Mitigation)						
A – V2 Tattenhoe Street	2.8	13.32	0.74	1.9	8.66	0.66
B - A421 Standing Way (N)	55.0	119.81	1.06	121.8	185.35	1.12
C - Tattenhoe Lane	23.2	131.76	1.04	44.8	408.84	1.20

¹⁵ Paragraphs 8.3.66 to 8.3.71 Updated TA (May 2020)

Arm Description	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
D - A421 Standing Way (S)	152.6	253.19	1.15	20.2	47.09	0.98
2033 Do Something 2 (Post-Mitigation)						
A – V2 Tattenhoe Street	2.7	12.98	0.74	1.7	8.09	0.64
B - A421 Standing Way (N)	42.2	96.55	1.04	85.3	134.42	1.08
C - Tattenhoe Lane	20.4	116.93	1.03	39.7	352.38	1.18
D - A421 Standing Way (S)	123.8	189.24	1.12	14.4	35.39	0.95
2033 Do Something 3 (Post-Mitigation)						
A – V2 Tattenhoe Street	2.9	13.55	0.75	1.9	8.76	0.66
B - A421 Standing Way (N)	60.9	130.96	1.07	129.7	196.56	1.13
C - Tattenhoe Lane	25.4	141.84	1.05	46.3	424.11	1.20
D - A421 Standing Way (S)	165.3	280.88	1.16	21.2	49.01	0.98

- 5.2.39. **Table 5-11** shows that with the proposed additional mitigation measures in place significant improvements in queueing and delay are evident on the Tattenhoe Street and Tattenhoe Lane arms in the AM peak hour when compared to the 2033 Do Nothing scenario
- 5.2.40. In the PM peak improvements in queueing and delay are evident on all arms with the exception of the A421 Standing Way northern arm.
- 5.2.41. Over the junction as a whole, delay is reduced in the AM peak hour by 574 seconds. In the PM peak delay is reduced by 189 seconds with only a minor increase in queueing of 26 vehicles. As such the mitigation measures are considered appropriate to mitigate the impacts of the Proposed Development. Hence, the residual cumulative impact at this junction would not be severe.

5.3 MITIGATION SUMMARY

- 5.3.1. **Table 5-12** provides a summary of the proposed mitigation as a result of the modified analysis presented in TRN3; the table also identifies where the mitigation proposals originally identified in the Updated TA have been superseded.
- 5.3.2. As a result of the mitigation outlined within this TRN3, there are significant improvements to queueing and delay when considered across the whole of the MKC highway network. In the context of the NPPF paragraphs 56 and 109, the overall level of proposed highway related improvements is considered to be appropriate and proportionate to mitigate the impact of the Proposed Development and to ensure that the residual cumulative impact is not severe.

Table 5-12 – Mitigation Summary

Junction	Mitigation proposed within TRN3	TRN3 compared with Updated TA
Junction 1 – B4034 Buckingham Road/Sherwood Drive/ Water Eaton Road	Improvements in the form of widening on Sherwood Drive, Buckingham Road and Water Eaton Road. Two straight ahead lanes proposed on the B4034 Buckingham Road arms as per drawing 70069442-001B.	Revised mitigation that supersedes the mitigation identified in the Updated TA ¹⁶
Junction 2 – B4034 Buckingham Road/ Shenley Road/Newton Road	Improvements in the form widening on the entries of all arms of the mini-roundabout as per drawing 70069442-015 P03	Mitigation now proposed when previously no mitigation was required..
Junction 5 - A421 Tattenhoe Roundabout	Part-time traffic signal junction as shown on drawing 9442-TP-SK-004 P05	As proposed within the Updated TA ¹⁷ but also includes traffic signals across the remaining arms of the junctions plus widening on Snelshall Street.
Junction 6 - A421 Bottledump Roundabout	Kerb widening on A421 Buckingham Road and Whaddon Road with widening on exit of A421 Buckingham Road as shown on drawing 70069442-004-P05	As proposed within the Updated TA ¹⁸ but now includes additional mitigation in the form of widening on the exit of the A421 Buckingham Road and revisions to the widening on the entry of A421 Buckingham Road
Junction 12 – Kingsmead Roundabout	Kerb widening on Chaffron Way as per drawing 70069442-010 P02	Mitigation now proposed when previously no mitigation was required.
Junction 13 – Westcroft Roundabout	No mitigation required as impact of the development is not material	No change
Junction 14 – Furzton Roundabout	Kerb widening on Fulmer Street and Chaffron Way north and south as shown on drawing 70069442-011 P02	Mitigation now proposed when previously no mitigation was required.
Junction 15 – A421 Bleak Hall Roundabout	Kerb widening by narrowing the central island on all arms and reduction in the size of the central island as shown on drawing 70069442-012 P03	As proposed within the Updated TA ¹⁹ but now includes additional mitigation in the form of additional widening

¹⁶ Updated TA (May 2020) Paragraphs 8.3.21 to 8.3.29

¹⁷ Updated TA (May 2020) Paragraphs 8.3.30 to 8.3.38

¹⁸ Updated TA (May 2020) Paragraphs 8.3.39 to 8.3.43

¹⁹ Updated TA (May 2020) Paragraphs 8.3.43 to 8.3.49

Junction	Mitigation proposed within TRN3	TRN3 compared with Updated TA
Junction 16 – A421 Elfield Park Roundabout	Kerb widening by narrowing the central island on all arms of junction and a reduction in the size of the central island as shown on drawing 70069442-016-P03	As proposed within the Updated TA ²⁰ but now includes additional mitigation in the form of additional widening
Junction 17 – A421 Emerson Roundabout	Kerb widening by narrowing the central island on Shenley Road and widening on the other arms plus a reduction in the size of the central island as shown on drawing 70069442-013 P02	As proposed within the Updated TA ²¹ but now includes additional mitigation in the form of additional widening
Junction 18 – A421 Windmill Hill Roundabout	Kerb widening on all arms of roundabout except Tattenhoe Lane where amendments to the road markings are proposed and a reduction in the size of the central island as shown on drawing 70069442-014 P02	As proposed within the Updated TA ²² but now includes additional mitigation in the form of additional widening

SUMMARY OF THE DIFFERENCES COMPARED TO UPDATED TA

5.3.3. Table 5-13 provides a summary of the changes presented in this Section when compared to the Updated TA.

Table 5-13 – Elements of Updated TA that are updated by TRN3

Section of Updated TA	Description	Area of Difference
Paragraphs 8.3.21 to 8.3.29	Junction 1 Mitigation Modelling	The TRN3 modelling presents a modified set of results. The proposed mitigation in TRN3 supersedes that identified in the Updated TA.
Paragraph 7.3.45	Junction 2 Mitigation Modelling	The TRN3 modelling presents a modified set of results. The proposed mitigation in TRN3 supersedes the conclusion that no mitigation was

²⁰ Updated TA (May 2020) Paragraphs 8.3.50 to 8.3.57

²¹ Updated TA (May 2020) Paragraphs 8.3.58 to 8.3.65

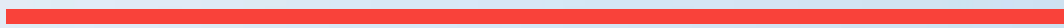
²² Updated TA (May 2020) Paragraphs 8.3.66 to 8.3.71

Section of Updated TA	Description	Area of Difference
		required as outlined in the Updated TA.
Paragraphs 8.3.30 to 8.3.38	Junction 5 Mitigation Modelling	The TRN3 modelling presents a modified set of results. The proposed mitigation represents the refined and modified proposals and supersedes that identified in the Updated TA.
Paragraphs 8.3.39 to 8.3.42	Junction 6 Mitigation Modelling	The TRN3 modelling presents an alternative set of results. The proposed mitigation represents the refined and modified proposals and supersedes that identified in the Updated TA.
Paragraph 7.3.63	Junction 12 Mitigation Modelling	The TRN3 modelling presents a modified set of results. The proposed mitigation supersedes the conclusion that no mitigation was required as outlined in the Updated TA.
Paragraphs 7.3.74 to 7.3.75	Junction 14 Mitigation Modelling	The TRN3 modelling presents a modified set of results. The proposed mitigation supersedes the conclusion that no mitigation was required as outlined in the Updated TA.
Paragraphs 8.3.43-8.3.49	Junction 15 Mitigation Modelling	The TRN3 modelling presents an alternative set of results. The proposed mitigation represents the refined and modified proposals and supersedes that identified in the Updated TA.
Paragraphs 8.3.50-8.3.57	Junction 16 Mitigation Modelling	The TRN3 modelling presents an alternative set of results. The proposed mitigation represents the refined and modified proposals and supersedes that identified in the Updated TA.

Section of Updated TA	Description	Area of Difference
Paragraphs 8.3.58-8.3.65	Junction 17 Mitigation Modelling	The TRN3 modelling presents an alternative set of results. The proposed mitigation represents the refined and modified proposals and supersedes that identified in the Updated TA.
Paragraphs 8.3.66-8.3.71	Junction 18 Mitigation Modelling	The TRN3 modelling presents an alternative set of results. The proposed mitigation represents the refined and modified proposals and supersedes that identified in the Updated TA.
Table 8.13	Highway Mitigation Summary	Updated Table 5-16 supersedes that presented in the Updated TA.

Appendix A

BC RESPONSE TO TRN1





Directorate for Planning Growth & Sustainability
Buckinghamshire Council,
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01296 382416
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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 unusual.
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: <i>'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</i>

Junction	Comment
	<p><i>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.</i></p> <p>If the correction were to still be applied, you will not get the positive impacts in the results that the mitigation scheme is showing.</p>
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 kerblines 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

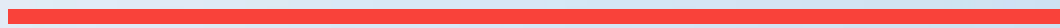
James Bedingfeld
Highways Development Management
Planning Growth & Sustainability

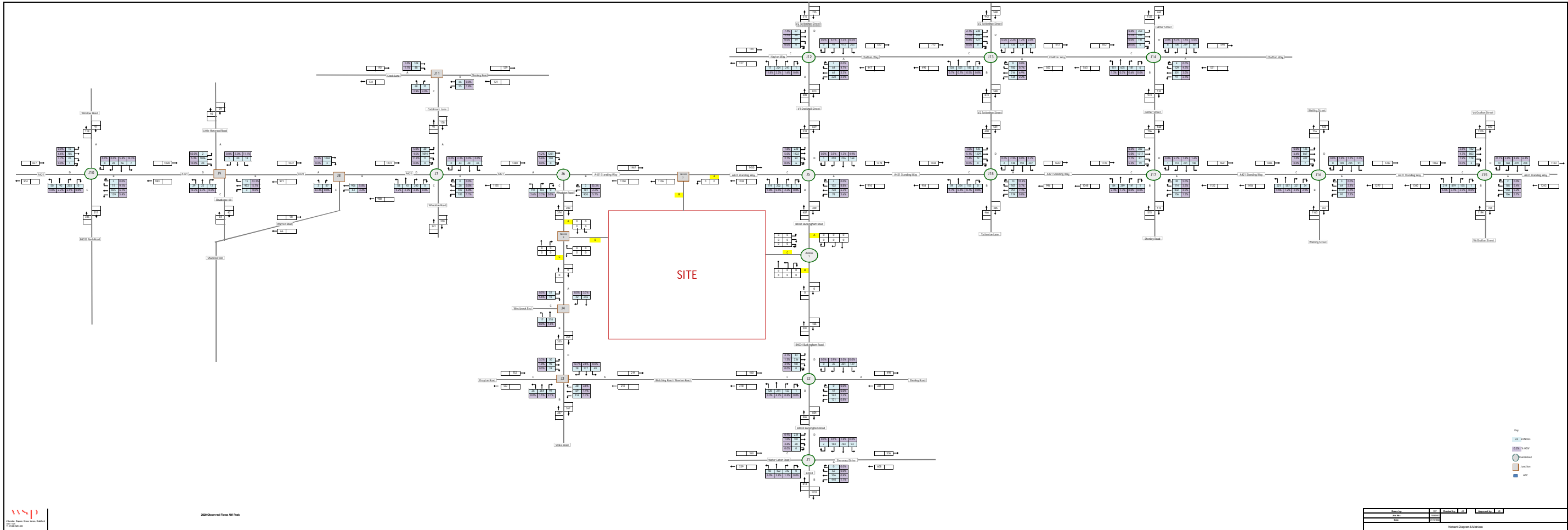
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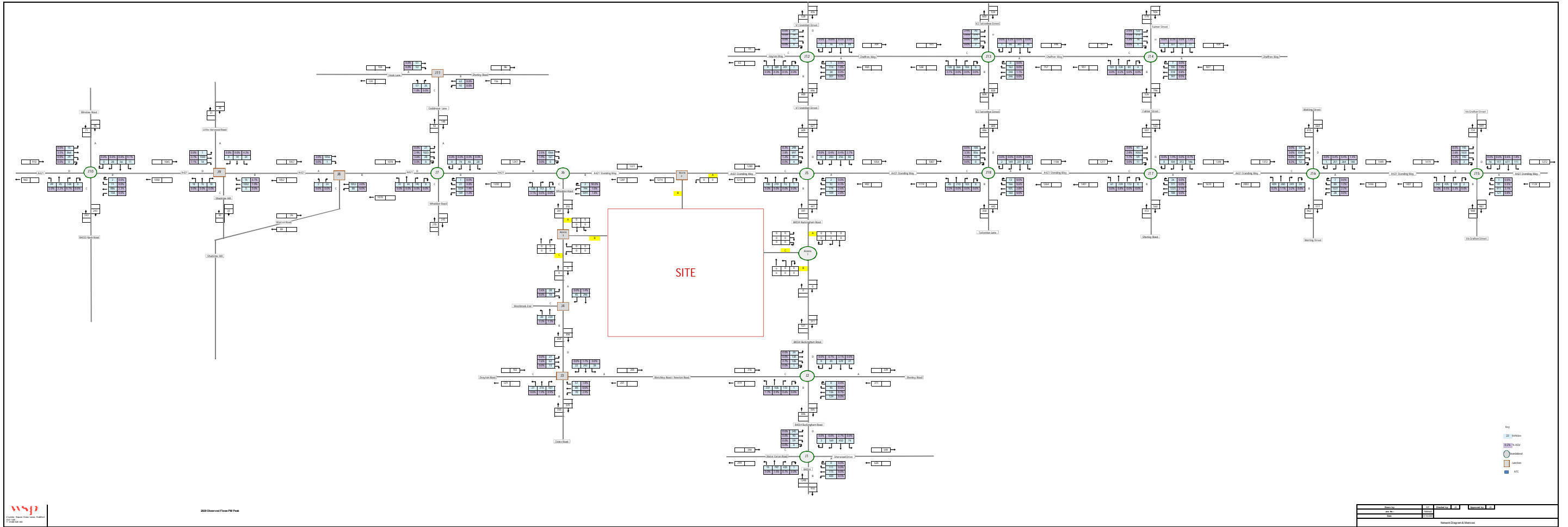
This advice is given at officer level only and is based on the facts and information you have supplied. It must be understood that the final decision on any planning application that may be submitted in the future rests with the Planning Authority.

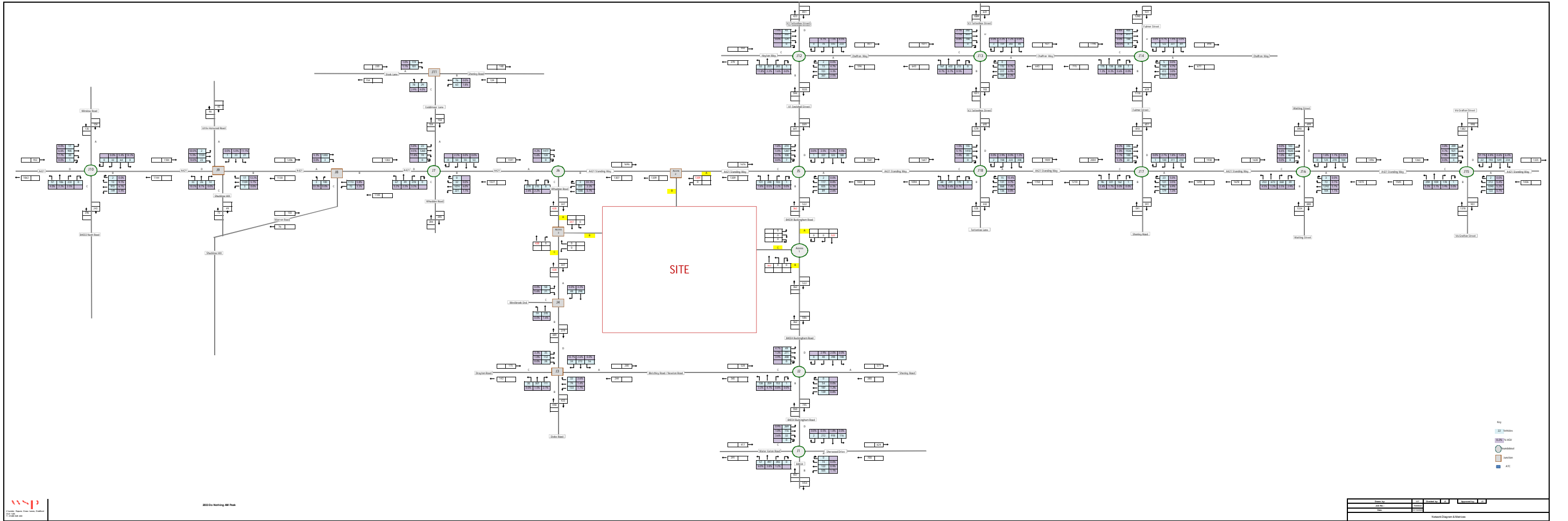
Appendix B

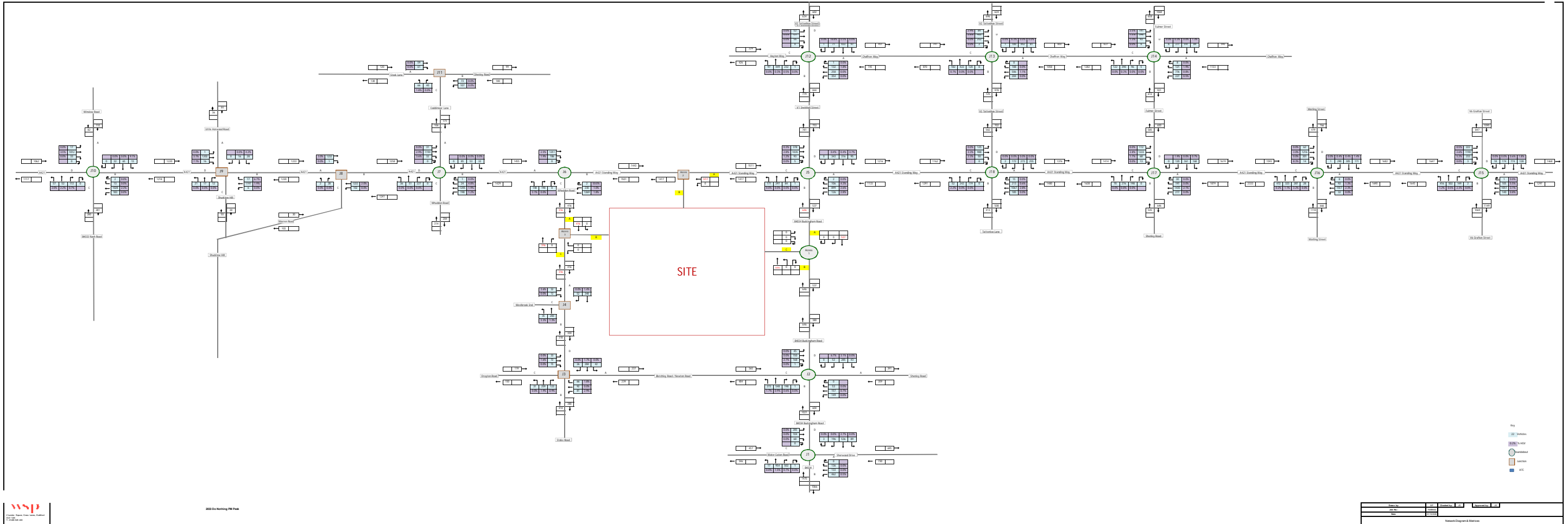
TRAFFIC FLOW DIAGRAMS

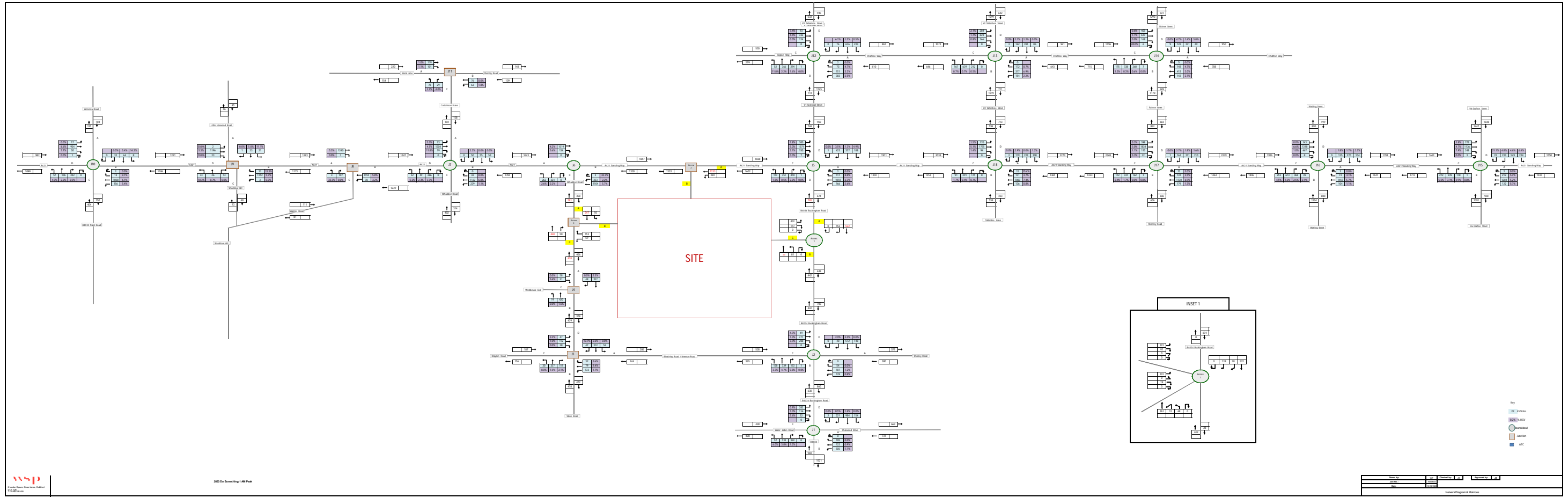


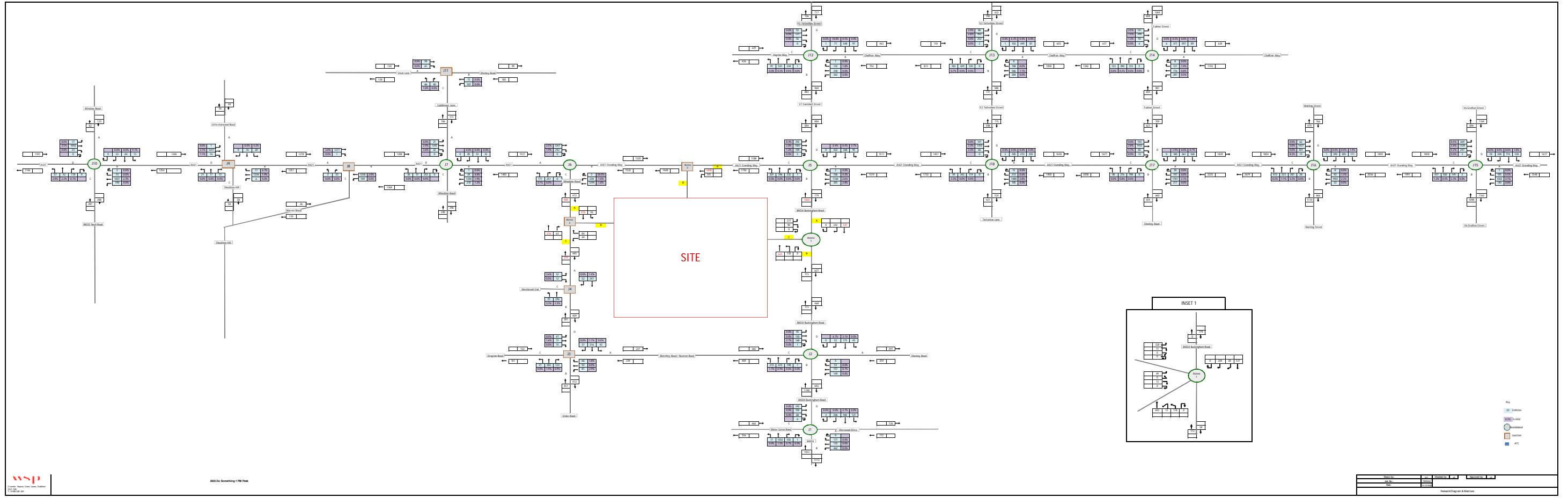


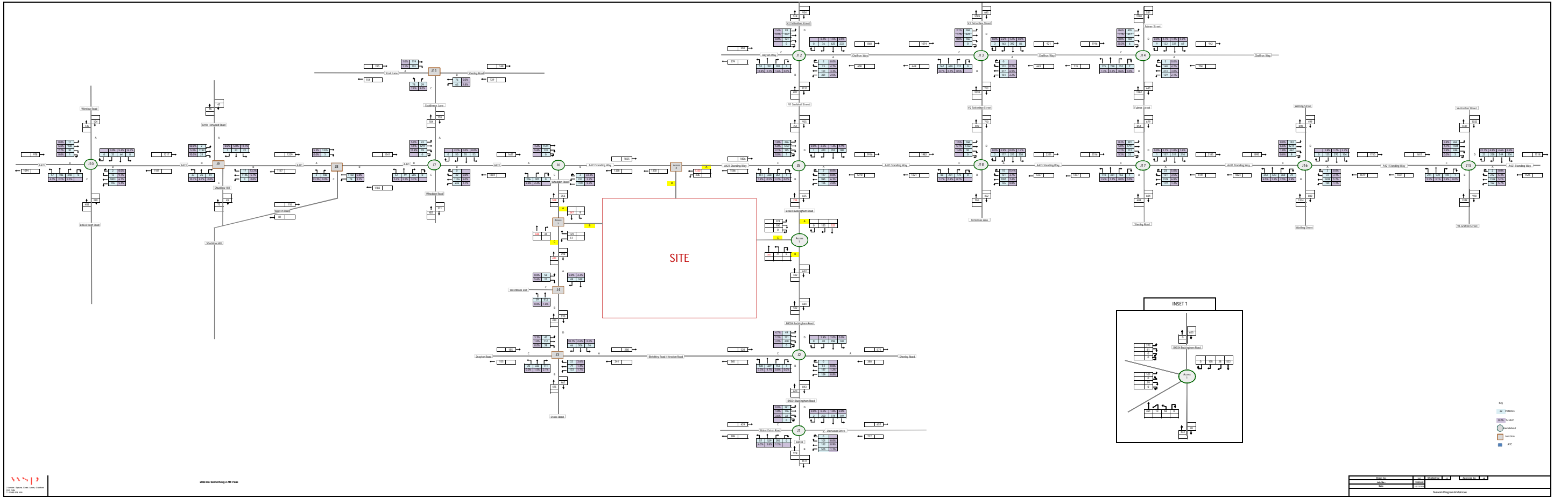


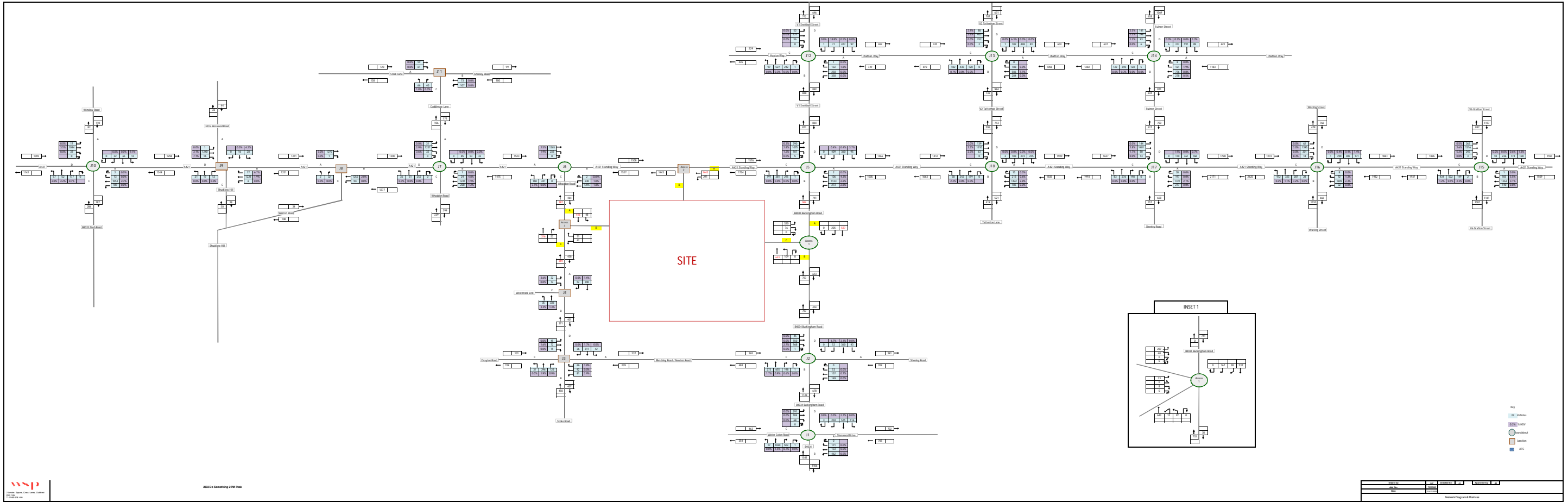


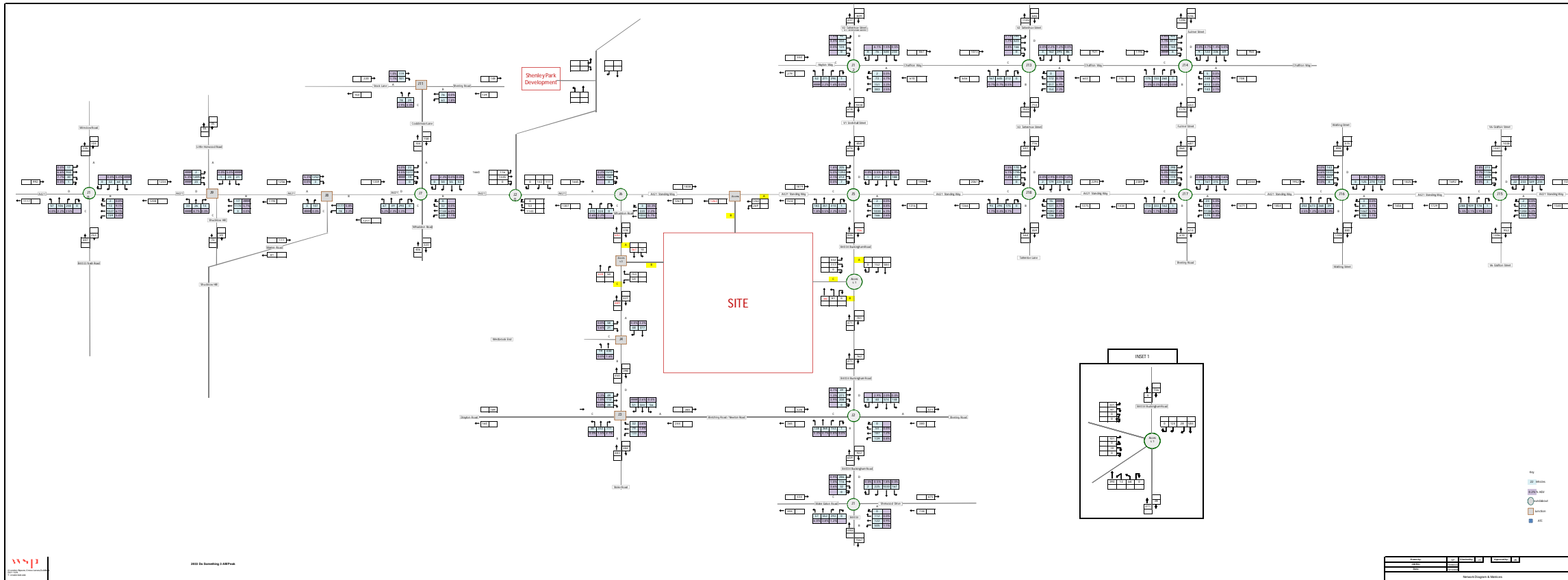


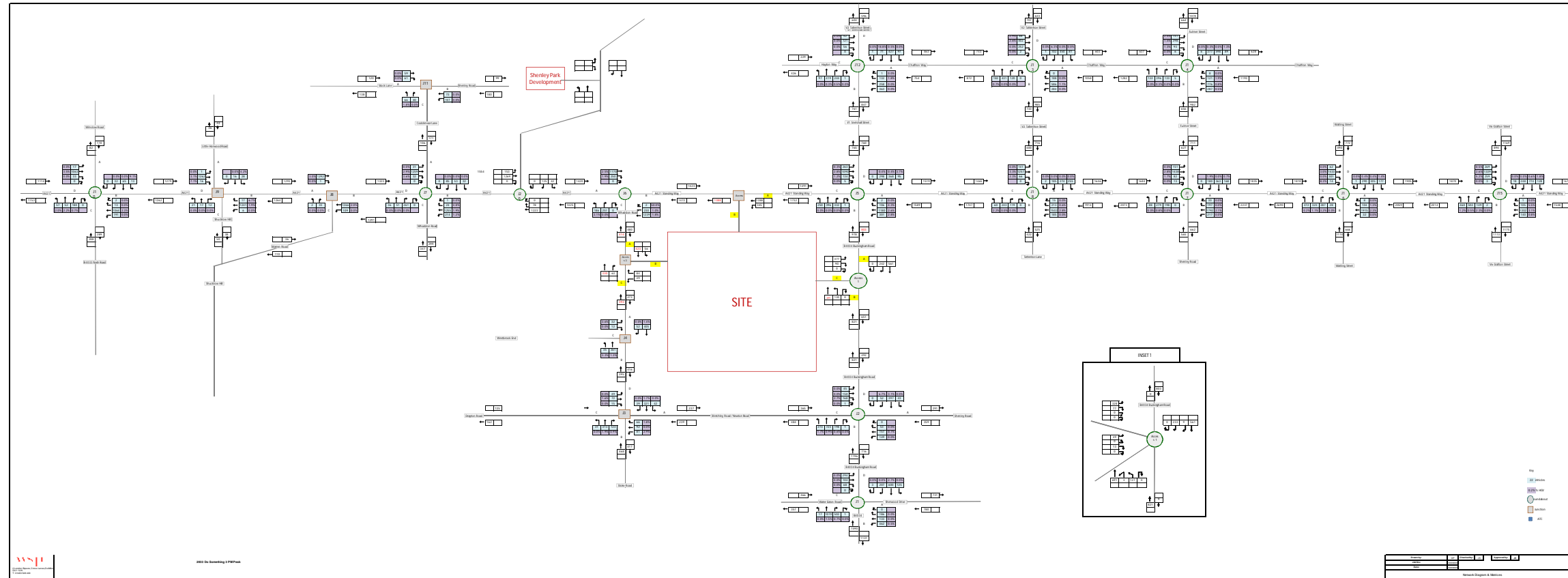






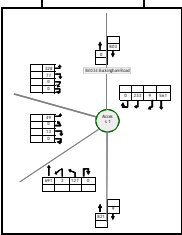






SITE

Sherley Park
Development



PO
PARKING
ROAD
LANDSCAPED AREA
REAR COURT
RV

NO. OF SHEETS	1
TOTAL NO. OF SHEETS	1
SHEET NO. 1	
SHEETS TO BE PRODUCED	
AS-BUILT	0
FINAL	1
SHEET TOTAL	
NO. OF SHEETS	1
TOTAL NO. OF SHEETS	1
SHEET NO. 1	
SHEETS TO BE PRODUCED	
AS-BUILT	0
FINAL	1
SHEET TOTAL	

DATE: 2024-08-01

Appendix C

BASE JUNCTION CAPACITY ASSESSMENT RESULTS



Junctions 9
ARCADY 9 - Roundabout Module
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Filename: J1- Sherwood Drive Water Eaton B4034 Roundabout_AM.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J1
Report generation date: 28/01/2021 17:34:16

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

Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
[Lane Simulation] - 2020 Base					
A - Sherwood Drive	D1	8.7	44.29		E
B - B4034		9.2	36.30		E
C - Water Eaton Road		5.8	50.17		F
D - B4034 Buckingham Road		27.0	77.80		F
[Lane Simulation] - 2033 Base					
A - Sherwood Drive	D13	28.5	117.55		F
B - B4034		29.9	95.93		F
C - Water Eaton Road		28.1	201.16		F
D - B4034 Buckingham Road		144.4	459.53		F
[Lane Simulation] - 2033 Base + CD + D					
A - Sherwood Drive	D15	25.0	101.43		F
B - B4034		51.9	168.06		F
C - Water Eaton Road		40.4	315.81		F
D - B4034 Buckingham Road		255.6	773.83		F
[Lane Simulation] - 2033 Base + CD + D with TP					
A - Sherwood Drive	D17	26.1	110.35		F
B - B4034		45.7	152.08		F
C - Water Eaton Road		42.7	333.33		F
D - B4034 Buckingham Road		243.6	742.00		F
[Lane Simulation] - 2033 Base + CD + D - ST					
A - Sherwood Drive	D19	25.0	103.57		F
B - B4034		60.9	212.98		F
C - Water Eaton Road		47.4	376.45		F
D - B4034 Buckingham Road		323.9	948.63		F
[Lane Simulation] - 2033 Base + CD + SP (ST)					
A - Sherwood Drive	D21	25.6	99.78		F
B - B4034		62.0	219.31		F
C - Water Eaton Road		46.6	383.50		F
D - B4034 Buckingham Road		326.9	951.89		F

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. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	Buckingham Road / Sherwood Drive / Water Eaton Road
Location	51°59'35.88"N, 0°44'17.67"W
Site number	1

Date	05/01/2021
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

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			79406068	220	39.79

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	Use Lane Simulation	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,D21	100.000	100.000

2020 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	54.99	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Sherwood Drive	
B	B4034	
C	Water Eaton Road	
D	B4034 Buckingham Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Sherwood Drive	3.70	5.70	25.8	13.3	30.1	56.0	
B - B4034	6.00	6.60	1.0	22.9	30.1	29.0	
C - Water Eaton Road	3.50	6.40	71.2	12.9	30.1	52.0	
D - B4034 Buckingham Road	3.40	6.70	118.7	16.0	30.1	43.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Sherwood Drive	Direct	Calibration against queue lengths	300
B - B4034	Direct	Calibration against queue lengths	-400
C - Water Eaton Road	Direct	Calibration against queue length	-450
D - B4034 Buckingham Road	Direct	Calibration against queue lengths	420

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	0.565	1722
B - B4034	0.701	1497
C - Water Eaton Road	0.615	1198
D - B4034 Buckingham Road	0.668	2257

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Sherwood Drive	Evenly split	10.00
B - B4034	Evenly split	10.00
C - Water Eaton Road	Evenly split	10.00
D - B4034 Buckingham Road	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A - Sherwood Drive	Entry	1	1	B	✓	4.00		0	99999	
			2	A, C, D	✓	4.00		0	99999	
	Exit	1	1	(A, B, C, D)		Infinity				
B - B4034	Entry	1	1	C, D		Infinity		0	99999	
			2	A, B		Infinity		0	99999	
C - Water Eaton Road	Entry	1	1	D	✓	10.00		0	99999	
			2	A, B, C	✓	10.00		0	99999	
	Exit	1	1	(A, B, C, D)		Infinity				
D - B4034 Buckingham Road	Entry	1	1	A, B	✓	20.00		0	99999	
			2	C, D	✓	20.00		0	99999	
	Exit	1	1	(A, B, C, D)		Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	Entry	1	1	0.283	861
			2	0.283	861
B - B4034	Entry	1	1	0.351	749
			2	0.351	749
C - Water Eaton Road	Entry	1	1	0.308	599
			2	0.308	599
D - B4034 Buckingham Road	Entry	1	1	0.334	1128
			2	0.334	1128

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			Sherwood Drive	B4034	Water Eaton Road	B4034 Buckingham Road
A - Sherwood Drive	1	1		✓		
		2	✓		✓	✓
B - B4034	1	1			✓	✓
		2	✓	✓		
C - Water Eaton Road	1	1				✓
		2	✓	✓	✓	
D - B4034 Buckingham Road	1	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

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 - Sherwood Drive		ONE HOUR	✓	608	100.000
B - B4034		ONE HOUR	✓	814	100.000
C - Water Eaton Road		ONE HOUR	✓	363	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1042	100.000

Origin-Destination Data

Demand (Veh/hr)

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		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	440	106	62
	B - B4034	342	0	50	422
	C - Water Eaton Road	101	28	0	234
	D - B4034 Buckingham Road	93	764	183	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	44.29	8.7	E	562	842
B - B4034	36.30	9.2	E	752	1128
C - Water Eaton Road	50.17	5.8	F	330	496
D - B4034 Buckingham Road	77.80	27.0	F	957	1435

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	445	111	749	448	453	398	0.0	1.1	10.343	B
B - B4034	612	153	262	613	627	936	0.0	1.9	11.369	B
C - Water Eaton Road	267	67	621	266	267	253	0.0	1.2	14.326	B
D - B4034 Buckingham Road	793	198	353	795	797	534	0.0	1.9	9.344	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	550	138	881	545	548	494	1.1	2.6	14.692	B
B - B4034	743	186	317	744	755	1108	1.9	3.4	15.961	C
C - Water Eaton Road	323	81	759	324	324	302	1.2	1.9	19.983	C
D - B4034 Buckingham Road	940	235	431	944	939	652	1.9	3.8	14.892	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	684	171	1035	671	659	591	2.6	7.8	34.137	D
B - B4034	907	227	385	896	895	1321	3.4	9.1	30.029	D
C - Water Eaton Road	398	100	910	389	386	371	1.9	5.0	37.370	E
D - B4034 Buckingham Road	1152	288	525	1101	1105	773	3.8	20.1	45.191	E

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	677	169	1048	671	672	586	7.8	8.6	44.293	E
B - B4034	891	223	386	907	920	1332	9.1	8.1	36.305	E
C - Water Eaton Road	400	100	924	399	400	369	5.0	5.8	50.171	F
D - B4034 Buckingham Road	1138	284	518	1116	1126	804	20.1	26.9	77.798	F

08:30 - 08:45

	Total	Junction	Circulating		Average	Throughput	Start	End		Unsignalised

Arm	Demand (Veh/hr)	Arrivals (Veh)	flow (Veh/hr)	Throughput (Veh/hr)	throughput (PCU/hr)	(exit side) (Veh/hr)	queue (Veh)	queue (Veh)	Delay (s)	level of service
A - Sherwood Drive	550	137	910	554	583	481	8.6	2.8	26.274	D
B - B4034	735	184	323	735	775	1142	8.1	3.4	20.199	C
C - Water Eaton Road	323	81	749	330	349	308	5.8	1.6	29.452	D
D - B4034 Buckingham Road	935	234	421	971	1027	658	26.9	7.2	48.966	E

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	462	116	740	465	474	404	2.8	1.3	11.683	B
B - B4034	626	157	267	628	640	938	3.4	1.8	12.377	B
C - Water Eaton Road	270	68	637	271	279	257	1.6	1.0	15.236	C
D - B4034 Buckingham Road	781	195	357	787	825	551	7.2	2.0	13.104	B

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	327	640	0.512	329	330	0.0	0.9	10.623	B
			2	A, C, D	118	642	0.184	119	124	0.0	0.2	6.864	A
		2	1	(A, B, C, D)	445			446	458	0.0	0.0	0.740	A
	Exit	1	1		398			398	404	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	354	630	0.561	355	366	0.0	1.1	13.047	B
			2	A, B	257	650	0.396	258	261	0.0	0.7	9.074	A
	Exit	1	1		936			936	938	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	171	401	0.428	171	171	0.0	0.8	15.726	C
			2	A, B, C	96	396	0.241	95	96	0.0	0.3	11.747	B
		2	1	(A, B, C, D)	267			267	271	0.0	0.0	0.021	A
	Exit	1	1		253			253	257	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	650	993	0.654	652	655	0.0	1.7	10.462	B
			2	C, D	143	1005	0.142	143	141	0.0	0.2	4.189	A
		2	1	(A, B, C, D)	793			793	805	0.0	0.0	0.000	A
	Exit	1	1		534			534	545	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	397	602	0.659	395	398	0.9	1.5	13.287	B
			2	A, C, D	150	606	0.247	150	151	0.2	0.4	7.935	A
		2	1	(A, B, C, D)	550			547	552	0.0	0.6	2.854	A
	Exit	1	1		494			494	489	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	424	613	0.690	426	438	1.1	2.4	19.272	C
			2	A, B	318	630	0.505	319	317	0.7	1.1	11.485	B
	Exit	1	1		1108			1108	1115	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	209	358	0.585	211	208	0.8	1.2	23.113	C
			2	A, B, C	114	355	0.321	112	116	0.3	0.6	13.801	B
		2	1	(A, B, C, D)	323			323	327	0.0	0.0	0.184	A
	Exit	1	1		302			302	305	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	771	969	0.796	776	774	1.7	3.5	17.010	C
			2	C, D	168	978	0.172	167	165	0.2	0.3	4.389	A
		2	1	(A, B, C, D)	940			939	947	0.0	0.0	0.107	A
	Exit	1	1		652			652	658	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	486	558	0.872	485	475	1.5	2.9	19.526	C
			2	A, C, D	187	560	0.333	186	183	0.4	0.6	9.905	A
		2	1	(A, B, C, D)	684			673	665	0.6	4.3	17.174	C
	Exit	1	1		591			591	583	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	529	591	0.894	513	517	2.4	7.6	40.280	E
			2	A, B	378	605	0.625	382	379	1.1	1.5	15.859	C
	Exit	1	1		1321			1321	1312	0.0	0.0	0.000	A
		1	1	D	252	310	0.812	245	246	1.2	3.5	42.056	E

C - Water Eaton Road	Entry		2	A, B, C	144	308	0.469	143	140	0.6	0.9	20.919	C
		2	1	(A, B, C, D)	398			396	397	0.0	0.6	2.518	A
	Exit	1	1		371			371	376	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	916	935	0.979	902	901	3.5	12.9	41.040	E
		2	1	C, D	199	947	0.210	199	204	0.3	0.3	4.905	A
	Exit	1	1	(A, B, C, D)	1152			1115	1143	0.0	7.0	9.958	A
	Exit	1	1		773			773	774	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	485	554	0.877	484	485	2.9	2.9	20.916	C
		2	1	A, C, D	186	555	0.335	187	188	0.6	0.5	10.647	B
	Exit	1	1	(A, B, C, D)	677			671	672	4.3	5.3	26.213	D
B - B4034	Entry	1	1	C, D	520	590	0.882	531	545	7.6	6.6	51.000	F
	Exit	1	1	A, B	370	604	0.613	376	375	1.5	1.5	15.672	C
C - Water Eaton Road	Entry	1	1	D	255	305	0.838	256	255	3.5	3.9	53.753	F
		2	1	A, B, C	144	304	0.472	142	145	0.9	1.0	24.666	C
	Exit	1	1	(A, B, C, D)	400			399	401	0.6	1.0	6.658	A
D - B4034 Buckingham Road	Entry	1	1	A, B	918	937	0.981	916	926	12.9	14.5	54.318	F
		2	1	C, D	199	948	0.210	200	200	0.3	0.2	5.177	A
	Exit	1	1	(A, B, C, D)	1138			1118	1132	7.0	12.2	31.965	D
	Exit	1	1		804			804	814	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	402	594	0.676	401	423	2.9	1.7	17.129	C
		2	1	A, C, D	153	597	0.257	153	160	0.5	0.4	8.917	A
	Exit	1	1	(A, B, C, D)	550			555	577	5.3	0.7	11.655	B
B - B4034	Entry	1	1	C, D	428	610	0.702	427	462	6.6	2.4	26.417	D
	Exit	1	1	A, B	307	627	0.489	308	313	1.5	1.0	11.556	B
C - Water Eaton Road	Entry	1	1	D	211	361	0.586	217	228	3.9	1.2	33.637	D
		2	1	A, B, C	112	356	0.315	113	121	1.0	0.5	17.176	C
	Exit	1	1	(A, B, C, D)	323			323	336	1.0	0.0	2.347	A
D - B4034 Buckingham Road	Entry	1	1	A, B	782	971	0.806	801	855	14.5	5.3	37.942	E
		2	1	C, D	170	980	0.173	170	172	0.2	0.2	4.649	A
	Exit	1	1	(A, B, C, D)	935			952	990	12.2	1.7	18.195	C
	Exit	1	1		658			658	701	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	335	643	0.522	337	344	1.7	0.9	11.528	B
		2	1	A, C, D	126	647	0.196	128	130	0.4	0.2	7.436	A
	Exit	1	1	(A, B, C, D)	462			462	470	0.7	0.2	1.364	A
B - B4034	Entry	1	1	C, D	366	628	0.582	368	378	2.4	1.1	14.203	B
	Exit	1	1	A, B	260	646	0.403	260	261	1.0	0.6	9.834	A
C - Water Eaton Road	Entry	1	1	D	174	394	0.441	174	180	1.2	0.7	16.643	C
		2	1	A, B, C	97	393	0.247	96	99	0.5	0.3	12.683	B
	Exit	1	1	(A, B, C, D)	270			270	276	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	644	990	0.650	648	684	5.3	1.8	13.863	B
		2	1	C, D	139	1005	0.139	139	140	0.2	0.2	4.282	A
	Exit	1	1	(A, B, C, D)	781			784	810	1.7	0.0	1.366	A
	Exit	1	1		551			551	567	0.0	0.0	0.000	A

2033 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	250.19	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 - Sherwood Drive		ONE HOUR	✓	700	100.000
B - B4034		ONE HOUR	✓	947	100.000
C - Water Eaton Road		ONE HOUR	✓	417	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1248	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	74
	B - B4034	392	0	57	497
	C - Water Eaton Road	116	32	0	269
	D - B4034 Buckingham Road	116	918	212	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1
	D - B4034 Buckingham Road	0	2	1	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	117.55	28.5	F	648	972
B - B4034	95.93	29.9	F	865	1297
C - Water Eaton Road	201.16	28.1	F	384	576
D - B4034 Buckingham Road	459.53	144.4	F	1144	1716

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	536	134	877	532	528	467	0.0	2.4	14.334	B
B - B4034	709	177	312	713	719	1097	0.0	3.3	15.331	C
C - Water Eaton Road	319	80	726	317	313	299	0.0	1.7	17.808	C
D - B4034 Buckingham Road	940	235	403	941	943	641	0.0	4.3	15.320	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	632	158	1010	631	623	560	2.4	5.2	25.806	D
B - B4034	846	211	372	841	856	1270	3.3	6.6	24.380	C
C - Water Eaton Road	382	96	859	377	373	353	1.7	4.0	31.074	D
D - B4034 Buckingham Road	1111	278	487	1083	1092	749	4.3	15.1	37.252	E

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	774	193	1039	740	727	648	5.2	18.7	66.492	F
B - B4034	1034	259	399	1008	1016	1380	6.6	20.0	57.357	F
C - Water Eaton Road	452	113	1030	400	416	378	4.0	16.1	92.020	F
D - B4034 Buckingham Road	1375	344	576	1111	1130	854	15.1	79.1	155.324	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	777	194	1041	736	743	653	18.7	28.6	117.545	F
B - B4034	1036	259	394	1017	1032	1383	20.0	29.6	95.930	F
C - Water Eaton Road	458	114	1037	411	417	374	16.1	28.1	201.162	F
D - B4034 Buckingham Road	1374	343	579	1115	1128	869	79.1	144.3	365.517	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	636	159	1064	664	700	576	28.6	13.7	96.777	F
B - B4034	850	213	377	885	926	1350	29.6	15.6	79.421	F
C - Water Eaton Road	381	95	905	435	434	357	28.1	15.9	180.225	F
D - B4034 Buckingham Road	1125	281	505	1135	1142	835	144.3	141.9	459.530	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	532	133	1070	547	580	490	13.7	3.8	37.676	E
B - B4034	712	178	343	730	778	1274	15.6	4.1	32.719	D
C - Water Eaton Road	312	78	748	336	369	326	15.9	2.9	61.372	F
D - B4034 Buckingham Road	937	234	407	1153	1172	677	141.9	86.7	343.796	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	382	603	0.635	380	379	0.0	1.6	13.372	B
			2	A, C, D	153	606	0.252	152	149	0.0	0.4	7.906	A
	Exit	1	1	(A, B, C, D)	536			535	536	0.0	0.4	2.476	A
B - B4034	Entry	1	1	C, D	419	614	0.682	422	426	0.0	2.4	18.592	C
			2	A, B	291	631	0.460	291	293	0.0	0.9	10.677	B
	Exit	1	1		1097			1097	1097	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	207	367	0.565	206	201	0.0	1.3	20.034	C
			2	A, B, C	111	365	0.304	111	112	0.0	0.3	13.657	B
	Exit	1	1	(A, B, C, D)	319			318	320	0.0	0.0	0.012	A
D - B4034 Buckingham Road	Entry	1	1	A, B	779	978	0.797	781	780	0.0	3.9	17.255	C
			2	C, D	160	985	0.162	160	163	0.0	0.2	4.400	A
	Exit	1	1	(A, B, C, D)	940			939	959	0.0	0.1	0.237	A
	Exit	1	1		641			641	639	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	450	564	0.798	451	447	1.6	2.3	17.709	C
			2	A, C, D	181	568	0.319	180	176	0.4	0.6	9.623	A
	Exit	1	1	(A, B, C, D)	632			632	626	0.4	2.3	10.305	B
B - B4034	Entry	1	1	C, D	497	595	0.837	493	503	2.4	5.1	31.935	D
			2	A, B	348	611	0.570	349	352	0.9	1.4	13.703	B
	Exit	1	1		1270			1270	1275	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	240	325	0.739	238	240	1.3	2.9	36.220	E
			2	A, B, C	140	323	0.432	139	133	0.3	0.8	18.602	C
	Exit	1	1	(A, B, C, D)	382			380	381	0.0	0.3	0.970	A
D - B4034 Buckingham Road	Entry	1	1	A, B	905	948	0.955	892	899	3.9	11.3	36.463	E
			2	C, D	192	958	0.200	191	193	0.2	0.2	4.691	A
	Exit	1	1	(A, B, C, D)	1111			1097	1122	0.1	3.6	5.904	A
	Exit	1	1		749			749	759	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	531	557	0.954	532	524	2.3	3.4	22.534	C
			2	A, C, D	209	559	0.373	208	203	0.6	0.7	11.481	B
	Exit	1	1	(A, B, C, D)	774			739	731	2.3	14.7	46.909	E
B - B4034	Entry	1	1	C, D	607	586	1.039	576	581	5.1	17.5	83.084	F
			2	A, B	428	601	0.711	432	435	1.4	2.4	21.277	C
	Exit	1	1		1380			1380	1388	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	271	273	0.994	257	263	2.9	8.0	81.589	F
			2	A, B, C	144	271	0.530	144	153	0.8	1.3	30.196	D
	Exit	1	1	(A, B, C, D)	452			414	439	0.3	6.8	26.547	D
D - B4034 Buckingham Road	Entry	1	1	A, B	922	918	1.004	920	931	11.3	19.5	70.211	F
			2	C, D	191	929	0.205	191	199	0.2	0.3	5.446	A
	Exit	1	1	(A, B, C, D)	1375			1113	1164	3.6	59.2	95.405	F
	Exit	1	1		854			854	861	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	531	556	0.955	531	537	3.4	3.6	23.947	C
			2	A, C, D	205	558	0.368	205	205	0.7	0.7	11.611	B
	Exit	1	1	(A, B, C, D)	777			736	744	14.7	24.3	96.996	F
B - B4034	Entry	1	1	C, D	609	586	1.037	583	596	17.5	27.3	148.067	F
			2	A, B	427	602	0.709	434	436	2.4	2.2	21.650	C
	Exit	1	1		1383			1383	1401	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	269	270	0.993	266	270	8.0	8.7	112.405	F
			2	A, B, C	145	268	0.540	145	146	1.3	1.4	35.777	E

		2	1	(A, B, C, D)	458			413	420	6.8	18.0	114.851	F
	Exit	1	1		374			374	379	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	925	918	1.009	926	936	19.5	19.6	76.685	F
			2	C, D	189	929	0.204	189	191	0.3	0.3	5.343	A
	Exit	1	1	(A, B, C, D)	1374			1114	1128	59.2	124.3	301.012	F
					869			869	885	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	483	550	0.878	481	507	3.6	3.1	22.647	C
			2	A, C, D	181	552	0.329	183	193	0.7	0.4	11.153	B
		2	1	(A, B, C, D)	636			664	697	24.3	10.2	77.372	F
	Exit	1	1		576			576	579	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	499	592	0.843	533	571	27.3	14.3	124.474	F
			2	A, B	351	607	0.578	351	356	2.2	1.3	15.095	C
C - Water Eaton Road	Entry	1	1	D	266	311	0.856	281	282	8.7	6.1	96.133	F
			2	A, B, C	150	311	0.484	154	152	1.4	1.1	32.220	D
		2	1	(A, B, C, D)	381			417	422	18.0	8.7	109.989	F
	Exit	1	1		357			357	372	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	941	941	0.999	941	947	19.6	19.6	75.697	F
			2	C, D	194	952	0.203	194	194	0.3	0.3	5.259	A
		2	1	(A, B, C, D)	1125			1135	1141	124.3	122.1	397.048	F
	Exit	1	1		835			835	868	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	392	547	0.718	394	422	3.1	1.9	18.564	C
			2	A, C, D	152	549	0.277	153	158	0.4	0.4	9.820	A
		2	1	(A, B, C, D)	532			545	575	10.2	1.5	21.922	C
	Exit	1	1		490			490	502	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	420	604	0.696	439	482	14.3	3.2	47.707	E
			2	A, B	292	619	0.471	291	296	1.3	0.8	11.338	B
C - Water Eaton Road	Entry	1	1	D	213	361	0.589	220	244	6.1	1.9	50.794	F
			2	A, B, C	117	360	0.325	116	125	1.1	0.6	19.037	C
		2	1	(A, B, C, D)	312			330	350	8.7	0.4	26.116	D
	Exit	1	1		326			326	344	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	953	975	0.977	963	976	19.6	18.2	71.597	F
			2	C, D	190	986	0.193	190	196	0.3	0.3	4.979	A
	Exit	1	1	(A, B, C, D)	937			1143	1166	122.1	68.3	284.277	F
	Exit	1	1		677			677	736	0.0	0.0	0.000	A

2033 Base + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	407.47	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 - Sherwood Drive		ONE HOUR	✓	731	100.000
B - B4034		ONE HOUR	✓	983	100.000
C - Water Eaton Road		ONE HOUR	✓	430	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1361	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	105
	B - B4034	392	0	57	533
	C - Water Eaton Road	116	32	0	282
	D - B4034 Buckingham Road	154	984	221	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4
	C - Water Eaton Road	1	4	0	1

D - B4034 Buckingham Road	0	2	1	0
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Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	101.43	25.0	F	668	1001
B - B4034	168.06	51.9	F	901	1352
C - Water Eaton Road	315.81	40.4	F	395	593
D - B4034 Buckingham Road	773.83	255.6	F	1251	1877

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	552	138	926	547	549	498	0.0	2.5	15.299	C
B - B4034	747	187	332	743	754	1142	0.0	4.0	17.014	C
C - Water Eaton Road	324	81	781	324	320	295	0.0	2.1	21.776	C
D - B4034 Buckingham Road	1027	257	407	1018	1014	698	0.0	7.8	22.706	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	655	164	1029	648	650	580	2.5	5.3	25.916	D
B - B4034	881	220	392	870	881	1285	4.0	9.6	31.485	D
C - Water Eaton Road	385	96	914	381	377	348	2.1	5.0	39.248	E
D - B4034 Buckingham Road	1231	308	481	1129	1133	815	7.8	35.0	72.683	F

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	791	198	1017	777	757	662	5.3	17.8	65.895	F
B - B4034	1081	270	428	1006	1016	1366	9.6	30.0	79.818	F
C - Water Eaton Road	472	118	1061	394	410	373	5.0	21.7	123.658	F
D - B4034 Buckingham Road	1493	373	569	1110	1126	885	35.0	131.4	275.175	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	799	200	996	774	784	663	17.8	24.9	101.427	F
B - B4034	1095	274	420	999	1028	1350	30.0	51.4	156.327	F
C - Water Eaton Road	471	118	1056	405	405	363	21.7	40.4	294.507	F
D - B4034 Buckingham Road	1503	376	567	1091	1109	893	131.4	233.8	596.303	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	655	164	1042	683	719	595	24.9	10.8	79.791	F
B - B4034	879	220	403	918	961	1322	51.4	38.7	168.060	F
C - Water Eaton Road	392	98	958	429	423	363	40.4	32.7	315.809	F
D - B4034 Buckingham Road	1221	305	494	1142	1152	893	233.8	255.3	773.832	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	551	138	1056	556	585	520	10.8	3.3	29.169	D
B - B4034	725	181	361	797	854	1251	38.7	14.7	90.439	F
C - Water Eaton Road	328	82	829	389	413	330	32.7	11.8	153.321	F
D - B4034 Buckingham Road	1028	257	417	1159	1164	801	255.3	224.4	698.855	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	382	587	0.650	380	380	0.0	1.6	13.867	B
			2	A, C, D	167	591	0.282	168	170	0.0	0.4	8.476	A
		2	1	(A, B, C, D)	552			549	557	0.0	0.5	3.057	A
	Exit	1	1		498			498	498	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	450	606	0.743	447	454	0.0	3.1	21.212	C
		2	1	A, B	296	625	0.475	297	300	0.0	0.9	10.733	B
	Exit	1	1		1142			1142	1137	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	215	351	0.613	214	210	0.0	1.6	25.045	D
			2	A, B, C	110	347	0.316	110	110	0.0	0.4	14.942	B
		2	1	(A, B, C, D)	324			324	328	0.0	0.0	0.160	A
	Exit	1	1		295			295	301	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	860	975	0.882	853	846	0.0	6.9	24.780	C
			2	C, D	164	989	0.166	164	168	0.0	0.2	4.476	A
	2	1	(A, B, C, D)	1027			1024	1043	0.0	0.7	1.127	A	
	Exit	1	1		698			698	700	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	446	560	0.797	445	447	1.6	2.3	17.927	C
			2	A, C, D	203	563	0.361	203	203	0.4	0.6	10.677	B
		2	1	(A, B, C, D)	655			650	653	0.5	2.4	10.205	B
	Exit	1	1		580			580	583	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	534	587	0.911	520	530	3.1	8.0	42.638	E
		2	1	A, B	347	605	0.573	349	351	0.9	1.5	14.627	B
	Exit	1	1		1285			1285	1294	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	250	309	0.810	250	242	1.6	3.7	46.105	E
			2	A, B, C	133	307	0.432	131	135	0.4	0.9	20.655	C
		2	1	(A, B, C, D)	385			383	387	0.0	0.4	1.861	A
	Exit	1	1		348			348	350	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	958	950	1.008	939	943	6.9	17.2	53.091	F
			2	C, D	188	964	0.196	189	190	0.2	0.3	4.872	A
	2	1	(A, B, C, D)	1231			1147	1175	0.7	17.5	26.560	D	
	Exit	1	1		815			815	814	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	536	563	0.951	534	521	2.3	3.4	22.180	C
			2	A, C, D	245	566	0.433	243	236	0.6	0.9	12.337	B
		2	1	(A, B, C, D)	791			781	763	2.4	13.4	46.699	E
	Exit	1	1		662			662	666	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	651	575	1.133	578	592	8.0	27.4	118.752	F
		2	1	A, B	430	591	0.727	428	425	1.5	2.6	20.387	C
	Exit	1	1		1366			1366	1371	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	266	263	1.010	252	261	3.7	8.8	94.904	F
			2	A, B, C	141	262	0.537	142	149	0.9	1.3	31.867	D
		2	1	(A, B, C, D)	472			407	433	0.4	11.5	48.022	E
	Exit	1	1		373			373	371	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	926	923	1.003	926	943	17.2	19.4	74.882	F
			2	C, D	184	931	0.198	185	183	0.3	0.2	5.290	A
	2	1	(A, B, C, D)	1493			1110	1136	17.5	111.5	210.898	F	
	Exit	1	1		885			885	902	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	533	569	0.936	532	541	3.4	3.6	23.197	C
			2	A, C, D	241	573	0.422	242	243	0.9	0.8	12.484	B
		2	1	(A, B, C, D)	799			774	784	13.4	20.6	81.492	F

	Exit	1	1		663			663	668	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	662	578	1.144	569	592	27.4	48.7	244.649	F
			2	A, B	433	594	0.728	430	435	2.6	2.8	22.119	C
	Exit	1	1		1350			1350	1379	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	268	265	1.008	267	265	8.8	9.5	125.540	F
			2	A, B, C	141	263	0.535	137	140	1.3	1.7	38.969	E
		2	1	(A, B, C, D)	471			408	409	11.5	29.3	197.979	F
	Exit	1	1		363			363	365	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	913	923	0.990	914	932	19.4	19.6	77.166	F
			2	C, D	178	931	0.191	178	177	0.2	0.4	5.313	A
		2	1	(A, B, C, D)	1503			1091	1109	111.5	213.8	532.155	F
	Exit	1	1		893			893	913	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	469	557	0.843	472	499	3.6	2.7	22.195	C
			2	A, C, D	211	559	0.377	211	221	0.8	0.6	11.604	B
		2	1	(A, B, C, D)	655			680	715	20.6	7.6	61.033	F
	Exit	1	1		595			595	606	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	526	582	0.901	569	596	48.7	37.2	270.987	F
			2	A, B	353	599	0.589	350	365	2.8	1.5	15.464	C
C - Water Eaton Road	Entry	1	1	D	280	295	0.952	284	278	9.5	8.1	114.236	F
			2	A, B, C	143	292	0.490	145	145	1.7	1.2	34.040	D
		2	1	(A, B, C, D)	392			423	416	29.3	23.4	233.218	F
	Exit	1	1		363			363	369	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	951	947	1.005	951	963	19.6	19.7	74.544	F
			2	C, D	191	956	0.199	191	189	0.4	0.2	5.289	A
		2	1	(A, B, C, D)	1221			1142	1151	213.8	235.4	712.571	F
	Exit	1	1		893			893	915	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	387	551	0.702	387	406	2.7	1.8	17.491	C
			2	A, C, D	169	555	0.304	169	179	0.6	0.4	10.324	B
		2	1	(A, B, C, D)	551			556	580	7.6	1.2	14.176	B
	Exit	1	1		520			520	536	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	441	600	0.733	511	554	37.2	13.8	146.193	F
			2	A, B	285	613	0.463	286	300	1.5	0.9	11.553	B
C - Water Eaton Road	Entry	1	1	D	242	335	0.723	258	274	8.1	4.5	83.447	F
			2	A, B, C	129	331	0.389	131	139	1.2	0.7	26.608	D
		2	1	(A, B, C, D)	328			372	396	23.4	6.6	97.943	F
	Exit	1	1		330			330	341	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	967	971	0.996	967	975	19.7	19.7	73.432	F
			2	C, D	191	981	0.195	192	190	0.2	0.3	5.258	A
	Exit	1	1	(A, B, C, D)	1028			1158	1165	235.4	204.5	651.115	F
D - B4034 Buckingham Road	Exit	1	1		801			801	856	0.0	0.0	0.000	A

2033 Base + CD + D with TP, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	392.56	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 - Sherwood Drive		ONE HOUR	✓	728	100.000
B - B4034		ONE HOUR	✓	978	100.000
C - Water Eaton Road		ONE HOUR	✓	429	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1345	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	101
	B - B4034	392	0	57	529
	C - Water Eaton Road	116	32	0	281
	D - B4034 Buckingham Road	149	974	220	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4

C - Water Eaton Road	1	4	0	1
D - B4034 Buckingham Road	0	2	1	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	110.35	26.1	F	669	1004
B - B4034	152.08	45.7	F	900	1350
C - Water Eaton Road	333.33	42.7	F	395	593
D - B4034 Buckingham Road	742.00	243.6	F	1233	1850

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	544	136	932	542	540	494	0.0	2.5	14.574	B
B - B4034	737	184	332	736	749	1142	0.0	3.9	17.392	C
C - Water Eaton Road	330	83	766	330	325	302	0.0	2.0	21.888	C
D - B4034 Buckingham Road	1035	259	408	1019	1007	688	0.0	6.9	19.230	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	664	166	1023	653	649	574	2.5	5.9	26.815	D
B - B4034	884	221	393	865	879	1283	3.9	9.9	32.986	D
C - Water Eaton Road	390	97	904	381	378	353	2.0	5.1	38.283	E
D - B4034 Buckingham Road	1203	301	479	1117	1127	806	6.9	30.4	63.484	F

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	796	199	1014	763	752	667	5.9	19.3	70.348	F
B - B4034	1076	269	414	996	1020	1364	9.9	29.9	78.383	F
C - Water Eaton Road	466	117	1048	402	406	363	5.1	22.9	137.884	F
D - B4034 Buckingham Road	1474	369	577	1104	1122	873	30.4	123.8	254.141	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	805	201	1013	781	783	670	19.3	26.1	110.347	F
B - B4034	1085	271	421	1019	1042	1373	29.9	45.3	141.899	F
C - Water Eaton Road	473	118	1072	399	401	367	22.9	42.7	308.288	F
D - B4034 Buckingham Road	1483	371	578	1105	1117	893	123.8	221.2	563.752	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	654	164	1017	677	713	597	26.1	12.7	86.339	F
B - B4034	891	223	380	929	953	1315	45.3	34.8	152.082	F
C - Water Eaton Road	381	95	967	418	424	341	42.7	34.3	333.332	F
D - B4034 Buckingham Road	1201	300	503	1111	1138	883	221.2	243.7	741.997	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	552	138	1050	558	593	518	12.7	3.5	33.369	D
B - B4034	728	182	355	792	842	1253	34.8	13.5	81.589	F
C - Water Eaton Road	329	82	822	397	416	326	34.3	11.9	156.043	F
D - B4034 Buckingham Road	1003	251	418	1150	1169	800	243.7	207.4	648.233	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	379	586	0.647	379	373	0.0	1.5	13.458	B
			2	A, C, D	164	591	0.277	163	168	0.0	0.4	8.622	A
	Exit	1	1	(A, B, C, D)	544			543	548	0.0	0.6	2.581	A
B - B4034	Entry	1	1	C, D	441	606	0.728	440	451	0.0	3.0	21.535	C
			2	A, B	297	622	0.477	296	298	0.0	1.0	11.191	B
	Exit	1	1		1142			1142	1127	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	218	355	0.616	218	211	0.0	1.6	25.201	D
			2	A, B, C	112	352	0.317	112	114	0.0	0.4	15.066	C
	Exit	1	1	(A, B, C, D)	330			330	333	0.0	0.0	0.195	A
D - B4034 Buckingham Road	Entry	1	1	A, B	862	974	0.885	850	839	0.0	6.4	21.689	C
			2	C, D	170	983	0.173	169	169	0.0	0.2	4.474	A
	Exit	1	1	(A, B, C, D)	1035			1032	1034	0.0	0.3	0.342	A
	Exit	1	1		688			688	694	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	451	561	0.804	450	449	1.5	2.3	18.189	C
			2	A, C, D	204	564	0.362	204	200	0.4	0.5	10.068	B
	Exit	1	1	(A, B, C, D)	664			655	652	0.6	3.1	11.035	B
B - B4034	Entry	1	1	C, D	537	585	0.917	519	528	3.0	8.5	45.654	E
			2	A, B	347	604	0.575	346	350	1.0	1.4	13.701	B
	Exit	1	1		1283			1283	1293	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	251	312	0.805	248	244	1.6	3.7	43.407	E
			2	A, B, C	134	308	0.435	133	134	0.4	0.8	20.104	C
	Exit	1	1	(A, B, C, D)	390			385	388	0.0	0.7	2.392	A
D - B4034 Buckingham Road	Entry	1	1	A, B	941	951	0.989	928	937	6.4	16.3	50.504	F
			2	C, D	190	961	0.198	189	190	0.2	0.3	4.847	A
	Exit	1	1	(A, B, C, D)	1203			1131	1168	0.3	13.8	19.548	C
	Exit	1	1		806			806	810	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	529	562	0.940	528	524	2.3	3.4	22.512	C
			2	A, C, D	234	567	0.411	235	228	0.5	0.7	11.889	B
	Exit	1	1	(A, B, C, D)	796			763	758	3.1	15.1	50.959	F
B - B4034	Entry	1	1	C, D	640	578	1.108	562	586	8.5	26.9	117.379	F
			2	A, B	436	595	0.733	434	434	1.4	3.0	21.409	C
	Exit	1	1		1364			1364	1371	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	268	267	1.004	260	259	3.7	8.5	94.220	F
			2	A, B, C	142	265	0.536	143	147	0.8	1.3	33.317	D
	Exit	1	1	(A, B, C, D)	466			410	427	0.7	13.1	61.815	F
D - B4034 Buckingham Road	Entry	1	1	A, B	925	920	1.006	925	938	16.3	19.6	74.479	F
			2	C, D	178	926	0.193	179	184	0.3	0.2	5.326	A
	Exit	1	1	(A, B, C, D)	1474			1104	1135	13.8	103.9	190.284	F
	Exit	1	1		873			873	889	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	542	564	0.962	543	544	3.4	3.4	23.088	C
			2	A, C, D	239	568	0.421	238	238	0.7	0.9	12.758	B
	Exit	1	1	(A, B, C, D)	805			781	783	15.1	21.7	90.414	F

	Exit	1	1		670			670	672	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	644	578	1.113	578	601	26.9	42.7	222.878	F
			2	A, B	441	594	0.742	441	441	3.0	2.6	22.327	C
	Exit	1	1		1373			1373	1391	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	264	260	1.015	262	260	8.5	9.3	124.840	F
			2	A, B, C	139	259	0.538	137	141	1.3	1.6	37.313	E
		2	1	(A, B, C, D)	473			403	405	13.1	31.7	213.951	F
	Exit	1	1		367			367	368	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	921	918	1.004	922	937	19.6	19.5	76.578	F
			2	C, D	184	927	0.199	183	180	0.2	0.3	5.157	A
		2	1	(A, B, C, D)	1483			1105	1117	103.9	201.3	499.529	F
	Exit	1	1		893			893	912	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	474	563	0.844	476	500	3.4	2.7	21.770	C
			2	A, C, D	201	566	0.355	201	213	0.9	0.7	11.509	B
		2	1	(A, B, C, D)	654			675	709	21.7	9.4	67.812	F
	Exit	1	1		597			597	604	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	532	589	0.899	571	589	42.7	33.4	243.816	F
			2	A, B	360	607	0.593	358	364	2.6	1.4	15.178	C
C - Water Eaton Road	Entry	1	1	D	272	292	0.932	273	277	9.3	8.3	115.208	F
			2	A, B, C	143	289	0.492	145	147	1.6	1.2	36.835	E
	Exit	1	1		341			414	418	31.7	24.8	248.726	F
D - B4034 Buckingham Road	Entry	1	1	A, B	932	943	0.989	933	954	19.5	19.6	75.336	F
			2	C, D	178	952	0.187	178	184	0.3	0.3	5.155	A
		2	1	(A, B, C, D)	1201			1110	1138	201.3	223.9	680.526	F
	Exit	1	1		883			883	910	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	390	553	0.705	389	411	2.7	1.8	17.557	C
			2	A, C, D	169	555	0.305	169	182	0.7	0.5	10.261	B
		2	1	(A, B, C, D)	552			559	589	9.4	1.2	18.350	C
	Exit	1	1		518			518	530	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	441	599	0.735	506	547	33.4	12.6	129.445	F
			2	A, B	287	618	0.464	287	295	1.4	0.8	11.453	B
C - Water Eaton Road	Entry	1	1	D	251	337	0.743	265	278	8.3	4.3	81.030	F
			2	A, B, C	132	336	0.395	132	138	1.2	0.9	26.392	D
	Exit	1	1		329			383	399	24.8	6.7	103.204	F
D - B4034 Buckingham Road	Entry	1	1	A, B	962	972	0.991	964	979	19.6	19.6	72.996	F
			2	C, D	186	984	0.189	186	190	0.3	0.2	5.102	A
		2	1	(A, B, C, D)	1003			1149	1169	223.9	187.6	598.833	F
	Exit	1	1		800			800	855	0.0	0.0	0.000	A

2033 Base + CD + D - ST, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	501.55	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 - Sherwood Drive		ONE HOUR	✓	738	100.000
B - B4034		ONE HOUR	✓	1002	100.000
C - Water Eaton Road		ONE HOUR	✓	434	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1425	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	112
	B - B4034	392	0	57	552
	C - Water Eaton Road	116	32	0	286
	D - B4034 Buckingham Road	167	1030	225	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4

C - Water Eaton Road	1	4	0	1
D - B4034 Buckingham Road	0	2	1	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	103.57	25.0	F	673	1009
B - B4034	212.98	60.9	F	915	1373
C - Water Eaton Road	376.45	47.4	F	399	599
D - B4034 Buckingham Road	948.63	323.9	F	1307	1961

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	549	137	960	556	549	506	0.0	2.2	15.110	C
B - B4034	758	190	344	760	764	1172	0.0	4.0	18.423	C
C - Water Eaton Road	328	82	798	328	323	306	0.0	2.3	22.854	C
D - B4034 Buckingham Road	1063	266	408	1058	1048	718	0.0	9.1	25.318	D

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	659	165	1028	653	650	594	2.2	5.9	26.846	D
B - B4034	891	223	390	885	894	1290	4.0	9.9	35.230	E
C - Water Eaton Road	398	99	938	393	383	336	2.3	6.0	45.560	E
D - B4034 Buckingham Road	1294	324	487	1134	1144	844	9.1	49.3	94.783	F

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	803	201	996	774	764	671	5.9	17.9	64.762	F
B - B4034	1105	276	419	1015	1025	1351	9.9	35.9	92.869	F
C - Water Eaton Road	479	120	1079	390	401	355	6.0	25.4	149.360	F
D - B4034 Buckingham Road	1562	390	570	1097	1122	899	49.3	163.9	350.025	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	807	202	1000	791	794	665	17.9	24.9	103.573	F
B - B4034	1095	274	424	1001	1033	1367	35.9	60.4	187.275	F
C - Water Eaton Road	481	120	1066	401	395	359	25.4	47.4	347.070	F
D - B4034 Buckingham Road	1561	390	568	1097	1108	899	163.9	282.2	731.867	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	666	166	1017	697	727	596	24.9	10.9	78.010	F
B - B4034	895	224	398	928	965	1316	60.4	51.7	212.979	F
C - Water Eaton Road	392	98	984	427	426	343	47.4	39.5	376.448	F
D - B4034 Buckingham Road	1286	322	498	1115	1134	914	282.2	323.9	948.632	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	552	138	1031	562	592	536	10.9	3.1	29.913	D
B - B4034	748	187	357	838	888	1235	51.7	24.5	125.796	F
C - Water Eaton Road	319	80	874	399	416	322	39.5	18.2	204.236	F
D - B4034 Buckingham Road	1077	269	431	1136	1152	843	323.9	310.1	814.638	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	377	579	0.651	379	375	0.0	1.4	13.736	B
			2	A, C, D	178	583	0.305	177	174	0.0	0.5	8.649	A
		2	1	(A, B, C, D)	549			554	557	0.0	0.3	2.968	A
	Exit	1	1		506			506	501	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	463	602	0.769	464	470	0.0	3.2	23.371	C
			2	A, B	295	621	0.474	296	294	0.0	0.8	10.631	B
	Exit	1	1		1172			1172	1161	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	216	344	0.627	215	210	0.0	1.8	26.629	D
			2	A, B, C	113	344	0.328	113	112	0.0	0.5	15.240	C
		2	1	(A, B, C, D)	328			328	332	0.0	0.0	0.109	A
	Exit	1	1		306			306	307	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	895	975	0.918	891	880	0.0	7.9	26.956	D
			2	C, D	167	985	0.169	167	169	0.0	0.2	4.498	A
		2	1	(A, B, C, D)	1063			1061	1081	0.0	1.0	1.745	A
	Exit	1	1		718			718	716	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	449	559	0.803	447	440	1.4	2.5	18.392	C
			2	A, C, D	205	563	0.364	206	210	0.5	0.5	10.644	B
		2	1	(A, B, C, D)	659			653	655	0.3	2.9	10.875	B
	Exit	1	1		594			594	590	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	538	587	0.915	531	542	3.2	8.6	48.674	E
			2	A, B	353	603	0.586	353	352	0.8	1.3	14.356	B
	Exit	1	1		1290			1290	1291	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	261	300	0.870	259	249	1.8	4.3	50.643	F
			2	A, B, C	136	299	0.453	134	134	0.5	0.8	20.628	C
		2	1	(A, B, C, D)	398			396	394	0.0	0.9	4.737	A
	Exit	1	1		336			336	348	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	957	948	1.008	950	954	7.9	18.7	59.847	F
			2	C, D	185	959	0.192	184	190	0.2	0.3	4.967	A
		2	1	(A, B, C, D)	1294			1141	1188	1.0	30.3	42.677	E
	Exit	1	1		844			844	843	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	529	568	0.931	529	522	2.5	3.3	21.897	C
			2	A, C, D	247	572	0.431	245	242	0.5	1.0	12.490	B
		2	1	(A, B, C, D)	803			775	769	2.9	13.6	45.738	E
	Exit	1	1		671			671	669	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	672	578	1.165	581	595	8.6	33.4	138.923	F
			2	A, B	432	595	0.727	434	429	1.3	2.5	20.828	C
	Exit	1	1		1351			1351	1369	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	263	258	1.019	254	258	4.3	8.9	102.469	F
			2	A, B, C	139	256	0.541	136	144	0.8	1.6	34.509	D
		2	1	(A, B, C, D)	479			402	424	0.9	14.8	66.768	F
	Exit	1	1		355			355	361	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	924	921	1.003	923	943	18.7	19.6	75.786	F
			2	C, D	174	932	0.187	174	179	0.3	0.3	5.293	A
		2	1	(A, B, C, D)	1562			1098	1126	30.3	144.0	285.115	F
	Exit	1	1		899			899	913	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	544	568	0.958	543	544	3.3	3.4	22.611	C
			2	A, C, D	248	572	0.434	248	251	1.0	0.9	12.415	B
		2	1	(A, B, C, D)	807			792	795	13.6	20.6	84.164	F

	Exit	1	1		665			665	670	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	665	575	1.152	570	597	33.4	57.5	292.589	F
			2	A, B	430	593	0.725	431	436	2.5	2.8	24.114	C
	Exit	1	1		1367			1367	1377	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	267	261	1.022	264	258	8.9	9.6	130.011	F
			2	A, B, C	137	259	0.528	137	137	1.6	1.5	41.892	E
		2	1	(A, B, C, D)	481			404	397	14.8	36.3	248.322	F
	Exit	1	1		359			359	364	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	920	922	0.998	921	930	19.6	19.7	77.254	F
			2	C, D	177	930	0.190	176	178	0.3	0.3	5.225	A
		2	1	(A, B, C, D)	1561			1097	1108	144.0	262.3	667.316	F
	Exit	1	1		899			899	920	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	472	561	0.840	473	498	3.4	2.7	21.374	C
			2	A, C, D	225	566	0.398	224	229	0.9	0.8	11.757	B
		2	1	(A, B, C, D)	666			697	724	20.6	7.3	59.854	F
	Exit	1	1		596			596	610	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	543	584	0.929	579	601	57.5	50.1	340.397	F
			2	A, B	352	602	0.585	349	363	2.8	1.5	15.539	C
C - Water Eaton Road	Entry	1	1	D	275	287	0.958	279	279	9.6	8.7	120.613	F
			2	A, B, C	145	284	0.510	148	147	1.5	1.2	37.090	E
	Exit	1	1		392			419	421	36.3	29.5	288.753	F
D - B4034 Buckingham Road	Entry	1	1	A, B	942	944	0.997	941	957	19.7	19.7	74.933	F
			2	C, D	174	954	0.182	174	178	0.3	0.2	5.183	A
		2	1	(A, B, C, D)	1286			1115	1134	262.3	304.0	892.948	F
	Exit	1	1		914			914	933	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	384	559	0.686	385	404	2.7	1.6	17.320	C
			2	A, C, D	176	563	0.314	176	188	0.8	0.5	10.331	B
		2	1	(A, B, C, D)	552			560	587	7.3	1.0	15.092	C
	Exit	1	1		536			536	543	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	451	598	0.756	542	584	50.1	23.5	208.928	F
			2	A, B	297	616	0.483	296	304	1.5	1.0	11.694	B
C - Water Eaton Road	Entry	1	1	D	251	321	0.783	265	277	8.7	5.7	94.456	F
			2	A, B, C	132	318	0.414	134	139	1.2	0.9	28.849	D
	Exit	1	1		319			382	402	29.5	11.7	142.217	F
D - B4034 Buckingham Road	Entry	1	1	A, B	956	968	0.987	955	970	19.7	19.7	73.893	F
			2	C, D	180	979	0.184	181	182	0.2	0.2	4.893	A
		2	1	(A, B, C, D)	1077			1136	1153	304.0	290.2	787.942	F
	Exit	1	1		843			843	895	0.0	0.0	0.000	A

2033 Base + CD + SP (ST), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	504.20	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
D21	2033 Base + CD + SP (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 - Sherwood Drive		ONE HOUR	✓	738	100.000
B - B4034		ONE HOUR	✓	1002	100.000
C - Water Eaton Road		ONE HOUR	✓	434	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	1424	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	505	122	112
	B - B4034	392	0	57	552
	C - Water Eaton Road	116	32	0	286
	D - B4034 Buckingham Road	167	1030	225	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	1	0
	B - B4034	1	0	6	4

C - Water Eaton Road	1	4	0	1
D - B4034 Buckingham Road	0	2	1	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	99.78	25.6	F	677	1016
B - B4034	219.31	62.0	F	919	1378
C - Water Eaton Road	383.50	46.6	F	400	600
D - B4034 Buckingham Road	951.89	326.9	F	1309	1964

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	560	140	962	563	553	511	0.0	2.5	15.147	C
B - B4034	760	190	350	758	764	1174	0.0	4.2	18.833	C
C - Water Eaton Road	324	81	805	322	325	303	0.0	2.2	22.117	C
D - B4034 Buckingham Road	1083	271	408	1065	1051	720	0.0	9.3	24.711	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	655	164	1030	665	654	593	2.5	4.7	27.245	D
B - B4034	907	227	397	890	902	1298	4.2	10.8	36.293	E
C - Water Eaton Road	393	98	945	378	377	342	2.2	6.0	43.008	E
D - B4034 Buckingham Road	1280	320	492	1131	1141	831	9.3	48.1	96.696	F

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	805	201	1010	774	769	655	4.7	16.7	60.314	F
B - B4034	1096	274	430	1006	1023	1354	10.8	37.4	98.113	F
C - Water Eaton Road	480	120	1072	383	397	363	6.0	27.2	160.559	F
D - B4034 Buckingham Road	1571	393	559	1105	1119	895	48.1	166.0	353.590	F

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	820	205	998	784	787	661	16.7	25.6	99.777	F
B - B4034	1095	274	427	1007	1033	1355	37.4	61.5	190.643	F
C - Water Eaton Road	474	118	1076	399	399	358	27.2	46.6	352.321	F
D - B4034 Buckingham Road	1562	390	565	1094	1112	910	166.0	284.5	742.636	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	665	166	1018	692	732	598	25.6	10.9	78.745	F
B - B4034	905	226	402	938	961	1308	61.5	53.4	219.310	F
C - Water Eaton Road	394	98	987	423	419	353	46.6	41.3	383.496	F
D - B4034 Buckingham Road	1284	321	496	1119	1133	914	284.5	326.9	951.887	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	558	139	1061	561	595	534	10.9	3.7	29.936	D
B - B4034	749	187	367	846	891	1254	53.4	26.3	131.122	F
C - Water Eaton Road	333	83	885	402	423	329	41.3	19.2	203.958	F
D - B4034 Buckingham Road	1073	268	427	1168	1167	860	326.9	305.1	798.632	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	382	578	0.660	383	374	0.0	1.6	13.967	B
			2	A, C, D	180	582	0.309	180	179	0.0	0.5	8.821	A
		2	1	(A, B, C, D)	560			561	562	0.0	0.5	2.806	A
	Exit	1	1		511			511	510	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	465	601	0.774	461	466	0.0	3.3	23.667	C
			2	A, B	295	618	0.477	296	298	0.0	1.0	11.365	B
	Exit	1	1		1174			1174	1154	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	212	343	0.617	211	212	0.0	1.6	25.202	D
			2	A, B, C	111	340	0.328	111	113	0.0	0.5	15.164	C
		2	1	(A, B, C, D)	324			323	333	0.0	0.1	0.270	A
	Exit	1	1		303			303	308	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	906	977	0.927	895	879	0.0	8.1	26.752	D
			2	C, D	170	985	0.173	170	172	0.0	0.2	4.451	A
		2	1	(A, B, C, D)	1083			1076	1085	0.0	0.9	1.412	A
	Exit	1	1		720			720	721	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	446	558	0.800	448	445	1.6	2.2	17.977	C
			2	A, C, D	215	561	0.383	217	208	0.5	0.6	10.848	B
		2	1	(A, B, C, D)	655			662	657	0.5	2.0	11.519	B
	Exit	1	1		593			593	586	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	547	585	0.935	533	546	3.3	9.3	50.425	F
			2	A, B	361	603	0.599	357	356	1.0	1.5	14.469	B
	Exit	1	1		1298			1298	1302	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	253	299	0.847	243	246	1.6	4.2	47.674	E
			2	A, B, C	135	298	0.455	135	131	0.5	0.8	20.719	C
		2	1	(A, B, C, D)	393			389	389	0.1	1.0	3.998	A
	Exit	1	1		342			342	348	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	967	947	1.021	951	955	8.1	18.6	59.621	F
			2	C, D	181	956	0.189	181	186	0.2	0.3	5.035	A
		2	1	(A, B, C, D)	1280			1148	1184	0.9	29.2	44.562	E
	Exit	1	1		831			831	838	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	526	565	0.931	525	523	2.2	3.4	21.719	C
			2	A, C, D	248	569	0.436	249	246	0.6	0.8	12.190	B
		2	1	(A, B, C, D)	805			774	775	2.0	12.5	41.515	E
	Exit	1	1		655			655	667	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	669	573	1.166	578	594	9.3	34.7	147.410	F
			2	A, B	427	590	0.724	427	430	1.5	2.7	20.976	C
	Exit	1	1		1354			1354	1365	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	260	259	1.006	251	256	4.2	8.9	102.375	F
			2	A, B, C	135	258	0.523	132	140	0.8	1.6	33.834	D
		2	1	(A, B, C, D)	480			395	419	1.0	16.8	77.933	F
	Exit	1	1		363			363	363	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	925	925	0.999	924	940	18.6	19.5	76.041	F
			2	C, D	181	930	0.194	181	179	0.3	0.3	5.229	A
		2	1	(A, B, C, D)	1571			1105	1123	29.2	146.1	288.500	F
	Exit	1	1		895			895	912	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	536	567	0.944	535	539	3.4	3.5	22.897	C
			2	A, C, D	248	570	0.435	249	248	0.8	0.8	12.361	B
		2	1	(A, B, C, D)	820			784	787	12.5	21.3	80.146	F

	Exit	1	1		661			661	671	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	665	574	1.153	579	602	34.7	58.6	297.621	F
			2	A, B	430	592	0.726	428	432	2.7	2.9	22.005	C
	Exit	1	1		1355			1355	1372	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	264	258	1.019	262	261	8.9	9.6	128.614	F
			2	A, B, C	133	257	0.518	137	139	1.6	1.2	39.481	E
		2	1	(A, B, C, D)	474			397	400	16.8	35.9	255.382	F
	Exit	1	1		358			358	364	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	916	923	0.993	916	934	19.5	19.8	77.014	F
			2	C, D	178	932	0.192	178	178	0.3	0.3	5.301	A
		2	1	(A, B, C, D)	1562			1095	1112	146.1	264.6	678.247	F
	Exit	1	1		910			910	924	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	472	563	0.837	472	500	3.5	2.7	21.180	C
			2	A, C, D	219	566	0.387	219	232	0.8	0.7	11.993	B
		2	1	(A, B, C, D)	665			690	728	21.3	7.6	60.727	F
	Exit	1	1		598			598	602	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	548	584	0.940	582	597	58.6	52.0	350.226	F
			2	A, B	357	600	0.594	356	364	2.9	1.4	16.213	C
C - Water Eaton Road	Entry	1	1	D	280	286	0.981	283	279	9.6	8.9	118.934	F
			2	A, B, C	137	284	0.483	140	140	1.2	1.1	34.882	D
	Exit	1	1		394			417	416	35.9	31.4	295.752	F
D - B4034 Buckingham Road	Entry	1	1	A, B	937	945	0.991	937	949	19.8	19.7	75.513	F
			2	C, D	183	954	0.191	182	184	0.3	0.3	5.087	A
		2	1	(A, B, C, D)	1284			1119	1133	264.6	306.9	897.295	F
	Exit	1	1		914			914	929	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	382	550	0.696	383	412	2.7	1.8	17.639	C
			2	A, C, D	178	553	0.321	178	184	0.7	0.5	9.856	A
		2	1	(A, B, C, D)	558			560	591	7.6	1.4	14.997	B
	Exit	1	1		534			534	549	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	455	597	0.765	552	590	52.0	25.5	216.730	F
			2	A, B	294	611	0.481	295	301	1.4	0.9	11.380	B
C - Water Eaton Road	Entry	1	1	D	257	318	0.809	270	281	8.9	5.7	94.824	F
			2	A, B, C	132	316	0.417	132	142	1.1	1.0	30.426	D
	Exit	1	1		333			388	409	31.4	12.5	142.124	F
D - B4034 Buckingham Road	Entry	1	1	A, B	977	968	1.010	978	984	19.7	19.7	72.689	F
			2	C, D	189	977	0.194	189	182	0.3	0.2	5.044	A
		2	1	(A, B, C, D)	1073			1166	1166	306.9	285.3	769.479	F
	Exit	1	1		860			860	907	0.0	0.0	0.000	A

Junctions 9
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Report generation date: 28/01/2021 17:38:16

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

Summary of junction performance

	PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
[Lane Simulation] - 2020 Base					
A - Sherwood Drive	D2	7.4	37.34		E
B - B4034		35.5	85.06		F
C - Water Eaton Road		9.2	72.57		F
D - B4034 Buckingham Road		15.8	67.11		F
[Lane Simulation] - 2033 Base					
A - Sherwood Drive	D14	27.7	115.38		F
B - B4034		136.0	373.16		F
C - Water Eaton Road		42.6	289.06		F
D - B4034 Buckingham Road		79.9	344.51		F
[Lane Simulation] - 2033 Base + CD + D					
A - Sherwood Drive	D16	31.6	120.26		F
B - B4034		224.2	595.04		F
C - Water Eaton Road		55.2	397.92		F
D - B4034 Buckingham Road		146.0	647.15		F
[Lane Simulation] - 2033 Base + CD + D with TP					
A - Sherwood Drive	D18	30.1	120.83		F
B - B4034		206.9	554.01		F
C - Water Eaton Road		49.9	367.03		F
D - B4034 Buckingham Road		136.8	613.61		F
[Lane Simulation] - 2033 Base + CD + D - ST					
A - Sherwood Drive	D20	34.3	130.53		F
B - B4034		257.8	673.03		F
C - Water Eaton Road		58.6	466.43		F
D - B4034 Buckingham Road		172.7	747.73		F
[Lane Simulation] - 2033 Base + CD + SP (ST)					
A - Sherwood Drive	D22	33.8	131.77		F
B - B4034		260.7	684.60		F
C - Water Eaton Road		55.0	417.77		F
D - B4034 Buckingham Road		178.2	774.76		F

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. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	Buckingham Road / Sherwood Drive / Water Eaton Road
Location	51°59'35.88"N, 0°44'17.67"W
Site number	1
Date	06/01/2021

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

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			1531966295	199	38.44

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	Use Lane Simulation	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,D22	100.000	100.000

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	69.15	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Sherwood Drive	
B	B4034	
C	Water Eaton Road	
D	B4034 Buckingham Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Sherwood Drive	3.70	5.70	25.8	13.3	30.1	56.0	
B - B4034	6.00	6.60	1.0	22.9	30.1	29.0	
C - Water Eaton Road	3.50	6.40	71.2	12.9	30.1	52.0	
D - B4034 Buckingham Road	3.40	6.70	118.7	16.0	30.1	43.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Sherwood Drive	Direct	Calibration against queue lengths	50
B - B4034	Direct	Calibration against queue lengths	150
C - Water Eaton Road	Direct	Calibration against queue lengths	-150
D - B4034 Buckingham Road	Direct	Calibration against queue lengths	-175

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	0.565	1472
B - B4034	0.701	2047
C - Water Eaton Road	0.615	1498
D - B4034 Buckingham Road	0.668	1662

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Sherwood Drive	Evenly split	10.00
B - B4034	Evenly split	10.00
C - Water Eaton Road	Evenly split	10.00
D - B4034 Buckingham Road	Evenly split	10.00

Lanes

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Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A - Sherwood Drive	Entry	1	1	B	✓	4.00		0	99999	
			2	A, C, D	✓	4.00	0	99999		
	Exit	1	1	(A, B, C, D)		Infinity				
B - B4034	Entry	1	1	C, D		Infinity		0	99999	
			2	A, B		Infinity	0	99999		
Exit	1	1			Infinity					
C - Water Eaton Road	Entry	1	1	D	✓	10.00		0	99999	
			2	A, B, C	✓	10.00	0	99999		
	Exit	1	1	(A, B, C, D)		Infinity				
D - B4034 Buckingham Road	Entry	1	1	A, B	✓	20.00		0	99999	
			2	C, D	✓	20.00	0	99999		
	Exit	1	1	(A, B, C, D)		Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Sherwood Drive	Entry	1	1	0.283	736
			2	0.283	736
B - B4034	Entry	1	1	0.351	1024
			2	0.351	1024
C - Water Eaton Road	Entry	1	1	0.308	749
			2	0.308	749
D - B4034 Buckingham Road	Entry	1	1	0.334	831
			2	0.334	831

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			Sherwood Drive	B4034	Water Eaton Road	B4034 Buckingham Road
A - Sherwood Drive	1	1		✓		
		2	✓		✓	✓
B - B4034	1	1			✓	✓
		2	✓	✓		
C - Water Eaton Road	1	1				✓
		2	✓	✓	✓	✓
D - B4034 Buckingham Road	1	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

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 - Sherwood Drive		ONE HOUR	✓	626	100.000
B - B4034		ONE HOUR	✓	1248	100.000
C - Water Eaton Road		ONE HOUR	✓	394	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	696	100.000

Origin-Destination Data

Demand (Veh/hr)

	To
	A - Sherwood Drive B - B4034 C - Water Eaton Road D - B4034 Buckingham Road

From	A - Sherwood Drive	0	400	115	111
	B - B4034	435	1	15	797
	C - Water Eaton Road	90	59	0	245
	D - B4034 Buckingham Road	74	450	169	3

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
D - B4034 Buckingham Road	0	3	0	0	

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	37.34	7.4	E	575	862
B - B4034	85.06	35.5	F	1145	1718
C - Water Eaton Road	72.57	9.2	F	360	539
D - B4034 Buckingham Road	67.11	15.8	F	643	964

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	466	116	517	467	467	452	0.0	1.5	11.424	B
B - B4034	941	235	294	943	944	690	0.0	2.4	10.151	B
C - Water Eaton Road	297	74	1015	297	295	221	0.0	1.0	13.121	B
D - B4034 Buckingham Road	527	132	441	528	530	871	0.0	1.8	11.549	B

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	563	141	600	563	558	546	1.5	2.6	15.858	C
B - B4034	1122	280	355	1121	1129	808	2.4	5.3	16.527	C
C - Water Eaton Road	352	88	1209	354	351	267	1.0	1.9	19.178	C
D - B4034 Buckingham Road	626	157	532	614	625	1031	1.8	3.8	17.061	C

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	684	171	727	687	679	662	2.6	6.4	31.085	D
B - B4034	1379	345	435	1317	1320	978	5.3	25.7	47.607	E
C - Water Eaton Road	431	108	1425	419	410	328	1.9	7.4	46.705	E
D - B4034 Buckingham Road	766	191	651	738	741	1192	3.8	12.1	42.676	E

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	699	175	732	699	690	662	6.4	7.4	37.342	E
B - B4034	1373	343	443	1331	1352	989	25.7	35.4	85.057	F
C - Water Eaton Road	431	108	1445	429	423	329	7.4	9.2	72.568	F
D - B4034 Buckingham Road	773	193	645	750	767	1229	12.1	15.8	67.114	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	558	140	632	565	583	543	7.4	2.8	23.715	C

B - B4034	1122	280	362	1182	1221	836	35.4	13.5	63.790	F
C - Water Eaton Road	349	87	1269	367	385	274	9.2	2.4	42.944	E
D - B4034 Buckingham Road	639	160	529	646	687	1107	15.8	4.6	37.614	E

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	478	120	516	477	482	447	2.8	1.4	12.463	B
B - B4034	932	233	303	941	988	690	13.5	2.9	18.118	C
C - Water Eaton Road	297	74	1013	298	300	231	2.4	1.1	15.069	C
D - B4034 Buckingham Road	526	132	436	526	549	875	4.6	1.9	13.371	B

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	300	584	0.513	302	300	0.0	0.9	11.661	B
			2	A, C, D	165	587	0.282	165	167	0.0	0.4	8.540	A
		2	1	(A, B, C, D)	466			465	472	0.0	0.1	0.870	A
	Exit	1	1		452			452	453	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	612	908	0.673	613	614	0.0	1.9	12.263	B
			2	A, B	329	913	0.360	330	330	0.0	0.5	6.230	A
Exit	1	1			690			690	691	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	186	433	0.430	186	184	0.0	0.8	14.416	B
			2	A, B, C	110	433	0.255	111	111	0.0	0.2	10.968	B
		2	1	(A, B, C, D)	297			297	299	0.0	0.0	0.000	A
	Exit	1	1		221			221	221	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	398	665	0.598	399	403	0.0	1.5	13.163	B
			2	C, D	129	683	0.189	129	127	0.0	0.3	6.529	A
		2	1	(A, B, C, D)	527			527	537	0.0	0.0	0.000	A
	Exit	1	1		871			871	871	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	360	561	0.643	361	357	0.9	1.5	14.816	B
			2	A, C, D	201	564	0.357	202	201	0.4	0.5	10.029	B
		2	1	(A, B, C, D)	563			561	560	0.1	0.6	2.745	A
	Exit	1	1		546			546	542	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	723	887	0.815	724	733	1.9	4.5	21.639	C
			2	A, B	399	895	0.446	398	396	0.5	0.8	7.021	A
Exit	1	1			808			808	814	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	219	374	0.585	220	218	0.8	1.4	22.318	C
			2	A, B, C	134	374	0.358	134	132	0.2	0.5	13.810	B
		2	1	(A, B, C, D)	352			352	354	0.0	0.0	0.057	A
	Exit	1	1		267			267	268	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	471	639	0.738	461	471	1.5	3.3	20.238	C
			2	C, D	154	652	0.236	153	154	0.3	0.4	7.265	A
		2	1	(A, B, C, D)	626			626	633	0.0	0.1	0.014	A
	Exit	1	1		1031			1031	1039	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	440	524	0.840	437	432	1.5	2.6	20.121	C
			2	A, C, D	247	527	0.469	250	246	0.5	0.8	13.007	B
		2	1	(A, B, C, D)	684			687	684	0.6	3.0	13.489	B
	Exit	1	1		662			662	660	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	896	858	1.045	829	833	4.5	24.6	68.286	F
			2	A, B	483	865	0.558	488	487	0.8	1.2	9.213	A
Exit	1	1			978			978	974	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	260	306	0.851	255	250	1.4	4.6	49.021	E
			2	A, B, C	163	306	0.531	163	160	0.5	1.1	24.821	C
		2	1	(A, B, C, D)	431			423	425	0.0	1.8	6.031	A
	Exit	1	1		328			328	325	0.0	0.0	0.000	A
		1	1	A, B	566	598	0.945	552	555	3.3	9.5	48.385	E

D - B4034 Buckingham Road	Entry		2	C, D	187	612	0.305	186	186	0.4	0.5	8.296	A
		2	1	(A, B, C, D)	766			753	767	0.1	2.0	3.710	A
	Exit	1	1		1192			1192	1191	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	441	522	0.846	442	441	2.6	2.4	20.775	C
			2	A, C, D	255	525	0.485	257	249	0.8	0.9	13.931	B
		2	1	(A, B, C, D)	699			696	689	3.0	4.2	19.014	C
	Exit	1	1		662			662	664	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	896	855	1.049	851	867	24.6	34.2	126.002	F
			2	A, B	477	863	0.553	480	485	1.2	1.2	9.333	A
	Exit	1	1		989			989	1003	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	259	300	0.864	264	261	4.6	5.2	70.110	F
			2	A, B, C	165	300	0.551	165	161	1.1	1.5	30.148	D
		2	1	(A, B, C, D)	431			424	427	1.8	2.6	17.569	C
	Exit	1	1		329			329	327	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	578	600	0.964	564	579	9.5	11.3	65.463	F
			2	C, D	186	614	0.303	186	188	0.5	0.5	8.982	A
		2	1	(A, B, C, D)	773			765	774	2.0	4.0	15.179	C
	Exit	1	1		1229			1229	1238	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	359	551	0.652	360	377	2.4	1.6	17.485	C
			2	A, C, D	204	554	0.368	205	206	0.9	0.6	11.378	B
		2	1	(A, B, C, D)	558			563	579	4.2	0.6	8.565	A
	Exit	1	1		543			543	555	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	728	883	0.824	788	824	34.2	12.8	94.309	F
			2	A, B	394	890	0.443	394	397	1.2	0.7	7.361	A
	Exit	1	1		836			836	889	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	222	354	0.626	232	243	5.2	1.7	45.050	E
			2	A, B, C	133	354	0.375	135	141	1.5	0.5	20.721	C
		2	1	(A, B, C, D)	349			355	367	2.6	0.1	8.476	A
	Exit	1	1		274			274	278	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	485	639	0.759	489	528	11.3	4.2	41.524	E
			2	C, D	158	653	0.242	157	159	0.5	0.3	7.209	A
		2	1	(A, B, C, D)	639			643	658	4.0	0.1	5.891	A
	Exit	1	1		1107			1107	1154	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	301	584	0.516	301	308	1.6	0.9	12.324	B
			2	A, C, D	177	587	0.301	176	174	0.6	0.4	9.007	A
		2	1	(A, B, C, D)	478			478	478	0.6	0.1	1.404	A
	Exit	1	1		447			447	457	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	611	905	0.676	621	657	12.8	2.3	24.527	C
			2	A, B	321	910	0.353	321	331	0.7	0.6	6.340	A
	Exit	1	1		690			690	714	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	182	434	0.419	182	187	1.7	0.7	16.643	C
			2	A, B, C	115	434	0.264	116	113	0.5	0.4	12.510	B
		2	1	(A, B, C, D)	297			297	295	0.1	0.0	0.066	A
	Exit	1	1		231			231	230	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	399	668	0.597	399	419	4.2	1.6	15.550	C
			2	C, D	128	684	0.187	127	130	0.3	0.3	6.545	A
		2	1	(A, B, C, D)	526			526	538	0.1	0.0	0.071	A
	Exit	1	1		875			875	917	0.0	0.0	0.000	A

2033 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	302.11	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 - Sherwood Drive		ONE HOUR	✓	730	100.000
B - B4034		ONE HOUR	✓	1475	100.000
C - Water Eaton Road		ONE HOUR	✓	457	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	824	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	136
	B - B4034	502	1	17	954
	C - Water Eaton Road	104	68	0	285
	D - B4034 Buckingham Road	89	536	196	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0
	D - B4034 Buckingham Road	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	115.38	27.7	F	666	999
B - B4034	373.16	136.0	F	1357	2036
C - Water Eaton Road	289.06	42.6	F	418	626
D - B4034 Buckingham Road	344.51	79.9	F	757	1135

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	547	137	607	545	543	521	0.0	2.5	14.842	B
B - B4034	1118	279	351	1111	1104	801	0.0	5.8	15.981	C
C - Water Eaton Road	340	85	1200	339	336	263	0.0	1.9	18.216	C
D - B4034 Buckingham Road	620	155	509	618	617	1029	0.0	3.1	16.013	C

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	654	163	710	650	646	623	2.5	5.3	25.321	D
B - B4034	1323	331	420	1293	1286	939	5.8	18.0	38.605	E
C - Water Eaton Road	406	102	1402	395	394	311	1.9	5.1	34.479	D
D - B4034 Buckingham Road	745	186	606	727	723	1191	3.1	9.6	36.522	E

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	798	199	741	766	747	741	5.3	18.7	66.394	F
B - B4034	1639	410	468	1413	1417	1040	18.0	74.9	132.261	F
C - Water Eaton Road	504	126	1545	425	426	336	5.1	23.6	129.358	F
D - B4034 Buckingham Road	904	226	727	756	783	1244	9.6	42.3	124.306	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	786	196	747	761	767	727	18.7	27.7	115.375	F
B - B4034	1627	407	469	1395	1416	1039	74.9	131.5	290.745	F
C - Water Eaton Road	496	124	1528	435	428	336	23.6	42.6	289.058	F
D - B4034 Buckingham Road	911	228	714	761	773	1250	42.3	79.8	293.183	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	654	164	779	692	718	642	27.7	14.0	97.616	F
B - B4034	1321	330	444	1316	1328	1026	131.5	135.7	373.156	F
C - Water Eaton Road	414	103	1431	455	462	330	42.6	30.3	275.066	F
D - B4034 Buckingham Road	748	187	622	799	801	1264	79.8	69.1	344.506	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	558	139	731	571	593	549	14.0	4.1	38.365	E
B - B4034	1113	278	384	1257	1262	918	135.7	103.2	262.721	F
C - Water Eaton Road	345	86	1353	402	430	288	30.3	8.3	119.555	F
D - B4034 Buckingham Road	615	154	526	754	792	1230	69.1	29.4	204.242	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	348	559	0.623	347	346	0.0	1.5	13.879	B
			2	A, C, D	198	561	0.353	199	197	0.0	0.6	10.036	B
	Exit	1	1	(A, B, C, D)	547			546	551	0.0	0.4	2.330	A
B - B4034	Entry	1	1	C, D	737	889	0.829	730	725	0.0	5.1	20.669	C
	Exit	1	1	A, B	381	895	0.425	381	379	0.0	0.8	6.906	A
C - Water Eaton Road	Entry	1	1	D	210	376	0.558	210	209	0.0	1.3	21.021	C
			2	A, B, C	130	376	0.345	128	126	0.0	0.6	13.513	B
	Exit	1	1	(A, B, C, D)	340			340	343	0.0	0.0	0.002	A
D - B4034 Buckingham Road	Entry	1	1	A, B	468	645	0.725	465	466	0.0	2.8	18.868	C
			2	C, D	152	660	0.231	153	150	0.0	0.3	7.120	A
	Exit	1	1	(A, B, C, D)	620			620	629	0.0	0.0	0.010	A
	Exit	1	1		1029			1029	1023	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	411	529	0.776	409	406	1.5	2.3	18.103	C
			2	A, C, D	240	532	0.452	240	240	0.6	0.7	12.066	B
	Exit	1	1	(A, B, C, D)	654			651	649	0.4	2.3	9.388	A
B - B4034	Entry	1	1	C, D	868	864	1.006	837	831	5.1	17.0	54.282	F
	Exit	1	1	A, B	455	870	0.523	456	456	0.8	1.0	8.630	A
C - Water Eaton Road	Entry	1	1	D	254	313	0.811	245	243	1.3	3.5	39.269	E
			2	A, B, C	149	313	0.477	150	151	0.6	1.1	22.339	C
	Exit	1	1	(A, B, C, D)	406			403	405	0.0	0.4	1.378	A
D - B4034 Buckingham Road	Entry	1	1	A, B	558	613	0.909	547	546	2.8	8.1	42.275	E
			2	C, D	179	627	0.286	180	176	0.3	0.3	7.906	A
	Exit	1	1	(A, B, C, D)	745			737	745	0.0	1.2	2.191	A
	Exit	1	1		1191			1191	1183	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	483	521	0.927	482	471	2.3	3.3	23.406	C
			2	A, C, D	285	523	0.545	284	275	0.7	1.2	15.107	C
	Exit	1	1	(A, B, C, D)	798			768	753	2.3	14.2	45.934	E
B - B4034	Entry	1	1	C, D	1074	847	1.268	851	862	17.0	73.0	194.730	F
	Exit	1	1	A, B	565	854	0.661	563	554	1.0	1.9	11.320	B
C - Water Eaton Road	Entry	1	1	D	273	269	1.016	261	260	3.5	8.6	92.124	F
			2	A, B, C	162	269	0.601	164	166	1.1	1.7	36.860	E
	Exit	1	1	(A, B, C, D)	504			435	449	0.4	13.2	55.067	F
D - B4034 Buckingham Road	Entry	1	1	A, B	589	574	1.028	573	588	8.1	18.1	91.520	F
			2	C, D	183	587	0.312	183	196	0.3	0.5	10.158	B
	Exit	1	1	(A, B, C, D)	904			772	825	1.2	23.7	50.025	F
	Exit	1	1		1244			1244	1252	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	480	519	0.925	479	483	3.3	3.4	24.679	C
			2	A, C, D	281	521	0.540	282	284	1.2	1.2	16.064	C
	Exit	1	1	(A, B, C, D)	786			761	768	14.2	23.1	93.794	F
B - B4034	Entry	1	1	C, D	1075	847	1.270	844	859	73.0	129.6	434.260	F
	Exit	1	1	A, B	552	852	0.647	551	557	1.9	1.9	12.233	B
C - Water Eaton Road	Entry	1	1	D	273	274	0.996	273	267	8.6	9.4	122.625	F
			2	A, B, C	165	274	0.601	163	161	1.7	2.1	44.152	E
	Exit	1	1	(A, B, C, D)	496			438	433	13.2	31.0	196.882	F

	Exit	1	1		336			336	337	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	574	578	0.993	574	586	18.1	19.2	118.329	F
			2	C, D	187	591	0.316	186	187	0.5	0.6	10.950	B
		2	1	(A, B, C, D)	911			761	778	23.7	60.0	201.567	F
	Exit	1	1		1250			1250	1260	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	437	509	0.858	439	458	3.4	2.8	23.750	C
			2	A, C, D	252	512	0.493	254	260	1.2	1.0	15.146	C
		2	1	(A, B, C, D)	654			690	714	23.1	10.3	77.133	F
	Exit	1	1		642			642	649	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	871	856	1.017	864	867	129.6	134.7	561.841	F
			2	A, B	450	861	0.523	452	460	1.9	1.0	9.055	A
C - Water Eaton Road	Entry	1	1	D	284	304	0.934	286	289	9.4	7.8	104.430	F
			2	A, B, C	169	304	0.555	170	173	2.1	1.8	41.991	E
		2	1	(A, B, C, D)	414			453	454	31.0	20.7	197.664	F
	Exit	1	1		330			330	330	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	604	608	0.993	608	612	19.2	18.5	113.479	F
			2	C, D	190	622	0.305	191	189	0.6	0.4	10.116	B
		2	1	(A, B, C, D)	748			793	798	60.0	50.2	256.740	F
	Exit	1	1		1264			1264	1275	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	360	522	0.689	361	377	2.8	1.7	19.384	C
			2	A, C, D	210	526	0.399	210	216	1.0	0.7	12.758	B
		2	1	(A, B, C, D)	558			569	588	10.3	1.7	21.834	C
	Exit	1	1		549			549	564	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	733	876	0.838	879	878	134.7	102.4	468.266	F
			2	A, B	380	883	0.430	379	384	1.0	0.8	7.378	A
C - Water Eaton Road	Entry	1	1	D	242	328	0.739	255	273	7.8	3.8	74.051	F
			2	A, B, C	144	328	0.440	147	157	1.8	0.9	28.611	D
		2	1	(A, B, C, D)	345			387	411	20.7	3.6	68.707	F
	Exit	1	1		288			288	298	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	548	639	0.857	581	612	18.5	12.3	95.536	F
			2	C, D	173	654	0.265	174	180	0.4	0.4	9.224	A
		2	1	(A, B, C, D)	615			721	766	50.2	16.7	135.954	F
	Exit	1	1		1230			1230	1251	0.0	0.0	0.000	A

2033 Base + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	485.49	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
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 - Sherwood Drive		ONE HOUR	✓	771	100.000
B - B4034		ONE HOUR	✓	1552	100.000
C - Water Eaton Road		ONE HOUR	✓	464	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	912	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	177
	B - B4034	502	1	17	1032
	C - Water Eaton Road	104	68	0	292
	D - B4034 Buckingham Road	121	582	206	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0

D - B4034 Buckingham Road	0	3	0	0
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Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	120.26	31.6	F	705	1057
B - B4034	595.04	224.2	F	1430	2145
C - Water Eaton Road	397.92	55.2	F	428	642
D - B4034 Buckingham Road	647.15	146.0	F	836	1254

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	572	143	641	583	580	545	0.0	2.4	16.389	C
B - B4034	1163	291	392	1176	1153	833	0.0	7.9	21.613	C
C - Water Eaton Road	347	87	1302	347	343	266	0.0	2.5	21.776	C
D - B4034 Buckingham Road	685	171	506	680	673	1142	0.0	5.2	23.091	C

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	700	175	730	694	675	654	2.4	6.0	27.121	D
B - B4034	1396	349	459	1299	1299	964	7.9	37.5	71.086	F
C - Water Eaton Road	433	108	1450	416	403	308	2.5	7.2	46.801	E
D - B4034 Buckingham Road	813	203	614	770	779	1253	5.2	17.9	59.246	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	836	209	705	806	786	750	6.0	21.7	73.657	F
B - B4034	1730	433	496	1397	1406	1015	37.5	120.2	230.331	F
C - Water Eaton Road	509	127	1574	405	421	319	7.2	29.1	161.249	F
D - B4034 Buckingham Road	1003	251	709	746	780	1270	17.9	76.0	219.845	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	855	214	712	817	816	740	21.7	31.5	120.264	F
B - B4034	1710	428	494	1388	1410	1035	120.2	198.0	460.111	F
C - Water Eaton Road	515	129	1561	403	410	321	29.1	55.2	377.498	F
D - B4034 Buckingham Road	1001	250	699	753	764	1266	76.0	139.9	511.129	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	697	174	774	733	753	655	31.5	16.5	105.867	F
B - B4034	1408	352	486	1301	1317	1022	198.0	223.5	595.044	F
C - Water Eaton Road	414	104	1461	463	454	326	55.2	44.7	397.918	F
D - B4034 Buckingham Road	831	208	618	811	820	1307	139.9	145.7	647.150	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	571	143	760	598	622	585	16.5	4.6	46.339	E
B - B4034	1167	292	417	1234	1257	942	223.5	206.8	344.704	F
C - Water Eaton Road	350	88	1358	435	450	292	44.7	19.6	203.755	F
D - B4034 Buckingham Road	677	169	541	804	818	1252	145.7	116.2	525.891	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	345	549	0.628	349	348	0.0	1.3	14.526	B
			2	A, C, D	232	552	0.421	235	232	0.0	0.7	11.294	B
		2	1	(A, B, C, D)	572			577	588	0.0	0.4	3.134	A
	Exit	1	1		545			545	544	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	786	875	0.899	797	774	0.0	7.0	28.562	D
			2	A, B	377	880	0.428	378	379	0.0	0.9	7.127	A
C - Water Eaton Road	Entry	1	1	D	221	345	0.641	219	214	0.0	2.0	25.380	D
			2	A, B, C	127	345	0.368	128	129	0.0	0.6	15.145	C
		2	1	(A, B, C, D)	347			348	353	0.0	0.0	0.182	A
	Exit	1	1		266			266	262	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	529	647	0.818	523	520	0.0	5.0	27.462	D
			2	C, D	155	661	0.235	157	152	0.0	0.2	7.033	A
		2	1	(A, B, C, D)	685			684	694	0.0	0.1	0.166	A
	Exit	1	1		1142			1142	1111	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	411	523	0.784	409	402	1.3	2.3	18.780	C
			2	A, C, D	284	526	0.539	284	274	0.7	1.1	13.627	B
		2	1	(A, B, C, D)	700			694	681	0.4	2.6	10.359	B
	Exit	1	1		654			654	649	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	934	849	1.101	839	840	7.0	36.2	101.075	F
			2	A, B	462	858	0.539	460	459	0.9	1.3	9.200	A
C - Water Eaton Road	Entry	1	1	D	268	298	0.898	262	252	2.0	4.7	52.376	F
			2	A, B, C	156	298	0.524	154	151	0.6	1.3	24.043	C
		2	1	(A, B, C, D)	433			424	417	0.0	1.2	4.257	A
	Exit	1	1		308			308	311	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	615	612	1.005	595	595	5.0	12.7	59.385	F
			2	C, D	174	625	0.279	175	183	0.2	0.4	8.202	A
		2	1	(A, B, C, D)	813			789	811	0.1	4.8	10.499	B
	Exit	1	1		1253			1253	1238	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	484	530	0.912	481	471	2.3	3.2	22.973	C
			2	A, C, D	323	534	0.605	326	314	1.1	1.5	16.630	C
		2	1	(A, B, C, D)	836			806	791	2.6	16.9	53.117	F
	Exit	1	1		750			750	751	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	1173	838	1.401	844	854	36.2	118.0	333.252	F
			2	A, B	557	844	0.661	553	552	1.3	2.2	12.351	B
C - Water Eaton Road	Entry	1	1	D	257	260	0.989	249	259	4.7	9.1	104.204	F
			2	A, B, C	153	260	0.587	156	162	1.3	1.7	40.475	E
		2	1	(A, B, C, D)	509			410	440	1.2	18.4	77.530	F
	Exit	1	1		319			319	330	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	580	582	0.996	575	595	12.7	19.5	107.778	F
			2	C, D	171	593	0.289	170	185	0.4	0.5	10.049	B
		2	1	(A, B, C, D)	1003			751	808	4.8	56.0	132.716	F
	Exit	1	1		1270			1270	1284	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	491	528	0.930	493	490	3.2	3.1	23.692	C
			2	A, C, D	326	531	0.614	324	326	1.5	1.6	16.759	C
		2	1	(A, B, C, D)	855			817	816	16.9	26.8	99.279	F
	Exit	1	1		740			740	750	0.0	0.0	0.000	A

B - B4034	Entry	1	1	C, D	1154	838	1.376	832	849	118.0	195.9	676.889	F
		2	2	A, B	557	846	0.658	556	561	2.2	2.0	13.012	B
	Exit	1	1		1035			1035	1045	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	260	264	0.985	260	259	9.1	9.8	132.372	F
		2	2	A, B, C	145	264	0.549	143	151	1.7	2.1	44.471	E
	Exit	1	1	(A, B, C, D)	515			405	415	18.4	43.3	279.949	F
D - B4034 Buckingham Road	Entry	1	1	A, B	581	584	0.996	582	593	19.5	19.6	121.327	F
		2	2	C, D	168	596	0.282	171	171	0.5	0.4	10.472	B
	Exit	1	1	(A, B, C, D)	1001			749	764	56.0	120.0	418.267	F
	Exit	1	1		1266			1266	1282	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	432	512	0.845	435	449	3.1	2.6	23.283	C
		2	2	A, C, D	296	514	0.577	298	304	1.6	1.4	16.815	C
		2	1	(A, B, C, D)	697			729	750	26.8	12.6	85.225	F
	Exit	1	1		655			655	661	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	958	841	1.139	851	861	195.9	222.2	870.883	F
	Exit	1	1	A, B	451	847	0.532	450	456	2.0	1.3	9.438	A
C - Water Eaton Road	Entry	1	1	D	289	295	0.979	296	288	9.8	8.7	116.169	F
		2	2	A, B, C	166	295	0.562	167	166	2.1	2.1	44.558	E
	Exit	1	1	(A, B, C, D)	414			454	450	43.3	33.9	311.647	F
D - B4034 Buckingham Road	Entry	1	1	A, B	622	611	1.021	624	630	19.6	19.5	113.948	F
		2	2	C, D	187	624	0.299	187	189	0.4	0.4	10.039	B
	Exit	1	1	(A, B, C, D)	831			809	819	120.0	125.9	558.286	F
	Exit	1	1		1307			1307	1313	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	362	515	0.704	363	374	2.6	1.8	19.568	C
		2	2	A, C, D	235	518	0.454	235	248	1.4	0.9	14.351	B
		2	1	(A, B, C, D)	571			598	617	12.6	1.9	29.215	D
	Exit	1	1		585			585	594	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	784	867	0.906	850	870	222.2	206.0	734.631	F
	Exit	1	1	A, B	383	871	0.439	383	387	1.3	0.8	7.708	A
C - Water Eaton Road	Entry	1	1	D	262	327	0.800	278	285	8.7	5.3	90.300	F
		2	2	A, B, C	152	327	0.465	157	165	2.1	1.1	32.547	D
	Exit	1	1	(A, B, C, D)	350			414	432	33.9	13.3	146.317	F
D - B4034 Buckingham Road	Entry	1	1	A, B	619	637	0.974	623	634	19.5	19.3	112.332	F
		2	2	C, D	182	649	0.280	181	184	0.4	0.5	9.280	A
	Exit	1	1	(A, B, C, D)	677			801	817	125.9	96.4	450.553	F
	Exit	1	1		1252			1252	1287	0.0	0.0	0.000	A

2033 Base + CD + D with TP, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	455.55	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 - Sherwood Drive		ONE HOUR	✓	765	100.000
B - B4034		ONE HOUR	✓	1540	100.000
C - Water Eaton Road		ONE HOUR	✓	463	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	898	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	171
	B - B4034	502	1	17	1020
	C - Water Eaton Road	104	68	0	291
	D - B4034 Buckingham Road	116	575	204	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0

D - B4034 Buckingham Road	0	3	0	0
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Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	120.83	30.1	F	703	1054
B - B4034	554.01	206.9	F	1411	2117
C - Water Eaton Road	367.03	49.9	F	423	634
D - B4034 Buckingham Road	613.61	136.8	F	826	1240

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	582	145	643	574	568	543	0.0	3.0	15.532	C
B - B4034	1151	288	389	1157	1144	829	0.0	7.5	21.257	C
C - Water Eaton Road	348	87	1278	349	345	269	0.0	2.2	21.252	C
D - B4034 Buckingham Road	678	170	511	676	671	1115	0.0	4.3	21.021	C

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	690	172	730	673	671	646	3.0	6.9	28.678	D
B - B4034	1381	345	448	1297	1300	955	7.5	31.1	58.839	F
C - Water Eaton Road	417	104	1434	409	399	311	2.2	6.3	44.031	E
D - B4034 Buckingham Road	813	203	610	766	771	1233	4.3	16.4	53.126	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	845	211	722	807	785	744	6.9	21.8	74.719	F
B - B4034	1702	425	506	1391	1403	1023	31.1	108.6	205.397	F
C - Water Eaton Road	503	126	1568	419	421	329	6.3	26.5	148.486	F
D - B4034 Buckingham Road	997	249	711	755	784	1277	16.4	71.7	209.914	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	838	209	718	809	805	747	21.8	30.1	120.833	F
B - B4034	1693	423	489	1392	1410	1038	108.6	184.6	424.145	F
C - Water Eaton Road	510	127	1559	419	417	323	26.5	49.9	345.459	F
D - B4034 Buckingham Road	985	246	711	754	768	1267	71.7	131.1	486.305	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	687	172	754	727	748	653	30.1	16.3	104.680	F
B - B4034	1388	347	476	1292	1316	1005	184.6	206.3	554.013	F
C - Water Eaton Road	411	103	1445	456	451	323	49.9	41.2	367.034	F
D - B4034 Buckingham Road	803	201	619	788	793	1282	131.1	136.6	613.606	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	575	144	792	594	625	569	16.3	4.9	44.821	E
B - B4034	1151	288	427	1233	1250	958	206.3	186.2	340.160	F
C - Water Eaton Road	349	87	1352	426	448	308	41.2	16.0	180.436	F
D - B4034 Buckingham Road	682	170	524	837	839	1255	136.6	100.6	483.541	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	345	549	0.629	343	342	0.0	1.5	14.363	B
			2	A, C, D	233	551	0.424	231	226	0.0	0.9	10.846	B
		2	1	(A, B, C, D)	582			579	577	0.0	0.6	2.534	A
	Exit	1	1		543			543	543	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	773	873	0.885	778	763	0.0	6.7	28.225	D
		2	1	A, B	378	881	0.429	379	381	0.0	0.7	7.039	A
C - Water Eaton Road	Entry	1	1	D	216	352	0.614	217	214	0.0	1.6	24.319	C
			2	A, B, C	132	352	0.374	132	131	0.0	0.5	15.626	C
		2	1	(A, B, C, D)	348			348	353	0.0	0.0	0.178	A
	Exit	1	1		269			269	265	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	520	645	0.806	518	514	0.0	3.9	25.014	D
			2	C, D	158	659	0.240	158	157	0.0	0.3	7.193	A
		2	1	(A, B, C, D)	678			678	689	0.0	0.0	0.151	A
	Exit	1	1		1115			1115	1095	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	410	524	0.784	408	403	1.5	2.5	19.174	C
			2	A, C, D	267	526	0.508	265	267	0.9	1.1	13.600	B
		2	1	(A, B, C, D)	690			678	676	0.6	3.3	11.643	B
	Exit	1	1		646			646	643	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	925	854	1.082	842	844	6.7	29.9	83.386	F
		2	1	A, B	457	860	0.531	455	456	0.7	1.2	8.978	A
C - Water Eaton Road	Entry	1	1	D	259	303	0.854	254	249	1.6	4.4	49.325	E
			2	A, B, C	155	303	0.511	154	150	0.5	1.1	23.399	C
		2	1	(A, B, C, D)	417			414	412	0.0	0.9	3.731	A
	Exit	1	1		311			311	311	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	605	613	0.987	584	589	3.9	12.1	55.824	F
			2	C, D	183	626	0.292	182	182	0.3	0.5	8.055	A
		2	1	(A, B, C, D)	813			788	805	0.0	3.9	7.416	A
	Exit	1	1		1233			1233	1231	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	482	526	0.917	481	474	2.5	3.2	23.126	C
			2	A, C, D	326	528	0.617	326	312	1.1	1.5	16.520	C
		2	1	(A, B, C, D)	845			808	790	3.3	17.2	54.105	F
	Exit	1	1		744			744	748	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	1147	834	1.376	842	851	29.9	106.5	298.686	F
		2	1	A, B	555	841	0.660	549	552	1.2	2.1	11.740	B
C - Water Eaton Road	Entry	1	1	D	266	262	1.017	258	258	4.4	8.9	101.671	F
			2	A, B, C	157	262	0.597	161	163	1.1	1.8	40.028	E
		2	1	(A, B, C, D)	503			423	442	0.9	15.8	66.891	F
	Exit	1	1		329			329	333	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	581	580	1.001	575	597	12.1	19.5	107.971	F
			2	C, D	180	592	0.304	180	187	0.5	0.6	10.177	B
		2	1	(A, B, C, D)	997			761	814	3.9	51.7	122.775	F
	Exit	1	1		1277			1277	1276	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	491	527	0.932	493	487	3.2	3.3	24.074	C
			2	A, C, D	318	529	0.600	316	318	1.5	1.5	16.988	C
		2	1	(A, B, C, D)	838			809	806	17.2	25.3	99.508	F
	Exit	1	1		747			747	749	0.0	0.0	0.000	A

B - B4034	Entry	1	1	C, D	1138	839	1.356	835	849	106.5	182.7	624.399	F
		2	2	A, B	554	846	0.655	557	560	2.1	1.9	12.808	B
	Exit	1	1		1038			1038	1047	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	266	264	1.008	266	262	8.9	9.4	127.910	F
		2	2	A, B, C	155	264	0.587	154	154	1.8	1.8	44.643	E
	Exit	1	1	(A, B, C, D)	510			422	419	15.8	38.6	249.845	F
D - B4034 Buckingham Road	Entry	1	1	A, B	580	579	1.003	581	594	19.5	19.5	120.988	F
		2	2	C, D	174	592	0.294	173	174	0.6	0.6	10.788	B
	Exit	1	1	(A, B, C, D)	985			754	768	51.7	111.1	391.826	F
	Exit	1	1		1267			1267	1279	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	434	516	0.841	435	451	3.3	2.7	23.451	C
		2	2	A, C, D	290	519	0.558	291	296	1.5	1.3	16.688	C
		2	1	(A, B, C, D)	687			724	744	25.3	12.4	84.011	F
	Exit	1	1		653			653	660	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	933	844	1.107	840	856	182.7	204.9	820.030	F
	Exit	1	1	A, B	454	851	0.534	452	460	1.9	1.4	9.289	A
C - Water Eaton Road	Entry	1	1	D	285	300	0.951	288	286	9.4	8.7	114.326	F
		2	2	A, B, C	169	300	0.563	168	166	1.8	2.0	41.482	E
	Exit	1	1	(A, B, C, D)	411			454	449	38.6	30.5	283.242	F
D - B4034 Buckingham Road	Entry	1	1	A, B	603	611	0.988	603	614	19.5	19.6	116.709	F
		2	2	C, D	185	623	0.297	185	179	0.6	0.5	9.729	A
	Exit	1	1	(A, B, C, D)	803			788	793	111.1	116.6	525.019	F
	Exit	1	1		1282			1282	1296	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	360	505	0.712	359	380	2.7	1.9	19.465	C
		2	2	A, C, D	233	508	0.458	234	245	1.3	0.8	14.154	B
		2	1	(A, B, C, D)	575			592	620	12.4	2.2	27.766	D
	Exit	1	1		569			569	587	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	776	860	0.901	861	868	204.9	185.3	721.737	F
	Exit	1	1	A, B	375	867	0.432	373	382	1.4	0.9	7.476	A
C - Water Eaton Road	Entry	1	1	D	264	328	0.804	275	285	8.7	5.4	86.978	F
		2	2	A, B, C	151	328	0.461	151	163	2.0	1.1	31.365	D
	Exit	1	1	(A, B, C, D)	349			415	431	30.5	9.5	122.924	F
D - B4034 Buckingham Road	Entry	1	1	A, B	642	640	1.002	644	649	19.6	19.2	109.641	F
		2	2	C, D	194	655	0.296	193	190	0.5	0.6	9.642	A
	Exit	1	1	(A, B, C, D)	682			835	838	116.6	80.8	404.356	F
	Exit	1	1		1255			1255	1279	0.0	0.0	0.000	A

2033 Base + CD + D - ST, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	554.95	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
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 - Sherwood Drive		ONE HOUR	✓	780	100.000
B - B4034		ONE HOUR	✓	1590	100.000
C - Water Eaton Road		ONE HOUR	✓	466	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	935	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	186
	B - B4034	502	1	17	1070
	C - Water Eaton Road	104	68	0	294
	D - B4034 Buckingham Road	125	600	207	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0

D - B4034 Buckingham Road	0	3	0	0
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Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	130.53	34.3	F	717	1076
B - B4034	673.03	257.8	F	1462	2193
C - Water Eaton Road	466.43	58.6	F	428	643
D - B4034 Buckingham Road	747.73	172.7	F	859	1289

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	595	149	662	595	581	557	0.0	2.9	16.700	C
B - B4034	1204	301	396	1184	1170	860	0.0	11.3	26.322	D
C - Water Eaton Road	349	87	1312	345	336	268	0.0	2.6	22.726	C
D - B4034 Buckingham Road	714	179	515	704	694	1142	0.0	5.8	23.899	C

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	703	176	734	698	689	643	2.9	7.1	32.115	D
B - B4034	1422	356	464	1298	1307	968	11.3	45.4	86.312	F
C - Water Eaton Road	423	106	1450	400	395	312	2.6	8.7	56.180	F
D - B4034 Buckingham Road	844	211	599	778	786	1251	5.8	22.6	71.058	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	852	213	714	808	790	743	7.1	24.1	78.339	F
B - B4034	1748	437	499	1381	1406	1022	45.4	135.6	266.941	F
C - Water Eaton Road	510	128	1562	412	415	318	8.7	32.0	184.750	F
D - B4034 Buckingham Road	1042	261	703	754	778	1271	22.6	90.1	268.038	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	864	216	712	827	821	750	24.1	34.3	130.532	F
B - B4034	1763	441	505	1409	1416	1033	135.6	222.6	524.383	F
C - Water Eaton Road	516	129	1593	418	411	322	32.0	58.6	409.687	F
D - B4034 Buckingham Road	1028	257	712	749	764	1298	90.1	158.1	591.858	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	699	175	732	746	774	661	34.3	17.4	111.081	F
B - B4034	1444	361	485	1295	1309	994	222.6	257.2	673.026	F
C - Water Eaton Road	421	105	1468	451	441	312	58.6	54.3	466.434	F
D - B4034 Buckingham Road	835	209	620	773	793	1298	158.1	172.5	747.727	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	589	147	789	609	641	576	17.4	5.4	45.929	E
B - B4034	1189	297	435	1224	1244	963	257.2	248.3	362.185	F
C - Water Eaton Road	351	88	1357	459	463	303	54.3	27.0	252.831	F
D - B4034 Buckingham Road	692	173	533	831	837	1283	172.5	143.0	619.729	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	353	543	0.651	354	345	0.0	1.4	14.871	B
			2	A, C, D	241	546	0.441	240	236	0.0	0.8	11.337	B
		2	1	(A, B, C, D)	595			594	590	0.0	0.6	3.235	A
	Exit	1	1		557			557	546	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	816	871	0.936	796	791	0.0	10.6	35.205	E
			2	A, B	388	878	0.442	388	379	0.0	0.7	7.066	A
	Exit	1	1		860			860	840	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	219	341	0.643	218	210	0.0	1.9	26.702	D
			2	A, B, C	130	341	0.381	127	126	0.0	0.7	15.721	C
		2	1	(A, B, C, D)	349			349	346	0.0	0.0	0.090	A
	Exit	1	1		268			268	265	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	554	646	0.858	548	537	0.0	5.2	28.258	D
			2	C, D	157	658	0.239	156	157	0.0	0.3	7.115	A
		2	1	(A, B, C, D)	714			712	717	0.0	0.3	0.301	A
	Exit	1	1		1142			1142	1129	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	413	522	0.791	415	408	1.4	2.2	19.870	C
			2	A, C, D	286	525	0.544	283	281	0.8	1.4	14.275	B
		2	1	(A, B, C, D)	703			698	694	0.6	3.5	14.464	B
	Exit	1	1		643			643	645	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	972	848	1.147	847	851	10.6	44.3	122.499	F
			2	A, B	451	855	0.527	451	456	0.7	1.1	8.746	A
	Exit	1	1		968			968	969	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	261	298	0.876	252	247	1.9	5.4	59.540	F
			2	A, B, C	149	298	0.500	148	148	0.7	1.1	24.712	C
		2	1	(A, B, C, D)	423			410	411	0.0	2.3	8.436	A
	Exit	1	1		312			312	312	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	618	616	1.003	597	601	5.2	14.4	67.477	F
			2	C, D	179	630	0.285	181	184	0.3	0.4	8.162	A
		2	1	(A, B, C, D)	844			797	824	0.3	7.8	15.534	C
	Exit	1	1		1251			1251	1252	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	480	528	0.910	480	470	2.2	3.2	23.093	C
			2	A, C, D	326	530	0.614	327	320	1.4	1.3	16.559	C
		2	1	(A, B, C, D)	852			806	794	3.5	19.6	57.789	F
	Exit	1	1		743			743	749	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	1198	837	1.432	832	852	44.3	133.7	384.489	F
			2	A, B	549	843	0.652	549	553	1.1	2.0	12.220	B
	Exit	1	1		1022			1022	1033	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	267	264	1.010	258	258	5.4	9.2	108.355	F
			2	A, B, C	152	264	0.576	154	158	1.1	1.7	39.795	E
		2	1	(A, B, C, D)	510			419	433	2.3	21.0	98.662	F
	Exit	1	1		318			318	321	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	584	582	1.005	582	601	14.4	19.5	112.045	F
			2	C, D	173	595	0.291	172	177	0.4	0.6	10.020	B
		2	1	(A, B, C, D)	1042			757	800	7.8	70.0	177.623	F
	Exit	1	1		1271			1271	1286	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	487	529	0.922	488	486	3.2	3.2	24.039	C
			2	A, C, D	341	531	0.643	339	335	1.3	1.8	17.444	C
		2	1	(A, B, C, D)	864			829	823	19.6	29.4	109.146	F
	Exit	1	1		750			750	747	0.0	0.0	0.000	A

B - B4034	Entry	1	1	C, D	1208	835	1.450	851	857	133.7	220.8	762.068	F
		2	1	A, B	555	841	0.660	558	559	2.0	1.8	12.250	B
	Exit	1	1		1033			1033	1042	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	264	254	1.039	263	261	9.2	9.8	131.925	F
		2	1	A, B, C	151	254	0.594	155	150	1.7	1.8	45.469	E
	Exit	1	1	(A, B, C, D)	516			416	413	21.0	47.0	311.046	F
D - B4034 Buckingham Road	Entry	1	1	A, B	584	579	1.007	583	594	19.5	19.2	120.644	F
		2	1	C, D	168	592	0.283	166	170	0.6	0.5	10.101	B
	Exit	1	1	(A, B, C, D)	1028			751	764	70.0	138.0	498.033	F
	Exit	1	1		1298			1298	1302	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	435	522	0.833	434	455	3.2	2.8	22.808	C
		2	1	A, C, D	312	525	0.594	313	319	1.8	1.3	16.844	C
		2	1	(A, B, C, D)	699			747	771	29.4	13.3	90.895	F
	Exit	1	1		661			661	660	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	990	839	1.177	837	850	220.8	256.2	983.068	F
	Exit	1	1	A, B	454	848	0.535	458	459	1.8	1.1	9.363	A
C - Water Eaton Road	Entry	1	1	D	284	292	0.973	289	281	9.8	9.2	122.417	F
		2	1	A, B, C	165	292	0.565	162	160	1.8	1.9	42.189	E
	Exit	1	1	(A, B, C, D)	421			449	439	47.0	43.2	377.613	F
D - B4034 Buckingham Road	Entry	1	1	A, B	601	609	0.987	601	618	19.2	19.6	116.171	F
		2	1	C, D	173	623	0.278	173	175	0.5	0.6	9.948	A
	Exit	1	1	(A, B, C, D)	835			774	793	138.0	152.4	661.122	F
	Exit	1	1		1298			1298	1307	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	361	507	0.713	362	381	2.8	1.9	19.864	C
		2	1	A, C, D	246	509	0.484	247	260	1.3	0.8	14.283	B
		2	1	(A, B, C, D)	589			607	636	13.3	2.6	28.610	D
	Exit	1	1		576			576	582	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	819	859	0.955	856	869	256.2	247.4	833.135	F
	Exit	1	1	A, B	370	865	0.427	368	375	1.1	0.9	7.501	A
C - Water Eaton Road	Entry	1	1	D	279	327	0.852	294	295	9.2	6.5	96.653	F
		2	1	A, B, C	162	327	0.495	165	168	1.9	1.3	34.269	D
	Exit	1	1	(A, B, C, D)	351			441	450	43.2	19.2	192.023	F
D - B4034 Buckingham Road	Entry	1	1	A, B	642	638	1.007	643	651	19.6	19.4	109.855	F
		2	1	C, D	189	652	0.290	188	186	0.6	0.5	9.595	A
	Exit	1	1	(A, B, C, D)	692			831	836	152.4	123.1	551.457	F
	Exit	1	1		1283			1283	1306	0.0	0.0	0.000	A

2033 Base + CD + SP (ST), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - B4034 - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	C - Water Eaton Road - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	D - B4034 Buckingham Road - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Water Eaton Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	D - B4034 Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J1	Buckingham Road / Sherwood Drive / Water Eaton Road	Standard Roundabout		A, B, C, D	560.87	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
D22	2033 Base + CD + SP (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 - Sherwood Drive		ONE HOUR	✓	780	100.000
B - B4034		ONE HOUR	✓	1590	100.000
C - Water Eaton Road		ONE HOUR	✓	466	100.000
D - B4034 Buckingham Road		ONE HOUR	✓	935	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	462	133	186
	B - B4034	502	1	17	1070
	C - Water Eaton Road	104	68	0	294
	D - B4034 Buckingham Road	125	600	207	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Sherwood Drive	B - B4034	C - Water Eaton Road	D - B4034 Buckingham Road
From	A - Sherwood Drive	0	1	0	0
	B - B4034	1	0	0	2
	C - Water Eaton Road	0	0	0	0

D - B4034 Buckingham Road	0	3	0	0
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Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Sherwood Drive	131.77	33.8	F	715	1072
B - B4034	684.60	260.7	F	1459	2189
C - Water Eaton Road	417.77	55.0	F	430	645
D - B4034 Buckingham Road	774.76	178.2	F	857	1285

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	592	148	663	586	583	555	0.0	3.1	16.392	C
B - B4034	1195	299	395	1176	1173	854	0.0	11.6	27.153	D
C - Water Eaton Road	356	89	1306	355	343	265	0.0	2.6	23.139	C
D - B4034 Buckingham Road	705	176	515	703	696	1145	0.0	5.5	24.869	C

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	706	176	750	691	685	642	3.1	7.8	31.043	D
B - B4034	1426	356	465	1296	1305	977	11.6	44.7	86.746	F
C - Water Eaton Road	425	106	1447	414	396	314	2.6	7.3	51.560	F
D - B4034 Buckingham Road	844	211	603	789	792	1258	5.5	20.8	65.907	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	855	214	714	825	807	737	7.8	23.6	81.578	F
B - B4034	1736	434	515	1365	1395	1024	44.7	134.4	264.749	F
C - Water Eaton Road	516	129	1550	416	422	330	7.3	30.4	169.852	F
D - B4034 Buckingham Road	1029	257	698	753	767	1269	20.8	89.0	264.807	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	854	213	704	824	818	750	23.6	33.8	131.768	F
B - B4034	1751	438	503	1379	1406	1026	134.4	225.5	529.579	F
C - Water Eaton Road	514	128	1565	403	417	317	30.4	55.0	377.746	F
D - B4034 Buckingham Road	1026	257	712	742	757	1255	89.0	160.8	604.834	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	699	175	757	742	769	662	33.8	17.1	108.850	F
B - B4034	1444	361	485	1294	1312	1014	225.5	260.1	684.601	F
C - Water Eaton Road	416	104	1462	459	447	317	55.0	47.3	417.768	F
D - B4034 Buckingham Road	840	210	625	795	791	1296	160.8	177.9	774.762	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	583	146	766	608	635	582	17.1	4.9	44.747	E
B - B4034	1200	300	434	1230	1243	941	260.1	252.8	357.259	F
C - Water Eaton Road	355	89	1366	449	455	298	47.3	21.0	226.482	F
D - B4034 Buckingham Road	694	174	542	806	823	1272	177.9	150.7	632.849	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	351	543	0.647	350	345	0.0	1.6	15.116	C
			2	A, C, D	237	545	0.434	236	238	0.0	0.7	10.852	B
		2	1	(A, B, C, D)	592			588	593	0.0	0.8	2.963	A
	Exit	1	1		555			555	549	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	812	871	0.933	792	789	0.0	11.0	36.478	E
			2	A, B	383	879	0.436	384	384	0.0	0.6	7.174	A
B - B4034	Exit	1	1		854			854	845	0.0	0.0	0.000	A
					854			854	845	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	226	343	0.658	224	217	0.0	1.9	26.280	D
			2	A, B, C	131	343	0.381	131	126	0.0	0.7	17.000	C
		2	1	(A, B, C, D)	356			356	353	0.0	0.0	0.225	A
	Exit	1	1		265			265	265	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	547	644	0.850	545	539	0.0	5.1	29.261	D
			2	C, D	159	658	0.242	159	157	0.0	0.3	7.423	A
		2	1	(A, B, C, D)	705			707	718	0.0	0.1	0.501	A
	Exit	1	1		1145			1145	1137	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	414	518	0.799	412	404	1.6	2.6	19.429	C
			2	A, C, D	283	521	0.543	280	281	0.7	1.3	14.519	B
		2	1	(A, B, C, D)	706			697	692	0.8	3.9	13.558	B
	Exit	1	1		642			642	637	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	979	848	1.154	851	859	11.0	43.7	122.302	F
			2	A, B	447	856	0.522	445	446	0.6	1.1	8.575	A
B - B4034	Exit	1	1		977			977	972	0.0	0.0	0.000	A
					977			977	972	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	262	300	0.876	256	247	1.9	4.8	55.789	F
			2	A, B, C	159	300	0.532	158	149	0.7	1.1	24.422	C
		2	1	(A, B, C, D)	425			422	410	0.0	1.4	6.767	A
	Exit	1	1		314			314	308	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	627	617	1.020	604	610	5.1	14.3	65.771	F
			2	C, D	185	629	0.294	185	182	0.3	0.3	8.333	A
		2	1	(A, B, C, D)	844			812	830	0.1	6.1	11.685	B
	Exit	1	1		1258			1258	1261	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	487	528	0.923	486	478	2.6	3.1	23.524	C
			2	A, C, D	338	531	0.637	339	328	1.3	1.7	17.169	C
		2	1	(A, B, C, D)	855			825	810	3.9	18.9	60.565	F
	Exit	1	1		737			737	745	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	1190	831	1.434	819	846	43.7	132.6	381.387	F
			2	A, B	546	837	0.652	546	550	1.1	1.9	12.230	B
B - B4034	Exit	1	1		1024			1024	1035	0.0	0.0	0.000	A
					1024			1024	1035	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	268	267	1.002	264	261	4.8	9.1	105.720	F
			2	A, B, C	155	267	0.579	152	161	1.1	2.0	42.246	E
		2	1	(A, B, C, D)	516			423	442	1.4	19.3	84.717	F
	Exit	1	1		330			330	323	0.0	0.0	0.000	A
D - B4034 Buckingham Road	Entry	1	1	A, B	578	583	0.990	577	591	14.3	19.4	115.438	F
			2	C, D	174	597	0.291	176	176	0.3	0.5	9.899	A
		2	1	(A, B, C, D)	1029			752	788	6.1	69.0	172.397	F
	Exit	1	1		1269			1269	1287	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	488	531	0.919	487	482	3.1	3.3	24.021	C
			2	A, C, D	338	533	0.634	337	335	1.7	1.8	17.373	C
		2	1	(A, B, C, D)	854			826	819	18.9	28.7	110.380	F
	Exit	1	1		750			750	753	0.0	0.0	0.000	A

B - B4034	Entry	1	1	C, D	1187	834	1.423	820	847	132.6	223.2	769.884	F
		2	2	A, B	563	840	0.671	559	559	1.9	2.3	12.781	B
	Exit	1	1		1026			1026	1035	0.0	0.0	0.000	A
C - Water Eaton Road	Entry	1	1	D	251	262	0.957	250	260	9.1	9.8	131.130	F
		2	2	A, B, C	149	262	0.566	154	157	2.0	1.8	48.000	E
	Exit	1	1	(A, B, C, D)	514			400	419	19.3	43.4	279.432	F
D - B4034 Buckingham Road	Entry	1	1	A, B	576	579	0.995	576	590	19.4	19.7	122.214	F
		2	2	C, D	165	591	0.278	166	167	0.5	0.4	10.374	B
	Exit	1	1	(A, B, C, D)	1026			740	757	69.0	140.9	509.778	F
	Exit	1	1		1255			1255	1290	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	434	516	0.842	435	455	3.3	2.6	22.550	C
		2	2	A, C, D	303	518	0.584	307	314	1.8	1.3	17.013	C
		2	1	(A, B, C, D)	699			737	764	28.7	13.1	88.795	F
	Exit	1	1		662			662	663	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	988	841	1.174	839	849	223.2	258.9	1002.481	F
	Exit	1	1	A, B	456	847	0.539	455	462	2.3	1.2	9.660	A
C - Water Eaton Road	Entry	1	1	D	289	295	0.981	289	284	9.8	9.1	118.666	F
		2	2	A, B, C	168	295	0.570	170	163	1.8	1.7	41.921	E
	Exit	1	1	(A, B, C, D)	416			457	444	43.4	36.5	330.289	F
D - B4034 Buckingham Road	Entry	1	1	A, B	616	608	1.014	616	616	19.7	19.7	116.071	F
		2	2	C, D	179	621	0.289	178	174	0.4	0.5	10.129	B
	Exit	1	1	(A, B, C, D)	840			795	791	140.9	157.8	688.647	F
	Exit	1	1		1296			1296	1306	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Sherwood Drive	Entry	1	1	B	351	514	0.684	356	376	2.6	1.5	19.104	C
		2	2	A, C, D	251	515	0.486	253	259	1.3	0.8	13.953	B
		2	1	(A, B, C, D)	583			602	628	13.1	2.6	28.150	D
	Exit	1	1		582			582	589	0.0	0.0	0.000	A
B - B4034	Entry	1	1	C, D	821	860	0.958	850	860	258.9	252.1	831.215	F
	Exit	1	1	A, B	378	866	0.437	380	384	1.2	0.7	7.652	A
C - Water Eaton Road	Entry	1	1	D	281	325	0.867	286	291	9.1	6.4	93.488	F
		2	2	A, B, C	163	325	0.502	163	164	1.7	1.4	31.551	D
	Exit	1	1	(A, B, C, D)	355			444	443	36.5	13.2	166.265	F
D - B4034 Buckingham Road	Entry	1	1	A, B	626	634	0.986	625	641	19.7	19.5	111.184	F
		2	2	C, D	182	649	0.280	181	182	0.5	0.5	9.055	A
	Exit	1	1	(A, B, C, D)	694			808	822	157.8	130.6	567.778	F
	Exit	1	1		1272			1272	1290	0.0	0.0	0.000	A

Junctions 9
ARCADY 9 - Roundabout Module
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 Path: \\uk.wspgroup.com\central_data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J2
 Report generation date: 26/01/2021 17:19:51

- »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
- »2033 Base + CD + SP (ST), AM
- »2033 Base + CD + SP (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										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D1	2.1	21.64	0.69	C	D2	1.2	13.34	0.56	B
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		0.7	5.20	0.42	A		3.0	11.90	0.76	B
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.7	23.02	0.86	C		1.3	7.73	0.56	A
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		0.9	5.79	0.49	A		3.4	13.07	0.78	B
2W - Newford Road/ Buckingham Road - B - Newton Road		2.1	15.51	0.69	C		1.3	13.60	0.57	B
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		1.7	12.11	0.63	B		0.6	6.03	0.36	A
2033 Base										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D13	3.8	33.94	0.81	D	D14	4.5	39.91	0.86	E
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.0	6.30	0.51	A		47.0	129.22	1.10	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	24.05	0.87	C		2.1	10.55	0.68	B
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		1.3	6.96	0.58	A		5.9	20.35	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		55.9	412.45	1.23	F		2.3	21.02	0.71	C
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		59.8	411.56	1.23	F		0.9	7.54	0.47	A
2033 Base + CD + D										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D15	4.7	42.89	0.84	E	D16	10.0	76.89	1.01	F
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.4	7.46	0.59	A		131.2	448.39	1.29	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	23.19	0.87	C		3.0	13.86	0.76	B
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		1.8	8.35	0.65	A		5.9	21.03	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		87.5	670.83	1.35	F		2.7	24.85	0.74	C
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		141.9	933.69	1.41	F		1.3	9.42	0.57	A
2033 Base + CD + D with TP										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D17	4.5	41.35	0.84	E	D18	9.0	70.45	0.99	F
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.4	7.29	0.58	A		117.9	389.22	1.26	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	23.19	0.88	C		2.9	13.19	0.75	B
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		1.7	8.15	0.64	A		5.9	20.88	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		82.7	633.70	1.34	F		2.6	24.21	0.74	C
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		129.5	843.48	1.38	F		1.2	9.06	0.56	A
2033 Base + CD + D - ST										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D19	5.3	48.70	0.86	E	D20	9.8	76.09	1.00	F
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.6	8.01	0.62	A		176.3	591.93	1.35	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	23.24	0.87	C		3.4	15.15	0.78	C
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		2.0	9.01	0.67	A		5.9	21.02	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		102.6	794.36	1.39	F		2.8	26.36	0.75	D
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		199.6	1296.73	1.50	F		1.5	10.14	0.60	B
2033 Base + CD + SP (ST)										
2E - Buckingham Road/ Shenley Road - A - Shenley Road	D21	5.9	54.24	0.88	F	D22	4.5	43.60	0.84	E
2E - Buckingham Road/ Shenley Road - B - Buckingham Road East		1.6	8.08	0.62	A		201.5	682.73	1.37	F
2E - Buckingham Road/ Shenley Road - C - Buckingham Road West		5.9	23.20	0.87	C		3.4	14.79	0.78	B
2W - Newford Road/ Buckingham Road - A - Buckingham Road East		2.1	9.13	0.68	A		5.9	20.35	0.87	C
2W - Newford Road/ Buckingham Road - B - Newton Road		101.5	783.45	1.39	F		2.8	25.85	0.74	D
2W - Newford Road/ Buckingham Road - C - Buckingham Road West		195.3	1263.99	1.49	F		1.5	10.12	0.60	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.

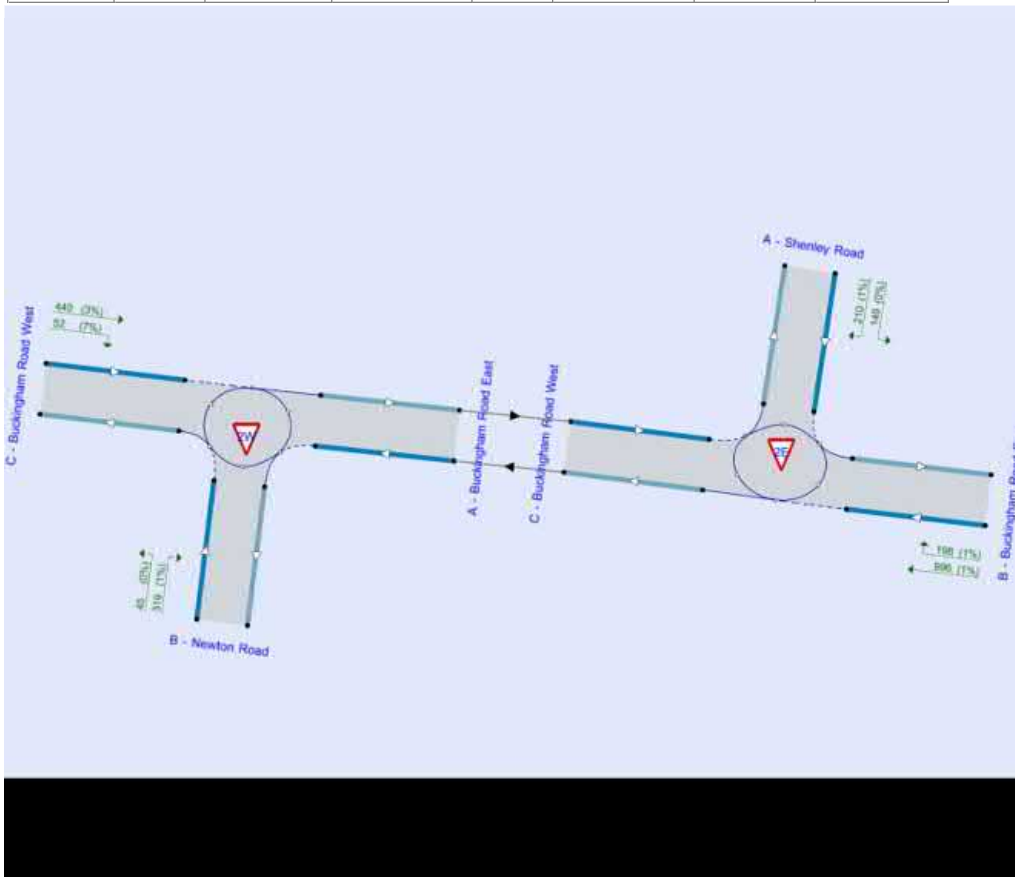
File summary

File Description

Title	Newford Road/ Buckingham Road
Location	51°59'28.63"N, 0°45'16.56"W
Site number	2E
Date	06/01/2021
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



The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	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	✓
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	✓
D12	2026 Base + CD + SP (ST)	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,D21,D22	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
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	17.65	C
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	10.84	B

Junction Network Options

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

Arms

Arms

Junction	Arm	Name	Description
2E - Buckingham Road/ Shenley Road	A	Shenley Road	
	B	Buckingham Road East	
	C	Buckingham Road West	
2W - Newford Road/ Buckingham Road	A	Buckingham Road East	
	B	Newton Road	
	C	Buckingham Road West	

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
2E - Buckingham Road/ Shenley Road	A - Shenley Road	3.10	3.10	4.60	1.8	11.00	7.88	-3.9	
	B - Buckingham Road East	4.80	4.80	6.50	19.5	16.00	15.27	-4.8	
	C - Buckingham Road West	5.30	5.30	5.30	0.0	12.70	9.06	-2.3	✓
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	5.80	5.80	7.60	2.3	12.60	7.48	-0.5	✓
	B - Newton Road	4.10	4.10	6.20	1.8	13.00	9.25	-1.3	✓
	C - Buckingham Road West	2.90	2.90	4.80	10.8	18.90	19.53	-3.6	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	None		
	B - Buckingham Road East	None		
	C - Buckingham Road West	None		
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	None		
	B - Newton Road	None		
	C - Buckingham Road West	Direct	Calibration against queue length	-250

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.657	890
	B - Buckingham Road East	0.795	1427
	C - Buckingham Road West	0.596	1190
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.611	1277
	B - Newton Road	0.554	921
	C - Buckingham Road West	0.915	1251

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	331	100.000
	B - Buckingham Road East		ONE HOUR	✓	464	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	460	100.000
	C - Buckingham Road West		ONE HOUR	✓	465	100.000

Origin-Destination Data

2W - Newford Road/ Buckingham Road

Demand (Veh/hr)

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
	A - Buckingham Road East	0	283	258
	B - Newton Road	417	0	43
	C - Buckingham Road West	430	35	0

Proportions

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
	A - Buckingham Road East	0.00	0.52	0.48
	B - Newton Road	0.91	0.00	0.09
	C - Buckingham Road West	0.92	0.08	0.00

2E - Buckingham Road/ Shenley Road

Demand (Veh/hr)

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
	A - Shenley Road	0	121	210
	B - Buckingham Road East	133	0	331
	C - Buckingham Road West	365	482	0

Proportions

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
	A - Shenley Road	0.00	0.37	0.63
	B - Buckingham Road East	0.29	0.00	0.71
	C - Buckingham Road West	0.43	0.57	0.00

Vehicle Mix

2W - Newford Road/ Buckingham Road

Heavy Vehicle Percentages

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
	A - Buckingham Road East	0	2	4
	B - Newton Road	2	0	5
	C - Buckingham Road West	1	3	0

Average PCU Per Veh

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
	A - Buckingham Road East	1.000	1.021	1.039
	B - Newton Road	1.024	1.000	1.047
	C - Buckingham Road West	1.014	1.029	1.000

2E - Buckingham Road/ Shenley Road

Heavy Vehicle Percentages

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
	A - Shenley Road	0	1	1
	B - Buckingham Road East	1	0	4
	C - Buckingham Road West	1	2	0

Average PCU Per Veh

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
	A - Shenley Road	1.000	1.008	1.010
	B - Buckingham Road East	1.008	1.000	1.042
	C - Buckingham Road West	1.008	1.019	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)	
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	249	252	
		07:45-08:00	298	300	
		08:00-08:15	364	368	
		08:15-08:30	364	368	
		08:30-08:45	298	300	
	B - Buckingham Road East	08:45-09:00	249	252	
		07:30-07:45	349	361	
		07:45-08:00	417	431	
		08:00-08:15	511	527	
		08:15-08:30	511	527	
	C - Buckingham Road West	08:30-08:45	417	431	
		08:45-09:00	349	361	
		07:30-07:45	638	647	
		07:45-08:00	761	772	
		08:00-08:15	933	946	
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	08:15-08:30	933	946	
		08:30-08:45	761	772	
		08:45-09:00	638	647	
		07:30-07:45	407	419	
		07:45-08:00	486	501	
	B - Newton Road	08:00-08:15	596	613	
		08:15-08:30	596	613	
		08:30-08:45	486	501	
		08:45-09:00	407	419	
		07:30-07:45	346	355	
			07:45-08:00	414	424
			08:00-08:15	506	520

C - Buckingham Road West	08:15-08:30	506	520
	08:30-08:45	414	424
	08:45-09:00	346	355
	07:30-07:45	350	355
	07:45-08:00	418	424
	08:00-08:15	512	520
	08:15-08:30	512	520
	08:30-08:45	418	424
	08:45-09:00	350	355

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.69	21.64	2.1	C	304	456
	B - Buckingham Road East	0.42	5.20	0.7	A	426	639
	C - Buckingham Road West	0.86	23.02	5.7	C	780	1170
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.49	5.79	0.9	A	496	744
	B - Newton Road	0.69	15.51	2.1	C	422	633
	C - Buckingham Road West	0.63	12.11	1.7	B	427	640

Main Results for each time segment

07:30 - 07:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	249	62	359	644	0.387	247	371	0.0	0.6	9.006	A
	B - Buckingham Road East	349	87	157	1261	0.277	348	449	0.0	0.4	3.935	A
	C - Buckingham Road West	636	159	100	1114	0.570	630	405	0.0	1.3	7.363	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	405	101	26	1225	0.330	403	633	0.0	0.5	4.369	A
	B - Newton Road	346	87	192	789	0.439	343	237	0.0	0.8	8.016	A
	C - Buckingham Road West	350	88	311	945	0.370	348	224	0.0	0.6	6.005	A

07:45 - 08:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	298	74	432	596	0.500	296	447	0.6	1.0	11.968	B
	B - Buckingham Road East	417	104	188	1237	0.337	417	540	0.4	0.5	4.386	A
	C - Buckingham Road West	762	191	119	1103	0.692	759	485	1.3	2.2	10.369	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	485	121	31	1222	0.397	484	759	0.5	0.7	4.880	A
	B - Newton Road	414	103	231	767	0.539	412	285	0.8	1.1	10.086	B
	C - Buckingham Road West	418	105	374	887	0.471	417	270	0.6	0.9	7.631	A

08:00 - 08:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	364	91	523	535	0.681	360	542	1.0	2.0	20.108	C
	B - Buckingham Road East	511	128	229	1205	0.424	510	654	0.5	0.7	5.173	A
	C - Buckingham Road West	931	233	146	1087	0.856	919	592	2.2	5.2	20.069	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	592	148	38	1217	0.487	591	926	0.7	0.9	5.740	A
	B - Newton Road	506	127	282	739	0.686	503	348	1.1	2.1	15.009	C
	C - Buckingham Road West	512	128	456	812	0.631	509	329	0.9	1.7	11.772	B

08:15 - 08:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	364	91	532	529	0.689	364	549	2.0	2.1	21.642	C
	B - Buckingham Road East	511	128	231	1203	0.425	511	665	0.7	0.7	5.198	A
	C - Buckingham Road West	936	234	146	1087	0.862	934	595	5.2	5.7	23.024	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	595	149	39	1217	0.489	595	932	0.9	0.9	5.789	A
	B - Newton Road	506	127	284	738	0.687	506	350	2.1	2.1	15.510	C
	C - Buckingham Road West	512	128	459	809	0.633	512	331	1.7	1.7	12.114	B

08:30 - 08:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	298	74	446	586	0.508	302	458	2.1	1.1	12.845	B
	B - Buckingham Road East	417	104	191	1234	0.338	418	557	0.7	0.5	4.418	A
	C - Buckingham Road West	771	193	120	1102	0.700	784	490	5.7	2.4	11.745	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	490	122	32	1221	0.401	491	768	0.9	0.7	4.934	A
	B - Newton Road	414	103	234	766	0.540	417	288	2.1	1.2	10.436	B
	C - Buckingham Road West	418	105	378	883	0.473	421	273	1.7	0.9	7.844	A

08:45 - 09:00

Junction	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
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	249	62	368	638	0.391	251	379	1.1	0.7	9.346	A
	B - Buckingham Road East	349	87	159	1259	0.277	350	460	0.5	0.4	3.962	A
	C - Buckingham Road West	643	161	100	1114	0.577	647	409	2.4	1.4	7.782	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	409	102	26	1225	0.334	409	640	0.7	0.5	4.421	A
	B - Newton Road	346	87	195	788	0.440	348	241	1.2	0.8	8.220	A
	C - Buckingham Road West	350	88	315	941	0.372	351	228	0.9	0.6	6.116	A

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details. [Arms B and C have 81% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	10.83	B
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	11.70	B

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	311	100.000
	B - Buckingham Road East		ONE HOUR	✓	845	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	315	100.000
	C - Buckingham Road West		ONE HOUR	✓	311	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	373	482
	B - Newton Road	276	0	39
	C - Buckingham Road West	266	45	0

Proportions

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.44	0.56
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.86	0.14	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	129	182
	B - Buckingham Road East	172	0	673
	C - Buckingham Road West	167	375	0

Proportions

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.41	0.59
	B - Buckingham Road East	0.20	0.00	0.80
	C - Buckingham Road West	0.31	0.69	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0
	C - Buckingham Road West	3	7	0

Average PCU Per Veh

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.008
	B - Newton Road	1.014	1.000	1.000
	C - Buckingham Road West	1.026	1.067	1.000

Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	0
	B - Buckingham Road East	0	0	4
	C - Buckingham Road West	0	1	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.004
	B - Buckingham Road East	1.000	1.000	1.036
	C - Buckingham Road West	1.003	1.008	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	234	235
		17:00-17:15	280	280
		17:15-17:30	342	343
		17:30-17:45	342	343
		17:45-18:00	280	280
		18:00-18:15	234	235
	B - Buckingham Road East	16:45-17:00	636	655
		17:00-17:15	760	782
		17:15-17:30	930	957
		17:30-17:45	930	957
		17:45-18:00	760	782
		18:00-18:15	636	655
	C - Buckingham Road West	16:45-17:00	408	411
		17:00-17:15	487	491
		17:15-17:30	597	601
		17:30-17:45	597	601
		17:45-18:00	487	491
		18:00-18:15	408	411
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	16:45-17:00	644	650
		17:00-17:15	769	776
		17:15-17:30	941	951
		17:30-17:45	941	951
		17:45-18:00	769	776
		18:00-18:15	644	650
	B - Newton Road	16:45-17:00	237	240
		17:00-17:15	283	287
		17:15-17:30	347	351
		17:30-17:45	347	351
		17:45-18:00	283	287
		18:00-18:15	237	240
	C - Buckingham Road West	16:45-17:00	234	242
		17:00-17:15	280	289
		17:15-17:30	342	353
		17:30-17:45	342	353
		17:45-18:00	280	289
		18:00-18:15	234	242

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.56	13.34	1.2	B	285	428
	B - Buckingham Road East	0.76	11.90	3.0	B	775	1163
	C - Buckingham Road West	0.56	7.73	1.3	A	503	755
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.78	13.07	3.4	B	799	1198
	B - Newton Road	0.57	13.60	1.3	B	289	434
	C - Buckingham Road West	0.36	6.03	0.6	A	285	428

Main Results for each time segment

16:45 - 17:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	234	59	282	701	0.334	232	254	0.0	0.5	7.639	A
	B - Buckingham Road East	636	159	136	1282	0.496	632	379	0.0	1.0	5.509	A
	C - Buckingham Road West	411	103	129	1106	0.371	408	639	0.0	0.6	5.144	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	652	163	34	1243	0.524	647	405	0.0	1.1	6.004	A
	B - Newton Road	237	59	365	708	0.335	235	316	0.0	0.5	7.582	A
	C - Buckingham Road West	234	59	206	1027	0.228	233	394	0.0	0.3	4.527	A

17:00 - 17:15

Junction	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
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	280	70	340	663	0.421	279	306	0.5	0.7	9.343	A
	B - Buckingham Road East	760	190	163	1261	0.603	758	456	1.0	1.5	7.124	A
	C - Buckingham Road West	492	123	154	1091	0.451	492	766	0.6	0.8	5.999	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	781	195	40	1238	0.631	779	486	1.1	1.7	7.792	A
	B - Newton Road	283	71	439	667	0.425	282	380	0.5	0.7	9.334	A
	C - Buckingham Road West	280	70	247	990	0.282	279	474	0.3	0.4	5.064	A

17:15 - 17:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	86	415	614	0.558	340	373	0.7	1.2	13.072	B
	B - Buckingham Road East	930	233	199	1233	0.755	925	556	1.5	2.9	11.470	B
	C - Buckingham Road West	602	151	188	1071	0.562	600	936	0.8	1.3	7.623	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	954	238	49	1233	0.774	947	594	1.7	3.2	12.350	B
	B - Newton Road	347	87	534	615	0.564	345	463	0.7	1.3	13.233	B
	C - Buckingham Road West	342	86	302	941	0.364	342	577	0.4	0.6	6.003	A

17:30 - 17:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	86	418	612	0.560	342	376	1.2	1.2	13.344	B
	B - Buckingham Road East	930	233	200	1232	0.755	930	560	2.9	3.0	11.895	B
	C - Buckingham Road West	604	151	189	1070	0.565	604	941	1.3	1.3	7.726	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	959	240	50	1233	0.778	958	597	3.2	3.4	13.073	B
	B - Newton Road	347	87	540	611	0.568	347	468	1.3	1.3	13.599	B
	C - Buckingham Road West	342	86	304	939	0.365	342	583	0.6	0.6	6.033	A

17:45 - 18:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	280	70	344	661	0.423	282	309	1.2	0.7	9.548	A
	B - Buckingham Road East	760	190	165	1259	0.603	765	461	3.0	1.5	7.373	A
	C - Buckingham Road West	496	124	156	1090	0.455	498	774	1.3	0.8	6.100	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	789	197	41	1238	0.637	796	490	3.4	1.8	8.245	A
	B - Newton Road	283	71	449	662	0.428	285	388	1.3	0.8	9.615	A
	C - Buckingham Road West	280	70	250	987	0.283	280	484	0.6	0.4	5.095	A

18:00 - 18:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	234	59	287	698	0.335	235	258	0.7	0.5	7.791	A
	B - Buckingham Road East	636	159	138	1281	0.497	638	385	1.5	1.0	5.627	A
	C - Buckingham Road West	415	104	130	1105	0.375	416	646	0.8	0.6	5.229	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	658	165	34	1243	0.530	661	409	1.8	1.1	6.219	A
	B - Newton Road	237	59	373	704	0.337	238	322	0.8	0.5	7.748	A
	C - Buckingham Road West	234	59	209	1025	0.229	235	402	0.4	0.3	4.560	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
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	20.83	C
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	263.79	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	549	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	527	100.000
	C - Buckingham Road West		ONE HOUR	✓	586	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
2W - Newford Road/ Buckingham Road	From				
		A - Buckingham Road East	0	325	313
		B - Newton Road	478	0	49
		C - Buckingham Road West	546	40	0

Proportions

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
From					
		A - Buckingham Road East	0.00	0.51	0.49
		B - Newton Road	0.91	0.00	0.09
		C - Buckingham Road West	0.93	0.07	0.00

Demand (Veh/hr)

		To			
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West	
2E - Buckingham Road/ Shenley Road	From				
		A - Shenley Road	0	139	241
		B - Buckingham Road East	153	0	396
		C - Buckingham Road West	419	606	0

Proportions

		To			
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West	
From					
		A - Shenley Road	0.00	0.37	0.63
		B - Buckingham Road East	0.28	0.00	0.72
		C - Buckingham Road West	0.41	0.59	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
2W - Newford Road/ Buckingham Road	From				
		A - Buckingham Road East	0	2	4
		B - Newton Road	2	0	5
		C - Buckingham Road West	2	3	0

Average PCU Per Veh

		To			
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West	
From					
		A - Buckingham Road East	1.000	1.021	1.039
		B - Newton Road	1.024	1.000	1.047
		C - Buckingham Road West	1.015	1.029	1.000

Heavy Vehicle Percentages

From	To	A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
		A - Shenley Road	0	1
B - Buckingham Road East	1	0	4	
C - Buckingham Road West	1	2	0	

Average PCU Per Veh

From	To	A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
		A - Shenley Road	1.000	1.008
B - Buckingham Road East	1.008	1.000	1.043	
C - Buckingham Road West	1.008	1.019	1.000	

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	289
		07:45-08:00	342	345
		08:00-08:15	418	422
		08:15-08:30	418	422
		08:30-08:45	342	345
		08:45-09:00	286	289
	B - Buckingham Road East	07:30-07:45	413	427
		07:45-08:00	494	510
		08:00-08:15	604	625
		08:15-08:30	604	625
		08:30-08:45	494	510
		08:45-09:00	413	427
	C - Buckingham Road West	07:30-07:45	772	783
		07:45-08:00	921	935
		08:00-08:15	1129	1145
		08:15-08:30	1129	1145
		08:30-08:45	921	935
		08:45-09:00	772	783
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	07:30-07:45	480	495
		07:45-08:00	574	591
		08:00-08:15	702	723
		08:15-08:30	702	723
		08:30-08:45	574	591
		08:45-09:00	480	495
	B - Newton Road	07:30-07:45	397	407
		07:45-08:00	474	486
		08:00-08:15	580	595
		08:15-08:30	580	595
		08:30-08:45	474	486
		08:45-09:00	397	407
	C - Buckingham Road West	07:30-07:45	441	448
		07:45-08:00	527	535
		08:00-08:15	645	655
		08:15-08:30	645	655
		08:30-08:45	527	535
		08:45-09:00	441	448

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.81	33.94	3.8	D	349	523
	B - Buckingham Road East	0.51	6.30	1.0	A	504	756
	C - Buckingham Road West	0.87	24.05	5.9	C	903	1355
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.58	6.96	1.3	A	584	876
	B - Newton Road	1.23	412.45	55.9	F	484	725
	C - Buckingham Road West	1.23	411.56	59.8	F	538	807

Main Results for each time segment

07:30 - 07:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	448	585	0.489	282	425	0.0	0.9	11.771	B
	B - Buckingham Road East	413	103	179	1242	0.333	411	552	0.0	0.5	4.321	A
	C - Buckingham Road West	767	192	115	1105	0.694	758	476	0.0	2.2	10.142	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	476	119	30	1222	0.390	474	764	0.0	0.6	4.793	A
	B - Newton Road	397	99	232	767	0.517	393	271	0.0	1.0	9.519	A
	C - Buckingham Road West	441	110	356	903	0.489	437	269	0.0	0.9	7.675	A

07:45 - 08:00

Junction	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 - Shenley Road	342	85	538	525	0.650	338	509	0.9	1.8	18.911	C

2E - Buckingham Road/ Shenley Road	B - Buckingham Road East	494	123	215	1215	0.406	493	661	0.5	0.7	4.980	A
	C - Buckingham Road West	920	230	137	1092	0.842	910	570	2.2	4.7	18.750	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	570	143	36	1219	0.468	569	916	0.6	0.9	5.539	A
	B - Newton Road	474	118	279	740	0.640	471	326	1.0	1.7	13.239	B
	C - Buckingham Road West	527	132	427	837	0.629	524	323	0.9	1.6	11.398	B

08:00 - 08:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	550	517	0.809	411	548	1.8	3.6	31.807	D
	B - Buckingham Road East	604	151	261	1179	0.513	603	701	0.7	1.0	6.235	A
	C - Buckingham Road West	935	234	168	1074	0.871	931	696	4.7	5.9	24.051	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	696	174	37	1218	0.572	694	931	0.9	1.3	6.852	A
	B - Newton Road	580	145	341	487	1.192	474	390	1.7	28.2	132.398	F
	C - Buckingham Road West	645	161	430	552	1.169	538	385	1.6	28.5	118.872	F

08:15 - 08:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	543	522	0.802	418	544	3.6	3.8	33.937	D
	B - Buckingham Road East	604	151	265	1176	0.514	604	696	1.0	1.0	6.301	A
	C - Buckingham Road West	918	230	168	1073	0.855	918	701	5.9	5.9	23.189	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	701	175	36	1219	0.576	701	914	1.3	1.3	6.957	A
	B - Newton Road	580	145	344	471	1.233	469	393	28.2	55.9	334.985	F
	C - Buckingham Road West	645	161	426	525	1.229	524	388	28.5	58.9	314.806	F

08:30 - 08:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	552	516	0.662	348	520	3.8	2.1	22.257	C
	B - Buckingham Road East	494	123	221	1210	0.408	495	679	1.0	0.7	5.044	A
	C - Buckingham Road West	934	233	138	1091	0.855	934	578	5.9	5.9	22.807	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	578	145	36	1219	0.475	580	929	1.3	0.9	5.651	A
	B - Newton Road	474	118	285	489	0.970	487	331	55.9	52.6	412.446	F
	C - Buckingham Road West	527	132	442	528	0.998	523	330	58.9	59.8	411.564	F

08:45 - 09:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	559	511	0.559	289	502	2.1	1.3	16.408	C
	B - Buckingham Road East	413	103	183	1239	0.334	414	664	0.7	0.5	4.369	A
	C - Buckingham Road West	945	236	115	1105	0.855	945	482	5.9	5.9	22.530	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	482	121	37	1218	0.396	483	941	0.9	0.7	4.908	A
	B - Newton Road	397	99	237	494	0.803	485	283	52.6	30.5	311.923	F
	C - Buckingham Road West	441	110	440	546	0.808	537	282	59.8	35.8	323.209	F

2033 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 82% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	75.34	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	17.70	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1019	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	364	100.000
	C - Buckingham Road West		ONE HOUR	✓	380	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	601
	B - Newton Road	319	0	45
	C - Buckingham Road West	328	52	0

Proportions

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.42	0.58
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.86	0.14	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	821
	C - Buckingham Road West	193	454	0

Proportions

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.19	0.00	0.81
	C - Buckingham Road West	0.30	0.70	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0
	C - Buckingham Road West	3	7	0

Average PCU Per Veh

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.008
	B - Newton Road	1.014	1.000	1.000
	C - Buckingham Road West	1.027	1.067	1.000

Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	1
	B - Buckingham Road East	1	0	1
	C - Buckingham Road West	0	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.005
	B - Buckingham Road East	1.006	1.000	1.012
	C - Buckingham Road West	1.003	1.019	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	324
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	324
		18:00-18:15	270	271
	B - Buckingham Road East	16:45-17:00	767	775
		17:00-17:15	916	926
		17:15-17:30	1122	1134
		17:30-17:45	1122	1134
		17:45-18:00	916	926
		18:00-18:15	767	775
	C - Buckingham Road West	16:45-17:00	487	494
		17:00-17:15	582	590
		17:15-17:30	712	723
		17:30-17:45	712	723
		17:45-18:00	582	590
		18:00-18:15	487	494
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	16:45-17:00	776	784
		17:00-17:15	927	936
		17:15-17:30	1135	1147
		17:30-17:45	1135	1147
		17:45-18:00	927	936
		18:00-18:15	776	784
	B - Newton Road	16:45-17:00	274	277
		17:00-17:15	327	331
		17:15-17:30	401	406
		17:30-17:45	401	406
		17:45-18:00	327	331
		18:00-18:15	274	277
	C - Buckingham Road West	16:45-17:00	286	295
		17:00-17:15	342	353
		17:15-17:30	418	432
		17:30-17:45	418	432
		17:45-18:00	342	353
		18:00-18:15	286	295

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.86	39.91	4.5	E	329	494
	B - Buckingham Road East	1.10	129.22	47.0	F	935	1403
	C - Buckingham Road West	0.68	10.55	2.1	B	597	895
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	20.35	5.9	C	945	1418
	B - Newton Road	0.71	21.02	2.3	C	334	501
	C - Buckingham Road West	0.47	7.54	0.9	A	349	523

Main Results for each time segment

16:45 - 17:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	339	661	0.409	268	292	0.0	0.7	9.082	A
	B - Buckingham Road East	767	192	157	1289	0.595	761	450	0.0	1.4	6.758	A
	C - Buckingham Road West	486	122	148	1086	0.448	483	770	0.0	0.8	5.942	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	770	193	39	1239	0.621	764	483	0.0	1.6	7.474	A
	B - Newton Road	274	69	445	664	0.413	271	358	0.0	0.7	9.115	A
	C - Buckingham Road West	286	72	238	998	0.287	284	479	0.0	0.4	5.035	A

17:00 - 17:15

Junction	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
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	408	615	0.525	321	351	0.7	1.1	12.179	B
	B - Buckingham Road East	916	229	188	1264	0.725	912	541	1.4	2.5	10.099	B
	C - Buckingham Road West	583	146	177	1069	0.546	582	922	0.8	1.2	7.369	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	923	231	47	1234	0.748	918	580	1.6	2.8	11.197	B
	B - Newton Road	327	82	535	614	0.533	326	430	0.7	1.1	12.408	B
	C - Buckingham Road West	342	85	285	955	0.358	341	575	0.4	0.6	5.855	A

17:15 - 17:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	497	461	0.857	381	416	1.1	4.5	39.912	E
	B - Buckingham Road East	1122	280	223	1100	1.020	1054	655	2.5	19.4	50.109	F
	C - Buckingham Road West	712	178	205	1052	0.676	708	1073	1.2	2.0	10.366	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1073	268	57	1228	0.874	1061	707	2.8	5.9	20.120	C
	B - Newton Road	401	100	618	568	0.706	396	499	1.1	2.2	20.432	C
	C - Buckingham Road West	418	105	347	899	0.465	417	667	0.6	0.9	7.444	A

17:30 - 17:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	503	552	0.716	402	410	4.5	2.7	25.103	D
	B - Buckingham Road East	1122	280	235	1018	1.102	1012	670	19.4	47.0	129.215	F
	C - Buckingham Road West	717	179	197	1057	0.678	716	1050	2.0	2.1	10.550	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1051	263	57	1228	0.856	1051	712	5.9	5.9	20.350	C
	B - Newton Road	401	100	613	571	0.702	401	495	2.2	2.3	21.015	C
	C - Buckingham Road West	418	105	351	896	0.467	418	662	0.9	0.9	7.535	A

17:45 - 18:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	416	610	0.529	329	385	2.7	1.2	13.072	B
	B - Buckingham Road East	916	229	192	1094	0.838	1072	552	47.0	8.1	99.730	F
	C - Buckingham Road West	589	147	208	1050	0.561	592	1056	2.1	1.3	7.914	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1057	264	47	1234	0.856	1057	586	5.9	5.9	20.247	C
	B - Newton Road	327	82	616	569	0.575	331	488	2.3	1.4	15.298	C
	C - Buckingham Road West	342	85	290	951	0.359	343	657	0.9	0.6	5.929	A

18:00 - 18:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	347	656	0.412	272	302	1.2	0.7	9.422	A
	B - Buckingham Road East	767	192	159	1286	0.596	794	460	8.1	1.5	7.690	A
	C - Buckingham Road West	493	123	154	1082	0.456	495	799	1.3	0.8	6.147	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	799	200	39	1239	0.645	815	490	5.9	1.9	8.804	A
	B - Newton Road	274	69	475	647	0.424	277	379	1.4	0.7	9.786	A
	C - Buckingham Road West	286	72	242	994	0.288	287	509	0.6	0.4	5.098	A

2033 Base + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details. [Arms B and C have 82% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	21.89	C
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	518.85	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	629	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	527	100.000
	C - Buckingham Road West		ONE HOUR	✓	700	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	325	393
	B - Newton Road	478	0	49
	C - Buckingham Road West	660	40	0

Proportions

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.45	0.55
	B - Newton Road	0.91	0.00	0.09
	C - Buckingham Road West	0.94	0.06	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	139	241
	B - Buckingham Road East	153	0	476
	C - Buckingham Road West	419	720	0

Proportions

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.37	0.63
	B - Buckingham Road East	0.24	0.00	0.76
	C - Buckingham Road West	0.37	0.63	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	2	4
	B - Newton Road	2	0	5
	C - Buckingham Road West	2	3	0

Average PCU Per Veh

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.021	1.041
	B - Newton Road	1.024	1.000	1.047
	C - Buckingham Road West	1.015	1.029	1.000

Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	1	1
	B - Buckingham Road East	1	0	4
	C - Buckingham Road West	1	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.008	1.010
	B - Buckingham Road East	1.008	1.000	1.043
	C - Buckingham Road West	1.008	1.020	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	289
		07:45-08:00	342	345
		08:00-08:15	418	422
		08:15-08:30	418	422
		08:30-08:45	342	345
	B - Buckingham Road East	08:45-09:00	286	289
		07:30-07:45	474	490
		07:45-08:00	565	585
		08:00-08:15	693	716
		08:15-08:30	693	716
	C - Buckingham Road West	08:30-08:45	565	585
		08:45-09:00	474	490
		07:30-07:45	857	871
		07:45-08:00	1024	1040
		08:00-08:15	1254	1274
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	08:15-08:30	1254	1274
		08:30-08:45	1024	1040
		08:45-09:00	857	871
		07:30-07:45	541	558
		07:45-08:00	645	666
	B - Newton Road	08:00-08:15	791	816
		08:15-08:30	791	816
		08:30-08:45	645	666
		08:45-09:00	541	558
		07:30-07:45	397	407
	C - Buckingham Road West	07:45-08:00	474	486
		08:00-08:15	580	595
		08:15-08:30	580	595
		08:30-08:45	474	486
		08:45-09:00	397	407
C - Buckingham Road West	07:30-07:45	527	535	
	07:45-08:00	629	639	
	08:00-08:15	771	783	
	08:15-08:30	771	783	
	08:30-08:45	629	639	
08:45-09:00	527	535		

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.84	42.89	4.7	E	349	523
	B - Buckingham Road East	0.59	7.46	1.4	A	577	866
	C - Buckingham Road West	0.87	23.19	5.9	C	919	1379
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.65	8.35	1.8	A	657	985
	B - Newton Road	1.35	670.83	87.5	F	484	725
	C - Buckingham Road West	1.41	933.69	141.9	F	642	963

Main Results for each time segment

07:30 - 07:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	529	531	0.539	282	423	0.0	1.1	14.216	B
	B - Buckingham Road East	474	118	179	1241	0.381	471	632	0.0	0.6	4.659	A
	C - Buckingham Road West	850	213	115	1104	0.770	838	535	0.0	3.1	12.961	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	535	134	30	1220	0.439	532	847	0.0	0.8	5.213	A
	B - Newton Road	397	99	291	733	0.541	392	271	0.0	1.1	10.417	B
	C - Buckingham Road West	527	132	356	903	0.583	522	328	0.0	1.4	9.302	A

07:45 - 08:00

Junction	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
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	596	486	0.703	337	484	1.1	2.2	23.535	C
	B - Buckingham Road East	565	141	214	1214	0.466	564	720	0.6	0.9	5.526	A
	C - Buckingham Road West	954	239	137	1091	0.875	943	641	3.1	5.9	22.735	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	641	160	33	1217	0.527	640	951	0.8	1.1	6.219	A
	B - Newton Road	474	118	350	483	0.982	440	323	1.1	9.5	61.949	F
	C - Buckingham Road West	629	157	399	628	1.003	585	391	1.4	12.4	59.063	F

08:00 - 08:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	580	497	0.842	410	505	2.2	4.3	37.865	E
	B - Buckingham Road East	693	173	260	1178	0.588	690	730	0.9	1.4	7.349	A
	C - Buckingham Road West	917	229	168	1073	0.855	917	782	5.9	5.9	23.186	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	783	196	32	1218	0.642	780	914	1.1	1.8	8.161	A
	B - Newton Road	580	145	427	430	1.348	428	385	9.5	47.6	257.750	F
	C - Buckingham Road West	771	193	388	560	1.376	558	467	12.4	65.5	267.764	F

08:15 - 08:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	580	497	0.842	417	506	4.3	4.7	42.893	E
	B - Buckingham Road East	693	173	264	1175	0.590	692	732	1.4	1.4	7.461	A
	C - Buckingham Road West	917	229	168	1072	0.855	917	788	5.9	5.9	23.192	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	788	197	31	1219	0.647	788	914	1.8	1.8	8.353	A
	B - Newton Road	580	145	431	438	1.324	438	388	47.6	83.2	542.888	F
	C - Buckingham Road West	771	193	397	548	1.405	548	472	65.5	121.2	624.666	F

08:30 - 08:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	589	491	0.696	350	481	4.7	2.5	27.026	D
	B - Buckingham Road East	565	141	222	1207	0.468	568	718	1.4	0.9	5.646	A
	C - Buckingham Road West	932	233	138	1090	0.855	932	652	5.9	5.9	22.810	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	652	163	31	1219	0.535	654	929	1.8	1.2	6.403	A
	B - Newton Road	474	118	358	458	1.035	456	327	83.2	87.5	670.826	F
	C - Buckingham Road West	629	157	414	547	1.151	546	401	121.2	141.9	877.700	F

08:45 - 09:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	597	486	0.589	290	463	2.5	1.5	18.718	C
	B - Buckingham Road East	474	118	184	1237	0.383	475	703	0.9	0.6	4.727	A
	C - Buckingham Road West	944	236	115	1104	0.855	944	543	5.9	5.9	22.534	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	543	136	31	1219	0.445	544	941	1.2	0.8	5.349	A
	B - Newton Road	397	99	298	480	0.826	475	277	87.5	67.9	590.299	F
	C - Buckingham Road West	527	132	431	544	0.968	541	342	141.9	138.5	933.692	F

2033 Base + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2W - Newford Road/ Buckingham Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 81% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	245.73	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	18.91	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1146	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	364	100.000
	C - Buckingham Road West		ONE HOUR	✓	468	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	728
	B - Newton Road	319	0	45
	C - Buckingham Road West	416	52	0

Proportions

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.37	0.63
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.89	0.11	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	948
	C - Buckingham Road West	193	541	0

Proportions

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.17	0.00	0.83
	C - Buckingham Road West	0.26	0.74	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0

Average PCU Per Veh

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.009
	B - Newton Road	1.014	1.000	1.000

C - Buckingham Road West	3	7	0
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C - Buckingham Road West	1.027	1.067	1.000
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Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	1
	B - Buckingham Road East	1	0	1
	C - Buckingham Road West	0	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.005
	B - Buckingham Road East	1.006	1.000	1.011
	C - Buckingham Road West	1.003	1.021	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	324
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	324
	B - Buckingham Road East	18:00-18:15	270	271
		16:45-17:00	863	872
		17:00-17:15	1030	1041
		17:15-17:30	1262	1275
		17:30-17:45	1262	1275
	C - Buckingham Road West	17:45-18:00	1030	1041
		18:00-18:15	863	872
		16:45-17:00	553	562
		17:00-17:15	660	671
		17:15-17:30	808	821
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	17:30-17:45	808	821
		17:45-18:00	660	671
		18:00-18:15	553	562
		16:45-17:00	872	881
		17:00-17:15	1041	1052
	B - Newton Road	17:15-17:30	1275	1288
		17:30-17:45	1275	1288
		17:45-18:00	1041	1052
		18:00-18:15	872	881
		16:45-17:00	274	277
	C - Buckingham Road West	17:00-17:15	327	331
		17:15-17:30	401	406
		17:30-17:45	401	406
		17:45-18:00	327	331
		18:00-18:15	274	277
C - Buckingham Road West	16:45-17:00	352	363	
	17:00-17:15	421	434	
	17:15-17:30	515	531	
	17:30-17:45	515	531	
	17:45-18:00	421	434	
		18:00-18:15	352	363

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	1.01	76.89	10.0	F	329	494
	B - Buckingham Road East	1.29	448.39	131.2	F	1052	1577
	C - Buckingham Road West	0.76	13.86	3.0	B	677	1015
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	21.03	5.9	C	1022	1533
	B - Newton Road	0.74	24.85	2.7	C	334	501
	C - Buckingham Road West	0.57	9.42	1.3	A	429	644

Main Results for each time segment

16:45 - 17:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	403	618	0.437	267	292	0.0	0.8	10.184	B
	B - Buckingham Road East	863	216	156	1290	0.669	855	514	0.0	2.0	8.143	A
	C - Buckingham Road West	551	138	148	1084	0.509	547	864	0.0	1.0	6.659	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	863	216	39	1239	0.697	854	549	0.0	2.2	9.155	A
	B - Newton Road	274	69	537	613	0.447	271	356	0.0	0.8	10.439	B
	C - Buckingham Road West	352	88	237	999	0.353	350	570	0.0	0.5	5.529	A

17:00 - 17:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	486	563	0.573	321	350	0.8	1.3	14.727	B
	B - Buckingham Road East	1030	258	188	1265	0.815	1022	619	2.0	4.1	14.332	B
	C - Buckingham Road West	661	165	177	1067	0.620	659	1033	1.0	1.6	8.773	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1032	258	47	1234	0.837	1023	658	2.2	4.6	16.310	C
	B - Newton Road	327	82	643	554	0.591	325	426	0.8	1.4	15.539	C
	C - Buckingham Road West	421	105	285	957	0.440	420	683	0.5	0.8	6.692	A

17:15 - 17:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	591	392	1.009	360	390	1.3	10.0	76.889	F
	B - Buckingham Road East	1262	315	211	1048	1.205	1038	740	4.1	60.1	123.560	F
	C - Buckingham Road West	807	202	179	1065	0.758	802	1069	1.6	3.0	13.374	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1069	267	57	1227	0.871	1063	803	4.6	5.9	21.034	C
	B - Newton Road	401	100	668	540	0.742	396	452	1.4	2.6	24.143	C
	C - Buckingham Road West	515	129	347	901	0.572	513	717	0.8	1.3	9.237	A

17:30 - 17:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	599	487	0.811	415	383	10.0	5.1	55.989	F
	B - Buckingham Road East	1262	315	243	978	1.290	977	771	60.1	131.2	353.641	F
	C - Buckingham Road West	813	203	169	1071	0.759	813	1051	3.0	3.0	13.855	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1050	263	57	1227	0.856	1050	809	5.9	5.9	20.353	C
	B - Newton Road	401	100	660	545	0.736	401	447	2.6	2.7	24.855	C
	C - Buckingham Road West	515	129	351	897	0.574	515	710	1.3	1.3	9.423	A

17:45 - 18:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	497	555	0.582	337	357	5.1	1.4	17.555	C
	B - Buckingham Road East	1030	258	197	1043	0.988	1039	637	131.2	129.0	448.392	F
	C - Buckingham Road West	670	167	179	1065	0.629	675	1057	3.0	1.7	9.349	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1056	264	47	1234	0.856	1056	666	5.9	5.9	20.248	C
	B - Newton Road	327	82	664	543	0.603	332	439	2.7	1.6	17.405	C
	C - Buckingham Road West	421	105	291	951	0.442	423	705	1.3	0.8	6.840	A

18:00 - 18:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	414	611	0.442	273	336	1.4	0.8	10.727	B
	B - Buckingham Road East	863	216	160	1098	0.786	1089	527	129.0	72.4	334.601	F
	C - Buckingham Road West	559	140	188	1060	0.527	561	1061	1.7	1.1	7.252	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1060	265	39	1239	0.856	1060	556	5.9	5.9	20.161	C
	B - Newton Road	274	69	667	541	0.506	276	433	1.6	1.1	13.697	B
	C - Buckingham Road West	352	88	242	995	0.354	353	701	0.8	0.6	5.617	A

2033 Base + CD + D with TP, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details. [Arms B and C have 82% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	21.61	C
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	475.91	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	619	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	527	100.000
	C - Buckingham Road West		ONE HOUR	✓	684	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	325	383
	B - Newton Road	478	0	49
	C - Buckingham Road West	644	40	0

Proportions

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.46	0.54
	B - Newton Road	0.91	0.00	0.09
	C - Buckingham Road West	0.94	0.06	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	139	241
	B - Buckingham Road East	153	0	466
	C - Buckingham Road West	419	703	0

Proportions

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.37	0.63
	B - Buckingham Road East	0.25	0.00	0.75
	C - Buckingham Road West	0.37	0.63	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	2	4
	B - Newton Road	2	0	5
	C - Buckingham Road West	2	3	0

Average PCU Per Veh

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.021	1.041
	B - Newton Road	1.024	1.000	1.047
	C - Buckingham Road West	1.015	1.029	1.000

Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	1	1
	B - Buckingham Road East	1	0	4
	C - Buckingham Road West	1	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.008	1.010
	B - Buckingham Road East	1.008	1.000	1.043
	C - Buckingham Road West	1.008	1.019	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	289
		07:45-08:00	342	345
		08:00-08:15	418	422
		08:15-08:30	418	422
		08:30-08:45	342	345
	B - Buckingham Road East	08:45-09:00	286	289
		07:30-07:45	466	482
		07:45-08:00	556	576
		08:00-08:15	682	705
		08:15-08:30	682	705
	C - Buckingham Road West	08:30-08:45	556	576
		08:45-09:00	466	482
		07:30-07:45	845	857
		07:45-08:00	1009	1024
		08:00-08:15	1235	1254
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	08:15-08:30	1235	1254
		08:30-08:45	1009	1024
		08:45-09:00	845	857
		07:30-07:45	533	550
		07:45-08:00	636	657
	B - Newton Road	08:00-08:15	780	804
		08:15-08:30	780	804
		08:30-08:45	636	657
		08:45-09:00	533	550
		07:30-07:45	397	407
	C - Buckingham Road West	07:45-08:00	474	486
		08:00-08:15	580	595
		08:15-08:30	580	595
		08:30-08:45	474	486
		08:45-09:00	397	407
C - Buckingham Road West	07:30-07:45	515	523	
	07:45-08:00	615	625	
	08:00-08:15	753	765	
	08:15-08:30	753	765	
	08:30-08:45	615	625	
08:45-09:00	515	523		

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.84	41.35	4.5	E	349	523
	B - Buckingham Road East	0.58	7.29	1.4	A	568	852
	C - Buckingham Road West	0.88	23.19	5.9	C	918	1377
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.64	8.15	1.7	A	648	972
	B - Newton Road	1.34	633.70	82.7	F	484	725
	C - Buckingham Road West	1.38	843.48	129.5	F	628	941

Main Results for each time segment

07:30 - 07:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	518	538	0.531	282	423	0.0	1.1	13.805	B
	B - Buckingham Road East	466	117	179	1241	0.375	464	621	0.0	0.6	4.615	A
	C - Buckingham Road West	839	210	115	1105	0.759	827	528	0.0	3.0	12.479	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	528	132	30	1220	0.433	525	836	0.0	0.8	5.158	A
	B - Newton Road	397	99	284	737	0.538	392	271	0.0	1.1	10.299	B
	C - Buckingham Road West	515	129	356	903	0.570	510	320	0.0	1.3	9.035	A

07:45 - 08:00

Junction	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
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	591	490	0.697	337	490	1.1	2.1	22.991	C
	B - Buckingham Road East	556	139	214	1214	0.458	556	715	0.6	0.8	5.459	A
	C - Buckingham Road West	955	239	137	1091	0.875	944	632	3.0	5.9	22.618	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	632	158	34	1217	0.519	631	952	0.8	1.1	6.126	A
	B - Newton Road	474	118	341	499	0.949	447	324	1.1	7.9	53.325	F
	C - Buckingham Road West	615	154	405	634	0.971	580	383	1.3	10.0	50.448	F

08:00 - 08:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	575	501	0.836	410	511	2.1	4.2	36.742	E
	B - Buckingham Road East	682	170	260	1178	0.578	679	725	0.8	1.3	7.189	A
	C - Buckingham Road West	918	229	168	1073	0.855	918	772	5.9	5.9	23.184	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	772	193	32	1218	0.634	769	914	1.1	1.7	7.974	A
	B - Newton Road	580	145	416	435	1.335	432	386	7.9	45.0	238.683	F
	C - Buckingham Road West	753	188	391	558	1.350	555	456	10.0	59.4	241.771	F

08:15 - 08:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	575	501	0.836	417	511	4.2	4.5	41.354	E
	B - Buckingham Road East	682	170	264	1175	0.580	681	728	1.3	1.4	7.293	A
	C - Buckingham Road West	918	229	168	1073	0.855	918	777	5.9	5.9	23.190	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	777	194	32	1219	0.638	777	914	1.7	1.7	8.150	A
	B - Newton Road	580	145	420	443	1.311	442	389	45.0	79.5	513.305	F
	C - Buckingham Road West	753	188	401	545	1.382	545	462	59.4	111.5	576.496	F

08:30 - 08:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	585	494	0.691	350	487	4.5	2.4	26.211	D
	B - Buckingham Road East	556	139	222	1208	0.461	558	713	1.4	0.9	5.563	A
	C - Buckingham Road West	933	233	138	1091	0.855	933	642	5.9	5.9	22.808	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	642	161	32	1219	0.527	645	929	1.7	1.1	6.298	A
	B - Newton Road	474	118	349	462	1.025	461	328	79.5	82.7	633.703	F
	C - Buckingham Road West	615	154	418	543	1.132	543	392	111.5	129.5	808.035	F

08:45 - 09:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	592	490	0.584	290	468	2.4	1.5	18.353	C
	B - Buckingham Road East	466	117	184	1237	0.377	467	698	0.9	0.6	4.680	A
	C - Buckingham Road West	945	236	115	1104	0.855	945	535	5.9	5.9	22.532	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	535	134	32	1219	0.439	537	941	1.1	0.8	5.290	A
	B - Newton Road	397	99	290	483	0.822	477	278	82.7	62.7	550.364	F
	C - Buckingham Road West	515	129	433	544	0.947	540	335	129.5	123.3	843.479	F

2033 Base + CD + D with TP, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2W - Newford Road/ Buckingham Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 81% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 83% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	213.98	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	18.68	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1126	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	364	100.000
	C - Buckingham Road West		ONE HOUR	✓	454	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	708
	B - Newton Road	319	0	45
	C - Buckingham Road West	402	52	0

Proportions

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.38	0.62
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.89	0.11	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	928
	C - Buckingham Road West	193	528	0

Proportions

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.18	0.00	0.82
	C - Buckingham Road West	0.27	0.73	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0

Average PCU Per Veh

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.008
	B - Newton Road	1.014	1.000	1.000

C - Buckingham Road West	3	7	0
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C - Buckingham Road West	1.027	1.067	1.000
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Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	1
	B - Buckingham Road East	1	0	1
	C - Buckingham Road West	0	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.005
	B - Buckingham Road East	1.006	1.000	1.011
	C - Buckingham Road West	1.003	1.021	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	324
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	324
	B - Buckingham Road East	18:00-18:15	270	271
		16:45-17:00	848	856
		17:00-17:15	1012	1022
		17:15-17:30	1240	1252
		17:30-17:45	1240	1252
	C - Buckingham Road West	17:45-18:00	1012	1022
		18:00-18:15	848	856
		16:45-17:00	543	552
		17:00-17:15	648	659
		17:15-17:30	794	807
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	17:30-17:45	794	807
		17:45-18:00	648	659
		18:00-18:15	543	552
		16:45-17:00	857	865
		17:00-17:15	1023	1033
	B - Newton Road	17:15-17:30	1253	1265
		17:30-17:45	1253	1265
		17:45-18:00	1023	1033
		18:00-18:15	857	865
		16:45-17:00	274	277
	C - Buckingham Road West	17:00-17:15	327	331
		17:15-17:30	401	406
		17:30-17:45	401	406
		17:45-18:00	327	331
		18:00-18:15	274	277
C - Buckingham Road West	16:45-17:00	342	353	
	17:00-17:15	408	421	
	17:15-17:30	500	516	
	17:30-17:45	500	516	
	17:45-18:00	408	421	
		18:00-18:15	342	353

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.99	70.45	9.0	F	329	494
	B - Buckingham Road East	1.26	389.22	117.9	F	1033	1550
	C - Buckingham Road West	0.75	13.19	2.9	B	664	996
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	20.88	5.9	C	1017	1526
	B - Newton Road	0.74	24.21	2.6	C	334	501
	C - Buckingham Road West	0.56	9.06	1.2	A	417	625

Main Results for each time segment

16:45 - 17:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	393	625	0.433	267	291	0.0	0.7	9.995	A
	B - Buckingham Road East	848	212	156	1290	0.657	840	504	0.0	1.9	7.888	A
	C - Buckingham Road West	541	135	148	1084	0.499	537	849	0.0	1.0	6.532	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	849	212	39	1240	0.685	840	538	0.0	2.1	8.840	A
	B - Newton Road	274	69	523	621	0.441	271	356	0.0	0.8	10.204	B
	C - Buckingham Road West	342	85	237	999	0.342	340	556	0.0	0.5	5.444	A

17:00 - 17:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	473	571	0.565	321	350	0.7	1.3	14.265	B
	B - Buckingham Road East	1012	253	188	1265	0.800	1005	607	1.9	3.7	13.461	B
	C - Buckingham Road West	649	162	177	1067	0.608	646	1016	1.0	1.5	8.519	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1016	254	47	1235	0.823	1007	645	2.1	4.2	15.251	C
	B - Newton Road	327	82	627	563	0.581	325	427	0.8	1.3	14.950	B
	C - Buckingham Road West	408	102	285	956	0.427	407	667	0.5	0.7	6.544	A

17:15 - 17:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	576	400	0.987	364	394	1.3	9.0	70.451	F
	B - Buckingham Road East	1240	310	213	1052	1.178	1040	727	3.7	53.6	111.487	F
	C - Buckingham Road West	792	198	183	1063	0.745	787	1071	1.5	2.8	12.788	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1271	268	57	1228	0.872	1064	788	4.2	5.9	20.875	C
	B - Newton Road	401	100	662	544	0.737	396	459	1.3	2.6	23.527	C
	C - Buckingham Road West	500	125	347	901	0.555	498	711	0.7	1.2	8.898	A

17:30 - 17:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	584	497	0.795	413	386	9.0	4.5	47.968	E
	B - Buckingham Road East	1240	310	242	983	1.261	982	755	53.6	117.9	316.819	F
	C - Buckingham Road West	797	199	173	1069	0.746	797	1051	2.8	2.9	13.190	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1051	263	57	1228	0.856	1051	794	5.9	5.9	20.352	C
	B - Newton Road	401	100	654	548	0.731	401	454	2.6	2.6	24.212	C
	C - Buckingham Road West	500	125	351	897	0.557	500	703	1.2	1.2	9.062	A

17:45 - 18:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	484	564	0.573	335	361	4.5	1.4	16.534	C
	B - Buckingham Road East	1012	253	196	1053	0.961	1044	624	117.9	109.9	389.218	F
	C - Buckingham Road West	657	164	184	1063	0.618	662	1057	2.9	1.7	9.076	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1057	264	47	1235	0.856	1057	654	5.9	5.9	20.245	C
	B - Newton Road	327	82	657	546	0.599	331	446	2.6	1.6	17.059	C
	C - Buckingham Road West	408	102	290	951	0.429	410	698	1.2	0.8	6.676	A

18:00 - 18:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	403	618	0.437	273	340	1.4	0.8	10.496	B
	B - Buckingham Road East	848	212	160	1103	0.768	1094	516	109.9	48.5	263.110	F
	C - Buckingham Road West	548	137	192	1058	0.518	550	1061	1.7	1.1	7.127	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1061	265	39	1240	0.856	1061	545	5.9	5.9	20.159	C
	B - Newton Road	274	69	660	545	0.503	276	440	1.6	1.0	13.492	B
	C - Buckingham Road West	342	85	242	995	0.344	343	694	0.8	0.5	5.528	A

2033 Base + CD + D - ST, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 83% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	22.94	C
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	691.18	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	658	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	527	100.000
	C - Buckingham Road West		ONE HOUR	✓	762	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	325	422
	B - Newton Road	478	0	49
	C - Buckingham Road West	722	40	0

Proportions

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.44	0.56
	B - Newton Road	0.91	0.00	0.09
	C - Buckingham Road West	0.95	0.05	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	139	241
	B - Buckingham Road East	153	0	505
	C - Buckingham Road West	419	782	0

Proportions

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.37	0.63
	B - Buckingham Road East	0.23	0.00	0.77
	C - Buckingham Road West	0.35	0.65	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	2	4
	B - Newton Road	2	0	5
	C - Buckingham Road West	2	3	0

Average PCU Per Veh

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.021	1.041
	B - Newton Road	1.024	1.000	1.047
	C - Buckingham Road West	1.016	1.029	1.000

Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	1	1
	B - Buckingham Road East	1	0	4
	C - Buckingham Road West	1	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.008	1.010
	B - Buckingham Road East	1.008	1.000	1.044
	C - Buckingham Road West	1.008	1.019	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	289
		07:45-08:00	342	345
		08:00-08:15	418	422
		08:15-08:30	418	422
		08:30-08:45	342	345
	B - Buckingham Road East	08:45-09:00	286	289
		07:30-07:45	495	513
		07:45-08:00	592	613
		08:00-08:15	724	750
		08:15-08:30	724	750
	C - Buckingham Road West	08:30-08:45	592	613
		08:45-09:00	495	513
		07:30-07:45	904	918
		07:45-08:00	1080	1096
		08:00-08:15	1322	1342
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	08:15-08:30	1322	1342
		08:30-08:45	1080	1096
		08:45-09:00	904	918
		07:30-07:45	562	581
		07:45-08:00	672	693
	B - Newton Road	08:00-08:15	822	849
		08:15-08:30	822	849
		08:30-08:45	672	693
		08:45-09:00	562	581
		07:30-07:45	397	407
	C - Buckingham Road West	07:45-08:00	474	486
		08:00-08:15	580	595
		08:15-08:30	580	595
		08:30-08:45	474	486
		08:45-09:00	397	407
C - Buckingham Road West	07:30-07:45	574	583	
	07:45-08:00	685	696	
	08:00-08:15	839	853	
	08:15-08:30	839	853	
	08:30-08:45	685	696	
		08:45-09:00	574	583

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.86	48.70	5.3	E	349	523
	B - Buckingham Road East	0.62	8.01	1.6	A	604	906
	C - Buckingham Road West	0.87	23.24	5.9	C	927	1390
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.67	9.01	2.0	A	684	1026
	B - Newton Road	1.39	794.36	102.6	F	484	725
	C - Buckingham Road West	1.50	1296.73	199.6	F	699	1049

Main Results for each time segment

07:30 - 07:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	573	502	0.570	281	422	0.0	1.3	15.965	C
	B - Buckingham Road East	495	124	178	1240	0.399	493	676	0.0	0.7	4.800	A
	C - Buckingham Road West	896	224	115	1105	0.811	881	556	0.0	3.9	15.158	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	557	139	30	1219	0.457	553	893	0.0	0.8	5.380	A
	B - Newton Road	397	99	313	721	0.550	392	271	0.0	1.2	10.785	B
	C - Buckingham Road West	574	143	356	903	0.636	567	349	0.0	1.7	10.522	B

07:45 - 08:00

Junction	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
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	615	474	0.721	337	467	1.3	2.4	25.540	D
	B - Buckingham Road East	592	148	214	1213	0.488	590	739	0.7	0.9	5.775	A
	C - Buckingham Road West	953	238	137	1091	0.874	945	667	3.9	5.9	23.239	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	668	167	32	1218	0.548	666	949	0.8	1.2	6.503	A
	B - Newton Road	474	118	376	442	1.071	418	321	1.2	15.1	90.952	F
	C - Buckingham Road West	685	171	379	623	1.099	602	415	1.7	22.6	90.195	F

08:00 - 08:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	598	486	0.861	409	488	2.4	4.8	41.977	E
	B - Buckingham Road East	724	181	259	1177	0.615	722	747	0.9	1.6	7.860	A
	C - Buckingham Road West	918	229	168	1073	0.855	918	813	5.9	5.9	23.184	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	814	204	30	1219	0.668	811	914	1.2	2.0	8.750	A
	B - Newton Road	580	145	458	418	1.388	417	383	15.1	56.0	323.707	F
	C - Buckingham Road West	839	210	378	567	1.481	566	497	22.6	90.8	375.466	F

08:15 - 08:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	597	486	0.861	416	489	4.8	5.3	48.699	E
	B - Buckingham Road East	724	181	264	1174	0.617	724	750	1.6	1.6	8.007	A
	C - Buckingham Road West	917	229	168	1073	0.855	917	820	5.9	5.9	23.191	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	821	205	29	1220	0.673	820	914	2.0	2.0	9.007	A
	B - Newton Road	580	145	463	424	1.370	423	386	56.0	95.2	643.383	F
	C - Buckingham Road West	839	210	384	559	1.501	559	503	90.8	160.8	823.105	F

08:30 - 08:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	607	479	0.713	352	464	5.3	2.7	30.136	D
	B - Buckingham Road East	592	148	223	1205	0.491	594	736	1.6	1.0	5.911	A
	C - Buckingham Road West	933	233	138	1091	0.855	933	679	5.9	5.9	22.810	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	679	170	29	1220	0.557	682	929	2.0	1.3	6.738	A
	B - Newton Road	474	118	385	445	1.065	444	326	95.2	102.6	794.361	F
	C - Buckingham Road West	685	171	403	555	1.234	555	427	160.8	193.3	1160.037	F

08:45 - 09:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	615	474	0.603	291	445	2.7	1.6	20.036	C
	B - Buckingham Road East	495	124	184	1236	0.401	497	721	1.0	0.7	4.879	A
	C - Buckingham Road West	944	236	115	1104	0.855	944	565	5.9	5.9	22.535	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	566	141	29	1220	0.464	567	940	1.3	0.9	5.529	A
	B - Newton Road	397	99	320	468	0.848	463	276	102.6	86.0	733.520	F
	C - Buckingham Road West	574	143	420	549	1.045	549	364	193.3	199.6	1296.731	F

2033 Base + CD + D - ST, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2W - Newford Road/ Buckingham Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 82% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	321.71	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	19.25	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1194	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	364	100.000
	C - Buckingham Road West		ONE HOUR	✓	492	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	776
	B - Newton Road	319	0	45
	C - Buckingham Road West	440	52	0

Proportions

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.36	0.64
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.89	0.11	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	996
	C - Buckingham Road West	193	566	0

Proportions

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.17	0.00	0.83
	C - Buckingham Road West	0.25	0.75	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0

Average PCU Per Veh

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.013	1.009
	B - Newton Road	1.014	1.000	1.000

C - Buckingham Road West	3	7	0
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C - Buckingham Road West	1.028	1.067	1.000
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Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	1
	B - Buckingham Road East	1	0	1
	C - Buckingham Road West	0	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.005
	B - Buckingham Road East	1.006	1.000	1.011
	C - Buckingham Road West	1.003	1.021	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	324
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	324
	B - Buckingham Road East	18:00-18:15	270	271
		16:45-17:00	899	908
		17:00-17:15	1073	1084
		17:15-17:30	1315	1328
		17:30-17:45	1315	1328
	C - Buckingham Road West	17:45-18:00	1073	1084
		18:00-18:15	899	908
		16:45-17:00	571	581
		17:00-17:15	682	694
		17:15-17:30	836	849
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	17:30-17:45	836	849
		17:45-18:00	682	694
		18:00-18:15	571	581
		16:45-17:00	908	917
		17:00-17:15	1084	1095
	B - Newton Road	17:15-17:30	1328	1342
		17:30-17:45	1328	1342
		17:45-18:00	1084	1095
		18:00-18:15	908	917
		16:45-17:00	274	277
	C - Buckingham Road West	17:00-17:15	327	331
		17:15-17:30	401	406
		17:30-17:45	401	406
		17:45-18:00	327	331
		18:00-18:15	274	277
C - Buckingham Road West	16:45-17:00	370	382	
	17:00-17:15	442	457	
	17:15-17:30	542	559	
	17:30-17:45	542	559	
	17:45-18:00	442	457	
		18:00-18:15	370	382

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	1.00	76.09	9.8	F	329	494
	B - Buckingham Road East	1.35	591.93	176.3	F	1096	1643
	C - Buckingham Road West	0.78	15.15	3.4	C	699	1049
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	21.02	5.9	C	1033	1549
	B - Newton Road	0.75	26.36	2.8	D	334	501
	C - Buckingham Road West	0.60	10.14	1.5	B	451	677

Main Results for each time segment

16:45 - 17:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	421	606	0.446	267	291	0.0	0.8	10.538	B
	B - Buckingham Road East	899	225	156	1290	0.697	890	532	0.0	2.2	8.826	A
	C - Buckingham Road West	570	142	148	1084	0.526	565	899	0.0	1.1	6.885	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	898	225	39	1239	0.725	888	566	0.0	2.5	9.990	A
	B - Newton Road	274	69	571	594	0.462	271	356	0.0	0.8	11.038	B
	C - Buckingham Road West	370	93	237	999	0.371	368	605	0.0	0.6	5.688	A

17:00 - 17:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	507	548	0.589	320	349	0.8	1.4	15.626	C
	B - Buckingham Road East	1073	268	187	1265	0.849	1062	640	2.2	5.0	16.888	C
	C - Buckingham Road West	683	171	176	1067	0.640	680	1074	1.1	1.7	9.246	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1073	268	47	1234	0.869	1060	679	2.5	5.7	19.363	C
	B - Newton Road	327	82	682	532	0.615	324	425	0.8	1.5	17.086	C
	C - Buckingham Road West	442	111	284	956	0.463	441	722	0.6	0.8	6.975	A

17:15 - 17:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	617	394	1.004	362	379	1.4	9.8	76.090	F
	B - Buckingham Road East	1315	329	211	1023	1.285	1017	767	5.0	79.3	160.999	F
	C - Buckingham Road West	834	208	169	1071	0.778	828	1060	1.7	3.3	14.402	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1059	265	57	1227	0.863	1059	829	5.7	5.9	21.019	C
	B - Newton Road	401	100	681	533	0.752	396	434	1.5	2.7	25.350	D
	C - Buckingham Road West	542	135	347	900	0.602	539	730	0.8	1.5	9.908	A

17:30 - 17:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	626	469	0.843	408	375	9.8	6.5	65.133	F
	B - Buckingham Road East	1315	329	239	974	1.350	974	795	79.3	164.5	449.845	F
	C - Buckingham Road West	840	210	161	1076	0.781	839	1051	3.3	3.4	15.151	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1050	263	57	1227	0.856	1050	835	5.9	5.9	20.351	C
	B - Newton Road	401	100	676	536	0.748	400	432	2.7	2.8	26.357	D
	C - Buckingham Road West	542	135	351	896	0.604	542	725	1.5	1.5	10.137	B

17:45 - 18:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	521	539	0.599	343	348	6.5	1.6	19.968	C
	B - Buckingham Road East	1073	268	200	1027	1.045	1026	663	164.5	176.3	591.931	F
	C - Buckingham Road West	692	173	170	1070	0.647	699	1057	3.4	1.9	9.838	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1056	264	47	1234	0.856	1056	689	5.9	5.9	20.242	C
	B - Newton Road	327	82	679	534	0.613	332	424	2.8	1.7	18.216	C
	C - Buckingham Road West	442	111	291	950	0.465	445	721	1.5	0.9	7.152	A

18:00 - 18:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	433	598	0.452	273	327	1.6	0.8	11.170	B
	B - Buckingham Road East	899	225	160	1086	0.828	1080	546	176.3	131.0	512.975	F
	C - Buckingham Road West	578	144	179	1065	0.542	580	1061	1.9	1.2	7.467	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1060	265	39	1239	0.856	1060	574	5.9	5.9	20.162	C
	B - Newton Road	274	69	682	532	0.515	276	417	1.7	1.1	14.179	B
	C - Buckingham Road West	370	93	242	994	0.373	372	716	0.9	0.6	5.792	A

2033 Base + CD + SP (ST), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 82% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	24.08	C
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	672.99	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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
D21	2033 Base + CD + SP (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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	380	100.000
	B - Buckingham Road East		ONE HOUR	✓	659	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	528	100.000
	C - Buckingham Road West		ONE HOUR	✓	762	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	325	422
	B - Newton Road	479	0	49
	C - Buckingham Road West	722	40	0

Proportions

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.44	0.56
	B - Newton Road	0.91	0.00	0.09
	C - Buckingham Road West	0.95	0.05	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	139	241
	B - Buckingham Road East	153	0	506
	C - Buckingham Road West	419	782	0

Proportions

From		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.37	0.63
	B - Buckingham Road East	0.23	0.00	0.77
	C - Buckingham Road West	0.35	0.65	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	2	4
	B - Newton Road	2	0	5
	C - Buckingham Road West	1	3	0

Average PCU Per Veh

From		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.015	1.040
	B - Newton Road	1.018	1.000	1.050
	C - Buckingham Road West	1.010	1.033	1.000

Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	1	4
	B - Buckingham Road East	1	0	4
	C - Buckingham Road West	1	2	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.010	1.040
	B - Buckingham Road East	1.010	1.000	1.040
	C - Buckingham Road West	1.011	1.020	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	07:30-07:45	286	294
		07:45-08:00	342	352
		08:00-08:15	418	431
		08:15-08:30	418	431
		08:30-08:45	342	352
	B - Buckingham Road East	08:45-09:00	286	294
		07:30-07:45	496	513
		07:45-08:00	592	612
		08:00-08:15	726	750
		08:15-08:30	726	750
	C - Buckingham Road West	08:30-08:45	592	612
		08:45-09:00	496	513
		07:30-07:45	904	919
		07:45-08:00	1080	1098
		08:00-08:15	1322	1345
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	08:15-08:30	1322	1345
		08:30-08:45	1080	1098
		08:45-09:00	904	919
		07:30-07:45	562	579
		07:45-08:00	672	691
	B - Newton Road	08:00-08:15	822	846
		08:15-08:30	822	846
		08:30-08:45	672	691
		08:45-09:00	562	579
		07:30-07:45	398	406
	C - Buckingham Road West	07:45-08:00	475	485
		08:00-08:15	581	593
		08:15-08:30	581	593
		08:30-08:45	475	485
		08:45-09:00	398	406
C - Buckingham Road West	07:30-07:45	574	580	
	07:45-08:00	685	693	
	08:00-08:15	839	848	
	08:15-08:30	839	848	
	08:30-08:45	685	693	
		08:45-09:00	574	580

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.88	54.24	5.9	F	349	523
	B - Buckingham Road East	0.62	8.08	1.6	A	605	907
	C - Buckingham Road West	0.87	23.20	5.9	C	924	1387
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.68	9.13	2.1	A	692	1037
	B - Newton Road	1.39	783.45	101.5	F	485	727
	C - Buckingham Road West	1.49	1263.99	195.3	F	699	1049

Main Results for each time segment

07:30 - 07:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	570	494	0.579	281	420	0.0	1.3	16.502	C
	B - Buckingham Road East	496	124	178	1239	0.400	493	672	0.0	0.7	4.811	A
	C - Buckingham Road West	890	223	115	1103	0.808	875	557	0.0	3.8	14.947	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	563	141	30	1223	0.460	559	894	0.0	0.8	5.400	A
	B - Newton Road	398	99	316	723	0.550	393	273	0.0	1.2	10.747	B
	C - Buckingham Road West	574	143	356	909	0.631	567	353	0.0	1.7	10.345	B

07:45 - 08:00

Junction	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
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2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	614	465	0.734	337	466	1.3	2.5	27.059	D
	B - Buckingham Road East	592	148	214	1211	0.489	591	737	0.7	0.9	5.799	A
	C - Buckingham Road West	951	238	137	1089	0.874	943	668	3.8	5.9	23.199	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	675	169	32	1222	0.552	673	955	0.8	1.2	6.544	A
	B - Newton Road	475	119	380	446	1.065	421	325	1.2	14.7	88.663	F
	C - Buckingham Road West	685	171	382	628	1.091	605	419	1.7	21.7	87.118	F

08:00 - 08:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	596	477	0.878	408	487	2.5	5.2	45.679	E
	B - Buckingham Road East	726	181	258	1175	0.618	723	745	0.9	1.6	7.920	A
	C - Buckingham Road West	916	229	168	1071	0.855	916	814	5.9	5.9	23.193	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	822	206	30	1223	0.672	819	919	1.2	2.0	8.847	A
	B - Newton Road	581	145	463	420	1.385	418	386	14.7	55.4	318.314	F
	C - Buckingham Road West	839	210	379	570	1.471	569	502	21.7	89.1	364.935	F

08:15 - 08:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	418	105	596	477	0.877	416	488	5.2	5.9	54.238	F
	B - Buckingham Road East	726	181	264	1171	0.620	725	748	1.6	1.6	8.078	A
	C - Buckingham Road West	916	229	168	1071	0.855	916	821	5.9	5.9	23.200	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	829	207	30	1223	0.678	829	919	2.0	2.1	9.125	A
	B - Newton Road	581	145	468	426	1.366	425	390	55.4	94.4	635.031	F
	C - Buckingham Road West	839	210	386	563	1.492	562	508	89.1	158.2	804.091	F

08:30 - 08:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	342	85	606	470	0.726	353	463	5.9	2.9	33.158	D
	B - Buckingham Road East	592	148	224	1202	0.493	595	735	1.6	1.0	5.951	A
	C - Buckingham Road West	931	233	138	1089	0.855	931	681	5.9	5.9	22.818	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	688	172	29	1223	0.563	691	934	2.1	1.3	6.803	A
	B - Newton Road	475	119	390	447	1.062	446	330	94.4	101.5	783.447	F
	C - Buckingham Road West	685	171	405	559	1.226	558	432	158.2	189.9	1133.272	F

08:45 - 09:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	286	72	614	466	0.615	291	444	2.9	1.7	21.168	C
	B - Buckingham Road East	496	124	185	1234	0.402	497	720	1.0	0.7	4.893	A
	C - Buckingham Road West	942	236	115	1102	0.855	942	566	5.9	5.9	22.543	C
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	572	143	29	1223	0.468	574	945	1.3	0.9	5.560	A
	B - Newton Road	398	99	324	470	0.845	466	279	101.5	84.5	719.998	F
	C - Buckingham Road West	574	143	422	552	1.039	552	368	189.9	195.3	1263.991	F

2033 Base + CD + SP (ST), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	2W - Newford Road/ Buckingham Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 82% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2E - Buckingham Road/ Shenley Road	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2E	Buckingham Road/ Shenley Road	Mini-roundabout		A, B, C	366.79	F
2W	Newford Road/ Buckingham Road	Mini-roundabout		A, B, C	18.77	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	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
D22	2033 Base + CD + SP (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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
2E - Buckingham Road/ Shenley Road	C - Buckingham Road West	2W	A	Queue limited	Normal	0	100.00	6.00
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	2E	C	Queue limited	Normal	0	100.00	6.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
2E - Buckingham Road/ Shenley Road	A - Shenley Road		ONE HOUR	✓	359	100.000
	B - Buckingham Road East		ONE HOUR	✓	1194	100.000
	C - Buckingham Road West	✓				
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	✓				
	B - Newton Road		ONE HOUR	✓	363	100.000
	C - Buckingham Road West		ONE HOUR	✓	492	100.000

Origin-Destination Data

Demand (Veh/hr)

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	430	776
	B - Newton Road	318	0	45
	C - Buckingham Road West	440	52	0

Proportions

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0.00	0.36	0.64
	B - Newton Road	0.88	0.00	0.12
	C - Buckingham Road West	0.89	0.11	0.00

Demand (Veh/hr)

2E - Buckingham Road/ Shenley Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	149	210
	B - Buckingham Road East	198	0	996
	C - Buckingham Road West	193	565	0

Proportions

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0.00	0.42	0.58
	B - Buckingham Road East	0.17	0.00	0.83
	C - Buckingham Road West	0.25	0.75	0.00

Vehicle Mix

Heavy Vehicle Percentages

2W - Newford Road/ Buckingham Road

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	0	1	1
	B - Newton Road	1	0	0

Average PCU Per Veh

		To		
		A - Buckingham Road East	B - Newton Road	C - Buckingham Road West
From	A - Buckingham Road East	1.000	1.010	1.010
	B - Newton Road	1.010	1.000	1.000

C - Buckingham Road West	3	7	0
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C - Buckingham Road West	1.030	1.070	1.000
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Heavy Vehicle Percentages

2E -
Buckingham
Road/
Shenley
Road

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	0	0	0
	B - Buckingham Road East	0	0	4
	C - Buckingham Road West	0	1	0

Average PCU Per Veh

		To		
		A - Shenley Road	B - Buckingham Road East	C - Buckingham Road West
From	A - Shenley Road	1.000	1.000	1.004
	B - Buckingham Road East	1.000	1.000	1.036
	C - Buckingham Road West	1.003	1.009	1.000

Detailed Demand Data

Demand for each time segment

Junction	Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	16:45-17:00	270	271
		17:00-17:15	323	323
		17:15-17:30	395	396
		17:30-17:45	395	396
		17:45-18:00	323	323
		18:00-18:15	270	271
	B - Buckingham Road East	16:45-17:00	899	926
		17:00-17:15	1073	1105
		17:15-17:30	1315	1354
		17:30-17:45	1315	1354
		17:45-18:00	1073	1105
		18:00-18:15	899	926
	C - Buckingham Road West	16:45-17:00	571	575
		17:00-17:15	681	686
		17:15-17:30	835	841
		17:30-17:45	835	841
		17:45-18:00	681	686
		18:00-18:15	571	575
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	16:45-17:00	908	917
		17:00-17:15	1084	1095
		17:15-17:30	1328	1341
		17:30-17:45	1328	1341
		17:45-18:00	1084	1095
		18:00-18:15	908	917
	B - Newton Road	16:45-17:00	273	276
		17:00-17:15	326	329
		17:15-17:30	400	403
		17:30-17:45	400	403
		17:45-18:00	326	329
		18:00-18:15	273	276
	C - Buckingham Road West	16:45-17:00	370	383
		17:00-17:15	442	457
		17:15-17:30	542	560
		17:30-17:45	542	560
		17:45-18:00	442	457
		18:00-18:15	370	383

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
2E - Buckingham Road/ Shenley Road	A - Shenley Road	0.84	43.60	4.5	E	329	494
	B - Buckingham Road East	1.37	682.73	201.5	F	1096	1643
	C - Buckingham Road West	0.78	14.79	3.4	B	705	1057
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	0.87	20.35	5.9	C	1036	1554
	B - Newton Road	0.74	25.85	2.8	D	333	500
	C - Buckingham Road West	0.60	10.12	1.5	B	451	677

Main Results for each time segment

16:45 - 17:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	424	608	0.445	267	292	0.0	0.8	10.480	B
	B - Buckingham Road East	899	225	156	1265	0.711	889	535	0.0	2.4	9.367	A
	C - Buckingham Road West	574	143	147	1094	0.524	569	898	0.0	1.1	6.803	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	916	229	39	1240	0.739	905	566	0.0	2.7	10.460	B
	B - Newton Road	273	68	583	589	0.464	270	362	0.0	0.8	11.163	B
	C - Buckingham Road West	370	93	236	998	0.371	368	616	0.0	0.6	5.693	A

17:00 - 17:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	511	487	0.663	319	348	0.8	1.8	20.858	C
	B - Buckingham Road East	1073	268	186	1146	0.937	1045	643	2.4	9.5	29.664	D
	C - Buckingham Road West	688	172	173	1079	0.637	685	1058	1.1	1.7	9.084	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1079	270	47	1235	0.874	1066	678	2.7	5.9	19.943	C
	B - Newton Road	326	82	686	532	0.614	324	427	0.8	1.5	17.074	C
	C - Buckingham Road West	442	111	284	956	0.463	441	726	0.6	0.8	6.977	A

17:15 - 17:30

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	622	477	0.828	387	373	1.8	3.9	36.704	E
	B - Buckingham Road East	1315	329	226	968	1.358	966	782	9.5	96.7	208.299	F
	C - Buckingham Road West	840	210	160	1087	0.773	834	1032	1.7	3.2	13.924	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1051	263	57	1228	0.856	1051	828	5.9	5.9	20.349	C
	B - Newton Road	400	100	676	537	0.744	395	432	1.5	2.6	24.541	C
	C - Buckingham Road West	542	135	346	900	0.602	539	725	0.8	1.5	9.905	A

17:30 - 17:45

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	395	99	630	472	0.838	393	375	3.9	4.5	43.596	E
	B - Buckingham Road East	1315	329	230	961	1.367	961	793	96.7	185.1	525.295	F
	C - Buckingham Road West	846	212	159	1087	0.778	845	1032	3.2	3.4	14.787	B
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1051	263	57	1228	0.856	1051	834	5.9	5.9	20.353	C
	B - Newton Road	400	100	676	537	0.744	399	432	2.6	2.8	25.848	D
	C - Buckingham Road West	542	135	350	897	0.604	542	726	1.5	1.5	10.122	B

17:45 - 18:00

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	323	81	524	542	0.596	334	346	4.5	1.5	18.264	C
	B - Buckingham Road East	1073	268	196	1008	1.065	1008	663	185.1	201.5	682.734	F
	C - Buckingham Road West	697	174	167	1083	0.644	703	1036	3.4	1.9	9.635	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1056	264	47	1234	0.856	1056	688	5.9	5.9	20.243	C
	B - Newton Road	326	82	680	535	0.610	331	424	2.8	1.6	17.981	C
	C - Buckingham Road West	442	111	290	951	0.465	445	721	1.5	0.9	7.151	A

18:00 - 18:15

Junction	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
2E - Buckingham Road/ Shenley Road	A - Shenley Road	270	68	436	600	0.450	273	324	1.5	0.8	11.096	B
	B - Buckingham Road East	899	225	160	1060	0.848	1054	549	201.5	162.7	622.256	F
	C - Buckingham Road West	582	145	175	1078	0.540	584	1039	1.9	1.2	7.330	A
2W - Newford Road/ Buckingham Road	A - Buckingham Road East	1061	265	39	1239	0.856	1061	574	5.9	5.9	20.161	C
	B - Newton Road	273	68	683	534	0.512	275	417	1.6	1.1	14.060	B
	C - Buckingham Road West	370	93	241	994	0.373	372	717	0.9	0.6	5.796	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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Filename: J5 - Post Calibration WF Update[JB-AM) 201130.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J5
Report generation date: 02/12/2020 08:43:07

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

Summary of junction performance

		AM				
		Set ID	Queue (Veh)	Delay (s)	RFC	LOS
AM - 2020 Base						
A - Snelshall Street	D1		24.2	115.62	1.03	F
B - A421 Standing Way East			6.2	23.59	0.87	C
C - Buckingham Road			6.2	53.35	0.89	F
D - A421 Standing Way West			5.9	13.78	0.86	B
AM - 2033 Base						
A - Snelshall Street	D13		186.9	843.60	1.52	F
B - A421 Standing Way East			20.7	66.81	0.99	F
C - Buckingham Road			48.6	311.65	1.20	F
D - A421 Standing Way West			31.5	60.90	1.00	F
AM - 2033 Base + CD + D						
A - Snelshall Street	D15		424.6	2352.72	1.92	F
B - A421 Standing Way East			162.0	506.20	1.23	F
C - Buckingham Road			559.1	4200.35	2.23	F
D - A421 Standing Way West			110.0	181.68	1.11	F
AM - 2033 Base + CD + D with TP						
A - Snelshall Street	D17		389.6	2054.65	1.87	F
B - A421 Standing Way East			136.4	423.67	1.20	F
C - Buckingham Road			477.2	3609.37	2.10	F
D - A421 Standing Way West			97.5	157.19	1.09	F
AM - 2033 Base + CD + D - ST						
A - Snelshall Street	D19		348.7	2114.49	1.86	F
B - A421 Standing Way East			177.7	551.58	1.25	F
C - Buckingham Road			540.7	3745.24	2.11	F
D - A421 Standing Way West			111.4	186.84	1.11	F
AM - 2033 Base + CD + SP (ST)						
A - Snelshall Street	D21		314.0	1806.14	1.81	F
B - A421 Standing Way East			148.8	470.68	1.22	F
C - Buckingham Road			459.9	3208.21	1.99	F
D - A421 Standing Way West			99.2	160.78	1.10	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	Tattenhoe Roundabout
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Location	51°59'21.98"N, 0°47'6.71"W
Site number	5
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	Ü
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	Ü
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	Ü
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	Ü
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	Ü
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	Ü

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM	Ü	Ü	D1,D13,D15,D17,D19,D21	100.000	100.000

AM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	40.38	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Snelshall Street	
B	A421 Standing Way East	
C	Buckingham Road	
D	A421 Standing Way West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Snelshall Street	3.30	7.50	8.4	29.6	60.8	28.0	
B - A421 Standing Way East	7.20	8.80	14.6	49.8	60.8	14.0	
C - Buckingham Road	2.80	7.30	22.1	55.4	60.8	9.0	
D - A421 Standing Way West	7.30	9.00	17.0	60.0	60.8	27.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Snelshall Street	None		
B - A421 Standing Way East	Direct	Uneven Lane Useage (B. Chard) +to match queues	-1050
C - Buckingham Road	Direct	Uneven Lane Useage (B. Chard) +to match queues	-575
D - A421 Standing Way West	Direct	Uneven Lane Useage (B. Chard)	-451

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Snelshall Street	0.528	1523
B - A421 Standing Way East	0.756	1706
C - Buckingham Road	0.605	1273
D - A421 Standing Way West	0.738	2263

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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	659	100.000
B - A421 Standing Way East		ONE HOUR	Ü	910	100.000
C - Buckingham Road		ONE HOUR	Ü	407	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1450	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
A - Snelshall Street	1	164	236	258
B - A421 Standing Way East	102	2	78	728
C - Buckingham Road	202	90	1	114
D - A421 Standing Way West	228	1122	94	6

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
A - Snelshall Street	0	5	1	4
B - A421 Standing Way East	9	0	3	6
C - Buckingham Road	1	2	0	2
D - A421 Standing Way West	2	5	2	0

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 - Snelshall Street	1.03	115.62	24.2	F	605	907
B - A421 Standing Way East	0.87	23.59	6.2	C	835	1253
C - Buckingham Road	0.89	53.35	6.2	F	373	560
D - A421 Standing Way West	0.86	13.78	5.9	B	1331	1996

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 - Snelshall Street	496	124	985	950	0.522	492	399	0.0	1.1	7.784	A
B - A421 Standing Way East	685	171	445	1281	0.535	681	1032	0.0	1.1	5.953	A
C - Buckingham Road	306	77	820	739	0.415	304	306	0.0	0.7	8.219	A
D - A421 Standing Way West	1092	273	297	1953	0.559	1087	827	0.0	1.3	4.131	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 - Snelshall Street	592	148	1179	846	0.700	588	477	1.1	2.2	13.681	B
B - A421 Standing Way East	818	205	532	1218	0.672	815	1234	1.1	2.0	8.857	A
C - Buckingham Road	366	91	981	637	0.574	363	366	0.7	1.3	13.047	B
D - A421 Standing Way West	1304	326	356	1910	0.682	1300	989	1.3	2.1	5.865	A

08:00 - 08:15

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of
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	(Veh/hr)	(Veh)	(Veh/hr)				(Veh/hr)	(Veh)	(Veh)		service
A - Snelshall Street	726	181	1433	710	1.022	673	576	2.2	15.3	62.586	F
B - A421 Standing Way East	1002	250	616	1157	0.866	988	1490	2.0	5.6	19.815	C
C - Buckingham Road	448	112	1174	515	0.871	433	429	1.3	5.0	38.879	E
D - A421 Standing Way West	1596	399	426	1859	0.859	1583	1182	2.1	5.5	12.445	B

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 - Snelshall Street	726	181	1446	703	1.032	690	584	15.3	24.2	115.624	F
B - A421 Standing Way East	1002	250	629	1147	0.874	999	1506	5.6	6.2	23.594	C
C - Buckingham Road	448	112	1191	504	0.889	443	437	5.0	6.2	53.351	F
D - A421 Standing Way West	1596	399	434	1853	0.862	1595	1200	5.5	5.9	13.783	B

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 - Snelshall Street	592	148	1199	836	0.709	679	492	24.2	2.6	34.225	D
B - A421 Standing Way East	818	205	602	1167	0.701	833	1276	6.2	2.4	11.241	B
C - Buckingham Road	366	91	1034	604	0.606	384	401	6.2	1.6	17.618	C
D - A421 Standing Way West	1304	326	373	1898	0.687	1318	1045	5.9	2.2	6.356	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 - Snelshall Street	496	124	994	945	0.525	502	404	2.6	1.1	8.225	A
B - A421 Standing Way East	685	171	453	1275	0.537	690	1043	2.4	1.2	6.209	A
C - Buckingham Road	306	77	833	731	0.419	310	311	1.6	0.7	8.620	A
D - A421 Standing Way West	1092	273	303	1949	0.560	1095	840	2.2	1.3	4.235	A

AM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	253.74	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	849	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1043	100.000
C - Buckingham Road		ONE HOUR	Ü	483	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1676	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	1	188	323	337
	B - A421 Standing Way East	117	2	89	835
	C - Buckingham Road	248	103	1	131
	D - A421 Standing Way West	274	1287	108	7

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	5	1	4
	B - A421 Standing Way East	9	0	3	6
	C - Buckingham Road	1	2	0	2
	D - A421 Standing Way West	2	5	2	0

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 - Snelshall Street	1.52	843.60	186.9	F	779	1169
B - A421 Standing Way East	0.99	66.81	20.7	F	957	1436
C - Buckingham Road	1.20	311.65	48.6	F	443	665
D - A421 Standing Way West	1.00	60.90	31.5	F	1538	2307

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 - Snelshall Street	639	160	1128	874	0.731	629	477	0.0	2.6	14.150	B
B - A421 Standing Way East	785	196	577	1185	0.663	778	1181	0.0	1.9	8.681	A
C - Buckingham Road	364	91	967	645	0.564	359	387	0.0	1.3	12.384	B
D - A421 Standing Way West	1262	315	351	1914	0.659	1254	975	0.0	1.9	5.399	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 - Snelshall Street	763	191	1347	757	1.009	716	568	2.6	14.5	58.464	F
B - A421 Standing Way East	938	234	661	1124	0.835	927	1402	1.9	4.5	17.448	C
C - Buckingham Road	434	109	1140	536	0.811	425	449	1.3	3.6	30.167	D
D - A421 Standing Way West	1507	377	417	1866	0.808	1498	1148	1.9	4.0	9.584	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 - Snelshall Street	935	234	1581	631	1.482	630	642	14.5	90.8	315.918	F
B - A421 Standing Way East	1149	287	613	1159	0.991	1103	1598	4.5	15.9	44.559	E
C - Buckingham Road	532	133	1267	454	1.172	444	449	3.6	25.7	140.210	F
D - A421 Standing Way West	1845	461	450	1840	1.003	1773	1261	4.0	22.1	35.621	E

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 - Snelshall Street	935	234	1609	616	1.518	616	649	90.8	170.6	729.308	F
B - A421 Standing Way East	1149	287	604	1165	0.986	1130	1621	15.9	20.7	66.812	F
C - Buckingham Road	532	133	1286	442	1.204	440	448	25.7	48.6	311.649	F
D - A421 Standing Way West	1845	461	451	1840	1.003	1807	1275	22.1	31.5	60.899	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 - Snelshall Street	763	191	1456	698	1.093	698	627	170.6	186.9	843.605	F
B - A421 Standing Way East	938	234	655	1128	0.831	998	1499	20.7	5.6	34.671	D
C - Buckingham Road	434	109	1198	499	0.871	489	456	48.6	35.0	304.439	F
D - A421 Standing Way West	1507	377	471	1826	0.825	1612	1215	31.5	5.1	23.360	C

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 - Snelshall Street	639	160	1174	850	0.752	846	553	186.9	135.4	687.024	F
B - A421 Standing Way East	785	196	747	1061	0.740	796	1273	5.6	3.0	14.053	B
C - Buckingham Road	364	91	1070	581	0.626	496	473	35.0	1.9	86.973	F
D - A421 Standing Way West	1262	315	454	1840	0.686	1273	1112	5.1	2.2	6.483	A

AM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	1400.34	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	969	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1303	100.000
C - Buckingham Road		ONE HOUR	Ü	916	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1828	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	1	188	357	423
	B - A421 Standing Way East	117	2	166	1018
	C - Buckingham Road	351	410	1	154
	D - A421 Standing Way West	300	1371	150	7

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	5	1	3
	B - A421 Standing Way East	9	0	3	6
	C - Buckingham Road	1	2	0	2
	D - A421 Standing Way West	2	5	2	0

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 - Snelshall Street	1.92	2352.72	424.6	F	889	1334
B - A421 Standing Way East	1.23	506.20	162.0	F	1196	1794
C - Buckingham Road	2.23	4200.35	559.1	F	840	1260
D - A421 Standing Way West	1.11	181.68	110.0	F	1677	2516

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 - Snelshall Street	730	182	1376	744	0.981	684	511	0.0	11.4	44.845	E
B - A421 Standing Way East	981	245	669	1120	0.876	958	1391	0.0	5.9	19.957	C
C - Buckingham Road	689	172	1140	535	1.289	522	486	0.0	41.8	161.072	F
D - A421 Standing Way West	1376	344	523	1790	0.769	1363	1139	0.0	3.2	8.202	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 - Snelshall Street	871	218	1569	640	1.362	637	545	11.4	69.9	252.528	F
B - A421 Standing Way East	1172	293	654	1131	1.036	1099	1553	5.9	23.9	61.290	F
C - Buckingham Road	823	206	1244	468	1.758	468	509	41.8	130.5	685.539	F
D - A421 Standing Way West	1643	411	491	1813	0.906	1624	1222	3.2	8.0	17.440	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 - Snelshall Street	1067	267	1712	563	1.896	563	575	69.9	196.0	864.253	F
B - A421 Standing Way East	1435	359	609	1164	1.233	1162	1666	23.9	92.3	189.215	F
C - Buckingham Road	1008	252	1267	454	2.223	454	504	130.5	269.2	1596.708	F
D - A421 Standing Way West	2013	503	484	1817	1.107	1802	1236	8.0	60.7	77.714	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 - Snelshall Street	1067	267	1723	557	1.915	557	577	196.0	323.5	1686.528	F
B - A421 Standing Way East	1435	359	605	1166	1.230	1166	1674	92.3	159.5	395.171	F
C - Buckingham Road	1008	252	1268	453	2.227	453	503	269.2	408.1	2696.183	F
D - A421 Standing Way West	2013	503	484	1818	1.107	1815	1237	60.7	110.0	175.584	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 - Snelshall Street	871	218	1711	563	1.547	563	574	323.5	400.5	2164.374	F
B - A421 Standing Way East	1172	293	609	1164	1.007	1161	1665	159.5	162.0	506.197	F
C - Buckingham Road	823	206	1267	454	1.815	454	504	408.1	500.5	3606.051	F
D - A421 Standing Way West	1643	411	484	1817	0.904	1801	1236	110.0	70.6	181.684	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 - Snelshall Street	730	182	1581	633	1.153	633	546	400.5	424.6	2352.718	F
B - A421 Standing Way East	981	245	652	1132	0.867	1125	1562	162.0	126.0	461.389	F
C - Buckingham Road	689	172	1265	455	1.515	455	512	500.5	559.1	4200.345	F
D - A421 Standing Way West	1376	344	482	1819	0.757	1645	1238	70.6	3.4	49.942	E

AM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	1185.43	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	955	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1270	100.000
C - Buckingham Road		ONE HOUR	Ü	857	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1807	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	1	188	353	413
	B - A421 Standing Way East	117	2	156	995
	C - Buckingham Road	338	367	1	151
	D - A421 Standing Way West	296	1359	145	7

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	5	1	3
	B - A421 Standing Way East	9	0	3	6
	C - Buckingham Road	0	2	0	2
	D - A421 Standing Way West	2	5	2	0

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 - Snelshall Street	1.87	2054.65	389.6	F	877	1315
B - A421 Standing Way East	1.20	423.67	136.4	F	1166	1748
C - Buckingham Road	2.10	3609.37	477.2	F	787	1180
D - A421 Standing Way West	1.09	157.19	97.5	F	1658	2487

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 - Snelshall Street	719	180	1356	754	0.953	682	517	0.0	9.4	38.966	E
B - A421 Standing Way East	956	239	661	1125	0.850	936	1376	0.0	5.0	17.580	C
C - Buckingham Road	645	161	1122	547	1.179	529	476	0.0	29.1	116.064	F
D - A421 Standing Way West	1360	340	525	1790	0.760	1348	1127	0.0	3.1	7.941	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 - Snelshall Street	859	215	1549	651	1.320	648	550	9.4	62.2	220.841	F
B - A421 Standing Way East	1142	285	656	1129	1.011	1086	1540	5.0	19.0	51.681	F
C - Buckingham Road	771	193	1239	473	1.631	472	502	29.1	103.7	529.552	F
D - A421 Standing Way West	1624	406	492	1813	0.896	1607	1220	3.1	7.4	16.241	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 - Snelshall Street	1052	263	1702	568	1.852	568	581	62.2	183.1	792.000	F
B - A421 Standing Way East	1399	350	608	1164	1.201	1161	1662	19.0	78.4	160.957	F
C - Buckingham Road	944	236	1271	452	2.090	452	498	103.7	226.7	1328.147	F
D - A421 Standing Way West	1989	497	482	1820	1.093	1801	1241	7.4	54.5	71.020	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 - Snelshall Street	1052	263	1715	561	1.874	561	583	183.1	305.8	1576.711	F
B - A421 Standing Way East	1399	350	604	1167	1.198	1167	1672	78.4	136.4	338.456	F
C - Buckingham Road	944	236	1274	450	2.097	450	497	226.7	350.1	2304.234	F
D - A421 Standing Way West	1989	497	481	1820	1.093	1817	1243	54.5	97.5	157.187	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 - Snelshall Street	859	215	1702	568	1.512	568	581	305.8	378.5	1974.196	F
B - A421 Standing Way East	1142	285	608	1164	0.981	1156	1662	136.4	132.9	423.670	F
C - Buckingham Road	771	193	1267	454	1.696	454	497	350.1	429.1	3102.130	F
D - A421 Standing Way West	1624	406	484	1818	0.893	1800	1238	97.5	53.6	152.779	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 - Snelshall Street	719	180	1503	675	1.065	675	537	378.5	389.6	2054.652	F
B - A421 Standing Way East	956	239	674	1116	0.857	1108	1504	132.9	95.1	371.547	F
C - Buckingham Road	645	161	1270	453	1.424	453	511	429.1	477.2	3609.371	F
D - A421 Standing Way West	1360	340	478	1823	0.746	1562	1245	53.6	3.1	26.818	D

AM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	1282.36	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	858	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1315	100.000
C - Buckingham Road		ONE HOUR	Ü	945	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1818	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	1	188	357	312
	B - A421 Standing Way East	117	2	166	1030
	C - Buckingham Road	351	410	1	183
	D - A421 Standing Way West	205	1394	212	7

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	5	1	3
	B - A421 Standing Way East	9	0	3	6
	C - Buckingham Road	0	2	0	2
	D - A421 Standing Way West	2	5	2	0

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 - Snelshall Street	1.86	2114.49	348.7	F	788	1181
B - A421 Standing Way East	1.25	551.58	177.7	F	1207	1810
C - Buckingham Road	2.11	3745.24	540.7	F	867	1300
D - A421 Standing Way West	1.11	186.84	111.4	F	1668	2502

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 - Snelshall Street	646	162	1448	706	0.915	618	448	0.0	7.0	34.138	D
B - A421 Standing Way East	990	248	647	1137	0.871	967	1420	0.0	5.7	19.222	C
C - Buckingham Road	711	178	1076	575	1.236	560	538	0.0	37.7	137.164	F
D - A421 Standing Way West	1369	342	541	1777	0.770	1356	1096	0.0	3.2	8.303	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 - Snelshall Street	772	193	1655	595	1.297	591	469	7.0	52.2	203.093	F
B - A421 Standing Way East	1182	296	656	1130	1.047	1101	1589	5.7	26.0	64.435	F
C - Buckingham Road	849	212	1184	507	1.677	506	574	37.7	123.5	592.439	F
D - A421 Standing Way West	1634	409	509	1799	0.908	1614	1181	3.2	8.2	17.773	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 - Snelshall Street	945	236	1803	515	1.835	515	488	52.2	159.7	755.825	F
B - A421 Standing Way East	1448	362	618	1158	1.251	1156	1700	26.0	99.1	203.711	F
C - Buckingham Road	1040	260	1205	493	2.111	493	569	123.5	260.3	1411.601	F
D - A421 Standing Way West	2002	500	503	1804	1.110	1789	1194	8.2	61.4	79.050	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 - Snelshall Street	945	236	1815	509	1.856	509	490	159.7	268.7	1523.875	F
B - A421 Standing Way East	1448	362	615	1160	1.248	1160	1709	99.1	171.2	425.918	F
C - Buckingham Road	1040	260	1206	492	2.114	492	569	260.3	397.4	2410.698	F
D - A421 Standing Way West	2002	500	503	1804	1.110	1802	1195	61.4	111.4	178.929	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 - Snelshall Street	772	193	1802	516	1.496	516	488	268.7	332.7	1969.970	F
B - A421 Standing Way East	1182	296	618	1158	1.022	1156	1700	171.2	177.7	551.577	F
C - Buckingham Road	849	212	1205	492	1.725	492	569	397.4	486.6	3228.336	F
D - A421 Standing Way West	1634	409	503	1804	0.906	1788	1195	111.4	73.0	186.837	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 - Snelshall Street	646	162	1679	582	1.110	582	470	332.7	348.7	2114.495	F
B - A421 Standing Way East	990	248	653	1132	0.875	1126	1607	177.7	143.8	514.759	F
C - Buckingham Road	711	178	1202	495	1.437	495	577	486.6	540.7	3745.237	F
D - A421 Standing Way West	1369	342	502	1804	0.758	1647	1195	73.0	3.4	55.266	F

AM - 2033 Base + CD + SP (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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	1078.27	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
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	844	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1283	100.000
C - Buckingham Road		ONE HOUR	Ü	886	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1798	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	1	188	353	302
	B - A421 Standing Way East	117	2	156	1008
	C - Buckingham Road	338	367	1	180
	D - A421 Standing Way West	202	1382	207	7

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	5	1	3
	B - A421 Standing Way East	9	0	3	6
	C - Buckingham Road	0	2	0	2
	D - A421 Standing Way West	2	5	2	0

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 - Snelshall Street	1.81	1806.14	314.0	F	775	1162
B - A421 Standing Way East	1.22	470.68	148.8	F	1178	1766
C - Buckingham Road	1.99	3208.21	459.9	F	813	1220
D - A421 Standing Way West	1.10	160.78	99.2	F	1650	2475

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 - Snelshall Street	636	159	1427	717	0.886	612	453	0.0	5.8	29.719	D
B - A421 Standing Way East	966	242	636	1144	0.844	947	1403	0.0	4.8	16.893	C
C - Buckingham Road	667	167	1057	587	1.136	565	526	0.0	25.5	97.823	F
D - A421 Standing Way West	1354	338	539	1778	0.761	1341	1083	0.0	3.1	8.025	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 - Snelshall Street	759	190	1633	607	1.251	601	474	5.8	45.3	175.013	F
B - A421 Standing Way East	1154	288	658	1128	1.022	1089	1576	4.8	20.9	54.679	F
C - Buckingham Road	797	199	1179	510	1.563	509	568	25.5	97.3	454.122	F
D - A421 Standing Way West	1616	404	508	1800	0.898	1599	1180	3.1	7.5	16.545	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 - Snelshall Street	930	232	1793	520	1.786	520	494	45.3	147.7	683.492	F
B - A421 Standing Way East	1413	353	618	1158	1.220	1155	1696	20.9	85.3	175.043	F
C - Buckingham Road	976	244	1208	491	1.989	490	564	97.3	218.6	1170.455	F
D - A421 Standing Way West	1979	495	499	1806	1.096	1788	1200	7.5	55.3	72.404	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 - Snelshall Street	930	232	1807	513	1.811	513	496	147.7	251.8	1410.207	F
B - A421 Standing Way East	1413	353	614	1160	1.218	1160	1706	85.3	148.5	369.652	F
C - Buckingham Road	976	244	1210	489	1.994	489	564	218.6	340.2	2064.581	F
D - A421 Standing Way West	1979	495	498	1807	1.096	1804	1201	55.3	99.2	160.779	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 - Snelshall Street	759	190	1793	520	1.459	520	494	251.8	311.4	1778.942	F
B - A421 Standing Way East	1154	288	618	1158	0.996	1153	1696	148.5	148.8	470.680	F
C - Buckingham Road	797	199	1206	492	1.619	492	564	340.2	416.4	2772.967	F
D - A421 Standing Way West	1616	404	500	1806	0.895	1788	1198	99.2	56.3	158.213	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 - Snelshall Street	636	159	1597	626	1.016	625	466	311.4	314.0	1806.140	F
B - A421 Standing Way East	966	242	673	1117	0.865	1110	1549	148.8	112.9	425.140	F
C - Buckingham Road	667	167	1206	493	1.353	493	577	416.4	459.9	3208.213	F
D - A421 Standing Way West	1354	338	497	1808	0.749	1566	1202	56.3	3.2	30.460	D

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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Filename: J5 - Post Calibration WF Update[JB-PM) 201130.j9
Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\September 2020 Junction Modelling\Base\J5
Report generation date: 02/12/2020 11:17:42

- » **PM - 2020 Base, PM**
- » **PM - 2033 Base, PM**
- » **PM - 2033 Base + CD + D, PM**
- » **PM - 2033 Base + CD + D with TP, PM**
- » **PM - 2033 Base + CD + D - ST, PM**
- » **PM - 2033 Base + CD + SP (ST), PM**

Summary of junction performance

		PM				
		Set ID	Queue (Veh)	Delay (s)	RFC	LOS
PM - 2020 Base						
A - Snelshall Street	D2		18.5	97.05	1.00	F
B - A421 Standing Way East			9.8	34.71	0.93	D
C - Buckingham Road			6.3	50.40	0.89	F
D - A421 Standing Way West			5.7	15.26	0.86	C
PM - 2033 Base						
A - Snelshall Street	D14		120.1	611.91	1.35	F
B - A421 Standing Way East			47.2	127.20	1.06	F
C - Buckingham Road			59.0	405.99	1.22	F
D - A421 Standing Way West			43.9	89.29	1.03	F
PM - 2033 Base + CD + D						
A - Snelshall Street	D16		325.2	1879.59	1.73	F
B - A421 Standing Way East			398.0	1216.96	1.44	F
C - Buckingham Road			450.6	2828.96	1.86	F
D - A421 Standing Way West			99.5	193.47	1.11	F
PM - 2033 Base + CD + D with TP						
A - Snelshall Street	D18		293.6	1710.20	1.67	F
B - A421 Standing Way East			323.1	969.81	1.38	F
C - Buckingham Road			318.5	1953.72	1.65	F
D - A421 Standing Way West			101.5	201.82	1.11	F
PM - 2033 Base + CD + D - ST						
A - Snelshall Street	D20		228.4	1309.65	1.65	F
B - A421 Standing Way East			409.7	1278.84	1.44	F
C - Buckingham Road			468.7	2773.23	1.85	F
D - A421 Standing Way West			52.7	106.34	1.05	F
PM - 2033 Base + CD + SP (ST)						
A - Snelshall Street	D22		202.8	1185.54	1.58	F
B - A421 Standing Way East			321.4	1018.15	1.37	F
C - Buckingham Road			329.8	1888.45	1.65	F
D - A421 Standing Way West			53.7	109.14	1.05	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	Tattenhoe Roundabout
-------	----------------------

Location	51°59'21.98"N, 0°47'6.71"W
Site number	5
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	Ü
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	PM	Ü	Ü	D2,D14,D16,D18,D20,D22	100.000	100.000

PM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	40.75	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Snelshall Street	
B	A421 Standing Way East	
C	Buckingham Road	
D	A421 Standing Way West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Snelshall Street	3.30	7.50	8.4	29.6	60.8	28.0	
B - A421 Standing Way East	7.20	8.80	14.6	49.8	60.8	14.0	
C - Buckingham Road	2.80	7.30	22.1	55.4	60.8	9.0	
D - A421 Standing Way West	7.30	9.00	17.0	60.0	60.8	27.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Snelshall Street	Direct	Adjusted to match observed queues	-210
B - A421 Standing Way East	Direct	Uneven Lane Usage (B. Chard) + to match queues	-1050
C - Buckingham Road	Direct	Uneven Lane Usage (B. Chard) + to match queues	-525
D - A421 Standing Way West	Direct	Uneven Lane Usage (B. Chard) + to match queues	-725

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Snelshall Street	0.528	1313
B - A421 Standing Way East	0.756	1706
C - Buckingham Road	0.605	1323
D - A421 Standing Way West	0.738	1989

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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	621	100.000
B - A421 Standing Way East		ONE HOUR	Ü	982	100.000
C - Buckingham Road		ONE HOUR	Ü	441	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1280	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
A - Snelshall Street	0	82	256	283
B - A421 Standing Way East	92	2	109	779
C - Buckingham Road	219	73	1	148
D - A421 Standing Way West	298	897	81	4

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
A - Snelshall Street	0	4	0	0
B - A421 Standing Way East	4	0	3	3
C - Buckingham Road	0	0	0	0
D - A421 Standing Way West	0	3	1	0

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 - Snelshall Street	1.00	97.05	18.5	F	570	855
B - A421 Standing Way East	0.93	34.71	9.8	D	901	1352
C - Buckingham Road	0.89	50.40	6.3	F	405	607
D - A421 Standing Way West	0.86	15.26	5.7	C	1175	1762

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 - Snelshall Street	468	117	792	880	0.531	463	455	0.0	1.1	8.543	A
B - A421 Standing Way East	739	185	466	1316	0.562	734	789	0.0	1.3	6.138	A
C - Buckingham Road	332	83	867	788	0.421	329	334	0.0	0.7	7.803	A
D - A421 Standing Way West	964	241	289	1738	0.555	959	907	0.0	1.2	4.593	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 - Snelshall Street	558	140	948	796	0.701	554	545	1.1	2.2	14.579	B
B - A421 Standing Way East	883	221	558	1249	0.707	879	944	1.3	2.3	9.617	A
C - Buckingham Road	396	99	1037	683	0.581	394	399	0.7	1.3	12.364	B
D - A421 Standing Way West	1151	288	346	1696	0.678	1147	1085	1.2	2.1	6.517	A

17:15 - 17:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of
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	(Veh/hr)	(Veh)	(Veh/hr)				(Veh/hr)	(Veh)	(Veh)		service
A - Snelshall Street	684	171	1152	686	0.996	643	658	2.2	12.5	56.788	F
B - A421 Standing Way East	1081	270	651	1179	0.917	1058	1143	2.3	8.1	25.840	D
C - Buckingham Road	486	121	1238	558	0.870	471	472	1.3	5.0	36.323	E
D - A421 Standing Way West	1409	352	414	1646	0.856	1396	1295	2.1	5.4	13.699	B

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 - Snelshall Street	684	171	1163	681	1.005	660	667	12.5	18.5	97.045	F
B - A421 Standing Way East	1081	270	667	1168	0.926	1075	1155	8.1	9.8	34.712	D
C - Buckingham Road	486	121	1260	544	0.892	480	482	5.0	6.3	50.396	F
D - A421 Standing Way West	1409	352	422	1641	0.859	1408	1319	5.4	5.7	15.259	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 - Snelshall Street	558	140	965	787	0.709	622	563	18.5	2.6	29.028	D
B - A421 Standing Way East	883	221	618	1204	0.733	910	969	9.8	2.9	13.285	B
C - Buckingham Road	396	99	1096	646	0.613	415	432	6.3	1.7	16.734	C
D - A421 Standing Way West	1151	288	363	1684	0.683	1165	1148	5.7	2.2	7.114	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 - Snelshall Street	468	117	800	876	0.534	473	462	2.6	1.2	9.063	A
B - A421 Standing Way East	739	185	476	1309	0.565	746	798	2.9	1.3	6.460	A
C - Buckingham Road	332	83	881	779	0.426	336	340	1.7	0.8	8.190	A
D - A421 Standing Way West	964	241	294	1734	0.556	967	923	2.2	1.3	4.720	A

PM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	242.62	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	754	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1133	100.000
C - Buckingham Road		ONE HOUR	Ü	553	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1511	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	95	316	343
	B - A421 Standing Way East	106	2	126	899
	C - Buckingham Road	297	84	1	171
	D - A421 Standing Way West	378	1035	93	5

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	4	0	0
	B - A421 Standing Way East	4	0	3	3
	C - Buckingham Road	0	0	0	0
	D - A421 Standing Way West	0	3	1	0

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 - Snelshall Street	1.35	611.91	120.1	F	692	1037
B - A421 Standing Way East	1.06	127.20	47.2	F	1040	1560
C - Buckingham Road	1.22	405.99	59.0	F	508	761
D - A421 Standing Way West	1.03	89.29	43.9	F	1387	2080

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 - Snelshall Street	567	142	912	813	0.698	559	582	0.0	2.2	13.717	B
B - A421 Standing Way East	853	213	563	1244	0.686	845	908	0.0	2.1	8.848	A
C - Buckingham Road	416	104	1009	700	0.595	411	399	0.0	1.4	12.238	B
D - A421 Standing Way West	1138	284	365	1682	0.676	1130	1055	0.0	2.0	6.424	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 - Snelshall Street	677	169	1088	719	0.943	652	692	2.2	8.7	42.859	E
B - A421 Standing Way East	1019	255	658	1173	0.869	1005	1081	2.1	5.7	19.895	C
C - Buckingham Road	497	124	1194	585	0.850	485	469	1.4	4.6	32.515	D
D - A421 Standing Way West	1359	340	431	1634	0.832	1348	1247	2.0	4.6	12.205	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 - Snelshall Street	830	207	1258	627	1.323	624	770	8.7	60.1	213.852	F
B - A421 Standing Way East	1248	312	649	1180	1.058	1153	1233	5.7	29.2	66.809	F
C - Buckingham Road	609	152	1314	510	1.194	501	488	4.6	31.4	148.640	F
D - A421 Standing Way West	1664	416	457	1614	1.031	1571	1359	4.6	27.8	47.393	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 - Snelshall Street	830	207	1279	616	1.347	616	778	60.1	113.6	507.714	F
B - A421 Standing Way East	1248	312	643	1184	1.054	1176	1251	29.2	47.2	127.202	F
C - Buckingham Road	609	152	1330	500	1.218	499	489	31.4	59.0	339.827	F
D - A421 Standing Way West	1664	416	457	1614	1.031	1599	1372	27.8	43.9	89.293	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 - Snelshall Street	677	169	1211	652	1.039	651	753	113.6	120.1	611.915	F
B - A421 Standing Way East	1019	255	669	1165	0.874	1141	1194	47.2	16.7	105.729	F
C - Buckingham Road	497	124	1315	509	0.976	500	494	59.0	58.4	405.994	F
D - A421 Standing Way West	1359	340	455	1616	0.841	1509	1361	43.9	6.2	48.847	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 - Snelshall Street	567	142	957	789	0.719	783	692	120.1	66.3	430.845	F
B - A421 Standing Way East	853	213	760	1098	0.777	905	980	16.7	3.8	22.720	C
C - Buckingham Road	416	104	1164	604	0.689	594	501	58.4	13.9	225.460	F
D - A421 Standing Way West	1138	284	497	1586	0.717	1152	1261	6.2	2.6	8.553	A

PM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	1302.24	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	885	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1573	100.000
C - Buckingham Road		ONE HOUR	Ü	930	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1588	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	95	368	422
	B - A421 Standing Way East	106	2	301	1164
	C - Buckingham Road	396	332	1	201
	D - A421 Standing Way West	392	1082	109	5

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	4	0	0
	B - A421 Standing Way East	4	0	3	3
	C - Buckingham Road	0	0	0	0
	D - A421 Standing Way West	0	3	1	0

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 - Snelshall Street	1.73	1879.59	325.2	F	812	1218
B - A421 Standing Way East	1.44	1216.96	398.0	F	1444	2166
C - Buckingham Road	1.86	2828.96	450.6	F	854	1280
D - A421 Standing Way West	1.11	193.47	99.5	F	1457	2185

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 - Snelshall Street	666	166	1093	718	0.927	635	606	0.0	7.7	35.626	E
B - A421 Standing Way East	1185	296	653	1178	1.006	1114	1076	0.0	17.6	40.057	E
C - Buckingham Road	700	175	1208	577	1.214	561	559	0.0	34.8	125.888	F
D - A421 Standing Way West	1195	299	516	1573	0.760	1183	1252	0.0	3.0	8.983	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 - Snelshall Street	795	199	1260	629	1.265	624	661	7.7	50.4	187.172	F
B - A421 Standing Way East	1415	354	659	1173	1.206	1169	1225	17.6	78.8	157.685	F
C - Buckingham Road	836	209	1248	552	1.515	552	581	34.8	106.0	471.744	F
D - A421 Standing Way West	1427	357	513	1575	0.906	1408	1286	3.0	7.9	19.569	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 - Snelshall Street	974	243	1373	568	1.716	567	701	50.4	152.1	655.334	F
B - A421 Standing Way East	1732	433	619	1202	1.441	1202	1322	78.8	211.4	440.101	F
C - Buckingham Road	1024	256	1247	552	1.856	552	574	106.0	224.1	1086.001	F
D - A421 Standing Way West	1748	437	515	1573	1.111	1559	1284	7.9	55.2	82.710	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 - Snelshall Street	974	243	1382	563	1.731	563	704	152.1	254.9	1310.454	F
B - A421 Standing Way East	1732	433	616	1205	1.438	1205	1329	211.4	343.3	834.243	F
C - Buckingham Road	1024	256	1247	552	1.856	552	573	224.1	342.2	1855.366	F
D - A421 Standing Way West	1748	437	516	1573	1.111	1571	1284	55.2	99.5	184.249	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 - Snelshall Street	795	199	1372	568	1.400	568	701	254.9	311.7	1738.180	F
B - A421 Standing Way East	1415	354	619	1202	1.177	1202	1321	343.3	396.4	1115.888	F
C - Buckingham Road	836	209	1248	552	1.516	552	574	342.2	413.3	2474.195	F
D - A421 Standing Way West	1427	357	515	1573	0.907	1558	1284	99.5	66.9	193.475	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 - Snelshall Street	666	166	1290	612	1.088	612	672	311.7	325.2	1879.591	F
B - A421 Standing Way East	1185	296	651	1179	1.005	1178	1251	396.4	398.0	1216.960	F
C - Buckingham Road	700	175	1249	551	1.271	551	580	413.3	450.6	2828.960	F
D - A421 Standing Way West	1195	299	513	1575	0.759	1449	1287	66.9	3.5	63.041	F

PM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	1020.98	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
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	863	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1504	100.000
C - Buckingham Road		ONE HOUR	Ü	855	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1577	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	95	423	346
	B - A421 Standing Way East	106	2	273	1123
	C - Buckingham Road	381	295	1	178
	D - A421 Standing Way West	390	1075	107	5

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	4	0	0
	B - A421 Standing Way East	4	0	3	3
	C - Buckingham Road	0	0	0	0
	D - A421 Standing Way West	0	3	1	0

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 - Snelshall Street	1.67	1710.20	293.6	F	792	1189
B - A421 Standing Way East	1.38	969.81	323.1	F	1381	2071
C - Buckingham Road	1.65	1953.72	318.5	F	785	1177
D - A421 Standing Way West	1.11	201.82	101.5	F	1447	2170

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 - Snelshall Street	650	163	1086	722	0.900	624	626	0.0	6.4	31.469	D
B - A421 Standing Way East	1133	283	640	1187	0.954	1088	1071	0.0	11.0	29.180	D
C - Buckingham Road	644	161	1145	615	1.046	579	584	0.0	16.1	66.716	F
D - A421 Standing Way West	1187	297	537	1558	0.762	1175	1187	0.0	3.1	9.129	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 - Snelshall Street	776	194	1252	633	1.226	627	683	6.4	43.8	163.116	F
B - A421 Standing Way East	1352	338	658	1174	1.152	1166	1221	11.0	57.6	116.843	F
C - Buckingham Road	769	192	1210	575	1.337	573	614	16.1	65.0	270.118	F
D - A421 Standing Way West	1417	354	538	1557	0.910	1397	1245	3.1	8.1	20.297	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 - Snelshall Street	951	238	1361	574	1.655	574	720	43.8	137.9	582.413	F
B - A421 Standing Way East	1656	414	621	1201	1.380	1200	1313	57.6	171.7	350.199	F
C - Buckingham Road	942	235	1217	570	1.652	570	605	65.0	158.0	714.502	F
D - A421 Standing Way West	1736	434	538	1557	1.115	1543	1249	8.1	56.3	85.018	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 - Snelshall Street	951	238	1369	570	1.669	570	723	137.9	233.2	1168.340	F
B - A421 Standing Way East	1656	414	618	1203	1.377	1203	1321	171.7	285.0	688.852	F
C - Buckingham Road	942	235	1217	570	1.653	570	604	158.0	251.0	1300.351	F
D - A421 Standing Way West	1736	434	538	1557	1.115	1555	1250	56.3	101.5	189.639	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 - Snelshall Street	776	194	1360	575	1.350	575	720	233.2	283.5	1584.038	F
B - A421 Standing Way East	1352	338	622	1200	1.127	1200	1313	285.0	323.1	923.617	F
C - Buckingham Road	769	192	1217	570	1.349	570	605	251.0	300.7	1746.032	F
D - A421 Standing Way West	1417	354	538	1557	0.910	1542	1250	101.5	70.4	201.819	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 - Snelshall Street	650	163	1294	610	1.066	610	698	283.5	293.6	1710.201	F
B - A421 Standing Way East	1133	283	647	1182	0.958	1178	1257	323.1	311.7	969.814	F
C - Buckingham Road	644	161	1213	573	1.124	573	612	300.7	318.5	1953.718	F
D - A421 Standing Way West	1187	297	538	1557	0.762	1454	1248	70.4	3.6	72.560	F

PM - 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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	1217.52	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	761	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1589	100.000
C - Buckingham Road		ONE HOUR	Ü	979	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1492	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	95	368	298
	B - A421 Standing Way East	106	2	301	1180
	C - Buckingham Road	396	332	1	250
	D - A421 Standing Way West	263	1090	134	5

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	4	0	0
	B - A421 Standing Way East	4	0	3	3
	C - Buckingham Road	0	0	0	0
	D - A421 Standing Way West	0	3	1	0

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 - Snelshall Street	1.65	1309.65	228.4	F	698	1047
B - A421 Standing Way East	1.44	1278.84	409.7	F	1459	2188
C - Buckingham Road	1.85	2773.23	468.7	F	898	1348
D - A421 Standing Way West	1.05	106.34	52.7	F	1369	2053

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 - Snelshall Street	573	143	1122	703	0.815	557	514	0.0	3.8	22.813	C
B - A421 Standing Way East	1197	299	592	1222	0.979	1141	1087	0.0	14.0	33.296	D
C - Buckingham Road	737	184	1146	614	1.201	597	586	0.0	35.1	119.562	F
D - A421 Standing Way West	1123	281	522	1566	0.717	1113	1221	0.0	2.5	7.785	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 - Snelshall Street	684	171	1296	609	1.123	594	550	3.8	26.2	110.722	F
B - A421 Standing Way East	1429	357	645	1183	1.208	1179	1246	14.0	76.5	147.435	F
C - Buckingham Road	880	220	1193	585	1.504	585	631	35.1	109.0	455.563	F
D - A421 Standing Way West	1341	335	516	1571	0.854	1330	1262	2.5	5.3	14.284	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 - Snelshall Street	837	209	1465	518	1.616	518	588	26.2	106.1	476.616	F
B - A421 Standing Way East	1750	438	597	1219	1.436	1218	1386	76.5	209.3	427.480	F
C - Buckingham Road	1078	270	1195	583	1.848	583	620	109.0	232.7	1063.308	F
D - A421 Standing Way West	1642	411	517	1570	1.046	1535	1261	5.3	32.0	54.266	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 - Snelshall Street	837	209	1485	507	1.650	507	593	106.1	188.6	1021.559	F
B - A421 Standing Way East	1750	438	590	1224	1.430	1224	1402	209.3	340.9	817.076	F
C - Buckingham Road	1078	270	1196	583	1.849	583	618	232.7	356.4	1826.537	F
D - A421 Standing Way West	1642	411	518	1569	1.046	1560	1261	32.0	52.7	106.343	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 - Snelshall Street	684	171	1453	525	1.303	525	585	188.6	228.4	1309.646	F
B - A421 Standing Way East	1429	357	601	1215	1.176	1215	1376	340.9	394.4	1106.822	F
C - Buckingham Road	880	220	1195	583	1.509	583	621	356.4	430.7	2431.283	F
D - A421 Standing Way West	1341	335	517	1570	0.854	1521	1261	52.7	7.8	71.874	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 - Snelshall Street	573	143	1143	691	0.828	688	514	228.4	199.5	1119.424	F
B - A421 Standing Way East	1197	299	710	1135	1.054	1135	1122	394.4	409.7	1278.838	F
C - Buckingham Road	737	184	1194	585	1.260	585	651	430.7	468.7	2773.234	F
D - A421 Standing Way West	1123	281	513	1573	0.714	1144	1265	7.8	2.6	8.775	A

PM - 2033 Base + CD + SP (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
J5	Tattenhoe Roundabout	Standard Roundabout		A, B, C, D	919.91	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
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Snelshall Street		ONE HOUR	Ü	740	100.000
B - A421 Standing Way East		ONE HOUR	Ü	1519	100.000
C - Buckingham Road		ONE HOUR	Ü	903	100.000
D - A421 Standing Way West		ONE HOUR	Ü	1480	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	95	423	222
	B - A421 Standing Way East	106	2	273	1138
	C - Buckingham Road	381	295	1	226
	D - A421 Standing Way West	261	1083	131	5

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street	B - A421 Standing Way East	C - Buckingham Road	D - A421 Standing Way West
From	A - Snelshall Street	0	4	0	0
	B - A421 Standing Way East	4	0	3	3
	C - Buckingham Road	0	0	0	0
	D - A421 Standing Way West	0	3	1	0

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 - Snelshall Street	1.58	1185.54	202.8	F	679	1018
B - A421 Standing Way East	1.37	1018.15	321.4	F	1394	2091
C - Buckingham Road	1.65	1888.45	329.8	F	829	1243
D - A421 Standing Way West	1.05	109.14	53.7	F	1358	2037

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 - Snelshall Street	557	139	1113	707	0.788	544	533	0.0	3.3	20.615	C
B - A421 Standing Way East	1144	286	576	1234	0.927	1109	1081	0.0	8.8	24.212	C
C - Buckingham Road	680	170	1076	657	1.035	617	609	0.0	15.7	61.788	F
D - A421 Standing Way West	1114	278	542	1552	0.718	1104	1151	0.0	2.5	7.874	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 - Snelshall Street	665	166	1288	613	1.084	594	572	3.3	21.2	93.479	F
B - A421 Standing Way East	1366	341	639	1187	1.150	1178	1242	8.8	55.8	109.513	F
C - Buckingham Road	812	203	1149	612	1.327	610	669	15.7	66.2	256.505	F
D - A421 Standing Way West	1330	333	541	1552	0.857	1318	1217	2.5	5.4	14.691	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 - Snelshall Street	814	204	1452	525	1.551	524	608	21.2	93.7	410.818	F
B - A421 Standing Way East	1673	418	597	1218	1.373	1218	1379	55.8	169.6	339.247	F
C - Buckingham Road	994	249	1161	604	1.647	604	654	66.2	163.8	695.730	F
D - A421 Standing Way West	1629	407	540	1553	1.049	1521	1225	5.4	32.5	55.502	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 - Snelshall Street	814	204	1472	514	1.583	514	612	93.7	168.7	909.217	F
B - A421 Standing Way East	1673	418	591	1223	1.368	1223	1395	169.6	282.1	671.253	F
C - Buckingham Road	994	249	1162	603	1.649	603	651	163.8	261.7	1278.256	F
D - A421 Standing Way West	1629	407	539	1554	1.049	1544	1226	32.5	53.7	109.139	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 - Snelshall Street	665	166	1445	529	1.258	528	607	168.7	202.8	1185.535	F
B - A421 Standing Way East	1366	341	600	1216	1.123	1216	1374	282.1	319.6	925.679	F
C - Buckingham Road	812	203	1161	604	1.344	604	655	261.7	313.7	1706.607	F
D - A421 Standing Way West	1330	333	540	1553	0.856	1512	1225	53.7	8.2	75.870	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 - Snelshall Street	557	139	1139	693	0.803	690	540	202.8	169.6	972.362	F
B - A421 Standing Way East	1144	286	706	1138	1.005	1137	1123	319.6	321.4	1018.149	F
C - Buckingham Road	680	170	1143	616	1.104	616	700	313.7	329.8	1888.451	F
D - A421 Standing Way West	1114	278	543	1551	0.718	1136	1216	8.2	2.6	9.106	A

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: J6 - Post Calibration Adjustment.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J6

Report generation date: 28/01/2021 17:43:05

- »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
- »2033 Base + CD + SP (ST), AM
- »2033 Base + CD + SP (ST), PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
[Lane Simulation] - 2020 Base										
A - Standing Way (E)	D1	5.2	14.35		B	D2	19.9	44.86		E
B - Whaddon Road		4.5	37.88		E		6.5	67.84		F
C - Buckingham Road		4.6	10.21		B		2.9	7.73		A
[Lane Simulation] - 2033 Base										
A - Standing Way (E)	D13	31.5	67.74		F	D14	97.8	218.82		F
B - Whaddon Road		47.8	350.59		F		19.4	190.36		F
C - Buckingham Road		11.2	22.18		C		4.9	10.61		B
[Lane Simulation] - 2033 Base + CD + D										
A - Standing Way (E)	D15	40.5	85.75		F	D16	125.4	305.45		F
B - Whaddon Road		108.9	658.39		F		31.3	273.81		F
C - Buckingham Road		18.6	34.97		D		6.9	14.99		B
[Lane Simulation] - 2033 Base + CD + D with TP										
A - Standing Way (E)	D17	35.7	75.98		F	D18	117.8	279.15		F
B - Whaddon Road		97.3	624.43		F		40.0	345.76		F
C - Buckingham Road		18.2	31.58		D		6.5	13.12		B
[Lane Simulation] - 2033 Base + CD + D - ST										
A - Standing Way (E)	D19	18.8	42.94		E	D20	91.7	208.61		F
B - Whaddon Road		81.5	455.66		F		39.8	362.36		F
C - Buckingham Road		23.1	40.60		E		4.8	11.32		B
[Lane Simulation] - 2033 Base + CD + SP (ST)										
A - Standing Way (E)	D21	18.7	42.87		E	D22	81.7	172.17		F
B - Whaddon Road		71.2	400.81		F		43.4	378.75		F
C - Buckingham Road		21.9	38.91		E		5.0	10.53		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. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	Bottledump Roundabout
Location	51°59'11.04"N, 0°48'13.16"W

Site number	6
Date	30/11/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Will Forster
Description	A421 western arm exit restriction added to reflect queuing through junction in peak periods

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

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	10000	100000	-1	3	1	60	✓		✓	2002931116	527	91.57

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	Use Lane Simulation	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,D21,D22	100.000	100.000

2020 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	15.39	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Standing Way (E)	
B	Whaddon Road	
C	Buckingham Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Standing Way (E)	7.50	7.50	0.0	37.2	56.3	27.0	
B - Whaddon Road	7.40	7.40	0.0	50.0	56.3	11.5	
C - Buckingham Road	3.70	7.40	89.1	38.6	56.3	27.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Standing Way (E)	Direct		125
B - Whaddon Road	None		
C - Buckingham Road	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Standing Way (E)	0.703	2473
B - Whaddon Road	0.738	2452
C - Buckingham Road	0.673	2182

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - Standing Way (E)	Apportion from lane geometry	10.00
B - Whaddon Road	Evenly split	10.00
C - Buckingham Road	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Bottleneck capacity (PCU/hr)	Bottleneck type	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
	Entry	1	1	B		Infinity				0	99999	
			2	A, C		Infinity			0	99999		
	Exit	1	1			Infinity				0	99999	

A - Standing Way (E)	CircLink	1	2			Infinity				0	99999
			1	A	✓	8.00			0	99999	
		2	A, B, C	✓	8.00			0	99999		
	CircBase	1	1	B, C	✓	2.50			0	99999	
B - Whaddon Road	Entry	1	1	C	✓	4.00			0	99999	
			2	A, B	✓	4.00			0	99999	
		2	1	(A, B, C)		Infinity			0	99999	
	Exit	1	1			Infinity			0	99999	
	CircLink	1	1	B	✓	4.00			0	99999	
			2	A, C	✓	4.00			0	99999	
CircBase	1	1	A, C	✓	2.50			0	99999		
C - Buckingham Road	Entry	1	1	A	✓	14.00			0	99999	
			2	A, B, C	✓	14.00			0	99999	
		2	1	(A, B, C)		Infinity			0	99999	
	Exit	1	1		✓	10.00	✓	1420	Random	0	99999
	CircLink	1	1	A, B, C	✓	4.00			0	99999	
	CircBase	1	1	A, B	✓	2.50			0	99999	
Exit	2	1			Infinity			0	99999		

Entry Lane Geometry

Arm	Side	Lane level	Lane	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)
A - Standing Way (E)	Entry	1	1	3.00	3.00	0.0	38.0	56.3	29.0
			2	3.75	4.00	1.0	40.0	56.3	27.0

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - Standing Way (E)	Entry	1	1	0.305	1072
			2	0.398	1401
B - Whaddon Road	Entry	1	1	0.369	1226
			2	0.369	1226
C - Buckingham Road	Entry	1	1	0.337	1091
			2	0.337	1091

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm		
			Standing Way (E)	Whaddon Road	Buckingham Road
A - Standing Way (E)	1	1		✓	
		2	✓		✓
B - Whaddon Road	1	1			✓
		2	✓	✓	
2	1	1	✓	✓	✓
		2	1	✓	
C - Buckingham Road	1	1	✓		
		2	✓	✓	✓
2	1	1	✓	✓	✓

Summary of Circulating Lane allowed movements

Arm	Side	Lane Level	Lane	Destination arm		
				Standing Way (E)	Whaddon Road	Buckingham Road
A - Standing Way (E)	CircBase	1	1		✓	✓
	CircLink	1	1	✓		
			2	✓	✓	✓
B - Whaddon Road	CircBase	1	1	✓		✓
	CircLink	1	1		✓	
			2	✓		✓
C - Buckingham Road	CircBase	1	1	✓	✓	
	CircLink	1	1	✓	✓	✓

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 - Standing Way (E)		ONE HOUR	✓	1104	100.000
B - Whaddon Road		ONE HOUR	✓	374	100.000
C - Buckingham Road		ONE HOUR	✓	1389	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	3	181	920
	B - Whaddon Road	183	0	191
	C - Buckingham Road	1281	108	0

Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.16	0.83
	B - Whaddon Road	0.49	0.00	0.51
	C - Buckingham Road	0.92	0.08	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road	4	6	0

Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.330	1.020	1.060
	B - Whaddon Road	1.020	1.000	1.030
	C - Buckingham Road	1.040	1.060	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	07:30-07:45	831	876
	07:45-08:00	992	1046
	08:00-08:15	1216	1281
	08:15-08:30	1216	1281
	08:30-08:45	992	1046
	08:45-09:00	831	876
B - Whaddon Road	07:30-07:45	282	289
	07:45-08:00	336	345
	08:00-08:15	412	422
	08:15-08:30	412	422
	08:30-08:45	336	345
	08:45-09:00	282	289
C - Buckingham Road	07:30-07:45	1046	1089
	07:45-08:00	1249	1301
	08:00-08:15	1529	1593
	08:15-08:30	1529	1593
	08:30-08:45	1249	1301
	08:45-09:00	1046	1089

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	14.35	5.2	B	1015	1522
B - Whaddon Road	37.88	4.5	E	345	517
C - Buckingham Road	10.21	4.6	B	1270	1906

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	835	209	81	834	873	1098	0.0	1.4	5.897	A
B - Whaddon Road	286	72	699	287	292	215	0.0	0.4	4.670	A
C - Buckingham Road	1034	259	144	1034	1078	842	0.0	1.4	5.374	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	992	248	97	994	1042	1318	1.4	2.0	7.609	A
B - Whaddon Road	340	85	827	340	343	264	0.4	0.6	6.437	A
C - Buckingham Road	1246	312	170	1246	1293	996	1.4	2.3	6.526	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1214	304	120	1213	1268	1606	2.0	4.7	12.882	B
B - Whaddon Road	417	104	1011	401	406	322	0.6	4.5	25.470	D
C - Buckingham Road	1525	381	200	1526	1582	1210	2.3	4.3	9.818	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1219	305	119	1215	1280	1616	4.7	5.2	14.354	B
B - Whaddon Road	412	103	1012	415	428	319	4.5	4.1	37.878	E
C - Buckingham Road	1531	383	208	1527	1591	1219	4.3	4.5	10.213	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	992	248	94	993	1062	1314	5.2	2.1	8.539	A
B - Whaddon Road	334	83	831	335	358	255	4.1	0.6	11.917	B
C - Buckingham Road	1242	311	167	1240	1308	1001	4.5	2.4	6.961	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	839	210	82	837	885	1102	2.1	1.6	5.992	A
B - Whaddon Road	281	70	701	281	288	219	0.6	0.3	4.785	A
C - Buckingham Road	1044	261	141	1043	1098	841	2.4	1.6	5.489	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	134	1026	0.131	134	139	0.0	0.2	4.058	A
			2	A, C	700	1285	0.545	699	734	0.0	1.2	6.259	A
	Exit	1	1		548			548	570	0.0	0.0	0.000	A
			2		550			550	569	0.0	0.0	0.000	A
	CircLink	1	1	A	551			551	570	0.0	0.0	0.000	A
			2	A, B, C	627			627	655	0.0	0.0	0.000	A
CircBase	1	1	B, C	81			81	86	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	145	922	0.157	145	149	0.0	0.2	4.713	A
			2	A, B	141	936	0.151	142	143	0.0	0.2	4.592	A
		2	1	(A, B, C)	286			286	294	0.0	0.0	0.015	A
	Exit	1	1		215			215	225	0.0	0.0	0.000	A
			2		215			215	225	0.0	0.0	0.000	A
	CircLink	1	1	B	215			215	225	0.0	0.0	0.000	A
2			A, C	699			699	734	0.0	0.0	0.009	A	
CircBase	1	1	A, C	699			699	734	0.0	0.0	0.018	A	
			1	A	502	1000	0.502	502	522	0.0	0.7	5.275	A

C - Buckingham Road	Entry	1	2	A, B, C	532	999	0.532	532	556	0.0	0.8	5.467	A
		2	1	(A, B, C)	1034			1034	1085	0.0	0.0	0.000	A
	Exit	1	1		842			842	872	0.0	1.7	7.140	A
	CircLink	1	1	A, B, C	986			986	1026	0.0	0.0	0.100	A
	CircBase	1	1	A, B	144			144	146	0.0	0.0	0.000	A
	Exit	2	1		842			842	872	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	167	1021	0.163	167	168	0.2	0.2	4.249	A
			2	A, C	825	1280	0.645	827	874	1.2	1.8	8.278	A
	Exit	1	1		658			658	677	0.0	0.0	0.000	A
			2		660			660	683	0.0	0.0	0.000	A
	CircLink	1	1	A	663			663	683	0.0	0.0	0.000	A
			2	A, B, C	752			752	781	0.0	0.0	0.000	A
CircBase	1	1	B, C	97			97	103	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	173	875	0.198	173	176	0.2	0.3	6.031	A
			2	A, B	167	884	0.189	167	167	0.2	0.3	5.732	A
		2	1	(A, B, C)	340			340	344	0.0	0.0	0.549	A
	Exit	1	1		264			264	270	0.0	0.0	0.000	A
			2		264			264	270	0.0	0.0	0.000	A
	CircLink	1	1	B	264			264	270	0.0	0.0	0.000	A
CircBase	1	1	A, C	827			827	874	0.0	0.0	0.093	A	
C - Buckingham Road	Entry	1	1	A	610	994	0.613	609	631	0.7	1.1	6.389	A
			2	A, B, C	636	990	0.643	637	663	0.8	1.2	6.656	A
		2	1	(A, B, C)	1246			1246	1297	0.0	0.0	0.000	A
	Exit	1	1		998			996	1042	1.7	2.8	9.828	A
	CircLink	1	1	A, B, C	1167			1167	1217	0.0	0.1	0.423	A
	CircBase	1	1	A, B	170			170	170	0.0	0.0	0.000	A
Exit	2	1		996			996	1042	0.0	0.0	0.000	A	

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	202	1011	0.200	202	204	0.2	0.2	4.452	A
			2	A, C	1012	1272	0.795	1011	1064	1.8	4.5	14.547	B
	Exit	1	1		811			811	833	0.0	0.0	0.000	A
			2		795			795	827	0.0	0.0	0.000	A
	CircLink	1	1	A	803			803	833	0.0	0.0	0.000	A
			2	A, B, C	923			923	950	0.0	0.0	0.000	A
CircBase	1	1	B, C	120			120	124	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	205	803	0.256	204	209	0.3	1.0	13.603	B
			2	A, B	197	813	0.243	196	198	0.3	0.9	13.428	B
		2	1	(A, B, C)	417			403	412	0.0	2.6	11.486	B
	Exit	1	1		322			322	328	0.0	0.0	0.000	A
			2		322			322	328	0.0	0.0	0.000	A
	CircLink	1	1	B	322			322	328	0.0	0.0	0.000	A
CircBase	1	1	A, C	1011			1011	1063	0.0	0.1	0.424	A	
CircBase	1	1	A, C	1011			1011	1062	0.0	0.2	0.678	A	
C - Buckingham Road	Entry	1	1	A	754	983	0.767	755	780	1.1	2.0	9.622	A
			2	A, B, C	771	981	0.786	771	802	1.2	2.2	9.974	A
		2	1	(A, B, C)	1525			1525	1591	0.0	0.0	0.018	A
	Exit	1	1		1212			1210	1250	2.8	5.9	15.763	C
	CircLink	1	1	A, B, C	1412			1412	1465	0.1	1.1	2.140	A
	CircBase	1	1	A, B	200			200	201	0.0	0.0	0.000	A
Exit	2	1		1210			1210	1250	0.0	0.0	0.000	A	

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	199	1013	0.197	200	204	0.2	0.2	4.438	A
			2	A, C	1019	1273	0.801	1014	1076	4.5	5.0	16.304	C
	Exit	1	1		809			809	841	0.0	0.0	0.000	A
			2		807			807	837	0.0	0.0	0.000	A
	CircLink	1	1	A	805			805	840	0.0	0.0	0.000	A
			2	A, B, C	930			930	964	0.0	0.0	0.000	A
CircBase	1	1	B, C	119			119	126	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	211	806	0.262	210	219	1.0	1.0	16.460	C
			2	A, B	204	815	0.251	205	209	0.9	0.8	16.408	C
		2	1	(A, B, C)	412			415	427	2.6	2.3	21.608	C

B - Whaddon Road	Exit	1	1		319			319	330	0.0	0.0	0.000	A
	CircLink	1	1	B	319			319	330	0.0	0.0	0.000	A
			2	A, C	1014			1012	1076	0.1	0.2	0.566	A
	CircBase	1	1	A, C	1012			1012	1075	0.2	0.3	0.882	A
C - Buckingham Road	Entry	1	1	A	754	980	0.770	752	785	2.0	2.2	10.007	B
			2	A, B, C	776	978	0.793	774	806	2.2	2.3	10.387	B
		2	1	(A, B, C)	1531			1530	1592	0.0	0.0	0.011	A
	Exit	1	1		1218			1219	1292	5.9	5.7	17.249	C
	CircLink	1	1	A, B, C	1426			1426	1504	1.1	1.0	2.704	A
	CircBase	1	1	A, B	208			208	213	0.0	0.0	0.000	A
Exit	2	1		1219			1219	1292	0.0	0.0	0.000	A	

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	162	1022	0.158	162	165	0.2	0.2	4.138	A
			2	A, C	830	1282	0.647	831	897	5.0	1.9	9.394	A
	Exit	1	1		657			657	694	0.0	0.0	0.000	A
			2		657			657	689	0.0	0.0	0.000	A
	CircLink	1	1	A	656			656	689	0.0	0.0	0.000	A
			2	A, B, C	751			751	797	0.0	0.0	0.000	A
CircBase	1	1	B, C	94			94	102	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	171	874	0.195	171	184	1.0	0.3	8.050	A
			2	A, B	164	881	0.186	164	174	0.8	0.3	7.875	A
		2	1	(A, B, C)	334			334	353	2.3	0.1	4.456	A
	Exit	1	1		255			255	267	0.0	0.0	0.000	A
			2		255			255	267	0.0	0.0	0.000	A
	CircLink	1	1	B	255			255	267	0.0	0.0	0.000	A
2			A, C	831			831	898	0.2	0.0	0.162	A	
CircBase	1	1	A, C	831			831	899	0.3	0.0	0.276	A	
C - Buckingham Road	Entry	1	1	A	606	996	0.608	605	638	2.2	1.1	6.819	A
			2	A, B, C	636	989	0.644	635	670	2.3	1.2	7.092	A
		2	1	(A, B, C)	1242			1242	1299	0.0	0.0	0.006	A
	Exit	1	1		999			1001	1095	5.7	2.8	11.668	B
	CircLink	1	1	A, B, C	1166			1166	1261	1.0	0.1	0.951	A
	CircBase	1	1	A, B	167			167	178	0.0	0.0	0.000	A
Exit	2	1		1001			1001	1095	0.0	0.0	0.000	A	

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	136	1023	0.133	137	141	0.2	0.2	4.051	A
			2	A, C	703	1286	0.546	701	744	1.9	1.4	6.374	A
	Exit	1	1		547			547	576	0.0	0.0	0.000	A
			2		555			555	580	0.0	0.0	0.000	A
	CircLink	1	1	A	553			553	578	0.0	0.0	0.000	A
			2	A, B, C	631			631	664	0.0	0.0	0.000	A
CircBase	1	1	B, C	82			82	87	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	142	922	0.154	142	147	0.3	0.1	4.784	A
			2	A, B	139	933	0.149	139	141	0.3	0.2	4.740	A
		2	1	(A, B, C)	281			281	287	0.1	0.0	0.035	A
	Exit	1	1		219			219	227	0.0	0.0	0.000	A
			2		219			219	227	0.0	0.0	0.000	A
	CircLink	1	1	B	219			219	227	0.0	0.0	0.000	A
2			A, C	701			701	744	0.0	0.0	0.007	A	
CircBase	1	1	A, C	701			701	744	0.0	0.0	0.022	A	
C - Buckingham Road	Entry	1	1	A	507	1001	0.506	507	532	1.1	0.7	5.380	A
			2	A, B, C	537	1000	0.537	536	566	1.2	0.9	5.592	A
		2	1	(A, B, C)	1044			1044	1095	0.0	0.0	0.000	A
	Exit	1	1		840			841	894	2.8	1.6	7.484	A
	CircLink	1	1	A, B, C	982			981	1032	0.1	0.0	0.134	A
	CircBase	1	1	A, B	141			141	144	0.0	0.0	0.000	A
Exit	2	1		841			841	894	0.0	0.0	0.000	A	

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	30.75	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 - Standing Way (E)		ONE HOUR	✓	1287	100.000
B - Whaddon Road		ONE HOUR	✓	281	100.000
C - Buckingham Road		ONE HOUR	✓	1227	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	2	194	1091
B - Whaddon Road	153	0	128
C - Buckingham Road	1066	161	0

Proportions

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	0.00	0.15	0.85
B - Whaddon Road	0.54	0.00	0.46
C - Buckingham Road	0.87	0.13	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	50	1	2
B - Whaddon Road	0	0	3
C - Buckingham Road	3	2	0

Average PCU Per Veh

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	1.500	1.010	1.020
B - Whaddon Road	1.000	1.000	1.030
C - Buckingham Road	1.030	1.020	1.000

Detailed Demand Data

Demand for each time segment

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Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	16:45-17:00	969	988
	17:00-17:15	1157	1179
	17:15-17:30	1417	1444
	17:30-17:45	1417	1444
	17:45-18:00	1157	1179
	18:00-18:15	969	988
B - Whaddon Road	16:45-17:00	212	214
	17:00-17:15	253	256
	17:15-17:30	309	314
	17:30-17:45	309	314
	17:45-18:00	253	256
	18:00-18:15	212	214
C - Buckingham Road	16:45-17:00	924	950
	17:00-17:15	1103	1135
	17:15-17:30	1351	1390
	17:30-17:45	1351	1390
	17:45-18:00	1103	1135
	18:00-18:15	924	950

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	44.86	19.9	E	1184	1777
B - Whaddon Road	67.84	6.5	F	260	390
C - Buckingham Road	7.73	2.9	A	1130	1696

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	965	241	125	966	976	932	0.0	1.9	6.781	A
B - Whaddon Road	212	53	819	212	214	272	0.0	0.3	4.580	A
C - Buckingham Road	939	235	120	938	957	911	0.0	1.3	4.912	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1164	291	150	1164	1172	1098	1.9	3.2	9.869	A
B - Whaddon Road	253	63	987	254	256	326	0.3	0.6	6.589	A
C - Buckingham Road	1107	277	140	1108	1131	1100	1.3	1.6	5.585	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1430	357	177	1394	1406	1336	3.2	14.3	25.721	D
B - Whaddon Road	311	78	1172	294	295	396	0.6	4.8	36.394	E
C - Buckingham Road	1349	337	165	1347	1382	1300	1.6	2.9	7.236	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1431	358	176	1398	1427	1353	14.3	19.9	44.856	E
B - Whaddon Road	314	79	1184	303	312	389	4.8	6.5	67.836	F
C - Buckingham Road	1360	340	166	1363	1405	1319	2.9	2.8	7.729	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1141	285	144	1168	1247	1096	19.9	3.2	22.402	C

B - Whaddon Road	251	63	994	257	278	318	6.5	1.1	31.478	D
C - Buckingham Road	1095	274	144	1096	1142	1123	2.8	1.6	5.679	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	975	244	123	979	995	928	3.2	1.7	7.032	A
B - Whaddon Road	216	54	832	217	218	270	1.1	0.2	5.370	A
C - Buckingham Road	932	233	121	930	954	925	1.6	1.4	4.813	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	147	1023	0.144	147	148	0.0	0.2	4.083	A
			2	A, C	818	1324	0.618	819	828	0.0	1.7	7.268	A
	Exit	1	1		472			472	476	0.0	0.0	0.000	A
			2		460			460	473	0.0	0.0	0.000	A
	CircLink	1	1	A	465			465	472	0.0	0.0	0.000	A
2			A, B, C	592			592	604	0.0	0.0	0.000	A	
CircBase	1	1	B, C	125			125	128	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	94	887	0.106	94	98	0.0	0.1	4.685	A
			2	A, B	118	918	0.129	118	116	0.0	0.1	4.490	A
		2	(A, B, C)	212			212	216	0.0	0.0	0.002	A	
	Exit	1	1		272			272	276	0.0	0.0	0.000	A
			1	B	272			272	276	0.0	0.0	0.000	A
CircLink	1	1	A, C	819			819	828	0.0	0.0	0.002	A	
		2	A, C	819			819	828	0.0	0.0	0.009	A	
CircBase	1	1	A, C	819			819	828	0.0	0.0	0.000	A	
C - Buckingham Road	Entry	1	1	A	440	1020	0.431	440	449	0.0	0.6	4.707	A
			2	A, B, C	499	1017	0.491	498	508	0.0	0.7	5.093	A
		2	(A, B, C)	939			939	963	0.0	0.0	0.000	A	
	Exit	1	1		911			911	915	0.0	1.9	7.399	A
			1	A, B, C	1031			1031	1042	0.0	0.0	0.095	A
CircBase	1	1	A, B	120			120	119	0.0	0.0	0.000	A	
Exit	2	1		911			911	915	0.0	0.0	0.000	A	

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	176	1018	0.173	176	176	0.2	0.1	4.207	A
			2	A, C	988	1315	0.752	988	996	1.7	3.1	10.876	B
	Exit	1	1		553			553	564	0.0	0.0	0.000	A
			2		545			545	562	0.0	0.0	0.000	A
	CircLink	1	1	A	545			545	560	0.0	0.0	0.000	A
2			A, B, C	702			702	712	0.0	0.0	0.000	A	
CircBase	1	1	B, C	150			150	147	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	116	833	0.139	116	117	0.1	0.3	6.638	A
			2	A, B	139	855	0.162	138	139	0.1	0.3	6.025	A
		2	(A, B, C)	253			254	257	0.0	0.0	0.287	A	
	Exit	1	1		326			326	323	0.0	0.0	0.000	A
			1	B	326			326	323	0.0	0.0	0.000	A
CircLink	1	1	A, C	988			987	996	0.0	0.1	0.080	A	
		2	A, C	987			987	996	0.0	0.1	0.128	A	
CircBase	1	1	A, C	987			987	996	0.0	0.1	0.128	A	
C - Buckingham Road	Entry	1	1	A	531	1013	0.524	531	537	0.6	0.7	5.368	A
			2	A, B, C	576	1018	0.566	577	594	0.7	0.9	5.781	A
		2	(A, B, C)	1107			1107	1132	0.0	0.0	0.000	A	
	Exit	1	1		1100			1100	1102	1.9	3.6	10.804	B
			1	A, B, C	1241			1240	1251	0.0	0.3	0.577	A
CircBase	1	1	A, B	140			140	141	0.0	0.0	0.000	A	
Exit	2	1		1100			1100	1102	0.0	0.0	0.000	A	

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

A - Standing Way (E)	Entry	1	1	B	220	1009	0.218	219	220	0.1	0.3	4.575	A
			2	A, C	1209	1303	0.927	1174	1186	3.1	14.0	29.556	D
	Exit	1	1		667			667	682	0.0	0.0	0.000	A
			2		668			668	684	0.0	0.0	0.000	A
	CircLink	1	1	A	671			671	685	0.0	0.0	0.000	A
2			A, B, C	841			841	860	0.0	0.0	0.000	A	
CircBase	1	1	B, C	177			177	178	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	133	762	0.175	130	136	0.3	0.9	17.820	C
			2	A, B	164	785	0.209	164	159	0.3	1.2	20.612	C
		2	1	(A, B, C)	311			297	301	0.0	2.7	16.277	C
	Exit	1	1		396			396	398	0.0	0.0	0.000	A
			1	B	396			396	398	0.0	0.0	0.000	A
CircLink	1	1	A, C	1174			1173	1184	0.1	0.5	0.666	A	
		2	A, C	1174			1173	1184	0.1	0.5	0.666	A	
CircBase	1	1	A, C	1173			1172	1183	0.1	0.4	0.935	A	
C - Buckingham Road	Entry	1	1	A	647	1003	0.644	646	665	0.7	1.3	7.008	A
			2	A, B, C	702	1008	0.697	701	717	0.9	1.6	7.446	A
		2	1	(A, B, C)	1349			1349	1388	0.0	0.0	0.000	A
	Exit	1	1		1300			1300	1298	3.6	6.6	17.198	C
			1	A, B, C	1467			1466	1473	0.3	1.5	2.845	A
	CircBase	1	1	A, B	165			165	162	0.0	0.0	0.000	A
Exit	2	1		1300			1300	1298	0.0	0.0	0.000	A	

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	214	1007	0.213	214	217	0.3	0.3	4.605	A
			2	A, C	1217	1301	0.936	1185	1210	14.0	19.6	52.016	F
	Exit	1	1		674			674	694	0.0	0.0	0.000	A
			2		679			679	701	0.0	0.0	0.000	A
	CircLink	1	1	A	677			677	699	0.0	0.0	0.000	A
2			A, B, C	851			851	878	0.0	0.0	0.000	A	
CircBase	1	1	B, C	176			176	182	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	139	750	0.185	139	143	0.9	0.9	26.762	D
			2	A, B	167	779	0.214	165	169	1.2	1.5	28.699	D
		2	1	(A, B, C)	314			306	314	2.7	4.0	39.552	E
	Exit	1	1		389			389	399	0.0	0.0	0.000	A
			1	B	389			389	399	0.0	0.0	0.000	A
CircLink	1	1	A, C	1185			1184	1210	0.5	0.4	1.116	A	
		2	A, C	1185			1184	1210	0.5	0.4	1.116	A	
CircBase	1	1	A, C	1184			1184	1210	0.4	0.5	1.483	A	
C - Buckingham Road	Entry	1	1	A	664	1005	0.661	665	679	1.3	1.3	7.404	A
			2	A, B, C	696	1005	0.693	697	726	1.6	1.5	8.009	A
		2	1	(A, B, C)	1360			1360	1405	0.0	0.0	0.013	A
	Exit	1	1		1321			1319	1345	6.6	7.5	19.717	C
			1	A, B, C	1487			1487	1521	1.5	1.8	4.129	A
	CircBase	1	1	A, B	166			166	172	0.0	0.0	0.000	A
Exit	2	1		1319			1319	1345	0.0	0.0	0.000	A	

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	174	1015	0.171	174	177	0.3	0.2	4.380	A
			2	A, C	968	1319	0.734	994	1070	19.6	3.1	25.606	D
	Exit	1	1		544			544	573	0.0	0.0	0.000	A
			2		552			552	575	0.0	0.0	0.000	A
	CircLink	1	1	A	543			543	574	0.0	0.0	0.000	A
2			A, B, C	697			697	723	0.0	0.0	0.000	A	
CircBase	1	1	B, C	144			144	148	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	114	824	0.139	115	128	0.9	0.3	15.014	C
			2	A, B	141	853	0.165	142	151	1.5	0.4	17.117	C
		2	1	(A, B, C)	251			255	272	4.0	0.4	17.121	C
	Exit	1	1		318			318	325	0.0	0.0	0.000	A
			1	B	318			318	325	0.0	0.0	0.000	A
CircLink	1	1	A, C	994			994	1072	0.4	0.1	0.561	A	
		2	A, C	994			994	1073	0.5	0.1	0.773	A	
CircBase	1	1	A, C	994			994	1073	0.5	0.1	0.773	A	
C - Buckingham Road	Entry	1	1	A	512	1009	0.507	514	540	1.3	0.7	5.528	A
			2	A, B, C	583	1018	0.573	583	602	1.5	0.9	5.814	A
		2	1	(A, B, C)	1095			1095	1137	0.0	0.0	0.000	A
	Exit	1	1		1109			1123	1220	7.5	3.4	15.402	C
			1	A, B, C	1251			1253	1358	1.8	0.3	2.373	A
	CircBase	1	1	A, B	144			144	154	0.0	0.0	0.000	A
Exit	2	1		1123			1123	1220	0.0	0.0	0.000	A	

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	148	1024	0.144	147	148	0.2	0.2	4.101	A
			2	A, C	827	1324	0.624	832	847	3.1	1.5	7.555	A
	Exit	1	1		461			461	475	0.0	0.0	0.000	A
			2		467			467	478	0.0	0.0	0.000	A
	CircLink	1	1	A	462			462	478	0.0	0.0	0.000	A
			2	A, B, C	589			589	598	0.0	0.0	0.000	A
	CircBase	1	1	B, C	123			123	123	0.0	0.0	0.000	A
B - Whaddon Road	Entry	1	1	C	97	893	0.109	97	99	0.3	0.1	5.108	A
			2	A, B	119	913	0.131	120	119	0.4	0.1	5.106	A
		2	1	(A, B, C)	216			216	216	0.4	0.0	0.417	A
	Exit	1	1		270			270	271	0.0	0.0	0.000	A
			1	B	270			270	271	0.0	0.0	0.000	A
	CircLink	1	1	A, C	832			832	847	0.1	0.0	0.023	A
			2		832			832	848	0.1	0.0	0.049	A
CircBase	1	1	A, C	832			832	848	0.1	0.0	0.049	A	
C - Buckingham Road	Entry	1	1	A	439	1019	0.431	437	448	0.7	0.7	4.648	A
			2	A, B, C	493	1024	0.482	492	506	0.9	0.7	4.958	A
		2	1	(A, B, C)	932			932	953	0.0	0.0	0.000	A
	Exit	1	1		927			925	950	3.4	2.2	8.150	A
	CircLink	1	1	A, B, C	1049			1048	1067	0.3	0.0	0.246	A
	CircBase	1	1	A, B	121			121	122	0.0	0.0	0.000	A
	Exit	2	1		925			925	950	0.0	0.0	0.000	A

2033 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	82.15	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)
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 - Standing Way (E)		ONE HOUR	✓	1306	100.000
B - Whaddon Road		ONE HOUR	✓	434	100.000
C - Buckingham Road		ONE HOUR	✓	1601	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	3	223	1080
	B - Whaddon Road	215	0	219
	C - Buckingham Road	1477	124	0

Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.17	0.83
	B - Whaddon Road	0.50	0.00	0.50
	C - Buckingham Road	0.92	0.08	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road	4	6	0

Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road	1.042	1.056	1.000

Detailed Demand Data

Demand for each time segment

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Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	07:30-07:45	984	1034
	07:45-08:00	1174	1235
	08:00-08:15	1438	1512
	08:15-08:30	1438	1512
	08:30-08:45	1174	1235
	08:45-09:00	984	1034
B - Whaddon Road	07:30-07:45	327	335
	07:45-08:00	390	400
	08:00-08:15	478	489
	08:15-08:30	478	489
	08:30-08:45	390	400
	08:45-09:00	327	335
C - Buckingham Road	07:30-07:45	1205	1257
	07:45-08:00	1439	1501
	08:00-08:15	1763	1839
	08:15-08:30	1763	1839
	08:30-08:45	1439	1501
	08:45-09:00	1205	1257

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	67.74	31.5	F	1200	1800
B - Whaddon Road	350.59	47.8	F	400	600
C - Buckingham Road	22.18	11.2	C	1468	2203

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	986	247	95	989	1028	1279	0.0	1.8	6.955	A
B - Whaddon Road	324	81	818	324	334	266	0.0	0.6	5.572	A
C - Buckingham Road	1206	301	164	1210	1248	975	0.0	1.9	6.267	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1175	294	109	1174	1225	1518	1.8	3.8	10.972	B
B - Whaddon Road	395	99	973	388	389	309	0.6	2.6	17.605	C
C - Buckingham Road	1433	358	197	1429	1499	1162	1.9	3.6	8.534	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1438	360	136	1398	1450	1812	3.8	19.0	34.465	D
B - Whaddon Road	485	121	1147	375	399	385	2.6	24.6	144.533	F
C - Buckingham Road	1767	442	190	1758	1809	1326	3.6	11.0	19.002	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1434	358	136	1393	1458	1812	19.0	31.3	67.736	F
B - Whaddon Road	482	120	1149	376	396	380	24.6	47.9	350.588	F
C - Buckingham Road	1757	439	191	1757	1835	1338	11.0	11.1	22.183	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1171	293	111	1222	1332	1578	31.3	9.1	48.214	E

B - Whaddon Road	387	97	1025	486	463	311	47.9	32.4	298.968	F
C - Buckingham Road	1446	362	247	1442	1528	1278	11.1	4.0	10.652	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	993	248	91	997	1072	1305	9.1	2.0	10.945	B
B - Whaddon Road	330	83	830	384	461	259	32.4	2.4	64.319	F
C - Buckingham Road	1200	300	195	1200	1264	1026	4.0	2.2	6.923	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	170	1022	0.166	170	171	0.0	0.2	4.265	A
			2	A, C	816	1284	0.636	818	857	0.0	1.6	7.511	A
	Exit	1	1		644			644	661	0.0	0.0	0.000	A
			2		634			634	658	0.0	0.0	0.000	A
	CircLink	1	1	A	638			638	657	0.0	0.0	0.000	A
2			A, B, C	736			736	759	0.0	0.0	0.000	A	
CircBase	1	1	B, C	95			95	97	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	163	883	0.184	163	169	0.0	0.3	5.532	A
			2	A, B	162	887	0.182	162	165	0.0	0.3	5.427	A
		2	(A, B, C)	324			324	336	0.0	0.0	0.091	A	
	Exit	1	1		266			266	269	0.0	0.0	0.000	A
			1	B	266			266	269	0.0	0.0	0.000	A
	CircLink	1	1	A, C	818			818	857	0.0	0.0	0.030	A
2			A, C	818			818	856	0.0	0.0	0.065	A	
CircBase	1	1	A, C	818			818	856	0.0	0.0	0.065	A	
C - Buckingham Road	Entry	1	1	A	584	993	0.589	587	607	0.0	0.9	6.168	A
			2	A, B, C	621	990	0.628	623	641	0.0	1.1	6.361	A
		2	(A, B, C)	1206			1206	1256	0.0	0.0	0.000	A	
	Exit	1	1		978			975	1010	0.0	2.8	9.378	A
			1	A, B, C	1143			1142	1190	0.0	0.2	0.337	A
	CircBase	1	1	A, B	164			164	168	0.0	0.0	0.000	A
Exit	2	1		975			975	1010	0.0	0.0	0.000	A	

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	200	1014	0.197	200	203	0.2	0.2	4.490	A
			2	A, C	975	1285	0.760	974	1022	1.6	3.6	12.295	B
	Exit	1	1		761			761	792	0.0	0.0	0.000	A
			2		757			757	789	0.0	0.0	0.000	A
	CircLink	1	1	A	762			762	791	0.0	0.0	0.000	A
2			A, B, C	864			864	906	0.0	0.0	0.000	A	
CircBase	1	1	B, C	109			109	116	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	194	825	0.236	195	196	0.3	0.7	10.615	B
			2	A, B	195	830	0.236	193	193	0.3	0.7	10.918	B
		2	(A, B, C)	395			390	393	0.0	1.2	6.444	A	
	Exit	1	1		309			309	319	0.0	0.0	0.000	A
			1	B	309			309	319	0.0	0.0	0.000	A
	CircLink	1	1	A, C	974			973	1021	0.0	0.1	0.300	A
2			A, C	973			973	1021	0.0	0.2	0.464	A	
CircBase	1	1	A, C	973			973	1021	0.0	0.2	0.464	A	
C - Buckingham Road	Entry	1	1	A	704	983	0.717	702	735	0.9	1.8	8.411	A
			2	A, B, C	730	979	0.744	727	764	1.1	1.9	8.651	A
		2	(A, B, C)	1433			1433	1506	0.0	0.0	0.001	A	
	Exit	1	1		1163			1162	1202	2.8	4.7	13.886	B
			1	A, B, C	1361			1360	1408	0.2	0.7	1.496	A
CircBase	1	1	A, B	197			197	198	0.0	0.0	0.000	A	
Exit	2	1		1162			1162	1202	0.0	0.0	0.000	A	

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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A - Standing Way (E)	Entry	1	1	B	250	1003	0.249	249	253	0.2	0.3	4.767	A
			2	A, C	1189	1271	0.936	1149	1197	3.6	18.7	40.634	E
	Exit	1	1		904			904	931	0.0	0.0	0.000	A
			2		908			908	939	0.0	0.0	0.000	A
	CircLink	1	1	A	900			900	930	0.0	0.0	0.000	A
2			A, B, C	1048			1048	1080	0.0	0.0	0.000	A	
CircBase	1	1	B, C	136			136	140	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	193	758	0.255	190	202	0.7	2.3	33.467	D
			2	A, B	188	760	0.247	185	197	0.7	2.2	34.141	D
		2	1	(A, B, C)	485			381	412	1.2	20.1	108.225	F
	Exit	1	1		385			385	393	0.0	0.0	0.000	A
			1	B	385			385	393	0.0	0.0	0.000	A
CircLink	1	1	A, C	1149			1148	1195	0.1	0.6	1.452	A	
		2	A, C	1148			1147	1192	0.2	0.8	1.933	A	
CircBase	1	1	A, C	1148			1147	1192	0.2	0.8	1.933	A	
C - Buckingham Road	Entry	1	1	A	869	984	0.884	870	893	1.8	4.6	17.484	C
			2	A, B, C	890	982	0.906	888	915	1.9	4.8	17.714	C
		2	1	(A, B, C)	1767			1759	1833	0.0	1.7	1.348	A
	Exit	1	1		1329			1326	1366	4.7	8.5	21.246	C
			1	A, B, C	1522			1519	1584	0.7	2.7	4.932	A
CircBase	1	1	A, B	190			190	202	0.0	0.0	0.000	A	
Exit	2	1		1326			1326	1366	0.0	0.0	0.000	A	

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	244	1007	0.242	244	250	0.3	0.3	4.645	A
			2	A, C	1190	1271	0.936	1149	1208	18.7	30.9	80.708	F
	Exit	1	1		907			907	946	0.0	0.0	0.000	A
			2		905			905	945	0.0	0.0	0.000	A
	CircLink	1	1	A	903			903	943	0.0	0.0	0.000	A
2			A, B, C	1045			1045	1092	0.0	0.0	0.000	A	
CircBase	1	1	B, C	136			136	145	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	191	758	0.253	189	200	2.3	2.6	44.755	E
			2	A, B	187	761	0.246	187	195	2.2	2.5	44.780	E
		2	1	(A, B, C)	482			378	398	20.1	42.7	307.164	F
	Exit	1	1		380			380	395	0.0	0.0	0.000	A
			1	B	380			380	395	0.0	0.0	0.000	A
CircLink	1	1	A, C	1149			1149	1207	0.6	0.7	2.033	A	
		2	A, C	1149			1149	1207	0.8	0.9	2.634	A	
CircBase	1	1	A, C	1149			1149	1207	0.8	0.9	2.634	A	
C - Buckingham Road	Entry	1	1	A	873	984	0.887	873	911	4.6	4.4	18.029	C
			2	A, B, C	883	981	0.900	884	924	4.8	4.6	18.489	C
		2	1	(A, B, C)	1757			1756	1834	1.7	2.1	3.927	A
	Exit	1	1		1335			1338	1401	8.5	8.7	23.542	C
			1	A, B, C	1526			1526	1602	2.7	2.8	6.431	A
CircBase	1	1	A, B	191			191	200	0.0	0.0	0.000	A	
Exit	2	1		1338			1338	1401	0.0	0.0	0.000	A	

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	201	1014	0.198	200	202	0.3	0.3	4.432	A
			2	A, C	970	1280	0.758	1022	1130	30.9	8.8	57.032	F
	Exit	1	1		792			792	823	0.0	0.0	0.000	A
			2		786			786	821	0.0	0.0	0.000	A
	CircLink	1	1	A	791			791	820	0.0	0.0	0.000	A
2			A, B, C	898			898	942	0.0	0.0	0.000	A	
CircBase	1	1	B, C	111			111	119	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	240	805	0.297	243	233	2.6	1.7	33.501	D
			2	A, B	239	807	0.296	243	229	2.5	1.7	33.983	D
		2	1	(A, B, C)	387			479	455	42.7	29.0	271.920	F
	Exit	1	1		311			311	321	0.0	0.0	0.000	A
			1	B	311			311	321	0.0	0.0	0.000	A
CircLink	1	1	A, C	1022			1023	1132	0.7	0.4	1.648	A	
		2	A, C	1023			1025	1134	0.9	0.5	2.182	A	
CircBase	1	1	A, C	1023			1025	1134	0.9	0.5	2.182	A	
C - Buckingham Road	Entry	1	1	A	710	964	0.737	708	751	4.4	1.9	10.025	B
			2	A, B, C	736	965	0.763	734	778	4.6	2.0	10.285	B
		2	1	(A, B, C)	1446			1446	1508	2.1	0.0	0.599	A
	Exit	1	1		1269			1278	1375	8.7	6.8	21.840	C
			1	A, B, C	1511			1516	1601	2.8	1.7	5.335	A
CircBase	1	1	A, B	247			247	234	0.0	0.0	0.000	A	
Exit	2	1		1278			1278	1375	0.0	0.0	0.000	A	

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	168	1020	0.165	168	173	0.3	0.2	4.240	A
			2	A, C	824	1289	0.640	829	899	8.8	1.8	12.330	B
	Exit	1	1		652			652	699	0.0	0.0	0.000	A
			2		652			652	701	0.0	0.0	0.000	A
	CircLink	1	1	A	652			652	699	0.0	0.0	0.000	A
			2	A, B, C	743			743	799	0.0	0.0	0.000	A
	CircBase	1	1	B, C	91			91	99	0.0	0.0	0.000	A
B - Whaddon Road	Entry	1	1	C	190	881	0.215	192	230	1.7	0.3	13.766	B
			2	A, B	188	884	0.213	192	231	1.7	0.4	14.011	B
		2	1	(A, B, C)	330			378	450	29.0	1.7	54.338	F
	Exit	1	1		259			259	272	0.0	0.0	0.000	A
			1	B	259			259	272	0.0	0.0	0.000	A
	CircLink	1	1	A, C	829			829	901	0.4	0.0	0.387	A
			2		829			829	901	0.4	0.0	0.387	A
CircBase	1	1	A, C	829			830	902	0.5	0.0	0.630	A	
C - Buckingham Road	Entry	1	1	A	584	981	0.595	584	615	1.9	1.0	6.834	A
			2	A, B, C	616	982	0.628	617	649	2.0	1.2	7.010	A
		2	1	(A, B, C)	1200			1200	1257	0.0	0.0	0.001	A
	Exit	1	1		1020			1026	1151	6.8	2.9	14.190	B
	CircLink	1	1	A, B, C	1214			1215	1370	1.7	0.2	1.909	A
	CircBase	1	1	A, B	195			195	235	0.0	0.0	0.000	A
	Exit	2	1		1026			1026	1151	0.0	0.0	0.000	A

2033 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - Standing Way (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	124.30	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)
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 - Standing Way (E)		ONE HOUR	✓	1501	100.000
B - Whaddon Road		ONE HOUR	✓	338	100.000
C - Buckingham Road		ONE HOUR	✓	1437	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	2	230	1269
	B - Whaddon Road	190	0	148
	C - Buckingham Road	1251	186	0

Proportions

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.15	0.85
	B - Whaddon Road	0.56	0.00	0.44
	C - Buckingham Road	0.87	0.13	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	50	1	2
	B - Whaddon Road	0	0	3
	C - Buckingham Road	3	2	0

Average PCU Per Veh

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.500	1.010	1.018
	B - Whaddon Road	1.000	1.000	1.031
	C - Buckingham Road	1.025	1.019	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	16:45-17:00	1130	1150
	17:00-17:15	1350	1374
	17:15-17:30	1653	1682
	17:30-17:45	1653	1682
	17:45-18:00	1350	1374
	18:00-18:15	1130	1150
B - Whaddon Road	16:45-17:00	254	258
	17:00-17:15	304	308
	17:15-17:30	372	377
	17:30-17:45	372	377
	17:45-18:00	304	308
	18:00-18:15	254	258
C - Buckingham Road	16:45-17:00	1082	1108
	17:00-17:15	1292	1323
	17:15-17:30	1582	1621
	17:30-17:45	1582	1621
	17:45-18:00	1292	1323
	18:00-18:15	1082	1108

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	218.82	97.8	F	1377	2065
B - Whaddon Road	190.36	19.4	F	312	468
C - Buckingham Road	10.61	4.9	B	1316	1974

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1134	283	141	1133	1142	1085	0.0	2.9	8.842	A
B - Whaddon Road	248	62	959	249	258	314	0.0	0.4	5.743	A
C - Buckingham Road	1083	271	142	1083	1108	1067	0.0	1.5	5.555	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1343	336	163	1344	1355	1290	2.9	7.1	17.208	C
B - Whaddon Road	306	76	1137	297	297	368	0.4	2.8	23.690	C
C - Buckingham Road	1285	321	171	1282	1317	1254	1.5	2.5	6.657	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1631	408	203	1473	1489	1552	7.1	50.8	75.272	F
B - Whaddon Road	380	95	1220	316	330	454	2.8	15.3	107.656	F
C - Buckingham Road	1575	394	180	1575	1605	1351	2.5	4.6	10.226	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1664	416	201	1472	1493	1584	50.8	97.5	187.428	F
B - Whaddon Road	372	93	1217	355	358	454	15.3	19.4	188.520	F
C - Buckingham Road	1587	397	201	1584	1621	1367	4.6	4.9	10.607	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1345	336	168	1434	1459	1300	97.5	75.9	218.816	F

B - Whaddon Road	305	76	1225	314	321	377	19.4	15.9	190.364	F
C - Buckingham Road	1287	322	180	1288	1336	1359	4.9	2.3	7.090	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1140	285	143	1308	1369	1103	75.9	21.6	112.134	F
B - Whaddon Road	260	65	1135	280	297	317	15.9	6.9	101.275	F
C - Buckingham Road	1083	271	160	1086	1112	1274	2.3	1.5	5.557	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	174	1016	0.171	173	174	0.0	0.2	4.222	A
			2	A, C	960	1318	0.729	959	967	0.0	2.7	9.675	A
	Exit	1	1		545			545	557	0.0	0.0	0.000	A
			2		541			541	555	0.0	0.0	0.000	A
	CircLink	1	1	A	543			543	557	0.0	0.0	0.000	A
2			A, B, C	683			683	697	0.0	0.0	0.000	A	
CircBase	1	1	B, C	141			141	142	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	108	836	0.129	109	115	0.0	0.2	5.658	A
			2	A, B	141	865	0.162	140	143	0.0	0.3	5.670	A
		2	(A, B, C)	248			248	260	0.0	0.0	0.078	A	
	Exit	1	1		314			314	317	0.0	0.0	0.000	A
			1	B	314			314	317	0.0	0.0	0.000	A
	CircLink	1	1	A, C	959			959	967	0.0	0.0	0.049	A
2			A, C	959			959	967	0.0	0.0	0.093	A	
CircBase	1	1	A, C	959			959	967	0.0	0.0	0.000	A	
C - Buckingham Road	Entry	1	1	A	510	1017	0.501	510	522	0.0	0.7	5.408	A
			2	A, B, C	573	1020	0.561	574	586	0.0	0.8	5.687	A
		2	(A, B, C)	1083			1083	1115	0.0	0.0	0.000	A	
	Exit	1	1		1066			1067	1065	0.0	3.1	9.783	A
			1	A, B, C	1208			1209	1224	0.0	0.2	0.404	A
	CircBase	1	1	A, B	142			142	146	0.0	0.0	0.000	A
Exit	2	1		1067			1067	1065	0.0	0.0	0.000	A	

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	205	1013	0.203	206	208	0.2	0.2	4.540	A
			2	A, C	1138	1314	0.866	1138	1147	2.7	6.9	19.497	C
	Exit	1	1		638			638	657	0.0	0.0	0.000	A
			2		652			652	662	0.0	0.0	0.000	A
	CircLink	1	1	A	642			642	658	0.0	0.0	0.000	A
2			A, B, C	810			810	826	0.0	0.0	0.000	A	
CircBase	1	1	B, C	163			163	166	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	128	773	0.166	127	131	0.2	0.6	14.012	B
			2	A, B	171	800	0.214	170	165	0.3	0.9	14.565	B
		2	(A, B, C)	306			299	301	0.0	1.3	8.775	A	
	Exit	1	1		368			368	374	0.0	0.0	0.000	A
			1	B	368			368	374	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1138			1138	1146	0.0	0.2	0.431	A
2			A, C	1138			1137	1145	0.0	0.3	0.623	A	
CircBase	1	1	A, C	1138			1137	1145	0.0	0.3	0.623	A	
C - Buckingham Road	Entry	1	1	A	611	1008	0.606	610	629	0.7	1.1	6.475	A
			2	A, B, C	674	1011	0.666	672	688	0.8	1.3	6.823	A
		2	(A, B, C)	1285			1285	1321	0.0	0.0	0.000	A	
	Exit	1	1		1260			1254	1258	3.1	6.0	15.291	C
			1	A, B, C	1434			1430	1437	0.2	1.3	2.013	A
CircBase	1	1	A, B	171			171	167	0.0	0.0	0.000	A	
Exit	2	1		1254			1254	1258	0.0	0.0	0.000	A	

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

A - Standing Way (E)	Entry	1	1	B	252	1001	0.252	251	253	0.2	0.4	4.862	A
			2	A, C	1379	1294	1.066	1221	1236	6.9	50.4	88.040	F
	Exit	1	1		777			777	793	0.0	0.0	0.000	A
			2		775			775	793	0.0	0.0	0.000	A
	CircLink	1	1	A	772			772	793	0.0	0.0	0.000	A
2			A, B, C	983			983	997	0.0	0.0	0.000	A	
CircBase	1	1	B, C	203			203	204	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	141	743	0.189	138	147	0.6	1.6	32.499	D
			2	A, B	181	767	0.236	178	183	0.9	2.3	34.812	D
		2	1	(A, B, C)	380			322	339	1.3	11.4	72.690	F
	Exit	1	1		454			454	457	0.0	0.0	0.000	A
			1	B	454			454	457	0.0	0.0	0.000	A
CircLink	1	1	A, C	1221			1220	1234	0.2	0.6	1.396	A	
		2	A, C	1220			1220	1233	0.3	0.7	1.752	A	
CircBase	1	1	A, C	1220			1220	1233	0.3	0.7	1.752	A	
C - Buckingham Road	Entry	1	1	A	764	1006	0.759	765	783	1.1	2.1	9.811	A
			2	A, B, C	810	1008	0.803	811	822	1.3	2.4	10.449	B
		2	1	(A, B, C)	1575			1574	1613	0.0	0.1	0.082	A
	Exit	1	1		1355			1351	1362	6.0	8.3	20.557	C
			1	A, B, C	1536			1535	1558	1.3	2.4	4.618	A
	CircBase	1	1	A, B	180			180	186	0.0	0.0	0.000	A
Exit	2	1		1351			1351	1362	0.0	0.0	0.000	A	

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	255	1002	0.254	254	253	0.4	0.4	4.888	A
			2	A, C	1409	1294	1.089	1219	1239	50.4	97.2	220.065	F
	Exit	1	1		793			793	804	0.0	0.0	0.000	A
			2		791			791	812	0.0	0.0	0.000	A
	CircLink	1	1	A	793			793	807	0.0	0.0	0.000	A
2			A, B, C	991			991	1016	0.0	0.0	0.000	A	
CircBase	1	1	B, C	201			201	207	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	158	746	0.213	157	160	1.6	1.8	39.395	E
			2	A, B	199	768	0.259	199	198	2.3	2.4	43.182	E
		2	1	(A, B, C)	372			357	360	11.4	15.2	146.031	F
	Exit	1	1		454			454	460	0.0	0.0	0.000	A
			1	B	454			454	460	0.0	0.0	0.000	A
CircLink	1	1	A, C	1219			1218	1239	0.6	0.6	1.778	A	
		2	A, C	1218			1217	1238	0.7	0.8	2.260	A	
CircBase	1	1	A, C	1218			1217	1238	0.7	0.8	2.260	A	
C - Buckingham Road	Entry	1	1	A	767	998	0.768	765	788	2.1	2.3	10.287	B
			2	A, B, C	820	999	0.820	819	833	2.4	2.5	10.756	B
		2	1	(A, B, C)	1587			1587	1623	0.1	0.0	0.086	A
	Exit	1	1		1368			1367	1392	8.3	8.8	22.667	C
			1	A, B, C	1572			1569	1595	2.4	2.7	5.791	A
	CircBase	1	1	A, B	201			201	202	0.0	0.0	0.000	A
Exit	2	1		1367			1367	1392	0.0	0.0	0.000	A	

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	210	1009	0.208	209	209	0.4	0.3	4.443	A
			2	A, C	1135	1308	0.869	1225	1250	97.2	75.7	257.505	F
	Exit	1	1		656			656	670	0.0	0.0	0.000	A
			2		644			644	673	0.0	0.0	0.000	A
	CircLink	1	1	A	648			648	670	0.0	0.0	0.000	A
2			A, B, C	820			820	847	0.0	0.0	0.000	A	
CircBase	1	1	B, C	168			168	174	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	137	743	0.184	137	143	1.8	1.5	42.335	E
			2	A, B	178	765	0.233	177	178	2.4	2.3	45.932	E
		2	1	(A, B, C)	305			315	319	15.2	12.2	147.176	F
	Exit	1	1		377			377	382	0.0	0.0	0.000	A
			1	B	377			377	382	0.0	0.0	0.000	A
CircLink	1	1	A, C	1225			1225	1251	0.6	0.6	1.850	A	
		2	A, C	1225			1225	1251	0.8	0.8	2.292	A	
CircBase	1	1	A, C	1225			1225	1251	0.8	0.8	2.292	A	
C - Buckingham Road	Entry	1	1	A	615	1005	0.612	616	638	2.3	1.1	6.865	A
			2	A, B, C	672	1006	0.668	671	697	2.5	1.3	7.282	A
		2	1	(A, B, C)	1287			1287	1325	0.0	0.0	0.007	A
	Exit	1	1		1361			1359	1393	8.8	8.6	22.522	C
			1	A, B, C	1540			1541	1573	2.7	2.3	5.855	A
	CircBase	1	1	A, B	180			180	181	0.0	0.0	0.000	A
Exit	2	1		1359			1359	1393	0.0	0.0	0.000	A	

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	176	1017	0.173	174	173	0.3	0.3	4.206	A
			2	A, C	965	1318	0.732	1134	1196	75.7	21.3	132.611	F
	Exit	1	1		548			548	569	0.0	0.0	0.000	A
			2		555			555	568	0.0	0.0	0.000	A
	CircLink	1	1	A	551			551	565	0.0	0.0	0.000	A
			2	A, B, C	694			694	716	0.0	0.0	0.000	A
CircBase	1	1	B, C	143			143	144	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	120	770	0.156	123	132	1.5	0.9	31.416	D
			2	A, B	153	799	0.191	157	165	2.3	1.1	34.397	D
		2	1	(A, B, C)	260			273	290	12.2	4.9	71.563	F
	Exit	1	1		317			317	317	0.0	0.0	0.000	A
			1	B	317			317	317	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1134			1134	1197	0.6	0.3	1.398	A
1			A, C	1134			1135	1199	0.8	0.4	1.805	A	
C - Buckingham Road	Entry	1	1	A	510	1012	0.504	513	525	1.1	0.6	5.392	A
			2	A, B, C	573	1012	0.566	573	587	1.3	0.9	5.705	A
		2	1	(A, B, C)	1083			1083	1109	0.0	0.0	0.000	A
	Exit	1	1		1259			1274	1341	8.6	5.8	20.513	C
	CircLink	1	1	A, B, C	1415			1419	1499	2.3	1.4	4.801	A
	CircBase	1	1	A, B	160			160	169	0.0	0.0	0.000	A
Exit	2	1		1274			1274	1341	0.0	0.0	0.000	A	

2033 Base + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - Whaddon Road - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	154.49	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)
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 - Standing Way (E)		ONE HOUR	✓	1331	100.000
B - Whaddon Road		ONE HOUR	✓	586	100.000
C - Buckingham Road		ONE HOUR	✓	1653	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	3	223	1104
	B - Whaddon Road	324	0	262
	C - Buckingham Road	1519	134	0

Proportions

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.17	0.83
	B - Whaddon Road	0.55	0.00	0.45
	C - Buckingham Road	0.92	0.08	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road	4	6	0

Average PCU Per Veh

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road	1.042	1.056	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	07:30-07:45	1002	1054
	07:45-08:00	1197	1258
	08:00-08:15	1466	1541
	08:15-08:30	1466	1541
	08:30-08:45	1197	1258
	08:45-09:00	1002	1054
B - Whaddon Road	07:30-07:45	441	452
	07:45-08:00	527	539
	08:00-08:15	645	661
	08:15-08:30	645	661
	08:30-08:45	527	539
	08:45-09:00	441	452
C - Buckingham Road	07:30-07:45	1244	1298
	07:45-08:00	1486	1550
	08:00-08:15	1820	1899
	08:15-08:30	1820	1899
	08:30-08:45	1486	1550
	08:45-09:00	1244	1298

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	85.75	40.5	F	1222	1833
B - Whaddon Road	658.39	108.9	F	537	805
C - Buckingham Road	34.97	18.6	D	1516	2274

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1004	251	101	1001	1046	1382	0.0	2.4	7.509	A
B - Whaddon Road	442	111	832	443	451	271	0.0	0.8	6.802	A
C - Buckingham Road	1235	309	245	1238	1289	1031	0.0	2.4	6.851	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1195	299	121	1196	1246	1636	2.4	4.5	12.236	B
B - Whaddon Road	525	131	996	510	515	321	0.8	5.9	32.289	D
C - Buckingham Road	1481	370	285	1473	1540	1217	2.4	4.9	10.205	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1464	366	142	1405	1456	1908	4.5	23.6	40.951	E
B - Whaddon Road	647	162	1154	441	477	391	5.9	51.3	255.304	F
C - Buckingham Road	1830	457	247	1802	1854	1349	4.9	17.3	26.996	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1459	365	149	1396	1465	1884	23.6	40.3	85.746	F
B - Whaddon Road	647	162	1146	424	440	400	51.3	104.8	658.389	F
C - Buckingham Road	1813	453	236	1798	1881	1335	17.3	18.6	34.966	D

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1209	302	116	1277	1371	1686	40.3	14.9	68.164	F

B - Whaddon Road	522	131	1075	555	521	320	104.8	109.0	640.243	F
C - Buckingham Road	1490	373	313	1489	1605	1325	18.6	5.4	17.312	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1005	251	101	1014	1105	1550	14.9	2.7	16.767	C
B - Whaddon Road	441	110	846	709	763	272	109.0	32.3	233.126	F
C - Buckingham Road	1248	312	397	1255	1305	1172	5.4	2.7	8.835	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	171	1016	0.168	170	173	0.0	0.2	4.247	A
			2	A, C	833	1287	0.647	831	873	0.0	2.1	8.173	A
	Exit	1	1		682			682	715	0.0	0.0	0.000	A
			2		700			700	721	0.0	0.0	0.000	A
	CircLink	1	1	A	684			684	714	0.0	0.0	0.000	A
2			A, B, C	800			800	827	0.0	0.0	0.000	A	
CircBase	1	1	B, C	101			101	106	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	200	879	0.228	200	203	0.0	0.4	5.934	A
			2	A, B	242	884	0.273	243	248	0.0	0.4	6.403	A
		2	(A, B, C)	442			442	454	0.0	0.1	0.605	A	
	Exit	1	1		271			271	278	0.0	0.0	0.000	A
			1	B	271			271	278	0.0	0.0	0.000	A
	CircLink	1	2	A, C	831			831	873	0.0	0.0	0.044	A
1			A, C	831			832	873	0.0	0.0	0.085	A	
C - Buckingham Road	Entry	1	1	A	604	968	0.624	606	631	0.0	1.1	6.657	A
			2	A, B, C	631	964	0.654	632	659	0.0	1.3	7.037	A
		2	(A, B, C)	1235			1235	1300	0.0	0.0	0.000	A	
	Exit	1	1		1030			1031	1060	0.0	3.0	9.889	A
			1	A, B, C	1274			1275	1324	0.0	0.2	0.378	A
	CircBase	1	1	A, B	245			245	251	0.0	0.0	0.000	A
Exit	2	1		1031			1031	1060	0.0	0.0	0.000	A	

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	200	1012	0.197	200	205	0.2	0.2	4.545	A
			2	A, C	995	1275	0.780	996	1042	2.1	4.2	13.787	B
	Exit	1	1		820			820	852	0.0	0.0	0.000	A
			2		816			816	849	0.0	0.0	0.000	A
	CircLink	1	1	A	816			816	848	0.0	0.0	0.000	A
2			A, B, C	941			941	981	0.0	0.0	0.000	A	
CircBase	1	1	B, C	121			121	128	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	228	815	0.280	228	231	0.4	0.9	12.925	B
			2	A, B	283	816	0.347	281	285	0.4	1.2	13.475	B
		2	(A, B, C)	525			511	521	0.1	3.8	18.107	C	
	Exit	1	1		321			321	332	0.0	0.0	0.000	A
			1	B	321			321	332	0.0	0.0	0.000	A
	CircLink	1	2	A, C	996			996	1041	0.0	0.1	0.402	A
1			A, C	996			996	1040	0.0	0.2	0.666	A	
C - Buckingham Road	Entry	1	1	A	729	951	0.767	725	758	1.1	2.4	9.979	A
			2	A, B, C	752	949	0.792	748	781	1.3	2.5	10.376	B
		2	(A, B, C)	1481			1481	1550	0.0	0.0	0.023	A	
	Exit	1	1		1220			1217	1253	3.0	5.5	15.850	C
			1	A, B, C	1506			1505	1553	0.2	0.9	1.997	A
CircBase	1	1	A, B	285			285	289	0.0	0.0	0.000	A	
Exit	2	1		1217			1217	1253	0.0	0.0	0.000	A	

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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A - Standing Way (E)	Entry	1	1	B	250	1007	0.248	249	252	0.2	0.4	4.898	A
			2	A, C	1214	1269	0.956	1156	1204	4.2	23.2	48.299	E
	Exit	1	1		961			961	985	0.0	0.0	0.000	A
			2		947			947	985	0.0	0.0	0.000	A
	CircLink	1	1	A	951			951	978	0.0	0.0	0.000	A
2			A, B, C	1099			1099	1142	0.0	0.0	0.000	A	
CircBase	1	1	B, C	142			142	150	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	198	757	0.262	196	216	0.9	2.3	33.233	D
			2	A, B	245	762	0.322	245	261	1.2	2.9	36.588	E
		2	1	(A, B, C)	647			443	490	3.8	46.2	217.242	F
	Exit	1	1		391			391	402	0.0	0.0	0.000	A
			1	B	391			391	402	0.0	0.0	0.000	A
CircLink	1	1	A, C	1156			1154	1202	0.1	0.8	1.614	A	
		2	A, C	1154			1154	1199	0.2	0.9	2.142	A	
CircBase	1	1	A, C	1154			1154	1199	0.2	0.9	2.142	A	
C - Buckingham Road	Entry	1	1	A	899	964	0.932	897	922	2.4	6.1	22.269	C
			2	A, B, C	907	963	0.943	905	933	2.5	6.2	22.838	C
		2	1	(A, B, C)	1830			1806	1885	0.0	4.9	4.375	A
	Exit	1	1		1347			1349	1391	5.5	8.5	22.077	C
			1	A, B, C	1596			1595	1669	0.9	2.8	5.230	A
	CircBase	1	1	A, B	247			247	265	0.0	0.0	0.000	A
Exit	2	1		1349			1349	1391	0.0	0.0	0.000	A	

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	250	1003	0.250	251	250	0.4	0.4	4.901	A
			2	A, C	1208	1268	0.953	1145	1215	23.2	39.9	102.002	F
	Exit	1	1		939			939	987	0.0	0.0	0.000	A
			2		945			945	984	0.0	0.0	0.000	A
	CircLink	1	1	A	942			942	985	0.0	0.0	0.000	A
2			A, B, C	1091			1091	1142	0.0	0.0	0.000	A	
CircBase	1	1	B, C	149			149	156	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	194	758	0.256	192	198	2.3	2.4	42.386	E
			2	A, B	232	761	0.305	231	241	2.9	3.2	46.832	E
		2	1	(A, B, C)	647			426	441	46.2	99.2	618.194	F
	Exit	1	1		400			400	406	0.0	0.0	0.000	A
			1	B	400			400	406	0.0	0.0	0.000	A
CircLink	1	1	A, C	1145			1146	1216	0.8	0.6	2.190	A	
		2	A, C	1146			1146	1216	0.9	0.8	2.734	A	
CircBase	1	1	A, C	1146			1146	1216	0.9	0.8	2.734	A	
C - Buckingham Road	Entry	1	1	A	886	973	0.910	886	933	6.1	5.5	22.664	C
			2	A, B, C	913	969	0.942	911	948	6.2	5.8	22.949	C
		2	1	(A, B, C)	1813			1799	1876	4.9	7.3	12.124	B
	Exit	1	1		1335			1335	1408	8.5	8.8	23.779	C
			1	A, B, C	1569			1570	1656	2.8	2.7	6.407	A
	CircBase	1	1	A, B	236			236	247	0.0	0.0	0.000	A
Exit	2	1		1335			1335	1408	0.0	0.0	0.000	A	

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	203	1010	0.201	204	208	0.4	0.2	4.407	A
			2	A, C	1006	1277	0.787	1073	1163	39.9	14.7	81.096	F
	Exit	1	1		849			849	888	0.0	0.0	0.000	A
			2		836			836	881	0.0	0.0	0.000	A
	CircLink	1	1	A	842			842	883	0.0	0.0	0.000	A
2			A, B, C	960			960	1013	0.0	0.0	0.000	A	
CircBase	1	1	B, C	116			116	127	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	243	784	0.310	245	234	2.4	2.0	34.464	D
			2	A, B	309	785	0.394	310	287	3.2	3.0	38.218	E
		2	1	(A, B, C)	522			552	519	99.2	103.9	617.281	F
	Exit	1	1		320			320	335	0.0	0.0	0.000	A
			1	B	320			320	335	0.0	0.0	0.000	A
CircLink	1	1	A, C	1073			1074	1163	0.6	0.5	1.925	A	
		2	A, C	1074			1075	1164	0.8	0.7	2.512	A	
CircBase	1	1	A, C	1074			1075	1164	0.8	0.7	2.512	A	
C - Buckingham Road	Entry	1	1	A	733	944	0.777	733	789	5.5	2.4	13.728	B
			2	A, B, C	756	941	0.804	756	816	5.8	2.5	13.917	B
		2	1	(A, B, C)	1490			1489	1579	7.3	0.4	3.774	A
	Exit	1	1		1320			1325	1398	8.8	8.2	23.301	C
			1	A, B, C	1630			1634	1686	2.7	2.3	5.821	A
	CircBase	1	1	A, B	313			313	291	0.0	0.0	0.000	A
Exit	2	1		1325			1325	1398	0.0	0.0	0.000	A	

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	171	1019	0.168	171	172	0.2	0.2	4.285	A
			2	A, C	834	1283	0.650	844	933	14.7	2.5	19.300	C
	Exit	1	1		777			777	817	0.0	0.0	0.000	A
			2		774			774	809	0.0	0.0	0.000	A
	CircLink	1	1	A	771			771	810	0.0	0.0	0.000	A
			2	A, B, C	881			881	923	0.0	0.0	0.000	A
	CircBase	1	1	B, C	101			101	106	0.0	0.0	0.000	A
B - Whaddon Road	Entry	1	1	C	313	872	0.359	317	340	2.0	1.2	17.066	C
			2	A, B	386	877	0.440	393	423	3.0	1.5	18.916	C
		2	1	(A, B, C)	441			699	753	103.9	29.7	220.245	F
	Exit	1	1		272			272	278	0.0	0.0	0.000	A
			1	B	272			272	278	0.0	0.0	0.000	A
	CircLink	1	1	A, C	844			845	935	0.5	0.0	0.715	A
			2		845			846	937	0.7	0.1	1.168	A
CircBase	1	1	A, C	845			846	937	0.7	0.1	1.168	A	
C - Buckingham Road	Entry	1	1	A	611	915	0.667	613	639	2.4	1.3	8.617	A
			2	A, B, C	637	916	0.696	642	666	2.5	1.4	8.933	A
		2	1	(A, B, C)	1248			1248	1296	0.4	0.0	0.075	A
	Exit	1	1		1163			1172	1294	8.2	4.8	18.351	C
	CircLink	1	1	A, B, C	1556			1560	1707	2.3	0.7	2.875	A
	CircBase	1	1	A, B	397			397	427	0.0	0.0	0.000	A
	Exit	2	1		1172			1172	1294	0.0	0.0	0.000	A

2033 Base + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - Standing Way (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	B - Whaddon Road - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	174.75	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)
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 - Standing Way (E)		ONE HOUR	✓	1531	100.000
B - Whaddon Road		ONE HOUR	✓	422	100.000
C - Buckingham Road		ONE HOUR	✓	1509	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	2	230	1299
	B - Whaddon Road	251	0	171
	C - Buckingham Road	1267	242	0

Proportions

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.15	0.85
	B - Whaddon Road	0.59	0.00	0.41
	C - Buckingham Road	0.84	0.16	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	50	1	2
	B - Whaddon Road	0	0	3
	C - Buckingham Road	3	2	0

Average PCU Per Veh

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.500	1.010	1.018
	B - Whaddon Road	1.000	1.000	1.031
	C - Buckingham Road	1.025	1.019	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	16:45-17:00	1153	1174
	17:00-17:15	1377	1401
	17:15-17:30	1686	1716
	17:30-17:45	1686	1716
	17:45-18:00	1377	1401
B - Whaddon Road	16:45-17:00	318	322
	17:00-17:15	379	384
	17:15-17:30	465	471
	17:30-17:45	465	471
	17:45-18:00	379	384
C - Buckingham Road	16:45-17:00	1136	1164
	17:00-17:15	1357	1389
	17:15-17:30	1661	1702
	17:30-17:45	1661	1702
	17:45-18:00	1357	1389
	18:00-18:15	1136	1164

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	305.45	125.4	F	1409	2113
B - Whaddon Road	273.81	31.3	F	388	582
C - Buckingham Road	14.99	6.9	B	1383	2075

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1163	291	181	1167	1167	1143	0.0	3.2	9.900	A
B - Whaddon Road	319	80	990	320	321	358	0.0	0.7	7.478	A
C - Buckingham Road	1130	283	193	1131	1158	1112	0.0	1.9	5.877	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1374	343	217	1362	1370	1357	3.2	11.0	23.396	C
B - Whaddon Road	376	94	1154	362	366	427	0.7	5.1	35.448	E
C - Buckingham Road	1355	339	220	1355	1385	1296	1.9	2.8	7.411	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1694	424	267	1454	1483	1633	11.0	68.7	101.222	F
B - Whaddon Road	462	115	1202	406	403	518	5.1	21.0	136.750	F
C - Buckingham Road	1665	416	243	1657	1687	1358	2.8	6.9	12.982	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1692	423	265	1456	1486	1656	68.7	125.2	247.525	F
B - Whaddon Road	463	116	1202	418	427	519	21.0	31.3	244.778	F
C - Buckingham Road	1658	415	251	1670	1704	1368	6.9	6.4	14.985	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1372	343	212	1416	1441	1386	125.2	114.7	305.451	F
B - Whaddon Road	379	95	1212	387	396	419	31.3	28.4	273.809	F
C - Buckingham Road	1360	340	237	1361	1410	1362	6.4	2.9	8.498	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1160	290	184	1376	1410	1157	114.7	58.5	207.067	F
B - Whaddon Road	328	82	1199	345	354	362	28.4	21.2	176.929	F
C - Buckingham Road	1132	283	207	1134	1167	1343	2.9	1.8	6.081	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	176	1005	0.175	176	177	0.0	0.2	4.380	A
			2	A, C	987	1303	0.758	990	990	0.0	3.0	10.891	B
	Exit	1	1		572			572	583	0.0	0.0	0.000	A
			2		570			570	580	0.0	0.0	0.000	A
	CircLink	1	1	A	567			567	581	0.0	0.0	0.000	A
			2	A, B, C	757			757	768	0.0	0.0	0.000	A
CircBase	1	1	B, C	181			181	185	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	129	831	0.155	129	133	0.0	0.2	6.408	A
			2	A, B	191	854	0.223	191	189	0.0	0.4	6.783	A
		2	(A, B, C)	319			319	324	0.0	0.1	0.802	A	
	Exit	1	1		358			358	363	0.0	0.0	0.000	A
			1	B	358			358	363	0.0	0.0	0.000	A
	CircLink	1	2	A, C	990			990	990	0.0	0.0	0.085	A
CircBase	1	1	A, C	990			990	990	0.0	0.1	0.143	A	
C - Buckingham Road	Entry	1	1	A	527	999	0.528	528	543	0.0	0.8	5.582	A
			2	A, B, C	603	1003	0.601	603	615	0.0	1.0	6.137	A
		2	(A, B, C)	1130			1130	1166	0.0	0.0	0.000	A	
	Exit	1	1		1116			1112	1104	0.0	3.7	10.692	B
			1	A, B, C	1310			1309	1310	0.0	0.2	0.569	A
	CircBase	1	1	A, B	193			193	191	0.0	0.0	0.000	A
Exit	2	1		1112			1112	1104	0.0	0.0	0.000	A	

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	209	995	0.210	209	210	0.2	0.3	4.615	A
			2	A, C	1165	1287	0.905	1153	1160	3.0	10.8	26.736	D
	Exit	1	1		681			681	691	0.0	0.0	0.000	A
			2		676			676	693	0.0	0.0	0.000	A
	CircLink	1	1	A	681			681	693	0.0	0.0	0.000	A
			2	A, B, C	893			893	909	0.0	0.0	0.000	A
CircBase	1	1	B, C	217			217	219	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	145	770	0.189	145	151	0.2	0.8	16.128	C
			2	A, B	219	791	0.277	218	215	0.4	1.3	17.438	C
		2	(A, B, C)	376			364	372	0.1	3.0	17.548	C	
	Exit	1	1		427			427	429	0.0	0.0	0.000	A
			1	B	427			427	429	0.0	0.0	0.000	A
	CircLink	1	2	A, C	1153			1153	1159	0.0	0.3	0.585	A
1			A, C	1153			1154	1158	0.1	0.3	0.829	A	
C - Buckingham Road	Entry	1	1	A	643	991	0.648	643	660	0.8	1.3	7.077	A
			2	A, B, C	712	994	0.717	711	725	1.0	1.5	7.714	A
		2	(A, B, C)	1355			1355	1389	0.0	0.0	0.000	A	
	Exit	1	1		1298			1296	1290	3.7	6.7	16.759	C
			1	A, B, C	1517			1518	1519	0.2	1.3	2.466	A
	CircBase	1	1	A, B	220			220	218	0.0	0.0	0.000	A
Exit	2	1		1296			1296	1290	0.0	0.0	0.000	A	

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	252	980	0.257	251	255	0.3	0.4	4.902	A
			2	A, C	1442	1268	1.137	1202	1228	10.8	68.4	118.204	F
	Exit	1	1		816			816	827	0.0	0.0	0.000	A
			2		817			817	827	0.0	0.0	0.000	A
	CircLink	1	1	A	817			817	827	0.0	0.0	0.000	A
			2	A, B, C	1082			1082	1098	0.0	0.0	0.000	A
CircBase	1	1	B, C	267			267	271	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	166	748	0.222	165	168	0.8	1.5	29.759	D
			2	A, B	244	774	0.315	241	235	1.3	2.6	34.448	D
		2	1	(A, B, C)	462			410	412	3.0	16.8	103.186	F
	Exit	1	1		518			518	526	0.0	0.0	0.000	A
			1	B	518			518	526	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1202			1202	1227	0.3	0.5	1.401	A
2			A, C	1202			1202	1226	0.3	0.6	1.833	A	
CircBase	1	1	A, C	1202			1202	1226	0.3	0.6	1.833	A	
C - Buckingham Road	Entry	1	1	A	809	984	0.822	804	819	1.3	3.2	12.387	B
			2	A, B, C	854	987	0.866	852	868	1.5	3.4	13.163	B
		2	1	(A, B, C)	1665			1663	1703	0.0	0.3	0.178	A
	Exit	1	1		1364			1358	1378	6.7	8.7	21.249	C
			1	A, B, C	1608			1607	1625	1.3	2.4	4.768	A
	CircLink	1	1	A, B, C	1608			1607	1625	1.3	2.4	4.768	A
	CircBase	1	1	A, B	243			243	238	0.0	0.0	0.000	A
Exit	2	1		1358			1358	1378	0.0	0.0	0.000	A	

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	254	979	0.259	254	258	0.4	0.3	5.023	A
			2	A, C	1438	1267	1.134	1202	1228	68.4	124.9	290.729	F
	Exit	1	1		823			823	843	0.0	0.0	0.000	A
			2		834			834	846	0.0	0.0	0.000	A
	CircLink	1	1	A	820			820	841	0.0	0.0	0.000	A
			2	A, B, C	1101			1101	1118	0.0	0.0	0.000	A
CircBase	1	1	B, C	265			265	270	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	170	754	0.226	170	176	1.5	1.6	33.599	D
			2	A, B	250	774	0.323	249	252	2.6	2.9	40.013	E
		2	1	(A, B, C)	463			420	429	16.8	26.8	206.741	F
	Exit	1	1		519			519	528	0.0	0.0	0.000	A
			1	B	519			519	528	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1202			1202	1228	0.5	0.6	1.646	A
2			A, C	1202			1202	1227	0.6	0.8	2.167	A	
CircBase	1	1	A, C	1202			1202	1227	0.6	0.8	2.167	A	
C - Buckingham Road	Entry	1	1	A	812	982	0.826	818	835	3.2	2.9	14.053	B
			2	A, B, C	846	983	0.860	852	870	3.4	3.3	15.123	C
		2	1	(A, B, C)	1658			1658	1703	0.3	0.2	0.390	A
	Exit	1	1		1368			1368	1400	8.7	8.6	22.436	C
			1	A, B, C	1620			1619	1654	2.4	2.4	5.456	A
	CircLink	1	1	A, B, C	1620			1619	1654	2.4	2.4	5.456	A
CircBase	1	1	A, B	251			251	255	0.0	0.0	0.000	A	
Exit	2	1		1368			1368	1400	0.0	0.0	0.000	A	

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	205	993	0.207	206	211	0.3	0.2	4.599	A
			2	A, C	1167	1291	0.905	1210	1230	124.9	114.5	359.223	F
	Exit	1	1		701			701	716	0.0	0.0	0.000	A
			2		685			685	707	0.0	0.0	0.000	A
	CircLink	1	1	A	696			696	714	0.0	0.0	0.000	A
			2	A, B, C	902			902	934	0.0	0.0	0.000	A
CircBase	1	1	B, C	212			212	226	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	152	746	0.205	152	161	1.6	1.5	35.696	E
			2	A, B	235	770	0.305	236	235	2.9	2.6	41.530	E
		2	1	(A, B, C)	379			387	395	26.8	24.2	235.003	F
	Exit	1	1		419			419	437	0.0	0.0	0.000	A
			1	B	419			419	437	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1210			1211	1230	0.6	0.5	1.775	A
2			A, C	1211			1212	1230	0.8	0.7	2.239	A	
CircBase	1	1	A, C	1211			1212	1230	0.8	0.7	2.239	A	
C - Buckingham Road	Entry	1	1	A	646	985	0.656	647	673	2.9	1.3	8.121	A
			2	A, B, C	714	989	0.722	714	736	3.3	1.6	8.805	A
		2	1	(A, B, C)	1360			1360	1396	0.2	0.0	0.037	A
	Exit	1	1		1362			1362	1389	8.6	8.5	22.577	C

	CircLink	1	1	A, B, C	1599			1600	1626	2.4	2.5	5.578	A
	CircBase	1	1	A, B	237			237	238	0.0	0.0	0.000	A
	Exit	2	1		1362			1362	1389	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	178	1004	0.177	178	176	0.2	0.2	4.388	A
			2	A, C	982	1300	0.754	1198	1233	114.5	58.3	250.148	F
	Exit	1	1		578			578	597	0.0	0.0	0.000	A
			2		579			579	595	0.0	0.0	0.000	A
	CircLink	1	1	A	581			581	598	0.0	0.0	0.000	A
			2	A, B, C	760			760	781	0.0	0.0	0.000	A
CircBase	1	1	B, C	184			184	187	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	142	753	0.188	141	146	1.5	1.4	34.523	D
			2	A, B	204	775	0.264	204	208	2.6	2.3	39.359	E
			2	(A, B, C)	328			346	352	24.2	17.5	144.910	F
	Exit	1	1		362			362	363	0.0	0.0	0.000	A
			2		362			362	363	0.0	0.0	0.000	A
	CircLink	1	1	B	362			362	363	0.0	0.0	0.000	A
2			A, C	1198			1199	1233	0.5	0.5	1.733	A	
CircBase	1	1	A, C	1199			1199	1234	0.7	0.7	2.185	A	
C - Buckingham Road	Entry	1	1	A	529	995	0.531	529	550	1.3	0.8	5.770	A
			2	A, B, C	604	998	0.605	604	618	1.6	1.0	6.357	A
			2	(A, B, C)	1132			1132	1163	0.0	0.0	0.000	A
	Exit	1	1		1340			1343	1379	8.5	8.0	22.095	C
			2		1343			1343	1379	0.0	0.0	0.000	A
	CircLink	1	1	A, B, C	1544			1547	1589	2.5	2.1	5.466	A
CircBase	1	1	A, B	207			207	212	0.0	0.0	0.000	A	
Exit	2	1		1343			1343	1379	0.0	0.0	0.000	A	

2033 Base + CD + D with TP, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	B - Whaddon Road - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	141.05	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)
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 - Standing Way (E)		ONE HOUR	✓	1328	100.000
B - Whaddon Road		ONE HOUR	✓	563	100.000
C - Buckingham Road		ONE HOUR	✓	1647	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	3	223	1101
	B - Whaddon Road	307	0	256
	C - Buckingham Road	1514	133	0

Proportions

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.17	0.83
	B - Whaddon Road	0.55	0.00	0.45
	C - Buckingham Road	0.92	0.08	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road	4	6	0

Average PCU Per Veh

		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road	1.042	1.056	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	07:30-07:45	1000	1051
	07:45-08:00	1194	1255
	08:00-08:15	1462	1537
	08:15-08:30	1462	1537
	08:30-08:45	1194	1255
	08:45-09:00	1000	1051
B - Whaddon Road	07:30-07:45	424	434
	07:45-08:00	506	518
	08:00-08:15	620	635
	08:15-08:30	620	635
	08:30-08:45	506	518
	08:45-09:00	424	434
C - Buckingham Road	07:30-07:45	1240	1294
	07:45-08:00	1481	1545
	08:00-08:15	1813	1892
	08:15-08:30	1813	1892
	08:30-08:45	1481	1545
	08:45-09:00	1240	1294

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	75.98	35.7	F	1213	1819
B - Whaddon Road	624.43	97.3	F	517	775
C - Buckingham Road	31.58	18.2	D	1513	2269

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	996	249	103	999	1046	1385	0.0	2.0	7.732	A
B - Whaddon Road	424	106	827	427	430	276	0.0	0.7	6.977	A
C - Buckingham Road	1251	313	236	1252	1291	1015	0.0	2.5	6.983	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1192	298	120	1186	1246	1656	2.0	4.7	11.953	B
B - Whaddon Road	504	126	985	511	502	322	0.7	4.8	30.930	D
C - Buckingham Road	1487	372	288	1489	1542	1208	2.5	4.2	10.168	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1446	361	143	1391	1460	1898	4.7	22.0	38.492	E
B - Whaddon Road	624	156	1147	417	452	383	4.8	49.2	242.059	F
C - Buckingham Road	1812	453	229	1811	1848	1333	4.2	14.7	25.730	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1453	363	148	1399	1470	1871	22.0	35.5	75.978	F
B - Whaddon Road	620	155	1155	417	438	394	49.2	97.3	624.434	F
C - Buckingham Road	1817	454	228	1792	1879	1346	14.7	18.1	31.581	D

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1195	299	120	1254	1352	1666	35.5	11.2	55.693	F

B - Whaddon Road	505	126	1057	576	528	320	97.3	95.3	578.793	F
C - Buckingham Road	1463	366	318	1469	1601	1324	18.1	4.8	17.029	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	996	249	100	999	1092	1516	11.2	2.4	12.754	B
B - Whaddon Road	426	106	833	671	740	267	95.3	20.7	197.527	F
C - Buckingham Road	1246	312	370	1246	1307	1150	4.8	2.7	8.670	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	172	1018	0.169	173	174	0.0	0.2	4.239	A
			2	A, C	824	1282	0.642	826	873	0.0	1.9	8.448	A
	Exit	1	1		688			688	712	0.0	0.0	0.000	A
			2		696			696	713	0.0	0.0	0.000	A
	CircLink	1	1	A	689			689	710	0.0	0.0	0.000	A
2			A, B, C	798			798	819	0.0	0.0	0.000	A	
CircBase	1	1	B, C	103			103	104	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	193	879	0.219	193	196	0.0	0.3	5.884	A
			2	A, B	233	882	0.264	234	234	0.0	0.4	6.254	A
		2	(A, B, C)	424			426	433	0.0	0.1	0.809	A	
	Exit	1	1		276			276	278	0.0	0.0	0.000	A
			2		276			276	278	0.0	0.0	0.000	A
	CircLink	1	1	B	276			276	278	0.0	0.0	0.000	A
2			A, C	826			826	873	0.0	0.0	0.050	A	
CircBase	1	1	A, C	826			827	873	0.0	0.0	0.101	A	
C - Buckingham Road	Entry	1	1	A	612	970	0.632	613	629	0.0	1.2	6.845	A
			2	A, B, C	639	966	0.662	639	663	0.0	1.3	7.112	A
		2	(A, B, C)	1251			1251	1302	0.0	0.0	0.001	A	
	Exit	1	1		1018			1015	1052	0.0	3.0	10.122	B
			2		1018			1015	1052	0.0	0.0	0.000	A
	CircLink	1	1	A, B, C	1253			1254	1302	0.0	0.1	0.441	A
CircBase	1	1	A, B	236			236	237	0.0	0.0	0.000	A	
Exit	2	1		1015			1015	1052	0.0	0.0	0.000	A	

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	202	1013	0.199	202	208	0.2	0.2	4.627	A
			2	A, C	990	1276	0.776	984	1039	1.9	4.5	13.453	B
	Exit	1	1		824			824	850	0.0	0.0	0.000	A
			2		832			832	845	0.0	0.0	0.000	A
	CircLink	1	1	A	831			831	851	0.0	0.0	0.000	A
2			A, B, C	946			946	972	0.0	0.0	0.000	A	
CircBase	1	1	B, C	120			120	127	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	226	822	0.275	227	226	0.3	0.8	12.016	B
			2	A, B	282	822	0.342	284	276	0.4	1.1	13.586	B
		2	(A, B, C)	504			508	507	0.1	3.0	17.305	C	
	Exit	1	1		322			322	335	0.0	0.0	0.000	A
			2		322			322	335	0.0	0.0	0.000	A
	CircLink	1	1	B	322			322	335	0.0	0.0	0.000	A
2			A, C	984			984	1038	0.0	0.1	0.415	A	
CircBase	1	1	A, C	984			985	1038	0.0	0.2	0.667	A	
C - Buckingham Road	Entry	1	1	A	728	952	0.765	729	759	1.2	2.0	9.984	A
			2	A, B, C	758	947	0.800	759	784	1.3	2.1	10.314	B
		2	(A, B, C)	1487			1487	1550	0.0	0.0	0.016	A	
	Exit	1	1		1210			1208	1245	3.0	5.6	15.902	C
			2		1210			1208	1245	0.0	0.0	0.000	A
CircLink	1	1	A, B, C	1496			1497	1537	0.1	0.9	1.975	A	
CircBase	1	1	A, B	288			288	280	0.0	0.0	0.000	A	
Exit	2	1		1208			1208	1245	0.0	0.0	0.000	A	

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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A - Standing Way (E)	Entry	1	1	B	241	1005	0.240	241	249	0.2	0.3	4.705	A
			2	A, C	1205	1267	0.952	1150	1211	4.5	21.6	45.289	E
	Exit	1	1		951			951	972	0.0	0.0	0.000	A
			2		947			947	976	0.0	0.0	0.000	A
	CircLink	1	1	A	944			944	976	0.0	0.0	0.000	A
2			A, B, C	1096			1096	1121	0.0	0.0	0.000	A	
CircBase	1	1	B, C	143			143	149	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	193	756	0.255	191	208	0.8	2.3	33.916	D
			2	A, B	227	761	0.298	225	245	1.1	3.0	37.132	E
		2	1	(A, B, C)	624			420	466	3.0	44.0	203.288	F
	Exit	1	1		383			383	399	0.0	0.0	0.000	A
			1	B	383			383	399	0.0	0.0	0.000	A
CircLink	1	1	A, C	1150			1150	1208	0.1	0.6	1.613	A	
		2	A, C	1150			1147	1205	0.2	0.9	2.137	A	
CircBase	1	1	A, C	1150			1147	1205	0.2	0.9	2.137	A	
C - Buckingham Road	Entry	1	1	A	908	972	0.935	910	917	2.0	5.6	21.603	C
			2	A, B, C	900	967	0.930	901	930	2.1	5.8	22.091	C
		2	1	(A, B, C)	1812			1808	1878	0.0	3.3	3.793	A
	Exit	1	1		1333			1333	1388	5.6	8.6	22.076	C
			1	A, B, C	1564			1562	1650	0.9	2.8	5.232	A
	CircBase	1	1	A, B	229			229	249	0.0	0.0	0.000	A
Exit	2	1		1333			1333	1388	0.0	0.0	0.000	A	

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	246	1003	0.245	246	251	0.3	0.3	4.804	A
			2	A, C	1207	1265	0.953	1154	1219	21.6	35.2	90.448	F
	Exit	1	1		926			926	981	0.0	0.0	0.000	A
			2		945			945	985	0.0	0.0	0.000	A
	CircLink	1	1	A	937			937	988	0.0	0.0	0.000	A
2			A, B, C	1082			1082	1133	0.0	0.0	0.000	A	
CircBase	1	1	B, C	148			148	154	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	191	755	0.252	193	201	2.3	2.2	42.828	E
			2	A, B	224	760	0.295	224	237	3.0	3.0	46.655	E
		2	1	(A, B, C)	620			414	438	44.0	92.1	584.557	F
	Exit	1	1		394			394	405	0.0	0.0	0.000	A
			1	B	394			394	405	0.0	0.0	0.000	A
CircLink	1	1	A, C	1154			1154	1219	0.6	0.7	2.078	A	
		2	A, C	1154			1155	1219	0.9	0.9	2.680	A	
CircBase	1	1	A, C	1154			1155	1219	0.9	0.9	2.680	A	
C - Buckingham Road	Entry	1	1	A	898	972	0.925	894	932	5.6	5.8	22.351	C
			2	A, B, C	901	966	0.932	898	947	5.8	5.9	22.731	C
		2	1	(A, B, C)	1817			1799	1880	3.3	6.5	8.991	A
	Exit	1	1		1344			1346	1413	8.6	8.9	23.857	C
			1	A, B, C	1572			1572	1656	2.8	2.9	6.450	A
	CircBase	1	1	A, B	228			228	241	0.0	0.0	0.000	A
Exit	2	1		1346			1346	1413	0.0	0.0	0.000	A	

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	200	1005	0.199	200	206	0.3	0.2	4.454	A
			2	A, C	996	1277	0.779	1055	1146	35.2	10.9	66.111	F
	Exit	1	1		831			831	878	0.0	0.0	0.000	A
			2		835			835	883	0.0	0.0	0.000	A
	CircLink	1	1	A	835			835	880	0.0	0.0	0.000	A
2			A, B, C	952			952	1015	0.0	0.0	0.000	A	
CircBase	1	1	B, C	120			120	133	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	261	793	0.329	262	239	2.2	2.2	34.039	D
			2	A, B	312	796	0.392	314	289	3.0	2.6	35.435	E
		2	1	(A, B, C)	505			573	526	92.1	90.5	556.266	F
	Exit	1	1		320			320	339	0.0	0.0	0.000	A
			1	B	320			320	339	0.0	0.0	0.000	A
CircLink	1	1	A, C	1055			1056	1147	0.7	0.4	1.858	A	
		2	A, C	1056			1057	1149	0.9	0.5	2.439	A	
CircBase	1	1	A, C	1056			1057	1149	0.9	0.5	2.439	A	
C - Buckingham Road	Entry	1	1	A	716	938	0.763	719	791	5.8	2.3	13.983	B
			2	A, B, C	747	940	0.795	750	811	5.9	2.5	14.362	B
		2	1	(A, B, C)	1463			1463	1573	6.5	0.0	3.160	A
	Exit	1	1		1318			1324	1393	8.9	7.7	22.854	C
			1	A, B, C	1633			1636	1680	2.9	2.1	5.605	A
	CircBase	1	1	A, B	318			318	293	0.0	0.0	0.000	A
Exit	2	1		1324			1324	1393	0.0	0.0	0.000	A	

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	167	1018	0.164	167	171	0.2	0.2	4.240	A
			2	A, C	829	1283	0.646	832	921	10.9	2.1	14.464	B
	Exit	1	1		761			761	806	0.0	0.0	0.000	A
			2		755			755	804	0.0	0.0	0.000	A
	CircLink	1	1	A	761			761	805	0.0	0.0	0.000	A
			2	A, B, C	856			856	910	0.0	0.0	0.000	A
	CircBase	1	1	B, C	100			100	106	0.0	0.0	0.000	A
B - Whaddon Road	Entry	1	1	C	299	879	0.340	304	335	2.2	0.9	16.223	C
			2	A, B	360	881	0.409	367	404	2.6	1.2	17.822	C
		2	1	(A, B, C)	426			659	729	90.5	18.5	184.550	F
	Exit	1	1		267			267	277	0.0	0.0	0.000	A
			1	B	267			267	277	0.0	0.0	0.000	A
	CircLink	1	1	A, C	832			832	923	0.4	0.1	0.581	A
			2		832			833	925	0.5	0.1	0.984	A
CircBase	1	1	A, C	832			833	925	0.5	0.1	0.984	A	
C - Buckingham Road	Entry	1	1	A	609	924	0.659	608	639	2.3	1.4	8.509	A
			2	A, B, C	637	922	0.691	639	668	2.5	1.3	8.809	A
		2	1	(A, B, C)	1246			1246	1298	0.0	0.0	0.010	A
	Exit	1	1		1137			1150	1276	7.7	4.5	17.594	C
	CircLink	1	1	A, B, C	1504			1508	1671	2.1	0.6	2.621	A
	CircBase	1	1	A, B	370			370	408	0.0	0.0	0.000	A
	Exit	2	1		1150			1150	1276	0.0	0.0	0.000	A

2033 Base + CD + D with TP, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - Standing Way (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	B - Whaddon Road - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	170.38	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)
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 - Standing Way (E)		ONE HOUR	✓	1509	100.000
B - Whaddon Road		ONE HOUR	✓	427	100.000
C - Buckingham Road		ONE HOUR	✓	1498	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	2	230	1276
B - Whaddon Road	241	0	186
C - Buckingham Road	1265	233	0

Proportions

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	0.00	0.15	0.85
B - Whaddon Road	0.56	0.00	0.44
C - Buckingham Road	0.84	0.16	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	50	1	2
B - Whaddon Road	0	0	3
C - Buckingham Road	3	2	0

Average PCU Per Veh

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	1.500	1.010	1.018
B - Whaddon Road	1.000	1.000	1.031
C - Buckingham Road	1.025	1.019	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	16:45-17:00	1136	1156
	17:00-17:15	1356	1381
	17:15-17:30	1661	1691
	17:30-17:45	1661	1691
	17:45-18:00	1356	1381
B - Whaddon Road	16:45-17:00	321	326
	17:00-17:15	384	389
	17:15-17:30	470	477
	17:30-17:45	470	477
	17:45-18:00	384	389
C - Buckingham Road	16:45-17:00	1128	1155
	17:00-17:15	1347	1379
	17:15-17:30	1649	1689
	17:30-17:45	1649	1689
	17:45-18:00	1347	1379
	18:00-18:15	1128	1155

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	279.15	117.8	F	1387	2080
B - Whaddon Road	345.76	40.0	F	388	582
C - Buckingham Road	13.12	6.5	B	1381	2072

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1134	284	178	1137	1150	1145	0.0	2.8	9.607	A
B - Whaddon Road	322	81	967	322	324	347	0.0	0.6	6.364	A
C - Buckingham Road	1141	285	181	1141	1145	1103	0.0	1.9	5.808	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1357	339	212	1339	1351	1355	2.8	9.7	20.340	C
B - Whaddon Road	381	95	1131	364	371	420	0.6	4.6	31.286	D
C - Buckingham Road	1361	340	204	1363	1377	1286	1.9	2.8	7.551	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1658	415	254	1460	1483	1607	9.7	61.5	93.422	F
B - Whaddon Road	461	115	1208	376	391	504	4.6	26.0	166.934	F
C - Buckingham Road	1654	414	212	1650	1666	1368	2.8	6.4	12.483	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1681	420	251	1444	1467	1635	61.5	117.4	230.049	F
B - Whaddon Road	469	117	1189	415	417	506	26.0	39.9	309.439	F
C - Buckingham Road	1650	413	236	1650	1694	1368	6.4	5.9	13.118	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1354	338	213	1415	1441	1370	117.4	102.5	279.153	F
B - Whaddon Road	378	94	1212	388	403	416	39.9	35.9	345.760	F
C - Buckingham Road	1354	339	222	1361	1397	1381	5.9	2.6	7.899	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1133	283	172	1350	1396	1156	102.5	43.0	176.319	F
B - Whaddon Road	317	79	1177	350	362	347	35.9	27.4	212.621	F
C - Buckingham Road	1129	282	198	1129	1161	1340	2.6	1.7	6.073	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	170	1004	0.169	169	173	0.0	0.2	4.258	A
			2	A, C	965	1304	0.740	967	976	0.0	2.7	10.558	B
	Exit	1	1		575			575	573	0.0	0.0	0.000	A
			2		570			570	576	0.0	0.0	0.000	A
	CircLink	1	1	A	571			571	574	0.0	0.0	0.000	A
			2	A, B, C	751			751	753	0.0	0.0	0.000	A
CircBase	1	1	B, C	178			178	178	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	143	836	0.170	143	145	0.0	0.3	6.063	A
			2	A, B	179	862	0.208	179	179	0.0	0.3	6.150	A
		2	1	(A, B, C)	322			322	326	0.0	0.0	0.250	A
	Exit	1	1		347			347	351	0.0	0.0	0.000	A
			1	B	347			347	351	0.0	0.0	0.000	A
	CircLink	1	2	A, C	967			967	976	0.0	0.0	0.038	A
CircBase	1	1	A, C	967			967	976	0.0	0.0	0.094	A	
C - Buckingham Road	Entry	1	1	A	537	1005	0.534	537	537	0.0	0.8	5.534	A
			2	A, B, C	604	1007	0.599	604	608	0.0	1.0	6.050	A
		2	1	(A, B, C)	1141			1141	1153	0.0	0.0	0.000	A
	Exit	1	1		1108			1103	1103	0.0	3.5	10.310	B
			1	A, B, C	1289			1289	1299	0.0	0.3	0.470	A
	CircBase	1	1	A, B	181			181	182	0.0	0.0	0.000	A
Exit	2	1		1103			1103	1103	0.0	0.0	0.000	A	

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	208	997	0.208	208	210	0.2	0.2	4.574	A
			2	A, C	1149	1290	0.891	1132	1141	2.7	9.5	23.191	C
	Exit	1	1		682			682	687	0.0	0.0	0.000	A
			2		673			673	686	0.0	0.0	0.000	A
	CircLink	1	1	A	673			673	686	0.0	0.0	0.000	A
			2	A, B, C	894			894	899	0.0	0.0	0.000	A
CircBase	1	1	B, C	212			212	212	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	164	780	0.211	162	166	0.3	1.0	15.381	C
			2	A, B	204	801	0.255	202	206	0.3	1.2	16.650	C
		2	1	(A, B, C)	381			368	378	0.0	2.5	14.225	B
	Exit	1	1		420			420	422	0.0	0.0	0.000	A
			1	B	420			420	422	0.0	0.0	0.000	A
	CircLink	1	2	A, C	1132			1131	1140	0.0	0.3	0.553	A
CircBase	1	1	A, C	1131			1131	1139	0.0	0.4	0.784	A	
C - Buckingham Road	Entry	1	1	A	647	998	0.649	648	657	0.8	1.3	7.232	A
			2	A, B, C	713	999	0.714	716	720	1.0	1.5	7.837	A
		2	1	(A, B, C)	1361			1361	1381	0.0	0.0	0.003	A
	Exit	1	1		1288			1286	1284	3.5	6.7	16.392	C
			1	A, B, C	1495			1492	1506	0.3	1.4	2.349	A
	CircBase	1	1	A, B	204			204	209	0.0	0.0	0.000	A
Exit	2	1		1286			1286	1284	0.0	0.0	0.000	A	

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	251	983	0.256	250	255	0.2	0.4	4.950	A
			2	A, C	1407	1274	1.105	1210	1228	9.5	61.1	109.318	F
	Exit	1	1		798			798	812	0.0	0.0	0.000	A
			2		809			809	817	0.0	0.0	0.000	A
	CircLink	1	1	A	809			809	816	0.0	0.0	0.000	A
			2	A, B, C	1052			1052	1069	0.0	0.0	0.000	A
CircBase	1	1	B, C	254			254	256	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	166	747	0.223	167	175	1.0	1.8	35.933	E
			2	A, B	210	772	0.272	209	216	1.2	2.6	37.621	E
		2	1	(A, B, C)	461			376	400	2.5	21.5	128.556	F
	Exit	1	1		504			504	511	0.0	0.0	0.000	A
			1	B	504			504	511	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1210			1209	1226	0.3	0.6	1.584	A
1			A, C	1209			1208	1225	0.4	0.8	2.050	A	
CircBase	1	1	A, C	1209			1208	1225	0.4	0.8	2.050	A	
C - Buckingham Road	Entry	1	1	A	800	996	0.803	799	809	1.3	2.9	11.858	B
			2	A, B, C	854	998	0.855	850	857	1.5	3.3	12.630	B
		2	1	(A, B, C)	1654			1654	1680	0.0	0.2	0.221	A
	Exit	1	1		1370			1368	1383	6.7	8.7	21.719	C
			1	A, B, C	1584			1581	1610	1.4	2.6	5.208	A
	CircBase	1	1	A, B	212			212	219	0.0	0.0	0.000	A
Exit	2	1		1368			1368	1383	0.0	0.0	0.000	A	

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	255	985	0.259	255	254	0.4	0.4	4.811	A
			2	A, C	1426	1276	1.120	1190	1213	61.1	117.0	270.106	F
	Exit	1	1		817			817	833	0.0	0.0	0.000	A
			2		818			818	833	0.0	0.0	0.000	A
	CircLink	1	1	A	823			823	839	0.0	0.0	0.000	A
			2	A, B, C	1063			1063	1091	0.0	0.0	0.000	A
CircBase	1	1	B, C	251			251	263	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	182	757	0.241	180	185	1.8	2.0	38.695	E
			2	A, B	235	779	0.302	235	232	2.6	2.9	43.421	E
		2	1	(A, B, C)	469			418	419	21.5	35.0	268.257	F
	Exit	1	1		506			506	517	0.0	0.0	0.000	A
			1	B	506			506	517	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1190			1189	1213	0.6	0.6	1.845	A
1			A, C	1189			1189	1213	0.8	0.8	2.405	A	
CircBase	1	1	A, C	1189			1189	1213	0.8	0.8	2.405	A	
C - Buckingham Road	Entry	1	1	A	813	984	0.825	813	827	2.9	2.7	12.415	B
			2	A, B, C	838	989	0.848	838	867	3.3	3.1	13.300	B
		2	1	(A, B, C)	1650			1650	1692	0.2	0.1	0.251	A
	Exit	1	1		1367			1368	1395	8.7	8.7	23.269	C
			1	A, B, C	1603			1603	1631	2.6	2.7	5.975	A
	CircBase	1	1	A, B	236			236	235	0.0	0.0	0.000	A
Exit	2	1		1368			1368	1395	0.0	0.0	0.000	A	

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	204	995	0.205	203	209	0.4	0.3	4.641	A
			2	A, C	1150	1288	0.891	1212	1232	117.0	102.2	328.598	F
	Exit	1	1		677			677	699	0.0	0.0	0.000	A
			2		693			693	708	0.0	0.0	0.000	A
	CircLink	1	1	A	688			688	702	0.0	0.0	0.000	A
			2	A, B, C	895			895	922	0.0	0.0	0.000	A
CircBase	1	1	B, C	213			213	217	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	164	749	0.219	168	179	2.0	1.6	38.576	E
			2	A, B	218	769	0.284	220	224	2.9	2.7	44.328	E
		2	1	(A, B, C)	378			382	401	35.0	31.5	303.866	F
	Exit	1	1		416			416	427	0.0	0.0	0.000	A
			1	B	416			416	427	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1212			1212	1232	0.6	0.6	1.846	A
1			A, C	1212			1212	1232	0.8	0.8	2.366	A	
CircBase	1	1	A, C	1212			1212	1232	0.8	0.8	2.366	A	
C - Buckingham Road	Entry	1	1	A	647	991	0.652	650	667	2.7	1.2	7.555	A
			2	A, B, C	708	992	0.713	711	730	3.1	1.4	8.213	A
		2	1	(A, B, C)	1354			1354	1384	0.1	0.0	0.005	A
	Exit	1	1		1380			1381	1407	8.7	8.8	22.965	C

	CircLink	1	1	A, B, C	1600			1602	1635	2.7	2.7	5.929	A
	CircBase	1	1	A, B	222			222	222	0.0	0.0	0.000	A
	Exit	2	1		1381			1381	1407	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	175	1009	0.174	175	176	0.3	0.3	4.298	A
			2	A, C	958	1307	0.733	1176	1221	102.2	42.7	211.864	F
	Exit	1	1		577			577	592	0.0	0.0	0.000	A
			2		579			579	593	0.0	0.0	0.000	A
	CircLink	1	1	A	581			581	594	0.0	0.0	0.000	A
			2	A, B, C	747			747	771	0.0	0.0	0.000	A
CircBase	1	1	B, C	172			172	181	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	151	758	0.199	154	160	1.6	1.4	37.208	E
			2	A, B	194	784	0.248	196	202	2.7	2.3	41.037	E
			2	(A, B, C)	317			345	360	31.5	23.7	181.894	F
	Exit	1	1		347			347	356	0.0	0.0	0.000	A
			2		347			347	356	0.0	0.0	0.000	A
	CircLink	1	1	B	347			347	356	0.0	0.0	0.000	A
2			A, C	1176			1176	1221	0.6	0.7	1.790	A	
CircBase	1	1	A, C	1176			1177	1221	0.8	0.7	2.258	A	
C - Buckingham Road	Entry	1	1	A	533	1000	0.533	534	545	1.2	0.8	5.808	A
			2	A, B, C	596	1001	0.595	595	616	1.4	1.0	6.307	A
			2	(A, B, C)	1129			1129	1157	0.0	0.0	0.000	A
	Exit	1	1		1331			1340	1384	8.8	7.8	22.338	C
			2		1331			1340	1384	8.8	7.8	22.338	C
	CircLink	1	1	A, B, C	1527			1530	1585	2.7	2.3	5.684	A
CircBase	1	1	A, B	198			198	205	0.0	0.0	0.000	A	
Exit	2	1		1340			1340	1384	0.0	0.0	0.000	A	

2033 Base + CD + D - ST, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	110.65	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)
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 - Standing Way (E)		ONE HOUR	✓	1261	100.000
B - Whaddon Road		ONE HOUR	✓	597	100.000
C - Buckingham Road		ONE HOUR	✓	1664	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	3	223	1034
	B - Whaddon Road	324	0	273
	C - Buckingham Road	1510	154	0

Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.18	0.82
	B - Whaddon Road	0.54	0.00	0.46
	C - Buckingham Road	0.91	0.09	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road	4	6	0

Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road	1.042	1.056	1.000

Detailed Demand Data

Demand for each time segment

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Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	07:30-07:45	949	998
	07:45-08:00	1133	1191
	08:00-08:15	1388	1459
	08:15-08:30	1388	1459
	08:30-08:45	1133	1191
	08:45-09:00	949	998
B - Whaddon Road	07:30-07:45	449	460
	07:45-08:00	537	549
	08:00-08:15	657	673
	08:15-08:30	657	673
	08:30-08:45	537	549
	08:45-09:00	449	460
C - Buckingham Road	07:30-07:45	1253	1307
	07:45-08:00	1496	1561
	08:00-08:15	1832	1912
	08:15-08:30	1832	1912
	08:30-08:45	1496	1561
	08:45-09:00	1253	1307

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	42.94	18.8	E	1154	1731
B - Whaddon Road	455.66	81.5	F	548	823
C - Buckingham Road	40.60	23.1	E	1528	2292

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	961	240	115	957	992	1386	0.0	2.1	6.937	A
B - Whaddon Road	449	112	789	449	457	283	0.0	0.8	5.927	A
C - Buckingham Road	1251	313	248	1253	1301	991	0.0	2.2	7.168	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1126	281	141	1126	1184	1647	2.1	3.2	9.802	A
B - Whaddon Road	541	135	926	535	538	341	0.8	3.0	16.771	C
C - Buckingham Road	1500	375	289	1499	1558	1167	2.2	4.7	10.874	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1374	344	166	1352	1409	1910	3.2	13.1	25.965	D
B - Whaddon Road	665	166	1102	493	523	414	3.0	40.7	183.006	F
C - Buckingham Road	1828	457	269	1806	1846	1319	4.7	17.6	28.027	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1385	346	164	1365	1437	1908	13.1	18.7	42.944	E
B - Whaddon Road	656	164	1118	503	506	409	40.7	81.6	455.656	F
C - Buckingham Road	1819	455	280	1791	1884	1336	17.6	23.0	40.604	E

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1135	284	138	1159	1258	1759	18.7	4.3	24.670	C

B - Whaddon Road	534	134	960	677	649	337	81.6	56.7	354.700	F
C - Buckingham Road	1512	378	373	1524	1639	1274	23.0	6.7	23.047	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	944	236	116	944	1009	1449	4.3	1.8	7.812	A
B - Whaddon Road	448	112	773	555	663	288	56.7	7.2	89.417	F
C - Buckingham Road	1258	314	304	1261	1329	1037	6.7	2.7	8.894	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	169	1008	0.167	168	171	0.0	0.2	4.304	A
			2	A, C	792	1280	0.619	788	822	0.0	1.8	7.500	A
	Exit	1	1		698			698	719	0.0	0.0	0.000	A
			2		688			688	711	0.0	0.0	0.000	A
	CircLink	1	1	A	693			693	713	0.0	0.0	0.000	A
2			A, B, C	807			807	838	0.0	0.0	0.000	A	
CircBase	1	1	B, C	115			115	122	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	204	894	0.228	203	209	0.0	0.4	5.700	A
			2	A, B	245	902	0.272	245	248	0.0	0.4	5.748	A
		2	(A, B, C)	449			449	460	0.0	0.0	0.196	A	
	Exit	1	1		283			283	293	0.0	0.0	0.000	A
			1	B	283			283	293	0.0	0.0	0.000	A
	CircLink	1	1	A, C	788			788	822	0.0	0.0	0.021	A
2			A, C	788			789	822	0.0	0.0	0.055	A	
CircBase	1	1	A, C	788			789	822	0.0	0.0	0.055	A	
C - Buckingham Road	Entry	1	1	A	606	963	0.629	608	629	0.0	1.1	7.042	A
			2	A, B, C	645	963	0.670	645	671	0.0	1.2	7.287	A
		2	(A, B, C)	1251			1251	1310	0.0	0.0	0.000	A	
	Exit	1	1		989			991	1016	0.0	2.5	9.140	A
			1	A, B, C	1237			1237	1277	0.0	0.2	0.281	A
	CircBase	1	1	A, B	248			248	251	0.0	0.0	0.000	A
Exit	2	1		991			991	1016	0.0	0.0	0.000	A	

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	200	1005	0.199	200	204	0.2	0.2	4.414	A
			2	A, C	926	1270	0.730	926	980	1.8	3.0	10.961	B
	Exit	1	1		820			820	852	0.0	0.0	0.000	A
			2		827			827	853	0.0	0.0	0.000	A
	CircLink	1	1	A	820			820	855	0.0	0.0	0.000	A
2			A, B, C	969			969	996	0.0	0.0	0.000	A	
CircBase	1	1	B, C	141			141	146	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	250	843	0.297	250	249	0.4	0.8	9.901	A
			2	A, B	287	849	0.338	286	289	0.4	0.9	10.566	B
		2	(A, B, C)	541			536	542	0.0	1.3	6.291	A	
	Exit	1	1		341			341	350	0.0	0.0	0.000	A
			1	B	341			341	350	0.0	0.0	0.000	A
CircLink	1	1	A, C	926			927	979	0.0	0.1	0.226	A	
		2	A, C	927			926	979	0.0	0.2	0.424	A	
CircBase	1	1	A, C	927			926	979	0.0	0.2	0.424	A	
C - Buckingham Road	Entry	1	1	A	740	950	0.779	740	766	1.1	2.3	10.611	B
			2	A, B, C	759	948	0.801	759	792	1.2	2.4	10.991	B
		2	(A, B, C)	1500			1500	1568	0.0	0.0	0.069	A	
	Exit	1	1		1170			1167	1210	2.5	5.1	14.397	B
			1	A, B, C	1462			1459	1514	0.2	0.8	1.439	A
CircBase	1	1	A, B	289			289	293	0.0	0.0	0.000	A	
Exit	2	1		1167			1167	1210	0.0	0.0	0.000	A	

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service

A - Standing Way (E)	Entry	1	1	B	248	996	0.249	248	252	0.2	0.3	4.740	A
			2	A, C	1126	1261	0.893	1104	1156	3.0	12.7	30.601	D
	Exit	1	1		950			950	977	0.0	0.0	0.000	A
			2		960			960	982	0.0	0.0	0.000	A
	CircLink	1	1	A	957			957	979	0.0	0.0	0.000	A
2			A, B, C	1119			1119	1153	0.0	0.0	0.000	A	
CircBase	1	1	B, C	166			166	173	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	228	776	0.294	226	241	0.8	2.1	27.581	D
			2	A, B	269	777	0.346	267	282	0.9	2.7	30.088	D
		2	1	(A, B, C)	665			497	536	1.3	35.8	151.329	F
	Exit	1	1		414			414	425	0.0	0.0	0.000	A
			1	B	414			414	425	0.0	0.0	0.000	A
CircLink	1	1	A, C	1104			1103	1154	0.1	0.6	1.324	A	
		2	A, C	1103			1102	1152	0.2	0.7	1.838	A	
CircBase	1	1	A, C	1103			1102	1152	0.2	0.7	1.838	A	
C - Buckingham Road	Entry	1	1	A	900	958	0.939	901	918	2.3	6.0	22.596	C
			2	A, B, C	904	955	0.946	905	928	2.4	6.3	23.263	C
		2	1	(A, B, C)	1828			1804	1878	0.0	5.3	4.953	A
	Exit	1	1		1323			1319	1368	5.1	8.5	21.103	C
			1	A, B, C	1595			1593	1668	0.8	2.5	4.532	A
	CircBase	1	1	A, B	269			269	286	0.0	0.0	0.000	A
Exit	2	1		1319			1319	1368	0.0	0.0	0.000	A	

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	245	997	0.245	245	254	0.3	0.3	4.902	A
			2	A, C	1140	1261	0.904	1120	1183	12.7	18.4	51.214	F
	Exit	1	1		950			950	991	0.0	0.0	0.000	A
			2		957			957	999	0.0	0.0	0.000	A
	CircLink	1	1	A	949			949	993	0.0	0.0	0.000	A
2			A, B, C	1123			1123	1172	0.0	0.0	0.000	A	
CircBase	1	1	B, C	164			164	175	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	227	767	0.297	226	231	2.1	2.4	35.464	E
			2	A, B	277	771	0.359	276	275	2.7	3.0	38.164	E
		2	1	(A, B, C)	656			504	508	35.8	76.2	422.954	F
	Exit	1	1		409			409	428	0.0	0.0	0.000	A
			1	B	409			409	428	0.0	0.0	0.000	A
CircLink	1	1	A, C	1120			1119	1183	0.6	0.6	1.830	A	
		2	A, C	1119			1118	1183	0.7	0.8	2.392	A	
CircBase	1	1	A, C	1119			1118	1183	0.7	0.8	2.392	A	
C - Buckingham Road	Entry	1	1	A	898	956	0.940	896	931	6.0	6.5	25.475	D
			2	A, B, C	899	953	0.944	896	953	6.3	6.8	25.777	D
		2	1	(A, B, C)	1819			1797	1889	5.3	9.7	14.899	B
	Exit	1	1		1340			1336	1406	8.5	8.8	23.029	C
			1	A, B, C	1621			1620	1688	2.5	2.6	5.678	A
	CircBase	1	1	A, B	280			280	280	0.0	0.0	0.000	A
Exit	2	1		1336			1336	1406	0.0	0.0	0.000	A	

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	200	1007	0.198	199	208	0.3	0.3	4.602	A
			2	A, C	936	1269	0.738	960	1050	18.4	4.0	29.033	D
	Exit	1	1		881			881	920	0.0	0.0	0.000	A
			2		879			879	921	0.0	0.0	0.000	A
	CircLink	1	1	A	874			874	919	0.0	0.0	0.000	A
2			A, B, C	1023			1023	1078	0.0	0.0	0.000	A	
CircBase	1	1	B, C	138			138	155	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	306	829	0.369	308	296	2.4	1.8	23.946	C
			2	A, B	367	832	0.441	369	352	3.0	2.3	26.093	D
		2	1	(A, B, C)	534			672	643	76.2	52.6	335.145	F
	Exit	1	1		337			337	363	0.0	0.0	0.000	A
			1	B	337			337	363	0.0	0.0	0.000	A
CircLink	1	1	A, C	960			961	1052	0.6	0.2	1.244	A	
		2	A, C	961			960	1054	0.8	0.4	1.835	A	
CircBase	1	1	A, C	961			960	1054	0.8	0.4	1.835	A	
C - Buckingham Road	Entry	1	1	A	744	924	0.805	746	806	6.5	3.0	17.083	C
			2	A, B, C	777	922	0.843	778	833	6.8	3.2	17.367	C
		2	1	(A, B, C)	1512			1521	1609	9.7	0.6	6.237	A
	Exit	1	1		1268			1274	1360	8.8	6.8	21.238	C
			1	A, B, C	1637			1641	1708	2.6	1.4	4.393	A
CircBase	1	1	A, B	373			373	357	0.0	0.0	0.000	A	
Exit	2	1		1274			1274	1360	0.0	0.0	0.000	A	

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	171	1013	0.169	171	173	0.3	0.2	4.241	A
			2	A, C	773	1276	0.605	772	835	4.0	1.5	8.591	A
	Exit	1	1		730			730	787	0.0	0.0	0.000	A
			2		718			718	781	0.0	0.0	0.000	A
	CircLink	1	1	A	718			718	782	0.0	0.0	0.000	A
			2	A, B, C	847			847	910	0.0	0.0	0.000	A
	CircBase	1	1	B, C	116			116	124	0.0	0.0	0.000	A
B - Whaddon Road	Entry	1	1	C	253	901	0.281	254	304	1.8	0.6	12.053	B
			2	A, B	296	906	0.327	301	359	2.3	0.7	12.976	B
		2	1	(A, B, C)	448			549	651	52.6	5.9	79.600	F
	Exit	1	1		288			288	297	0.0	0.0	0.000	A
			1	B	288			288	297	0.0	0.0	0.000	A
	CircLink	1	1	A, C	772			773	836	0.2	0.0	0.260	A
			2		773			773	837	0.4	0.0	0.500	A
CircBase	1	1	A, C	773			773	837	0.4	0.0	0.500	A	
C - Buckingham Road	Entry	1	1	A	613	948	0.647	614	650	3.0	1.3	8.610	A
			2	A, B, C	645	948	0.681	647	679	3.2	1.4	9.010	A
		2	1	(A, B, C)	1258			1258	1315	0.6	0.0	0.129	A
	Exit	1	1		1028			1037	1158	6.8	3.0	14.182	B
	CircLink	1	1	A, B, C	1328			1332	1505	1.4	0.2	1.564	A
	CircBase	1	1	A, B	304			304	362	0.0	0.0	0.000	A
	Exit	2	1		1037			1037	1158	0.0	0.0	0.000	A

2033 Base + CD + D - ST, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - Standing Way (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	B - Whaddon Road - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	144.09	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)
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 - Standing Way (E)		ONE HOUR	✓	1471	100.000
B - Whaddon Road		ONE HOUR	✓	437	100.000
C - Buckingham Road		ONE HOUR	✓	1420	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	2	230	1239
B - Whaddon Road	251	0	186
C - Buckingham Road	1170	250	0

Proportions

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	0.00	0.16	0.84
B - Whaddon Road	0.57	0.00	0.43
C - Buckingham Road	0.82	0.18	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	50	1	2
B - Whaddon Road	0	0	3
C - Buckingham Road	3	2	0

Average PCU Per Veh

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	1.500	1.010	1.018
B - Whaddon Road	1.000	1.000	1.031
C - Buckingham Road	1.025	1.019	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	16:45-17:00	1108	1128
	17:00-17:15	1323	1346
	17:15-17:30	1620	1649
	17:30-17:45	1620	1649
	17:45-18:00	1323	1346
B - Whaddon Road	16:45-17:00	329	333
	17:00-17:15	393	398
	17:15-17:30	481	488
	17:30-17:45	481	488
	17:45-18:00	393	398
C - Buckingham Road	16:45-17:00	1069	1095
	17:00-17:15	1277	1307
	17:15-17:30	1563	1601
	17:30-17:45	1563	1601
	17:45-18:00	1277	1307
	18:00-18:15	1069	1095

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	208.61	91.7	F	1354	2032
B - Whaddon Road	362.36	39.8	F	399	599
C - Buckingham Road	11.32	4.8	B	1304	1955

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1117	279	187	1113	1121	1054	0.0	3.0	9.151	A
B - Whaddon Road	323	81	943	319	328	357	0.0	0.9	6.175	A
C - Buckingham Road	1057	264	183	1058	1091	1080	0.0	1.5	5.637	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1326	331	229	1309	1325	1274	3.0	8.2	18.139	C
B - Whaddon Road	402	100	1102	383	382	437	0.9	5.0	29.233	D
C - Buckingham Road	1286	321	219	1284	1302	1260	1.5	2.4	6.779	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1614	404	277	1447	1477	1516	8.2	48.9	73.793	F
B - Whaddon Road	477	119	1198	383	407	523	5.0	25.3	150.509	F
C - Buckingham Road	1571	393	219	1573	1590	1356	2.4	4.4	10.940	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1606	401	271	1449	1476	1537	48.9	91.7	180.404	F
B - Whaddon Road	474	118	1195	436	435	521	25.3	36.9	291.289	F
C - Buckingham Road	1555	389	253	1555	1597	1375	4.4	4.8	11.316	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1335	334	230	1426	1440	1289	91.7	71.3	208.605	F
B - Whaddon Road	394	98	1217	395	386	439	36.9	39.7	362.362	F
C - Buckingham Road	1284	321	230	1289	1319	1377	4.8	2.4	7.402	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1128	282	185	1281	1349	1121	71.3	19.3	105.129	F
B - Whaddon Road	325	81	1105	413	409	365	39.7	21.9	207.882	F
C - Buckingham Road	1069	267	238	1067	1092	1295	2.4	1.9	5.849	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	169	1004	0.169	170	176	0.0	0.2	4.432	A
			2	A, C	948	1300	0.729	943	945	0.0	2.8	10.028	B
	Exit	1	1		521			521	541	0.0	0.0	0.000	A
			2		533			533	547	0.0	0.0	0.000	A
	Circlink	1	1	A	527			527	544	0.0	0.0	0.000	A
			2	A, B, C	714			714	734	0.0	0.0	0.000	A
CircBase	1	1	B, C	187			187	191	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	139	841	0.164	137	143	0.0	0.3	5.830	A
			2	A, B	183	871	0.210	181	185	0.0	0.4	5.837	A
		2	1	(A, B, C)	323			322	331	0.0	0.1	0.317	A
	Exit	1	1		357			357	367	0.0	0.0	0.000	A
			1	B	357			357	367	0.0	0.0	0.000	A
	Circlink	1	1	A, C	943			943	945	0.0	0.0	0.054	A
1			A, C	943			943	945	0.0	0.0	0.094	A	
C - Buckingham Road	Entry	1	1	A	481	1001	0.480	483	501	0.0	0.7	5.367	A
			2	A, B, C	575	1007	0.571	576	590	0.0	0.8	5.865	A
		2	1	(A, B, C)	1057			1057	1097	0.0	0.0	0.000	A
	Exit	1	1		1079			1080	1072	0.0	3.1	9.892	A
			1	A, B, C	1262			1262	1272	0.0	0.2	0.408	A
	CircBase	1	1	A, B	183			183	187	0.0	0.0	0.000	A
Exit	2	1		1080			1080	1072	0.0	0.0	0.000	A	

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	208	989	0.211	208	211	0.2	0.3	4.636	A
			2	A, C	1117	1282	0.871	1101	1114	2.8	7.8	20.677	C
	Exit	1	1		636			636	648	0.0	0.0	0.000	A
			2		637			637	645	0.0	0.0	0.000	A
	Circlink	1	1	A	643			643	652	0.0	0.0	0.000	A
			2	A, B, C	860			860	869	0.0	0.0	0.000	A
CircBase	1	1	B, C	229			229	227	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	167	784	0.213	167	166	0.3	0.8	13.747	B
			2	A, B	219	811	0.271	217	216	0.4	1.2	15.215	C
		2	1	(A, B, C)	402			387	387	0.1	2.9	13.802	B
	Exit	1	1		437			437	438	0.0	0.0	0.000	A
			1	B	437			437	438	0.0	0.0	0.000	A
	Circlink	1	1	A, C	1101			1102	1114	0.0	0.2	0.441	A
1			A, C	1102			1102	1113	0.0	0.3	0.688	A	
C - Buckingham Road	Entry	1	1	A	605	995	0.608	605	613	0.7	1.0	6.407	A
			2	A, B, C	681	995	0.685	679	689	0.8	1.4	7.108	A
		2	1	(A, B, C)	1286			1286	1305	0.0	0.0	0.000	A
	Exit	1	1		1265			1260	1257	3.1	6.5	15.906	C
			1	A, B, C	1485			1484	1490	0.2	1.2	2.171	A
	CircBase	1	1	A, B	219			219	220	0.0	0.0	0.000	A
Exit	2	1		1260			1260	1257	0.0	0.0	0.000	A	

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	248	976	0.254	247	253	0.3	0.4	4.981	A
			2	A, C	1366	1264	1.081	1201	1224	7.8	48.6	86.427	F
	Exit	1	1		751			751	770	0.0	0.0	0.000	A
			2		765			765	770	0.0	0.0	0.000	A
	CircLink	1	1	A	760			760	772	0.0	0.0	0.000	A
			2	A, B, C	1033			1033	1049	0.0	0.0	0.000	A
CircBase	1	1	B, C	277			277	280	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	166	752	0.221	165	178	0.8	1.7	31.723	D
			2	A, B	222	775	0.286	218	228	1.2	2.8	35.750	E
		2	1	(A, B, C)	477			388	417	2.9	20.8	114.712	F
	Exit	1	1		523			523	533	0.0	0.0	0.000	A
			1	B	523			523	533	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1201			1200	1222	0.2	0.6	1.431	A
1			A, C	1200			1198	1220	0.3	0.8	1.902	A	
CircBase	1	1	A, C	1200			1198	1220	0.3	0.8	1.902	A	
C - Buckingham Road	Entry	1	1	A	752	991	0.759	753	765	1.0	2.1	10.478	B
			2	A, B, C	819	994	0.823	820	825	1.4	2.3	11.282	B
		2	1	(A, B, C)	1571			1571	1598	0.0	0.0	0.044	A
	Exit	1	1		1359			1356	1381	6.5	8.9	21.447	C
			1	A, B, C	1581			1579	1621	1.2	2.7	4.948	A
	CircBase	1	1	A, B	219			219	230	0.0	0.0	0.000	A
Exit	2	1		1356			1356	1381	0.0	0.0	0.000	A	

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	249	979	0.255	251	257	0.4	0.3	4.973	A
			2	A, C	1356	1269	1.070	1199	1219	48.6	91.4	212.926	F
	Exit	1	1		769			769	788	0.0	0.0	0.000	A
			2		768			768	783	0.0	0.0	0.000	A
	CircLink	1	1	A	769			769	793	0.0	0.0	0.000	A
			2	A, B, C	1038			1038	1058	0.0	0.0	0.000	A
CircBase	1	1	B, C	271			271	279	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	187	757	0.248	185	186	1.7	2.0	35.277	E
			2	A, B	250	777	0.322	251	249	2.8	2.8	41.173	E
		2	1	(A, B, C)	474			438	436	20.8	32.1	251.072	F
	Exit	1	1		521			521	536	0.0	0.0	0.000	A
			1	B	521			521	536	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1199			1196	1218	0.6	0.8	1.721	A
1			A, C	1196			1195	1218	0.8	0.9	2.247	A	
CircBase	1	1	A, C	1196			1195	1218	0.8	0.9	2.247	A	
C - Buckingham Road	Entry	1	1	A	749	983	0.763	751	769	2.1	2.1	10.777	B
			2	A, B, C	805	984	0.817	804	828	2.3	2.5	11.688	B
		2	1	(A, B, C)	1555			1554	1598	0.0	0.1	0.060	A
	Exit	1	1		1375			1375	1401	8.9	8.6	22.760	C
			1	A, B, C	1631			1628	1653	2.7	2.8	5.623	A
	CircBase	1	1	A, B	253			253	253	0.0	0.0	0.000	A
Exit	2	1		1375			1375	1401	0.0	0.0	0.000	A	

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	207	993	0.209	209	211	0.3	0.2	4.609	A
			2	A, C	1128	1283	0.879	1218	1229	91.4	71.1	246.428	F
	Exit	1	1		649			649	654	0.0	0.0	0.000	A
			2		640			640	655	0.0	0.0	0.000	A
	CircLink	1	1	A	654			654	661	0.0	0.0	0.000	A
			2	A, B, C	866			866	880	0.0	0.0	0.000	A
CircBase	1	1	B, C	230			230	232	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	165	747	0.222	167	168	2.0	1.8	41.268	E
			2	A, B	229	769	0.297	228	219	2.8	2.8	45.800	E
		2	1	(A, B, C)	394			394	386	32.1	35.1	320.491	F
	Exit	1	1		439			439	443	0.0	0.0	0.000	A
			1	B	439			439	443	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1218			1217	1230	0.8	0.5	1.933	A
1			A, C	1217			1217	1231	0.9	0.8	2.485	A	
CircBase	1	1	A, C	1217			1217	1231	0.9	0.8	2.485	A	
C - Buckingham Road	Entry	1	1	A	597	987	0.605	600	619	2.1	1.0	7.094	A
			2	A, B, C	687	991	0.694	689	701	2.5	1.3	7.667	A
		2	1	(A, B, C)	1284			1284	1310	0.1	0.0	0.012	A
	Exit	1	1		1381			1377	1394	8.6	8.9	23.308	C

	CircLink	1	1	A, B, C	1612			1612	1618	2.8	2.6	6.158	A
	CircBase	1	1	A, B	230			230	222	0.0	0.0	0.000	A
	Exit	2	1		1377			1377	1394	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	180	1006	0.179	180	178	0.2	0.2	4.448	A
			2	A, C	949	1299	0.730	1101	1171	71.1	19.1	125.037	F
	Exit	1	1		560			560	570	0.0	0.0	0.000	A
			2		561			561	568	0.0	0.0	0.000	A
	CircLink	1	1	A	559			559	566	0.0	0.0	0.000	A
			2	A, B, C	746			746	759	0.0	0.0	0.000	A
CircBase	1	1	B, C	185			185	187	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	173	786	0.221	178	179	1.8	1.2	31.828	D
			2	A, B	231	810	0.286	235	229	2.8	1.9	35.301	E
			2	(A, B, C)	325			405	402	35.1	18.9	181.556	F
	Exit	1	1		365			365	366	0.0	0.0	0.000	A
			2		365			365	366	0.0	0.0	0.000	A
	CircLink	1	1	B	365			365	366	0.0	0.0	0.000	A
CircBase	1	1	A, C	1101			1103	1171	0.5	0.3	1.607	A	
C - Buckingham Road	Entry	1	1	A	493	982	0.502	492	507	1.0	0.9	5.513	A
			2	A, B, C	575	989	0.582	575	585	1.3	1.0	6.139	A
			2	(A, B, C)	1069			1069	1090	0.0	0.0	0.000	A
	Exit	1	1		1285			1295	1359	8.9	6.9	21.735	C
			2		1285			1295	1359	0.0	0.0	0.000	A
	CircLink	1	1	A, B, C	1519			1524	1584	2.6	1.8	5.182	A
	CircBase	1	1	A, B	238			238	233	0.0	0.0	0.000	A
Exit	2	1		1295			1295	1359	0.0	0.0	0.000	A	

2033 Base + CD + SP (ST), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	98.65	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)
D21	2033 Base + CD + SP (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 - Standing Way (E)		ONE HOUR	✓	1258	100.000
B - Whaddon Road		ONE HOUR	✓	574	100.000
C - Buckingham Road		ONE HOUR	✓	1658	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	3	223	1031
	B - Whaddon Road	307	0	267
	C - Buckingham Road	1505	153	0

Proportions

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	0.00	0.18	0.82
	B - Whaddon Road	0.53	0.00	0.47
	C - Buckingham Road	0.91	0.09	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	33	2	6
	B - Whaddon Road	2	0	3
	C - Buckingham Road	4	6	0

Average PCU Per Veh

From		To		
		A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
From	A - Standing Way (E)	1.333	1.022	1.057
	B - Whaddon Road	1.022	1.000	1.026
	C - Buckingham Road	1.042	1.056	1.000

Detailed Demand Data

Demand for each time segment

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Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	07:30-07:45	947	995
	07:45-08:00	1131	1189
	08:00-08:15	1385	1456
	08:15-08:30	1385	1456
	08:30-08:45	1131	1189
	08:45-09:00	947	995
B - Whaddon Road	07:30-07:45	432	442
	07:45-08:00	516	528
	08:00-08:15	632	647
	08:15-08:30	632	647
	08:30-08:45	516	528
	08:45-09:00	432	442
C - Buckingham Road	07:30-07:45	1248	1302
	07:45-08:00	1491	1555
	08:00-08:15	1825	1905
	08:15-08:30	1825	1905
	08:30-08:45	1491	1555
	08:45-09:00	1248	1302

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	42.87	18.7	E	1152	1728
B - Whaddon Road	400.81	71.2	F	525	787
C - Buckingham Road	38.91	21.9	E	1519	2279

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	944	236	115	945	989	1367	0.0	1.8	6.850	A
B - Whaddon Road	430	107	775	430	443	284	0.0	0.8	6.275	A
C - Buckingham Road	1247	312	233	1249	1293	972	0.0	2.4	6.999	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1133	283	136	1134	1183	1627	1.8	2.9	9.937	A
B - Whaddon Road	518	129	934	515	519	337	0.8	2.7	15.736	C
C - Buckingham Road	1486	371	277	1486	1544	1170	2.4	4.2	10.214	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1383	346	167	1358	1411	1885	2.9	13.3	25.413	D
B - Whaddon Road	629	157	1112	466	516	412	2.7	34.6	148.566	F
C - Buckingham Road	1828	457	253	1800	1846	1317	4.2	16.7	26.232	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1385	346	169	1369	1430	1900	13.3	18.5	42.870	E
B - Whaddon Road	628	157	1122	479	495	416	34.6	71.1	400.814	F
C - Buckingham Road	1824	456	260	1809	1887	1339	16.7	21.8	38.912	E

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1129	282	140	1145	1252	1721	18.5	4.2	23.507	C

B - Whaddon Road	515	129	951	673	646	335	71.1	42.4	300.708	F
C - Buckingham Road	1488	372	365	1496	1622	1268	21.8	5.6	20.231	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	939	235	112	942	1004	1404	4.2	1.6	7.453	A
B - Whaddon Road	428	107	774	500	605	280	42.4	2.4	61.573	F
C - Buckingham Road	1242	310	271	1245	1314	1011	5.6	2.5	8.256	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	169	1011	0.167	169	173	0.0	0.2	4.366	A
			2	A, C	775	1279	0.606	775	817	0.0	1.6	7.391	A
	Exit	1	1		684			684	707	0.0	0.0	0.000	A
			2		683			683	705	0.0	0.0	0.000	A
	CircLink	1	1	A	685			685	708	0.0	0.0	0.000	A
2			A, B, C	796			796	825	0.0	0.0	0.000	A	
CircBase	1	1	B, C	115			115	121	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	200	901	0.221	200	207	0.0	0.3	5.760	A
			2	A, B	231	904	0.255	230	236	0.0	0.4	5.871	A
		2	(A, B, C)	430			430	446	0.0	0.0	0.451	A	
	Exit	1	1		284			284	294	0.0	0.0	0.000	A
			1	B	284			284	294	0.0	0.0	0.000	A
	CircLink	1	1	A, C	775			775	817	0.0	0.0	0.037	A
2				775			775	817	0.0	0.0	0.077	A	
CircBase	1	1	A, C	775			775	817	0.0	0.0	0.000	A	
C - Buckingham Road	Entry	1	1	A	609	969	0.629	610	629	0.0	1.1	6.803	A
			2	A, B, C	638	967	0.660	639	664	0.0	1.3	7.185	A
		2	(A, B, C)	1247			1247	1303	0.0	0.0	0.000	A	
	Exit	1	1		972			972	1009	0.0	2.6	9.321	A
			1	A, B, C	1205			1205	1259	0.0	0.1	0.322	A
	CircBase	1	1	A, B	233			233	239	0.0	0.0	0.000	A
Exit	2	1		972			972	1009	0.0	0.0	0.000	A	

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	201	1006	0.200	201	205	0.2	0.3	4.544	A
			2	A, C	931	1271	0.733	933	978	1.6	2.7	11.100	B
	Exit	1	1		811			811	840	0.0	0.0	0.000	A
			2		816			816	841	0.0	0.0	0.000	A
	CircLink	1	1	A	811			811	840	0.0	0.0	0.000	A
2			A, B, C	952			952	985	0.0	0.0	0.000	A	
CircBase	1	1	B, C	136			136	144	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	241	840	0.286	241	242	0.3	0.7	9.665	A
			2	A, B	275	843	0.326	274	277	0.4	0.9	9.925	A
		2	(A, B, C)	518			516	522	0.0	1.2	5.692	A	
	Exit	1	1		337			337	348	0.0	0.0	0.000	A
			1	B	337			337	348	0.0	0.0	0.000	A
	CircLink	1	1	A, C	933			934	978	0.0	0.1	0.215	A
2				934			934	978	0.0	0.1	0.399	A	
CircBase	1	1	A, C	934			934	978	0.0	0.1	0.000	A	
C - Buckingham Road	Entry	1	1	A	731	956	0.765	731	758	1.1	2.0	9.998	A
			2	A, B, C	755	953	0.792	754	786	1.3	2.2	10.402	B
		2	(A, B, C)	1486			1486	1552	0.0	0.0	0.010	A	
	Exit	1	1		1170			1170	1205	2.6	4.6	13.888	B
			1	A, B, C	1448			1447	1494	0.1	0.7	1.337	A
CircBase	1	1	A, B	277			277	281	0.0	0.0	0.000	A	
Exit	2	1		1170			1170	1205	0.0	0.0	0.000	A	

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
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A - Standing Way (E)	Entry	1	1	B	243	997	0.244	244	250	0.3	0.3	4.735	A
			2	A, C	1140	1258	0.906	1113	1161	2.7	13.0	29.853	D
	Exit	1	1		939			939	974	0.0	0.0	0.000	A
			2		946			946	980	0.0	0.0	0.000	A
	Circlink	1	1	A	944			944	977	0.0	0.0	0.000	A
			2	A, B, C	1109			1109	1149	0.0	0.0	0.000	A
	CircBase	1	1	B, C	167			167	172	0.0	0.0	0.000	A
	B - Whaddon Road	Entry	1	1	C	220	771	0.285	217	241	0.7	2.1	26.507
2				A, B	253	776	0.326	249	276	0.9	2.7	28.831	D
2			1	(A, B, C)	629			472	529	1.2	29.8	118.294	F
Exit		1	1		412			412	422	0.0	0.0	0.000	A
			2		412			412	422	0.0	0.0	0.000	A
Circlink		1	1	B	412			412	422	0.0	0.0	0.000	A
			2	A, C	1113			1113	1159	0.1	0.5	1.246	A
CircBase		1	1	A, C	1113			1112	1157	0.1	0.7	1.748	A
C - Buckingham Road	Entry	1	1	A	899	964	0.933	896	915	2.0	6.1	22.013	C
			2	A, B, C	908	961	0.945	904	931	2.2	6.3	22.583	C
		2	1	(A, B, C)	1828			1807	1880	0.0	4.3	3.823	A
	Exit	1	1		1323			1317	1369	4.6	8.5	20.885	C
			2		1323			1317	1369	0.0	0.0	0.000	A
	Circlink	1	1	A, B, C	1578			1575	1665	0.7	2.5	4.409	A
	CircBase	1	1	A, B	253			253	280	0.0	0.0	0.000	A
	Exit	2	1		1317			1317	1369	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	247	996	0.249	247	251	0.3	0.3	4.785	A
			2	A, C	1138	1256	0.906	1122	1179	13.0	18.2	51.096	F
	Exit	1	1		952			952	993	0.0	0.0	0.000	A
			2		948			948	985	0.0	0.0	0.000	A
	Circlink	1	1	A	954			954	991	0.0	0.0	0.000	A
			2	A, B, C	1115			1115	1164	0.0	0.0	0.000	A
	CircBase	1	1	B, C	169			169	177	0.0	0.0	0.000	A
	B - Whaddon Road	Entry	1	1	C	223	767	0.290	223	232	2.1	2.4	36.566
2				A, B	255	772	0.331	256	263	2.7	2.8	38.846	E
2			1	(A, B, C)	628			478	497	29.8	66.0	366.768	F
Exit		1	1		416			416	428	0.0	0.0	0.000	A
			2		416			416	428	0.0	0.0	0.000	A
Circlink		1	1	B	416			416	428	0.0	0.0	0.000	A
			2	A, C	1122			1122	1179	0.5	0.6	1.830	A
CircBase		1	1	A, C	1122			1122	1179	0.7	0.8	2.436	A
C - Buckingham Road	Entry	1	1	A	900	961	0.937	900	938	6.1	6.4	25.070	D
			2	A, B, C	908	957	0.948	908	949	6.3	6.5	25.773	D
		2	1	(A, B, C)	1824			1808	1889	4.3	8.9	13.439	B
	Exit	1	1		1340			1339	1404	8.5	8.7	23.212	C
			2		1340			1339	1404	0.0	0.0	0.000	A
	Circlink	1	1	A, B, C	1601			1600	1673	2.5	2.7	5.837	A
	CircBase	1	1	A, B	260			260	268	0.0	0.0	0.000	A
	Exit	2	1		1339			1339	1404	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	196	1006	0.194	196	205	0.3	0.3	4.508	A
			2	A, C	933	1269	0.736	950	1047	18.2	4.0	27.576	D
	Exit	1	1		856			856	910	0.0	0.0	0.000	A
			2		865			865	910	0.0	0.0	0.000	A
	Circlink	1	1	A	862			862	910	0.0	0.0	0.000	A
			2	A, B, C	999			999	1061	0.0	0.0	0.000	A
	CircBase	1	1	B, C	140			140	152	0.0	0.0	0.000	A
	B - Whaddon Road	Entry	1	1	C	310	832	0.372	312	301	2.4	1.6	23.560
2				A, B	357	837	0.427	361	345	2.8	2.0	25.403	D
2			1	(A, B, C)	515			667	640	66.0	38.8	281.168	F
Exit		1	1		335			335	357	0.0	0.0	0.000	A
			2		335			335	357	0.0	0.0	0.000	A
Circlink		1	1	B	335			335	357	0.0	0.0	0.000	A
			2	A, C	950			950	1049	0.6	0.2	1.187	A
CircBase		1	1	A, C	950			951	1051	0.8	0.3	1.742	A
C - Buckingham Road	Entry	1	1	A	733	927	0.791	735	800	6.4	2.6	15.592	C
			2	A, B, C	760	924	0.822	761	822	6.5	2.8	15.998	C
		2	1	(A, B, C)	1488			1493	1590	8.9	0.2	4.807	A
	Exit	1	1		1262			1268	1362	8.7	6.6	20.949	C
			2		1262			1268	1362	2.7	1.4	4.223	A
	Circlink	1	1	A, B, C	1624			1627	1702	2.7	1.4	4.223	A
	CircBase	1	1	A, B	365			365	350	0.0	0.0	0.000	A
	Exit	2	1		1268			1268	1362	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	168	1015	0.166	168	171	0.3	0.2	4.313	A
			2	A, C	770	1282	0.601	773	832	4.0	1.4	8.130	A
	Exit	1	1		699			699	760	0.0	0.0	0.000	A
			2		705			705	761	0.0	0.0	0.000	A
	CircLink	1	1	A	698			698	763	0.0	0.0	0.000	A
			2	A, B, C	818			818	880	0.0	0.0	0.000	A
CircBase	1	1	B, C	112			112	121	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	229	900	0.255	232	281	1.6	0.4	10.921	B
			2	A, B	264	906	0.292	268	324	2.0	0.5	11.592	B
		2	1	(A, B, C)	428			494	594	38.8	1.5	52.579	F
	Exit	1	1		280			280	292	0.0	0.0	0.000	A
			1	B	280			280	292	0.0	0.0	0.000	A
	CircLink	1	1	A, C	773			774	833	0.2	0.0	0.192	A
2				774			774	835	0.3	0.0	0.392	A	
CircBase	1	1	A, C	774			774	835	0.3	0.0	0.392	A	
C - Buckingham Road	Entry	1	1	A	605	958	0.631	606	639	2.6	1.2	8.099	A
			2	A, B, C	637	956	0.666	638	675	2.8	1.3	8.374	A
		2	1	(A, B, C)	1242			1242	1302	0.2	0.0	0.040	A
	Exit	1	1		1005			1011	1132	6.6	3.0	13.316	B
	CircLink	1	1	A, B, C	1274			1276	1445	1.4	0.2	1.328	A
	CircBase	1	1	A, B	271			271	328	0.0	0.0	0.000	A
Exit	2	1		1011			1011	1132	0.0	0.0	0.000	A	

2033 Base + CD + SP (ST), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - Standing Way (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	B - Whaddon Road - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	C - Buckingham Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J6	Bottledump Roundabout	Standard Roundabout	✓	A, B, C	130.37	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)
D22	2033 Base + CD + SP (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 - Standing Way (E)		ONE HOUR	✓	1448	100.000
B - Whaddon Road		ONE HOUR	✓	442	100.000
C - Buckingham Road		ONE HOUR	✓	1409	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	2	230	1216
B - Whaddon Road	241	0	201
C - Buckingham Road	1168	241	0

Proportions

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	0.00	0.16	0.84
B - Whaddon Road	0.55	0.00	0.45
C - Buckingham Road	0.83	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	50	1	2
B - Whaddon Road	0	0	3
C - Buckingham Road	3	2	0

Average PCU Per Veh

From	To		
	A - Standing Way (E)	B - Whaddon Road	C - Buckingham Road
A - Standing Way (E)	1.500	1.010	1.018
B - Whaddon Road	1.000	1.000	1.031
C - Buckingham Road	1.025	1.019	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Standing Way (E)	16:45-17:00	1090	1110
	17:00-17:15	1302	1325
	17:15-17:30	1595	1623
	17:30-17:45	1595	1623
	17:45-18:00	1302	1325
	18:00-18:15	1090	1110
B - Whaddon Road	16:45-17:00	333	337
	17:00-17:15	397	403
	17:15-17:30	487	494
	17:30-17:45	487	494
	17:45-18:00	397	403
	18:00-18:15	333	337
C - Buckingham Road	16:45-17:00	1061	1086
	17:00-17:15	1267	1297
	17:15-17:30	1551	1589
	17:30-17:45	1551	1589
	17:45-18:00	1267	1297
	18:00-18:15	1061	1086

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - Standing Way (E)	172.17	81.7	F	1332	1998
B - Whaddon Road	378.75	43.4	F	407	610
C - Buckingham Road	10.53	5.0	B	1296	1944

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1096	274	180	1093	1104	1067	0.0	2.9	8.043	A
B - Whaddon Road	338	84	917	338	341	356	0.0	0.6	5.868	A
C - Buckingham Road	1061	265	187	1061	1084	1073	0.0	1.5	5.532	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1301	325	222	1297	1305	1261	2.9	6.5	15.586	C
B - Whaddon Road	399	100	1089	377	388	428	0.6	4.7	28.841	D
C - Buckingham Road	1281	320	205	1279	1290	1256	1.5	2.6	6.829	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1594	398	267	1437	1462	1515	6.5	43.9	65.423	F
B - Whaddon Road	480	120	1186	410	408	520	4.7	24.4	157.324	F
C - Buckingham Road	1559	390	227	1556	1580	1372	2.6	4.7	10.150	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1590	398	268	1449	1474	1498	43.9	81.5	161.783	F
B - Whaddon Road	492	123	1194	406	416	524	24.4	43.4	321.189	F
C - Buckingham Road	1550	387	220	1545	1595	1375	4.7	4.9	10.529	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1309	327	219	1404	1434	1268	81.5	55.2	172.174	F
B - Whaddon Road	395	99	1193	407	406	433	43.4	42.0	378.749	F
C - Buckingham Road	1263	316	223	1265	1314	1382	4.9	2.2	7.189	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	1099	275	181	1205	1293	1114	55.2	11.3	72.923	F
B - Whaddon Road	338	85	1038	425	427	353	42.0	20.5	184.668	F
C - Buckingham Road	1064	266	233	1063	1093	1241	2.2	1.7	5.780	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	175	1006	0.174	176	177	0.0	0.2	4.330	A
			2	A, C	921	1302	0.707	917	927	0.0	2.7	8.754	A
	Exit	1	1		534			534	544	0.0	0.0	0.000	A
			2		533			533	543	0.0	0.0	0.000	A
	Circlink	1	1	A	537			537	545	0.0	0.0	0.000	A
			2	A, B, C	710			710	725	0.0	0.0	0.000	A
CircBase	1	1	B, C	180			180	183	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	154	858	0.179	153	157	0.0	0.3	5.457	A
			2	A, B	184	881	0.209	185	183	0.0	0.3	5.855	A
		2	1	(A, B, C)	338			338	343	0.0	0.0	0.192	A
	Exit	1	1		356			356	360	0.0	0.0	0.000	A
			1	B	356			356	360	0.0	0.0	0.000	A
	Circlink	1	1	A, C	917			917	927	0.0	0.0	0.038	A
2			A, C	917			917	927	0.0	0.0	0.078	A	
CircBase	1	1	A, C	917			917	927	0.0	0.0	0.078	A	
C - Buckingham Road	Entry	1	1	A	490	1004	0.488	489	500	0.0	0.7	5.313	A
			2	A, B, C	571	1002	0.570	572	585	0.0	0.8	5.718	A
		2	1	(A, B, C)	1061			1061	1090	0.0	0.0	0.000	A
	Exit	1	1		1069			1073	1068	0.0	3.1	9.917	A
			1	A, B, C	1255			1255	1267	0.0	0.2	0.405	A
	CircBase	1	1	A, B	187			187	186	0.0	0.0	0.000	A
Exit	2	1		1073			1073	1068	0.0	0.0	0.000	A	

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	205	993	0.207	206	207	0.2	0.3	4.618	A
			2	A, C	1096	1285	0.853	1092	1098	2.7	6.2	17.651	C
	Exit	1	1		627			627	639	0.0	0.0	0.000	A
			2		634			634	642	0.0	0.0	0.000	A
	Circlink	1	1	A	627			627	642	0.0	0.0	0.000	A
			2	A, B, C	857			857	858	0.0	0.0	0.000	A
CircBase	1	1	B, C	222			222	218	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	175	794	0.221	174	181	0.3	0.9	13.845	B
			2	A, B	207	816	0.254	203	207	0.3	1.2	14.077	B
		2	1	(A, B, C)	399			382	394	0.0	2.6	13.888	B
	Exit	1	1		428			428	425	0.0	0.0	0.000	A
			1	B	428			428	425	0.0	0.0	0.000	A
	Circlink	1	1	A, C	1092			1090	1097	0.0	0.3	0.422	A
2			A, C	1092			1090	1097	0.0	0.3	0.422	A	
CircBase	1	1	A, C	1090			1089	1096	0.0	0.3	0.662	A	
C - Buckingham Road	Entry	1	1	A	602	998	0.604	601	610	0.7	1.2	6.465	A
			2	A, B, C	679	1000	0.679	678	680	0.8	1.5	7.155	A
		2	1	(A, B, C)	1281			1281	1295	0.0	0.0	0.000	A
	Exit	1	1		1258			1256	1258	3.1	6.0	15.705	C
			1	A, B, C	1466			1463	1480	0.2	1.2	2.038	A
	CircBase	1	1	A, B	205			205	210	0.0	0.0	0.000	A
Exit	2	1		1256			1256	1258	0.0	0.0	0.000	A	

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	253	977	0.259	252	253	0.3	0.4	4.944	A
			2	A, C	1341	1269	1.058	1184	1210	6.2	43.6	76.739	F
	Exit	1	1		753			753	770	0.0	0.0	0.000	A
			2		762			762	764	0.0	0.0	0.000	A
	CircLink	1	1	A	753			753	768	0.0	0.0	0.000	A
			2	A, B, C	1029			1029	1037	0.0	0.0	0.000	A
CircBase	1	1	B, C	267			267	270	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	186	758	0.246	185	187	0.9	1.9	32.413	D
			2	A, B	223	780	0.286	225	221	1.2	2.3	34.782	D
		2	1	(A, B, C)	480			409	416	2.6	20.2	121.693	F
	Exit	1	1		520			520	523	0.0	0.0	0.000	A
			1	B	520			520	523	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1184			1185	1209	0.3	0.5	1.464	A
2			A, C	1185			1186	1207	0.3	0.7	1.946	A	
CircBase	1	1	A, C	1185			1186	1207	0.3	0.7	1.946	A	
C - Buckingham Road	Entry	1	1	A	748	991	0.755	747	760	1.2	2.1	9.713	A
			2	A, B, C	811	990	0.819	808	820	1.5	2.6	10.503	B
		2	1	(A, B, C)	1559			1559	1589	0.0	0.0	0.026	A
	Exit	1	1		1371			1372	1376	6.0	8.5	21.522	C
			1	A, B, C	1596			1598	1610	1.2	2.4	4.995	A
	CircLink	1	1	A, B, C	1596			1598	1610	1.2	2.4	4.995	A
	CircBase	1	1	A, B	227			227	224	0.0	0.0	0.000	A
Exit	2	1		1372			1372	1376	0.0	0.0	0.000	A	

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	257	976	0.263	257	261	0.4	0.4	5.032	A
			2	A, C	1333	1268	1.052	1192	1213	43.6	81.2	191.963	F
	Exit	1	1		748			748	772	0.0	0.0	0.000	A
			2		750			750	777	0.0	0.0	0.000	A
	CircLink	1	1	A	738			738	767	0.0	0.0	0.000	A
			2	A, B, C	1028			1028	1055	0.0	0.0	0.000	A
CircBase	1	1	B, C	268			268	273	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	188	756	0.248	187	193	1.9	2.1	38.866	E
			2	A, B	221	777	0.285	219	224	2.3	2.7	42.711	E
		2	1	(A, B, C)	492			409	419	20.2	38.5	279.698	F
	Exit	1	1		524			524	534	0.0	0.0	0.000	A
			1	B	524			524	534	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1192			1194	1213	0.5	0.5	1.817	A
2			A, C	1194			1194	1212	0.7	0.8	2.383	A	
CircBase	1	1	A, C	1194			1194	1212	0.7	0.8	2.383	A	
C - Buckingham Road	Entry	1	1	A	746	992	0.752	743	770	2.1	2.3	9.982	A
			2	A, B, C	803	992	0.809	802	826	2.6	2.6	10.941	B
		2	1	(A, B, C)	1550			1549	1596	0.0	0.1	0.047	A
	Exit	1	1		1376			1375	1398	8.5	9.0	23.125	C
			1	A, B, C	1600			1597	1627	2.4	2.9	5.983	A
	CircLink	1	1	A, B, C	1600			1597	1627	2.4	2.9	5.983	A
CircBase	1	1	A, B	220			220	227	0.0	0.0	0.000	A	
Exit	2	1		1375			1375	1398	0.0	0.0	0.000	A	

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	214	993	0.215	214	213	0.4	0.2	4.603	A
			2	A, C	1095	1287	0.851	1190	1221	81.2	55.0	204.326	F
	Exit	1	1		633			633	654	0.0	0.0	0.000	A
			2		636			636	657	0.0	0.0	0.000	A
	CircLink	1	1	A	629			629	651	0.0	0.0	0.000	A
			2	A, B, C	859			859	885	0.0	0.0	0.000	A
CircBase	1	1	B, C	219			219	224	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	185	752	0.245	187	188	2.1	1.9	40.975	E
			2	A, B	222	777	0.285	221	218	2.7	2.7	45.112	E
		2	1	(A, B, C)	395			406	405	38.5	37.4	338.567	F
	Exit	1	1		433			433	437	0.0	0.0	0.000	A
			1	B	433			433	437	0.0	0.0	0.000	A
	CircLink	1	1	A, C	1190			1192	1221	0.5	0.6	1.959	A
2			A, C	1192			1193	1221	0.8	0.8	2.501	A	
CircBase	1	1	A, C	1192			1193	1221	0.8	0.8	2.501	A	
C - Buckingham Road	Entry	1	1	A	600	990	0.605	600	621	2.3	1.0	6.830	A
			2	A, B, C	663	993	0.668	665	693	2.6	1.2	7.514	A
		2	1	(A, B, C)	1263			1263	1303	0.1	0.0	0.005	A
	Exit	1	1		1379			1382	1409	9.0	8.5	23.155	C

	CircLink	1	1	A, B, C	1600			1602	1629	2.9	2.5	6.128	A
	CircBase	1	1	A, B	223			223	222	0.0	0.0	0.000	A
	Exit	2	1		1382			1382	1409	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - Standing Way (E)	Entry	1	1	B	172	1005	0.171	171	176	0.2	0.2	4.298	A
			2	A, C	927	1302	0.712	1034	1117	55.0	11.1	86.237	F
	Exit	1	1		554			554	568	0.0	0.0	0.000	A
			2		560			560	572	0.0	0.0	0.000	A
	CircLink	1	1	A	553			553	569	0.0	0.0	0.000	A
			2	A, B, C	742			742	756	0.0	0.0	0.000	A
CircBase	1	1	B, C	181			181	184	0.0	0.0	0.000	A	
B - Whaddon Road	Entry	1	1	C	193	810	0.238	195	198	1.9	1.1	26.736	D
			2	A, B	225	836	0.269	230	229	2.7	1.5	30.229	D
			2	(A, B, C)	338			418	419	37.4	17.9	163.628	F
	Exit	1	1		353			353	360	0.0	0.0	0.000	A
			2		353			353	360	0.0	0.0	0.000	A
	CircLink	1	1	B	353			353	360	0.0	0.0	0.000	A
2			A, C	1034			1036	1118	0.6	0.2	1.420	A	
CircBase	1	1	A, C	1036			1038	1120	0.8	0.3	1.822	A	
C - Buckingham Road	Entry	1	1	A	492	986	0.499	491	505	1.0	0.7	5.536	A
			2	A, B, C	572	991	0.577	572	588	1.2	1.0	5.989	A
			2	(A, B, C)	1064			1064	1091	0.0	0.0	0.000	A
	Exit	1	1		1234			1241	1330	8.5	6.0	20.079	C
			2		1234			1241	1330	8.5	6.0	20.079	C
	CircLink	1	1	A, B, C	1463			1467	1552	2.5	1.3	4.505	A
CircBase	1	1	A, B	233			233	232	0.0	0.0	0.000	A	
Exit	2	1		1241			1241	1330	0.0	0.0	0.000	A	

Junctions 9
ARCADY 9 - Roundabout Module
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Report generation date: 28/01/2021 17:50:47

- »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
- »2033 Base + CD + SP (ST), AM
- »2033 Base + CD + SP (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 - Snelshall Street (N)	D1	1.4	6.16	0.58	A	D2	0.6	3.85	0.36	A
B - Chaffron Way		3.5	27.18	0.79	D		2.3	17.07	0.71	C
C - Snelshall Street (S)		0.8	5.38	0.45	A		1.1	6.27	0.54	A
D - Hayton Way		0.1	2.63	0.08	A		0.0	2.60	0.04	A
2033 Base										
A - Snelshall Street (N)	D13	4.8	19.16	0.84	C	D14	1.0	5.42	0.50	A
B - Chaffron Way		79.0	454.91	1.28	F		110.2	570.72	1.32	F
C - Snelshall Street (S)		1.3	7.13	0.56	A		3.2	13.60	0.77	B
D - Hayton Way		0.7	4.22	0.42	A		0.2	3.16	0.18	A
2033 Base + CD + D										
A - Snelshall Street (N)	D15	10.6	39.21	0.93	E	D16	1.5	6.73	0.60	A
B - Chaffron Way		121.0	770.76	1.46	F		168.7	935.63	1.49	F
C - Snelshall Street (S)		2.0	9.32	0.67	A		5.4	20.97	0.85	C
D - Hayton Way		0.8	4.65	0.44	A		0.2	3.35	0.19	A
2033 Base + CD + D with TP										
A - Snelshall Street (N)	D17	9.5	35.44	0.92	E	D18	1.2	5.89	0.54	A
B - Chaffron Way		114.4	729.81	1.44	F		130.6	691.13	1.38	F
C - Snelshall Street (S)		1.9	8.94	0.66	A		5.1	20.28	0.85	C
D - Hayton Way		0.8	4.59	0.44	A		0.2	3.34	0.19	A
2033 Base + CD + D - ST										
A - Snelshall Street (N)	D19	4.6	18.50	0.83	C	D20	1.0	5.44	0.50	A
B - Chaffron Way		84.9	490.86	1.30	F		114.0	590.86	1.32	F
C - Snelshall Street (S)		1.4	7.51	0.59	A		2.9	12.63	0.75	B
D - Hayton Way		0.7	4.31	0.42	A		0.2	3.12	0.18	A
2033 Base + CD + SP (ST)										
A - Snelshall Street (N)	D21	2.7	11.90	0.73	B	D22	0.7	4.55	0.40	A
B - Chaffron Way		49.9	257.28	1.15	F		72.6	320.78	1.18	F
C - Snelshall Street (S)		0.9	6.01	0.48	A		1.9	9.45	0.65	A
D - Hayton Way		0.7	3.93	0.40	A		0.2	2.95	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	Kingsmead Roundabout
Location	51°59'50.88"N, 0°47'53.02"W

Site number	12
Date	06/01/2021
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,D21,D22	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	11.04	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Snelshall Street (N)	
B	Chaffron Way	
C	Snelshall Street (S)	
D	Hayton Way	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Snelshall Street (N)	3.20	7.27	12.5	38.7	56.0	28.0	
B - Chaffron Way	3.06	7.41	7.1	30.8	56.0	39.0	
C - Snelshall Street (S)	3.15	7.56	7.3	21.4	56.0	46.0	
D - Hayton Way	3.81	7.31	17.0	34.1	56.0	10.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Snelshall Street (N)	None		
B - Chaffron Way	Direct	Calibrated against queue length	-400
C - Snelshall Street (S)	None		
D - Hayton Way	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Snelshall Street (N)	0.573	1621
B - Chaffron Way	0.512	951
C - Snelshall Street (S)	0.499	1335
D - Hayton Way	0.649	1954

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 - Snelshall Street (N)		ONE HOUR	✓	725	100.000
B - Chaffron Way		ONE HOUR	✓	447	100.000
C - Snelshall Street (S)		ONE HOUR	✓	489	100.000

D - Hayton Way	ONE HOUR	✓	114	100.000
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Origin-Destination Data

Demand (Veh/hr)

From		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
	A - Snelshall Street (N)	0	203	473	49
	B - Chaffron Way	64	2	320	61
	C - Snelshall Street (S)	224	247	1	17
	D - Hayton Way	27	68	19	0

Proportions

From		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
	A - Snelshall Street (N)	0.00	0.28	0.65	0.07
	B - Chaffron Way	0.14	0.00	0.72	0.14
	C - Snelshall Street (S)	0.46	0.51	0.00	0.03
	D - Hayton Way	0.24	0.60	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

Average PCU Per Veh

From		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
	A - Snelshall Street (N)	1.000	1.005	1.015	1.061
	B - Chaffron Way	1.047	1.000	1.025	1.033
	C - Snelshall Street (S)	1.022	1.016	1.000	1.118
	D - Hayton Way	1.074	1.044	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 - Snelshall Street (N)	546	554
	B - Chaffron Way	337	346
	C - Snelshall Street (S)	368	376
	D - Hayton Way	86	90
07:45-08:00	A - Snelshall Street (N)	652	662
	B - Chaffron Way	402	414
	C - Snelshall Street (S)	440	449
	D - Hayton Way	102	107
08:00-08:15	A - Snelshall Street (N)	798	810
	B - Chaffron Way	492	506
	C - Snelshall Street (S)	538	550
	D - Hayton Way	126	131
08:15-08:30	A - Snelshall Street (N)	798	810
	B - Chaffron Way	492	506
	C - Snelshall Street (S)	538	550
	D - Hayton Way	126	131
08:30-08:45	A - Snelshall Street (N)	652	662
	B - Chaffron Way	402	414
	C - Snelshall Street (S)	440	449
	D - Hayton Way	102	107
08:45-09:00	A - Snelshall Street (N)	546	554
	B - Chaffron Way	337	346
	C - Snelshall Street (S)	368	376
	D - Hayton Way	86	90

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 - Snelshall Street (N)	0.58	6.16	1.4	A	665	998
B - Chaffron Way	0.79	27.18	3.5	D	410	615
C - Snelshall Street (S)	0.45	5.38	0.8	A	449	673
D - Hayton Way	0.08	2.63	0.1	A	105	157

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 - Snelshall Street (N)	546	136	253	1451	0.376	543	236	0.0	0.6	3.955	A
B - Chaffron Way	337	84	406	718	0.468	333	390	0.0	0.9	9.263	A
C - Snelshall Street (S)	368	92	131	1239	0.297	366	608	0.0	0.4	4.118	A
D - Hayton Way	86	21	403	1616	0.053	86	95	0.0	0.1	2.352	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 - Snelshall Street (N)	652	163	303	1422	0.458	651	283	0.6	0.8	4.660	A
B - Chaffron Way	402	100	487	678	0.593	400	467	0.9	1.4	12.846	B
C - Snelshall Street (S)	440	110	158	1226	0.359	439	729	0.4	0.6	4.572	A
D - Hayton Way	102	26	483	1565	0.065	102	114	0.1	0.1	2.461	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 - Snelshall Street (N)	798	200	370	1383	0.577	796	345	0.8	1.3	6.111	A
B - Chaffron Way	492	123	595	623	0.791	484	571	1.4	3.3	24.765	C
C - Snelshall Street (S)	538	135	191	1209	0.446	537	888	0.6	0.8	5.356	A
D - Hayton Way	126	31	590	1496	0.084	125	139	0.1	0.1	2.625	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 - Snelshall Street (N)	798	200	371	1383	0.577	798	347	1.3	1.4	6.156	A
B - Chaffron Way	492	123	597	622	0.791	491	573	3.3	3.5	27.182	D
C - Snelshall Street (S)	538	135	194	1207	0.446	538	895	0.8	0.8	5.380	A
D - Hayton Way	126	31	592	1495	0.084	126	140	0.1	0.1	2.627	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 - Snelshall Street (N)	652	163	304	1422	0.458	654	285	1.4	0.9	4.698	A
B - Chaffron Way	402	100	489	677	0.594	410	469	3.5	1.5	13.885	B
C - Snelshall Street (S)	440	110	161	1224	0.359	441	738	0.8	0.6	4.600	A
D - Hayton Way	102	26	486	1563	0.066	103	115	0.1	0.1	2.466	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 - Snelshall Street (N)	546	136	254	1450	0.376	547	238	0.9	0.6	3.989	A
B - Chaffron Way	337	84	409	717	0.469	339	392	1.5	0.9	9.579	A
C - Snelshall Street (S)	368	92	133	1238	0.297	369	614	0.6	0.4	4.144	A
D - Hayton Way	86	21	406	1614	0.053	86	96	0.1	0.1	2.357	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	8.54	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 - Snelshall Street (N)		ONE HOUR	✓	476	100.000
B - Chaffron Way		ONE HOUR	✓	460	100.000
C - Snelshall Street (S)		ONE HOUR	✓	600	100.000
D - Hayton Way		ONE HOUR	✓	55	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	84	375	16
	B - Chaffron Way	114	1	307	38
	C - Snelshall Street (S)	389	201	1	9
	D - Hayton Way	24	18	13	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.18	0.79	0.03
	B - Chaffron Way	0.25	0.00	0.67	0.08
	C - Snelshall Street (S)	0.65	0.34	0.00	0.02
	D - Hayton Way	0.44	0.33	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.000	1.005	1.188
	B - Chaffron Way	1.018	1.000	1.000	1.000
	C - Snelshall Street (S)	1.003	1.005	1.003	1.000
	D - Hayton Way	1.000	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 - Snelshall Street (N)	358	362
	B - Chaffron Way	346	348
	C - Snelshall Street (S)	452	453

	D - Hayton Way	41	41
17:00-17:15	A - Snelshall Street (N)	428	432
	B - Chaffron Way	414	415
	C - Snelshall Street (S)	539	541
	D - Hayton Way	49	49
17:15-17:30	A - Snelshall Street (N)	524	529
	B - Chaffron Way	506	509
	C - Snelshall Street (S)	661	663
	D - Hayton Way	61	61
17:30-17:45	A - Snelshall Street (N)	524	529
	B - Chaffron Way	506	509
	C - Snelshall Street (S)	661	663
	D - Hayton Way	61	61
17:45-18:00	A - Snelshall Street (N)	428	432
	B - Chaffron Way	414	415
	C - Snelshall Street (S)	539	541
	D - Hayton Way	49	49
18:00-18:15	A - Snelshall Street (N)	358	362
	B - Chaffron Way	346	348
	C - Snelshall Street (S)	452	453
	D - Hayton Way	41	41

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 - Snelshall Street (N)	0.36	3.85	0.6	A	437	655
B - Chaffron Way	0.71	17.07	2.3	C	422	633
C - Snelshall Street (S)	0.54	6.27	1.1	A	551	826
D - Hayton Way	0.04	2.60	0.0	A	50	76

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 - Snelshall Street (N)	358	90	175	1505	0.238	357	395	0.0	0.3	3.134	A
B - Chaffron Way	346	87	305	790	0.438	343	228	0.0	0.8	8.007	A
C - Snelshall Street (S)	452	113	127	1266	0.357	450	521	0.0	0.6	4.400	A
D - Hayton Way	41	10	529	1608	0.026	41	47	0.0	0.0	2.297	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 - Snelshall Street (N)	428	107	210	1485	0.288	428	474	0.3	0.4	3.404	A
B - Chaffron Way	414	103	365	759	0.545	412	273	0.8	1.2	10.343	B
C - Snelshall Street (S)	539	135	152	1253	0.431	539	624	0.6	0.7	5.037	A
D - Hayton Way	49	12	634	1539	0.032	49	56	0.0	0.0	2.415	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 - Snelshall Street (N)	524	131	257	1458	0.359	523	579	0.4	0.6	3.849	A
B - Chaffron Way	506	127	446	717	0.707	502	334	1.2	2.3	16.439	C
C - Snelshall Street (S)	661	165	186	1235	0.535	659	763	0.7	1.1	6.230	A
D - Hayton Way	61	15	776	1447	0.042	61	69	0.0	0.0	2.596	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 - Snelshall Street (N)	524	131	258	1458	0.359	524	581	0.6	0.6	3.854	A
B - Chaffron Way	506	127	447	716	0.707	506	335	2.3	2.3	17.071	C
C - Snelshall Street (S)	661	165	187	1235	0.535	661	766	1.1	1.1	6.269	A
D - Hayton Way	61	15	778	1445	0.042	61	69	0.0	0.0	2.599	A

17:45 - 18:00

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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 - Snelshall Street (N)	428	107	211	1485	0.288	429	477	0.6	0.4	3.412	A
B - Chaffron Way	414	103	366	758	0.545	418	274	2.3	1.2	10.707	B
C - Snelshall Street (S)	539	135	154	1251	0.431	541	629	1.1	0.8	5.078	A
D - Hayton Way	49	12	638	1537	0.032	49	57	0.0	0.0	2.421	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 - Snelshall Street (N)	358	90	176	1504	0.238	359	398	0.4	0.3	3.143	A
B - Chaffron Way	346	87	306	789	0.439	348	229	1.2	0.8	8.194	A
C - Snelshall Street (S)	452	113	129	1265	0.357	453	525	0.8	0.6	4.436	A
D - Hayton Way	41	10	534	1605	0.026	41	48	0.0	0.0	2.301	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	113.41	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 - Snelshall Street (N)		ONE HOUR	✓	852	100.000
B - Chaffron Way		ONE HOUR	✓	594	100.000
C - Snelshall Street (S)		ONE HOUR	✓	594	100.000
D - Hayton Way		ONE HOUR	✓	550	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	543	76
	B - Chaffron Way	73	2	367	151
	C - Snelshall Street (S)	257	283	1	52
	D - Hayton Way	93	332	124	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.27	0.64	0.09
	B - Chaffron Way	0.12	0.00	0.62	0.25
	C - Snelshall Street (S)	0.43	0.48	0.00	0.09
	D - Hayton Way	0.17	0.60	0.23	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.005	1.015	1.061
	B - Chaffron Way	1.047	1.000	1.025	1.033
	C - Snelshall Street (S)	1.022	1.016	1.000	1.118
	D - Hayton Way	1.074	1.044	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 - Snelshall Street (N)	641	652
	B - Chaffron Way	447	460
	C - Snelshall Street (S)	447	459

	D - Hayton Way	414	430
07:45-08:00	A - Snelshall Street (N)	766	778
	B - Chaffron Way	534	550
	C - Snelshall Street (S)	534	548
	D - Hayton Way	494	514
08:00-08:15	A - Snelshall Street (N)	938	953
	B - Chaffron Way	654	673
	C - Snelshall Street (S)	654	672
	D - Hayton Way	605	629
08:15-08:30	A - Snelshall Street (N)	938	953
	B - Chaffron Way	654	673
	C - Snelshall Street (S)	654	672
	D - Hayton Way	605	629
08:30-08:45	A - Snelshall Street (N)	766	778
	B - Chaffron Way	534	550
	C - Snelshall Street (S)	534	548
	D - Hayton Way	494	514
08:45-09:00	A - Snelshall Street (N)	641	652
	B - Chaffron Way	447	460
	C - Snelshall Street (S)	447	459
	D - Hayton Way	414	430

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 - Snelshall Street (N)	0.84	19.16	4.8	C	781	1172
B - Chaffron Way	1.28	454.91	79.0	F	545	817
C - Snelshall Street (S)	0.56	7.13	1.3	A	545	817
D - Hayton Way	0.42	4.22	0.7	A	505	757

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 - Snelshall Street (N)	641	160	557	1273	0.504	637	316	0.0	1.0	5.629	A
B - Chaffron Way	447	112	557	642	0.696	438	637	0.0	2.2	17.035	C
C - Snelshall Street (S)	447	112	224	1186	0.377	445	771	0.0	0.6	4.842	A
D - Hayton Way	414	103	461	1585	0.261	413	208	0.0	0.4	3.065	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 - Snelshall Street (N)	766	191	667	1209	0.633	763	378	1.0	1.7	8.018	A
B - Chaffron Way	534	133	667	587	0.910	516	763	2.2	6.6	43.075	E
C - Snelshall Street (S)	534	133	265	1165	0.458	533	918	0.6	0.8	5.686	A
D - Hayton Way	494	124	552	1528	0.324	494	246	0.4	0.5	3.480	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 - Snelshall Street (N)	938	234	816	1123	0.835	926	447	1.7	4.5	17.381	C
B - Chaffron Way	654	163	811	514	1.273	509	932	6.6	42.8	192.657	F
C - Snelshall Street (S)	654	163	277	1159	0.564	652	1043	0.8	1.3	7.077	A
D - Hayton Way	605	151	659	1459	0.415	604	270	0.5	0.7	4.208	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 - Snelshall Street (N)	938	234	818	1122	0.836	937	448	4.5	4.8	19.165	C
B - Chaffron Way	654	163	819	510	1.283	509	936	42.8	79.0	426.373	F
C - Snelshall Street (S)	654	163	278	1158	0.564	654	1050	1.3	1.3	7.132	A
D - Hayton Way	605	151	661	1458	0.415	605	271	0.7	0.7	4.221	A

08:30 - 08:45

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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 - Snelshall Street (N)	766	191	670	1208	0.634	778	386	4.8	1.8	8.597	A
B - Chaffron Way	534	133	678	581	0.919	574	770	79.0	69.0	454.910	F
C - Snelshall Street (S)	534	133	289	1153	0.463	535	963	1.3	0.9	5.843	A
D - Hayton Way	494	124	561	1521	0.325	495	262	0.7	0.5	3.510	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 - Snelshall Street (N)	641	160	561	1271	0.505	644	342	1.8	1.0	5.773	A
B - Chaffron Way	447	112	562	639	0.699	630	643	69.0	23.2	268.350	F
C - Snelshall Street (S)	447	112	298	1148	0.389	448	894	0.9	0.6	5.144	A
D - Hayton Way	414	103	489	1567	0.264	414	257	0.5	0.4	3.122	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	185.82	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
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 - Snelshall Street (N)		ONE HOUR	✓	602	100.000
B - Chaffron Way		ONE HOUR	✓	745	100.000
C - Snelshall Street (S)		ONE HOUR	✓	779	100.000
D - Hayton Way		ONE HOUR	✓	229	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	433	71
	B - Chaffron Way	132	1	354	258
	C - Snelshall Street (S)	449	232	1	97
	D - Hayton Way	52	121	56	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.16	0.72	0.12
	B - Chaffron Way	0.18	0.00	0.48	0.35
	C - Snelshall Street (S)	0.58	0.30	0.00	0.12
	D - Hayton Way	0.23	0.53	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	0	0	0
	D - Hayton Way	0	0	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.000	1.005	1.188
	B - Chaffron Way	1.018	1.000	1.000	1.000
	C - Snelshall Street (S)	1.003	1.005	1.000	1.000
	D - Hayton Way	1.000	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 - Snelshall Street (N)	453	465
	B - Chaffron Way	561	563
	C - Snelshall Street (S)	586	588

	D - Hayton Way	172	172
17:00-17:15	A - Snelshall Street (N)	541	555
	B - Chaffron Way	670	672
	C - Snelshall Street (S)	700	702
	D - Hayton Way	206	206
17:15-17:30	A - Snelshall Street (N)	662	680
	B - Chaffron Way	821	823
	C - Snelshall Street (S)	858	860
	D - Hayton Way	252	252
17:30-17:45	A - Snelshall Street (N)	662	680
	B - Chaffron Way	821	823
	C - Snelshall Street (S)	858	860
	D - Hayton Way	252	252
17:45-18:00	A - Snelshall Street (N)	541	555
	B - Chaffron Way	670	672
	C - Snelshall Street (S)	700	702
	D - Hayton Way	206	206
18:00-18:15	A - Snelshall Street (N)	453	465
	B - Chaffron Way	561	563
	C - Snelshall Street (S)	586	588
	D - Hayton Way	172	172

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 - Snelshall Street (N)	0.50	5.42	1.0	A	552	828
B - Chaffron Way	1.32	570.72	110.2	F	684	1026
C - Snelshall Street (S)	0.77	13.60	3.2	B	715	1072
D - Hayton Way	0.18	3.16	0.2	A	210	315

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 - Snelshall Street (N)	453	113	308	1408	0.322	451	473	0.0	0.5	3.754	A
B - Chaffron Way	561	140	421	727	0.771	549	338	0.0	3.1	19.035	C
C - Snelshall Street (S)	586	147	342	1155	0.508	582	628	0.0	1.0	6.238	A
D - Hayton Way	172	43	608	1556	0.111	172	316	0.0	0.1	2.600	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 - Snelshall Street (N)	541	135	369	1374	0.394	540	563	0.5	0.6	4.315	A
B - Chaffron Way	670	167	504	684	0.980	637	405	3.1	11.3	55.454	F
C - Snelshall Street (S)	700	175	399	1126	0.622	698	742	1.0	1.6	8.362	A
D - Hayton Way	206	51	726	1480	0.139	206	371	0.1	0.2	2.824	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 - Snelshall Street (N)	662	166	450	1328	0.499	661	659	0.6	1.0	5.388	A
B - Chaffron Way	821	205	617	625	1.314	622	494	11.3	60.9	223.722	F
C - Snelshall Street (S)	858	214	405	1121	0.765	852	833	1.6	3.1	13.064	B
D - Hayton Way	252	63	858	1394	0.181	252	399	0.2	0.2	3.152	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 - Snelshall Street (N)	662	166	452	1327	0.499	662	663	1.0	1.0	5.417	A
B - Chaffron Way	821	205	618	624	1.315	624	496	60.9	110.2	489.221	F
C - Snelshall Street (S)	858	214	406	1121	0.765	857	835	3.1	3.2	13.603	B
D - Hayton Way	252	63	863	1391	0.181	252	401	0.2	0.2	3.161	A

17:45 - 18:00

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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 - Snelshall Street (N)	541	135	371	1372	0.394	542	574	1.0	0.7	4.346	A
B - Chaffron Way	670	167	506	683	0.981	677	408	110.2	108.5	570.722	F
C - Snelshall Street (S)	700	175	420	1115	0.628	706	763	3.2	1.7	8.911	A
D - Hayton Way	206	51	740	1471	0.140	206	386	0.2	0.2	2.848	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 - Snelshall Street (N)	453	113	310	1406	0.322	454	507	0.7	0.5	3.784	A
B - Chaffron Way	561	140	423	726	0.773	720	341	108.5	68.9	445.557	F
C - Snelshall Street (S)	586	147	432	1110	0.528	589	711	1.7	1.1	6.931	A
D - Hayton Way	172	43	645	1533	0.112	173	376	0.2	0.1	2.646	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	183.61	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 - Snelshall Street (N)		ONE HOUR	✓	945	100.000
B - Chaffron Way		ONE HOUR	✓	610	100.000
C - Snelshall Street (S)		ONE HOUR	✓	713	100.000
D - Hayton Way		ONE HOUR	✓	550	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	636	76
	B - Chaffron Way	73	2	383	151
	C - Snelshall Street (S)	366	294	1	52
	D - Hayton Way	93	332	124	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.25	0.67	0.08
	B - Chaffron Way	0.12	0.00	0.63	0.25
	C - Snelshall Street (S)	0.51	0.41	0.00	0.07
	D - Hayton Way	0.17	0.60	0.23	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.005	1.015	1.061
	B - Chaffron Way	1.047	1.000	1.025	1.033
	C - Snelshall Street (S)	1.022	1.016	1.000	1.118
	D - Hayton Way	1.074	1.044	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 - Snelshall Street (N)	711	723
	B - Chaffron Way	459	473
	C - Snelshall Street (S)	537	551

	D - Hayton Way	414	430
07:45-08:00	A - Snelshall Street (N)	849	863
	B - Chaffron Way	548	564
	C - Snelshall Street (S)	641	658
	D - Hayton Way	494	514
08:00-08:15	A - Snelshall Street (N)	1040	1057
	B - Chaffron Way	671	691
	C - Snelshall Street (S)	785	806
	D - Hayton Way	605	629
08:15-08:30	A - Snelshall Street (N)	1040	1057
	B - Chaffron Way	671	691
	C - Snelshall Street (S)	785	806
	D - Hayton Way	605	629
08:30-08:45	A - Snelshall Street (N)	849	863
	B - Chaffron Way	548	564
	C - Snelshall Street (S)	641	658
	D - Hayton Way	494	514
08:45-09:00	A - Snelshall Street (N)	711	723
	B - Chaffron Way	459	473
	C - Snelshall Street (S)	537	551
	D - Hayton Way	414	430

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 - Snelshall Street (N)	0.93	39.21	10.6	E	867	1301
B - Chaffron Way	1.46	770.76	121.0	F	560	839
C - Snelshall Street (S)	0.67	9.32	2.0	A	655	982
D - Hayton Way	0.44	4.65	0.8	A	505	757

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 - Snelshall Street (N)	711	178	565	1268	0.561	706	398	0.0	1.3	6.352	A
B - Chaffron Way	459	115	626	607	0.756	448	645	0.0	2.8	21.335	C
C - Snelshall Street (S)	537	134	223	1187	0.452	534	851	0.0	0.8	5.481	A
D - Hayton Way	414	103	550	1529	0.271	412	207	0.0	0.4	3.221	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 - Snelshall Street (N)	849	212	677	1204	0.706	845	473	1.3	2.3	9.924	A
B - Chaffron Way	548	137	750	545	1.006	511	772	2.8	12.1	71.049	F
C - Snelshall Street (S)	641	160	258	1170	0.548	640	1003	0.8	1.2	6.775	A
D - Hayton Way	494	124	656	1461	0.338	494	241	0.4	0.5	3.720	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 - Snelshall Street (N)	1040	260	827	1117	0.932	1013	560	2.3	9.0	29.369	D
B - Chaffron Way	671	168	902	468	1.435	466	939	12.1	63.4	309.803	F
C - Snelshall Street (S)	785	196	255	1171	0.671	782	1113	1.2	2.0	9.185	A
D - Hayton Way	605	151	783	1380	0.439	604	254	0.5	0.8	4.632	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 - Snelshall Street (N)	1040	260	829	1115	0.933	1034	561	9.0	10.6	39.208	E
B - Chaffron Way	671	168	918	460	1.460	460	946	63.4	116.4	673.272	F
C - Snelshall Street (S)	785	196	254	1171	0.670	785	1123	2.0	2.0	9.315	A
D - Hayton Way	605	151	785	1379	0.439	605	255	0.8	0.8	4.652	A

08:30 - 08:45

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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 - Snelshall Street (N)	849	212	680	1202	0.707	882	478	10.6	2.5	12.310	B
B - Chaffron Way	548	137	778	531	1.033	530	784	116.4	121.0	770.758	F
C - Snelshall Street (S)	641	160	268	1165	0.551	644	1039	2.0	1.2	6.958	A
D - Hayton Way	494	124	663	1457	0.339	495	249	0.8	0.5	3.748	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 - Snelshall Street (N)	711	178	569	1266	0.562	716	419	2.5	1.3	6.604	A
B - Chaffron Way	459	115	634	603	0.761	598	651	121.0	86.2	625.031	F
C - Snelshall Street (S)	537	134	280	1159	0.464	539	952	1.2	0.9	5.818	A
D - Hayton Way	414	103	573	1514	0.274	415	245	0.5	0.4	3.279	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	281.04	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 - Snelshall Street (N)		ONE HOUR	✓	717	100.000
B - Chaffron Way		ONE HOUR	✓	754	100.000
C - Snelshall Street (S)		ONE HOUR	✓	883	100.000
D - Hayton Way		ONE HOUR	✓	229	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	548	71
	B - Chaffron Way	132	1	363	258
	C - Snelshall Street (S)	541	244	1	97
	D - Hayton Way	52	121	56	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.14	0.76	0.10
	B - Chaffron Way	0.17	0.00	0.48	0.34
	C - Snelshall Street (S)	0.61	0.28	0.00	0.11
	D - Hayton Way	0.23	0.53	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.000	1.005	1.188
	B - Chaffron Way	1.018	1.000	1.000	1.000
	C - Snelshall Street (S)	1.003	1.005	1.000	1.000
	D - Hayton Way	1.000	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 - Snelshall Street (N)	540	552
	B - Chaffron Way	568	569
	C - Snelshall Street (S)	665	667

	D - Hayton Way	172	172
17:00-17:15	A - Snelshall Street (N)	645	659
	B - Chaffron Way	678	680
	C - Snelshall Street (S)	794	796
	D - Hayton Way	206	206
17:15-17:30	A - Snelshall Street (N)	789	807
	B - Chaffron Way	830	833
	C - Snelshall Street (S)	972	975
	D - Hayton Way	252	252
17:30-17:45	A - Snelshall Street (N)	789	807
	B - Chaffron Way	830	833
	C - Snelshall Street (S)	972	975
	D - Hayton Way	252	252
17:45-18:00	A - Snelshall Street (N)	645	659
	B - Chaffron Way	678	680
	C - Snelshall Street (S)	794	796
	D - Hayton Way	206	206
18:00-18:15	A - Snelshall Street (N)	540	552
	B - Chaffron Way	568	569
	C - Snelshall Street (S)	665	667
	D - Hayton Way	172	172

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 - Snelshall Street (N)	0.60	6.73	1.5	A	658	987
B - Chaffron Way	1.49	935.63	168.7	F	692	1038
C - Snelshall Street (S)	0.85	20.97	5.4	C	810	1215
D - Hayton Way	0.19	3.35	0.2	A	210	315

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 - Snelshall Street (N)	540	135	317	1407	0.384	537	540	0.0	0.6	4.126	A
B - Chaffron Way	568	142	507	683	0.831	551	347	0.0	4.2	24.794	C
C - Snelshall Street (S)	665	166	340	1157	0.575	659	718	0.0	1.3	7.167	A
D - Hayton Way	172	43	685	1507	0.114	172	314	0.0	0.1	2.697	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 - Snelshall Street (N)	645	161	379	1372	0.470	643	639	0.6	0.9	4.933	A
B - Chaffron Way	678	169	607	631	1.075	611	415	4.2	20.8	92.312	F
C - Snelshall Street (S)	794	198	382	1135	0.700	790	837	1.3	2.2	10.336	B
D - Hayton Way	206	51	812	1424	0.145	206	360	0.1	0.2	2.955	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 - Snelshall Street (N)	789	197	462	1326	0.595	787	745	0.9	1.4	6.657	A
B - Chaffron Way	830	208	743	560	1.483	559	506	20.8	88.6	365.934	F
C - Snelshall Street (S)	972	243	369	1140	0.853	961	933	2.2	5.1	18.990	C
D - Hayton Way	252	63	955	1331	0.189	252	375	0.2	0.2	3.337	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 - Snelshall Street (N)	789	197	465	1324	0.596	789	751	1.4	1.5	6.731	A
B - Chaffron Way	830	208	745	559	1.486	559	509	88.6	156.5	756.288	F
C - Snelshall Street (S)	972	243	369	1140	0.853	971	935	5.1	5.4	20.965	C
D - Hayton Way	252	63	964	1325	0.190	252	376	0.2	0.2	3.355	A

17:45 - 18:00

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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 - Snelshall Street (N)	645	161	384	1370	0.471	647	651	1.5	0.9	4.995	A
B - Chaffron Way	678	169	610	629	1.077	629	420	156.5	168.7	935.635	F
C - Snelshall Street (S)	794	198	391	1130	0.703	806	848	5.4	2.5	11.480	B
D - Hayton Way	206	51	829	1413	0.146	206	368	0.2	0.2	2.983	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 - Snelshall Street (N)	540	135	320	1406	0.384	541	568	0.9	0.6	4.169	A
B - Chaffron Way	568	142	510	681	0.833	677	350	168.7	141.2	824.223	F
C - Snelshall Street (S)	665	166	406	1124	0.592	669	782	2.5	1.5	7.981	A
D - Hayton Way	172	43	715	1487	0.116	173	359	0.2	0.1	2.739	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	174.44	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 - Snelshall Street (N)		ONE HOUR	✓	934	100.000
B - Chaffron Way		ONE HOUR	✓	608	100.000
C - Snelshall Street (S)		ONE HOUR	✓	697	100.000
D - Hayton Way		ONE HOUR	✓	550	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	625	76
	B - Chaffron Way	73	2	381	151
	C - Snelshall Street (S)	351	293	1	52
	D - Hayton Way	93	332	124	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.25	0.67	0.08
	B - Chaffron Way	0.12	0.00	0.63	0.25
	C - Snelshall Street (S)	0.50	0.42	0.00	0.07
	D - Hayton Way	0.17	0.60	0.23	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.005	1.015	1.061
	B - Chaffron Way	1.047	1.000	1.025	1.033
	C - Snelshall Street (S)	1.022	1.016	1.000	1.118
	D - Hayton Way	1.074	1.044	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 - Snelshall Street (N)	703	715
	B - Chaffron Way	458	471
	C - Snelshall Street (S)	525	539

	D - Hayton Way	414	430
07:45-08:00	A - Snelshall Street (N)	840	853
	B - Chaffron Way	546	563
	C - Snelshall Street (S)	627	644
	D - Hayton Way	494	514
08:00-08:15	A - Snelshall Street (N)	1028	1045
	B - Chaffron Way	669	689
	C - Snelshall Street (S)	768	788
	D - Hayton Way	605	629
08:15-08:30	A - Snelshall Street (N)	1028	1045
	B - Chaffron Way	669	689
	C - Snelshall Street (S)	768	788
	D - Hayton Way	605	629
08:30-08:45	A - Snelshall Street (N)	840	853
	B - Chaffron Way	546	563
	C - Snelshall Street (S)	627	644
	D - Hayton Way	494	514
08:45-09:00	A - Snelshall Street (N)	703	715
	B - Chaffron Way	458	471
	C - Snelshall Street (S)	525	539
	D - Hayton Way	414	430

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 - Snelshall Street (N)	0.92	35.44	9.5	E	857	1285
B - Chaffron Way	1.44	729.81	114.4	F	558	837
C - Snelshall Street (S)	0.66	8.94	1.9	A	640	960
D - Hayton Way	0.44	4.59	0.8	A	505	757

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 - Snelshall Street (N)	703	176	564	1269	0.554	698	386	0.0	1.2	6.259	A
B - Chaffron Way	458	114	618	611	0.749	447	644	0.0	2.7	20.721	C
C - Snelshall Street (S)	525	131	224	1187	0.442	522	841	0.0	0.8	5.388	A
D - Hayton Way	414	103	538	1536	0.269	412	207	0.0	0.4	3.199	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 - Snelshall Street (N)	840	210	676	1204	0.697	836	460	1.2	2.2	9.660	A
B - Chaffron Way	546	137	740	550	0.994	512	771	2.7	11.2	66.806	F
C - Snelshall Street (S)	627	157	259	1169	0.536	626	993	0.8	1.1	6.606	A
D - Hayton Way	494	124	642	1470	0.336	494	242	0.4	0.5	3.686	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 - Snelshall Street (N)	1028	257	826	1117	0.920	1004	544	2.2	8.3	27.442	D
B - Chaffron Way	669	167	892	473	1.415	471	939	11.2	60.8	293.229	F
C - Snelshall Street (S)	768	192	258	1170	0.656	765	1105	1.1	1.9	8.830	A
D - Hayton Way	605	151	766	1391	0.435	604	256	0.5	0.8	4.571	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 - Snelshall Street (N)	1028	257	826	1116	0.921	1023	545	8.3	9.5	35.437	E
B - Chaffron Way	669	167	906	465	1.438	465	945	60.8	111.8	640.524	F
C - Snelshall Street (S)	768	192	257	1170	0.656	768	1115	1.9	1.9	8.944	A
D - Hayton Way	605	151	768	1390	0.436	605	256	0.8	0.8	4.589	A

08:30 - 08:45

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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 - Snelshall Street (N)	840	210	679	1202	0.698	868	466	9.5	2.4	11.608	B
B - Chaffron Way	546	137	765	537	1.017	536	782	111.8	114.4	729.806	F
C - Snelshall Street (S)	627	157	271	1163	0.539	630	1030	1.9	1.2	6.784	A
D - Hayton Way	494	124	649	1465	0.337	495	251	0.8	0.5	3.714	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 - Snelshall Street (N)	703	176	569	1266	0.555	708	408	2.4	1.3	6.494	A
B - Chaffron Way	458	114	626	607	0.753	602	650	114.4	78.3	577.728	F
C - Snelshall Street (S)	525	131	282	1157	0.454	526	946	1.2	0.8	5.719	A
D - Hayton Way	414	103	562	1521	0.272	415	247	0.5	0.4	3.257	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	215.60	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 - Snelshall Street (N)		ONE HOUR	✓	646	100.000
B - Chaffron Way		ONE HOUR	✓	749	100.000
C - Snelshall Street (S)		ONE HOUR	✓	867	100.000
D - Hayton Way		ONE HOUR	✓	229	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	477	71
	B - Chaffron Way	132	1	358	258
	C - Snelshall Street (S)	527	242	1	97
	D - Hayton Way	52	121	56	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.15	0.74	0.11
	B - Chaffron Way	0.18	0.00	0.48	0.34
	C - Snelshall Street (S)	0.61	0.28	0.00	0.11
	D - Hayton Way	0.23	0.53	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.000	1.005	1.188
	B - Chaffron Way	1.018	1.000	1.000	1.000
	C - Snelshall Street (S)	1.003	1.005	1.000	1.000
	D - Hayton Way	1.000	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 - Snelshall Street (N)	486	498
	B - Chaffron Way	564	566
	C - Snelshall Street (S)	653	655

	D - Hayton Way	172	172
17:00-17:15	A - Snelshall Street (N)	581	595
	B - Chaffron Way	673	675
	C - Snelshall Street (S)	779	782
	D - Hayton Way	206	206
17:15-17:30	A - Snelshall Street (N)	711	729
	B - Chaffron Way	825	827
	C - Snelshall Street (S)	955	957
	D - Hayton Way	252	252
17:30-17:45	A - Snelshall Street (N)	711	729
	B - Chaffron Way	825	827
	C - Snelshall Street (S)	955	957
	D - Hayton Way	252	252
17:45-18:00	A - Snelshall Street (N)	581	595
	B - Chaffron Way	673	675
	C - Snelshall Street (S)	779	782
	D - Hayton Way	206	206
18:00-18:15	A - Snelshall Street (N)	486	498
	B - Chaffron Way	564	566
	C - Snelshall Street (S)	653	655
	D - Hayton Way	172	172

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 - Snelshall Street (N)	0.54	5.89	1.2	A	593	889
B - Chaffron Way	1.38	691.13	130.6	F	687	1031
C - Snelshall Street (S)	0.85	20.28	5.1	C	796	1193
D - Hayton Way	0.19	3.34	0.2	A	210	315

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 - Snelshall Street (N)	486	122	315	1406	0.346	484	530	0.0	0.5	3.899	A
B - Chaffron Way	564	141	454	710	0.794	550	345	0.0	3.4	20.970	C
C - Snelshall Street (S)	653	163	341	1156	0.565	648	663	0.0	1.3	7.019	A
D - Hayton Way	172	43	674	1514	0.114	172	315	0.0	0.1	2.682	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 - Snelshall Street (N)	581	145	377	1371	0.424	580	630	0.5	0.7	4.547	A
B - Chaffron Way	673	168	544	663	1.015	629	413	3.4	14.4	67.554	F
C - Snelshall Street (S)	779	195	393	1129	0.691	776	780	1.3	2.2	10.098	B
D - Hayton Way	206	51	802	1430	0.144	206	367	0.1	0.2	2.939	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 - Snelshall Street (N)	711	178	460	1324	0.537	710	737	0.7	1.1	5.841	A
B - Chaffron Way	825	206	665	600	1.375	598	504	14.4	71.0	271.265	F
C - Snelshall Street (S)	955	239	391	1129	0.846	944	872	2.2	4.9	18.467	C
D - Hayton Way	252	63	946	1337	0.189	252	390	0.2	0.2	3.318	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 - Snelshall Street (N)	711	178	463	1323	0.538	711	744	1.1	1.2	5.887	A
B - Chaffron Way	825	206	667	599	1.377	599	507	71.0	127.5	583.871	F
C - Snelshall Street (S)	955	239	392	1128	0.846	954	874	4.9	5.1	20.279	C
D - Hayton Way	252	63	954	1331	0.189	252	391	0.2	0.2	3.335	A

17:45 - 18:00

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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 - Snelshall Street (N)	581	145	382	1368	0.424	582	645	1.2	0.7	4.592	A
B - Chaffron Way	673	168	546	662	1.017	661	418	127.5	130.6	691.131	F
C - Snelshall Street (S)	779	195	410	1120	0.696	791	797	5.1	2.4	11.254	B
D - Hayton Way	206	51	820	1418	0.145	206	380	0.2	0.2	2.969	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 - Snelshall Street (N)	486	122	318	1404	0.346	487	563	0.7	0.5	3.930	A
B - Chaffron Way	564	141	457	709	0.795	704	349	130.6	95.7	579.986	F
C - Snelshall Street (S)	653	163	422	1116	0.585	656	739	2.4	1.4	7.906	A
D - Hayton Way	172	43	709	1491	0.116	173	369	0.2	0.1	2.732	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	123.24	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 - Snelshall Street (N)		ONE HOUR	✓	839	100.000
B - Chaffron Way		ONE HOUR	✓	610	100.000
C - Snelshall Street (S)		ONE HOUR	✓	618	100.000
D - Hayton Way		ONE HOUR	✓	550	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	530	76
	B - Chaffron Way	73	2	383	151
	C - Snelshall Street (S)	271	294	1	52
	D - Hayton Way	93	332	124	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.28	0.63	0.09
	B - Chaffron Way	0.12	0.00	0.63	0.25
	C - Snelshall Street (S)	0.44	0.48	0.00	0.08
	D - Hayton Way	0.17	0.60	0.23	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.005	1.015	1.061
	B - Chaffron Way	1.047	1.000	1.025	1.033
	C - Snelshall Street (S)	1.022	1.016	1.000	1.118
	D - Hayton Way	1.074	1.044	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 - Snelshall Street (N)	632	642
	B - Chaffron Way	459	473
	C - Snelshall Street (S)	466	478

	D - Hayton Way	414	430
07:45-08:00	A - Snelshall Street (N)	754	766
	B - Chaffron Way	548	564
	C - Snelshall Street (S)	556	571
	D - Hayton Way	494	514
08:00-08:15	A - Snelshall Street (N)	924	939
	B - Chaffron Way	671	691
	C - Snelshall Street (S)	681	700
	D - Hayton Way	605	629
08:15-08:30	A - Snelshall Street (N)	924	939
	B - Chaffron Way	671	691
	C - Snelshall Street (S)	681	700
	D - Hayton Way	605	629
08:30-08:45	A - Snelshall Street (N)	754	766
	B - Chaffron Way	548	564
	C - Snelshall Street (S)	556	571
	D - Hayton Way	494	514
08:45-09:00	A - Snelshall Street (N)	632	642
	B - Chaffron Way	459	473
	C - Snelshall Street (S)	466	478
	D - Hayton Way	414	430

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 - Snelshall Street (N)	0.83	18.50	4.6	C	770	1155
B - Chaffron Way	1.30	490.86	84.9	F	560	839
C - Snelshall Street (S)	0.59	7.51	1.4	A	567	851
D - Hayton Way	0.42	4.31	0.7	A	505	757

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 - Snelshall Street (N)	632	158	565	1268	0.498	628	327	0.0	1.0	5.589	A
B - Chaffron Way	459	115	548	647	0.710	450	645	0.0	2.3	17.561	C
C - Snelshall Street (S)	466	116	224	1186	0.393	463	773	0.0	0.6	4.962	A
D - Hayton Way	414	103	480	1574	0.263	413	207	0.0	0.4	3.096	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 - Snelshall Street (N)	754	189	677	1203	0.627	751	390	1.0	1.6	7.918	A
B - Chaffron Way	548	137	656	592	0.926	528	773	2.3	7.3	46.020	E
C - Snelshall Street (S)	556	139	265	1166	0.477	555	919	0.6	0.9	5.885	A
D - Hayton Way	494	124	574	1514	0.327	494	246	0.4	0.5	3.527	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 - Snelshall Street (N)	924	231	828	1116	0.828	913	462	1.6	4.3	16.888	C
B - Chaffron Way	671	168	797	520	1.290	516	943	7.3	46.1	203.717	F
C - Snelshall Street (S)	681	170	275	1160	0.587	679	1039	0.9	1.4	7.445	A
D - Hayton Way	605	151	686	1442	0.420	604	268	0.5	0.7	4.292	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 - Snelshall Street (N)	924	231	830	1115	0.828	923	463	4.3	4.6	18.500	C
B - Chaffron Way	671	168	805	517	1.300	516	948	46.1	84.9	450.830	F
C - Snelshall Street (S)	681	170	276	1160	0.587	681	1045	1.4	1.4	7.511	A
D - Hayton Way	605	151	687	1441	0.420	605	269	0.7	0.7	4.306	A

08:30 - 08:45

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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 - Snelshall Street (N)	754	189	680	1202	0.627	765	398	4.6	1.7	8.454	A
B - Chaffron Way	548	137	666	587	0.934	580	779	84.9	76.9	490.861	F
C - Snelshall Street (S)	556	139	285	1155	0.481	558	961	1.4	0.9	6.043	A
D - Hayton Way	494	124	583	1508	0.328	495	260	0.7	0.5	3.557	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 - Snelshall Street (N)	632	158	569	1266	0.499	634	351	1.7	1.0	5.727	A
B - Chaffron Way	459	115	553	644	0.713	636	651	76.9	32.7	314.253	F
C - Snelshall Street (S)	466	116	294	1151	0.405	467	895	0.9	0.7	5.269	A
D - Hayton Way	414	103	506	1556	0.266	414	254	0.5	0.4	3.153	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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	195.09	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 - Snelshall Street (N)		ONE HOUR	✓	596	100.000
B - Chaffron Way		ONE HOUR	✓	754	100.000
C - Snelshall Street (S)		ONE HOUR	✓	761	100.000
D - Hayton Way		ONE HOUR	✓	229	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	427	71
	B - Chaffron Way	132	1	363	258
	C - Snelshall Street (S)	419	244	1	97
	D - Hayton Way	52	121	56	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.16	0.72	0.12
	B - Chaffron Way	0.17	0.00	0.48	0.34
	C - Snelshall Street (S)	0.55	0.32	0.00	0.13
	D - Hayton Way	0.23	0.53	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.005	1.005	1.188
	B - Chaffron Way	1.018	1.000	1.000	1.000
	C - Snelshall Street (S)	1.003	1.005	1.000	1.000
	D - Hayton Way	1.000	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 - Snelshall Street (N)	449	461
	B - Chaffron Way	568	569
	C - Snelshall Street (S)	573	575

	D - Hayton Way	172	172
17:00-17:15	A - Snelshall Street (N)	536	550
	B - Chaffron Way	678	680
	C - Snelshall Street (S)	684	686
	D - Hayton Way	206	206
17:15-17:30	A - Snelshall Street (N)	656	674
	B - Chaffron Way	830	833
	C - Snelshall Street (S)	838	840
	D - Hayton Way	252	252
17:30-17:45	A - Snelshall Street (N)	656	674
	B - Chaffron Way	830	833
	C - Snelshall Street (S)	838	840
	D - Hayton Way	252	252
17:45-18:00	A - Snelshall Street (N)	536	550
	B - Chaffron Way	678	680
	C - Snelshall Street (S)	684	686
	D - Hayton Way	206	206
18:00-18:15	A - Snelshall Street (N)	449	461
	B - Chaffron Way	568	569
	C - Snelshall Street (S)	573	575
	D - Hayton Way	172	172

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 - Snelshall Street (N)	0.50	5.44	1.0	A	547	820
B - Chaffron Way	1.32	590.86	114.0	F	692	1038
C - Snelshall Street (S)	0.75	12.63	2.9	B	698	1048
D - Hayton Way	0.18	3.12	0.2	A	210	315

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 - Snelshall Street (N)	449	112	317	1401	0.320	447	450	0.0	0.5	3.766	A
B - Chaffron Way	568	142	417	730	0.778	555	347	0.0	3.2	19.406	C
C - Snelshall Street (S)	573	143	342	1155	0.496	569	630	0.0	1.0	6.099	A
D - Hayton Way	172	43	595	1565	0.110	172	316	0.0	0.1	2.584	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 - Snelshall Street (N)	536	134	379	1366	0.392	535	536	0.5	0.6	4.327	A
B - Chaffron Way	678	169	499	686	0.987	643	416	3.2	12.0	57.605	F
C - Snelshall Street (S)	684	171	398	1126	0.607	682	744	1.0	1.5	8.060	A
D - Hayton Way	206	51	709	1491	0.138	206	371	0.1	0.2	2.801	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 - Snelshall Street (N)	656	164	464	1319	0.497	655	626	0.6	1.0	5.408	A
B - Chaffron Way	830	208	611	628	1.322	625	508	12.0	63.2	230.659	F
C - Snelshall Street (S)	838	209	403	1122	0.747	833	833	1.5	2.8	12.213	B
D - Hayton Way	252	63	838	1407	0.179	252	398	0.2	0.2	3.117	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 - Snelshall Street (N)	656	164	465	1318	0.498	656	629	1.0	1.0	5.437	A
B - Chaffron Way	830	208	612	627	1.324	627	510	63.2	114.0	503.129	F
C - Snelshall Street (S)	838	209	404	1122	0.747	838	834	2.8	2.9	12.629	B
D - Hayton Way	252	63	843	1404	0.180	252	399	0.2	0.2	3.125	A

17:45 - 18:00

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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 - Snelshall Street (N)	536	134	382	1365	0.393	537	546	1.0	0.7	4.357	A
B - Chaffron Way	678	169	501	686	0.989	679	418	114.0	113.8	590.863	F
C - Snelshall Street (S)	684	171	417	1117	0.613	689	763	2.9	1.6	8.513	A
D - Hayton Way	206	51	722	1482	0.139	206	384	0.2	0.2	2.820	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 - Snelshall Street (N)	449	112	320	1400	0.321	449	483	0.7	0.5	3.792	A
B - Chaffron Way	568	142	419	728	0.779	722	350	113.8	75.2	472.681	F
C - Snelshall Street (S)	573	143	429	1112	0.515	575	712	1.6	1.1	6.735	A
D - Hayton Way	172	43	630	1542	0.112	173	374	0.2	0.1	2.628	A

2033 Base + CD + SP (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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	70.00	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
D21	2033 Base + CD + SP (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 - Snelshall Street (N)		ONE HOUR	✓	745	100.000
B - Chaffron Way		ONE HOUR	✓	594	100.000
C - Snelshall Street (S)		ONE HOUR	✓	497	100.000
D - Hayton Way		ONE HOUR	✓	550	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	233	436	76
	B - Chaffron Way	73	2	367	151
	C - Snelshall Street (S)	161	283	1	52
	D - Hayton Way	93	332	124	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.31	0.59	0.10
	B - Chaffron Way	0.12	0.00	0.62	0.25
	C - Snelshall Street (S)	0.32	0.57	0.00	0.11
	D - Hayton Way	0.17	0.60	0.23	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	1	2	6
	B - Chaffron Way	5	0	3	3
	C - Snelshall Street (S)	2	2	0	12
	D - Hayton Way	7	4	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.005	1.015	1.061
	B - Chaffron Way	1.047	1.000	1.025	1.033
	C - Snelshall Street (S)	1.022	1.016	1.000	1.118
	D - Hayton Way	1.074	1.044	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 - Snelshall Street (N)	561	570
	B - Chaffron Way	447	460
	C - Snelshall Street (S)	374	385

	D - Hayton Way	414	430
07:45-08:00	A - Snelshall Street (N)	670	681
	B - Chaffron Way	534	550
	C - Snelshall Street (S)	447	460
	D - Hayton Way	494	514
08:00-08:15	A - Snelshall Street (N)	820	834
	B - Chaffron Way	654	673
	C - Snelshall Street (S)	548	563
	D - Hayton Way	605	629
08:15-08:30	A - Snelshall Street (N)	820	834
	B - Chaffron Way	654	673
	C - Snelshall Street (S)	548	563
	D - Hayton Way	605	629
08:30-08:45	A - Snelshall Street (N)	670	681
	B - Chaffron Way	534	550
	C - Snelshall Street (S)	447	460
	D - Hayton Way	494	514
08:45-09:00	A - Snelshall Street (N)	561	570
	B - Chaffron Way	447	460
	C - Snelshall Street (S)	374	385
	D - Hayton Way	414	430

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 - Snelshall Street (N)	0.73	11.90	2.7	B	684	1025
B - Chaffron Way	1.15	257.28	49.9	F	545	817
C - Snelshall Street (S)	0.48	6.01	0.9	A	456	685
D - Hayton Way	0.40	3.93	0.7	A	505	757

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 - Snelshall Street (N)	561	140	557	1272	0.441	558	245	0.0	0.8	5.015	A
B - Chaffron Way	447	112	478	682	0.655	440	637	0.0	1.8	14.457	B
C - Snelshall Street (S)	374	94	225	1184	0.316	373	692	0.0	0.5	4.426	A
D - Hayton Way	414	103	390	1631	0.254	413	208	0.0	0.3	2.952	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 - Snelshall Street (N)	670	167	667	1209	0.554	668	293	0.8	1.2	6.635	A
B - Chaffron Way	534	133	572	634	0.841	523	763	1.8	4.4	29.924	D
C - Snelshall Street (S)	447	112	268	1162	0.385	446	827	0.5	0.6	5.025	A
D - Hayton Way	494	124	466	1582	0.312	494	248	0.3	0.5	3.305	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 - Snelshall Street (N)	820	205	817	1122	0.731	815	348	1.2	2.6	11.495	B
B - Chaffron Way	654	163	698	571	1.146	559	933	4.4	28.1	122.947	F
C - Snelshall Street (S)	548	137	297	1148	0.477	547	960	0.6	0.9	5.976	A
D - Hayton Way	605	151	560	1522	0.398	605	283	0.5	0.7	3.920	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 - Snelshall Street (N)	820	205	818	1122	0.731	820	350	2.6	2.7	11.904	B
B - Chaffron Way	654	163	702	569	1.150	566	936	28.1	49.9	257.275	F
C - Snelshall Street (S)	548	137	300	1146	0.478	548	968	0.9	0.9	6.015	A
D - Hayton Way	605	151	562	1521	0.398	605	285	0.7	0.7	3.931	A

08:30 - 08:45

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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 - Snelshall Street (N)	670	167	670	1207	0.555	675	305	2.7	1.3	6.832	A
B - Chaffron Way	534	133	577	632	0.845	619	768	49.9	28.6	230.325	F
C - Snelshall Street (S)	447	112	305	1143	0.391	448	891	0.9	0.6	5.186	A
D - Hayton Way	494	124	480	1573	0.314	495	274	0.7	0.5	3.340	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 - Snelshall Street (N)	561	140	561	1270	0.441	563	260	1.3	0.8	5.101	A
B - Chaffron Way	447	112	481	680	0.657	553	642	28.6	2.1	49.905	E
C - Snelshall Street (S)	374	94	269	1162	0.322	375	766	0.6	0.5	4.579	A
D - Hayton Way	414	103	406	1620	0.255	414	238	0.5	0.3	2.988	A

2033 Base + CD + SP (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
J12	Kingsmead Roundabout	Standard Roundabout		A, B, C, D	116.85	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
D22	2033 Base + CD + SP (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 - Snelshall Street (N)		ONE HOUR	✓	480	100.000
B - Chaffron Way		ONE HOUR	✓	745	100.000
C - Snelshall Street (S)		ONE HOUR	✓	656	100.000
D - Hayton Way		ONE HOUR	✓	229	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1	97	311	71
	B - Chaffron Way	132	1	354	258
	C - Snelshall Street (S)	326	232	1	97
	D - Hayton Way	52	121	56	0

Proportions

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0.00	0.20	0.65	0.15
	B - Chaffron Way	0.18	0.00	0.48	0.35
	C - Snelshall Street (S)	0.50	0.35	0.00	0.15
	D - Hayton Way	0.23	0.53	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	0	0	1	19
	B - Chaffron Way	2	0	0	0
	C - Snelshall Street (S)	0	1	0	0
	D - Hayton Way	0	0	0	0

Average PCU Per Veh

		To			
		A - Snelshall Street (N)	B - Chaffron Way	C - Snelshall Street (S)	D - Hayton Way
From	A - Snelshall Street (N)	1.000	1.005	1.005	1.188
	B - Chaffron Way	1.018	1.000	1.000	1.000
	C - Snelshall Street (S)	1.003	1.005	1.000	1.000
	D - Hayton Way	1.000	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 - Snelshall Street (N)	361	373
	B - Chaffron Way	561	563
	C - Snelshall Street (S)	494	495

	D - Hayton Way	172	172
17:00-17:15	A - Snelshall Street (N)	431	445
	B - Chaffron Way	670	672
	C - Snelshall Street (S)	590	592
	D - Hayton Way	206	206
17:15-17:30	A - Snelshall Street (N)	528	545
	B - Chaffron Way	820	823
	C - Snelshall Street (S)	722	725
	D - Hayton Way	252	252
17:30-17:45	A - Snelshall Street (N)	528	545
	B - Chaffron Way	820	823
	C - Snelshall Street (S)	722	725
	D - Hayton Way	252	252
17:45-18:00	A - Snelshall Street (N)	431	445
	B - Chaffron Way	670	672
	C - Snelshall Street (S)	590	592
	D - Hayton Way	206	206
18:00-18:15	A - Snelshall Street (N)	361	373
	B - Chaffron Way	561	563
	C - Snelshall Street (S)	494	495
	D - Hayton Way	172	172

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 - Snelshall Street (N)	0.40	4.55	0.7	A	440	661
B - Chaffron Way	1.18	320.78	72.6	F	684	1025
C - Snelshall Street (S)	0.65	9.45	1.9	A	602	903
D - Hayton Way	0.17	2.95	0.2	A	210	315

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 - Snelshall Street (N)	361	90	308	1399	0.258	360	381	0.0	0.3	3.459	A
B - Chaffron Way	561	140	330	774	0.724	551	338	0.0	2.5	15.512	C
C - Snelshall Street (S)	494	123	343	1155	0.428	491	538	0.0	0.7	5.400	A
D - Hayton Way	172	43	517	1616	0.107	172	317	0.0	0.1	2.493	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 - Snelshall Street (N)	431	108	369	1365	0.316	431	456	0.3	0.5	3.852	A
B - Chaffron Way	670	167	395	740	0.905	653	405	2.5	6.8	35.640	E
C - Snelshall Street (S)	590	147	407	1122	0.526	588	640	0.7	1.1	6.731	A
D - Hayton Way	206	51	619	1549	0.133	206	377	0.1	0.2	2.678	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 - Snelshall Street (N)	528	132	451	1319	0.401	528	537	0.5	0.7	4.541	A
B - Chaffron Way	820	205	483	693	1.183	685	495	6.8	40.4	139.562	F
C - Snelshall Street (S)	722	181	439	1105	0.654	719	730	1.1	1.8	9.272	A
D - Hayton Way	252	63	736	1473	0.171	252	422	0.2	0.2	2.948	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 - Snelshall Street (N)	528	132	452	1319	0.401	528	540	0.7	0.7	4.554	A
B - Chaffron Way	820	205	484	693	1.184	692	497	40.4	72.6	301.379	F
C - Snelshall Street (S)	722	181	442	1103	0.655	722	733	1.8	1.9	9.447	A
D - Hayton Way	252	63	740	1470	0.171	252	424	0.2	0.2	2.954	A

17:45 - 18:00

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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 - Snelshall Street (N)	431	108	371	1364	0.316	432	471	0.7	0.5	3.867	A
B - Chaffron Way	670	167	396	739	0.906	729	407	72.6	57.7	320.779	F
C - Snelshall Street (S)	590	147	448	1102	0.535	593	678	1.9	1.2	7.113	A
D - Hayton Way	206	51	636	1538	0.134	206	404	0.2	0.2	2.702	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 - Snelshall Street (N)	361	90	310	1398	0.259	362	421	0.5	0.4	3.478	A
B - Chaffron Way	561	140	331	773	0.725	760	341	57.7	7.9	162.624	F
C - Snelshall Street (S)	494	123	453	1100	0.449	495	638	1.2	0.8	5.972	A
D - Hayton Way	172	43	558	1589	0.109	173	390	0.2	0.1	2.541	A

Junctions 9
ARCADY 9 - Roundabout Module
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Report generation date: 08/01/2021 11:37:26

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

Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Tattenhoe Street (N)	D1	2.9	17.78	0.75	C
B - Chaffron Way (E)		3.6	24.72	0.79	C
C - Tattenhoe Street (S)		6.0	23.77	0.87	C
D - Chaffron Way (W)		1.4	6.40	0.58	A
2033 Base					
A - Tattenhoe Street (N)	D13	57.4	275.31	1.18	F
B - Chaffron Way (E)		30.6	150.11	1.06	F
C - Tattenhoe Street (S)		43.5	130.51	1.06	F
D - Chaffron Way (W)		8.1	26.28	0.90	D
2033 Base + CD + D					
A - Tattenhoe Street (N)	D15	62.9	298.49	1.20	F
B - Chaffron Way (E)		31.3	153.06	1.06	F
C - Tattenhoe Street (S)		46.7	138.45	1.07	F
D - Chaffron Way (W)		8.3	26.89	0.91	D
2033 Base + CD + D with TP					
A - Tattenhoe Street (N)	D17	64.2	303.76	1.20	F
B - Chaffron Way (E)		31.4	153.56	1.06	F
C - Tattenhoe Street (S)		46.8	138.65	1.07	F
D - Chaffron Way (W)		8.3	26.87	0.91	D
2033 Base + CD + D - ST					
A - Tattenhoe Street (N)	D19	64.8	306.23	1.20	F
B - Chaffron Way (E)		31.5	154.32	1.06	F
C - Tattenhoe Street (S)		49.2	144.73	1.07	F
D - Chaffron Way (W)		8.4	27.10	0.91	D
2033 Base + CD + SP (ST)					
A - Tattenhoe Street (N)	D21	59.0	282.14	1.18	F
B - Chaffron Way (E)		30.8	150.84	1.06	F
C - Tattenhoe Street (S)		46.0	136.77	1.07	F
D - Chaffron Way (W)		8.2	26.52	0.90	D

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

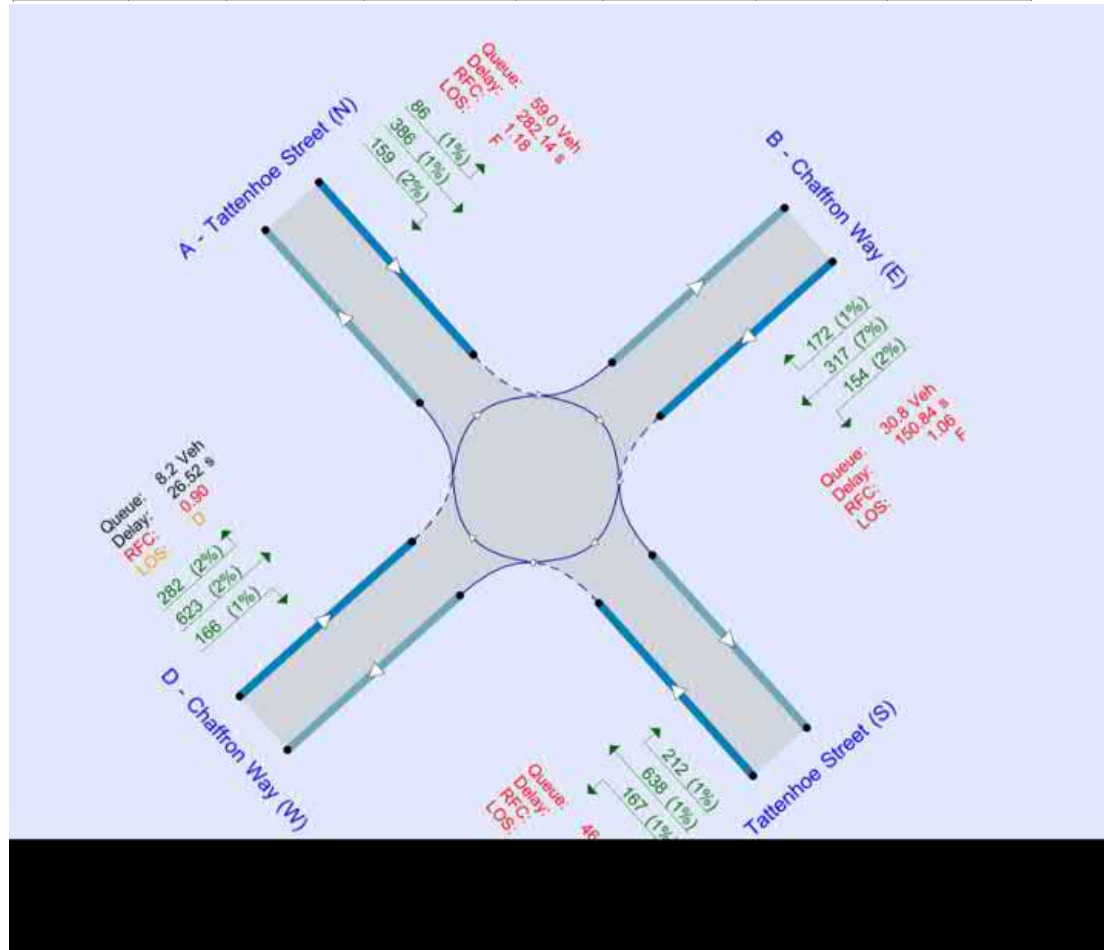
File summary

File Description

Title	Westcroft Roundabout
Location	52° 0'16.13"N, 0°47'21.25"W
Site number	13
Date	07/01/2021
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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing 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	ü
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	ü
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	ü
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	ü
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	ü
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	ü
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	ü
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	ü
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	ü
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	ü
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	ü

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	ü	ü	D1,D13,D15,D17,D19,D21	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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	18.02	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Tattenhoe Street (N)	
B	Chaffron Way (E)	
C	Tattenhoe Street (S)	
D	Chaffron Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Tattenhoe Street (N)	3.72	7.69	22.5	82.1	70.0	9.5	
B - Chaffron Way (E)	3.60	7.49	17.2	50.0	70.0	8.0	
C - Tattenhoe Street (S)	3.00	7.40	19.8	42.3	69.6	14.5	
D - Chaffron Way (W)	3.00	7.73	21.0	45.2	69.6	7.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Tattenhoe Street (N)	Direct	Calibrated against queue length	-850
B - Chaffron Way (E)	Direct	Calibrated against queue length	-865
C - Tattenhoe Street (S)	Direct	Calibrated against queue length	-392
D - Chaffron Way (W)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Tattenhoe Street (N)	0.594	1251
B - Chaffron Way (E)	0.572	1098
C - Tattenhoe Street (S)	0.546	1430
D - Chaffron Way (W)	0.569	1928

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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	ü	548	100.000
B - Chaffron Way (E)		ONE HOUR	ü	500	100.000
C - Tattenhoe Street (S)		ONE HOUR	ü	874	100.000
D - Chaffron Way (W)		ONE HOUR	ü	712	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	3	75	334	136
	B - Chaffron Way (E)	150	0	134	216
	C - Tattenhoe Street (S)	551	185	0	138
	D - Chaffron Way (W)	238	353	121	0

Proportions

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0.01	0.14	0.61	0.25
	B - Chaffron Way (E)	0.30	0.00	0.27	0.43
	C - Tattenhoe Street (S)	0.63	0.21	0.00	0.16
	D - Chaffron Way (W)	0.33	0.50	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	1	2
	B - Chaffron Way (E)	1	0	2	7
	C - Tattenhoe Street (S)	1	1	0	1
	D - Chaffron Way (W)	2	2	1	0

Average PCU Per Veh

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1.000	1.000	1.012	1.022
	B - Chaffron Way (E)	1.005	1.000	1.022	1.069
	C - Tattenhoe Street (S)	1.007	1.008	1.000	1.007
	D - Chaffron Way (W)	1.021	1.017	1.008	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Tattenhoe Street (N)	07:30-07:45	413	418
	07:45-08:00	493	499
	08:00-08:15	603	611
	08:15-08:30	603	611
	08:30-08:45	493	499
	08:45-09:00	413	418
B - Chaffron Way (E)	07:30-07:45	376	390
	07:45-08:00	449	466
	08:00-08:15	551	571
	08:15-08:30	551	571
	08:30-08:45	449	466
	08:45-09:00	376	390
C - Tattenhoe Street (S)	07:30-07:45	658	663
	07:45-08:00	786	791
	08:00-08:15	962	969
	08:15-08:30	962	969
	08:30-08:45	786	791
	08:45-09:00	658	663
D - Chaffron Way (W)	07:30-07:45	536	545
	07:45-08:00	640	651
	08:00-08:15	784	797
	08:15-08:30	784	797
	08:30-08:45	640	651
	08:45-09:00	536	545

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 - Tattenhoe Street (N)	0.75	17.78	2.9	C	503	754
B - Chaffron Way (E)	0.79	24.72	3.6	C	459	688
C - Tattenhoe Street (S)	0.87	23.77	6.0	C	802	1203
D - Chaffron Way (W)	0.58	6.40	1.4	A	653	980

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 - Tattenhoe Street (N)	413	103	494	942	0.438	409	704	0.0	0.8	6.725	A
B - Chaffron Way (E)	376	94	444	810	0.465	373	459	0.0	0.9	8.171	A
C - Tattenhoe Street (S)	658	164	377	1208	0.545	653	440	0.0	1.2	6.441	A
D - Chaffron Way (W)	536	134	664	1522	0.352	534	366	0.0	0.5	3.635	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 - Tattenhoe Street (N)	493	123	591	884	0.557	491	844	0.8	1.2	9.115	A
B - Chaffron Way (E)	449	112	532	761	0.591	447	550	0.9	1.4	11.386	B
C - Tattenhoe Street (S)	786	196	452	1166	0.674	782	528	1.2	2.0	9.315	A
D - Chaffron Way (W)	640	160	796	1448	0.442	639	439	0.5	0.8	4.444	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 - Tattenhoe Street (N)	603	151	721	807	0.748	597	1025	1.2	2.8	16.719	C
B - Chaffron Way (E)	551	138	648	696	0.791	543	670	1.4	3.4	22.364	C
C - Tattenhoe Street (S)	962	241	549	1111	0.866	948	642	2.0	5.5	20.513	C
D - Chaffron Way (W)	784	196	965	1353	0.579	782	532	0.8	1.4	6.275	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 - Tattenhoe Street (N)	603	151	725	804	0.750	603	1036	2.8	2.9	17.782	C
B - Chaffron Way (E)	551	138	654	693	0.794	550	674	3.4	3.6	24.722	C
C - Tattenhoe Street (S)	962	241	555	1107	0.869	960	648	5.5	6.0	23.770	C
D - Chaffron Way (W)	784	196	977	1346	0.582	784	539	1.4	1.4	6.400	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 - Tattenhoe Street (N)	493	123	597	880	0.560	499	860	2.9	1.3	9.594	A
B - Chaffron Way (E)	449	112	540	757	0.594	458	556	3.6	1.5	12.367	B
C - Tattenhoe Street (S)	786	196	462	1160	0.677	801	536	6.0	2.2	10.435	B
D - Chaffron Way (W)	640	160	815	1437	0.445	642	448	1.4	0.8	4.541	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 - Tattenhoe Street (N)	413	103	498	939	0.439	415	713	1.3	0.8	6.887	A
B - Chaffron Way (E)	376	94	449	807	0.466	379	463	1.5	0.9	8.448	A
C - Tattenhoe Street (S)	658	164	383	1204	0.546	662	446	2.2	1.2	6.680	A
D - Chaffron Way (W)	536	134	673	1517	0.353	537	371	0.8	0.5	3.678	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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	128.23	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	631	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	643	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	1011	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	1071	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	3	86	383	159
	B - Chaffron Way (E)	172	0	154	317
	C - Tattenhoe Street (S)	632	212	0	167
	D - Chaffron Way (W)	282	623	166	0

Proportions

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0.01	0.14	0.61	0.25
	B - Chaffron Way (E)	0.27	0.00	0.24	0.49
	C - Tattenhoe Street (S)	0.63	0.21	0.00	0.17
	D - Chaffron Way (W)	0.26	0.58	0.16	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	1	2
	B - Chaffron Way (E)	1	0	2	7
	C - Tattenhoe Street (S)	1	1	0	1
	D - Chaffron Way (W)	2	2	1	0

Average PCU Per Veh

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1.000	1.000	1.012	1.022
	B - Chaffron Way (E)	1.007	1.000	1.022	1.069
	C - Tattenhoe Street (S)	1.007	1.005	1.000	1.007
	D - Chaffron Way (W)	1.021	1.017	1.008	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Tattenhoe Street (N)	07:30-07:45	475	481
	07:45-08:00	568	575
	08:00-08:15	695	704
	08:15-08:30	695	704
	08:30-08:45	568	575
	08:45-09:00	475	481
		07:30-07:45	484
	07:45-08:00	578	602

B - Chaffron Way (E)	08:00-08:15	708	737
	08:15-08:30	708	737
	08:30-08:45	578	602
	08:45-09:00	484	504
C - Tattenhoe Street (S)	07:30-07:45	761	766
	07:45-08:00	909	915
	08:00-08:15	1113	1121
	08:15-08:30	1113	1121
	08:30-08:45	909	915
	08:45-09:00	761	766
D - Chaffron Way (W)	07:30-07:45	806	820
	07:45-08:00	963	979
	08:00-08:15	1179	1199
	08:15-08:30	1179	1199
	08:30-08:45	963	979
	08:45-09:00	806	820

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 - Tattenhoe Street (N)	1.18	275.31	57.4	F	579	869
B - Chaffron Way (E)	1.06	150.11	30.6	F	590	885
C - Tattenhoe Street (S)	1.06	130.51	43.5	F	928	1392
D - Chaffron Way (W)	0.90	26.28	8.1	D	983	1474

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 - Tattenhoe Street (N)	475	119	749	790	0.602	469	812	0.0	1.5	11.042	B
B - Chaffron Way (E)	484	121	530	759	0.638	477	688	0.0	1.7	12.490	B
C - Tattenhoe Street (S)	761	190	484	1147	0.664	754	523	0.0	1.9	8.989	A
D - Chaffron Way (W)	806	202	759	1469	0.549	801	478	0.0	1.2	5.356	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 - Tattenhoe Street (N)	568	142	895	703	0.807	559	969	1.5	3.7	23.607	C
B - Chaffron Way (E)	578	145	631	703	0.823	569	823	1.7	4.0	25.242	D
C - Tattenhoe Street (S)	909	227	576	1095	0.830	899	624	1.9	4.4	17.566	C
D - Chaffron Way (W)	963	241	906	1386	0.694	959	570	1.2	2.2	8.341	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 - Tattenhoe Street (N)	695	174	1070	599	1.161	587	1124	3.7	30.7	122.967	F
B - Chaffron Way (E)	708	177	687	672	1.054	648	970	4.0	19.1	80.921	F
C - Tattenhoe Street (S)	1113	278	644	1056	1.054	1028	691	4.4	25.8	65.925	F
D - Chaffron Way (W)	1179	295	1035	1314	0.898	1160	637	2.2	7.1	21.109	C

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 - Tattenhoe Street (N)	695	174	1085	590	1.178	588	1141	30.7	57.4	275.309	F
B - Chaffron Way (E)	708	177	690	670	1.057	662	983	19.1	30.6	150.107	F
C - Tattenhoe Street (S)	1113	278	655	1050	1.060	1042	697	25.8	43.5	130.506	F
D - Chaffron Way (W)	1179	295	1051	1305	0.904	1175	647	7.1	8.1	26.275	D

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 - Tattenhoe Street (N)	568	142	941	676	0.840	664	1074	57.4	33.2	245.765	F
B - Chaffron Way (E)	578	145	726	650	0.890	629	879	30.6	17.8	142.567	F
C - Tattenhoe Street (S)	909	227	650	1054	0.863	1030	706	43.5	13.3	104.858	F
D - Chaffron Way (W)	963	241	1032	1315	0.732	984	648	8.1	2.8	11.483	B

08:45 - 09:00

	Total	Junction				Throughput	Start	End		Unsignalised

Arm	Demand (Veh/hr)	Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	(exit side) (Veh/hr)	queue (Veh)	queue (Veh)	Delay (s)	level of service
A - Tattenhoe Street (N)	475	119	768	779	0.610	602	866	33.2	1.7	37.842	E
B - Chaffron Way (E)	484	121	646	695	0.697	546	724	17.8	2.5	32.639	D
C - Tattenhoe Street (S)	761	190	570	1099	0.693	805	621	13.3	2.4	13.994	B
D - Chaffron Way (W)	806	202	821	1434	0.562	812	553	2.8	1.3	5.847	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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	136.18	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	642	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	643	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	1018	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	1073	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	3	86	391	162
	B - Chaffron Way (E)	172	0	154	317
	C - Tattenhoe Street (S)	639	212	0	167
	D - Chaffron Way (W)	284	623	166	0

Proportions

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0.01	0.13	0.61	0.25
	B - Chaffron Way (E)	0.27	0.00	0.24	0.49
	C - Tattenhoe Street (S)	0.63	0.21	0.00	0.16
	D - Chaffron Way (W)	0.26	0.58	0.15	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	1	2
	B - Chaffron Way (E)	1	0	2	7
	C - Tattenhoe Street (S)	1	1	0	1
	D - Chaffron Way (W)	2	2	1	0

Average PCU Per Veh

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1.000	1.000	1.012	1.022
	B - Chaffron Way (E)	1.007	1.000	1.022	1.069
	C - Tattenhoe Street (S)	1.007	1.005	1.000	1.007
	D - Chaffron Way (W)	1.021	1.017	1.008	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Tattenhoe Street (N)	07:30-07:45	484	490
	07:45-08:00	578	585
	08:00-08:15	707	716
	08:15-08:30	707	716
	08:30-08:45	578	585
	08:45-09:00	484	490
	07:30-07:45	484	504
	07:45-08:00	578	602

B - Chaffron Way (E)	08:00-08:15	708	737
	08:15-08:30	708	737
	08:30-08:45	578	602
	08:45-09:00	484	504
C - Tattenhoe Street (S)	07:30-07:45	767	772
	07:45-08:00	915	922
	08:00-08:15	1121	1129
	08:15-08:30	1121	1129
	08:30-08:45	915	922
D - Chaffron Way (W)	08:45-09:00	767	772
	07:30-07:45	808	821
	07:45-08:00	965	981
	08:00-08:15	1182	1201
	08:15-08:30	1182	1201
D - Chaffron Way (W)	08:30-08:45	965	981
	08:45-09:00	808	821

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 - Tattenhoe Street (N)	1.20	298.49	62.9	F	590	884
B - Chaffron Way (E)	1.06	153.06	31.3	F	590	885
C - Tattenhoe Street (S)	1.07	138.45	46.7	F	934	1401
D - Chaffron Way (W)	0.91	26.89	8.3	D	985	1477

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 - Tattenhoe Street (N)	484	121	749	790	0.612	478	819	0.0	1.5	11.316	B
B - Chaffron Way (E)	484	121	538	755	0.641	477	688	0.0	1.7	12.680	B
C - Tattenhoe Street (S)	767	192	486	1146	0.669	759	529	0.0	2.0	9.131	A
D - Chaffron Way (W)	808	202	765	1466	0.551	803	480	0.0	1.2	5.393	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 - Tattenhoe Street (N)	578	144	895	703	0.822	568	977	1.5	4.0	24.967	C
B - Chaffron Way (E)	578	145	640	698	0.829	568	822	1.7	4.2	26.041	D
C - Tattenhoe Street (S)	915	229	579	1093	0.837	905	630	2.0	4.6	18.141	C
D - Chaffron Way (W)	965	241	912	1383	0.698	961	572	1.2	2.2	8.440	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 - Tattenhoe Street (N)	707	177	1069	600	1.180	589	1130	4.0	33.5	131.737	F
B - Chaffron Way (E)	708	177	690	670	1.057	647	968	4.2	19.4	82.518	F
C - Tattenhoe Street (S)	1121	280	644	1056	1.061	1030	693	4.6	27.3	68.879	F
D - Chaffron Way (W)	1182	295	1037	1312	0.900	1162	637	2.2	7.3	21.506	C

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 - Tattenhoe Street (N)	707	177	1083	591	1.197	590	1147	33.5	62.9	298.489	F
B - Chaffron Way (E)	708	177	693	669	1.059	661	980	19.4	31.3	153.059	F
C - Tattenhoe Street (S)	1121	280	655	1050	1.067	1044	699	27.3	46.7	138.446	F
D - Chaffron Way (W)	1182	295	1052	1304	0.906	1178	646	7.3	8.3	26.887	D

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 - Tattenhoe Street (N)	578	144	940	676	0.854	666	1080	62.9	40.9	279.169	F
B - Chaffron Way (E)	578	145	729	648	0.892	628	877	31.3	18.7	147.101	F
C - Tattenhoe Street (S)	915	229	649	1054	0.869	1032	708	46.7	17.6	116.894	F
D - Chaffron Way (W)	965	241	1034	1314	0.734	986	647	8.3	2.9	11.650	B

08:45 - 09:00

	Total	Junction				Throughput	Start	End		Unsignalised

Arm	Demand (Veh/hr)	Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	(exit side) (Veh/hr)	queue (Veh)	queue (Veh)	Delay (s)	level of service
A - Tattenhoe Street (N)	484	121	771	777	0.623	640	885	40.9	1.8	59.594	F
B - Chaffron Way (E)	484	121	681	675	0.717	548	731	18.7	2.8	39.168	E
C - Tattenhoe Street (S)	767	192	582	1092	0.702	827	647	17.6	2.5	16.623	C
D - Chaffron Way (W)	808	202	842	1423	0.568	814	568	2.9	1.3	5.977	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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	137.44	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	645	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	643	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	1018	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	1073	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	3	86	392	163
	B - Chaffron Way (E)	172	0	154	317
	C - Tattenhoe Street (S)	639	212	0	167
	D - Chaffron Way (W)	284	623	166	0

Proportions

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0.01	0.13	0.61	0.25
	B - Chaffron Way (E)	0.27	0.00	0.24	0.49
	C - Tattenhoe Street (S)	0.63	0.21	0.00	0.16
	D - Chaffron Way (W)	0.26	0.58	0.15	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	1	2
	B - Chaffron Way (E)	1	0	2	7
	C - Tattenhoe Street (S)	1	1	0	1
	D - Chaffron Way (W)	2	2	1	0

Average PCU Per Veh

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1.000	1.000	1.012	1.022
	B - Chaffron Way (E)	1.007	1.000	1.022	1.069
	C - Tattenhoe Street (S)	1.007	1.005	1.000	1.007
	D - Chaffron Way (W)	1.021	1.017	1.008	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Tattenhoe Street (N)	07:30-07:45	485	492
	07:45-08:00	580	587
	08:00-08:15	710	719
	08:15-08:30	710	719
	08:30-08:45	580	587
	08:45-09:00	485	492
	07:30-07:45	484	504
	07:45-08:00	578	602

B - Chaffron Way (E)	08:00-08:15	708	737
	08:15-08:30	708	737
	08:30-08:45	578	602
	08:45-09:00	484	504
C - Tattenhoe Street (S)	07:30-07:45	767	772
	07:45-08:00	915	922
	08:00-08:15	1121	1129
	08:15-08:30	1121	1129
	08:30-08:45	915	922
D - Chaffron Way (W)	08:45-09:00	767	772
	07:30-07:45	808	821
	07:45-08:00	965	981
	08:00-08:15	1182	1201
	08:15-08:30	1182	1201
D - Chaffron Way (W)	08:30-08:45	965	981
	08:45-09:00	808	821

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 - Tattenhoe Street (N)	1.20	303.76	64.2	F	592	887
B - Chaffron Way (E)	1.06	153.56	31.4	F	590	885
C - Tattenhoe Street (S)	1.07	138.65	46.8	F	934	1401
D - Chaffron Way (W)	0.91	26.87	8.3	D	985	1477

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 - Tattenhoe Street (N)	485	121	749	790	0.614	479	819	0.0	1.5	11.374	B
B - Chaffron Way (E)	484	121	540	754	0.642	477	688	0.0	1.7	12.722	B
C - Tattenhoe Street (S)	767	192	487	1145	0.669	759	530	0.0	2.0	9.139	A
D - Chaffron Way (W)	808	202	765	1466	0.551	803	481	0.0	1.2	5.393	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 - Tattenhoe Street (N)	580	145	895	703	0.825	570	977	1.5	4.1	25.269	D
B - Chaffron Way (E)	578	145	642	697	0.830	568	822	1.7	4.2	26.211	D
C - Tattenhoe Street (S)	915	229	580	1093	0.837	905	631	2.0	4.6	18.174	C
D - Chaffron Way (W)	965	241	911	1383	0.698	961	573	1.2	2.2	8.440	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 - Tattenhoe Street (N)	710	177	1069	600	1.184	590	1130	4.1	34.1	133.745	F
B - Chaffron Way (E)	708	177	691	670	1.057	647	968	4.2	19.5	82.811	F
C - Tattenhoe Street (S)	1121	280	644	1056	1.061	1030	693	4.6	27.4	68.969	F
D - Chaffron Way (W)	1182	295	1037	1312	0.900	1162	637	2.2	7.3	21.498	C

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 - Tattenhoe Street (N)	710	177	1083	591	1.201	590	1146	34.1	64.2	303.757	F
B - Chaffron Way (E)	708	177	693	668	1.059	661	980	19.5	31.4	153.557	F
C - Tattenhoe Street (S)	1121	280	655	1050	1.067	1043	699	27.4	46.8	138.646	F
D - Chaffron Way (W)	1182	295	1052	1304	0.906	1178	646	7.3	8.3	26.873	D

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 - Tattenhoe Street (N)	580	145	940	676	0.857	666	1080	64.2	42.6	286.620	F
B - Chaffron Way (E)	578	145	730	648	0.892	628	877	31.4	18.9	147.887	F
C - Tattenhoe Street (S)	915	229	650	1053	0.869	1031	708	46.8	17.7	117.195	F
D - Chaffron Way (W)	965	241	1034	1314	0.734	986	647	8.3	2.9	11.643	B

08:45 - 09:00

	Total	Junction				Throughput	Start	End		Unsignalised

Arm	Demand (Veh/hr)	Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	(exit side) (Veh/hr)	queue (Veh)	queue (Veh)	Delay (s)	level of service
A - Tattenhoe Street (N)	485	121	771	777	0.625	649	885	42.6	1.8	65.441	F
B - Chaffron Way (E)	484	121	688	671	0.722	548	732	18.9	2.9	40.742	E
C - Tattenhoe Street (S)	767	192	585	1090	0.703	828	652	17.7	2.5	16.782	C
D - Chaffron Way (W)	808	202	842	1422	0.568	814	570	2.9	1.3	5.977	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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	140.03	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
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	646	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	643	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	1024	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	1073	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	3	86	395	162
	B - Chaffron Way (E)	172	0	154	317
	C - Tattenhoe Street (S)	645	212	0	167
	D - Chaffron Way (W)	284	623	166	0

Proportions

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0.01	0.13	0.61	0.25
	B - Chaffron Way (E)	0.27	0.00	0.24	0.49
	C - Tattenhoe Street (S)	0.63	0.21	0.00	0.16
	D - Chaffron Way (W)	0.26	0.58	0.15	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	1	2
	B - Chaffron Way (E)	1	0	2	7
	C - Tattenhoe Street (S)	1	1	0	1
	D - Chaffron Way (W)	2	2	1	0

Average PCU Per Veh

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1.000	1.000	1.012	1.022
	B - Chaffron Way (E)	1.007	1.000	1.022	1.069
	C - Tattenhoe Street (S)	1.007	1.005	1.000	1.007
	D - Chaffron Way (W)	1.021	1.017	1.008	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Tattenhoe Street (N)	07:30-07:45	487	493
	07:45-08:00	581	589
	08:00-08:15	712	721
	08:15-08:30	712	721
	08:30-08:45	581	589
	08:45-09:00	487	493
	07:30-07:45	484	504
	07:45-08:00	578	602

B - Chaffron Way (E)	08:00-08:15	708	737
	08:15-08:30	708	737
	08:30-08:45	578	602
	08:45-09:00	484	504
C - Tattenhoe Street (S)	07:30-07:45	771	776
	07:45-08:00	921	927
	08:00-08:15	1128	1135
	08:15-08:30	1128	1135
	08:30-08:45	921	927
	08:45-09:00	771	776
D - Chaffron Way (W)	07:30-07:45	808	821
	07:45-08:00	965	981
	08:00-08:15	1182	1201
	08:15-08:30	1182	1201
	08:30-08:45	965	981
	08:45-09:00	808	821

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 - Tattenhoe Street (N)	1.20	306.23	64.8	F	593	890
B - Chaffron Way (E)	1.06	154.32	31.5	F	590	885
C - Tattenhoe Street (S)	1.07	144.73	49.2	F	940	1410
D - Chaffron Way (W)	0.91	27.10	8.4	D	985	1477

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 - Tattenhoe Street (N)	487	122	749	790	0.616	480	823	0.0	1.6	11.416	B
B - Chaffron Way (E)	484	121	541	753	0.643	477	688	0.0	1.7	12.752	B
C - Tattenhoe Street (S)	771	193	486	1146	0.673	763	532	0.0	2.0	9.229	A
D - Chaffron Way (W)	808	202	769	1463	0.552	803	480	0.0	1.2	5.414	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 - Tattenhoe Street (N)	581	145	895	703	0.827	571	982	1.6	4.1	25.482	D
B - Chaffron Way (E)	578	145	644	696	0.831	568	822	1.7	4.2	26.335	D
C - Tattenhoe Street (S)	921	230	579	1093	0.842	910	633	2.0	4.7	18.564	C
D - Chaffron Way (W)	965	241	917	1380	0.699	961	572	1.2	2.3	8.494	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 - Tattenhoe Street (N)	712	178	1068	600	1.186	590	1133	4.1	34.4	134.735	F
B - Chaffron Way (E)	708	177	691	669	1.058	647	967	4.2	19.6	83.150	F
C - Tattenhoe Street (S)	1128	282	643	1057	1.067	1032	695	4.7	28.6	71.178	F
D - Chaffron Way (W)	1182	295	1040	1311	0.902	1161	635	2.3	7.3	21.665	C

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 - Tattenhoe Street (N)	712	178	1082	592	1.203	590	1149	34.4	64.8	306.234	F
B - Chaffron Way (E)	708	177	694	668	1.060	660	979	19.6	31.5	154.317	F
C - Tattenhoe Street (S)	1128	282	654	1051	1.073	1045	701	28.6	49.2	144.726	F
D - Chaffron Way (W)	1182	295	1054	1303	0.907	1178	644	7.3	8.4	27.100	D

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 - Tattenhoe Street (N)	581	145	940	677	0.859	666	1083	64.8	43.5	290.386	F
B - Chaffron Way (E)	578	145	730	648	0.893	628	876	31.5	19.1	149.053	F
C - Tattenhoe Street (S)	921	230	648	1054	0.873	1033	710	49.2	21.1	126.551	F
D - Chaffron Way (W)	965	241	1036	1313	0.735	987	645	8.4	2.9	11.714	B

08:45 - 09:00

	Total	Junction				Throughput	Start	End		Unsignalised

Arm	Demand (Veh/hr)	Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	(exit side) (Veh/hr)	queue (Veh)	queue (Veh)	Delay (s)	level of service
A - Tattenhoe Street (N)	487	122	774	775	0.628	654	898	43.5	1.8	69.484	F
B - Chaffron Way (E)	484	121	693	669	0.724	549	735	19.1	2.9	41.992	E
C - Tattenhoe Street (S)	771	193	585	1090	0.707	845	656	21.1	2.5	19.097	C
D - Chaffron Way (W)	808	202	858	1413	0.572	814	573	2.9	1.4	6.066	A

2033 Base + CD + SP (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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	131.77	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
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	ü	634	100.000
B - Chaffron Way (E)		ONE HOUR	ü	643	100.000
C - Tattenhoe Street (S)		ONE HOUR	ü	1017	100.000
D - Chaffron Way (W)		ONE HOUR	ü	1071	100.000

Origin-Destination Data

Demand (Veh/hr)

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	3	86	386	159
	B - Chaffron Way (E)	172	0	154	317
	C - Tattenhoe Street (S)	638	212	0	167
	D - Chaffron Way (W)	282	623	166	0

Proportions

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0.01	0.14	0.61	0.25
	B - Chaffron Way (E)	0.27	0.00	0.24	0.49
	C - Tattenhoe Street (S)	0.63	0.21	0.00	0.16
	D - Chaffron Way (W)	0.26	0.58	0.15	0.00

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	1	1	2
	B - Chaffron Way (E)	1	0	2	7
	C - Tattenhoe Street (S)	1	1	0	1
	D - Chaffron Way (W)	2	2	1	0

Average PCU Per Veh

From		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1.000	1.007	1.012	1.022
	B - Chaffron Way (E)	1.007	1.000	1.022	1.069
	C - Tattenhoe Street (S)	1.007	1.005	1.000	1.007
	D - Chaffron Way (W)	1.021	1.017	1.008	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Tattenhoe Street (N)	07:30-07:45	478	484
	07:45-08:00	570	578
	08:00-08:15	699	708
	08:15-08:30	699	708
	08:30-08:45	570	578
	08:45-09:00	478	484
	07:30-07:45	484	504
	07:45-08:00	578	602

B - Chaffron Way (E)	08:00-08:15	708	737
	08:15-08:30	708	737
	08:30-08:45	578	602
	08:45-09:00	484	504
C - Tattenhoe Street (S)	07:30-07:45	766	771
	07:45-08:00	914	921
	08:00-08:15	1120	1128
	08:15-08:30	1120	1128
	08:30-08:45	914	921
	08:45-09:00	766	771
D - Chaffron Way (W)	07:30-07:45	806	820
	07:45-08:00	963	979
	08:00-08:15	1179	1199
	08:15-08:30	1179	1199
	08:30-08:45	963	979
	08:45-09:00	806	820

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 - Tattenhoe Street (N)	1.18	282.14	59.0	F	582	873
B - Chaffron Way (E)	1.06	150.84	30.8	F	590	885
C - Tattenhoe Street (S)	1.07	136.77	46.0	F	933	1400
D - Chaffron Way (W)	0.90	26.52	8.2	D	983	1474

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 - Tattenhoe Street (N)	478	119	749	789	0.605	472	817	0.0	1.5	11.140	B
B - Chaffron Way (E)	484	121	532	758	0.639	477	688	0.0	1.7	12.542	B
C - Tattenhoe Street (S)	766	191	484	1147	0.668	758	525	0.0	1.9	9.086	A
D - Chaffron Way (W)	806	202	764	1466	0.550	802	478	0.0	1.2	5.377	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 - Tattenhoe Street (N)	570	143	895	702	0.812	561	975	1.5	3.8	24.056	C
B - Chaffron Way (E)	578	145	634	701	0.824	569	823	1.7	4.1	25.460	D
C - Tattenhoe Street (S)	914	229	577	1095	0.835	904	626	1.9	4.5	17.961	C
D - Chaffron Way (W)	963	241	911	1384	0.696	959	570	1.2	2.2	8.397	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 - Tattenhoe Street (N)	699	175	1069	599	1.166	588	1128	3.8	31.5	125.593	F
B - Chaffron Way (E)	708	177	688	671	1.055	648	969	4.1	19.2	81.330	F
C - Tattenhoe Street (S)	1120	280	643	1057	1.060	1030	692	4.5	27.0	68.211	F
D - Chaffron Way (W)	1179	295	1037	1312	0.899	1160	636	2.2	7.2	21.290	C

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 - Tattenhoe Street (N)	699	175	1084	590	1.184	589	1144	31.5	59.0	282.139	F
B - Chaffron Way (E)	708	177	691	670	1.057	662	981	19.2	30.8	150.838	F
C - Tattenhoe Street (S)	1120	280	654	1051	1.066	1044	698	27.0	46.0	136.771	F
D - Chaffron Way (W)	1179	295	1053	1304	0.905	1175	645	7.2	8.2	26.522	D

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 - Tattenhoe Street (N)	570	143	940	676	0.844	664	1078	59.0	35.5	255.696	F
B - Chaffron Way (E)	578	145	727	650	0.890	629	878	30.8	18.0	143.646	F
C - Tattenhoe Street (S)	914	229	649	1054	0.868	1032	707	46.0	16.7	114.362	F
D - Chaffron Way (W)	963	241	1034	1314	0.733	984	646	8.2	2.9	11.555	B

08:45 - 09:00

	Total	Junction				Throughput	Start	End		Unsignalised

Arm	Demand (Veh/hr)	Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	(exit side) (Veh/hr)	queue (Veh)	queue (Veh)	Delay (s)	level of service
A - Tattenhoe Street (N)	478	119	770	776	0.615	613	880	35.5	1.7	43.751	E
B - Chaffron Way (E)	484	121	656	689	0.703	546	728	18.0	2.6	34.274	D
C - Tattenhoe Street (S)	766	191	573	1097	0.698	823	629	16.7	2.4	15.789	C
D - Chaffron Way (W)	806	202	837	1425	0.566	813	558	2.9	1.3	5.938	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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Filename: J13 - Westcroft Roundabout_PM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J13

Report generation date: 08/01/2021 11:40:31

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

Summary of junction performance

		PM				
		Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base						
A - Tattenhoe Street (N)	D2		0.5	3.25	0.35	A
B - Chaffron Way (E)			1.2	5.19	0.55	A
C - Tattenhoe Street (S)			1.7	9.08	0.63	A
D - Chaffron Way (W)			5.1	31.65	0.85	D
2033 Base						
A - Tattenhoe Street (N)	D14		0.7	3.72	0.42	A
B - Chaffron Way (E)			3.6	11.42	0.79	B
C - Tattenhoe Street (S)			7.1	34.09	0.89	D
D - Chaffron Way (W)			84.2	378.17	1.24	F
2033 Base + CD + D						
A - Tattenhoe Street (N)	D16		0.7	3.75	0.42	A
B - Chaffron Way (E)			3.7	11.60	0.79	B
C - Tattenhoe Street (S)			7.7	36.61	0.90	E
D - Chaffron Way (W)			87.2	397.20	1.25	F
2033 Base + CD + D with TP						
A - Tattenhoe Street (N)	D18		0.7	3.74	0.42	A
B - Chaffron Way (E)			3.6	11.56	0.79	B
C - Tattenhoe Street (S)			7.7	36.95	0.90	E
D - Chaffron Way (W)			88.6	405.81	1.25	F
2033 Base + CD + D - ST						
A - Tattenhoe Street (N)	D20		0.7	3.75	0.42	A
B - Chaffron Way (E)			3.7	11.62	0.79	B
C - Tattenhoe Street (S)			7.8	37.29	0.90	E
D - Chaffron Way (W)			87.7	401.26	1.25	F
2033 Base + CD + SP (ST)						
A - Tattenhoe Street (N)	D22		0.7	3.73	0.42	A
B - Chaffron Way (E)			3.6	11.45	0.79	B
C - Tattenhoe Street (S)			7.2	34.64	0.89	D
D - Chaffron Way (W)			84.6	380.63	1.24	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	Westcroft Roundabout
Location	52° 0'16.13"N, 0°47'21.25"W
Site number	13
Date	07/01/2021
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	Ü
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü

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	Ü	Ü	D2,D14,D16,D18,D20,D22	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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	11.76	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Tattenhoe Street (N)	
B	Chaffron Way (E)	
C	Tattenhoe Street (S)	
D	Chaffron Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Tattenhoe Street (N)	3.72	7.69	22.5	82.1	70.0	9.5	
B - Chaffron Way (E)	3.60	7.49	17.2	50.0	70.0	8.0	
C - Tattenhoe Street (S)	3.00	7.40	19.8	42.3	69.6	14.5	
D - Chaffron Way (W)	3.00	7.73	21.0	45.2	69.6	7.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Tattenhoe Street (N)	None		
B - Chaffron Way (E)	None		
C - Tattenhoe Street (S)	Direct	calibrated using B Chard method	-392
D - Chaffron Way (W)	Direct	calibrated using queue length	-800

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Tattenhoe Street (N)	0.594	2101
B - Chaffron Way (E)	0.572	1963
C - Tattenhoe Street (S)	0.546	1430
D - Chaffron Way (W)	0.569	1128

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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	534	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	757	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	608	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	555	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1	70	383	80
	B - Chaffron Way (E)	163	0	246	348
	C - Tattenhoe Street (S)	366	104	0	138
	D - Chaffron Way (W)	70	274	209	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	0	6
	B - Chaffron Way (E)	0	0	0	1
	C - Tattenhoe Street (S)	0	0	0	1
	D - Chaffron Way (W)	3	3	0	0

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 - Tattenhoe Street (N)	0.35	3.25	0.5	A	490	735
B - Chaffron Way (E)	0.55	5.19	1.2	A	695	1042
C - Tattenhoe Street (S)	0.63	9.08	1.7	A	558	837
D - Chaffron Way (W)	0.85	31.65	5.1	D	509	764

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 - Tattenhoe Street (N)	402	101	440	1819	0.221	401	449	0.0	0.3	2.535	A
B - Chaffron Way (E)	570	142	506	1663	0.343	568	335	0.0	0.5	3.282	A
C - Tattenhoe Street (S)	458	114	446	1181	0.388	455	628	0.0	0.6	4.944	A
D - Chaffron Way (W)	418	104	475	844	0.495	414	426	0.0	1.0	8.295	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 - Tattenhoe Street (N)	480	120	527	1767	0.272	480	538	0.3	0.4	2.796	A
B - Chaffron Way (E)	681	170	605	1606	0.424	680	401	0.5	0.7	3.884	A

C - Tattenhoe Street (S)	547	137	533	1132	0.483	545	752	0.6	0.9	6.120	A
D - Chaffron Way (W)	499	125	569	792	0.630	496	510	1.0	1.6	12.070	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 - Tattenhoe Street (N)	588	147	638	1701	0.346	587	657	0.4	0.5	3.229	A
B - Chaffron Way (E)	833	208	738	1530	0.545	832	487	0.7	1.2	5.143	A
C - Tattenhoe Street (S)	669	167	653	1066	0.628	667	917	0.9	1.6	8.936	A
D - Chaffron Way (W)	611	153	695	721	0.848	599	624	1.6	4.6	27.234	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 - Tattenhoe Street (N)	588	147	647	1696	0.347	588	660	0.5	0.5	3.248	A
B - Chaffron Way (E)	833	208	743	1527	0.546	833	492	1.2	1.2	5.189	A
C - Tattenhoe Street (S)	669	167	654	1066	0.628	669	922	1.6	1.7	9.075	A
D - Chaffron Way (W)	611	153	698	719	0.849	609	625	4.6	5.1	31.655	D

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 - Tattenhoe Street (N)	480	120	541	1759	0.273	481	543	0.5	0.4	2.817	A
B - Chaffron Way (E)	681	170	612	1602	0.425	682	410	1.2	0.7	3.923	A
C - Tattenhoe Street (S)	547	137	535	1131	0.483	549	759	1.7	0.9	6.216	A
D - Chaffron Way (W)	499	125	573	790	0.632	512	512	5.1	1.8	13.542	B

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 - Tattenhoe Street (N)	402	101	446	1815	0.221	402	453	0.4	0.3	2.548	A
B - Chaffron Way (E)	570	142	510	1661	0.343	571	339	0.7	0.5	3.307	A
C - Tattenhoe Street (S)	458	114	448	1180	0.388	459	633	0.9	0.6	5.002	A
D - Chaffron Way (W)	418	104	478	842	0.496	421	428	1.8	1.0	8.606	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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	102.16	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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	ü	624	100.000
B - Chaffron Way (E)		ONE HOUR	ü	1058	100.000
C - Tattenhoe Street (S)		ONE HOUR	ü	725	100.000
D - Chaffron Way (W)		ONE HOUR	ü	741	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1	81	442	100
	B - Chaffron Way (E)	188	0	284	586
	C - Tattenhoe Street (S)	422	120	0	182
	D - Chaffron Way (W)	84	402	252	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	0	6
	B - Chaffron Way (E)	0	0	0	1
	C - Tattenhoe Street (S)	0	0	0	1
	D - Chaffron Way (W)	3	3	0	0

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 - Tattenhoe Street (N)	0.42	3.72	0.7	A	572	858
B - Chaffron Way (E)	0.79	11.42	3.6	B	971	1456
C - Tattenhoe Street (S)	0.89	34.09	7.1	D	665	997
D - Chaffron Way (W)	1.24	378.17	84.2	F	680	1020

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 - Tattenhoe Street (N)	470	117	576	1737	0.270	468	520	0.0	0.4	2.836	A
B - Chaffron Way (E)	796	199	596	1609	0.495	792	449	0.0	1.0	4.394	A
C - Tattenhoe Street (S)	545	136	657	1064	0.513	541	731	0.0	1.0	6.838	A
D - Chaffron Way (W)	558	139	547	803	0.694	549	651	0.0	2.2	13.736	B

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 - Tattenhoe Street (N)	561	140	683	1673	0.335	560	621	0.4	0.5	3.232	A
B - Chaffron Way (E)	951	238	710	1543	0.616	948	533	1.0	1.6	6.026	A
C - Tattenhoe Street (S)	651	163	786	992	0.656	648	872	1.0	1.9	10.359	B
D - Chaffron Way (W)	666	167	655	743	0.896	649	780	2.2	6.4	33.591	D

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 - Tattenhoe Street (N)	687	172	715	1654	0.415	686	737	0.5	0.7	3.713	A
B - Chaffron Way (E)	1164	291	824	1478	0.788	1157	577	1.6	3.5	10.936	B
C - Tattenhoe Street (S)	798	199	959	897	0.890	780	1021	1.9	6.3	27.472	D
D - Chaffron Way (W)	816	204	791	667	1.223	661	948	6.4	45.1	156.006	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 - Tattenhoe Street (N)	687	172	716	1653	0.415	687	746	0.7	0.7	3.722	A
B - Chaffron Way (E)	1164	291	824	1478	0.788	1164	579	3.5	3.6	11.424	B
C - Tattenhoe Street (S)	798	199	965	894	0.893	795	1023	6.3	7.1	34.092	D
D - Chaffron Way (W)	816	204	803	660	1.236	659	956	45.1	84.2	354.700	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 - Tattenhoe Street (N)	561	140	753	1631	0.344	561	645	0.7	0.5	3.368	A
B - Chaffron Way (E)	951	238	737	1528	0.622	959	577	3.6	1.7	6.400	A
C - Tattenhoe Street (S)	651	163	794	988	0.659	672	901	7.1	2.0	12.060	B
D - Chaffron Way (W)	666	167	674	732	0.910	724	792	84.2	69.9	378.168	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 - Tattenhoe Street (N)	470	117	790	1609	0.292	470	553	0.5	0.4	3.160	A
B - Chaffron Way (E)	796	199	680	1561	0.510	799	580	1.7	1.1	4.734	A

C - Tattenhoe Street (S)	545	136	663	1061	0.514	549	815	2.0	1.1	7.087	A
D - Chaffron Way (W)	558	139	554	799	0.698	788	658	69.9	12.3	193.560	F

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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	107.03	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
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	ü	633	100.000
B - Chaffron Way (E)		ONE HOUR	ü	1058	100.000
C - Tattenhoe Street (S)		ONE HOUR	ü	731	100.000
D - Chaffron Way (W)		ONE HOUR	ü	743	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1	81	449	102
	B - Chaffron Way (E)	188	0	284	586
	C - Tattenhoe Street (S)	429	120	0	182
	D - Chaffron Way (W)	86	402	252	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	0	6
	B - Chaffron Way (E)	0	0	0	1
	C - Tattenhoe Street (S)	0	0	0	1
	D - Chaffron Way (W)	3	3	0	0

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 - Tattenhoe Street (N)	0.42	3.75	0.7	A	581	871
B - Chaffron Way (E)	0.79	11.60	3.7	B	971	1456
C - Tattenhoe Street (S)	0.90	36.61	7.7	E	671	1006
D - Chaffron Way (W)	1.25	397.20	87.2	F	681	1022

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 - Tattenhoe Street (N)	477	119	576	1736	0.274	475	526	0.0	0.4	2.849	A
B - Chaffron Way (E)	796	199	603	1605	0.496	792	448	0.0	1.0	4.408	A
C - Tattenhoe Street (S)	550	138	659	1063	0.518	546	736	0.0	1.1	6.915	A
D - Chaffron Way (W)	559	140	552	801	0.698	550	653	0.0	2.2	13.940	B

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 - Tattenhoe Street (N)	569	142	682	1673	0.340	568	629	0.4	0.5	3.256	A
B - Chaffron Way (E)	951	238	718	1539	0.618	948	532	1.0	1.6	6.071	A
C - Tattenhoe Street (S)	657	164	788	991	0.663	654	878	1.1	1.9	10.567	B
D - Chaffron Way (W)	668	167	661	740	0.903	650	782	2.2	6.6	34.738	D

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 - Tattenhoe Street (N)	697	174	710	1657	0.421	696	744	0.5	0.7	3.744	A
B - Chaffron Way (E)	1164	291	832	1473	0.790	1157	574	1.6	3.6	11.095	B
C - Tattenhoe Street (S)	805	201	962	895	0.899	786	1027	1.9	6.7	28.881	D
D - Chaffron Way (W)	818	204	797	663	1.232	658	950	6.6	46.6	161.392	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 - Tattenhoe Street (N)	697	174	711	1656	0.421	697	754	0.7	0.7	3.751	A
B - Chaffron Way (E)	1164	291	832	1473	0.790	1164	576	3.6	3.7	11.602	B
C - Tattenhoe Street (S)	805	201	967	892	0.902	801	1029	6.7	7.7	36.611	E
D - Chaffron Way (W)	818	204	810	656	1.246	656	959	46.6	87.2	368.013	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 - Tattenhoe Street (N)	569	142	748	1634	0.348	570	654	0.7	0.5	3.383	A
B - Chaffron Way (E)	951	238	743	1525	0.624	959	574	3.7	1.7	6.449	A
C - Tattenhoe Street (S)	657	164	796	987	0.666	680	906	7.7	2.1	12.515	B
D - Chaffron Way (W)	668	167	682	728	0.917	720	794	87.2	74.2	397.202	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 - Tattenhoe Street (N)	477	119	786	1611	0.296	477	559	0.5	0.4	3.177	A
B - Chaffron Way (E)	796	199	685	1558	0.511	799	578	1.7	1.1	4.757	A

C - Tattenhoe Street (S)	550	138	665	1060	0.519	554	819	2.1	1.1	7.176	A
D - Chaffron Way (W)	559	140	559	797	0.702	786	660	74.2	17.4	214.995	F

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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	109.34	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	632	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	1058	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	732	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	745	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1	81	448	102
	B - Chaffron Way (E)	188	0	284	586
	C - Tattenhoe Street (S)	430	120	0	182
	D - Chaffron Way (W)	88	402	252	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	0	6
	B - Chaffron Way (E)	0	0	0	1
	C - Tattenhoe Street (S)	0	0	0	1
	D - Chaffron Way (W)	3	3	0	0

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 - Tattenhoe Street (N)	0.42	3.74	0.7	A	580	870
B - Chaffron Way (E)	0.79	11.56	3.6	B	971	1456
C - Tattenhoe Street (S)	0.90	36.95	7.7	E	672	1008
D - Chaffron Way (W)	1.25	405.81	88.6	F	683	1025

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 - Tattenhoe Street (N)	476	119	576	1736	0.274	474	528	0.0	0.4	2.848	A
B - Chaffron Way (E)	796	199	602	1606	0.496	792	448	0.0	1.0	4.406	A
C - Tattenhoe Street (S)	551	138	659	1063	0.519	547	736	0.0	1.1	6.922	A
D - Chaffron Way (W)	561	140	553	800	0.701	552	653	0.0	2.2	14.035	B

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 - Tattenhoe Street (N)	568	142	682	1674	0.339	568	631	0.4	0.5	3.253	A
B - Chaffron Way (E)	951	238	717	1539	0.618	948	532	1.0	1.6	6.065	A
C - Tattenhoe Street (S)	658	165	788	991	0.664	655	877	1.1	1.9	10.593	B
D - Chaffron Way (W)	669	167	662	739	0.906	651	782	2.2	6.8	35.291	E

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 - Tattenhoe Street (N)	696	174	709	1658	0.420	695	747	0.5	0.7	3.735	A
B - Chaffron Way (E)	1164	291	831	1474	0.790	1157	573	1.6	3.6	11.063	B
C - Tattenhoe Street (S)	806	202	962	895	0.900	787	1025	1.9	6.8	29.068	D
D - Chaffron Way (W)	820	205	798	663	1.237	657	950	6.8	47.4	163.924	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 - Tattenhoe Street (N)	696	174	709	1657	0.420	696	757	0.7	0.7	3.742	A
B - Chaffron Way (E)	1164	291	830	1474	0.790	1164	574	3.6	3.6	11.564	B
C - Tattenhoe Street (S)	806	202	967	892	0.903	802	1027	6.8	7.7	36.951	E
D - Chaffron Way (W)	820	205	811	656	1.250	655	959	47.4	88.6	374.095	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 - Tattenhoe Street (N)	568	142	746	1635	0.347	569	656	0.7	0.5	3.377	A
B - Chaffron Way (E)	951	238	742	1526	0.623	959	573	3.6	1.7	6.434	A
C - Tattenhoe Street (S)	658	165	796	987	0.667	681	904	7.7	2.1	12.573	B
D - Chaffron Way (W)	669	167	683	727	0.920	719	794	88.6	76.2	405.809	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 - Tattenhoe Street (N)	476	119	784	1612	0.295	476	562	0.5	0.4	3.169	A
B - Chaffron Way (E)	796	199	684	1559	0.511	799	577	1.7	1.1	4.751	A

C - Tattenhoe Street (S)	551	138	665	1060	0.520	555	818	2.1	1.1	7.187	A
D - Chaffron Way (W)	561	140	560	796	0.704	786	660	76.2	19.9	225.037	F

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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	108.08	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	634	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	1058	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	733	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	743	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1	81	450	102
	B - Chaffron Way (E)	188	0	284	586
	C - Tattenhoe Street (S)	431	120	0	182
	D - Chaffron Way (W)	86	402	252	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	0	6
	B - Chaffron Way (E)	0	0	0	1
	C - Tattenhoe Street (S)	0	0	0	1
	D - Chaffron Way (W)	3	3	0	0

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 - Tattenhoe Street (N)	0.42	3.75	0.7	A	582	873
B - Chaffron Way (E)	0.79	11.62	3.7	B	971	1456
C - Tattenhoe Street (S)	0.90	37.29	7.8	E	673	1009
D - Chaffron Way (W)	1.25	401.26	87.7	F	681	1022

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 - Tattenhoe Street (N)	477	119	576	1736	0.275	476	527	0.0	0.4	2.851	A
B - Chaffron Way (E)	796	199	604	1605	0.496	792	448	0.0	1.0	4.411	A
C - Tattenhoe Street (S)	552	138	659	1063	0.519	548	737	0.0	1.1	6.933	A
D - Chaffron Way (W)	559	140	553	800	0.699	550	653	0.0	2.2	13.982	B

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 - Tattenhoe Street (N)	570	142	682	1673	0.341	569	630	0.4	0.5	3.258	A
B - Chaffron Way (E)	951	238	719	1538	0.618	948	532	1.0	1.6	6.076	A
C - Tattenhoe Street (S)	659	165	788	991	0.665	656	879	1.1	1.9	10.620	B
D - Chaffron Way (W)	668	167	662	739	0.904	650	782	2.2	6.7	34.982	D

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 - Tattenhoe Street (N)	698	174	710	1657	0.421	697	746	0.5	0.7	3.746	A
B - Chaffron Way (E)	1164	291	833	1473	0.791	1157	574	1.6	3.6	11.109	B
C - Tattenhoe Street (S)	807	202	962	896	0.901	788	1028	1.9	6.8	29.251	D
D - Chaffron Way (W)	818	204	799	662	1.234	657	950	6.7	46.9	162.550	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 - Tattenhoe Street (N)	698	174	710	1657	0.421	698	756	0.7	0.7	3.753	A
B - Chaffron Way (E)	1164	291	833	1473	0.791	1164	575	3.6	3.7	11.617	B
C - Tattenhoe Street (S)	807	202	967	892	0.905	803	1030	6.8	7.8	37.289	E
D - Chaffron Way (W)	818	204	812	655	1.248	654	959	46.9	87.7	370.874	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 - Tattenhoe Street (N)	570	142	747	1635	0.349	571	656	0.7	0.5	3.387	A
B - Chaffron Way (E)	951	238	744	1524	0.624	959	574	3.7	1.7	6.452	A
C - Tattenhoe Street (S)	659	165	796	987	0.668	682	906	7.8	2.1	12.639	B
D - Chaffron Way (W)	668	167	684	727	0.919	718	794	87.7	75.0	401.256	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 - Tattenhoe Street (N)	477	119	785	1612	0.296	478	561	0.5	0.4	3.178	A
B - Chaffron Way (E)	796	199	686	1558	0.511	799	577	1.7	1.1	4.757	A

C - Tattenhoe Street (S)	552	138	665	1060	0.521	556	820	2.1	1.1	7.202	A
D - Chaffron Way (W)	559	140	561	796	0.703	785	660	75.0	18.5	219.482	F

2033 Base + CD + SP (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
J13	Westcroft Roundabout	Standard Roundabout		A, B, C, D	102.78	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
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Tattenhoe Street (N)		ONE HOUR	Ü	625	100.000
B - Chaffron Way (E)		ONE HOUR	Ü	1058	100.000
C - Tattenhoe Street (S)		ONE HOUR	Ü	726	100.000
D - Chaffron Way (W)		ONE HOUR	Ü	741	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	1	81	443	100
	B - Chaffron Way (E)	188	0	284	586
	C - Tattenhoe Street (S)	424	120	0	182
	D - Chaffron Way (W)	84	402	252	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street (N)	B - Chaffron Way (E)	C - Tattenhoe Street (S)	D - Chaffron Way (W)
From	A - Tattenhoe Street (N)	0	0	0	6
	B - Chaffron Way (E)	0	0	0	1
	C - Tattenhoe Street (S)	0	0	0	1
	D - Chaffron Way (W)	3	3	0	0

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 - Tattenhoe Street (N)	0.42	3.73	0.7	A	573	860
B - Chaffron Way (E)	0.79	11.45	3.6	B	971	1456
C - Tattenhoe Street (S)	0.89	34.64	7.2	D	666	1000
D - Chaffron Way (W)	1.24	380.63	84.6	F	680	1019

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 - Tattenhoe Street (N)	470	118	576	1737	0.271	469	521	0.0	0.4	2.838	A
B - Chaffron Way (E)	796	199	597	1609	0.495	792	449	0.0	1.0	4.384	A
C - Tattenhoe Street (S)	547	137	657	1064	0.514	543	732	0.0	1.0	6.866	A
D - Chaffron Way (W)	558	139	548	803	0.695	549	652	0.0	2.2	13.761	B

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 - Tattenhoe Street (N)	562	140	683	1673	0.336	561	623	0.4	0.5	3.236	A
B - Chaffron Way (E)	951	238	711	1543	0.616	948	533	1.0	1.6	6.030	A
C - Tattenhoe Street (S)	653	163	787	992	0.658	650	873	1.0	1.9	10.406	B
D - Chaffron Way (W)	666	166	656	742	0.897	649	780	2.2	6.4	33.731	D

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 - Tattenhoe Street (N)	688	172	714	1655	0.416	687	738	0.5	0.7	3.718	A
B - Chaffron Way (E)	1164	291	825	1478	0.788	1157	576	1.6	3.5	10.959	B
C - Tattenhoe Street (S)	800	200	960	897	0.892	782	1022	1.9	6.4	27.783	D
D - Chaffron Way (W)	815	204	792	666	1.224	660	949	6.4	45.3	156.692	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 - Tattenhoe Street (N)	688	172	715	1654	0.416	688	748	0.7	0.7	3.726	A
B - Chaffron Way (E)	1164	291	825	1477	0.788	1164	578	3.5	3.6	11.449	B
C - Tattenhoe Street (S)	800	200	965	894	0.895	796	1024	6.4	7.2	34.638	D
D - Chaffron Way (W)	815	204	805	659	1.237	658	957	45.3	84.6	356.436	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 - Tattenhoe Street (N)	562	140	752	1632	0.344	563	647	0.7	0.5	3.371	A
B - Chaffron Way (E)	951	238	738	1528	0.622	959	577	3.6	1.7	6.406	A
C - Tattenhoe Street (S)	653	163	795	988	0.661	674	902	7.2	2.0	12.156	B
D - Chaffron Way (W)	666	166	676	731	0.911	723	792	84.6	70.4	380.632	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 - Tattenhoe Street (N)	470	118	789	1609	0.292	471	554	0.5	0.4	3.162	A
B - Chaffron Way (E)	796	199	680	1561	0.510	799	580	1.7	1.1	4.739	A

C - Tattenhoe Street (S)	547	137	663	1061	0.516	550	816	2.0	1.1	7.110	A
D - Chaffron Way (W)	558	139	555	799	0.698	788	658	70.4	12.9	196.205	F

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: J14 - Furzton Roundabout_AM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J14

Report generation date: 29/01/2021 09:09:18

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

Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Fulmer Street (N)	D1	0.7	4.71	0.40	A
B - Chaffron Way (E)		1.5	9.22	0.60	A
C - Fulmer Street (S)		6.6	23.58	0.88	C
D - Chaffron Way (W)		14.7	58.65	0.97	F
2033 Base					
A - Fulmer Street (N)	D13	0.9	5.59	0.48	A
B - Chaffron Way (E)		3.5	17.40	0.78	C
C - Fulmer Street (S)		67.0	176.59	1.10	F
D - Chaffron Way (W)		264.0	898.08	1.42	F
2033 Base + CD + D					
A - Fulmer Street (N)	D15	0.9	5.77	0.48	A
B - Chaffron Way (E)		4.3	20.66	0.82	C
C - Fulmer Street (S)		94.5	240.12	1.16	F
D - Chaffron Way (W)		274.9	1021.28	1.43	F
2033 Base + CD + D with TP					
A - Fulmer Street (N)	D17	0.9	5.75	0.48	A
B - Chaffron Way (E)		4.2	20.19	0.82	C
C - Fulmer Street (S)		90.2	230.06	1.15	F
D - Chaffron Way (W)		273.3	1002.66	1.43	F
2033 Base + CD + D - ST					
A - Fulmer Street (N)	D19	0.9	5.81	0.49	A
B - Chaffron Way (E)		4.4	20.99	0.82	C
C - Fulmer Street (S)		96.8	245.56	1.16	F
D - Chaffron Way (W)		275.7	1037.51	1.43	F
2033 Base + CD + SP (ST)					
A - Fulmer Street (N)	D21	0.9	5.62	0.48	A
B - Chaffron Way (E)		3.5	17.61	0.79	C
C - Fulmer Street (S)		69.2	181.66	1.11	F
D - Chaffron Way (W)		265.0	904.89	1.43	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

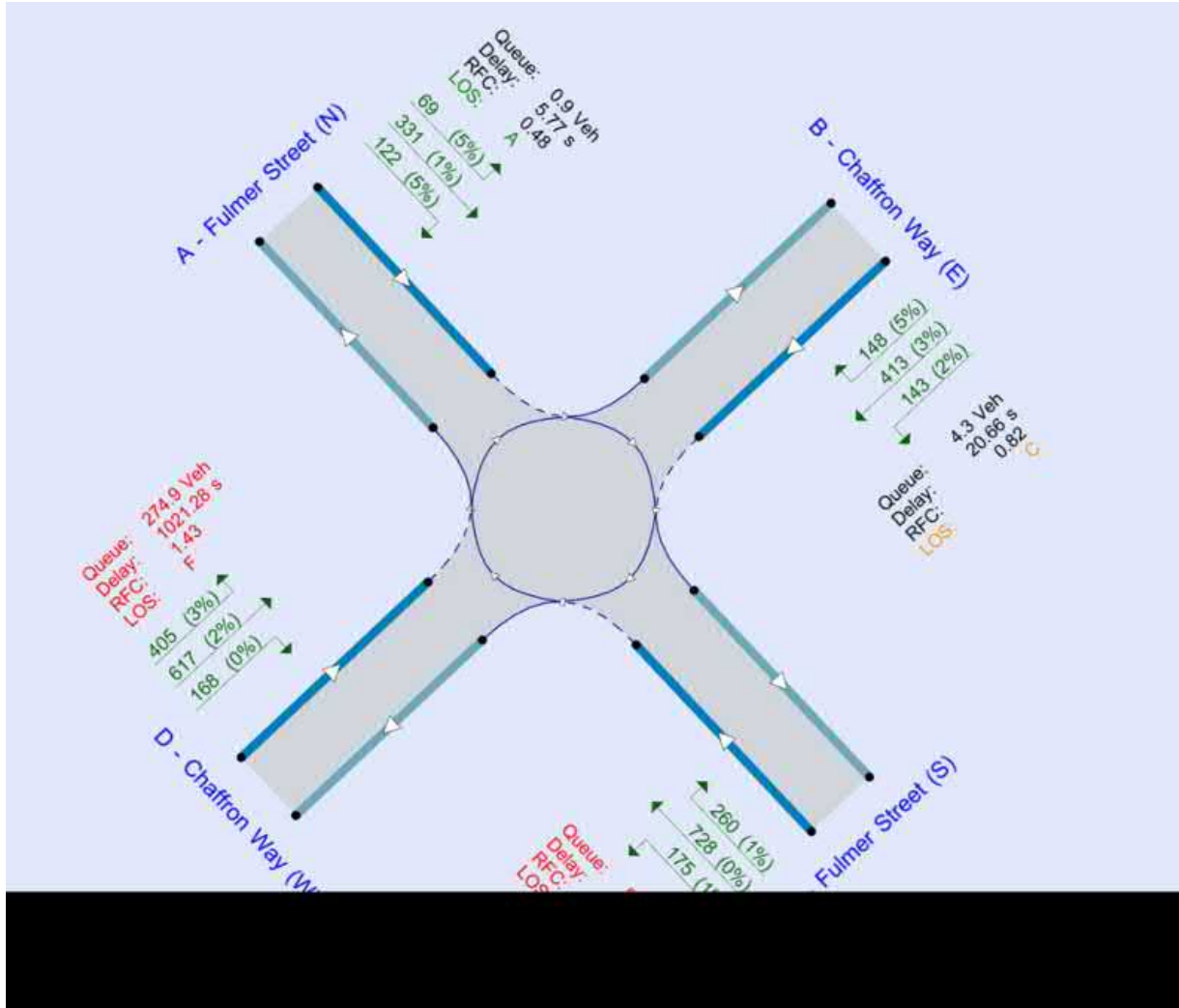
File Description

Title	Furzton Roundabout
Location	52° 0'43.42"N, 0°46'38.81"W
Site number	14
Date	07/01/2021

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing 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 (%)
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A1	✓	✓	D1,D13,D15,D17,D19,D21	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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	28.23	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Fulmer Street (N)	
B	Chaffron Way (E)	
C	Fulmer Street (S)	
D	Chaffron Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street (N)	2.90	7.90	14.2	40.4	62.0	9.0	
B - Chaffron Way (E)	3.20	7.90	16.5	50.4	62.0	11.0	
C - Fulmer Street (S)	3.10	7.70	19.2	40.7	62.0	13.0	
D - Chaffron Way (W)	3.10	7.90	22.6	49.4	62.0	14.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street (N)	None		
B - Chaffron Way (E)	Direct	Calibrated against queue length	-500
C - Fulmer Street (S)	Direct	Calibrated against queue length	-275
D - Chaffron Way (W)	Direct	Calibrated against viedo survey	-329

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street (N)	0.579	1746
B - Chaffron Way (E)	0.601	1378
C - Fulmer Street (S)	0.597	1598
D - Chaffron Way (W)	0.612	1629

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 - Fulmer Street (N)	ONE HOUR	✓	463	100.000
B - Chaffron Way (E)	ONE HOUR	✓	531	100.000
C - Fulmer Street (S)	ONE HOUR	✓	973	100.000
D - Chaffron Way (W)	ONE HOUR	✓	852	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	8	60	289	106
	B - Chaffron Way (E)	129	4	97	301
	C - Fulmer Street (S)	635	181	6	151
	D - Chaffron Way (W)	353	353	141	5

Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.62	0.23
	B - Chaffron Way (E)	0.24	0.01	0.18	0.57
	C - Fulmer Street (S)	0.65	0.19	0.01	0.16
	D - Chaffron Way (W)	0.41	0.41	0.17	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1
	D - Chaffron Way (W)	1	1	0	20

Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.000	1.006	1.000	1.013
	D - Chaffron Way (W)	1.006	1.011	1.000	1.200

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	349	358
	07:45-08:00	416	427
	08:00-08:15	510	523
	08:15-08:30	510	523
	08:30-08:45	416	427
	08:45-09:00	349	358
B - Chaffron Way (E)	07:30-07:45	400	413
	07:45-08:00	477	493
	08:00-08:15	585	604
	08:15-08:30	585	604
	08:30-08:45	477	493
	08:45-09:00	400	413
C - Fulmer Street (S)	07:30-07:45	733	735
	07:45-08:00	875	877
	08:00-08:15	1071	1075
	08:15-08:30	1071	1075
	08:30-08:45	875	877
	08:45-09:00	733	735
D - Chaffron Way (W)	07:30-07:45	641	647
	07:45-08:00	766	772
	08:00-08:15	938	946
	08:15-08:30	938	946
	08:30-08:45	766	772
	08:45-09:00	641	647

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 - Fulmer Street (N)	0.40	4.71	0.7	A	425	637
B - Chaffron Way (E)	0.60	9.22	1.5	A	487	731
C - Fulmer Street (S)	0.88	23.58	6.6	C	893	1339

D - Chaffron Way (W)	0.97	58.65	14.7	F	782	1173
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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 - Fulmer Street (N)	349	87	516	1409	0.247	347	841	0.0	0.3	3.387	A
B - Chaffron Way (E)	400	100	416	1089	0.367	397	447	0.0	0.6	5.191	A
C - Fulmer Street (S)	733	183	414	1337	0.548	728	399	0.0	1.2	5.860	A
D - Chaffron Way (W)	641	160	720	1175	0.546	637	421	0.0	1.2	6.626	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 - Fulmer Street (N)	416	104	617	1351	0.308	416	1007	0.3	0.4	3.848	A
B - Chaffron Way (E)	477	119	498	1040	0.459	476	535	0.6	0.8	6.372	A
C - Fulmer Street (S)	875	219	496	1287	0.680	871	478	1.2	2.1	8.592	A
D - Chaffron Way (W)	766	191	863	1089	0.704	762	505	1.2	2.3	10.858	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 - Fulmer Street (N)	510	127	736	1283	0.397	509	1213	0.4	0.7	4.645	A
B - Chaffron Way (E)	585	146	604	977	0.598	582	641	0.8	1.5	9.001	A
C - Fulmer Street (S)	1071	268	606	1219	0.879	1055	580	2.1	6.1	20.264	C
D - Chaffron Way (W)	938	235	1046	977	0.961	903	616	2.3	11.0	38.016	E

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 - Fulmer Street (N)	510	127	751	1275	0.400	510	1231	0.7	0.7	4.705	A
B - Chaffron Way (E)	585	146	609	975	0.600	585	652	1.5	1.5	9.224	A
C - Fulmer Street (S)	1071	268	609	1217	0.880	1069	584	6.1	6.6	23.582	C
D - Chaffron Way (W)	938	235	1059	969	0.968	924	619	11.0	14.7	58.647	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 - Fulmer Street (N)	416	104	652	1331	0.313	417	1044	0.7	0.5	3.942	A
B - Chaffron Way (E)	477	119	508	1034	0.462	480	561	1.5	0.9	6.523	A
C - Fulmer Street (S)	875	219	500	1285	0.681	892	488	6.6	2.2	9.573	A
D - Chaffron Way (W)	766	191	881	1077	0.711	814	511	14.7	2.6	16.046	C

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 - Fulmer Street (N)	349	87	523	1404	0.248	349	852	0.5	0.3	3.415	A
B - Chaffron Way (E)	400	100	419	1087	0.368	401	453	0.9	0.6	5.256	A
C - Fulmer Street (S)	733	183	417	1335	0.549	736	403	2.2	1.2	6.048	A
D - Chaffron Way (W)	641	160	729	1171	0.548	647	425	2.6	1.2	6.945	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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	364.45	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 - Fulmer Street (N)		ONE HOUR	✓	531	100.000
B - Chaffron Way (E)		ONE HOUR	✓	677	100.000
C - Fulmer Street (S)		ONE HOUR	✓	1118	100.000
D - Chaffron Way (W)		ONE HOUR	✓	1196	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	331	122
	B - Chaffron Way (E)	148	5	111	413
	C - Fulmer Street (S)	728	208	7	175
	D - Chaffron Way (W)	405	617	168	6

Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.62	0.23
	B - Chaffron Way (E)	0.22	0.01	0.16	0.61
	C - Fulmer Street (S)	0.65	0.19	0.01	0.16
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1
	D - Chaffron Way (W)	3	2	0	20

Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.006	1.000	1.013
	D - Chaffron Way (W)	1.025	1.015	1.000	1.200

Detailed Demand Data

Demand for each time segment

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Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	400	410
	07:45-08:00	477	490
	08:00-08:15	585	600
	08:15-08:30	585	600
	08:30-08:45	477	490
	08:45-09:00	400	410
B - Chaffron Way (E)	07:30-07:45	509	526
	07:45-08:00	608	628
	08:00-08:15	745	769
	08:15-08:30	745	769
	08:30-08:45	608	628
	08:45-09:00	509	526
C - Fulmer Street (S)	07:30-07:45	842	846
	07:45-08:00	1005	1010
	08:00-08:15	1231	1237
	08:15-08:30	1231	1237
	08:30-08:45	1005	1010
	08:45-09:00	842	846
D - Chaffron Way (W)	07:30-07:45	900	916
	07:45-08:00	1075	1093
	08:00-08:15	1316	1339
	08:15-08:30	1316	1339
	08:30-08:45	1075	1093
	08:45-09:00	900	916

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 - Fulmer Street (N)	0.48	5.59	0.9	A	487	731
B - Chaffron Way (E)	0.78	17.40	3.5	C	621	931
C - Fulmer Street (S)	1.10	176.59	67.0	F	1026	1539
D - Chaffron Way (W)	1.42	898.08	264.0	F	1097	1646

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 - Fulmer Street (N)	400	100	748	1275	0.314	398	960	0.0	0.5	4.095	A
B - Chaffron Way (E)	509	127	480	1051	0.485	506	666	0.0	0.9	6.555	A
C - Fulmer Street (S)	842	210	525	1267	0.665	834	461	0.0	1.9	8.182	A
D - Chaffron Way (W)	900	225	824	1101	0.817	884	535	0.0	4.1	15.564	C

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 - Fulmer Street (N)	477	119	843	1221	0.391	477	1120	0.5	0.6	4.830	A
B - Chaffron Way (E)	608	152	563	1002	0.607	606	756	0.9	1.5	9.043	A
C - Fulmer Street (S)	1005	251	628	1203	0.836	995	541	1.9	4.6	16.478	C
D - Chaffron Way (W)	1075	269	983	1005	1.070	980	639	4.1	27.8	72.444	F

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 - Fulmer Street (N)	585	146	831	1228	0.476	584	1203	0.6	0.9	5.579	A
B - Chaffron Way (E)	745	186	650	950	0.784	738	765	1.5	3.4	16.392	C
C - Fulmer Street (S)	1231	308	765	1119	1.100	1100	623	4.6	37.3	80.834	F
D - Chaffron Way (W)	1316	329	1104	931	1.414	930	761	27.8	124.3	304.097	F

08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street (N)	585	146	829	1229	0.476	585	1210	0.9	0.9	5.587	A
B - Chaffron Way (E)	745	186	650	950	0.784	745	764	3.4	3.5	17.397	C
C - Fulmer Street (S)	1231	308	770	1116	1.103	1112	624	37.3	67.0	176.591	F
D - Chaffron Way (W)	1316	329	1116	924	1.425	924	767	124.3	222.5	686.972	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 - Fulmer Street (N)	477	119	831	1228	0.389	478	1219	0.9	0.6	4.810	A
B - Chaffron Way (E)	608	152	556	1006	0.605	616	754	3.5	1.6	9.400	A
C - Fulmer Street (S)	1005	251	637	1198	0.839	1180	535	67.0	23.2	141.350	F
D - Chaffron Way (W)	1075	269	1142	909	1.183	909	675	222.5	264.0	898.080	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 - Fulmer Street (N)	400	100	875	1203	0.332	400	1078	0.6	0.5	4.490	A
B - Chaffron Way (E)	509	127	507	1036	0.492	512	769	1.6	1.0	6.905	A
C - Fulmer Street (S)	842	210	531	1263	0.667	926	487	23.2	2.1	13.575	B
D - Chaffron Way (W)	900	225	904	1053	0.854	1049	554	264.0	226.7	841.913	F

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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	420.59	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 - Fulmer Street (N)		ONE HOUR	✓	531	100.000
B - Chaffron Way (E)		ONE HOUR	✓	708	100.000
C - Fulmer Street (S)		ONE HOUR	✓	1170	100.000
D - Chaffron Way (W)		ONE HOUR	✓	1196	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	331	122
	B - Chaffron Way (E)	148	5	143	413
	C - Fulmer Street (S)	728	260	7	175
	D - Chaffron Way (W)	405	617	168	6

Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.62	0.23
	B - Chaffron Way (E)	0.21	0.01	0.20	0.58
	C - Fulmer Street (S)	0.62	0.22	0.01	0.15
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1
	D - Chaffron Way (W)	3	2	0	20

Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.006	1.000	1.013
	D - Chaffron Way (W)	1.025	1.015	1.000	1.200

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	400	410
	07:45-08:00	477	490
	08:00-08:15	585	600
	08:15-08:30	585	600
	08:30-08:45	477	490
	08:45-09:00	400	410
B - Chaffron Way (E)	07:30-07:45	533	550
	07:45-08:00	637	657
	08:00-08:15	780	804
	08:15-08:30	780	804
	08:30-08:45	637	657
	08:45-09:00	533	550
C - Fulmer Street (S)	07:30-07:45	881	886
	07:45-08:00	1052	1058
	08:00-08:15	1289	1295
	08:15-08:30	1289	1295
	08:30-08:45	1052	1058
	08:45-09:00	881	886
D - Chaffron Way (W)	07:30-07:45	900	916
	07:45-08:00	1075	1093
	08:00-08:15	1316	1339
	08:15-08:30	1316	1339
	08:30-08:45	1075	1093
	08:45-09:00	900	916

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 - Fulmer Street (N)	0.48	5.77	0.9	A	487	731
B - Chaffron Way (E)	0.82	20.66	4.3	C	650	975
C - Fulmer Street (S)	1.16	240.12	94.5	F	1074	1611
D - Chaffron Way (W)	1.43	1021.28	274.9	F	1097	1646

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 - Fulmer Street (N)	400	100	786	1254	0.319	398	959	0.0	0.5	4.196	A
B - Chaffron Way (E)	533	133	480	1052	0.507	529	704	0.0	1.0	6.838	A
C - Fulmer Street (S)	881	220	525	1267	0.696	872	484	0.0	2.2	8.937	A
D - Chaffron Way (W)	900	225	863	1078	0.835	882	534	0.0	4.5	17.069	C

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 - Fulmer Street (N)	477	119	875	1203	0.397	477	1111	0.5	0.7	4.952	A
B - Chaffron Way (E)	637	159	561	1004	0.634	634	791	1.0	1.7	9.664	A
C - Fulmer Street (S)	1052	263	628	1203	0.875	1037	567	2.2	5.9	20.113	C
D - Chaffron Way (W)	1075	269	1027	978	1.098	960	639	4.5	33.3	84.743	F

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 - Fulmer Street (N)	585	146	867	1207	0.484	584	1173	0.7	0.9	5.759	A
B - Chaffron Way (E)	780	195	649	951	0.820	770	802	1.7	4.1	18.940	C
C - Fulmer Street (S)	1289	322	763	1120	1.150	1109	656	5.9	50.9	103.946	F
D - Chaffron Way (W)	1316	329	1119	922	1.427	922	753	33.3	131.9	331.828	F

08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street (N)	585	146	866	1208	0.484	585	1177	0.9	0.9	5.774	A
B - Chaffron Way (E)	780	195	649	951	0.820	779	802	4.1	4.3	20.658	C
C - Fulmer Street (S)	1289	322	770	1116	1.155	1114	658	50.9	94.5	240.119	F
D - Chaffron Way (W)	1316	329	1125	918	1.434	918	759	131.9	231.5	724.853	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 - Fulmer Street (N)	477	119	870	1206	0.396	478	1186	0.9	0.7	4.958	A
B - Chaffron Way (E)	637	159	555	1007	0.632	647	794	4.3	1.8	10.249	B
C - Fulmer Street (S)	1052	263	638	1197	0.879	1184	563	94.5	61.5	237.545	F
D - Chaffron Way (W)	1075	269	1155	901	1.192	901	668	231.5	274.9	1010.897	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 - Fulmer Street (N)	400	100	885	1197	0.334	400	1135	0.7	0.5	4.521	A
B - Chaffron Way (E)	533	133	493	1044	0.511	536	793	1.8	1.1	7.124	A
C - Fulmer Street (S)	881	220	531	1263	0.698	1117	498	61.5	2.5	62.714	F
D - Chaffron Way (W)	900	225	1072	951	0.946	948	576	274.9	262.9	1021.281	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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	411.92	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
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 - Fulmer Street (N)		ONE HOUR	✓	531	100.000
B - Chaffron Way (E)		ONE HOUR	✓	704	100.000
C - Fulmer Street (S)		ONE HOUR	✓	1162	100.000
D - Chaffron Way (W)		ONE HOUR	✓	1196	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	331	122
	B - Chaffron Way (E)	148	5	139	413
	C - Fulmer Street (S)	728	252	7	175
	D - Chaffron Way (W)	405	617	168	6

Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.62	0.23
	B - Chaffron Way (E)	0.21	0.01	0.20	0.59
	C - Fulmer Street (S)	0.63	0.22	0.01	0.15
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1
	D - Chaffron Way (W)	3	2	0	20

Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.006	1.000	1.013
	D - Chaffron Way (W)	1.025	1.015	1.000	1.200

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	400	410
	07:45-08:00	477	490
	08:00-08:15	585	600
	08:15-08:30	585	600
	08:30-08:45	477	490
	08:45-09:00	400	410
B - Chaffron Way (E)	07:30-07:45	530	547
	07:45-08:00	633	653
	08:00-08:15	776	800
	08:15-08:30	776	800
	08:30-08:45	633	653
	08:45-09:00	530	547
C - Fulmer Street (S)	07:30-07:45	875	880
	07:45-08:00	1045	1050
	08:00-08:15	1280	1287
	08:15-08:30	1280	1287
	08:30-08:45	1045	1050
	08:45-09:00	875	880
D - Chaffron Way (W)	07:30-07:45	900	916
	07:45-08:00	1075	1093
	08:00-08:15	1316	1339
	08:15-08:30	1316	1339
	08:30-08:45	1075	1093
	08:45-09:00	900	916

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 - Fulmer Street (N)	0.48	5.75	0.9	A	487	731
B - Chaffron Way (E)	0.82	20.19	4.2	C	646	970
C - Fulmer Street (S)	1.15	230.06	90.2	F	1067	1600
D - Chaffron Way (W)	1.43	1002.66	273.3	F	1097	1646

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 - Fulmer Street (N)	400	100	780	1257	0.318	398	959	0.0	0.5	4.182	A
B - Chaffron Way (E)	530	133	480	1052	0.504	526	698	0.0	1.0	6.799	A
C - Fulmer Street (S)	875	219	525	1267	0.691	867	481	0.0	2.2	8.814	A
D - Chaffron Way (W)	900	225	857	1082	0.832	882	534	0.0	4.4	16.822	C

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 - Fulmer Street (N)	477	119	870	1206	0.396	477	1113	0.5	0.6	4.933	A
B - Chaffron Way (E)	633	158	561	1004	0.631	631	786	1.0	1.7	9.581	A
C - Fulmer Street (S)	1045	261	628	1203	0.869	1031	563	2.2	5.7	19.477	C
D - Chaffron Way (W)	1075	269	1020	982	1.094	963	639	4.4	32.4	82.797	F

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 - Fulmer Street (N)	585	146	862	1210	0.483	584	1178	0.6	0.9	5.732	A
B - Chaffron Way (E)	776	194	649	951	0.815	766	797	1.7	4.0	18.583	C
C - Fulmer Street (S)	1280	320	763	1120	1.143	1108	652	5.7	48.8	100.210	F
D - Chaffron Way (W)	1316	329	1117	924	1.425	923	754	32.4	130.8	327.603	F

08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street (N)	585	146	861	1211	0.483	585	1182	0.9	0.9	5.746	A
B - Chaffron Way (E)	776	194	649	951	0.815	775	796	4.0	4.2	20.187	C
C - Fulmer Street (S)	1280	320	770	1116	1.147	1114	654	48.8	90.2	230.064	F
D - Chaffron Way (W)	1316	329	1124	919	1.432	919	760	130.8	230.2	719.215	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 - Fulmer Street (N)	477	119	865	1209	0.395	478	1191	0.9	0.7	4.934	A
B - Chaffron Way (E)	633	158	555	1007	0.629	643	788	4.2	1.7	10.133	B
C - Fulmer Street (S)	1045	261	638	1197	0.873	1184	559	90.2	55.5	222.331	F
D - Chaffron Way (W)	1075	269	1153	902	1.191	902	669	230.2	273.3	1002.661	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 - Fulmer Street (N)	400	100	883	1198	0.334	400	1127	0.7	0.5	4.516	A
B - Chaffron Way (E)	530	133	495	1043	0.509	533	788	1.7	1.1	7.099	A
C - Fulmer Street (S)	875	219	531	1263	0.693	1088	497	55.5	2.4	49.100	E
D - Chaffron Way (W)	900	225	1046	967	0.930	964	573	273.3	257.4	991.126	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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	427.06	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 - Fulmer Street (N)		ONE HOUR	✓	536	100.000
B - Chaffron Way (E)		ONE HOUR	✓	708	100.000
C - Fulmer Street (S)		ONE HOUR	✓	1175	100.000
D - Chaffron Way (W)		ONE HOUR	✓	1196	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	336	122
	B - Chaffron Way (E)	148	5	143	413
	C - Fulmer Street (S)	733	260	7	175
	D - Chaffron Way (W)	405	617	168	6

Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.63	0.23
	B - Chaffron Way (E)	0.21	0.01	0.20	0.58
	C - Fulmer Street (S)	0.62	0.22	0.01	0.15
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1
	D - Chaffron Way (W)	3	2	0	20

Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.006	1.000	1.013
	D - Chaffron Way (W)	1.025	1.015	1.000	1.200

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	403	414
	07:45-08:00	481	494
	08:00-08:15	590	605
	08:15-08:30	590	605
	08:30-08:45	481	494
	08:45-09:00	403	414
B - Chaffron Way (E)	07:30-07:45	533	550
	07:45-08:00	637	657
	08:00-08:15	780	804
	08:15-08:30	780	804
	08:30-08:45	637	657
	08:45-09:00	533	550
C - Fulmer Street (S)	07:30-07:45	884	889
	07:45-08:00	1056	1061
	08:00-08:15	1293	1300
	08:15-08:30	1293	1300
	08:30-08:45	1056	1061
	08:45-09:00	884	889
D - Chaffron Way (W)	07:30-07:45	900	916
	07:45-08:00	1075	1093
	08:00-08:15	1316	1339
	08:15-08:30	1316	1339
	08:30-08:45	1075	1093
	08:45-09:00	900	916

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 - Fulmer Street (N)	0.49	5.81	0.9	A	491	737
B - Chaffron Way (E)	0.82	20.99	4.4	C	650	975
C - Fulmer Street (S)	1.16	245.56	96.8	F	1078	1617
D - Chaffron Way (W)	1.43	1037.51	275.7	F	1097	1646

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 - Fulmer Street (N)	403	101	786	1254	0.321	401	962	0.0	0.5	4.212	A
B - Chaffron Way (E)	533	133	483	1050	0.508	529	704	0.0	1.0	6.861	A
C - Fulmer Street (S)	884	221	525	1267	0.698	875	488	0.0	2.2	9.003	A
D - Chaffron Way (W)	900	225	866	1076	0.836	882	534	0.0	4.5	17.199	C

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 - Fulmer Street (N)	481	120	874	1204	0.400	481	1114	0.5	0.7	4.974	A
B - Chaffron Way (E)	637	159	564	1002	0.636	634	791	1.0	1.7	9.719	A
C - Fulmer Street (S)	1056	264	628	1203	0.878	1041	570	2.2	6.1	20.458	C
D - Chaffron Way (W)	1075	269	1030	976	1.101	958	639	4.5	33.7	85.770	F

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 - Fulmer Street (N)	590	147	866	1208	0.488	588	1175	0.7	0.9	5.798	A
B - Chaffron Way (E)	780	195	653	949	0.822	770	801	1.7	4.1	19.192	C
C - Fulmer Street (S)	1293	323	763	1120	1.154	1109	661	6.1	52.1	105.921	F
D - Chaffron Way (W)	1316	329	1120	922	1.428	921	752	33.7	132.5	334.041	F

08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street (N)	590	147	865	1209	0.488	590	1179	0.9	0.9	5.813	A
B - Chaffron Way (E)	780	195	654	948	0.822	779	801	4.1	4.4	20.989	C
C - Fulmer Street (S)	1293	323	770	1116	1.159	1114	663	52.1	96.8	245.406	F
D - Chaffron Way (W)	1316	329	1126	918	1.434	918	759	132.5	232.2	727.790	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 - Fulmer Street (N)	481	120	869	1207	0.399	483	1187	0.9	0.7	4.980	A
B - Chaffron Way (E)	637	159	558	1005	0.634	647	793	4.4	1.8	10.331	B
C - Fulmer Street (S)	1056	264	639	1197	0.882	1184	567	96.8	64.7	245.563	F
D - Chaffron Way (W)	1075	269	1155	901	1.193	901	668	232.2	275.7	1015.281	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 - Fulmer Street (N)	403	101	882	1199	0.336	404	1144	0.7	0.5	4.530	A
B - Chaffron Way (E)	533	133	495	1043	0.511	536	791	1.8	1.1	7.144	A
C - Fulmer Street (S)	884	221	531	1263	0.700	1133	500	64.7	2.5	70.588	F
D - Chaffron Way (W)	900	225	1086	943	0.954	940	578	275.7	265.8	1037.509	F

2033 Base + CD + SP (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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	367.74	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
D21	2033 Base + CD + SP (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 - Fulmer Street (N)		ONE HOUR	✓	536	100.000
B - Chaffron Way (E)		ONE HOUR	✓	676	100.000
C - Fulmer Street (S)		ONE HOUR	✓	1123	100.000
D - Chaffron Way (W)		ONE HOUR	✓	1196	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	9	69	336	122
	B - Chaffron Way (E)	148	5	111	413
	C - Fulmer Street (S)	733	208	7	175
	D - Chaffron Way (W)	405	617	168	6

Proportions

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0.02	0.13	0.63	0.23
	B - Chaffron Way (E)	0.22	0.01	0.16	0.61
	C - Fulmer Street (S)	0.65	0.19	0.01	0.16
	D - Chaffron Way (W)	0.34	0.52	0.14	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	5	1	5
	B - Chaffron Way (E)	5	0	2	3
	C - Fulmer Street (S)	0	1	0	1
	D - Chaffron Way (W)	3	2	0	20

Average PCU Per Veh

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	1.000	1.050	1.014	1.047
	B - Chaffron Way (E)	1.047	1.000	1.021	1.030
	C - Fulmer Street (S)	1.003	1.005	1.000	1.013
	D - Chaffron Way (W)	1.025	1.015	1.000	1.200

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street (N)	07:30-07:45	403	414
	07:45-08:00	481	494
	08:00-08:15	590	605
	08:15-08:30	590	605
	08:30-08:45	481	494
	08:45-09:00	403	414
B - Chaffron Way (E)	07:30-07:45	509	525
	07:45-08:00	608	627
	08:00-08:15	745	768
	08:15-08:30	745	768
	08:30-08:45	608	627
	08:45-09:00	509	525
C - Fulmer Street (S)	07:30-07:45	845	849
	07:45-08:00	1009	1014
	08:00-08:15	1236	1242
	08:15-08:30	1236	1242
	08:30-08:45	1009	1014
	08:45-09:00	845	849
D - Chaffron Way (W)	07:30-07:45	900	916
	07:45-08:00	1075	1093
	08:00-08:15	1316	1339
	08:15-08:30	1316	1339
	08:30-08:45	1075	1093
	08:45-09:00	900	916

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 - Fulmer Street (N)	0.48	5.62	0.9	A	491	737
B - Chaffron Way (E)	0.79	17.61	3.5	C	621	931
C - Fulmer Street (S)	1.11	181.66	69.2	F	1030	1545
D - Chaffron Way (W)	1.43	904.89	265.0	F	1097	1646

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 - Fulmer Street (N)	403	101	748	1275	0.316	401	963	0.0	0.5	4.111	A
B - Chaffron Way (E)	509	127	483	1049	0.485	506	666	0.0	0.9	6.576	A
C - Fulmer Street (S)	845	211	525	1267	0.667	837	464	0.0	1.9	8.237	A
D - Chaffron Way (W)	900	225	828	1099	0.819	884	535	0.0	4.1	15.680	C

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 - Fulmer Street (N)	481	120	842	1222	0.394	481	1123	0.5	0.6	4.852	A
B - Chaffron Way (E)	608	152	567	999	0.608	606	755	0.9	1.5	9.087	A
C - Fulmer Street (S)	1009	252	628	1203	0.839	998	545	1.9	4.7	16.737	C
D - Chaffron Way (W)	1075	269	987	1002	1.072	978	639	4.1	28.3	73.426	F

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 - Fulmer Street (N)	590	147	831	1228	0.480	589	1205	0.6	0.9	5.616	A
B - Chaffron Way (E)	745	186	655	947	0.786	737	764	1.5	3.4	16.566	C
C - Fulmer Street (S)	1236	309	764	1120	1.104	1101	628	4.7	38.4	82.641	F
D - Chaffron Way (W)	1316	329	1106	930	1.415	930	760	28.3	125.0	306.411	F

08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity	RFC	Throughput	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of

	(Veh/hr)	(Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	(Veh/hr)	(Veh)	(Veh)		service
A - Fulmer Street (N)	590	147	829	1230	0.480	590	1212	0.9	0.9	5.624	A
B - Chaffron Way (E)	745	186	655	947	0.786	744	763	3.4	3.5	17.609	C
C - Fulmer Street (S)	1236	309	770	1116	1.108	1113	629	38.4	69.2	181.662	F
D - Chaffron Way (W)	1316	329	1117	923	1.426	923	766	125.0	223.2	690.233	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 - Fulmer Street (N)	481	120	831	1228	0.392	482	1221	0.9	0.6	4.834	A
B - Chaffron Way (E)	608	152	560	1004	0.606	616	753	3.5	1.6	9.457	A
C - Fulmer Street (S)	1009	252	637	1198	0.842	1181	539	69.2	26.3	148.969	F
D - Chaffron Way (W)	1075	269	1144	908	1.184	908	674	223.2	265.0	904.895	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 - Fulmer Street (N)	403	101	872	1204	0.335	404	1086	0.6	0.5	4.501	A
B - Chaffron Way (E)	509	127	509	1034	0.492	512	767	1.6	1.0	6.921	A
C - Fulmer Street (S)	845	211	531	1263	0.669	942	489	26.3	2.1	14.928	B
D - Chaffron Way (W)	900	225	917	1045	0.861	1041	556	265.0	229.7	855.337	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: J14 - Furzton Roundabout_PM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J14

Report generation date: 29/01/2021 09:13:55

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

Summary of junction performance

PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Fulmer Street (N)	D2	3.1	11.05	0.76	B
B - Chaffron Way (E)		28.9	109.19	1.03	F
C - Fulmer Street (S)		3.4	21.82	0.78	C
D - Chaffron Way (W)		0.5	3.45	0.33	A
2033 Base					
A - Fulmer Street (N)	D14	12.2	39.90	0.94	E
B - Chaffron Way (E)		289.9	1085.76	1.58	F
C - Fulmer Street (S)		9.4	53.69	0.93	F
D - Chaffron Way (W)		0.8	4.27	0.45	A
2033 Base + CD + D					
A - Fulmer Street (N)	D16	14.9	48.10	0.96	E
B - Chaffron Way (E)		349.0	1275.24	1.66	F
C - Fulmer Street (S)		12.7	67.89	0.96	F
D - Chaffron Way (W)		0.8	4.37	0.46	A
2033 Base + CD + D with TP					
A - Fulmer Street (N)	D18	14.5	46.89	0.96	E
B - Chaffron Way (E)		340.0	1246.27	1.64	F
C - Fulmer Street (S)		12.2	65.91	0.96	F
D - Chaffron Way (W)		0.8	4.36	0.46	A
2033 Base + CD + D - ST					
A - Fulmer Street (N)	D20	15.1	48.72	0.96	E
B - Chaffron Way (E)		350.0	1279.48	1.66	F
C - Fulmer Street (S)		13.8	72.60	0.97	F
D - Chaffron Way (W)		0.8	4.39	0.46	A
2033 Base + CD + SP (ST)					
A - Fulmer Street (N)	D22	12.4	40.47	0.95	E
B - Chaffron Way (E)		290.5	1088.69	1.58	F
C - Fulmer Street (S)		10.2	57.47	0.94	F
D - Chaffron Way (W)		0.8	4.29	0.46	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	Furzton Roundabout
Location	52° 0'43.42"N, 0°46'38.81"W
Site number	14
Date	07/01/2021
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,D22	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
J14	Furztou Roundabout	Standard Roundabout		A, B, C, D	41.27	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Fulmer Street (N)	
B	Chaffron Way (E)	
C	Fulmer Street (S)	
D	Chaffron Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street (N)	2.90	7.90	14.2	40.4	62.0	9.0	
B - Chaffron Way (E)	3.20	7.90	16.5	50.4	62.0	11.0	
C - Fulmer Street (S)	3.10	7.70	19.2	40.7	62.0	13.0	
D - Chaffron Way (W)	3.10	7.90	22.6	49.4	62.0	14.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street (N)	Direct	Calibrated against queue length	-110
B - Chaffron Way (E)	Direct	Calibrated against queue length	-368
C - Fulmer Street (S)	Direct	Calibrated against queue length	-510
D - Chaffron Way (W)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street (N)	0.579	1636
B - Chaffron Way (E)	0.601	1510
C - Fulmer Street (S)	0.597	1363
D - Chaffron Way (W)	0.612	1958

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 - Fulmer Street (N)		ONE HOUR	✓	926	100.000
B - Chaffron Way (E)		ONE HOUR	✓	827	100.000
C - Fulmer Street (S)		ONE HOUR	✓	526	100.000
D - Chaffron Way (W)		ONE HOUR	✓	477	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	5	77	517	327
	B - Chaffron Way (E)	105	7	197	518
	C - Fulmer Street (S)	338	83	4	101
	D - Chaffron Way (W)	122	272	78	5

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

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 - Fulmer Street (N)	0.76	11.05	3.1	B	850	1275
B - Chaffron Way (E)	1.03	109.19	28.9	F	759	1138
C - Fulmer Street (S)	0.78	21.82	3.4	C	483	724
D - Chaffron Way (W)	0.33	3.45	0.5	A	438	657

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 - Fulmer Street (N)	697	174	337	1436	0.485	693	426	0.0	0.9	4.823	A
B - Chaffron Way (E)	623	156	701	1079	0.577	617	329	0.0	1.3	7.712	A
C - Fulmer Street (S)	396	99	723	927	0.427	393	596	0.0	0.7	6.708	A
D - Chaffron Way (W)	359	90	405	1680	0.214	358	711	0.0	0.3	2.720	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 - Fulmer Street (N)	832	208	403	1397	0.596	830	510	0.9	1.4	6.327	A
B - Chaffron Way (E)	743	186	839	996	0.746	738	394	1.3	2.8	13.623	B

C - Fulmer Street (S)	473	118	864	842	0.562	471	713	0.7	1.3	9.645	A
D - Chaffron Way (W)	429	107	485	1632	0.263	428	850	0.3	0.4	2.991	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 - Fulmer Street (N)	1020	255	492	1345	0.758	1013	615	1.4	3.0	10.654	B
B - Chaffron Way (E)	911	228	1025	886	1.028	848	481	2.8	18.4	59.027	F
C - Fulmer Street (S)	579	145	1015	752	0.771	572	858	1.3	3.1	19.295	C
D - Chaffron Way (W)	525	131	582	1573	0.334	525	1004	0.4	0.5	3.432	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 - Fulmer Street (N)	1020	255	494	1344	0.758	1019	622	3.0	3.1	11.048	B
B - Chaffron Way (E)	911	228	1030	882	1.032	869	483	18.4	28.9	109.188	F
C - Fulmer Street (S)	579	145	1033	741	0.782	578	866	3.1	3.4	21.822	C
D - Chaffron Way (W)	525	131	590	1568	0.335	525	1021	0.5	0.5	3.450	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 - Fulmer Street (N)	832	208	406	1396	0.597	839	530	3.1	1.5	6.534	A
B - Chaffron Way (E)	743	186	847	992	0.750	846	398	28.9	3.3	38.371	E
C - Fulmer Street (S)	473	118	949	791	0.598	480	744	3.4	1.5	11.855	B
D - Chaffron Way (W)	429	107	507	1618	0.265	429	923	0.5	0.4	3.028	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 - Fulmer Street (N)	697	174	339	1435	0.486	699	432	1.5	1.0	4.910	A
B - Chaffron Way (E)	623	156	707	1075	0.579	630	331	3.3	1.4	8.214	A
C - Fulmer Street (S)	396	99	735	920	0.431	399	602	1.5	0.8	6.953	A
D - Chaffron Way (W)	359	90	412	1676	0.214	359	722	0.4	0.3	2.736	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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	379.62	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 - Fulmer Street (N)		ONE HOUR	✓	1069	100.000
B - Chaffron Way (E)		ONE HOUR	✓	1133	100.000
C - Fulmer Street (S)		ONE HOUR	✓	612	100.000
D - Chaffron Way (W)		ONE HOUR	✓	637	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	597	377
	B - Chaffron Way (E)	121	8	227	776
	C - Fulmer Street (S)	390	96	5	122
	D - Chaffron Way (W)	141	398	93	6

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

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 - Fulmer Street (N)	0.94	39.90	12.2	E	981	1471
B - Chaffron Way (E)	1.58	1085.76	289.9	F	1040	1560
C - Fulmer Street (S)	0.93	53.69	9.4	F	562	843
D - Chaffron Way (W)	0.45	4.27	0.8	A	584	876

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 - Fulmer Street (N)	805	201	453	1368	0.588	799	489	0.0	1.4	6.263	A
B - Chaffron Way (E)	853	213	810	1014	0.841	834	442	0.0	4.6	18.469	C
C - Fulmer Street (S)	461	115	958	786	0.587	456	686	0.0	1.4	10.731	B
D - Chaffron Way (W)	479	120	464	1645	0.291	478	949	0.0	0.4	3.080	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 - Fulmer Street (N)	961	240	541	1317	0.730	956	575	1.4	2.6	9.850	A
B - Chaffron Way (E)	1019	255	969	919	1.108	902	528	4.6	33.7	91.653	F
C - Fulmer Street (S)	551	138	1069	719	0.766	544	802	1.4	3.0	19.871	C
D - Chaffron Way (W)	572	143	544	1597	0.358	572	1069	0.4	0.6	3.510	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 - Fulmer Street (N)	1177	294	658	1248	0.943	1146	663	2.6	10.2	29.145	D
B - Chaffron Way (E)	1247	312	1164	803	1.554	802	640	33.7	144.9	412.021	F
C - Fulmer Street (S)	674	169	1059	726	0.929	654	907	3.0	8.0	41.621	E
D - Chaffron Way (W)	701	175	622	1550	0.452	700	1091	0.6	0.8	4.229	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 - Fulmer Street (N)	1177	294	661	1246	0.944	1169	672	10.2	12.2	39.905	E
B - Chaffron Way (E)	1247	312	1185	790	1.578	790	645	144.9	259.2	867.819	F
C - Fulmer Street (S)	674	169	1057	727	0.928	669	918	8.0	9.4	53.689	F
D - Chaffron Way (W)	701	175	632	1544	0.454	701	1094	0.8	0.8	4.271	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 - Fulmer Street (N)	961	240	547	1313	0.732	998	593	12.2	2.8	12.692	B
B - Chaffron Way (E)	1019	255	1008	896	1.137	896	537	259.2	289.9	1085.761	F
C - Fulmer Street (S)	551	138	1079	713	0.772	573	825	9.4	3.7	28.772	D
D - Chaffron Way (W)	572	143	567	1583	0.362	573	1086	0.8	0.6	3.570	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 - Fulmer Street (N)	805	201	458	1365	0.589	810	516	2.8	1.5	6.546	A
B - Chaffron Way (E)	853	213	820	1008	0.846	1004	447	289.9	252.1	971.560	F
C - Fulmer Street (S)	461	115	1098	702	0.657	468	727	3.7	2.0	15.823	C
D - Chaffron Way (W)	479	120	494	1627	0.295	480	1072	0.6	0.4	3.141	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
J14	Furztou Roundabout	Standard Roundabout		A, B, C, D	456.93	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 - Fulmer Street (N)		ONE HOUR	✓	1069	100.000
B - Chaffron Way (E)		ONE HOUR	✓	1193	100.000
C - Fulmer Street (S)		ONE HOUR	✓	650	100.000
D - Chaffron Way (W)		ONE HOUR	✓	637	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	597	377
	B - Chaffron Way (E)	121	8	287	776
	C - Fulmer Street (S)	390	133	5	122
	D - Chaffron Way (W)	141	398	93	6

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

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 - Fulmer Street (N)	0.96	48.10	14.9	E	981	1471
B - Chaffron Way (E)	1.66	1275.24	349.0	F	1094	1642
C - Fulmer Street (S)	0.96	67.89	12.7	F	596	894
D - Chaffron Way (W)	0.46	4.37	0.8	A	584	876

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 - Fulmer Street (N)	805	201	480	1352	0.595	799	489	0.0	1.4	6.440	A
B - Chaffron Way (E)	898	224	809	1015	0.885	873	469	0.0	6.2	22.568	C
C - Fulmer Street (S)	489	122	954	788	0.620	483	729	0.0	1.6	11.557	B
D - Chaffron Way (W)	479	120	491	1629	0.294	478	945	0.0	0.4	3.123	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 - Fulmer Street (N)	961	240	574	1298	0.740	955	570	1.4	2.7	10.364	B
B - Chaffron Way (E)	1072	268	968	920	1.166	910	561	6.2	46.7	120.186	F
C - Fulmer Street (S)	584	146	1039	737	0.792	577	840	1.6	3.4	21.441	C
D - Chaffron Way (W)	572	143	572	1580	0.362	572	1043	0.4	0.6	3.569	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 - Fulmer Street (N)	1177	294	696	1226	0.960	1140	656	2.7	11.9	32.946	D
B - Chaffron Way (E)	1313	328	1158	806	1.629	806	678	46.7	173.5	503.550	F
C - Fulmer Street (S)	715	179	1027	745	0.961	688	937	3.4	10.2	48.508	E
D - Chaffron Way (W)	701	175	652	1532	0.458	700	1063	0.6	0.8	4.323	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 - Fulmer Street (N)	1177	294	701	1223	0.962	1164	665	11.9	14.9	48.101	E
B - Chaffron Way (E)	1313	328	1181	793	1.656	793	684	173.5	303.6	1014.256	F
C - Fulmer Street (S)	715	179	1026	745	0.959	705	948	10.2	12.7	67.892	F
D - Chaffron Way (W)	701	175	665	1524	0.460	701	1066	0.8	0.8	4.373	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 - Fulmer Street (N)	961	240	583	1292	0.744	1008	593	14.9	3.0	14.631	B
B - Chaffron Way (E)	1072	268	1017	891	1.204	890	574	303.6	349.0	1275.237	F
C - Fulmer Street (S)	584	146	1043	735	0.795	618	865	12.7	4.4	36.025	E
D - Chaffron Way (W)	572	143	604	1561	0.367	573	1057	0.8	0.6	3.651	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 - Fulmer Street (N)	805	201	486	1349	0.596	811	512	3.0	1.5	6.762	A
B - Chaffron Way (E)	898	224	821	1008	0.891	1005	476	349.0	322.3	1202.749	F
C - Fulmer Street (S)	489	122	1058	726	0.674	498	768	4.4	2.2	16.361	C
D - Chaffron Way (W)	479	120	518	1613	0.297	480	1038	0.6	0.4	3.181	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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	444.95	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
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 - Fulmer Street (N)		ONE HOUR	✓	1069	100.000
B - Chaffron Way (E)		ONE HOUR	✓	1184	100.000
C - Fulmer Street (S)		ONE HOUR	✓	645	100.000
D - Chaffron Way (W)		ONE HOUR	✓	637	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	597	377
	B - Chaffron Way (E)	121	8	278	776
	C - Fulmer Street (S)	390	128	5	122
	D - Chaffron Way (W)	141	398	93	6

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

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 - Fulmer Street (N)	0.96	46.89	14.5	E	981	1471
B - Chaffron Way (E)	1.64	1246.27	340.0	F	1086	1629
C - Fulmer Street (S)	0.96	65.91	12.2	F	592	887
D - Chaffron Way (W)	0.46	4.36	0.8	A	584	876

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 - Fulmer Street (N)	805	201	477	1354	0.594	799	489	0.0	1.4	6.415	A
B - Chaffron Way (E)	891	223	810	1015	0.878	868	466	0.0	5.9	21.863	C
C - Fulmer Street (S)	485	121	954	788	0.616	479	723	0.0	1.6	11.444	B
D - Chaffron Way (W)	479	120	487	1631	0.294	478	946	0.0	0.4	3.117	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 - Fulmer Street (N)	961	240	569	1300	0.739	956	571	1.4	2.7	10.293	B
B - Chaffron Way (E)	1064	266	968	920	1.157	909	556	5.9	44.7	115.586	F
C - Fulmer Street (S)	579	145	1043	735	0.789	572	834	1.6	3.4	21.250	C
D - Chaffron Way (W)	572	143	568	1582	0.362	572	1047	0.4	0.6	3.561	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 - Fulmer Street (N)	1177	294	691	1229	0.957	1141	657	2.7	11.6	32.403	D
B - Chaffron Way (E)	1303	326	1159	806	1.617	806	673	44.7	169.1	489.286	F
C - Fulmer Street (S)	710	177	1032	742	0.957	684	933	3.4	9.9	47.604	E
D - Chaffron Way (W)	701	175	648	1534	0.457	700	1067	0.6	0.8	4.311	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 - Fulmer Street (N)	1177	294	695	1226	0.959	1165	666	11.6	14.5	46.886	E
B - Chaffron Way (E)	1303	326	1181	792	1.645	792	679	169.1	296.8	991.926	F
C - Fulmer Street (S)	710	177	1030	743	0.956	700	943	9.9	12.2	65.914	F
D - Chaffron Way (W)	701	175	661	1527	0.459	701	1070	0.8	0.8	4.359	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 - Fulmer Street (N)	961	240	578	1295	0.742	1007	593	14.5	3.0	14.324	B
B - Chaffron Way (E)	1064	266	1016	891	1.194	891	569	296.8	340.0	1246.266	F
C - Fulmer Street (S)	579	145	1048	732	0.792	611	859	12.2	4.3	34.897	D
D - Chaffron Way (W)	572	143	598	1564	0.366	573	1061	0.8	0.6	3.637	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 - Fulmer Street (N)	805	201	482	1351	0.595	811	512	3.0	1.5	6.732	A
B - Chaffron Way (E)	891	223	821	1008	0.884	1005	472	340.0	311.6	1167.481	F
C - Fulmer Street (S)	485	121	1064	722	0.672	494	762	4.3	2.1	16.301	C
D - Chaffron Way (W)	479	120	514	1615	0.297	480	1043	0.6	0.4	3.176	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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	458.59	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 - Fulmer Street (N)		ONE HOUR	✓	1070	100.000
B - Chaffron Way (E)		ONE HOUR	✓	1193	100.000
C - Fulmer Street (S)		ONE HOUR	✓	655	100.000
D - Chaffron Way (W)		ONE HOUR	✓	637	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	598	377
	B - Chaffron Way (E)	121	8	287	776
	C - Fulmer Street (S)	396	133	5	122
	D - Chaffron Way (W)	141	398	93	6

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

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 - Fulmer Street (N)	0.96	48.72	15.1	E	982	1473
B - Chaffron Way (E)	1.66	1279.48	350.0	F	1094	1642
C - Fulmer Street (S)	0.97	72.60	13.8	F	601	902
D - Chaffron Way (W)	0.46	4.39	0.8	A	584	876

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 - Fulmer Street (N)	806	201	480	1352	0.596	800	493	0.0	1.4	6.452	A
B - Chaffron Way (E)	898	224	811	1014	0.886	873	469	0.0	6.2	22.647	C
C - Fulmer Street (S)	493	123	954	788	0.626	487	730	0.0	1.6	11.712	B
D - Chaffron Way (W)	479	120	495	1626	0.295	478	945	0.0	0.4	3.130	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 - Fulmer Street (N)	962	241	574	1298	0.741	957	575	1.4	2.7	10.403	B
B - Chaffron Way (E)	1072	268	970	919	1.167	909	561	6.2	46.9	120.755	F
C - Fulmer Street (S)	589	147	1038	738	0.799	582	841	1.6	3.6	22.000	C
D - Chaffron Way (W)	572	143	577	1577	0.363	572	1043	0.4	0.6	3.579	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 - Fulmer Street (N)	1178	295	696	1226	0.961	1141	661	2.7	12.0	33.213	D
B - Chaffron Way (E)	1313	328	1159	806	1.630	805	678	46.9	173.9	505.423	F
C - Fulmer Street (S)	722	180	1026	745	0.969	692	938	3.6	10.9	50.737	F
D - Chaffron Way (W)	701	175	657	1529	0.459	700	1062	0.6	0.8	4.338	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 - Fulmer Street (N)	1178	295	700	1224	0.963	1166	670	12.0	15.1	48.721	E
B - Chaffron Way (E)	1313	328	1182	792	1.658	792	684	173.9	304.2	1017.450	F
C - Fulmer Street (S)	722	180	1025	746	0.968	710	949	10.9	13.8	72.599	F
D - Chaffron Way (W)	701	175	670	1521	0.461	701	1065	0.8	0.8	4.389	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 - Fulmer Street (N)	962	241	584	1292	0.745	1010	601	15.1	3.1	14.820	B
B - Chaffron Way (E)	1072	268	1019	889	1.206	889	575	304.2	350.0	1279.477	F
C - Fulmer Street (S)	589	147	1042	735	0.801	626	866	13.8	4.6	39.260	E
D - Chaffron Way (W)	572	143	612	1556	0.368	573	1057	0.8	0.6	3.669	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 - Fulmer Street (N)	806	201	486	1349	0.597	812	516	3.1	1.5	6.780	A
B - Chaffron Way (E)	898	224	822	1007	0.892	1004	476	350.0	323.4	1207.357	F
C - Fulmer Street (S)	493	123	1058	726	0.680	503	769	4.6	2.2	16.762	C
D - Chaffron Way (W)	479	120	523	1610	0.298	480	1038	0.6	0.4	3.187	A

2033 Base + CD + SP (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
J14	Furzton Roundabout	Standard Roundabout		A, B, C, D	380.63	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
D22	2033 Base + CD + SP (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 - Fulmer Street (N)		ONE HOUR	✓	1070	100.000
B - Chaffron Way (E)		ONE HOUR	✓	1133	100.000
C - Fulmer Street (S)		ONE HOUR	✓	618	100.000
D - Chaffron Way (W)		ONE HOUR	✓	637	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	6	89	598	377
	B - Chaffron Way (E)	121	8	227	776
	C - Fulmer Street (S)	396	96	5	122
	D - Chaffron Way (W)	141	398	93	6

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street (N)	B - Chaffron Way (E)	C - Fulmer Street (S)	D - Chaffron Way (W)
From	A - Fulmer Street (N)	0	1	0	0
	B - Chaffron Way (E)	2	0	1	1
	C - Fulmer Street (S)	0	0	0	0
	D - Chaffron Way (W)	3	2	1	0

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 - Fulmer Street (N)	0.95	40.47	12.4	E	982	1473
B - Chaffron Way (E)	1.58	1088.69	290.5	F	1039	1559
C - Fulmer Street (S)	0.94	57.47	10.2	F	568	851
D - Chaffron Way (W)	0.46	4.29	0.8	A	584	876

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 - Fulmer Street (N)	806	201	453	1368	0.589	800	494	0.0	1.4	6.278	A
B - Chaffron Way (E)	853	213	811	1014	0.841	834	442	0.0	4.6	18.505	C
C - Fulmer Street (S)	466	116	958	786	0.593	460	687	0.0	1.4	10.870	B
D - Chaffron Way (W)	479	120	469	1642	0.292	478	949	0.0	0.4	3.087	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 - Fulmer Street (N)	962	241	541	1316	0.731	957	580	1.4	2.6	9.890	A
B - Chaffron Way (E)	1018	255	970	918	1.109	902	528	4.6	33.8	91.975	F
C - Fulmer Street (S)	556	139	1069	719	0.773	549	803	1.4	3.1	20.394	C
D - Chaffron Way (W)	572	143	549	1594	0.359	572	1069	0.4	0.6	3.520	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 - Fulmer Street (N)	1178	295	658	1248	0.944	1147	669	2.6	10.4	29.411	D
B - Chaffron Way (E)	1247	312	1165	802	1.555	802	640	33.8	145.1	413.196	F
C - Fulmer Street (S)	681	170	1058	726	0.938	659	909	3.1	8.5	43.621	E
D - Chaffron Way (W)	701	175	627	1547	0.453	700	1090	0.6	0.8	4.245	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 - Fulmer Street (N)	1178	295	661	1246	0.946	1170	677	10.4	12.4	40.472	E
B - Chaffron Way (E)	1247	312	1186	789	1.580	789	645	145.1	259.6	869.995	F
C - Fulmer Street (S)	681	170	1056	727	0.937	674	919	8.5	10.2	57.471	F
D - Chaffron Way (W)	701	175	638	1540	0.455	701	1093	0.8	0.8	4.288	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 - Fulmer Street (N)	962	241	547	1313	0.733	1000	600	12.4	2.9	12.828	B
B - Chaffron Way (E)	1018	255	1010	895	1.138	895	538	259.6	290.5	1088.693	F
C - Fulmer Street (S)	556	139	1079	713	0.779	581	826	10.2	3.9	30.777	D
D - Chaffron Way (W)	572	143	574	1579	0.363	573	1086	0.8	0.6	3.583	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 - Fulmer Street (N)	806	201	458	1365	0.590	811	521	2.9	1.5	6.566	A
B - Chaffron Way (E)	853	213	822	1007	0.847	1004	448	290.5	252.8	974.597	F
C - Fulmer Street (S)	466	116	1097	702	0.663	473	728	3.9	2.1	16.199	C
D - Chaffron Way (W)	479	120	499	1624	0.295	480	1072	0.6	0.4	3.150	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: J15 - Bleak Hall Roundabout_AM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\BaseJ15

Report generation date: 28/01/2021 17:57:08

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

Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Grafton Street (N)	D1	33.4	117.36	1.05	F
B - Standing Way (E)		44.9	109.16	1.05	F
C - Grafton Street (S)		35.3	91.15	1.03	F
D - Standing Way (W)		31.9	85.31	1.02	F
2033 Base					
A - Grafton Street (N)	D13	109.3	438.15	1.22	F
B - Standing Way (E)		153.8	429.08	1.22	F
C - Grafton Street (S)		132.7	365.66	1.19	F
D - Standing Way (W)		138.2	394.63	1.20	F
2033 Base + CD + D					
A - Grafton Street (N)	D15	157.8	621.85	1.28	F
B - Standing Way (E)		245.4	653.69	1.30	F
C - Grafton Street (S)		164.2	476.73	1.23	F
D - Standing Way (W)		378.5	1050.39	1.42	F
2033 Base + CD + D with TP					
A - Grafton Street (N)	D17	151.8	599.78	1.27	F
B - Standing Way (E)		232.9	624.16	1.29	F
C - Grafton Street (S)		159.7	463.31	1.23	F
D - Standing Way (W)		339.5	934.56	1.39	F
2033 Base + CD + D - ST					
A - Grafton Street (N)	D19	163.1	644.19	1.29	F
B - Standing Way (E)		256.9	687.61	1.31	F
C - Grafton Street (S)		170.9	491.02	1.24	F
D - Standing Way (W)		406.4	1131.89	1.45	F
2033 Base + CD + SP (ST)					
A - Grafton Street (N)	D21	114.8	464.27	1.23	F
B - Standing Way (E)		164.1	463.83	1.23	F
C - Grafton Street (S)		137.2	378.39	1.19	F
D - Standing Way (W)		155.8	450.14	1.23	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	Bleak Hall Roundabout
Location	52° 1'0.36"N, 0°44'42.06"W
Site number	15
Date	07/01/2021
Version	
Status	
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,D21	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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	99.79	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Grafton Street (N)	
B	Standing Way (E)	
C	Grafton Street (S)	
D	Standing Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Grafton Street (N)	7.30	9.30	14.8	34.8	59.5	11.0	
B - Standing Way (E)	6.70	7.60	8.5	40.5	59.5	13.5	
C - Grafton Street (S)	7.10	9.70	4.2	29.0	59.8	19.5	
D - Standing Way (W)	7.30	8.50	3.7	43.2	59.8	14.5	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Grafton Street (N)	Direct	Calibrated using video survey	-903
B - Standing Way (E)	Direct	Calibrated against queue length	-383
C - Grafton Street (S)	Direct	Calibrated against queue length	-178
D - Standing Way (W)	Direct	Calibrated using video survey	-322

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Grafton Street (N)	0.785	1960
B - Standing Way (E)	0.706	2034
C - Grafton Street (S)	0.718	2362
D - Standing Way (W)	0.732	2260

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 - Grafton Street (N)		ONE HOUR	✓	870	100.000
B - Standing Way (E)		ONE HOUR	✓	1243	100.000
C - Grafton Street (S)		ONE HOUR	✓	1194	100.000
D - Standing Way (W)		ONE HOUR	✓	1166	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	19	204	479	168
	B - Standing Way (E)	185	2	106	950
	C - Grafton Street (S)	819	155	1	219
	D - Standing Way (W)	182	803	178	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	6
	D - Standing Way (W)	4	5	8	0

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 - Grafton Street (N)	1.05	117.36	33.4	F	798	1197
B - Standing Way (E)	1.05	109.16	44.9	F	1141	1711
C - Grafton Street (S)	1.03	91.15	35.3	F	1096	1643
D - Standing Way (W)	1.02	85.31	31.9	F	1070	1605

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 - Grafton Street (N)	655	164	854	1191	0.550	650	902	0.0	1.2	6.601	A
B - Standing Way (E)	936	234	634	1483	0.631	929	871	0.0	1.7	6.426	A
C - Grafton Street (S)	899	225	992	1561	0.576	894	571	0.0	1.3	5.354	A
D - Standing Way (W)	878	219	884	1514	0.580	872	1002	0.0	1.4	5.567	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 - Grafton Street (N)	782	196	1020	1061	0.737	776	1076	1.2	2.7	12.394	B
B - Standing Way (E)	1117	279	757	1396	0.801	1109	1040	1.7	3.8	12.220	B

C - Grafton Street (S)	1073	268	1184	1420	0.756	1067	682	1.3	3.0	10.015	B
D - Standing Way (W)	1048	262	1055	1390	0.754	1042	1196	1.4	2.9	10.160	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 - Grafton Street (N)	958	239	1190	928	1.032	891	1250	2.7	19.5	58.599	F
B - Standing Way (E)	1369	342	872	1314	1.041	1277	1209	3.8	26.6	54.379	F
C - Grafton Street (S)	1315	329	1363	1289	1.020	1241	786	3.0	21.4	46.828	E
D - Standing Way (W)	1284	321	1225	1268	1.013	1216	1379	2.9	19.9	45.211	E

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 - Grafton Street (N)	958	239	1210	913	1.049	902	1269	19.5	33.4	117.355	F
B - Standing Way (E)	1369	342	884	1306	1.048	1295	1228	26.6	44.9	109.158	F
C - Grafton Street (S)	1315	329	1382	1275	1.031	1259	797	21.4	35.3	91.152	F
D - Standing Way (W)	1284	321	1243	1255	1.023	1236	1398	19.9	31.9	85.311	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 - Grafton Street (N)	782	196	1134	972	0.805	896	1206	33.4	4.9	65.132	F
B - Standing Way (E)	1117	279	867	1318	0.848	1268	1164	44.9	7.3	73.700	F
C - Grafton Street (S)	1073	268	1355	1295	0.829	1192	779	35.3	5.7	49.398	E
D - Standing Way (W)	1048	262	1184	1297	0.808	1157	1364	31.9	4.7	37.827	E

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 - Grafton Street (N)	655	164	873	1176	0.557	670	924	4.9	1.3	7.302	A
B - Standing Way (E)	936	234	652	1470	0.637	958	891	7.3	1.8	7.321	A
C - Grafton Street (S)	899	225	1022	1538	0.584	916	587	5.7	1.4	5.939	A
D - Standing Way (W)	878	219	907	1497	0.586	891	1032	4.7	1.4	6.062	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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	405.00	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 - Grafton Street (N)		ONE HOUR	✓	998	100.000
B - Standing Way (E)		ONE HOUR	✓	1426	100.000
C - Grafton Street (S)		ONE HOUR	✓	1378	100.000
D - Standing Way (W)		ONE HOUR	✓	1363	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	22	234	549	193
	B - Standing Way (E)	212	2	122	1090
	C - Grafton Street (S)	939	178	1	259
	D - Standing Way (W)	209	921	229	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	6
	D - Standing Way (W)	4	5	8	0

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 - Grafton Street (N)	1.22	438.15	109.3	F	916	1374
B - Standing Way (E)	1.22	429.08	153.8	F	1308	1962
C - Grafton Street (S)	1.19	365.66	132.7	F	1264	1896
D - Standing Way (W)	1.20	394.63	138.2	F	1250	1875

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 - Grafton Street (N)	751	188	995	1080	0.695	742	1030	0.0	2.2	10.400	B
B - Standing Way (E)	1073	268	743	1406	0.763	1061	995	0.0	3.1	10.109	B
C - Grafton Street (S)	1037	259	1133	1453	0.714	1027	671	0.0	2.4	8.276	A
D - Standing Way (W)	1026	256	1010	1419	0.723	1016	1150	0.0	2.5	8.715	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 - Grafton Street (N)	897	224	1168	945	0.949	866	1209	2.2	9.9	36.394	E
B - Standing Way (E)	1282	320	868	1317	0.973	1239	1166	3.1	13.9	34.575	D
C - Grafton Street (S)	1238	310	1322	1315	0.942	1207	784	2.4	10.3	27.642	D
D - Standing Way (W)	1225	306	1185	1293	0.948	1192	1344	2.5	10.8	29.155	D

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 - Grafton Street (N)	1099	275	1221	904	1.215	899	1268	9.9	59.9	152.331	F
B - Standing Way (E)	1570	392	902	1293	1.214	1289	1218	13.9	84.1	146.245	F
C - Grafton Street (S)	1517	379	1375	1276	1.188	1270	815	10.3	71.9	126.587	F
D - Standing Way (W)	1500	375	1245	1250	1.200	1244	1401	10.8	74.8	133.867	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 - Grafton Street (N)	1099	275	1223	902	1.218	901	1271	59.9	109.3	346.101	F
B - Standing Way (E)	1570	392	904	1291	1.215	1291	1220	84.1	153.8	337.677	F
C - Grafton Street (S)	1517	379	1378	1275	1.190	1274	817	71.9	132.7	295.597	F
D - Standing Way (W)	1500	375	1248	1247	1.203	1247	1404	74.8	138.2	313.981	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 - Grafton Street (N)	897	224	1218	906	0.991	897	1267	109.3	109.3	438.150	F
B - Standing Way (E)	1282	320	900	1294	0.990	1286	1216	153.8	152.7	429.084	F
C - Grafton Street (S)	1238	310	1372	1279	0.969	1269	814	132.7	125.0	365.655	F
D - Standing Way (W)	1225	306	1243	1251	0.979	1242	1398	138.2	134.0	394.630	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 - Grafton Street (N)	751	188	1218	906	0.829	897	1266	109.3	72.7	366.443	F
B - Standing Way (E)	1073	268	900	1294	0.829	1286	1216	152.7	99.6	354.387	F
C - Grafton Street (S)	1037	259	1372	1279	0.811	1269	814	125.0	67.1	274.336	F
D - Standing Way (W)	1026	256	1243	1251	0.820	1242	1398	134.0	80.0	311.600	F

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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	721.85	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 - Grafton Street (N)		ONE HOUR	✓	1038	100.000
B - Standing Way (E)		ONE HOUR	✓	1540	100.000
C - Grafton Street (S)		ONE HOUR	✓	1390	100.000
D - Standing Way (W)		ONE HOUR	✓	1660	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	22	234	549	233
	B - Standing Way (E)	212	2	122	1204
	C - Grafton Street (S)	939	178	1	272
	D - Standing Way (W)	273	1136	248	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	6
	D - Standing Way (W)	4	5	8	0

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 - Grafton Street (N)	1.28	621.85	157.8	F	953	1429
B - Standing Way (E)	1.30	653.69	245.4	F	1413	2120
C - Grafton Street (S)	1.23	476.73	164.2	F	1276	1914
D - Standing Way (W)	1.42	1050.39	378.5	F	1524	2285

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 - Grafton Street (N)	782	195	1159	953	0.820	765	1074	0.0	4.1	17.897	C
B - Standing Way (E)	1159	290	779	1380	0.840	1140	1145	0.0	4.8	14.076	B
C - Grafton Street (S)	1047	262	1241	1375	0.762	1035	679	0.0	3.0	10.253	B
D - Standing Way (W)	1250	313	1007	1422	0.879	1225	1268	0.0	6.2	16.603	C

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 - Grafton Street (N)	933	233	1242	888	1.051	860	1217	4.1	22.4	69.699	F
B - Standing Way (E)	1384	346	864	1320	1.049	1288	1238	4.8	28.9	58.671	F
C - Grafton Street (S)	1250	312	1400	1258	0.993	1196	752	3.0	16.5	40.411	E
D - Standing Way (W)	1493	373	1159	1312	1.138	1299	1437	6.2	54.5	94.989	F

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 - Grafton Street (N)	1143	286	1235	893	1.280	892	1247	22.4	85.2	227.937	F
B - Standing Way (E)	1696	424	886	1304	1.300	1303	1240	28.9	127.1	223.143	F
C - Grafton Street (S)	1531	383	1422	1243	1.232	1239	768	16.5	89.4	163.087	F
D - Standing Way (W)	1828	457	1197	1285	1.423	1285	1464	54.5	190.4	349.516	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 - Grafton Street (N)	1143	286	1234	894	1.279	894	1248	85.2	147.6	476.755	F
B - Standing Way (E)	1696	424	888	1303	1.301	1303	1240	127.1	225.1	491.523	F
C - Grafton Street (S)	1531	383	1422	1242	1.232	1242	768	89.4	161.7	370.048	F
D - Standing Way (W)	1828	457	1199	1284	1.424	1284	1465	190.4	326.6	729.151	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 - Grafton Street (N)	933	233	1235	893	1.045	893	1247	147.6	157.8	621.850	F
B - Standing Way (E)	1384	346	887	1304	1.062	1304	1241	225.1	245.4	653.687	F
C - Grafton Street (S)	1250	312	1422	1242	1.006	1240	768	161.7	164.2	476.733	F
D - Standing Way (W)	1493	373	1197	1285	1.162	1285	1465	326.6	378.5	991.756	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 - Grafton Street (N)	782	195	1233	894	0.874	889	1245	157.8	131.0	585.541	F
B - Standing Way (E)	1159	290	884	1306	0.888	1301	1238	245.4	210.1	630.571	F
C - Grafton Street (S)	1047	262	1419	1245	0.841	1237	766	164.2	116.6	409.574	F
D - Standing Way (W)	1250	313	1195	1287	0.972	1283	1461	378.5	370.3	1050.393	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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	670.33	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 - Grafton Street (N)		ONE HOUR	✓	1033	100.000
B - Standing Way (E)		ONE HOUR	✓	1525	100.000
C - Grafton Street (S)		ONE HOUR	✓	1389	100.000
D - Standing Way (W)		ONE HOUR	✓	1617	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	22	234	549	228
	B - Standing Way (E)	212	2	122	1189
	C - Grafton Street (S)	939	178	1	271
	D - Standing Way (W)	264	1104	246	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	6
	D - Standing Way (W)	4	5	8	0

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 - Grafton Street (N)	1.27	599.78	151.8	F	948	1422
B - Standing Way (E)	1.29	624.16	232.9	F	1399	2099
C - Grafton Street (S)	1.23	463.31	159.7	F	1275	1912
D - Standing Way (W)	1.39	934.56	339.5	F	1484	2226

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 - Grafton Street (N)	778	194	1136	970	0.802	763	1068	0.0	3.7	16.368	C
B - Standing Way (E)	1148	287	776	1383	0.830	1130	1124	0.0	4.5	13.447	B
C - Grafton Street (S)	1046	261	1227	1384	0.756	1034	679	0.0	3.0	9.968	A
D - Standing Way (W)	1218	304	1007	1422	0.856	1196	1254	0.0	5.3	14.813	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 - Grafton Street (N)	929	232	1238	891	1.042	860	1218	3.7	20.9	65.656	F
B - Standing Way (E)	1371	343	866	1319	1.040	1283	1232	4.5	26.5	55.090	F
C - Grafton Street (S)	1249	312	1391	1265	0.987	1198	757	3.0	15.6	38.712	E
D - Standing Way (W)	1454	364	1163	1309	1.110	1292	1426	5.3	45.7	82.293	F

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 - Grafton Street (N)	1138	284	1233	894	1.272	892	1250	20.9	82.2	218.738	F
B - Standing Way (E)	1679	420	889	1302	1.289	1301	1237	26.5	121.1	212.125	F
C - Grafton Street (S)	1530	382	1416	1247	1.227	1243	774	15.6	87.2	158.335	F
D - Standing Way (W)	1781	445	1203	1281	1.390	1280	1456	45.7	170.9	311.206	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 - Grafton Street (N)	1138	284	1233	895	1.271	894	1251	82.2	142.9	460.753	F
B - Standing Way (E)	1679	420	890	1302	1.290	1301	1237	121.1	215.5	470.788	F
C - Grafton Street (S)	1530	382	1417	1246	1.227	1246	775	87.2	158.2	360.762	F
D - Standing Way (W)	1781	445	1205	1279	1.392	1279	1458	170.9	296.3	661.543	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 - Grafton Street (N)	929	232	1234	894	1.039	893	1249	142.9	151.8	599.784	F
B - Standing Way (E)	1371	343	889	1302	1.053	1302	1238	215.5	232.9	624.160	F
C - Grafton Street (S)	1249	312	1416	1246	1.002	1243	775	158.2	159.7	463.311	F
D - Standing Way (W)	1454	364	1202	1281	1.135	1281	1457	296.3	339.5	897.041	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 - Grafton Street (N)	778	194	1232	896	0.868	890	1247	151.8	123.9	558.372	F
B - Standing Way (E)	1148	287	887	1304	0.880	1299	1235	232.9	195.3	593.902	F
C - Grafton Street (S)	1046	261	1413	1249	0.837	1241	772	159.7	110.9	393.313	F
D - Standing Way (W)	1218	304	1200	1282	0.950	1279	1454	339.5	324.3	934.556	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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	764.20	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
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 - Grafton Street (N)		ONE HOUR	✓	1038	100.000
B - Standing Way (E)		ONE HOUR	✓	1540	100.000
C - Grafton Street (S)		ONE HOUR	✓	1406	100.000
D - Standing Way (W)		ONE HOUR	✓	1691	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	22	234	549	233
	B - Standing Way (E)	212	2	122	1204
	C - Grafton Street (S)	939	178	1	288
	D - Standing Way (W)	273	1136	279	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	6
	D - Standing Way (W)	4	5	8	0

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 - Grafton Street (N)	1.29	644.19	163.1	F	953	1429
B - Standing Way (E)	1.31	687.61	256.9	F	1413	2120
C - Grafton Street (S)	1.24	491.02	170.9	F	1290	1936
D - Standing Way (W)	1.45	1131.89	406.4	F	1552	2328

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 - Grafton Street (N)	782	195	1179	936	0.835	764	1073	0.0	4.4	19.261	C
B - Standing Way (E)	1159	290	801	1365	0.850	1139	1142	0.0	5.1	14.862	B
C - Grafton Street (S)	1059	265	1239	1375	0.770	1046	700	0.0	3.2	10.563	B
D - Standing Way (W)	1273	318	1007	1422	0.895	1245	1279	0.0	7.0	18.173	C

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 - Grafton Street (N)	933	233	1249	882	1.059	856	1211	4.4	23.6	73.447	F
B - Standing Way (E)	1384	346	882	1307	1.059	1279	1223	5.1	31.5	63.127	F
C - Grafton Street (S)	1264	316	1391	1265	0.999	1207	770	3.2	17.6	42.091	E
D - Standing Way (W)	1521	380	1156	1314	1.157	1304	1442	7.0	61.2	104.738	F

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 - Grafton Street (N)	1143	286	1241	888	1.287	886	1238	23.6	87.8	236.936	F
B - Standing Way (E)	1696	424	903	1292	1.312	1291	1225	31.5	132.6	236.301	F
C - Grafton Street (S)	1548	387	1409	1251	1.238	1248	785	17.6	92.6	168.022	F
D - Standing Way (W)	1862	466	1191	1289	1.445	1288	1467	61.2	204.6	377.418	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 - Grafton Street (N)	1143	286	1241	888	1.287	888	1240	87.8	151.6	492.792	F
B - Standing Way (E)	1696	424	904	1292	1.313	1291	1225	132.6	233.7	515.594	F
C - Grafton Street (S)	1548	387	1410	1251	1.238	1250	785	92.6	167.1	379.874	F
D - Standing Way (W)	1862	466	1193	1287	1.446	1287	1468	204.6	348.4	777.300	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 - Grafton Street (N)	933	233	1241	888	1.051	887	1239	151.6	163.1	644.189	F
B - Standing Way (E)	1384	346	903	1292	1.072	1292	1225	233.7	256.9	687.614	F
C - Grafton Street (S)	1264	316	1410	1251	1.011	1249	785	167.1	170.9	491.018	F
D - Standing Way (W)	1521	380	1192	1288	1.180	1288	1467	348.4	406.4	1058.277	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 - Grafton Street (N)	782	195	1240	889	0.879	884	1236	163.1	137.6	613.107	F
B - Standing Way (E)	1159	290	900	1294	0.896	1289	1223	256.9	224.5	672.551	F
C - Grafton Street (S)	1059	265	1407	1253	0.845	1246	783	170.9	124.2	427.143	F
D - Standing Way (W)	1273	318	1189	1290	0.987	1287	1464	406.4	403.0	1131.894	F

2033 Base + CD + SP (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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	437.66	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
D21	2033 Base + CD + SP (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 - Grafton Street (N)		ONE HOUR	✓	998	100.000
B - Standing Way (E)		ONE HOUR	✓	1426	100.000
C - Grafton Street (S)		ONE HOUR	✓	1393	100.000
D - Standing Way (W)		ONE HOUR	✓	1393	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	22	234	549	193
	B - Standing Way (E)	212	2	122	1090
	C - Grafton Street (S)	939	178	1	275
	D - Standing Way (W)	209	921	260	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	21	6	5	5
	B - Standing Way (E)	5	0	6	5
	C - Grafton Street (S)	3	4	0	5
	D - Standing Way (W)	4	5	8	0

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 - Grafton Street (N)	1.23	464.27	114.8	F	916	1374
B - Standing Way (E)	1.23	463.83	164.1	F	1309	1963
C - Grafton Street (S)	1.19	378.39	137.2	F	1279	1918
D - Standing Way (W)	1.23	450.14	155.8	F	1279	1918

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 - Grafton Street (N)	751	188	1018	1062	0.707	742	1030	0.0	2.3	10.949	B
B - Standing Way (E)	1074	268	765	1389	0.773	1061	994	0.0	3.2	10.573	B
C - Grafton Street (S)	1049	262	1133	1453	0.722	1039	694	0.0	2.5	8.498	A
D - Standing Way (W)	1049	262	1010	1419	0.739	1038	1162	0.0	2.7	9.213	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 - Grafton Street (N)	897	224	1188	929	0.966	861	1205	2.3	11.3	40.579	E
B - Standing Way (E)	1282	321	889	1301	0.985	1233	1160	3.2	15.5	37.861	E
C - Grafton Street (S)	1253	313	1316	1319	0.949	1218	806	2.5	11.0	29.056	D
D - Standing Way (W)	1253	313	1182	1294	0.968	1211	1352	2.7	13.1	33.421	D

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 - Grafton Street (N)	1099	275	1228	897	1.225	893	1260	11.3	62.8	161.822	F
B - Standing Way (E)	1570	393	921	1279	1.228	1275	1200	15.5	89.2	157.011	F
C - Grafton Street (S)	1534	384	1362	1286	1.193	1280	834	11.0	74.6	130.287	F
D - Standing Way (W)	1534	384	1239	1253	1.224	1249	1403	13.1	84.3	149.966	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 - Grafton Street (N)	1099	275	1230	896	1.226	896	1263	62.8	113.7	363.226	F
B - Standing Way (E)	1570	393	923	1277	1.229	1277	1202	89.2	162.4	360.619	F
C - Grafton Street (S)	1534	384	1364	1284	1.194	1284	836	74.6	137.2	303.357	F
D - Standing Way (W)	1534	384	1242	1251	1.226	1250	1406	84.3	155.3	350.863	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 - Grafton Street (N)	897	224	1229	897	1.001	893	1257	113.7	114.8	464.269	F
B - Standing Way (E)	1282	321	921	1279	1.002	1276	1201	162.4	164.1	463.833	F
C - Grafton Street (S)	1253	313	1362	1286	0.974	1276	835	137.2	131.2	378.389	F
D - Standing Way (W)	1253	313	1236	1255	0.998	1251	1403	155.3	155.8	450.142	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 - Grafton Street (N)	751	188	1226	899	0.836	892	1258	114.8	79.8	394.131	F
B - Standing Way (E)	1074	268	919	1280	0.839	1272	1198	164.1	114.3	394.726	F
C - Grafton Street (S)	1049	262	1359	1288	0.814	1278	833	131.2	73.8	290.210	F
D - Standing Way (W)	1049	262	1237	1255	0.836	1247	1400	155.8	106.4	379.642	F

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: J15 - Bleak Hall Roundabout_PM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J15

Report generation date: 28/01/2021 18:05:10

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

Summary of junction performance

PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Grafton Street (N)	D2	41.2	130.15	1.07	F
B - Standing Way (E)		20.0	59.55	0.99	F
C - Grafton Street (S)		26.4	91.12	1.02	F
D - Standing Way (W)		46.2	98.38	1.04	F
2033 Base					
A - Grafton Street (N)	D14	131.7	486.62	1.24	F
B - Standing Way (E)		99.9	265.99	1.14	F
C - Grafton Street (S)		121.1	456.99	1.23	F
D - Standing Way (W)		165.6	390.12	1.20	F
2033 Base + CD + D					
A - Grafton Street (N)	D16	214.4	767.85	1.34	F
B - Standing Way (E)		300.1	830.28	1.36	F
C - Grafton Street (S)		198.2	757.95	1.33	F
D - Standing Way (W)		311.2	689.96	1.31	F
2033 Base + CD + D with TP					
A - Grafton Street (N)	D18	200.9	719.95	1.32	F
B - Standing Way (E)		262.6	721.02	1.32	F
C - Grafton Street (S)		186.7	711.19	1.32	F
D - Standing Way (W)		286.3	641.49	1.30	F
2033 Base + CD + D - ST					
A - Grafton Street (N)	D20	218.4	788.29	1.35	F
B - Standing Way (E)		304.4	847.26	1.36	F
C - Grafton Street (S)		217.0	834.92	1.36	F
D - Standing Way (W)		316.9	699.02	1.32	F
2033 Base + CD + SP (ST)					
A - Grafton Street (N)	D22	135.0	499.34	1.25	F
B - Standing Way (E)		102.1	274.87	1.15	F
C - Grafton Street (S)		137.1	508.89	1.25	F
D - Standing Way (W)		169.4	398.70	1.20	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	Bleak Hall Roundabout
Location	52° 1'0.36"N, 0°44'42.06"W
Site number	15
Date	07/01/2021
Version	
Status	
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,D22	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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	93.66	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Grafton Street (N)	
B	Standing Way (E)	
C	Grafton Street (S)	
D	Standing Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Grafton Street (N)	7.30	9.30	14.8	34.8	59.5	11.0	
B - Standing Way (E)	6.70	7.60	8.5	40.5	59.5	13.5	
C - Grafton Street (S)	7.10	9.70	4.2	29.0	59.8	19.5	
D - Standing Way (W)	7.30	8.50	3.7	43.2	59.8	14.5	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Grafton Street (N)	Direct	Calibrated against queue length	-718
B - Standing Way (E)	Direct	Calibrated using viedo survey	-358
C - Grafton Street (S)	Direct	Calibrated against queue length	-625
D - Standing Way (W)	Direct	Calibrated against queue length	-506

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Grafton Street (N)	0.785	2145
B - Standing Way (E)	0.706	2059
C - Grafton Street (S)	0.718	1915
D - Standing Way (W)	0.732	2076

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	

A - Grafton Street (N)	853	213	1214	1151	0.741	847	656	1.2	2.7	11.597	B
B - Standing Way (E)	1010	253	925	1355	0.746	1005	1136	1.4	2.8	10.123	B
C - Grafton Street (S)	816	204	1048	1132	0.721	811	881	1.2	2.5	11.049	B
D - Standing Way (W)	1276	319	602	1581	0.807	1267	1257	1.8	3.9	11.171	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 - Grafton Street (N)	1045	261	1406	997	1.048	963	764	2.7	23.1	61.579	F
B - Standing Way (E)	1238	309	1055	1263	0.980	1191	1314	2.8	14.5	36.655	E
C - Grafton Street (S)	1000	250	1235	995	1.005	945	1011	2.5	16.2	48.475	E
D - Standing Way (W)	1562	391	703	1508	1.036	1467	1477	3.9	27.8	49.551	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 - Grafton Street (N)	1045	261	1427	980	1.066	972	776	23.1	41.2	130.146	F
B - Standing Way (E)	1238	309	1066	1256	0.986	1215	1333	14.5	20.0	59.547	F
C - Grafton Street (S)	1000	250	1259	978	1.023	959	1023	16.2	26.4	91.117	F
D - Standing Way (W)	1562	391	714	1500	1.041	1488	1504	27.8	46.2	98.375	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 - Grafton Street (N)	853	213	1374	1022	0.835	990	733	41.2	7.1	91.498	F
B - Standing Way (E)	1010	253	1074	1250	0.808	1072	1290	20.0	4.6	25.296	D
C - Grafton Street (S)	816	204	1134	1069	0.763	908	1013	26.4	3.5	32.356	D
D - Standing Way (W)	1276	319	670	1532	0.833	1437	1371	46.2	5.9	54.922	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 - Grafton Street (N)	714	179	1038	1292	0.553	738	561	7.1	1.3	6.761	A
B - Standing Way (E)	846	212	803	1440	0.588	859	973	4.6	1.4	6.330	A
C - Grafton Street (S)	684	171	899	1241	0.551	693	763	3.5	1.2	6.668	A
D - Standing Way (W)	1068	267	515	1644	0.650	1084	1077	5.9	1.9	6.608	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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	392.55	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 - Grafton Street (N)		ONE HOUR	✓	1095	100.000
B - Standing Way (E)		ONE HOUR	✓	1297	100.000
C - Grafton Street (S)		ONE HOUR	✓	1069	100.000
D - Standing Way (W)		ONE HOUR	✓	1647	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	18	128	774	174
	B - Standing Way (E)	105	1	140	1051
	C - Grafton Street (S)	502	149	2	416
	D - Standing Way (W)	222	1190	233	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	0	2	1	0
	B - Standing Way (E)	6	0	1	3
	C - Grafton Street (S)	1	2	0	1
	D - Standing Way (W)	1	3	5	0

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 - Grafton Street (N)	1.24	486.62	131.7	F	1005	1507
B - Standing Way (E)	1.14	265.99	99.9	F	1190	1785
C - Grafton Street (S)	1.23	456.99	121.1	F	981	1471
D - Standing Way (W)	1.20	390.12	165.6	F	1512	2268

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 - Grafton Street (N)	824	206	1176	1187	0.694	816	631	0.0	2.2	9.473	A
B - Standing Way (E)	977	244	898	1374	0.711	967	1093	0.0	2.4	8.657	A
C - Grafton Street (S)	805	201	1009	1159	0.694	796	856	0.0	2.2	9.698	A
D - Standing Way (W)	1240	310	579	1602	0.774	1227	1226	0.0	3.3	9.309	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 - Grafton Street (N)	985	246	1378	1025	0.960	948	740	2.2	11.2	36.595	E
B - Standing Way (E)	1166	292	1046	1271	0.917	1142	1281	2.4	8.3	24.449	C
C - Grafton Street (S)	961	240	1189	1027	0.936	933	999	2.2	9.1	31.797	D
D - Standing Way (W)	1481	370	680	1529	0.969	1438	1443	3.3	14.0	30.562	D

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 - Grafton Street (N)	1206	301	1442	974	1.239	969	768	11.2	70.3	162.797	F
B - Standing Way (E)	1428	357	1074	1251	1.141	1241	1337	8.3	55.1	102.887	F
C - Grafton Street (S)	1177	294	1281	960	1.226	955	1034	9.1	64.7	150.997	F
D - Standing Way (W)	1814	453	701	1513	1.199	1509	1535	14.0	90.3	133.094	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 - Grafton Street (N)	1206	301	1445	971	1.242	970	769	70.3	129.2	377.100	F
B - Standing Way (E)	1428	357	1076	1250	1.142	1249	1340	55.1	99.9	231.170	F
C - Grafton Street (S)	1177	294	1288	955	1.233	954	1036	64.7	120.4	356.339	F
D - Standing Way (W)	1814	453	702	1513	1.199	1513	1541	90.3	165.6	310.210	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 - Grafton Street (N)	985	246	1438	977	1.008	974	769	129.2	131.7	486.620	F
B - Standing Way (E)	1166	292	1078	1249	0.934	1236	1334	99.9	82.4	265.986	F
C - Grafton Street (S)	961	240	1278	962	0.999	958	1036	120.4	121.1	456.992	F
D - Standing Way (W)	1481	370	703	1512	0.979	1503	1533	165.6	160.1	390.116	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 - Grafton Street (N)	824	206	1438	977	0.844	969	767	131.7	95.5	422.982	F
B - Standing Way (E)	977	244	1073	1252	0.780	1237	1334	82.4	17.3	149.447	F
C - Grafton Street (S)	805	201	1277	963	0.836	955	1033	121.1	83.6	387.111	F
D - Standing Way (W)	1240	310	701	1514	0.819	1504	1531	160.1	94.1	305.457	F

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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	757.48	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 - Grafton Street (N)		ONE HOUR	✓	1169	100.000
B - Standing Way (E)		ONE HOUR	✓	1548	100.000
C - Grafton Street (S)		ONE HOUR	✓	1090	100.000
D - Standing Way (W)		ONE HOUR	✓	1858	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	18	128	774	248
	B - Standing Way (E)	105	1	140	1302
	C - Grafton Street (S)	502	149	2	437
	D - Standing Way (W)	269	1339	247	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	0	2	1	0
	B - Standing Way (E)	6	0	1	3
	C - Grafton Street (S)	1	2	0	1
	D - Standing Way (W)	1	3	5	0

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 - Grafton Street (N)	1.34	767.85	214.4	F	1073	1609
B - Standing Way (E)	1.36	830.28	300.1	F	1420	2130
C - Grafton Street (S)	1.33	757.95	198.2	F	1000	1501
D - Standing Way (W)	1.31	689.96	311.2	F	1705	2558

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 - Grafton Street (N)	880	220	1289	1097	0.802	865	660	0.0	3.7	14.693	B
B - Standing Way (E)	1165	291	957	1333	0.874	1141	1196	0.0	6.0	17.121	C
C - Grafton Street (S)	821	205	1238	992	0.827	804	861	0.0	4.3	17.753	C
D - Standing Way (W)	1399	350	573	1607	0.871	1375	1468	0.0	5.9	14.350	B

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 - Grafton Street (N)	1051	263	1440	976	1.077	952	730	3.7	28.5	74.571	F
B - Standing Way (E)	1391	348	1057	1264	1.101	1246	1335	6.0	42.3	81.158	F
C - Grafton Street (S)	980	245	1354	908	1.079	886	949	4.3	27.7	79.104	F
D - Standing Way (W)	1671	418	632	1565	1.068	1539	1608	5.9	38.9	62.929	F

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 - Grafton Street (N)	1287	322	1458	961	1.339	960	740	28.5	110.2	269.386	F
B - Standing Way (E)	1704	426	1067	1257	1.356	1256	1351	42.3	154.3	288.627	F
C - Grafton Street (S)	1200	300	1365	900	1.333	899	958	27.7	103.0	271.368	F
D - Standing Way (W)	2046	512	640	1559	1.313	1558	1624	38.9	161.0	237.338	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 - Grafton Street (N)	1287	322	1458	961	1.340	961	740	110.2	191.8	572.499	F
B - Standing Way (E)	1704	426	1067	1256	1.356	1256	1352	154.3	266.3	607.460	F
C - Grafton Street (S)	1200	300	1365	900	1.334	900	959	103.0	178.1	569.174	F
D - Standing Way (W)	2046	512	640	1558	1.313	1558	1624	161.0	283.0	517.231	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 - Grafton Street (N)	1051	263	1458	961	1.094	961	740	191.8	214.4	765.874	F
B - Standing Way (E)	1391	348	1067	1256	1.107	1256	1352	266.3	300.1	815.373	F
C - Grafton Street (S)	980	245	1365	900	1.089	900	959	178.1	198.2	757.949	F
D - Standing Way (W)	1671	418	640	1558	1.072	1558	1624	283.0	311.2	689.956	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 - Grafton Street (N)	880	220	1455	964	0.913	959	739	214.4	194.6	767.853	F
B - Standing Way (E)	1165	291	1065	1258	0.927	1253	1349	300.1	278.0	830.280	F
C - Grafton Street (S)	821	205	1362	902	0.910	898	957	198.2	178.9	756.538	F
D - Standing Way (W)	1399	350	639	1559	0.897	1554	1621	311.2	272.4	676.009	F

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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	692.71	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
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 - Grafton Street (N)		ONE HOUR	✓	1157	100.000
B - Standing Way (E)		ONE HOUR	✓	1509	100.000
C - Grafton Street (S)		ONE HOUR	✓	1087	100.000
D - Standing Way (W)		ONE HOUR	✓	1826	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	18	128	774	236
	B - Standing Way (E)	105	1	140	1263
	C - Grafton Street (S)	502	149	2	434
	D - Standing Way (W)	262	1316	245	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	0	2	1	0
	B - Standing Way (E)	6	0	1	3
	C - Grafton Street (S)	0	2	0	1
	D - Standing Way (W)	1	3	5	0

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 - Grafton Street (N)	1.32	719.95	200.9	F	1062	1592
B - Standing Way (E)	1.32	721.02	262.6	F	1385	2077
C - Grafton Street (S)	1.32	711.19	186.7	F	998	1496
D - Standing Way (W)	1.30	641.49	286.3	F	1676	2514

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 - Grafton Street (N)	871	218	1272	1110	0.784	857	657	0.0	3.4	13.583	B
B - Standing Way (E)	1136	284	948	1339	0.848	1116	1181	0.0	5.0	15.012	C
C - Grafton Street (S)	818	205	1204	1018	0.804	803	860	0.0	3.8	15.862	C
D - Standing Way (W)	1375	344	575	1606	0.856	1354	1432	0.0	5.4	13.322	B

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 - Grafton Street (N)	1040	260	1434	980	1.061	952	733	3.4	25.3	67.900	F
B - Standing Way (E)	1356	339	1056	1264	1.073	1239	1329	5.0	34.2	68.741	F
C - Grafton Street (S)	977	244	1337	920	1.062	894	959	3.8	24.6	71.299	F
D - Standing Way (W)	1642	410	639	1559	1.053	1528	1591	5.4	34.0	56.907	F

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 - Grafton Street (N)	1274	318	1456	963	1.323	961	744	25.3	103.4	250.640	F
B - Standing Way (E)	1661	415	1068	1256	1.323	1255	1349	34.2	135.8	251.411	F
C - Grafton Street (S)	1197	299	1353	909	1.318	907	970	24.6	97.1	251.581	F
D - Standing Way (W)	2011	503	649	1552	1.295	1551	1612	34.0	148.9	218.806	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 - Grafton Street (N)	1274	318	1456	962	1.324	962	745	103.4	181.3	539.456	F
B - Standing Way (E)	1661	415	1069	1255	1.323	1255	1350	135.8	237.3	540.188	F
C - Grafton Street (S)	1197	299	1354	908	1.318	908	970	97.1	169.3	535.220	F
D - Standing Way (W)	2011	503	649	1552	1.296	1552	1612	148.9	263.7	482.962	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 - Grafton Street (N)	1040	260	1456	962	1.081	962	745	181.3	200.9	719.947	F
B - Standing Way (E)	1356	339	1068	1255	1.080	1255	1350	237.3	262.6	721.021	F
C - Grafton Street (S)	977	244	1354	908	1.076	908	970	169.3	186.7	711.193	F
D - Standing Way (W)	1642	410	649	1552	1.058	1552	1612	263.7	286.3	641.494	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 - Grafton Street (N)	871	218	1453	965	0.902	960	743	200.9	178.5	711.217	F
B - Standing Way (E)	1136	284	1067	1257	0.904	1252	1347	262.6	233.6	713.644	F
C - Grafton Street (S)	818	205	1350	911	0.899	906	968	186.7	164.9	699.109	F
D - Standing Way (W)	1375	344	648	1553	0.885	1548	1608	286.3	243.1	615.917	F

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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	784.00	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 - Grafton Street (N)		ONE HOUR	✓	1169	100.000
B - Standing Way (E)		ONE HOUR	✓	1548	100.000
C - Grafton Street (S)		ONE HOUR	✓	1113	100.000
D - Standing Way (W)		ONE HOUR	✓	1870	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	18	128	774	248
	B - Standing Way (E)	105	1	140	1302
	C - Grafton Street (S)	502	149	2	460
	D - Standing Way (W)	269	1339	259	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	0	2	1	0
	B - Standing Way (E)	6	0	1	3
	C - Grafton Street (S)	0	2	0	1
	D - Standing Way (W)	1	3	5	0

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 - Grafton Street (N)	1.35	788.29	218.4	F	1073	1609
B - Standing Way (E)	1.36	847.26	304.4	F	1420	2130
C - Grafton Street (S)	1.36	834.92	217.0	F	1021	1532
D - Standing Way (W)	1.32	699.02	316.9	F	1716	2575

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 - Grafton Street (N)	880	220	1297	1091	0.807	865	659	0.0	3.8	15.056	C
B - Standing Way (E)	1165	291	966	1327	0.878	1141	1196	0.0	6.1	17.543	C
C - Grafton Street (S)	838	210	1238	993	0.844	819	869	0.0	4.7	19.047	C
D - Standing Way (W)	1408	352	573	1607	0.876	1383	1484	0.0	6.2	14.765	B

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 - Grafton Street (N)	1051	263	1445	971	1.082	948	724	3.8	29.4	76.711	F
B - Standing Way (E)	1391	348	1063	1259	1.105	1242	1331	6.1	43.4	83.265	F
C - Grafton Street (S)	1001	250	1349	911	1.098	893	956	4.7	31.5	87.137	F
D - Standing Way (W)	1682	420	624	1570	1.071	1545	1618	6.2	40.3	64.517	F

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 - Grafton Street (N)	1287	322	1463	957	1.345	956	732	29.4	112.2	275.821	F
B - Standing Way (E)	1704	426	1073	1252	1.361	1252	1346	43.4	156.5	294.400	F
C - Grafton Street (S)	1226	306	1360	904	1.356	903	965	31.5	112.2	295.845	F
D - Standing Way (W)	2059	515	631	1565	1.316	1564	1632	40.3	164.0	241.309	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 - Grafton Street (N)	1287	322	1463	957	1.345	956	733	112.2	194.8	584.264	F
B - Standing Way (E)	1704	426	1073	1252	1.361	1252	1347	156.5	269.6	617.459	F
C - Grafton Street (S)	1226	306	1360	904	1.356	904	965	112.2	192.7	614.079	F
D - Standing Way (W)	2059	515	631	1565	1.316	1565	1632	164.0	287.7	523.875	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 - Grafton Street (N)	1051	263	1463	957	1.098	956	733	194.8	218.4	782.410	F
B - Standing Way (E)	1391	348	1073	1252	1.111	1252	1347	269.6	304.4	829.191	F
C - Grafton Street (S)	1001	250	1360	904	1.107	904	965	192.7	217.0	821.217	F
D - Standing Way (W)	1682	420	631	1565	1.075	1565	1632	287.7	316.9	699.020	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 - Grafton Street (N)	880	220	1460	959	0.917	955	731	218.4	199.7	788.291	F
B - Standing Way (E)	1165	291	1071	1253	0.930	1249	1344	304.4	283.5	847.262	F
C - Grafton Street (S)	838	210	1357	906	0.925	902	963	217.0	201.1	834.921	F
D - Standing Way (W)	1408	352	630	1566	0.899	1561	1629	316.9	278.7	687.115	F

2033 Base + CD + SP (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
J15	Bleak Hall Roundabout	Standard Roundabout		A, B, C, D	411.48	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
D22	2033 Base + CD + SP (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 - Grafton Street (N)		ONE HOUR	✓	1095	100.000
B - Standing Way (E)		ONE HOUR	✓	1297	100.000
C - Grafton Street (S)		ONE HOUR	✓	1092	100.000
D - Standing Way (W)		ONE HOUR	✓	1659	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	18	128	774	174
	B - Standing Way (E)	105	1	140	1051
	C - Grafton Street (S)	502	149	2	439
	D - Standing Way (W)	222	1190	244	3

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Grafton Street (N)	B - Standing Way (E)	C - Grafton Street (S)	D - Standing Way (W)
From	A - Grafton Street (N)	0	2	1	0
	B - Standing Way (E)	6	0	1	3
	C - Grafton Street (S)	1	2	0	1
	D - Standing Way (W)	1	3	5	0

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 - Grafton Street (N)	1.25	499.34	135.0	F	1005	1507
B - Standing Way (E)	1.15	274.87	102.1	F	1190	1785
C - Grafton Street (S)	1.25	508.89	137.1	F	1002	1503
D - Standing Way (W)	1.20	398.70	169.4	F	1523	2284

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 - Grafton Street (N)	824	206	1184	1181	0.698	815	631	0.0	2.2	9.636	A
B - Standing Way (E)	976	244	906	1368	0.714	967	1093	0.0	2.4	8.770	A
C - Grafton Street (S)	822	206	1008	1159	0.709	813	864	0.0	2.3	10.135	B
D - Standing Way (W)	1249	312	579	1602	0.780	1236	1242	0.0	3.4	9.512	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 - Grafton Street (N)	984	246	1385	1019	0.966	946	738	2.2	11.7	37.900	E
B - Standing Way (E)	1166	291	1053	1266	0.921	1141	1278	2.4	8.5	25.127	D
C - Grafton Street (S)	982	245	1188	1028	0.955	948	1007	2.3	10.7	35.603	E
D - Standing Way (W)	1492	373	677	1531	0.974	1446	1460	3.4	14.9	31.892	D

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 - Grafton Street (N)	1206	301	1447	969	1.244	965	760	11.7	71.7	166.989	F
B - Standing Way (E)	1428	357	1080	1247	1.145	1237	1332	8.5	56.3	105.260	F
C - Grafton Street (S)	1202	301	1276	963	1.248	959	1041	10.7	71.5	165.783	F
D - Standing Way (W)	1827	457	691	1520	1.202	1516	1545	14.9	92.7	136.193	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 - Grafton Street (N)	1206	301	1450	966	1.247	966	761	71.7	131.6	385.876	F
B - Standing Way (E)	1428	357	1082	1246	1.146	1244	1335	56.3	102.1	236.823	F
C - Grafton Street (S)	1202	301	1283	958	1.255	958	1043	71.5	132.7	390.494	F
D - Standing Way (W)	1827	457	691	1521	1.202	1520	1550	92.7	169.4	315.967	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 - Grafton Street (N)	984	246	1442	973	1.012	971	761	131.6	135.0	499.345	F
B - Standing Way (E)	1166	291	1085	1244	0.937	1232	1329	102.1	85.6	274.872	F
C - Grafton Street (S)	982	245	1273	966	1.016	964	1043	132.7	137.1	508.886	F
D - Standing Way (W)	1492	373	694	1519	0.982	1510	1543	169.4	165.0	398.700	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 - Grafton Street (N)	824	206	1443	972	0.848	965	759	135.0	99.8	438.771	F
B - Standing Way (E)	976	244	1080	1247	0.783	1233	1329	85.6	21.5	160.375	F
C - Grafton Street (S)	822	206	1273	966	0.851	959	1040	137.1	102.9	451.324	F
D - Standing Way (W)	1249	312	691	1521	0.822	1512	1541	165.0	99.4	315.985	F

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: J16 - Elfield Park Roundabout_AM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J16

Report generation date: 26/01/2021 16:56:27

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

Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Watling Street (W)	D1	9.7	75.94	0.95	F
B - Standing Way (N)		41.6	98.86	1.04	F
C - Watling Street (E)		21.3	60.43	0.99	F
D - Standing Way (S)		27.2	62.48	1.00	F
2033 Base					
A - Watling Street (W)	D13	38.9	266.70	1.13	F
B - Standing Way (N)		150.8	400.19	1.21	F
C - Watling Street (E)		101.8	260.35	1.14	F
D - Standing Way (S)		147.3	333.16	1.18	F
2033 Base + CD + D					
A - Watling Street (W)	D15	51.2	394.29	1.18	F
B - Standing Way (N)		252.1	628.11	1.29	F
C - Watling Street (E)		125.4	353.14	1.18	F
D - Standing Way (S)		386.8	872.97	1.38	F
2033 Base + CD + D with TP					
A - Watling Street (W)	D17	49.6	378.65	1.17	F
B - Standing Way (N)		237.3	597.08	1.28	F
C - Watling Street (E)		122.3	341.94	1.18	F
D - Standing Way (S)		345.5	769.51	1.35	F
2033 Base + CD + D - ST					
A - Watling Street (W)	D19	60.4	473.21	1.21	F
B - Standing Way (N)		258.6	639.41	1.30	F
C - Watling Street (E)		128.1	364.61	1.19	F
D - Standing Way (S)		403.8	917.51	1.39	F
2033 Base + CD + SP (ST)					
A - Watling Street (W)	D21	46.7	333.35	1.16	F
B - Standing Way (N)		155.5	411.35	1.21	F
C - Watling Street (E)		104.6	271.14	1.15	F
D - Standing Way (S)		157.6	362.41	1.19	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

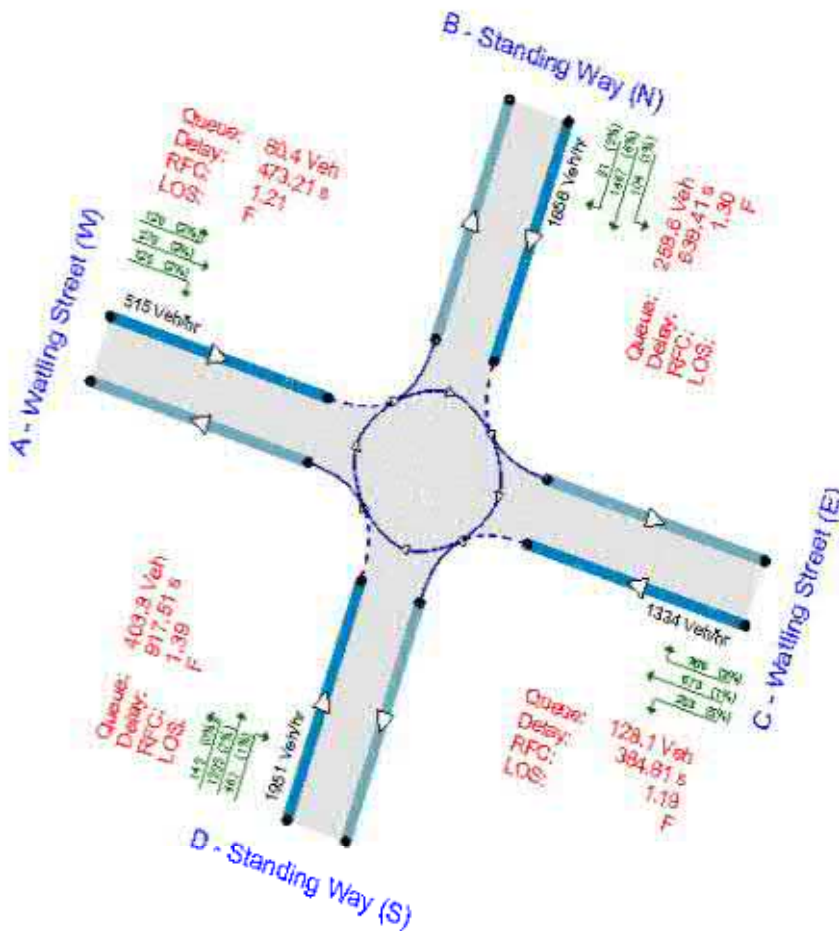
File Description

Title	Elfield Park Roundabout
Location	52° 0'45.10"N, 0°45'3.92"W
Site number	16
Date	08/01/2021

Version	
Status	
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



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	✓
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D11	2026 Base + CD + SP (ST)	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,D21	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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	74.28	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Watling Street (W)	
B	Standing Way (N)	
C	Watling Street (E)	
D	Standing Way (S)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Watling Street (W)	4.60	8.00	7.3	38.0	60.6	22.0	
B - Standing Way (N)	7.30	8.60	9.4	26.9	61.0	24.0	
C - Watling Street (E)	6.00	9.40	12.9	48.9	61.0	5.0	
D - Standing Way (S)	7.50	9.60	24.3	23.8	72.2	41.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Watling Street (W)	Direct	Calibrated against queue length	-282
B - Standing Way (N)	Direct	Calibrated against queue length	-533
C - Watling Street (E)	Direct	Calibrated against queue length	-258
D - Standing Way (S)	Direct	Calibrated against queue length	-365

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Watling Street (W)	0.601	1618
B - Standing Way (N)	0.709	2035
C - Watling Street (E)	0.745	2393
D - Standing Way (S)	0.642	2322

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 - Watling Street (W)	ONE HOUR	✓	435	100.000
B - Standing Way (N)	ONE HOUR	✓	1277	100.000
C - Watling Street (E)	ONE HOUR	✓	1163	100.000
D - Standing Way (S)	ONE HOUR	✓	1406	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	91	235	109
	B - Standing Way (N)	64	3	91	1119
	C - Watling Street (E)	587	321	34	221
	D - Standing Way (S)	125	867	407	7

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

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 - Watling Street (W)	0.95	75.94	9.7	F	399	599
B - Standing Way (N)	1.04	98.86	41.6	F	1172	1758
C - Watling Street (E)	0.99	60.43	21.3	F	1067	1601
D - Standing Way (S)	1.00	62.48	27.2	F	1290	1935

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 - Watling Street (W)	327	82	1227	833	0.393	325	581	0.0	0.6	7.053	A
B - Standing Way (N)	961	240	592	1529	0.629	955	960	0.0	1.7	6.202	A
C - Watling Street (E)	876	219	973	1594	0.549	871	574	0.0	1.2	4.943	A
D - Standing Way (S)	1059	265	755	1752	0.604	1052	1089	0.0	1.5	5.100	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 - Watling Street (W)	391	98	1466	686	0.570	388	694	0.6	1.3	12.013	B
B - Standing Way (N)	1148	287	708	1450	0.792	1140	1147	1.7	3.6	11.351	B
C - Watling Street (E)	1046	261	1163	1449	0.721	1040	686	1.2	2.5	8.692	A
D - Standing Way (S)	1264	316	902	1660	0.761	1258	1300	1.5	3.1	8.805	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 - Watling Street (W)	479	120	1734	521	0.920	457	820	1.3	6.7	46.528	E
B - Standing Way (N)	1406	351	836	1363	1.032	1321	1356	3.6	25.0	50.149	F
C - Watling Street (E)	1280	320	1348	1307	0.980	1232	808	2.5	14.7	35.484	E
D - Standing Way (S)	1548	387	1067	1557	0.994	1487	1513	3.1	18.4	35.798	E

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 - Watling Street (W)	479	120	1764	502	0.954	467	835	6.7	9.7	75.937	F
B - Standing Way (N)	1406	351	851	1352	1.040	1339	1380	25.0	41.6	98.860	F
C - Watling Street (E)	1280	320	1368	1292	0.991	1254	822	14.7	21.3	60.431	F
D - Standing Way (S)	1548	387	1086	1545	1.002	1513	1536	18.4	27.2	62.480	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 - Watling Street (W)	391	98	1580	615	0.636	423	748	9.7	1.8	21.440	C
B - Standing Way (N)	1148	287	766	1410	0.814	1294	1236	41.6	5.0	48.764	E
C - Watling Street (E)	1046	261	1315	1333	0.785	1115	746	21.3	3.9	21.057	C
D - Standing Way (S)	1264	316	971	1617	0.782	1357	1459	27.2	3.8	18.502	C

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 - Watling Street (W)	327	82	1245	822	0.399	332	591	1.8	0.7	7.426	A
B - Standing Way (N)	961	240	603	1522	0.632	974	975	5.0	1.7	6.730	A
C - Watling Street (E)	876	219	994	1579	0.555	886	584	3.9	1.3	5.276	A
D - Standing Way (S)	1059	265	769	1744	0.607	1067	1111	3.8	1.6	5.391	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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	327.48	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
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 - Watling Street (W)		ONE HOUR	✓	499	100.000
B - Standing Way (N)		ONE HOUR	✓	1473	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1638	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	104	270	125
	B - Standing Way (N)	73	3	104	1292
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1020	467	8

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

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 - Watling Street (W)	1.13	266.70	38.9	F	458	687
B - Standing Way (N)	1.21	400.19	150.8	F	1351	2027
C - Watling Street (E)	1.14	260.35	101.8	F	1224	1836

D - Standing Way (S)	1.18	333.16	147.3	F	1503	2254
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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 - Watling Street (W)	376	94	1422	712	0.527	371	664	0.0	1.1	10.424	B
B - Standing Way (N)	1109	277	677	1471	0.754	1097	1116	0.0	2.9	9.358	A
C - Watling Street (E)	1004	251	1118	1483	0.677	996	656	0.0	2.0	7.274	A
D - Standing Way (S)	1233	308	864	1684	0.732	1222	1250	0.0	2.6	7.638	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 - Watling Street (W)	449	112	1681	553	0.811	438	786	1.1	3.7	29.133	D
B - Standing Way (N)	1324	331	800	1387	0.955	1289	1319	2.9	11.8	29.431	D
C - Watling Street (E)	1199	300	1314	1333	0.900	1178	774	2.0	7.2	20.964	C
D - Standing Way (S)	1472	368	1022	1585	0.929	1445	1471	2.6	9.6	22.238	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 - Watling Street (W)	549	137	1785	489	1.124	475	844	3.7	22.2	118.264	F
B - Standing Way (N)	1622	405	856	1349	1.202	1344	1405	11.8	81.3	134.118	F
C - Watling Street (E)	1469	367	1375	1287	1.141	1275	824	7.2	55.6	99.365	F
D - Standing Way (S)	1803	451	1103	1534	1.175	1527	1547	9.6	78.7	113.116	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 - Watling Street (W)	549	137	1790	486	1.131	483	849	22.2	38.9	244.219	F
B - Standing Way (N)	1622	405	863	1344	1.206	1344	1410	81.3	150.8	316.768	F
C - Watling Street (E)	1469	367	1377	1285	1.143	1284	829	55.6	101.8	228.046	F
D - Standing Way (S)	1803	451	1110	1530	1.179	1529	1551	78.7	147.3	271.768	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 - Watling Street (W)	449	112	1783	490	0.915	478	845	38.9	31.5	266.702	F
B - Standing Way (N)	1324	331	857	1348	0.982	1339	1404	150.8	147.0	400.190	F
C - Watling Street (E)	1199	300	1371	1289	0.930	1277	825	101.8	82.4	260.353	F
D - Standing Way (S)	1472	368	1104	1534	0.960	1523	1544	147.3	134.5	333.157	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 - Watling Street (W)	376	94	1782	491	0.766	476	843	31.5	6.5	154.338	F
B - Standing Way (N)	1109	277	855	1349	0.822	1340	1403	147.0	89.1	318.388	F
C - Watling Street (E)	1004	251	1372	1289	0.779	1274	824	82.4	15.0	142.253	F
D - Standing Way (S)	1233	308	1102	1535	0.803	1524	1544	134.5	61.8	233.753	F

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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	628.58	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
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 - Watling Street (W)		ONE HOUR	✓	499	100.000
B - Standing Way (N)		ONE HOUR	✓	1640	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1936	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	104	270	125
	B - Standing Way (N)	73	3	104	1459
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1318	467	8

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

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 - Watling Street (W)	1.18	394.29	51.2	F	458	687
B - Standing Way (N)	1.29	628.11	252.1	F	1505	2258

C - Watling Street (E)	1.18	353.14	125.4	F	1224	1836
D - Standing Way (S)	1.38	872.97	386.8	F	1777	2665

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 - Watling Street (W)	376	94	1634	579	0.649	369	662	0.0	1.8	16.619	C
B - Standing Way (N)	1235	309	672	1473	0.838	1216	1330	0.0	4.7	13.176	B
C - Watling Street (E)	1004	251	1237	1392	0.722	994	651	0.0	2.5	8.846	A
D - Standing Way (S)	1458	364	862	1679	0.868	1434	1369	0.0	5.9	13.608	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 - Watling Street (W)	449	112	1811	470	0.955	423	766	1.8	8.0	59.027	F
B - Standing Way (N)	1475	369	754	1418	1.040	1381	1481	4.7	28.0	53.789	F
C - Watling Street (E)	1199	300	1406	1262	0.950	1165	729	2.5	11.0	30.131	D
D - Standing Way (S)	1741	435	1009	1588	1.096	1569	1563	5.9	48.9	72.905	F

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 - Watling Street (W)	549	137	1817	467	1.177	461	802	8.0	30.2	169.703	F
B - Standing Way (N)	1806	451	781	1399	1.291	1398	1496	28.0	130.0	210.970	F
C - Watling Street (E)	1469	367	1431	1243	1.181	1237	748	11.0	68.9	126.477	F
D - Standing Way (S)	2132	533	1068	1551	1.374	1551	1600	48.9	194.1	287.835	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 - Watling Street (W)	549	137	1816	467	1.176	466	804	30.2	51.2	330.599	F
B - Standing Way (N)	1806	451	784	1397	1.293	1397	1497	130.0	232.3	471.997	F
C - Watling Street (E)	1469	367	1431	1243	1.181	1243	750	68.9	125.4	288.305	F
D - Standing Way (S)	2132	533	1072	1549	1.376	1549	1602	194.1	339.9	623.900	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 - Watling Street (W)	449	112	1818	466	0.962	466	800	51.2	46.8	394.289	F
B - Standing Way (N)	1475	369	786	1396	1.056	1396	1498	232.3	252.1	628.111	F
C - Watling Street (E)	1199	300	1430	1244	0.964	1234	751	125.4	116.6	353.144	F
D - Standing Way (S)	1741	435	1065	1553	1.121	1553	1599	339.9	386.8	845.931	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 - Watling Street (W)	376	94	1814	468	0.802	459	801	46.8	26.0	289.806	F
B - Standing Way (N)	1235	309	779	1401	0.882	1395	1494	252.1	212.0	599.003	F
C - Watling Street (E)	1004	251	1428	1246	0.806	1235	746	116.6	58.9	257.810	F
D - Standing Way (S)	1458	364	1066	1553	0.939	1549	1597	386.8	364.1	872.970	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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	575.94	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 - Watling Street (W)		ONE HOUR	✓	499	100.000
B - Standing Way (N)		ONE HOUR	✓	1619	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1892	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	104	270	125
	B - Standing Way (N)	73	3	104	1438
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1274	467	8

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

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 - Watling Street (W)	1.17	378.65	49.6	F	458	687
B - Standing Way (N)	1.28	597.08	237.3	F	1486	2229

C - Watling Street (E)	1.18	341.94	122.3	F	1224	1836
D - Standing Way (S)	1.35	769.51	345.5	F	1736	2605

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 - Watling Street (W)	376	94	1604	598	0.628	369	663	0.0	1.6	15.342	C
B - Standing Way (N)	1219	305	673	1473	0.828	1201	1300	0.0	4.4	12.549	B
C - Watling Street (E)	1004	251	1222	1403	0.716	995	652	0.0	2.4	8.619	A
D - Standing Way (S)	1425	356	863	1680	0.848	1404	1354	0.0	5.1	12.277	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 - Watling Street (W)	449	112	1802	476	0.943	425	770	1.6	7.5	55.422	F
B - Standing Way (N)	1456	364	762	1412	1.031	1371	1465	4.4	25.5	50.440	F
C - Watling Street (E)	1199	300	1396	1270	0.944	1167	737	2.4	10.4	28.849	D
D - Standing Way (S)	1701	425	1011	1588	1.071	1561	1553	5.1	40.1	62.450	F

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 - Watling Street (W)	549	137	1813	469	1.171	462	807	7.5	29.2	163.198	F
B - Standing Way (N)	1783	446	791	1393	1.280	1391	1485	25.5	123.5	200.576	F
C - Watling Street (E)	1469	367	1424	1249	1.176	1242	758	10.4	67.1	122.713	F
D - Standing Way (S)	2083	521	1072	1549	1.345	1549	1594	40.1	173.8	254.828	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 - Watling Street (W)	549	137	1813	469	1.170	468	810	29.2	49.6	319.408	F
B - Standing Way (N)	1783	446	794	1390	1.283	1390	1486	123.5	221.7	451.742	F
C - Watling Street (E)	1469	367	1424	1249	1.176	1248	760	67.1	122.3	280.253	F
D - Standing Way (S)	2083	521	1077	1546	1.347	1546	1595	173.8	308.1	564.342	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 - Watling Street (W)	449	112	1815	468	0.958	459	805	49.6	47.0	378.653	F
B - Standing Way (N)	1456	364	789	1394	1.044	1394	1485	221.7	237.3	597.077	F
C - Watling Street (E)	1199	300	1425	1248	0.961	1238	757	122.3	112.7	341.936	F
D - Standing Way (S)	1701	425	1068	1552	1.096	1551	1594	308.1	345.5	762.160	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 - Watling Street (W)	376	94	1810	471	0.797	461	806	47.0	25.6	287.384	F
B - Standing Way (N)	1219	305	789	1394	0.875	1388	1483	237.3	195.0	561.069	F
C - Watling Street (E)	1004	251	1421	1251	0.803	1240	756	112.7	53.7	243.670	F
D - Standing Way (S)	1425	356	1070	1550	0.919	1546	1590	345.5	315.2	769.507	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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	658.16	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 - Watling Street (W)		ONE HOUR	✓	515	100.000
B - Standing Way (N)		ONE HOUR	✓	1656	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1951	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	120	270	125
	B - Standing Way (N)	81	3	104	1467
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1333	467	8

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	3	3	5
	D - Standing Way (S)	0	7	1	0

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 - Watling Street (W)	1.21	473.21	60.4	F	472	708
B - Standing Way (N)	1.30	639.41	258.6	F	1520	2279

C - Watling Street (E)	1.19	364.61	128.1	F	1224	1836
D - Standing Way (S)	1.39	917.51	403.8	F	1790	2686

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 - Watling Street (W)	387	97	1644	573	0.676	379	668	0.0	2.0	17.985	C
B - Standing Way (N)	1247	312	672	1474	0.846	1227	1352	0.0	5.0	13.635	B
C - Watling Street (E)	1004	251	1248	1384	0.726	994	651	0.0	2.6	9.020	A
D - Standing Way (S)	1469	367	868	1676	0.877	1444	1374	0.0	6.2	14.291	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 - Watling Street (W)	463	116	1810	470	0.984	432	771	2.0	9.6	66.965	F
B - Standing Way (N)	1489	372	747	1423	1.046	1389	1496	5.0	29.9	56.251	F
C - Watling Street (E)	1199	300	1413	1257	0.954	1164	723	2.6	11.4	31.039	D
D - Standing Way (S)	1754	439	1014	1585	1.107	1567	1563	6.2	52.9	77.890	F

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 - Watling Street (W)	566	142	1814	468	1.210	464	805	9.6	35.4	194.290	F
B - Standing Way (N)	1823	456	768	1408	1.295	1406	1509	29.9	134.1	217.103	F
C - Watling Street (E)	1469	367	1437	1239	1.186	1233	738	11.4	70.3	129.549	F
D - Standing Way (S)	2148	537	1071	1549	1.387	1549	1599	52.9	202.8	302.812	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 - Watling Street (W)	566	142	1814	468	1.210	467	807	35.4	60.2	383.158	F
B - Standing Way (N)	1823	456	771	1406	1.297	1406	1510	134.1	238.4	481.504	F
C - Watling Street (E)	1469	367	1437	1239	1.186	1238	740	70.3	128.1	295.418	F
D - Standing Way (S)	2148	537	1074	1547	1.389	1547	1601	202.8	353.2	649.986	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 - Watling Street (W)	463	116	1815	467	0.990	462	803	60.2	60.4	473.206	F
B - Standing Way (N)	1489	372	768	1408	1.057	1408	1510	238.4	258.6	639.411	F
C - Watling Street (E)	1199	300	1438	1238	0.969	1228	738	128.1	120.8	364.612	F
D - Standing Way (S)	1754	439	1067	1552	1.131	1551	1599	353.2	403.8	881.996	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 - Watling Street (W)	387	97	1812	470	0.825	462	804	60.4	41.7	399.992	F
B - Standing Way (N)	1247	312	767	1409	0.885	1404	1507	258.6	219.4	613.398	F
C - Watling Street (E)	1004	251	1434	1241	0.809	1231	737	120.8	64.1	272.080	F
D - Standing Way (S)	1469	367	1069	1550	0.948	1547	1596	403.8	384.4	917.508	F

2033 Base + CD + SP (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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	350.24	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
D21	2033 Base + CD + SP (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 - Watling Street (W)		ONE HOUR	✓	515	100.000
B - Standing Way (N)		ONE HOUR	✓	1488	100.000
C - Watling Street (E)		ONE HOUR	✓	1334	100.000
D - Standing Way (S)		ONE HOUR	✓	1653	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	120	270	125
	B - Standing Way (N)	81	3	104	1299
	C - Watling Street (E)	673	368	39	253
	D - Standing Way (S)	143	1035	467	8

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	2	2	2
	B - Standing Way (N)	3	0	1	6
	C - Watling Street (E)	1	2	3	5
	D - Standing Way (S)	0	7	1	0

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 - Watling Street (W)	1.16	333.35	46.7	F	472	708
B - Standing Way (N)	1.21	411.35	155.5	F	1366	2049

C - Watling Street (E)	1.15	271.14	104.6	F	1224	1836
D - Standing Way (S)	1.19	362.41	157.6	F	1517	2276

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 - Watling Street (W)	387	97	1433	705	0.549	383	670	0.0	1.2	11.003	B
B - Standing Way (N)	1121	280	677	1471	0.762	1108	1139	0.0	3.1	9.623	A
C - Watling Street (E)	1004	251	1130	1475	0.681	996	656	0.0	2.1	7.398	A
D - Standing Way (S)	1245	311	870	1680	0.741	1234	1256	0.0	2.8	7.885	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 - Watling Street (W)	463	116	1691	546	0.846	450	791	1.2	4.4	33.568	D
B - Standing Way (N)	1338	335	797	1389	0.963	1299	1344	3.1	12.8	31.278	D
C - Watling Street (E)	1199	300	1324	1326	0.905	1177	772	2.1	7.5	21.723	C
D - Standing Way (S)	1486	372	1028	1581	0.940	1455	1474	2.8	10.6	24.108	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 - Watling Street (W)	566	142	1784	489	1.158	479	847	4.4	26.3	135.378	F
B - Standing Way (N)	1639	410	843	1358	1.207	1353	1421	12.8	84.3	138.462	F
C - Watling Street (E)	1469	367	1382	1281	1.146	1271	814	7.5	57.0	102.159	F
D - Standing Way (S)	1820	455	1106	1532	1.188	1526	1547	10.6	84.4	120.871	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 - Watling Street (W)	566	142	1788	487	1.164	485	852	26.3	46.7	286.507	F
B - Standing Way (N)	1639	410	848	1354	1.210	1354	1425	84.3	155.5	324.611	F
C - Watling Street (E)	1469	367	1384	1280	1.148	1278	818	57.0	104.6	234.968	F
D - Standing Way (S)	1820	455	1112	1528	1.191	1527	1550	84.4	157.6	290.688	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 - Watling Street (W)	463	116	1781	491	0.942	481	848	46.7	42.1	333.354	F
B - Standing Way (N)	1338	335	843	1358	0.986	1349	1419	155.5	152.8	411.354	F
C - Watling Street (E)	1199	300	1379	1284	0.934	1272	813	104.6	86.5	271.137	F
D - Standing Way (S)	1486	372	1107	1532	0.971	1522	1544	157.6	148.7	362.407	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 - Watling Street (W)	387	97	1781	491	0.789	480	846	42.1	19.0	234.981	F
B - Standing Way (N)	1121	280	842	1358	0.825	1349	1419	152.8	95.6	332.488	F
C - Watling Street (E)	1004	251	1379	1284	0.782	1269	813	86.5	20.3	155.423	F
D - Standing Way (S)	1245	311	1105	1533	0.812	1523	1543	148.7	79.3	270.983	F

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: J16 - Elfield Park Roundabout_PM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J16

Report generation date: 26/01/2021 17:01:41

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

Summary of junction performance

	PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Watling Street (W)	D2	36.2	165.84	1.09	F
B - Standing Way (N)		30.7	68.01	1.01	F
C - Watling Street (E)		36.3	113.13	1.05	F
D - Standing Way (S)		47.8	105.18	1.05	F
2033 Base					
A - Watling Street (W)	D14	106.4	566.78	1.27	F
B - Standing Way (N)		153.9	338.51	1.18	F
C - Watling Street (E)		130.2	474.42	1.24	F
D - Standing Way (S)		169.5	421.97	1.21	F
2033 Base + CD + D					
A - Watling Street (W)	D16	119.4	640.35	1.29	F
B - Standing Way (N)		437.4	960.99	1.40	F
C - Watling Street (E)		157.0	575.52	1.27	F
D - Standing Way (S)		348.3	826.33	1.36	F
2033 Base + CD + D with TP					
A - Watling Street (W)	D18	117.8	631.01	1.28	F
B - Standing Way (N)		386.8	839.51	1.36	F
C - Watling Street (E)		153.9	563.76	1.26	F
D - Standing Way (S)		318.8	748.36	1.33	F
2033 Base + CD + D - ST					
A - Watling Street (W)	D20	122.4	651.99	1.29	F
B - Standing Way (N)		459.0	1012.13	1.41	F
C - Watling Street (E)		158.3	580.78	1.27	F
D - Standing Way (S)		359.1	858.22	1.37	F
2033 Base + CD + SP (ST)					
A - Watling Street (W)	D22	108.3	573.06	1.27	F
B - Standing Way (N)		166.6	372.07	1.19	F
C - Watling Street (E)		132.4	482.58	1.24	F
D - Standing Way (S)		176.8	444.19	1.22	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

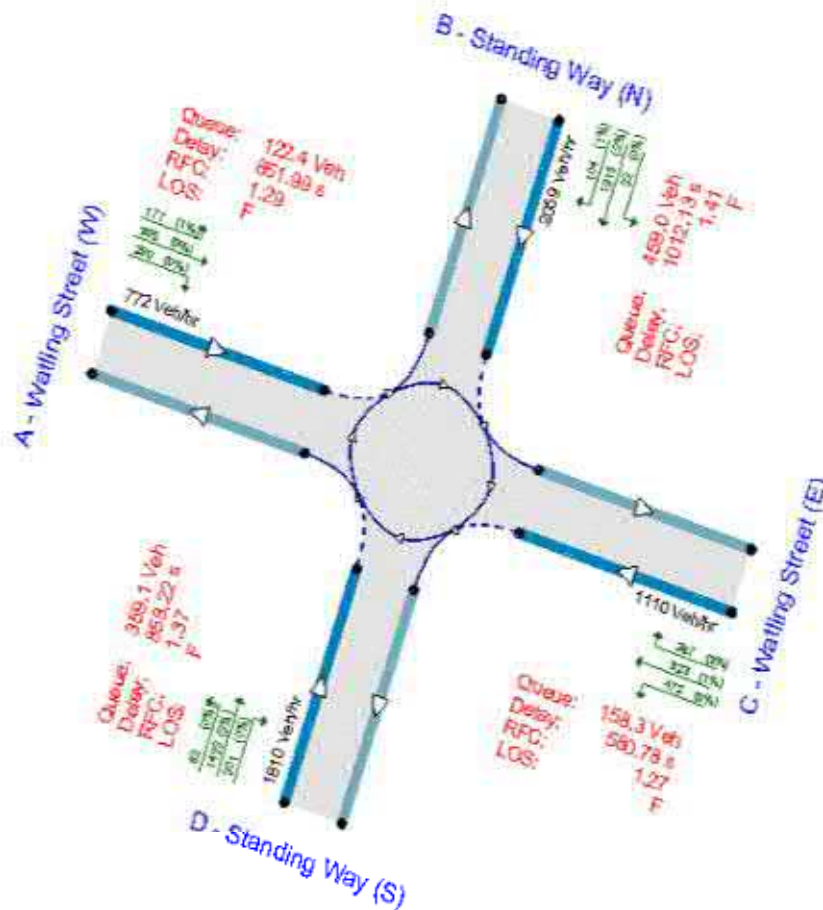
File Description

Title	Elfield Park Roundabout
Location	52° 0'45.10"N, 0°45'3.92"W
Site number	16
Date	08/01/2021
Version	
Status	

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing 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	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D12	2026 Base + CD + SP (ST)	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,D22	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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	103.71	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Watling Street (W)	
B	Standing Way (N)	
C	Watling Street (E)	
D	Standing Way (S)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Watling Street (W)	4.60	8.00	7.3	38.0	60.6	22.0	
B - Standing Way (N)	7.30	8.60	9.4	26.9	61.0	24.0	
C - Watling Street (E)	6.00	9.40	12.9	48.9	61.0	5.0	
D - Standing Way (S)	7.50	9.60	24.3	23.8	72.2	41.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Watling Street (W)	Direct	Calibrated against queue length	-195
B - Standing Way (N)	Direct	Calibrated against queue length	-365
C - Watling Street (E)	Direct	Calibrated against queue length	-275
D - Standing Way (S)	Direct	Calibrated against queue length	-772

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Watling Street (W)	0.601	1705
B - Standing Way (N)	0.709	2203
C - Watling Street (E)	0.745	2376
D - Standing Way (S)	0.642	1915

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 - Watling Street (W)		ONE HOUR	✓	664	100.000
B - Standing Way (N)		ONE HOUR	✓	1446	100.000

C - Watling Street (E)	ONE HOUR	✓	962	100.000
D - Standing Way (S)	ONE HOUR	✓	1372	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	148	264	251
	B - Standing Way (N)	80	7	28	1331
	C - Watling Street (E)	280	249	24	409
	D - Standing Way (S)	54	1045	261	12

Proportions

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.22	0.40	0.38
	B - Standing Way (N)	0.06	0.00	0.02	0.92
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.04	0.76	0.19	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

Average PCU Per Veh

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.002	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Watling Street (W)	16:45-17:00	500	503
	17:00-17:15	597	601
	17:15-17:30	731	735
	17:30-17:45	731	735
	17:45-18:00	597	601
	18:00-18:15	500	503
B - Standing Way (N)	16:45-17:00	1089	1112
	17:00-17:15	1300	1328
	17:15-17:30	1592	1626
	17:30-17:45	1592	1626
	17:45-18:00	1300	1328
	18:00-18:15	1089	1112
C - Watling Street (E)	16:45-17:00	724	733
	17:00-17:15	865	876
	17:15-17:30	1059	1072
	17:30-17:45	1059	1072
	17:45-18:00	865	876
	18:00-18:15	724	733
D - Standing Way (S)	16:45-17:00	1033	1057
	17:00-17:15	1233	1262
	17:15-17:30	1511	1546
	17:30-17:45	1511	1546
	17:45-18:00	1233	1262
	18:00-18:15	1033	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 - Watling Street (W)	1.09	165.84	36.2	F	609	914
B - Standing Way (N)	1.01	68.01	30.7	F	1327	1990
C - Watling Street (E)	1.05	113.13	36.3	F	883	1324
D - Standing Way (S)	1.05	105.18	47.8	F	1259	1888

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 - Watling Street (W)	500	125	1195	962	0.519	496	311	0.0	1.1	7.646	A
B - Standing Way (N)	1089	272	607	1734	0.628	1082	1083	0.0	1.7	5.472	A
C - Watling Street (E)	724	181	1258	1403	0.516	720	431	0.0	1.1	5.239	A
D - Standing Way (S)	1033	258	480	1565	0.660	1025	1498	0.0	1.9	6.586	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 - Watling Street (W)	597	149	1426	820	0.728	591	371	1.1	2.5	15.320	C
B - Standing Way (N)	1300	325	724	1652	0.787	1292	1293	1.7	3.5	9.819	A
C - Watling Street (E)	865	216	1503	1220	0.709	860	514	1.1	2.3	9.859	A
D - Standing Way (S)	1233	308	573	1505	0.819	1224	1789	1.9	4.2	12.408	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 - Watling Street (W)	731	183	1644	687	1.064	661	428	2.5	20.0	77.881	F
B - Standing Way (N)	1592	398	819	1586	1.004	1523	1486	3.5	20.7	38.560	E
C - Watling Street (E)	1059	265	1757	1029	1.030	987	586	2.3	20.3	54.263	F
D - Standing Way (S)	1511	378	660	1449	1.042	1412	2084	4.2	28.8	53.055	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 - Watling Street (W)	731	183	1668	672	1.088	666	433	20.0	36.2	165.838	F
B - Standing Way (N)	1592	398	828	1580	1.008	1552	1507	20.7	30.7	68.013	F
C - Watling Street (E)	1059	265	1787	1006	1.053	995	593	20.3	36.3	113.128	F
D - Standing Way (S)	1511	378	666	1445	1.045	1435	2116	28.8	47.8	105.179	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 - Watling Street (W)	597	149	1629	696	0.858	677	423	36.2	16.1	143.226	F
B - Standing Way (N)	1300	325	829	1579	0.823	1402	1478	30.7	5.1	28.559	D
C - Watling Street (E)	865	216	1644	1114	0.777	994	587	36.3	3.9	49.413	E
D - Standing Way (S)	1233	308	657	1451	0.850	1395	1981	47.8	7.3	69.392	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 - Watling Street (W)	500	125	1227	943	0.530	560	317	16.1	1.2	10.952	B
B - Standing Way (N)	1089	272	663	1695	0.642	1102	1123	5.1	1.8	6.207	A
C - Watling Street (E)	724	181	1302	1370	0.529	735	463	3.9	1.1	5.769	A
D - Standing Way (S)	1033	258	490	1558	0.663	1054	1548	7.3	2.0	7.428	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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	427.02	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 - Watling Street (W)		ONE HOUR	✓	766	100.000
B - Standing Way (N)		ONE HOUR	✓	1690	100.000
C - Watling Street (E)		ONE HOUR	✓	1110	100.000
D - Standing Way (S)		ONE HOUR	✓	1593	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From				
A - Watling Street (W)	1	171	305	290
B - Standing Way (N)	92	8	32	1557
C - Watling Street (E)	323	287	28	472
D - Standing Way (S)	62	1216	301	14

Proportions

	To			
	A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From				
A - Watling Street (W)	0.00	0.22	0.40	0.38
B - Standing Way (N)	0.05	0.00	0.02	0.92
C - Watling Street (E)	0.29	0.26	0.02	0.43
D - Standing Way (S)	0.04	0.76	0.19	0.01

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From				
A - Watling Street (W)	0	1	0	0
B - Standing Way (N)	1	0	0	2
C - Watling Street (E)	1	3	0	0
D - Standing Way (S)	0	3	0	8

Average PCU Per Veh

	To			
	A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From				
A - Watling Street (W)	1.000	1.014	1.004	1.004
B - Standing Way (N)	1.013	1.000	1.000	1.023
C - Watling Street (E)	1.011	1.032	1.000	1.002
D - Standing Way (S)	1.000	1.030	1.000	1.083

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	577	580

A - Watling Street (W)	17:00-17:15	689	693
	17:15-17:30	844	849
	17:30-17:45	844	849
	17:45-18:00	689	693
	18:00-18:15	577	580
B - Standing Way (N)	16:45-17:00	1272	1300
	17:00-17:15	1519	1552
	17:15-17:30	1861	1900
	17:30-17:45	1861	1900
	17:45-18:00	1519	1552
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
D - Standing Way (S)	16:45-17:00	1199	1227
	17:00-17:15	1432	1466
	17:15-17:30	1754	1795
	17:30-17:45	1754	1795
	17:45-18:00	1432	1466
	18:00-18:15	1199	1227

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 - Watling Street (W)	1.27	566.78	106.4	F	703	1055
B - Standing Way (N)	1.18	338.51	153.9	F	1551	2326
C - Watling Street (E)	1.24	474.42	130.2	F	1019	1528
D - Standing Way (S)	1.21	421.97	169.5	F	1462	2193

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 - Watling Street (W)	577	144	1380	849	0.680	569	357	0.0	2.0	12.518	B
B - Standing Way (N)	1272	318	697	1671	0.761	1260	1252	0.0	3.1	8.523	A
C - Watling Street (E)	836	209	1462	1250	0.669	828	495	0.0	2.0	8.381	A
D - Standing Way (S)	1199	300	552	1519	0.790	1185	1738	0.0	3.6	10.394	B

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 - Watling Street (W)	689	172	1611	707	0.974	654	418	2.0	10.8	49.745	E
B - Standing Way (N)	1519	380	806	1595	0.952	1483	1459	3.1	12.0	26.313	D
C - Watling Street (E)	998	250	1715	1060	0.941	967	574	2.0	9.6	31.770	D
D - Standing Way (S)	1432	358	645	1459	0.982	1383	2037	3.6	15.8	34.855	D

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 - Watling Street (W)	844	211	1676	668	1.264	664	430	10.8	55.7	194.811	F
B - Standing Way (N)	1861	465	826	1581	1.177	1574	1513	12.0	83.6	118.017	F
C - Watling Street (E)	1222	306	1809	990	1.235	985	592	9.6	69.0	155.143	F
D - Standing Way (S)	1754	439	661	1449	1.211	1445	2133	15.8	93.0	144.191	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 - Watling Street (W)	844	211	1679	666	1.267	665	431	55.7	100.3	432.449	F
B - Standing Way (N)	1861	465	828	1580	1.178	1579	1516	83.6	153.9	276.375	F
C - Watling Street (E)	1222	306	1814	986	1.240	985	593	69.0	128.2	367.249	F

D - Standing Way (S)	1754	439	661	1449	1.211	1448	2138	93.0	169.5	332.016	F
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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 - Watling Street (W)	689	172	1679	665	1.035	664	432	100.3	106.4	566.780	F
B - Standing Way (N)	1519	380	827	1580	0.961	1570	1516	153.9	141.2	338.507	F
C - Watling Street (E)	998	250	1805	993	1.005	990	592	128.2	130.2	474.418	F
D - Standing Way (S)	1432	358	663	1447	0.990	1447	2131	169.5	165.7	421.965	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 - Watling Street (W)	577	144	1671	670	0.861	664	430	106.4	84.6	518.921	F
B - Standing Way (N)	1272	318	825	1581	0.804	1570	1510	141.2	66.7	239.943	F
C - Watling Street (E)	836	209	1805	993	0.842	985	591	130.2	92.9	408.825	F
D - Standing Way (S)	1199	300	661	1449	0.828	1440	2129	165.7	105.5	339.984	F

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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	801.39	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 - Watling Street (W)		ONE HOUR	✓	766	100.000
B - Standing Way (N)		ONE HOUR	✓	2036	100.000
C - Watling Street (E)		ONE HOUR	✓	1110	100.000
D - Standing Way (S)		ONE HOUR	✓	1804	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	171	305	290
	B - Standing Way (N)	92	8	32	1903
	C - Watling Street (E)	323	287	28	472
	D - Standing Way (S)	62	1427	301	14

Proportions

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.22	0.40	0.38
	B - Standing Way (N)	0.05	0.00	0.02	0.93
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.03	0.79	0.17	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

Average PCU Per Veh

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.000	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	577	580

A - Watling Street (W)	17:00-17:15	689	693
	17:15-17:30	844	849
	17:30-17:45	844	849
	17:45-18:00	689	693
	18:00-18:15	577	580
B - Standing Way (N)	16:45-17:00	1533	1566
	17:00-17:15	1830	1870
	17:15-17:30	2241	2290
	17:30-17:45	2241	2290
	17:45-18:00	1830	1870
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
D - Standing Way (S)	16:45-17:00	1358	1391
	17:00-17:15	1622	1661
	17:15-17:30	1987	2035
	17:30-17:45	1987	2035
	17:45-18:00	1622	1661
	18:00-18:15	1358	1391

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 - Watling Street (W)	1.29	640.35	119.4	F	703	1055
B - Standing Way (N)	1.40	960.99	437.4	F	1868	2802
C - Watling Street (E)	1.27	575.52	157.0	F	1019	1528
D - Standing Way (S)	1.36	826.33	348.3	F	1656	2484

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 - Watling Street (W)	577	144	1524	760	0.759	565	354	0.0	2.9	17.564	C
B - Standing Way (N)	1533	383	692	1674	0.915	1498	1397	0.0	8.5	17.966	C
C - Watling Street (E)	836	209	1699	1071	0.780	823	491	0.0	3.3	13.815	B
D - Standing Way (S)	1358	340	548	1520	0.894	1330	1974	0.0	7.0	17.035	C

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 - Watling Street (W)	689	172	1680	665	1.037	634	396	2.9	16.5	71.679	F
B - Standing Way (N)	1830	458	771	1619	1.130	1607	1543	8.5	64.2	90.919	F
C - Watling Street (E)	998	250	1834	971	1.028	933	545	3.3	19.6	57.585	F
D - Standing Way (S)	1622	406	617	1476	1.099	1459	2150	7.0	47.8	78.121	F

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 - Watling Street (W)	844	211	1694	656	1.286	654	405	16.5	63.9	235.208	F
B - Standing Way (N)	2241	560	788	1607	1.394	1607	1560	64.2	222.8	326.721	F
C - Watling Street (E)	1222	306	1841	966	1.266	963	554	19.6	84.3	204.598	F
D - Standing Way (S)	1987	497	634	1465	1.356	1464	2170	47.8	178.3	284.018	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 - Watling Street (W)	844	211	1694	656	1.286	655	405	63.9	111.0	490.272	F
B - Standing Way (N)	2241	560	789	1607	1.395	1606	1560	222.8	381.5	680.802	F
C - Watling Street (E)	1222	306	1841	965	1.266	965	555	84.3	148.6	441.598	F

D - Standing Way (S)	1987	497	635	1464	1.357	1464	2171	178.3	308.9	603.164	F
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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 - Watling Street (W)	689	172	1694	656	1.050	655	405	111.0	119.4	640.352	F
B - Standing Way (N)	1830	458	789	1607	1.139	1607	1560	381.5	437.4	920.233	F
C - Watling Street (E)	998	250	1841	965	1.034	965	554	148.6	157.0	575.524	F
D - Standing Way (S)	1622	406	635	1465	1.108	1464	2171	308.9	348.3	811.254	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 - Watling Street (W)	577	144	1690	658	0.877	653	404	119.4	100.5	607.276	F
B - Standing Way (N)	1533	383	786	1608	0.953	1605	1557	437.4	419.3	960.990	F
C - Watling Street (E)	836	209	1838	968	0.864	961	553	157.0	125.6	529.658	F
D - Standing Way (S)	1358	340	633	1466	0.927	1462	2167	348.3	322.5	826.330	F

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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	728.58	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
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 - Watling Street (W)		ONE HOUR	✓	766	100.000
B - Standing Way (N)		ONE HOUR	✓	1982	100.000
C - Watling Street (E)		ONE HOUR	✓	1110	100.000
D - Standing Way (S)		ONE HOUR	✓	1772	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	171	305	290
	B - Standing Way (N)	92	8	32	1849
	C - Watling Street (E)	323	287	28	472
	D - Standing Way (S)	62	1395	301	14

Proportions

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.22	0.40	0.38
	B - Standing Way (N)	0.05	0.00	0.02	0.93
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.04	0.79	0.17	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

Average PCU Per Veh

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.000	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)

A - Watling Street (W)	16:45-17:00	577	580
	17:00-17:15	689	693
	17:15-17:30	844	849
	17:30-17:45	844	849
	17:45-18:00	689	693
	18:00-18:15	577	580
B - Standing Way (N)	16:45-17:00	1492	1524
	17:00-17:15	1782	1820
	17:15-17:30	2182	2229
	17:30-17:45	2182	2229
	17:45-18:00	1782	1820
	18:00-18:15	1492	1524
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
	18:00-18:15	836	846
D - Standing Way (S)	16:45-17:00	1334	1366
	17:00-17:15	1593	1632
	17:15-17:30	1951	1998
	17:30-17:45	1951	1998
	17:45-18:00	1593	1632
	18:00-18:15	1334	1366

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 - Watling Street (W)	1.28	631.01	117.8	F	703	1055
B - Standing Way (N)	1.36	839.51	386.8	F	1818	2728
C - Watling Street (E)	1.26	563.76	153.9	F	1019	1528
D - Standing Way (S)	1.33	748.36	318.8	F	1626	2440

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 - Watling Street (W)	577	144	1503	773	0.746	566	355	0.0	2.7	16.621	C
B - Standing Way (N)	1492	373	693	1673	0.892	1464	1376	0.0	7.0	15.559	C
C - Watling Street (E)	836	209	1665	1097	0.762	824	492	0.0	3.0	12.662	B
D - Standing Way (S)	1334	334	549	1520	0.878	1309	1940	0.0	6.2	15.637	C

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 - Watling Street (W)	689	172	1674	668	1.031	636	399	2.7	15.8	69.049	F
B - Standing Way (N)	1782	445	776	1616	1.103	1599	1534	7.0	52.7	77.077	F
C - Watling Street (E)	998	250	1825	977	1.021	936	549	3.0	18.5	54.752	F
D - Standing Way (S)	1593	398	620	1474	1.081	1452	2141	6.2	41.4	69.815	F

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 - Watling Street (W)	844	211	1691	657	1.283	655	408	15.8	62.9	230.393	F
B - Standing Way (N)	2182	545	793	1604	1.361	1603	1553	52.7	197.4	286.375	F
C - Watling Street (E)	1222	306	1837	968	1.262	966	559	18.5	82.6	199.079	F
D - Standing Way (S)	1951	488	638	1463	1.334	1462	2166	41.4	163.8	258.998	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 - Watling Street (W)	844	211	1692	657	1.284	657	409	62.9	109.7	483.103	F
B - Standing Way (N)	2182	545	794	1603	1.361	1603	1554	197.4	342.2	609.762	F

C - Watling Street (E)	1222	306	1837	968	1.262	968	560	82.6	146.2	432.821	F
D - Standing Way (S)	1951	488	639	1462	1.335	1462	2167	163.8	286.1	558.091	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 - Watling Street (W)	689	172	1692	657	1.048	656	409	109.7	117.8	631.006	F
B - Standing Way (N)	1782	445	794	1603	1.111	1603	1554	342.2	386.8	821.557	F
C - Watling Street (E)	998	250	1837	968	1.031	967	560	146.2	153.9	563.755	F
D - Standing Way (S)	1593	398	638	1462	1.089	1462	2166	286.1	318.8	748.117	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 - Watling Street (W)	577	144	1688	660	0.875	654	408	117.8	98.5	596.015	F
B - Standing Way (N)	1492	373	792	1605	0.930	1601	1550	386.8	359.6	839.514	F
C - Watling Street (E)	836	209	1834	971	0.861	964	558	153.9	121.8	515.334	F
D - Standing Way (S)	1334	334	636	1464	0.912	1459	2162	318.8	287.6	748.356	F

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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	832.91	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 - Watling Street (W)		ONE HOUR	✓	772	100.000
B - Standing Way (N)		ONE HOUR	✓	2059	100.000
C - Watling Street (E)		ONE HOUR	✓	1110	100.000
D - Standing Way (S)		ONE HOUR	✓	1810	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	177	305	290
	B - Standing Way (N)	104	8	32	1915
	C - Watling Street (E)	323	287	28	472
	D - Standing Way (S)	62	1433	301	14

Proportions

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.23	0.39	0.38
	B - Standing Way (N)	0.05	0.00	0.02	0.93
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.03	0.79	0.17	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

Average PCU Per Veh

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.000	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)

A - Watling Street (W)	16:45-17:00	581	585
	17:00-17:15	694	698
	17:15-17:30	850	855
	17:30-17:45	850	855
	17:45-18:00	694	698
	18:00-18:15	581	585
B - Standing Way (N)	16:45-17:00	1550	1584
	17:00-17:15	1851	1891
	17:15-17:30	2267	2316
	17:30-17:45	2267	2316
	17:45-18:00	1851	1891
	18:00-18:15	1550	1584
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
	18:00-18:15	836	846
D - Standing Way (S)	16:45-17:00	1363	1396
	17:00-17:15	1627	1667
	17:15-17:30	1993	2041
	17:30-17:45	1993	2041
	17:45-18:00	1627	1667
	18:00-18:15	1363	1396

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 - Watling Street (W)	1.29	651.99	122.4	F	709	1063
B - Standing Way (N)	1.41	1012.13	459.0	F	1890	2834
C - Watling Street (E)	1.27	580.78	158.3	F	1019	1528
D - Standing Way (S)	1.37	858.22	359.1	F	1661	2492

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 - Watling Street (W)	581	145	1527	758	0.767	569	362	0.0	3.0	18.058	C
B - Standing Way (N)	1550	388	692	1675	0.926	1513	1405	0.0	9.4	19.185	C
C - Watling Street (E)	836	209	1714	1061	0.788	822	491	0.0	3.4	14.353	B
D - Standing Way (S)	1363	341	556	1515	0.900	1334	1980	0.0	7.3	17.674	C

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 - Watling Street (W)	694	174	1676	667	1.041	638	403	3.0	17.1	73.443	F
B - Standing Way (N)	1851	463	768	1621	1.142	1611	1546	9.4	69.4	97.269	F
C - Watling Street (E)	998	250	1837	968	1.031	932	542	3.4	20.0	58.758	F
D - Standing Way (S)	1627	407	624	1471	1.106	1456	2145	7.3	50.3	81.724	F

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 - Watling Street (W)	850	213	1689	659	1.290	657	412	17.1	65.4	239.721	F
B - Standing Way (N)	2267	567	785	1610	1.408	1609	1561	69.4	233.9	344.287	F
C - Watling Street (E)	1222	306	1843	964	1.268	962	551	20.0	85.0	206.936	F
D - Standing Way (S)	1993	498	642	1460	1.365	1460	2163	50.3	183.7	294.513	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 - Watling Street (W)	850	213	1689	659	1.291	658	413	65.4	113.3	498.509	F
B - Standing Way (N)	2267	567	786	1609	1.409	1609	1562	233.9	398.5	711.055	F

C - Watling Street (E)	1222	306	1843	964	1.268	964	552	85.0	149.6	445.463	F
D - Standing Way (S)	1993	498	642	1460	1.366	1460	2164	183.7	317.1	621.758	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 - Watling Street (W)	694	174	1689	659	1.054	658	413	113.3	122.4	651.989	F
B - Standing Way (N)	1851	463	786	1609	1.150	1609	1562	398.5	459.0	961.921	F
C - Watling Street (E)	998	250	1843	964	1.035	963	552	149.6	158.3	580.783	F
D - Standing Way (S)	1627	407	642	1460	1.115	1460	2164	317.1	359.1	837.142	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 - Watling Street (W)	581	145	1686	661	0.880	656	412	122.4	103.8	621.699	F
B - Standing Way (N)	1550	388	783	1611	0.962	1607	1558	459.0	444.7	1012.131	F
C - Watling Street (E)	836	209	1840	966	0.865	960	550	158.3	127.3	536.091	F
D - Standing Way (S)	1363	341	640	1461	0.933	1457	2160	359.1	335.5	858.219	F

2033 Base + CD + SP (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
J16	Elfield Park Roundabout	Standard Roundabout		A, B, C, D	447.42	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
D22	2033 Base + CD + SP (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 - Watling Street (W)		ONE HOUR	✓	772	100.000
B - Standing Way (N)		ONE HOUR	✓	1713	100.000
C - Watling Street (E)		ONE HOUR	✓	1110	100.000
D - Standing Way (S)		ONE HOUR	✓	1599	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1	177	305	290
	B - Standing Way (N)	104	8	32	1569
	C - Watling Street (E)	323	287	28	472
	D - Standing Way (S)	62	1222	301	14

Proportions

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0.00	0.23	0.39	0.38
	B - Standing Way (N)	0.06	0.00	0.02	0.92
	C - Watling Street (E)	0.29	0.26	0.02	0.43
	D - Standing Way (S)	0.04	0.76	0.19	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	0	1	0	0
	B - Standing Way (N)	1	0	0	2
	C - Watling Street (E)	1	3	0	0
	D - Standing Way (S)	0	3	0	8

Average PCU Per Veh

		To			
		A - Watling Street (W)	B - Standing Way (N)	C - Watling Street (E)	D - Standing Way (S)
From	A - Watling Street (W)	1.000	1.014	1.004	1.004
	B - Standing Way (N)	1.013	1.000	1.000	1.023
	C - Watling Street (E)	1.011	1.032	1.000	1.002
	D - Standing Way (S)	1.000	1.030	1.000	1.083

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)

A - Watling Street (W)	16:45-17:00	581	585
	17:00-17:15	694	698
	17:15-17:30	850	855
	17:30-17:45	850	855
	17:45-18:00	694	698
	18:00-18:15	581	585
B - Standing Way (N)	16:45-17:00	1290	1317
	17:00-17:15	1540	1573
	17:15-17:30	1886	1926
	17:30-17:45	1886	1926
	17:45-18:00	1540	1573
	18:00-18:15	1290	1317
C - Watling Street (E)	16:45-17:00	836	846
	17:00-17:15	998	1010
	17:15-17:30	1222	1238
	17:30-17:45	1222	1238
	17:45-18:00	998	1010
	18:00-18:15	836	846
D - Standing Way (S)	16:45-17:00	1204	1232
	17:00-17:15	1438	1471
	17:15-17:30	1761	1802
	17:30-17:45	1761	1802
	17:45-18:00	1438	1471
	18:00-18:15	1204	1232

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 - Watling Street (W)	1.27	573.06	108.3	F	709	1063
B - Standing Way (N)	1.19	372.07	166.6	F	1572	2358
C - Watling Street (E)	1.24	482.58	132.4	F	1019	1528
D - Standing Way (S)	1.22	444.19	176.8	F	1467	2201

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 - Watling Street (W)	581	145	1384	846	0.687	573	365	0.0	2.1	12.807	B
B - Standing Way (N)	1290	322	697	1671	0.772	1277	1260	0.0	3.2	8.854	A
C - Watling Street (E)	836	209	1479	1238	0.675	828	495	0.0	2.0	8.622	A
D - Standing Way (S)	1204	301	560	1513	0.796	1189	1746	0.0	3.7	10.671	B

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 - Watling Street (W)	694	174	1611	707	0.982	657	426	2.1	11.4	51.800	F
B - Standing Way (N)	1540	385	803	1597	0.964	1498	1465	3.2	13.6	28.735	D
C - Watling Street (E)	998	250	1729	1049	0.951	964	572	2.0	10.4	33.883	D
D - Standing Way (S)	1438	359	653	1454	0.989	1384	2041	3.7	17.0	36.813	E

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 - Watling Street (W)	850	213	1670	671	1.268	667	439	11.4	57.1	199.340	F
B - Standing Way (N)	1886	471	823	1583	1.191	1578	1515	13.6	90.6	127.241	F
C - Watling Street (E)	1222	306	1812	987	1.238	983	589	10.4	70.3	159.138	F
D - Standing Way (S)	1761	440	669	1444	1.220	1440	2126	17.0	97.1	151.029	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 - Watling Street (W)	850	213	1673	669	1.271	669	439	57.1	102.5	439.338	F
B - Standing Way (N)	1886	471	824	1582	1.192	1582	1517	90.6	166.6	298.069	F

C - Watling Street (E)	1222	306	1816	984	1.242	984	590	70.3	129.9	373.251	F
D - Standing Way (S)	1761	440	670	1443	1.220	1443	2130	97.1	176.5	346.919	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 - Watling Street (W)	694	174	1668	672	1.033	671	440	102.5	108.3	573.057	F
B - Standing Way (N)	1540	385	825	1582	0.973	1572	1514	166.6	158.4	372.066	F
C - Watling Street (E)	998	250	1808	991	1.008	988	590	129.9	132.4	482.578	F
D - Standing Way (S)	1438	359	672	1442	0.997	1436	2124	176.5	176.8	444.191	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 - Watling Street (W)	581	145	1666	673	0.863	667	438	108.3	86.9	527.527	F
B - Standing Way (N)	1290	322	822	1584	0.814	1574	1511	158.4	87.3	282.275	F
C - Watling Street (E)	836	209	1808	990	0.844	983	588	132.4	95.6	418.639	F
D - Standing Way (S)	1204	301	669	1444	0.834	1436	2122	176.8	118.8	371.572	F

Junctions 9
ARCADY 9 - Roundabout Module
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Planning\Analysis\2021 Junction Modelling\Base\J17

Report generation date: 08/01/2021 15:27:23

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

Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Fulmer Street	D1	9.8	60.35	0.94	F
B - Standing Way (N)		18.5	55.72	0.98	F
C - Shenley Way		12.6	82.61	0.98	F
D - Standing Way (S)		4.8	9.43	0.83	A
2033 Base					
A - Fulmer Street	D13	99.1	482.61	1.38	F
B - Standing Way (N)		78.4	210.98	1.10	F
C - Shenley Way		55.2	329.81	1.18	F
D - Standing Way (S)		20.2	34.61	0.97	D
2033 Base + CD + D					
A - Fulmer Street	D15	203.4	1488.88	1.61	F
B - Standing Way (N)		173.5	478.84	1.23	F
C - Shenley Way		86.3	582.43	1.27	F
D - Standing Way (S)		164.3	227.24	1.13	F
2033 Base + CD + D with TP					
A - Fulmer Street	D17	186.8	1227.63	1.59	F
B - Standing Way (N)		158.7	439.63	1.21	F
C - Shenley Way		82.4	554.47	1.26	F
D - Standing Way (S)		137.2	177.40	1.11	F
2033 Base + CD + D - ST					
A - Fulmer Street	D19	214.7	1604.55	1.63	F
B - Standing Way (N)		181.8	499.23	1.24	F
C - Shenley Way		88.4	594.55	1.27	F
D - Standing Way (S)		175.4	247.62	1.14	F
2033 Base + CD + SP (ST)					
A - Fulmer Street	D21	106.4	523.64	1.41	F
B - Standing Way (N)		82.6	224.35	1.11	F
C - Shenley Way		57.0	343.11	1.18	F
D - Standing Way (S)		23.3	39.14	0.98	E

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

File summary

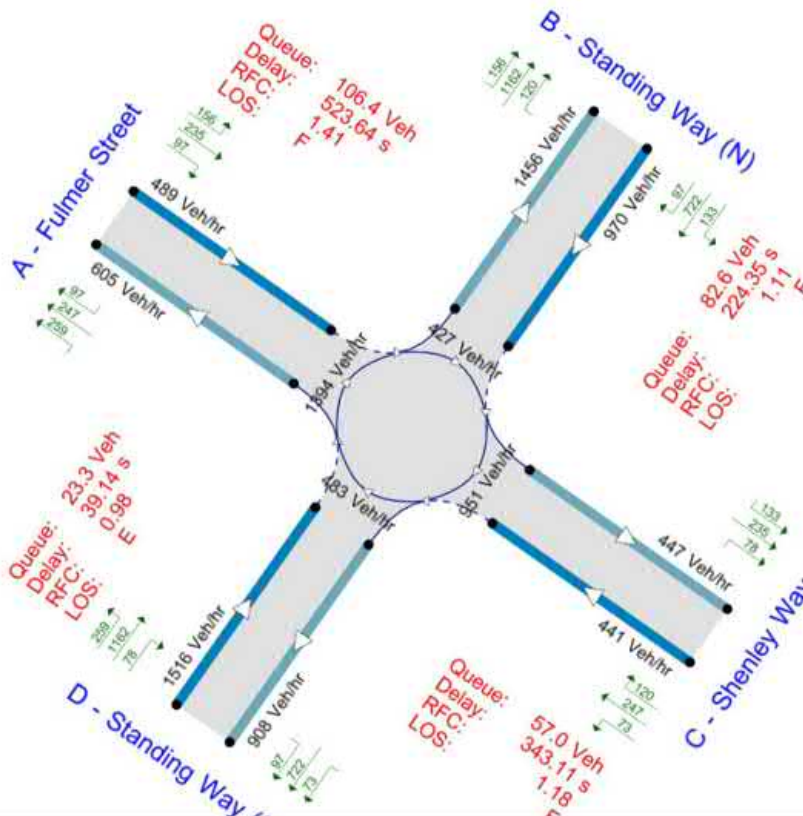
File Description

Title	Emerson Roundabout
Location	52° 0'10.64"N, 0°45'50.10"W
Site number	17
Date	07/01/2021
Version	

Status	
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



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	Ü
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	Ü
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	Ü
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	Ü
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	Ü
D11	2026 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	Ü
D13	2033 Base	AM	ONE HOUR	07:30	09:00	15	Ü
D15	2033 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	Ü
D17	2033 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	Ü
D19	2033 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	Ü

D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	ü
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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	ü	ü	D1,D13,D15,D17,D19,D21	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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	39.47	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Fulmer Street	
B	Standing Way (N)	
C	Shenley Way	
D	Standing Way (S)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street	3.00	7.90	19.9	35.5	68.0	9.0	
B - Standing Way (N)	7.30	9.30	24.7	40.3	68.0	17.5	
C - Shenley Way	3.70	7.90	10.5	42.1	69.4	11.5	
D - Standing Way (S)	7.50	10.60	9.1	30.0	69.4	27.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street	Direct	Calibrated against queue length	-190
B - Standing Way (N)	Direct	Calibrated against queue length	-1150
C - Shenley Way	Direct	Calibrated against queue length	-546
D - Standing Way (S)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street	0.570	1713
B - Standing Way (N)	0.720	1726
C - Shenley Way	0.550	1284
D - Standing Way (S)	0.688	2795

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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	ü	568	100.000

B - Standing Way (N)	ONE HOUR	ü	1122	100.000
C - Shenley Way	ONE HOUR	ü	515	100.000
D - Standing Way (S)	ONE HOUR	ü	1725	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	1	183	271	113	
B - Standing Way (N)	114	20	156	832	
C - Shenley Way	289	141	1	84	
D - Standing Way (S)	302	1317	87	19	

Proportions

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0.00	0.32	0.48	0.20	
B - Standing Way (N)	0.10	0.02	0.14	0.74	
C - Shenley Way	0.56	0.27	0.00	0.16	
D - Standing Way (S)	0.18	0.76	0.05	0.01	

Vehicle Mix

Heavy Vehicle Percentages

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0	2	2	3	
B - Standing Way (N)	4	5	1	7	
C - Shenley Way	2	0	0	2	
D - Standing Way (S)	0	5	1	5	

Average PCU Per Veh

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	1.000	1.016	1.018	1.027	
B - Standing Way (N)	1.035	1.050	1.011	1.069	
C - Shenley Way	1.017	1.000	1.000	1.024	
D - Standing Way (S)	1.003	1.050	1.011	1.053	

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	07:30-07:45	428	436
	07:45-08:00	511	520
	08:00-08:15	625	637
	08:15-08:30	625	637
	08:30-08:45	511	520
	08:45-09:00	428	436
B - Standing Way (N)	07:30-07:45	845	893
	07:45-08:00	1009	1066
	08:00-08:15	1235	1306
	08:15-08:30	1235	1306
	08:30-08:45	1009	1066
	08:45-09:00	845	893
C - Shenley Way	07:30-07:45	388	393
	07:45-08:00	463	469
	08:00-08:15	567	575
	08:15-08:30	567	575
	08:30-08:45	463	469
	08:45-09:00	388	393
D - Standing Way (S)	07:30-07:45	1299	1350
	07:45-08:00	1551	1613
	08:00-08:15	1899	1975
	08:15-08:30	1899	1975
	08:30-08:45	1551	1613
	08:45-09:00	1299	1350

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 - Fulmer Street	0.94	60.35	9.8	F	521	782
B - Standing Way (N)	0.98	55.72	18.5	F	1030	1544
C - Shenley Way	0.98	82.61	12.6	F	473	709
D - Standing Way (S)	0.83	9.43	4.8	A	1583	2374

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 - Fulmer Street	428	107	1188	988	0.433	425	528	0.0	0.8	6.363	A
B - Standing Way (N)	845	211	368	1378	0.613	838	1245	0.0	1.6	6.604	A
C - Shenley Way	388	97	821	794	0.488	384	385	0.0	0.9	8.700	A
D - Standing Way (S)	1299	325	422	2403	0.540	1294	783	0.0	1.2	3.232	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 - Fulmer Street	511	128	1421	852	0.600	508	631	0.8	1.5	10.388	B
B - Standing Way (N)	1009	252	440	1327	0.760	1003	1489	1.6	3.0	10.892	B
C - Shenley Way	463	116	982	701	0.660	459	461	0.9	1.9	14.648	B
D - Standing Way (S)	1551	388	505	2348	0.661	1548	937	1.2	1.9	4.483	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 - Fulmer Street	625	156	1728	672	0.930	600	756	1.5	7.7	40.760	E
B - Standing Way (N)	1235	309	524	1269	0.973	1193	1804	3.0	13.7	35.410	E
C - Shenley Way	567	142	1168	594	0.954	539	549	1.9	8.7	50.509	F
D - Standing Way (S)	1899	475	595	2287	0.830	1888	1113	1.9	4.6	8.796	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 - Fulmer Street	625	156	1740	666	0.940	617	766	7.7	9.8	60.349	F
B - Standing Way (N)	1235	309	536	1261	0.980	1216	1821	13.7	18.5	55.718	F
C - Shenley Way	567	142	1192	581	0.976	551	560	8.7	12.6	82.613	F
D - Standing Way (S)	1899	475	608	2279	0.834	1898	1135	4.6	4.8	9.426	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 - Fulmer Street	511	128	1446	837	0.610	544	666	9.8	1.6	13.581	B
B - Standing Way (N)	1009	252	465	1310	0.770	1069	1525	18.5	3.6	18.188	C
C - Shenley Way	463	116	1046	665	0.697	504	488	12.6	2.5	27.159	D
D - Standing Way (S)	1551	388	550	2317	0.669	1562	1000	4.8	2.1	4.832	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 - Fulmer Street	428	107	1198	982	0.435	431	536	1.6	0.8	6.571	A
B - Standing Way (N)	845	211	373	1374	0.615	852	1256	3.6	1.6	6.998	A
C - Shenley Way	388	97	835	786	0.493	394	391	2.5	1.0	9.298	A
D - Standing Way (S)	1299	325	432	2397	0.542	1302	796	2.1	1.2	3.300	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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	186.38	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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	ü	651	100.000
B - Standing Way (N)		ONE HOUR	ü	1295	100.000
C - Shenley Way		ONE HOUR	ü	591	100.000
D - Standing Way (S)		ONE HOUR	ü	2004	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1	210	311	130
	B - Standing Way (N)	131	23	179	962
	C - Shenley Way	331	162	1	96
	D - Standing Way (S)	346	1536	100	22

Proportions

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0.00	0.32	0.48	0.20
	B - Standing Way (N)	0.10	0.02	0.14	0.74
	C - Shenley Way	0.56	0.27	0.00	0.16
	D - Standing Way (S)	0.17	0.77	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	2	2	3
	B - Standing Way (N)	4	5	1	7
	C - Shenley Way	2	0	0	2
	D - Standing Way (S)	0	5	1	5

Average PCU Per Veh

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1.000	1.016	1.018	1.027
	B - Standing Way (N)	1.035	1.050	1.013	1.069
	C - Shenley Way	1.017	1.000	1.000	1.024
	D - Standing Way (S)	1.003	1.050	1.011	1.053

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	07:30-07:45	490	500

A - Fulmer Street	07:45-08:00	586	597
	08:00-08:15	717	731
	08:15-08:30	717	731
	08:30-08:45	586	597
	08:45-09:00	490	500
B - Standing Way (N)	07:30-07:45	975	1031
	07:45-08:00	1164	1231
	08:00-08:15	1426	1507
	08:15-08:30	1426	1507
	08:30-08:45	1164	1231
C - Shenley Way	07:30-07:45	445	451
	07:45-08:00	531	538
	08:00-08:15	650	659
	08:15-08:30	650	659
	08:30-08:45	531	538
D - Standing Way (S)	07:30-07:45	1508	1569
	07:45-08:00	1801	1874
	08:00-08:15	2206	2295
	08:15-08:30	2206	2295
	08:30-08:45	1801	1874
	08:45-09:00	1508	1569

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 - Fulmer Street	1.38	482.61	99.1	F	598	897
B - Standing Way (N)	1.10	210.98	78.4	F	1188	1782
C - Shenley Way	1.18	329.81	55.2	F	542	813
D - Standing Way (S)	0.97	34.61	20.2	D	1839	2758

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 - Fulmer Street	490	123	1380	875	0.560	485	604	0.0	1.2	9.125	A
B - Standing Way (N)	975	244	421	1341	0.727	965	1444	0.0	2.6	9.334	A
C - Shenley Way	445	111	945	723	0.615	439	441	0.0	1.5	12.407	B
D - Standing Way (S)	1508	377	482	2362	0.639	1502	901	0.0	1.7	4.150	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 - Fulmer Street	586	146	1647	719	0.814	575	718	1.2	3.8	23.522	C
B - Standing Way (N)	1164	291	500	1286	0.905	1144	1723	2.6	7.5	22.736	C
C - Shenley Way	531	133	1121	622	0.854	518	523	1.5	4.7	31.601	D
D - Standing Way (S)	1801	450	571	2303	0.782	1794	1069	1.7	3.5	6.986	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 - Fulmer Street	717	179	1956	538	1.333	533	810	3.8	49.9	199.040	F
B - Standing Way (N)	1426	356	493	1291	1.105	1276	1996	7.5	45.1	85.517	F
C - Shenley Way	650	163	1230	559	1.164	549	539	4.7	30.1	132.824	F
D - Standing Way (S)	2206	552	612	2275	0.970	2155	1167	3.5	16.2	23.591	C

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 - Fulmer Street	717	179	1986	521	1.377	520	819	49.9	99.1	482.609	F
B - Standing Way (N)	1426	356	487	1295	1.101	1292	2020	45.1	78.4	181.526	F

C - Shenley Way	650	163	1242	552	1.179	550	537	30.1	55.2	291.483	F
D - Standing Way (S)	2206	552	615	2273	0.971	2190	1177	16.2	20.2	34.612	D

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 - Fulmer Street	586	146	1720	677	0.865	670	762	99.1	78.0	454.736	F
B - Standing Way (N)	1164	291	569	1238	0.940	1223	1821	78.4	63.8	210.980	F
C - Shenley Way	531	133	1209	572	0.929	561	583	55.2	47.7	329.814	F
D - Standing Way (S)	1801	450	616	2272	0.793	1866	1154	20.2	4.0	10.197	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 - Fulmer Street	490	123	1433	845	0.580	796	703	78.0	1.6	159.617	F
B - Standing Way (N)	975	244	633	1194	0.817	1175	1596	63.8	13.7	123.931	F
C - Shenley Way	445	111	1189	583	0.762	571	619	47.7	16.0	206.832	F
D - Standing Way (S)	1508	377	619	2270	0.664	1516	1141	4.0	2.0	4.824	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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	506.44	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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	ü	683	100.000
B - Standing Way (N)		ONE HOUR	ü	1463	100.000
C - Shenley Way		ONE HOUR	ü	606	100.000
D - Standing Way (S)		ONE HOUR	ü	2369	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1	210	311	161
	B - Standing Way (N)	131	23	179	1130
	C - Shenley Way	331	162	1	112
	D - Standing Way (S)	398	1834	115	22

Proportions

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0.00	0.31	0.46	0.24
	B - Standing Way (N)	0.09	0.02	0.12	0.77
	C - Shenley Way	0.55	0.27	0.00	0.18
	D - Standing Way (S)	0.17	0.77	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	2	2	3
	B - Standing Way (N)	4	5	1	7
	C - Shenley Way	2	0	0	2
	D - Standing Way (S)	0	5	1	5

Average PCU Per Veh

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1.000	1.016	1.018	1.027
	B - Standing Way (N)	1.035	1.050	1.013	1.069
	C - Shenley Way	1.017	1.000	1.000	1.024
	D - Standing Way (S)	1.003	1.050	1.011	1.053

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	07:30-07:45	514	524

A - Fulmer Street	07:45-08:00	614	626
	08:00-08:15	752	767
	08:15-08:30	752	767
	08:30-08:45	614	626
	08:45-09:00	514	524
B - Standing Way (N)	07:30-07:45	1101	1165
	07:45-08:00	1315	1392
	08:00-08:15	1610	1704
	08:15-08:30	1610	1704
	08:30-08:45	1315	1392
C - Shenley Way	07:30-07:45	456	463
	07:45-08:00	545	553
	08:00-08:15	668	677
	08:15-08:30	668	677
	08:30-08:45	545	553
D - Standing Way (S)	07:30-07:45	1783	1855
	07:45-08:00	2129	2216
	08:00-08:15	2608	2713
	08:15-08:30	2608	2713
	08:30-08:45	2129	2216
	08:45-09:00	1783	1855

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 - Fulmer Street	1.61	1488.88	203.4	F	627	940
B - Standing Way (N)	1.23	478.84	173.5	F	1342	2013
C - Shenley Way	1.27	582.43	86.3	F	556	835
D - Standing Way (S)	1.13	227.24	164.3	F	2174	3260

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 - Fulmer Street	514	129	1611	740	0.695	505	640	0.0	2.2	14.880	B
B - Standing Way (N)	1101	275	453	1317	0.836	1083	1663	0.0	4.6	14.414	B
C - Shenley Way	456	114	1087	641	0.712	447	449	0.0	2.3	17.810	C
D - Standing Way (S)	1783	446	479	2364	0.754	1771	1055	0.0	3.0	5.964	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 - Fulmer Street	614	153	1908	566	1.084	544	746	2.2	19.5	91.610	F
B - Standing Way (N)	1315	329	500	1285	1.024	1243	1952	4.6	22.7	51.009	F
C - Shenley Way	545	136	1239	553	0.985	512	503	2.3	10.5	62.273	F
D - Standing Way (S)	2129	532	549	2317	0.919	2104	1202	3.0	9.4	15.358	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 - Fulmer Street	752	188	2069	471	1.595	471	790	19.5	89.8	434.131	F
B - Standing Way (N)	1610	403	460	1312	1.227	1310	2081	22.7	97.8	174.107	F
C - Shenley Way	668	167	1283	528	1.265	524	487	10.5	46.3	212.543	F
D - Standing Way (S)	2608	652	566	2305	1.131	2293	1241	9.4	88.0	83.694	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 - Fulmer Street	752	188	2078	466	1.612	466	793	89.8	161.1	971.142	F
B - Standing Way (N)	1610	403	457	1314	1.225	1314	2087	97.8	171.9	375.495	F

C - Shenley Way	668	167	1285	526	1.268	526	486	46.3	81.8	450.689	F
D - Standing Way (S)	2608	652	568	2304	1.132	2303	1243	88.0	164.3	201.919	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 - Fulmer Street	614	153	2067	473	1.299	473	791	161.1	196.5	1358.391	F
B - Standing Way (N)	1315	329	461	1312	1.002	1309	2079	171.9	173.5	478.840	F
C - Shenley Way	545	136	1282	528	1.032	527	487	81.8	86.3	582.431	F
D - Standing Way (S)	2129	532	568	2304	0.924	2290	1241	164.3	124.1	227.244	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 - Fulmer Street	514	129	2044	487	1.057	486	784	196.5	203.4	1488.881	F
B - Standing Way (N)	1101	275	468	1306	0.843	1299	2062	173.5	124.1	413.334	F
C - Shenley Way	456	114	1276	532	0.859	526	491	86.3	69.1	533.454	F
D - Standing Way (S)	1783	446	566	2306	0.774	2262	1236	124.1	4.4	100.471	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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	436.54	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	Ü	679	100.000
B - Standing Way (N)		ONE HOUR	Ü	1442	100.000
C - Shenley Way		ONE HOUR	Ü	604	100.000
D - Standing Way (S)		ONE HOUR	Ü	2317	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1	210	311	157
B - Standing Way (N)	131	23	179	1109
C - Shenley Way	331	162	1	110
D - Standing Way (S)	391	1791	113	22

Proportions

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0.00	0.31	0.46	0.23
B - Standing Way (N)	0.09	0.02	0.12	0.77
C - Shenley Way	0.55	0.27	0.00	0.18
D - Standing Way (S)	0.17	0.77	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	2	2	3
B - Standing Way (N)	4	5	1	7
C - Shenley Way	2	0	0	2
D - Standing Way (S)	0	5	1	5

Average PCU Per Veh

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1.000	1.016	1.018	1.027
B - Standing Way (N)	1.035	1.050	1.013	1.069
C - Shenley Way	1.017	1.000	1.000	1.024
D - Standing Way (S)	1.003	1.050	1.011	1.053

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	07:30-07:45	511	521

A - Fulmer Street	07:45-08:00	610	622
	08:00-08:15	747	762
	08:15-08:30	747	762
	08:30-08:45	610	622
	08:45-09:00	511	521
B - Standing Way (N)	07:30-07:45	1085	1149
	07:45-08:00	1296	1372
	08:00-08:15	1587	1680
	08:15-08:30	1587	1680
	08:30-08:45	1296	1372
C - Shenley Way	07:30-07:45	455	461
	07:45-08:00	543	551
	08:00-08:15	665	675
	08:15-08:30	665	675
	08:30-08:45	543	551
D - Standing Way (S)	07:30-07:45	1744	1815
	07:45-08:00	2083	2167
	08:00-08:15	2551	2654
	08:15-08:30	2551	2654
	08:30-08:45	2083	2167
	08:45-09:00	1744	1815

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 - Fulmer Street	1.59	1227.63	186.8	F	623	934
B - Standing Way (N)	1.21	439.63	158.7	F	1323	1984
C - Shenley Way	1.26	554.47	82.4	F	555	832
D - Standing Way (S)	1.11	177.40	137.2	F	2126	3189

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 - Fulmer Street	511	128	1578	759	0.673	503	635	0.0	2.0	13.694	B
B - Standing Way (N)	1085	271	449	1320	0.822	1068	1632	0.0	4.3	13.534	B
C - Shenley Way	455	114	1069	651	0.699	446	448	0.0	2.2	16.924	C
D - Standing Way (S)	1744	436	480	2363	0.738	1733	1036	0.0	2.8	5.619	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 - Fulmer Street	610	153	1872	587	1.040	557	742	2.0	15.4	74.891	F
B - Standing Way (N)	1296	324	506	1281	1.012	1232	1924	4.3	20.2	47.012	E
C - Shenley Way	543	136	1228	560	0.971	514	509	2.2	9.6	57.628	F
D - Standing Way (S)	2083	521	552	2315	0.900	2062	1190	2.8	7.8	13.316	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 - Fulmer Street	747	187	2063	476	1.572	475	794	15.4	83.5	391.836	F
B - Standing Way (N)	1587	397	462	1311	1.211	1308	2075	20.2	90.1	160.707	F
C - Shenley Way	665	166	1278	531	1.254	527	492	9.6	44.2	201.553	F
D - Standing Way (S)	2551	638	571	2302	1.108	2285	1233	7.8	74.2	72.222	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 - Fulmer Street	747	187	2074	469	1.594	469	798	83.5	153.2	908.467	F
B - Standing Way (N)	1587	397	459	1313	1.209	1313	2084	90.1	158.7	347.212	F

C - Shenley Way	665	166	1281	529	1.258	528	491	44.2	78.5	431.070	F
D - Standing Way (S)	2551	638	573	2301	1.109	2299	1236	74.2	137.2	170.677	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 - Fulmer Street	610	153	2062	476	1.283	476	795	153.2	186.8	1227.630	F
B - Standing Way (N)	1296	324	463	1310	0.989	1310	2075	158.7	155.0	439.627	F
C - Shenley Way	543	136	1280	529	1.027	528	493	78.5	82.4	554.469	F
D - Standing Way (S)	2083	521	572	2301	0.905	2285	1236	137.2	86.7	177.402	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 - Fulmer Street	511	128	1891	576	0.887	573	760	186.8	171.4	1125.799	F
B - Standing Way (N)	1085	271	518	1272	0.853	1264	1947	155.0	110.4	378.839	F
C - Shenley Way	455	114	1260	541	0.841	535	522	82.4	62.5	489.384	F
D - Standing Way (S)	1744	436	573	2301	0.758	2078	1222	86.7	3.3	44.301	E

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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	537.97	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	Ü	687	100.000
B - Standing Way (N)		ONE HOUR	Ü	1471	100.000
C - Shenley Way		ONE HOUR	Ü	609	100.000
D - Standing Way (S)		ONE HOUR	Ü	2389	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1	210	315	161
B - Standing Way (N)	131	23	179	1138
C - Shenley Way	333	162	1	113
D - Standing Way (S)	398	1850	119	22

Proportions

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0.00	0.31	0.46	0.23
B - Standing Way (N)	0.09	0.02	0.12	0.77
C - Shenley Way	0.55	0.27	0.00	0.19
D - Standing Way (S)	0.17	0.77	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	2	2	3
B - Standing Way (N)	4	5	1	7
C - Shenley Way	2	0	0	2
D - Standing Way (S)	0	5	1	5

Average PCU Per Veh

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1.000	1.016	1.018	1.027
B - Standing Way (N)	1.035	1.050	1.013	1.069
C - Shenley Way	1.017	1.000	1.000	1.024
D - Standing Way (S)	1.003	1.050	1.011	1.053

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	07:30-07:45	517	527

A - Fulmer Street	07:45-08:00	617	630
	08:00-08:15	756	771
	08:15-08:30	756	771
	08:30-08:45	617	630
	08:45-09:00	517	527
B - Standing Way (N)	07:30-07:45	1107	1172
	07:45-08:00	1322	1399
	08:00-08:15	1619	1714
	08:15-08:30	1619	1714
	08:30-08:45	1322	1399
C - Shenley Way	07:30-07:45	459	465
	07:45-08:00	548	555
	08:00-08:15	671	680
	08:15-08:30	671	680
	08:30-08:45	548	555
D - Standing Way (S)	07:30-07:45	1798	1871
	07:45-08:00	2147	2234
	08:00-08:15	2630	2736
	08:15-08:30	2630	2736
	08:30-08:45	2147	2234
	08:45-09:00	1798	1871

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 - Fulmer Street	1.63	1604.55	214.7	F	630	945
B - Standing Way (N)	1.24	499.23	181.8	F	1349	2024
C - Shenley Way	1.27	594.55	88.4	F	559	839
D - Standing Way (S)	1.14	247.62	175.4	F	2192	3288

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 - Fulmer Street	517	129	1625	731	0.707	508	641	0.0	2.3	15.557	C
B - Standing Way (N)	1107	277	459	1313	0.843	1088	1675	0.0	4.8	14.920	B
C - Shenley Way	459	115	1092	638	0.719	449	455	0.0	2.4	18.235	C
D - Standing Way (S)	1798	450	480	2363	0.761	1786	1060	0.0	3.1	6.116	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 - Fulmer Street	617	154	1923	557	1.108	539	746	2.3	21.9	101.105	F
B - Standing Way (N)	1322	331	500	1284	1.029	1246	1962	4.8	24.0	53.190	F
C - Shenley Way	548	137	1241	552	0.992	513	505	2.4	11.0	64.164	F
D - Standing Way (S)	2147	537	549	2317	0.927	2119	1205	3.1	10.1	16.319	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 - Fulmer Street	756	189	2074	469	1.612	469	787	21.9	93.8	460.507	F
B - Standing Way (N)	1619	405	461	1311	1.235	1309	2081	24.0	101.6	181.089	F
C - Shenley Way	671	168	1281	529	1.269	525	489	11.0	47.3	216.921	F
D - Standing Way (S)	2630	657	566	2306	1.141	2295	1241	10.1	93.8	88.586	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 - Fulmer Street	756	189	2081	465	1.627	465	790	93.8	166.7	1012.684	F
B - Standing Way (N)	1619	405	459	1313	1.234	1312	2086	101.6	178.3	389.760	F

C - Shenley Way	671	168	1283	527	1.272	527	488	47.3	83.3	458.604	F
D - Standing Way (S)	2630	657	567	2305	1.141	2304	1243	93.8	175.4	214.862	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 - Fulmer Street	617	154	2071	471	1.312	471	788	166.7	203.4	1424.084	F
B - Standing Way (N)	1322	331	463	1310	1.009	1308	2079	178.3	181.8	499.231	F
C - Shenley Way	548	137	1281	529	1.036	527	490	83.3	88.4	594.549	F
D - Standing Way (S)	2147	537	567	2305	0.932	2291	1241	175.4	139.3	247.621	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 - Fulmer Street	517	129	2069	472	1.096	472	786	203.4	214.7	1604.551	F
B - Standing Way (N)	1107	277	463	1310	0.845	1303	2077	181.8	132.9	435.583	F
C - Shenley Way	459	115	1276	531	0.863	525	490	88.4	71.7	549.624	F
D - Standing Way (S)	1798	450	565	2306	0.780	2290	1237	139.3	16.5	125.568	F

2033 Base + CD + SP (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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	199.51	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
D21	2033 Base + CD + SP (ST)	AM	ONE HOUR	07:30	09:00	15	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	Ü	656	100.000
B - Standing Way (N)		ONE HOUR	Ü	1303	100.000
C - Shenley Way		ONE HOUR	Ü	594	100.000
D - Standing Way (S)		ONE HOUR	Ü	2023	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1	210	315	130
B - Standing Way (N)	131	23	179	970
C - Shenley Way	333	162	1	98
D - Standing Way (S)	346	1551	104	22

Proportions

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0.00	0.32	0.48	0.20
B - Standing Way (N)	0.10	0.02	0.14	0.74
C - Shenley Way	0.56	0.27	0.00	0.17
D - Standing Way (S)	0.17	0.77	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	2	2	3
B - Standing Way (N)	4	5	1	7
C - Shenley Way	2	0	0	2
D - Standing Way (S)	0	5	1	5

Average PCU Per Veh

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1.000	1.016	1.018	1.027
B - Standing Way (N)	1.035	1.050	1.013	1.069
C - Shenley Way	1.017	1.000	1.000	1.024
D - Standing Way (S)	1.003	1.050	1.011	1.053

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	07:30-07:45	494	503

A - Fulmer Street	07:45-08:00	590	601
	08:00-08:15	722	736
	08:15-08:30	722	736
	08:30-08:45	590	601
	08:45-09:00	494	503
B - Standing Way (N)	07:30-07:45	981	1037
	07:45-08:00	1171	1238
	08:00-08:15	1434	1516
	08:15-08:30	1434	1516
	08:30-08:45	1171	1238
C - Shenley Way	07:30-07:45	447	453
	07:45-08:00	534	541
	08:00-08:15	654	663
	08:15-08:30	654	663
	08:30-08:45	534	541
D - Standing Way (S)	07:30-07:45	1523	1584
	07:45-08:00	1818	1891
	08:00-08:15	2227	2317
	08:15-08:30	2227	2317
	08:30-08:45	1818	1891
	08:45-09:00	1523	1584

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 - Fulmer Street	1.41	523.64	106.4	F	602	903
B - Standing Way (N)	1.11	224.35	82.6	F	1195	1793
C - Shenley Way	1.18	343.11	57.0	F	545	817
D - Standing Way (S)	0.98	39.14	23.3	E	1856	2784

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 - Fulmer Street	494	123	1394	867	0.570	489	605	0.0	1.3	9.398	A
B - Standing Way (N)	981	245	427	1336	0.734	970	1456	0.0	2.6	9.575	A
C - Shenley Way	447	112	951	720	0.621	441	447	0.0	1.6	12.645	B
D - Standing Way (S)	1523	381	483	2362	0.645	1516	908	0.0	1.8	4.221	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 - Fulmer Street	590	147	1664	709	0.832	578	718	1.3	4.2	25.479	D
B - Standing Way (N)	1171	293	507	1281	0.914	1149	1736	2.6	8.1	24.083	C
C - Shenley Way	534	133	1127	618	0.863	520	530	1.6	5.0	32.951	D
D - Standing Way (S)	1818	455	571	2302	0.790	1811	1076	1.8	3.6	7.221	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 - Fulmer Street	722	181	1971	530	1.364	525	808	4.2	53.5	215.624	F
B - Standing Way (N)	1434	359	493	1291	1.111	1277	2003	8.1	47.4	89.373	F
C - Shenley Way	654	163	1230	559	1.171	549	540	5.0	31.1	136.794	F
D - Standing Way (S)	2227	557	610	2276	0.978	2169	1169	3.6	18.1	25.517	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 - Fulmer Street	722	181	2003	511	1.413	511	817	53.5	106.4	523.639	F
B - Standing Way (N)	1434	359	486	1296	1.107	1293	2028	47.4	82.6	190.322	F

C - Shenley Way	654	163	1242	552	1.185	550	537	31.1	57.0	300.314	F
D - Standing Way (S)	2227	557	613	2274	0.979	2206	1179	18.1	23.3	39.137	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 - Fulmer Street	590	147	1746	661	0.892	655	763	106.4	90.0	508.597	F
B - Standing Way (N)	1171	293	565	1241	0.944	1226	1837	82.6	68.8	224.353	F
C - Shenley Way	534	133	1209	571	0.935	561	582	57.0	50.2	343.107	F
D - Standing Way (S)	1818	455	614	2273	0.800	1895	1156	23.3	4.2	11.333	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 - Fulmer Street	494	123	1448	836	0.590	827	703	90.0	6.6	216.202	F
B - Standing Way (N)	981	245	659	1175	0.834	1159	1616	68.8	24.4	148.630	F
C - Shenley Way	447	112	1181	588	0.761	576	636	50.2	17.9	218.448	F
D - Standing Way (S)	1523	381	619	2270	0.671	1531	1138	4.2	2.1	4.928	A

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: J17 - Emerson Roundabout_PM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport

Planning\Analysis\2021 Junction Modelling\Base\J17

Report generation date: 08/01/2021 15:31:52

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

Summary of junction performance

PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Fulmer Street	D2	7.2	44.65	0.90	E
B - Standing Way (N)		12.7	27.51	0.94	D
C - Shenley Way		9.6	69.79	0.95	F
D - Standing Way (S)		8.0	22.79	0.90	C
2033 Base					
A - Fulmer Street	D14	55.4	282.68	1.17	F
B - Standing Way (N)		106.8	168.11	1.10	F
C - Shenley Way		58.2	407.73	1.22	F
D - Standing Way (S)		49.0	104.87	1.04	F
2033 Base + CD + D					
A - Fulmer Street	D16	111.0	645.34	1.30	F
B - Standing Way (N)		366.0	675.90	1.31	F
C - Shenley Way		109.4	839.26	1.35	F
D - Standing Way (S)		167.7	385.85	1.20	F
2033 Base + CD + D with TP					
A - Fulmer Street	D18	100.3	587.32	1.28	F
B - Standing Way (N)		313.1	585.85	1.28	F
C - Shenley Way		101.9	767.14	1.33	F
D - Standing Way (S)		146.9	330.55	1.17	F
2033 Base + CD + D - ST					
A - Fulmer Street	D20	112.2	651.26	1.30	F
B - Standing Way (N)		377.3	695.40	1.32	F
C - Shenley Way		115.5	891.99	1.37	F
D - Standing Way (S)		170.2	391.85	1.20	F
2033 Base + CD + SP (ST)					
A - Fulmer Street	D22	56.4	294.81	1.17	F
B - Standing Way (N)		112.8	180.83	1.11	F
C - Shenley Way		62.1	440.95	1.23	F
D - Standing Way (S)		51.4	108.94	1.05	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

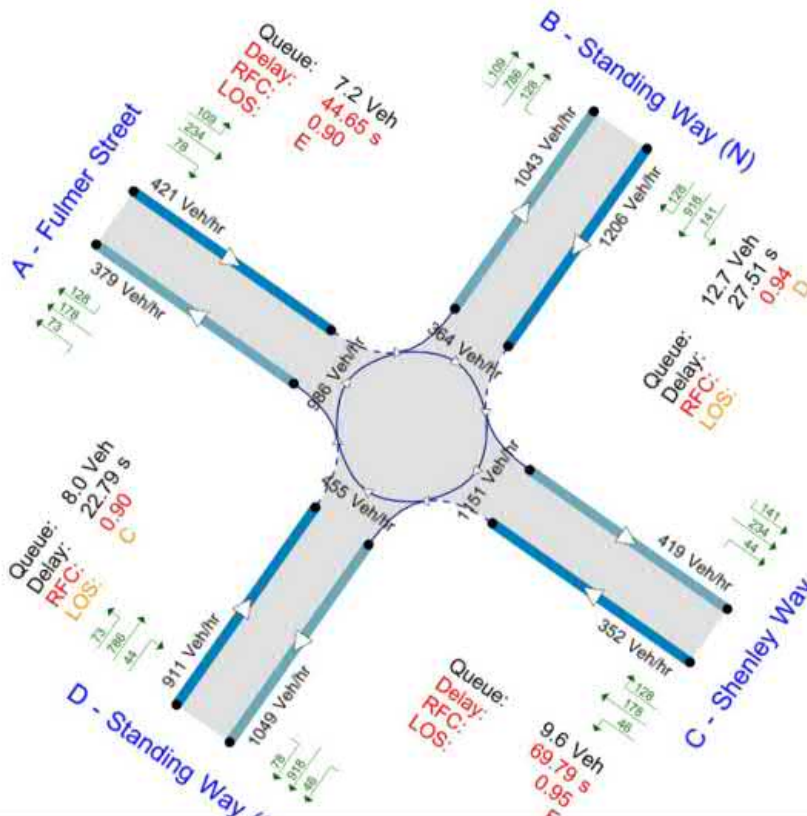
File Description

Title	Emerson Roundabout
Location	52° 0'10.64"N, 0°45'50.10"W
Site number	17
Date	07/01/2021
Version	

Status	
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



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
D2	2020 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü
D12	2026 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	Ü
D16	2033 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	Ü
D18	2033 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	Ü
D20	2033 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	Ü

D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	ü
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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	ü	ü	D2,D14,D16,D18,D20,D22	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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	33.59	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Fulmer Street	
B	Standing Way (N)	
C	Shenley Way	
D	Standing Way (S)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Fulmer Street	3.00	7.90	19.9	35.5	68.0	9.0	
B - Standing Way (N)	7.30	9.30	24.7	40.3	68.0	17.5	
C - Shenley Way	3.70	7.90	10.5	42.1	69.4	11.5	
D - Standing Way (S)	7.50	10.60	9.1	30.0	69.4	27.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Fulmer Street	Direct	Calibrated using video survey	-370
B - Standing Way (N)	Direct	Calibrated against queue length	-578
C - Shenley Way	Direct	Calibrated against queue length	-335
D - Standing Way (S)	Direct	Calibrated against queue length	-815

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Fulmer Street	0.570	1533
B - Standing Way (N)	0.720	2298
C - Shenley Way	0.550	1495
D - Standing Way (S)	0.688	1980

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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	ü	563	100.000

B - Standing Way (N)	ONE HOUR	ü	1610	100.000
C - Shenley Way	ONE HOUR	ü	472	100.000
D - Standing Way (S)	ONE HOUR	ü	1217	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0	146	313	104	
B - Standing Way (N)	171	26	188	1225	
C - Shenley Way	239	172	0	61	
D - Standing Way (S)	97	1050	59	11	

Proportions

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0.00	0.26	0.56	0.18	
B - Standing Way (N)	0.11	0.02	0.12	0.76	
C - Shenley Way	0.51	0.36	0.00	0.13	
D - Standing Way (S)	0.08	0.86	0.05	0.01	

Vehicle Mix

Heavy Vehicle Percentages

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	0	1	0	2	
B - Standing Way (N)	0	0	0	2	
C - Shenley Way	1	0	0	0	
D - Standing Way (S)	0	3	2	0	

Average PCU Per Veh

From	To				
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)	
A - Fulmer Street	1.000	1.007	1.000	1.019	
B - Standing Way (N)	1.000	1.000	1.000	1.021	
C - Shenley Way	1.008	1.000	1.000	1.000	
D - Standing Way (S)	1.000	1.028	1.017	1.000	

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Fulmer Street	16:45-17:00	424	426
	17:00-17:15	506	509
	17:15-17:30	620	623
	17:30-17:45	620	623
	17:45-18:00	506	509
	18:00-18:15	424	426
B - Standing Way (N)	16:45-17:00	1212	1231
	17:00-17:15	1447	1470
	17:15-17:30	1773	1801
	17:30-17:45	1773	1801
	17:45-18:00	1447	1470
	18:00-18:15	1212	1231
C - Shenley Way	16:45-17:00	355	357
	17:00-17:15	424	426
	17:15-17:30	520	522
	17:30-17:45	520	522
	17:45-18:00	424	426
	18:00-18:15	355	357
D - Standing Way (S)	16:45-17:00	916	939
	17:00-17:15	1094	1121
	17:15-17:30	1340	1373
	17:30-17:45	1340	1373
	17:45-18:00	1094	1121
	18:00-18:15	916	939

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 - Fulmer Street	0.90	44.65	7.2	E	517	775
B - Standing Way (N)	0.94	27.51	12.7	D	1477	2216
C - Shenley Way	0.95	69.79	9.6	F	433	650
D - Standing Way (S)	0.90	22.79	8.0	C	1117	1675

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 - Fulmer Street	424	106	986	953	0.445	421	379	0.0	0.8	6.727	A
B - Standing Way (N)	1212	303	364	2003	0.605	1206	1043	0.0	1.5	4.484	A
C - Shenley Way	355	89	1151	847	0.420	352	419	0.0	0.7	7.244	A
D - Standing Way (S)	916	229	455	1625	0.564	911	1049	0.0	1.3	5.005	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 - Fulmer Street	506	127	1180	840	0.602	503	454	0.8	1.5	10.595	B
B - Standing Way (N)	1447	362	436	1952	0.742	1442	1248	1.5	2.8	6.994	A
C - Shenley Way	424	106	1377	721	0.589	422	501	0.7	1.4	11.919	B
D - Standing Way (S)	1094	274	544	1565	0.699	1090	1255	1.3	2.3	7.509	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 - Fulmer Street	620	155	1425	699	0.887	602	542	1.5	5.9	32.776	D
B - Standing Way (N)	1773	443	522	1890	0.938	1740	1505	2.8	10.8	20.668	C
C - Shenley Way	520	130	1660	563	0.924	497	602	1.4	7.0	44.956	E
D - Standing Way (S)	1340	335	646	1497	0.895	1321	1512	2.3	7.1	18.675	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 - Fulmer Street	620	155	1444	687	0.902	615	552	5.9	7.2	44.651	E
B - Standing Way (N)	1773	443	532	1883	0.941	1765	1527	10.8	12.7	27.506	D
C - Shenley Way	520	130	1685	549	0.946	509	613	7.0	9.6	69.785	F
D - Standing Way (S)	1340	335	659	1488	0.901	1336	1534	7.1	8.0	22.790	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 - Fulmer Street	506	127	1217	819	0.618	528	478	7.2	1.7	13.254	B
B - Standing Way (N)	1447	362	455	1938	0.747	1486	1290	12.7	3.0	8.614	A
C - Shenley Way	424	106	1420	697	0.609	456	521	9.6	1.6	16.849	C
D - Standing Way (S)	1094	274	579	1542	0.710	1116	1297	8.0	2.5	8.869	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 - Fulmer Street	424	106	998	946	0.448	427	384	1.7	0.8	6.981	A
B - Standing Way (N)	1212	303	369	1999	0.606	1218	1056	3.0	1.6	4.643	A
C - Shenley Way	355	89	1163	840	0.423	359	424	1.6	0.7	7.534	A
D - Standing Way (S)	916	229	462	1621	0.565	921	1060	2.5	1.3	5.181	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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	193.17	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
D14	2033 Base	PM	ONE HOUR	16:45	18:15	15	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	ü	650	100.000
B - Standing Way (N)		ONE HOUR	ü	1879	100.000
C - Shenley Way		ONE HOUR	ü	545	100.000
D - Standing Way (S)		ONE HOUR	ü	1414	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	168	361	120
B - Standing Way (N)	197	30	217	1435
C - Shenley Way	276	198	0	70
D - Standing Way (S)	112	1222	68	13

Proportions

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0.00	0.26	0.56	0.18
B - Standing Way (N)	0.11	0.02	0.12	0.76
C - Shenley Way	0.51	0.36	0.00	0.13
D - Standing Way (S)	0.08	0.86	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	1	0	2
B - Standing Way (N)	0	0	0	2
C - Shenley Way	1	0	0	0
D - Standing Way (S)	0	3	2	0

Average PCU Per Veh

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1.000	1.007	1.000	1.019
B - Standing Way (N)	1.000	1.000	1.000	1.021
C - Shenley Way	1.008	1.000	1.000	1.000
D - Standing Way (S)	1.000	1.028	1.017	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	489	492

A - Fulmer Street	17:00-17:15	584	587
	17:15-17:30	715	719
	17:30-17:45	715	719
	17:45-18:00	584	587
	18:00-18:15	489	492
B - Standing Way (N)	16:45-17:00	1415	1438
	17:00-17:15	1689	1717
	17:15-17:30	2069	2102
	17:30-17:45	2069	2102
	17:45-18:00	1689	1717
C - Shenley Way	16:45-17:00	410	412
	17:00-17:15	490	492
	17:15-17:30	600	602
	17:30-17:45	600	602
	17:45-18:00	490	492
D - Standing Way (S)	16:45-17:00	1065	1091
	17:00-17:15	1271	1303
	17:15-17:30	1557	1596
	17:30-17:45	1557	1596
	17:45-18:00	1271	1303
	18:00-18:15	1065	1091

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 - Fulmer Street	1.17	282.68	55.4	F	596	894
B - Standing Way (N)	1.10	168.11	106.8	F	1724	2586
C - Shenley Way	1.22	407.73	58.2	F	500	750
D - Standing Way (S)	1.04	104.87	49.0	F	1298	1947

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 - Fulmer Street	489	122	1143	862	0.567	484	436	0.0	1.3	9.401	A
B - Standing Way (N)	1415	354	419	1963	0.721	1405	1208	0.0	2.5	6.335	A
C - Shenley Way	410	103	1341	740	0.554	405	482	0.0	1.2	10.596	B
D - Standing Way (S)	1065	266	523	1580	0.674	1057	1224	0.0	2.0	6.780	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 - Fulmer Street	584	146	1362	735	0.794	575	518	1.3	3.5	21.441	C
B - Standing Way (N)	1689	422	498	1907	0.886	1672	1439	2.5	6.8	14.377	B
C - Shenley Way	490	122	1597	598	0.819	479	574	1.2	3.9	28.133	D
D - Standing Way (S)	1271	318	619	1515	0.839	1260	1456	2.0	4.8	13.585	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 - Fulmer Street	715	179	1550	626	1.143	612	559	3.5	29.2	113.352	F
B - Standing Way (N)	2069	517	537	1879	1.101	1861	1626	6.8	58.8	72.290	F
C - Shenley Way	600	150	1772	500	1.200	491	625	3.9	31.1	147.357	F
D - Standing Way (S)	1557	389	653	1493	1.043	1457	1611	4.8	29.9	53.666	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 - Fulmer Street	715	179	1572	613	1.167	611	563	29.2	55.4	261.067	F
B - Standing Way (N)	2069	517	537	1879	1.101	1877	1646	58.8	106.8	165.223	F

C - Shenley Way	600	150	1786	492	1.218	491	628	31.1	58.2	340.863	F
D - Standing Way (S)	1557	389	655	1491	1.044	1481	1623	29.9	49.0	104.874	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 - Fulmer Street	584	146	1533	636	0.919	625	557	55.4	45.2	282.680	F
B - Standing Way (N)	1689	422	545	1874	0.902	1856	1612	106.8	65.1	168.109	F
C - Shenley Way	490	122	1770	501	0.977	491	631	58.2	57.9	407.727	F
D - Standing Way (S)	1271	318	652	1493	0.852	1438	1609	49.0	7.5	69.539	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 - Fulmer Street	489	122	1237	808	0.605	664	556	45.2	1.6	60.997	F
B - Standing Way (N)	1415	354	553	1868	0.757	1662	1347	65.1	3.3	39.974	E
C - Shenley Way	410	103	1602	595	0.689	585	613	57.9	14.2	228.364	F
D - Standing Way (S)	1065	266	710	1454	0.732	1083	1477	7.5	2.8	10.165	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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	594.35	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	ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	ü	710	100.000
B - Standing Way (N)		ONE HOUR	ü	2225	100.000
C - Shenley Way		ONE HOUR	ü	559	100.000
D - Standing Way (S)		ONE HOUR	ü	1678	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	168	361	180
	B - Standing Way (N)	197	30	217	1781
	C - Shenley Way	276	198	0	85
	D - Standing Way (S)	150	1433	82	13

Proportions

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0.00	0.24	0.51	0.25
	B - Standing Way (N)	0.09	0.01	0.10	0.80
	C - Shenley Way	0.49	0.35	0.00	0.15
	D - Standing Way (S)	0.09	0.85	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	0	1	0	2
	B - Standing Way (N)	0	0	0	2
	C - Shenley Way	1	0	0	0
	D - Standing Way (S)	0	3	2	0

Average PCU Per Veh

		To			
		A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
From	A - Fulmer Street	1.000	1.007	1.000	1.019
	B - Standing Way (N)	1.000	1.000	1.000	1.021
	C - Shenley Way	1.008	1.000	1.000	1.000
	D - Standing Way (S)	1.000	1.028	1.017	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	534	538

A - Fulmer Street	17:00-17:15	638	642
	17:15-17:30	781	786
	17:30-17:45	781	786
	17:45-18:00	638	642
	18:00-18:15	534	538
B - Standing Way (N)	16:45-17:00	1675	1703
	17:00-17:15	2000	2034
	17:15-17:30	2450	2491
	17:30-17:45	2450	2491
	17:45-18:00	2000	2034
C - Shenley Way	16:45-17:00	421	423
	17:00-17:15	503	505
	17:15-17:30	616	618
	17:30-17:45	616	618
	17:45-18:00	503	505
D - Standing Way (S)	16:45-17:00	1263	1294
	17:00-17:15	1508	1546
	17:15-17:30	1847	1893
	17:30-17:45	1847	1893
	17:45-18:00	1508	1546
	18:00-18:15	1263	1294

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 - Fulmer Street	1.30	645.34	111.0	F	651	977
B - Standing Way (N)	1.31	675.90	366.0	F	2042	3063
C - Shenley Way	1.35	839.26	109.4	F	513	770
D - Standing Way (S)	1.20	385.85	167.7	F	1539	2309

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 - Fulmer Street	534	134	1305	767	0.697	526	461	0.0	2.2	14.447	B
B - Standing Way (N)	1675	419	471	1924	0.871	1651	1359	0.0	6.0	12.263	B
C - Shenley Way	421	105	1633	578	0.729	411	489	0.0	2.5	20.573	C
D - Standing Way (S)	1263	316	517	1584	0.798	1248	1527	0.0	3.7	10.322	B

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 - Fulmer Street	638	159	1516	644	0.991	600	515	2.2	11.7	57.606	F
B - Standing Way (N)	2000	500	540	1875	1.067	1848	1576	6.0	44.2	58.369	F
C - Shenley Way	503	126	1831	467	1.076	447	557	2.5	16.5	97.125	F
D - Standing Way (S)	1508	377	568	1550	0.973	1464	1710	3.7	14.8	31.793	D

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 - Fulmer Street	781	195	1588	602	1.297	600	527	11.7	57.1	222.003	F
B - Standing Way (N)	2450	613	544	1872	1.309	1872	1644	44.2	188.9	229.574	F
C - Shenley Way	616	154	1853	455	1.354	453	563	16.5	57.1	309.173	F
D - Standing Way (S)	1847	462	576	1544	1.196	1540	1730	14.8	91.7	133.073	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 - Fulmer Street	781	195	1592	600	1.302	600	528	57.1	102.5	488.874	F
B - Standing Way (N)	2450	613	544	1872	1.309	1872	1647	188.9	333.4	505.892	F

C - Shenley Way	616	154	1853	455	1.355	454	563	57.1	97.4	624.873	F
D - Standing Way (S)	1847	462	577	1544	1.197	1543	1731	91.7	167.7	308.127	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 - Fulmer Street	638	159	1584	605	1.055	604	527	102.5	111.0	645.342	F
B - Standing Way (N)	2000	500	547	1870	1.070	1870	1641	333.4	366.0	675.901	F
C - Shenley Way	503	126	1853	455	1.105	455	565	97.4	109.4	828.675	F
D - Standing Way (S)	1508	377	577	1544	0.977	1534	1730	167.7	161.2	385.849	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 - Fulmer Street	534	134	1584	605	0.884	599	526	111.0	94.8	619.069	F
B - Standing Way (N)	1675	419	544	1873	0.895	1868	1640	366.0	317.9	659.327	F
C - Shenley Way	421	105	1849	457	0.922	453	562	109.4	101.5	839.255	F
D - Standing Way (S)	1263	316	575	1545	0.818	1535	1727	161.2	93.1	299.305	F

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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	522.57	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	Ü	700	100.000
B - Standing Way (N)		ONE HOUR	Ü	2171	100.000
C - Shenley Way		ONE HOUR	Ü	557	100.000
D - Standing Way (S)		ONE HOUR	Ü	1638	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	168	361	170
B - Standing Way (N)	197	30	217	1727
C - Shenley Way	276	198	0	83
D - Standing Way (S)	144	1401	80	13

Proportions

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0.00	0.24	0.52	0.24
B - Standing Way (N)	0.09	0.01	0.10	0.80
C - Shenley Way	0.49	0.36	0.00	0.15
D - Standing Way (S)	0.09	0.86	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	1	0	2
B - Standing Way (N)	0	0	0	2
C - Shenley Way	1	0	0	0
D - Standing Way (S)	0	3	2	0

Average PCU Per Veh

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1.000	1.007	1.000	1.019
B - Standing Way (N)	1.000	1.000	1.000	1.021
C - Shenley Way	1.008	1.000	1.000	1.000
D - Standing Way (S)	1.000	1.028	1.017	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	527	530

A - Fulmer Street	17:00-17:15	629	633
	17:15-17:30	770	775
	17:30-17:45	770	775
	17:45-18:00	629	633
	18:00-18:15	527	530
B - Standing Way (N)	16:45-17:00	1635	1662
	17:00-17:15	1952	1985
	17:15-17:30	2391	2431
	17:30-17:45	2391	2431
	17:45-18:00	1952	1985
C - Shenley Way	16:45-17:00	420	421
	17:00-17:15	501	503
	17:15-17:30	614	616
	17:30-17:45	614	616
	17:45-18:00	501	503
D - Standing Way (S)	16:45-17:00	1233	1263
	17:00-17:15	1472	1508
	17:15-17:30	1803	1847
	17:30-17:45	1803	1847
	17:45-18:00	1472	1508
	18:00-18:15	1233	1263

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 - Fulmer Street	1.28	587.32	100.3	F	642	963
B - Standing Way (N)	1.28	585.85	313.1	F	1992	2989
C - Shenley Way	1.33	767.14	101.9	F	511	767
D - Standing Way (S)	1.17	330.55	146.9	F	1503	2254

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 - Fulmer Street	527	132	1281	781	0.674	519	457	0.0	2.0	13.360	B
B - Standing Way (N)	1635	409	463	1930	0.847	1614	1337	0.0	5.1	10.783	B
C - Shenley Way	420	105	1588	602	0.697	411	489	0.0	2.1	18.106	C
D - Standing Way (S)	1233	308	519	1583	0.779	1220	1481	0.0	3.4	9.581	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 - Fulmer Street	629	157	1497	655	0.960	599	517	2.0	9.4	48.834	E
B - Standing Way (N)	1952	488	536	1878	1.039	1838	1560	5.1	33.7	47.563	E
C - Shenley Way	501	125	1811	478	1.048	453	563	2.1	14.2	85.336	F
D - Standing Way (S)	1472	368	578	1543	0.954	1437	1686	3.4	12.1	27.541	D

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 - Fulmer Street	770	193	1586	604	1.275	601	532	9.4	51.9	199.760	F
B - Standing Way (N)	2391	598	543	1873	1.276	1872	1644	33.7	163.4	195.374	F
C - Shenley Way	614	153	1843	460	1.333	458	572	14.2	53.0	281.774	F
D - Standing Way (S)	1803	451	586	1538	1.173	1531	1715	12.1	80.1	117.441	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 - Fulmer Street	770	193	1591	601	1.281	601	533	51.9	94.3	448.228	F
B - Standing Way (N)	2391	598	543	1873	1.276	1873	1648	163.4	292.8	442.294	F

C - Shenley Way	614	153	1844	460	1.335	459	572	53.0	91.6	579.655	F
D - Standing Way (S)	1803	451	587	1537	1.173	1536	1716	80.1	146.9	271.833	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 - Fulmer Street	629	157	1582	606	1.037	605	532	94.3	100.3	587.324	F
B - Standing Way (N)	1952	488	546	1871	1.043	1871	1641	292.8	313.1	585.854	F
C - Shenley Way	501	125	1843	460	1.089	460	574	91.6	101.9	767.138	F
D - Standing Way (S)	1472	368	587	1537	0.958	1527	1715	146.9	133.3	330.545	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 - Fulmer Street	527	132	1581	607	0.868	601	531	100.3	81.8	546.802	F
B - Standing Way (N)	1635	409	542	1874	0.872	1868	1640	313.1	254.8	547.668	F
C - Shenley Way	420	105	1839	462	0.907	458	571	101.9	92.3	764.002	F
D - Standing Way (S)	1233	308	585	1538	0.802	1527	1711	133.3	59.8	229.573	F

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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	611.42	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	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	Ü	711	100.000
B - Standing Way (N)		ONE HOUR	Ü	2236	100.000
C - Shenley Way		ONE HOUR	Ü	565	100.000
D - Standing Way (S)		ONE HOUR	Ü	1684	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	168	363	180
B - Standing Way (N)	197	30	217	1792
C - Shenley Way	279	198	0	88
D - Standing Way (S)	151	1438	82	13

Proportions

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0.00	0.24	0.51	0.25
B - Standing Way (N)	0.09	0.01	0.10	0.80
C - Shenley Way	0.49	0.35	0.00	0.16
D - Standing Way (S)	0.09	0.85	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	1	0	2
B - Standing Way (N)	0	0	0	2
C - Shenley Way	1	0	0	0
D - Standing Way (S)	0	3	2	0

Average PCU Per Veh

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1.000	1.007	1.000	1.019
B - Standing Way (N)	1.000	1.000	1.000	1.021
C - Shenley Way	1.008	1.000	1.000	1.000
D - Standing Way (S)	1.000	1.028	1.017	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	535	539

A - Fulmer Street	17:00-17:15	639	643
	17:15-17:30	783	788
	17:30-17:45	783	788
	17:45-18:00	639	643
	18:00-18:15	535	539
B - Standing Way (N)	16:45-17:00	1684	1712
	17:00-17:15	2010	2045
	17:15-17:30	2462	2504
	17:30-17:45	2462	2504
	17:45-18:00	2010	2045
C - Shenley Way	16:45-17:00	425	427
	17:00-17:15	508	510
	17:15-17:30	622	625
	17:30-17:45	622	625
	17:45-18:00	508	510
D - Standing Way (S)	16:45-17:00	1268	1299
	17:00-17:15	1514	1551
	17:15-17:30	1854	1899
	17:30-17:45	1854	1899
	17:45-18:00	1514	1551
	18:00-18:15	1268	1299

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 - Fulmer Street	1.30	651.26	112.2	F	653	979
B - Standing Way (N)	1.32	695.40	377.3	F	2052	3078
C - Shenley Way	1.37	891.99	115.5	F	518	778
D - Standing Way (S)	1.20	391.85	170.2	F	1545	2317

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 - Fulmer Street	535	134	1308	765	0.700	527	463	0.0	2.2	14.603	B
B - Standing Way (N)	1684	421	472	1923	0.875	1659	1362	0.0	6.3	12.605	B
C - Shenley Way	425	106	1640	573	0.742	415	490	0.0	2.6	21.535	C
D - Standing Way (S)	1268	317	519	1583	0.801	1252	1536	0.0	3.8	10.462	B

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 - Fulmer Street	639	160	1518	643	0.994	600	515	2.2	12.0	58.601	F
B - Standing Way (N)	2010	503	541	1875	1.072	1849	1578	6.3	46.6	60.784	F
C - Shenley Way	508	127	1833	466	1.091	447	557	2.6	17.8	102.949	F
D - Standing Way (S)	1514	378	566	1551	0.976	1468	1714	3.8	15.2	32.391	D

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 - Fulmer Street	783	196	1588	603	1.300	600	527	12.0	57.7	224.426	F
B - Standing Way (N)	2462	616	545	1872	1.315	1871	1643	46.6	194.4	237.137	F
C - Shenley Way	622	156	1853	454	1.369	453	563	17.8	60.0	325.836	F
D - Standing Way (S)	1854	463	573	1547	1.199	1542	1733	15.2	93.2	134.932	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 - Fulmer Street	783	196	1592	601	1.304	600	528	57.7	103.5	493.101	F
B - Standing Way (N)	2462	616	545	1872	1.316	1871	1647	194.4	342.1	519.738	F

C - Shenley Way	622	156	1853	454	1.370	454	563	60.0	102.1	655.160	F
D - Standing Way (S)	1854	463	574	1546	1.199	1546	1734	93.2	170.2	312.146	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 - Fulmer Street	639	160	1584	605	1.057	604	527	103.5	112.2	651.265	F
B - Standing Way (N)	2010	503	548	1870	1.075	1869	1641	342.1	377.3	695.402	F
C - Shenley Way	508	127	1853	455	1.117	454	564	102.1	115.5	871.253	F
D - Standing Way (S)	1514	378	574	1546	0.979	1537	1733	170.2	164.4	391.846	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 - Fulmer Street	535	134	1584	605	0.885	600	526	112.2	96.2	626.379	F
B - Standing Way (N)	1684	421	544	1872	0.899	1867	1639	377.3	331.4	683.474	F
C - Shenley Way	425	106	1849	456	0.932	453	562	115.5	108.7	891.992	F
D - Standing Way (S)	1268	317	572	1547	0.819	1538	1730	164.4	96.8	306.846	F

2033 Base + CD + SP (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
J17	Emerson Roundabout	Standard Roundabout		A, B, C, D	205.61	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
D22	2033 Base + CD + SP (ST)	PM	ONE HOUR	16:45	18:15	15	Ü

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Fulmer Street		ONE HOUR	Ü	651	100.000
B - Standing Way (N)		ONE HOUR	Ü	1890	100.000
C - Shenley Way		ONE HOUR	Ü	550	100.000
D - Standing Way (S)		ONE HOUR	Ü	1422	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	168	363	120
B - Standing Way (N)	197	30	217	1446
C - Shenley Way	279	198	0	73
D - Standing Way (S)	113	1228	68	13

Proportions

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0.00	0.26	0.56	0.18
B - Standing Way (N)	0.10	0.02	0.11	0.76
C - Shenley Way	0.51	0.36	0.00	0.13
D - Standing Way (S)	0.08	0.86	0.05	0.01

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	0	1	0	2
B - Standing Way (N)	0	0	0	2
C - Shenley Way	1	0	0	0
D - Standing Way (S)	0	3	2	0

Average PCU Per Veh

From	To			
	A - Fulmer Street	B - Standing Way (N)	C - Shenley Way	D - Standing Way (S)
A - Fulmer Street	1.000	1.007	1.000	1.019
B - Standing Way (N)	1.000	1.000	1.000	1.021
C - Shenley Way	1.008	1.000	1.000	1.000
D - Standing Way (S)	1.000	1.028	1.017	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
	16:45-17:00	490	493

A - Fulmer Street	17:00-17:15	585	588
	17:15-17:30	717	721
	17:30-17:45	717	721
	17:45-18:00	585	588
	18:00-18:15	490	493
B - Standing Way (N)	16:45-17:00	1423	1446
	17:00-17:15	1699	1727
	17:15-17:30	2081	2115
	17:30-17:45	2081	2115
	17:45-18:00	1699	1727
C - Shenley Way	16:45-17:00	414	416
	17:00-17:15	495	497
	17:15-17:30	606	608
	17:30-17:45	606	608
	17:45-18:00	495	497
D - Standing Way (S)	16:45-17:00	1070	1097
	17:00-17:15	1278	1310
	17:15-17:30	1565	1604
	17:30-17:45	1565	1604
	17:45-18:00	1278	1310
	18:00-18:15	1070	1097

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 - Fulmer Street	1.17	294.81	56.4	F	598	896
B - Standing Way (N)	1.11	180.83	112.8	F	1735	2602
C - Shenley Way	1.23	440.95	62.1	F	505	757
D - Standing Way (S)	1.05	108.94	51.4	F	1305	1957

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 - Fulmer Street	490	123	1148	859	0.570	485	439	0.0	1.3	9.491	A
B - Standing Way (N)	1423	356	420	1963	0.725	1413	1213	0.0	2.6	6.434	A
C - Shenley Way	414	104	1350	736	0.563	409	483	0.0	1.3	10.867	B
D - Standing Way (S)	1070	268	525	1579	0.678	1062	1234	0.0	2.1	6.866	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 - Fulmer Street	585	146	1367	732	0.799	576	521	1.3	3.6	21.915	C
B - Standing Way (N)	1699	425	499	1906	0.892	1681	1444	2.6	7.1	14.909	B
C - Shenley Way	495	124	1606	593	0.834	483	575	1.3	4.2	30.052	D
D - Standing Way (S)	1278	320	621	1514	0.844	1267	1468	2.1	4.9	13.944	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 - Fulmer Street	717	179	1551	625	1.147	612	559	3.6	29.8	115.240	F
B - Standing Way (N)	2081	520	537	1879	1.107	1863	1627	7.1	61.8	75.347	F
C - Shenley Way	606	151	1775	499	1.215	491	625	4.2	33.0	155.607	F
D - Standing Way (S)	1565	391	649	1495	1.047	1461	1616	4.9	31.1	55.208	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 - Fulmer Street	717	179	1573	612	1.171	611	562	29.8	56.4	266.042	F
B - Standing Way (N)	2081	520	537	1879	1.108	1877	1647	61.8	112.8	173.632	F

C - Shenley Way	606	151	1787	491	1.233	490	627	33.0	61.8	361.198	F
D - Standing Way (S)	1565	391	651	1494	1.048	1484	1627	31.1	51.4	108.945	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 - Fulmer Street	585	146	1543	630	0.930	619	560	56.4	48.1	294.814	F
B - Standing Way (N)	1699	425	541	1876	0.906	1860	1621	112.8	72.7	180.831	F
C - Shenley Way	495	124	1773	499	0.991	494	627	61.8	62.1	440.947	F
D - Standing Way (S)	1278	320	652	1493	0.856	1451	1615	51.4	8.1	75.881	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 - Fulmer Street	490	123	1236	809	0.606	676	551	48.1	1.6	69.662	F
B - Standing Way (N)	1423	356	563	1861	0.765	1700	1349	72.7	3.5	53.137	F
C - Shenley Way	414	104	1639	574	0.721	565	624	62.1	24.3	280.038	F
D - Standing Way (S)	1070	268	695	1464	0.731	1092	1510	8.1	2.8	10.171	B

Junctions 9
ARCADY 9 - Roundabout Module
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Report generation date: 27/01/2021 07:46:07

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

Summary of junction performance

AM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base					
A - Tattenhoe Street	D1	16.8	94.14	1.00	F
B - A421 Standing Way (N)		6.8	23.74	0.88	C
C - Tattenhoe Lane		8.8	66.29	0.93	F
D - A421 Standing Way (S)		15.6	37.58	0.96	E
2033 Base					
A - Tattenhoe Street	D13	87.4	502.27	1.26	F
B - A421 Standing Way (N)		29.1	81.43	1.01	F
C - Tattenhoe Lane		53.7	322.50	1.20	F
D - A421 Standing Way (S)		98.5	185.52	1.11	F
2033 Base + CD + D					
A - Tattenhoe Street	D15	138.6	832.06	1.35	F
B - A421 Standing Way (N)		138.2	391.34	1.20	F
C - Tattenhoe Lane		99.2	744.73	1.34	F
D - A421 Standing Way (S)		367.5	749.17	1.33	F
2033 Base + CD + D with TP					
A - Tattenhoe Street	D17	133.2	790.54	1.34	F
B - A421 Standing Way (N)		121.4	335.31	1.17	F
C - Tattenhoe Lane		93.4	700.73	1.32	F
D - A421 Standing Way (S)		316.3	653.86	1.30	F
2033 Base + CD + D - ST					
A - Tattenhoe Street	D19	142.7	861.10	1.36	F
B - A421 Standing Way (N)		144.9	414.59	1.21	F
C - Tattenhoe Lane		104.5	784.59	1.35	F
D - A421 Standing Way (S)		389.2	798.99	1.35	F
2033 Base + CD + SP (ST)					
A - Tattenhoe Street	D21	91.7	535.09	1.27	F
B - A421 Standing Way (N)		33.1	90.28	1.02	F
C - Tattenhoe Lane		58.0	366.35	1.22	F
D - A421 Standing Way (S)		110.2	214.39	1.12	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

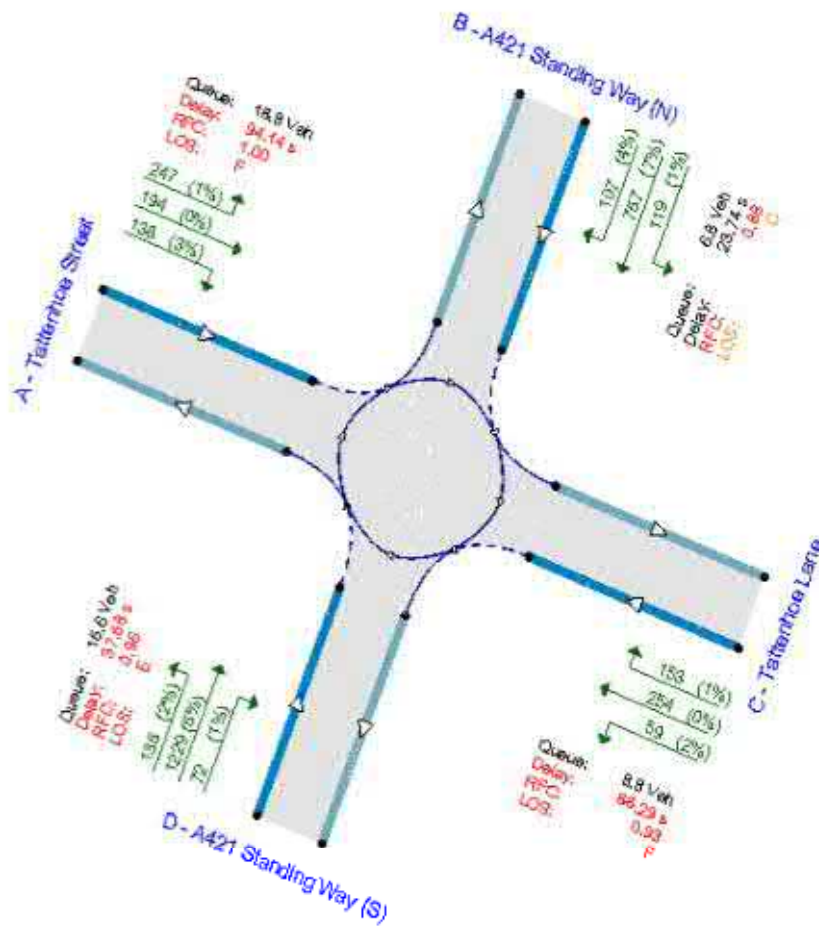
File Description

Title	Windmill Hill Roundabout
Location	51°59'53.19"N, 0°46'21.08"W
Site number	18
Date	08/01/2021

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



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	✓
D3	2026 Base	AM	ONE HOUR	07:30	09:00	15	✓
D5	2026 Base + CD + D	AM	ONE HOUR	07:30	09:00	15	✓
D7	2026 Base + CD + D with TP	AM	ONE HOUR	07:30	09:00	15	✓
D9	2026 Base + CD + D - ST	AM	ONE HOUR	07:30	09:00	15	✓
D11	2026 Base + CD + SP (ST)	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,D21	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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	46.44	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Tattenhoe Street	
B	A421 Standing Way (N)	
C	Tattenhoe Lane	
D	A421 Standing Way (S)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Tattenhoe Street	3.20	7.00	10.2	45.4	65.0	9.5	
B - A421 Standing Way (N)	7.40	9.10	25.4	32.5	65.0	13.0	
C - Tattenhoe Lane	2.90	6.50	8.6	33.1	65.0	18.0	
D - A421 Standing Way (S)	7.30	9.10	17.3	43.4	65.0	19.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Tattenhoe Street	Direct	Calibrated against queue length	-85
B - A421 Standing Way (N)	Direct	Calibrated against queue length	-1230
C - Tattenhoe Lane	Direct	Calibrated against queue length	-283
D - A421 Standing Way (S)	Direct	Calibrated against queue length	-645

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Tattenhoe Street	0.545	1557
B - A421 Standing Way (N)	0.743	1644
C - Tattenhoe Lane	0.500	1144
D - A421 Standing Way (S)	0.726	2145

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 - Tattenhoe Street	ONE HOUR	✓	581	100.000
B - A421 Standing Way (N)	ONE HOUR	✓	996	100.000
C - Tattenhoe Lane	ONE HOUR	✓	466	100.000
D - A421 Standing Way (S)	ONE HOUR	✓	1436	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	247	194	138
	B - A421 Standing Way (N)	107	13	119	757
	C - Tattenhoe Lane	254	153	0	59
	D - A421 Standing Way (S)	135	1229	72	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

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 - Tattenhoe Street	1.00	94.14	16.8	F	533	800
B - A421 Standing Way (N)	0.88	23.74	6.8	C	914	1371
C - Tattenhoe Lane	0.93	66.29	8.8	F	428	641
D - A421 Standing Way (S)	0.96	37.58	15.6	E	1318	1977

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 - Tattenhoe Street	437	109	1098	921	0.475	434	372	0.0	0.9	7.341	A
B - A421 Standing Way (N)	750	187	303	1332	0.563	745	1228	0.0	1.3	6.082	A
C - Tattenhoe Lane	351	88	760	736	0.477	347	288	0.0	0.9	9.183	A
D - A421 Standing Way (S)	1081	270	395	1774	0.609	1075	713	0.0	1.5	5.105	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 - Tattenhoe Street	522	131	1313	800	0.653	519	445	0.9	1.8	12.647	B
B - A421 Standing Way (N)	895	224	363	1290	0.694	892	1469	1.3	2.2	8.957	A
C - Tattenhoe Lane	419	105	910	656	0.638	416	344	0.9	1.7	14.760	B
D - A421 Standing Way (S)	1291	323	472	1719	0.751	1285	854	1.5	2.9	8.193	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 - Tattenhoe Street	640	160	1574	653	0.980	604	532	1.8	10.8	53.134	F
B - A421 Standing Way (N)	1097	274	424	1246	0.880	1081	1753	2.2	6.2	20.060	C
C - Tattenhoe Lane	513	128	1097	557	0.921	492	408	1.7	6.9	45.525	E
D - A421 Standing Way (S)	1581	395	562	1656	0.955	1543	1027	2.9	12.4	25.903	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 - Tattenhoe Street	640	160	1601	637	1.004	616	542	10.8	16.8	94.141	F
B - A421 Standing Way (N)	1097	274	433	1240	0.884	1094	1784	6.2	6.8	23.741	C
C - Tattenhoe Lane	513	128	1112	550	0.934	505	415	6.9	8.8	66.293	F
D - A421 Standing Way (S)	1581	395	575	1647	0.960	1568	1042	12.4	15.6	37.576	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 - Tattenhoe Street	522	131	1373	766	0.682	581	469	16.8	2.3	25.052	D
B - A421 Standing Way (N)	895	224	401	1263	0.709	913	1552	6.8	2.5	10.751	B
C - Tattenhoe Lane	419	105	943	639	0.656	446	370	8.8	2.0	21.033	C
D - A421 Standing Way (S)	1291	323	502	1699	0.760	1340	888	15.6	3.3	11.332	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 - Tattenhoe Street	437	109	1112	913	0.479	443	378	2.3	0.9	7.745	A
B - A421 Standing Way (N)	750	187	309	1328	0.565	755	1246	2.5	1.3	6.336	A
C - Tattenhoe Lane	351	88	771	730	0.481	355	293	2.0	0.9	9.705	A
D - A421 Standing Way (S)	1081	270	403	1768	0.611	1088	724	3.3	1.6	5.344	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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	225.69	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
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 - Tattenhoe Street		ONE HOUR	✓	692	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1150	100.000
C - Tattenhoe Lane		ONE HOUR	✓	535	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1647	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	223	158
	B - A421 Standing Way (N)	131	15	136	868
	C - Tattenhoe Lane	291	175	0	68
	D - A421 Standing Way (S)	155	1410	83	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

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 - Tattenhoe Street	1.26	502.27	87.4	F	635	952
B - A421 Standing Way (N)	1.01	81.43	29.1	F	1056	1583
C - Tattenhoe Lane	1.20	322.50	53.7	F	490	736

D - A421 Standing Way (S)	1.11	185.52	98.5	F	1511	2267
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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 - Tattenhoe Street	521	130	1256	832	0.626	514	431	0.0	1.6	11.129	B
B - A421 Standing Way (N)	866	217	347	1301	0.666	858	1424	0.0	1.9	7.995	A
C - Tattenhoe Lane	402	101	876	673	0.598	397	329	0.0	1.4	12.764	B
D - A421 Standing Way (S)	1240	310	457	1729	0.717	1230	816	0.0	2.5	7.083	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 - Tattenhoe Street	622	155	1494	698	0.891	604	513	1.6	6.0	33.591	D
B - A421 Standing Way (N)	1034	259	408	1258	0.822	1025	1690	1.9	4.2	14.893	B
C - Tattenhoe Lane	481	120	1044	585	0.822	471	389	1.4	3.9	29.341	D
D - A421 Standing Way (S)	1481	370	543	1669	0.887	1463	971	2.5	6.8	16.315	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 - Tattenhoe Street	761	190	1647	611	1.246	605	559	6.0	45.1	168.326	F
B - A421 Standing Way (N)	1267	317	417	1252	1.012	1204	1836	4.2	19.9	47.626	E
C - Tattenhoe Lane	588	147	1202	501	1.176	491	419	3.9	28.4	138.368	F
D - A421 Standing Way (S)	1813	453	583	1640	1.106	1623	1109	6.8	54.4	77.473	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 - Tattenhoe Street	761	190	1659	604	1.260	604	561	45.1	84.5	396.705	F
B - A421 Standing Way (N)	1267	317	416	1252	1.012	1230	1846	19.9	29.1	81.426	F
C - Tattenhoe Lane	588	147	1224	489	1.204	487	422	28.4	53.7	312.200	F
D - A421 Standing Way (S)	1813	453	583	1640	1.106	1637	1128	54.4	98.5	175.178	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 - Tattenhoe Street	622	155	1645	612	1.015	610	568	84.5	87.4	502.270	F
B - A421 Standing Way (N)	1034	259	419	1250	0.827	1129	1837	29.1	5.5	40.804	E
C - Tattenhoe Lane	481	120	1137	535	0.898	525	411	53.7	42.5	322.496	F
D - A421 Standing Way (S)	1481	370	604	1626	0.911	1609	1058	98.5	66.3	185.520	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 - Tattenhoe Street	521	130	1548	668	0.779	660	550	87.4	52.4	383.330	F
B - A421 Standing Way (N)	866	217	441	1235	0.701	878	1768	5.5	2.4	10.425	B
C - Tattenhoe Lane	402	101	927	647	0.622	565	391	42.5	1.8	97.864	F
D - A421 Standing Way (S)	1240	310	607	1624	0.763	1491	886	66.3	3.6	59.457	F

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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	654.14	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 - Tattenhoe Street		ONE HOUR	✓	712	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1365	100.000
C - Tattenhoe Lane		ONE HOUR	✓	558	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	2039	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	223	179
	B - A421 Standing Way (N)	131	15	136	1083
	C - Tattenhoe Lane	291	175	0	91
	D - A421 Standing Way (S)	170	1775	94	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

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 - Tattenhoe Street	1.35	832.06	138.6	F	654	980
B - A421 Standing Way (N)	1.20	391.34	138.2	F	1253	1879

C - Tattenhoe Lane	1.34	744.73	99.2	F	512	768
D - A421 Standing Way (S)	1.33	749.17	367.5	F	1871	2807

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 - Tattenhoe Street	536	134	1523	680	0.788	523	439	0.0	3.3	21.364	C
B - A421 Standing Way (N)	1028	257	366	1285	0.800	1013	1679	0.0	3.7	12.614	B
C - Tattenhoe Lane	420	105	1045	583	0.720	410	334	0.0	2.4	19.877	C
D - A421 Standing Way (S)	1535	384	453	1731	0.887	1508	1002	0.0	6.8	14.741	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 - Tattenhoe Street	640	160	1686	589	1.088	570	496	3.3	21.0	95.153	F
B - A421 Standing Way (N)	1227	307	400	1261	0.973	1187	1856	3.7	13.7	36.499	E
C - Tattenhoe Lane	501	125	1213	494	1.016	463	374	2.4	12.1	75.573	F
D - A421 Standing Way (S)	1833	458	516	1687	1.087	1666	1160	6.8	48.5	69.521	F

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 - Tattenhoe Street	784	196	1701	580	1.352	579	502	21.0	72.4	304.284	F
B - A421 Standing Way (N)	1503	376	406	1257	1.196	1252	1874	13.7	76.4	139.476	F
C - Tattenhoe Lane	614	154	1274	461	1.331	459	384	12.1	50.8	264.484	F
D - A421 Standing Way (S)	2245	561	520	1684	1.334	1683	1214	48.5	189.1	259.723	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 - Tattenhoe Street	784	196	1701	580	1.352	580	502	72.4	123.5	618.493	F
B - A421 Standing Way (N)	1503	376	406	1257	1.196	1256	1874	76.4	138.2	314.089	F
C - Tattenhoe Lane	614	154	1278	460	1.337	459	384	50.8	89.5	561.587	F
D - A421 Standing Way (S)	2245	561	520	1683	1.334	1683	1217	189.1	329.6	558.655	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 - Tattenhoe Street	640	160	1701	580	1.104	580	503	123.5	138.6	821.677	F
B - A421 Standing Way (N)	1227	307	406	1257	0.977	1248	1874	138.2	133.1	391.337	F
C - Tattenhoe Lane	501	125	1271	464	1.082	463	384	89.5	99.2	744.730	F
D - A421 Standing Way (S)	1833	458	522	1682	1.090	1682	1211	329.6	367.5	749.013	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 - Tattenhoe Street	536	134	1698	582	0.922	578	501	138.6	128.3	832.060	F
B - A421 Standing Way (N)	1028	257	405	1258	0.817	1248	1870	133.1	77.9	305.706	F
C - Tattenhoe Lane	420	105	1270	464	0.906	459	383	99.2	89.4	740.353	F
D - A421 Standing Way (S)	1535	384	519	1684	0.912	1680	1210	367.5	331.4	749.175	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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	584.97	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
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 - Tattenhoe Street		ONE HOUR	✓	710	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1337	100.000
C - Tattenhoe Lane		ONE HOUR	✓	555	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1982	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	223	177
	B - A421 Standing Way (N)	131	15	136	1055
	C - Tattenhoe Lane	291	175	0	88
	D - A421 Standing Way (S)	168	1722	93	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

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 - Tattenhoe Street	1.34	790.54	133.2	F	652	978
B - A421 Standing Way (N)	1.17	335.31	121.4	F	1227	1840

C - Tattenhoe Lane	1.32	700.73	93.4	F	509	764
D - A421 Standing Way (S)	1.30	653.86	316.3	F	1819	2728

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 - Tattenhoe Street	535	134	1486	701	0.762	523	438	0.0	2.9	19.105	C
B - A421 Standing Way (N)	1007	252	365	1287	0.782	993	1644	0.0	3.4	11.782	B
C - Tattenhoe Lane	418	104	1024	594	0.703	409	334	0.0	2.2	18.617	C
D - A421 Standing Way (S)	1492	373	454	1730	0.862	1470	979	0.0	5.6	12.863	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 - Tattenhoe Street	639	160	1673	596	1.072	574	501	2.9	19.2	87.459	F
B - A421 Standing Way (N)	1202	301	402	1260	0.954	1170	1845	3.4	11.4	31.960	D
C - Tattenhoe Lane	499	125	1195	504	0.991	466	376	2.2	10.4	67.099	F
D - A421 Standing Way (S)	1782	445	521	1683	1.059	1653	1140	5.6	37.9	57.467	F

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 - Tattenhoe Street	782	196	1696	583	1.341	582	509	19.2	69.3	287.967	F
B - A421 Standing Way (N)	1472	368	407	1256	1.172	1250	1870	11.4	67.1	123.446	F
C - Tattenhoe Lane	611	153	1269	464	1.315	462	388	10.4	47.7	244.996	F
D - A421 Standing Way (S)	2182	546	527	1679	1.300	1678	1204	37.9	164.0	222.645	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 - Tattenhoe Street	782	196	1696	583	1.342	582	509	69.3	119.2	592.839	F
B - A421 Standing Way (N)	1472	368	408	1256	1.172	1255	1871	67.1	121.4	277.273	F
C - Tattenhoe Lane	611	153	1274	462	1.323	461	389	47.7	85.1	529.604	F
D - A421 Standing Way (S)	2182	546	527	1679	1.300	1679	1208	164.0	290.0	490.988	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 - Tattenhoe Street	639	160	1696	583	1.095	583	510	119.2	133.2	787.466	F
B - A421 Standing Way (N)	1202	301	408	1256	0.957	1246	1870	121.4	110.5	335.312	F
C - Tattenhoe Lane	499	125	1266	466	1.070	466	388	85.1	93.4	700.734	F
D - A421 Standing Way (S)	1782	445	529	1677	1.063	1677	1202	290.0	316.3	653.858	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 - Tattenhoe Street	535	134	1692	585	0.914	581	508	133.2	121.7	790.539	F
B - A421 Standing Way (N)	1007	252	407	1257	0.801	1245	1866	110.5	50.8	235.296	F
C - Tattenhoe Lane	418	104	1265	467	0.895	462	387	93.4	82.4	686.141	F
D - A421 Standing Way (S)	1492	373	526	1679	0.889	1674	1201	316.3	270.8	631.464	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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	692.01	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 - Tattenhoe Street		ONE HOUR	✓	715	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1374	100.000
C - Tattenhoe Lane		ONE HOUR	✓	564	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	2062	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	226	179
	B - A421 Standing Way (N)	131	15	136	1092
	C - Tattenhoe Lane	294	175	0	94
	D - A421 Standing Way (S)	170	1795	97	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

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 - Tattenhoe Street	1.36	861.10	142.7	F	656	985
B - A421 Standing Way (N)	1.21	414.59	144.9	F	1261	1891

C - Tattenhoe Lane	1.35	784.59	104.5	F	517	776
D - A421 Standing Way (S)	1.35	798.99	389.2	F	1892	2839

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 - Tattenhoe Street	539	135	1538	672	0.801	524	441	0.0	3.6	22.615	C
B - A421 Standing Way (N)	1035	259	370	1282	0.807	1019	1692	0.0	3.9	13.007	B
C - Tattenhoe Lane	425	106	1051	580	0.732	415	339	0.0	2.5	20.668	C
D - A421 Standing Way (S)	1553	388	455	1729	0.898	1523	1010	0.0	7.4	15.708	C

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 - Tattenhoe Street	643	161	1690	586	1.097	569	495	3.6	22.1	99.423	F
B - A421 Standing Way (N)	1235	309	402	1259	0.981	1192	1856	3.9	14.8	38.619	E
C - Tattenhoe Lane	507	127	1217	492	1.031	464	377	2.5	13.3	80.944	F
D - A421 Standing Way (S)	1854	464	515	1687	1.099	1670	1167	7.4	53.4	75.118	F

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 - Tattenhoe Street	788	197	1702	579	1.360	578	500	22.1	74.5	314.452	F
B - A421 Standing Way (N)	1513	378	408	1255	1.205	1251	1872	14.8	80.3	146.525	F
C - Tattenhoe Lane	621	155	1273	462	1.344	460	386	13.3	53.4	278.718	F
D - A421 Standing Way (S)	2271	568	518	1685	1.348	1684	1216	53.4	200.0	276.103	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 - Tattenhoe Street	788	197	1703	579	1.360	579	500	74.5	126.7	635.745	F
B - A421 Standing Way (N)	1513	378	409	1255	1.206	1254	1873	80.3	144.9	329.580	F
C - Tattenhoe Lane	621	155	1277	460	1.349	460	387	53.4	93.7	586.918	F
D - A421 Standing Way (S)	2271	568	518	1685	1.348	1685	1218	200.0	346.4	587.700	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 - Tattenhoe Street	643	161	1702	579	1.110	579	501	126.7	142.7	845.346	F
B - A421 Standing Way (N)	1235	309	409	1255	0.984	1246	1872	144.9	142.2	414.586	F
C - Tattenhoe Lane	507	127	1269	464	1.092	464	386	93.7	104.5	780.415	F
D - A421 Standing Way (S)	1854	464	520	1683	1.101	1683	1213	346.4	389.2	789.441	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 - Tattenhoe Street	539	135	1699	581	0.927	577	499	142.7	133.1	861.099	F
B - A421 Standing Way (N)	1035	259	408	1256	0.824	1247	1869	142.2	89.0	334.914	F
C - Tattenhoe Lane	425	106	1269	464	0.915	460	385	104.5	95.7	784.591	F
D - A421 Standing Way (S)	1553	388	517	1686	0.921	1681	1212	389.2	357.0	798.990	F

2033 Base + CD + SP (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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	251.05	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
D21	2033 Base + CD + SP (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 - Tattenhoe Street		ONE HOUR	✓	694	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1160	100.000
C - Tattenhoe Lane		ONE HOUR	✓	541	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1671	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	308	226	158
	B - A421 Standing Way (N)	131	15	136	878
	C - Tattenhoe Lane	294	175	0	71
	D - A421 Standing Way (S)	155	1430	86	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	1	0	3
	B - A421 Standing Way (N)	4	15	1	7
	C - Tattenhoe Lane	0	1	0	2
	D - A421 Standing Way (S)	2	5	1	0

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 - Tattenhoe Street	1.27	535.09	91.7	F	637	956
B - A421 Standing Way (N)	1.02	90.28	33.1	F	1065	1597

C - Tattenhoe Lane	1.22	366.35	58.0	F	496	745
D - A421 Standing Way (S)	1.12	214.39	110.2	F	1533	2300

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 - Tattenhoe Street	523	131	1273	822	0.636	516	433	0.0	1.7	11.532	B
B - A421 Standing Way (N)	873	218	351	1298	0.673	865	1438	0.0	2.0	8.178	A
C - Tattenhoe Lane	407	102	883	670	0.608	401	334	0.0	1.5	13.141	B
D - A421 Standing Way (S)	1258	315	459	1728	0.728	1248	825	0.0	2.6	7.349	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 - Tattenhoe Street	624	156	1512	687	0.908	604	515	1.7	6.7	36.822	E
B - A421 Standing Way (N)	1043	261	412	1255	0.831	1033	1704	2.0	4.5	15.563	C
C - Tattenhoe Lane	486	122	1051	581	0.838	475	394	1.5	4.2	31.352	D
D - A421 Standing Way (S)	1502	376	545	1667	0.901	1482	982	2.6	7.6	17.795	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 - Tattenhoe Street	765	191	1652	608	1.257	603	556	6.7	47.0	176.690	F
B - A421 Standing Way (N)	1277	319	419	1250	1.022	1208	1836	4.5	21.9	51.048	F
C - Tattenhoe Lane	596	149	1205	499	1.194	490	422	4.2	30.6	147.803	F
D - A421 Standing Way (S)	1840	460	579	1642	1.120	1629	1115	7.6	60.4	84.540	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 - Tattenhoe Street	765	191	1662	603	1.269	602	558	47.0	87.7	412.921	F
B - A421 Standing Way (N)	1277	319	419	1250	1.022	1232	1845	21.9	33.1	90.275	F
C - Tattenhoe Lane	596	149	1226	487	1.222	486	425	30.6	58.0	336.953	F
D - A421 Standing Way (S)	1840	460	579	1643	1.120	1641	1134	60.4	110.2	193.889	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 - Tattenhoe Street	624	156	1649	610	1.023	608	562	87.7	91.7	535.094	F
B - A421 Standing Way (N)	1043	261	421	1248	0.836	1152	1836	33.1	6.0	50.261	F
C - Tattenhoe Lane	486	122	1156	525	0.927	516	416	58.0	50.6	366.348	F
D - A421 Standing Way (S)	1502	376	595	1632	0.920	1617	1078	110.2	81.4	214.388	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 - Tattenhoe Street	523	131	1626	624	0.838	617	575	91.7	68.0	467.023	F
B - A421 Standing Way (N)	873	218	424	1247	0.701	888	1820	6.0	2.4	10.403	B
C - Tattenhoe Lane	407	102	926	647	0.629	602	386	50.6	2.0	138.482	F
D - A421 Standing Way (S)	1258	315	636	1604	0.784	1565	891	81.4	4.7	98.105	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: J18 - Windmill Hill Roundabout_PM.j9

Path: \\uk.wspgroup.com\central data\Projects\700694xx\70069442 - SWMK - 2020\03 WIP\TP Transport Planning\Analysis\2021 Junction Modelling\Base\J18

Report generation date: 27/01/2021 07:47:57

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

Summary of junction performance

		PM				
		Set ID	Queue (Veh)	Delay (s)	RFC	LOS
2020 Base						
A - Tattenhoe Street	D2		7.6	44.38	0.91	E
B - A421 Standing Way (N)			4.5	12.07	0.82	B
C - Tattenhoe Lane			6.4	62.68	0.90	F
D - A421 Standing Way (S)			5.8	19.71	0.86	C
2033 Base						
A - Tattenhoe Street	D14		59.6	257.18	1.17	F
B - A421 Standing Way (N)			17.7	41.22	0.97	E
C - Tattenhoe Lane			61.1	471.85	1.36	F
D - A421 Standing Way (S)			24.6	69.85	1.00	F
2033 Base + CD + D						
A - Tattenhoe Street	D16		103.6	593.24	1.28	F
B - A421 Standing Way (N)			225.5	478.33	1.23	F
C - Tattenhoe Lane			151.5	1911.13	1.68	F
D - A421 Standing Way (S)			140.7	365.59	1.19	F
2033 Base + CD + D with TP						
A - Tattenhoe Street	D18		96.9	554.56	1.27	F
B - A421 Standing Way (N)			178.7	372.95	1.19	F
C - Tattenhoe Lane			140.4	1745.09	1.65	F
D - A421 Standing Way (S)			117.7	296.80	1.16	F
2033 Base + CD + D - ST						
A - Tattenhoe Street	D20		105.4	603.40	1.28	F
B - A421 Standing Way (N)			237.7	501.10	1.24	F
C - Tattenhoe Lane			154.5	1949.16	1.69	F
D - A421 Standing Way (S)			144.0	375.23	1.19	F
2033 Base + CD + SP (ST)						
A - Tattenhoe Street	D22		61.4	269.61	1.17	F
B - A421 Standing Way (N)			20.3	46.23	0.98	E
C - Tattenhoe Lane			64.8	504.69	1.39	F
D - A421 Standing Way (S)			25.8	72.37	1.00	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	Windmill Hill Roundabout
Location	51°59'53.19"N, 0°46'21.08"W
Site number	18
Date	08/01/2021
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	✓
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15	✓
D6	2026 Base + CD + D	PM	ONE HOUR	16:45	18:15	15	✓
D8	2026 Base + CD + D with TP	PM	ONE HOUR	16:45	18:15	15	✓
D10	2026 Base + CD + D - ST	PM	ONE HOUR	16:45	18:15	15	✓
D12	2026 Base + CD + SP (ST)	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,D22	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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	25.91	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Tattenhoe Street	
B	A421 Standing Way (N)	
C	Tattenhoe Lane	
D	A421 Standing Way (S)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Tattenhoe Street	3.30	7.00	10.2	45.4	65.0	9.5	
B - A421 Standing Way (N)	7.40	9.10	25.4	32.5	65.0	13.0	
C - Tattenhoe Lane	2.90	6.50	8.6	33.1	65.0	10.0	
D - A421 Standing Way (S)	7.30	9.10	17.3	43.4	65.0	19.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
A - Tattenhoe Street	Direct	Calibrated against queue length	-310
B - A421 Standing Way (N)	Direct	Calibrated against queue length	-800
C - Tattenhoe Lane	Direct	Calibrated against queue length	-300
D - A421 Standing Way (S)	Direct	Calibrated against queue length	-1075

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Tattenhoe Street	0.549	1358
B - A421 Standing Way (N)	0.743	2074
C - Tattenhoe Lane	0.513	1164
D - A421 Standing Way (S)	0.726	1715

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 - Tattenhoe Street		ONE HOUR	✓	600	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1264	100.000
C - Tattenhoe Lane		ONE HOUR	✓	358	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1007	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From				
A - Tattenhoe Street	2	212	237	149
B - A421 Standing Way (N)	166	13	160	925
C - Tattenhoe Lane	210	103	0	45
D - A421 Standing Way (S)	108	856	43	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From				
A - Tattenhoe Street	0	0	0	0
B - A421 Standing Way (N)	1	0	0	3
C - Tattenhoe Lane	0	0	0	2
D - A421 Standing Way (S)	0	3	2	0

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 - Tattenhoe Street	0.91	44.38	7.6	E	551	826
B - A421 Standing Way (N)	0.82	12.07	4.5	B	1160	1740
C - Tattenhoe Lane	0.90	62.68	6.4	F	329	493
D - A421 Standing Way (S)	0.86	19.71	5.8	C	924	1386

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 - Tattenhoe Street	452	113	759	929	0.486	448	363	0.0	0.9	7.423	A
B - A421 Standing Way (N)	952	238	322	1796	0.530	947	885	0.0	1.1	4.219	A
C - Tattenhoe Lane	270	67	940	670	0.402	267	329	0.0	0.7	8.878	A
D - A421 Standing Way (S)	758	190	369	1406	0.539	754	838	0.0	1.2	5.478	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 - Tattenhoe Street	539	135	909	845	0.638	536	435	0.9	1.7	11.550	B
B - A421 Standing Way (N)	1136	284	385	1750	0.649	1133	1060	1.1	1.8	5.814	A
C - Tattenhoe Lane	322	80	1125	573	0.562	320	394	0.7	1.2	14.066	B
D - A421 Standing Way (S)	905	226	442	1355	0.668	902	1003	1.2	2.0	7.894	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 - Tattenhoe Street	661	165	1101	736	0.897	642	523	1.7	6.3	33.220	D
B - A421 Standing Way (N)	1392	348	462	1694	0.822	1382	1281	1.8	4.3	11.185	B
C - Tattenhoe Lane	394	99	1368	446	0.884	378	475	1.2	5.2	45.583	E
D - A421 Standing Way (S)	1109	277	529	1293	0.857	1095	1218	2.0	5.3	17.127	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 - Tattenhoe Street	661	165	1115	729	0.907	656	532	6.3	7.6	44.376	E
B - A421 Standing Way (N)	1392	348	471	1687	0.825	1391	1299	4.3	4.5	12.068	B
C - Tattenhoe Lane	394	99	1380	440	0.896	390	482	5.2	6.4	62.682	F
D - A421 Standing Way (S)	1109	277	540	1286	0.862	1107	1230	5.3	5.8	19.707	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 - Tattenhoe Street	539	135	931	832	0.648	562	452	7.6	1.9	14.363	B
B - A421 Standing Way (N)	1136	284	403	1737	0.654	1147	1091	4.5	1.9	6.199	A
C - Tattenhoe Lane	322	80	1143	564	0.571	342	406	6.4	1.4	17.561	C
D - A421 Standing Way (S)	905	226	463	1340	0.676	920	1022	5.8	2.1	8.853	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 - Tattenhoe Street	452	113	768	924	0.489	455	368	1.9	1.0	7.741	A
B - A421 Standing Way (N)	952	238	327	1792	0.531	955	897	1.9	1.1	4.315	A
C - Tattenhoe Lane	270	67	949	665	0.405	272	333	1.4	0.7	9.220	A
D - A421 Standing Way (S)	758	190	375	1402	0.541	762	846	2.1	1.2	5.658	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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	136.59	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 - Tattenhoe Street		ONE HOUR	✓	702	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1480	100.000
C - Tattenhoe Lane		ONE HOUR	✓	413	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1162	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	273	172
	B - A421 Standing Way (N)	213	15	185	1067
	C - Tattenhoe Lane	242	119	0	52
	D - A421 Standing Way (S)	125	988	50	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3
	C - Tattenhoe Lane	0	0	0	2
	D - A421 Standing Way (S)	0	3	2	0

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 - Tattenhoe Street	1.17	257.18	59.6	F	644	967
B - A421 Standing Way (N)	0.97	41.22	17.7	E	1358	2037
C - Tattenhoe Lane	1.36	471.85	61.1	F	379	569
D - A421 Standing Way (S)	1.00	69.85	24.6	F	1066	1600

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 - Tattenhoe Street	529	132	874	865	0.612	523	434	0.0	1.5	10.352	B
B - A421 Standing Way (N)	1114	279	370	1761	0.633	1107	1027	0.0	1.7	5.453	A
C - Tattenhoe Lane	311	78	1099	586	0.531	307	379	0.0	1.1	12.720	B
D - A421 Standing Way (S)	875	219	440	1356	0.645	868	965	0.0	1.8	7.277	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 - Tattenhoe Street	631	158	1043	769	0.821	621	517	1.5	4.0	22.968	C
B - A421 Standing Way (N)	1330	333	440	1710	0.778	1324	1224	1.7	3.4	9.165	A
C - Tattenhoe Lane	371	93	1313	474	0.784	363	451	1.1	3.1	30.523	D
D - A421 Standing Way (S)	1045	261	523	1297	0.806	1036	1153	1.8	3.9	13.409	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 - Tattenhoe Street	773	193	1207	676	1.144	663	563	4.0	31.6	113.062	F
B - A421 Standing Way (N)	1629	407	475	1685	0.967	1586	1395	3.4	14.3	28.401	D
C - Tattenhoe Lane	455	114	1552	349	1.304	343	508	3.1	31.1	204.265	F
D - A421 Standing Way (S)	1279	320	546	1281	0.999	1224	1349	3.9	17.8	42.796	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 - Tattenhoe Street	773	193	1231	663	1.167	661	565	31.6	59.6	257.184	F
B - A421 Standing Way (N)	1629	407	475	1685	0.967	1616	1417	14.3	17.7	41.218	E
C - Tattenhoe Lane	455	114	1578	335	1.356	335	512	31.1	61.1	471.848	F
D - A421 Standing Way (S)	1279	320	544	1282	0.998	1252	1369	17.8	24.6	69.847	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 - Tattenhoe Street	631	158	1137	716	0.882	704	573	59.6	41.4	256.524	F
B - A421 Standing Way (N)	1330	333	497	1669	0.797	1384	1345	17.7	4.2	14.779	B
C - Tattenhoe Lane	371	93	1387	436	0.852	429	495	61.1	46.8	433.648	F
D - A421 Standing Way (S)	1045	261	590	1249	0.836	1120	1225	24.6	5.8	36.019	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 - Tattenhoe Street	529	132	946	825	0.641	687	548	41.4	1.9	57.596	F
B - A421 Standing Way (N)	1114	279	476	1684	0.661	1123	1157	4.2	2.0	6.508	A
C - Tattenhoe Lane	311	78	1153	558	0.558	493	445	46.8	1.4	131.813	F
D - A421 Standing Way (S)	875	219	606	1238	0.706	888	1040	5.8	2.5	10.644	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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	591.51	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 - Tattenhoe Street		ONE HOUR	✓	715	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1900	100.000
C - Tattenhoe Lane		ONE HOUR	✓	420	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1457	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	273	185
	B - A421 Standing Way (N)	213	15	185	1488
	C - Tattenhoe Lane	242	119	0	59
	D - A421 Standing Way (S)	141	1250	66	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3
	C - Tattenhoe Lane	0	0	0	2
	D - A421 Standing Way (S)	0	3	2	0

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 - Tattenhoe Street	1.28	593.24	103.6	F	656	985
B - A421 Standing Way (N)	1.23	478.33	225.5	F	1744	2616
C - Tattenhoe Lane	1.68	1911.13	151.5	F	386	578
D - A421 Standing Way (S)	1.19	365.59	140.7	F	1337	2005

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 - Tattenhoe Street	539	135	1074	751	0.717	529	441	0.0	2.4	15.613	C
B - A421 Standing Way (N)	1431	358	390	1744	0.820	1414	1214	0.0	4.3	10.414	B
C - Tattenhoe Lane	316	79	1415	420	0.754	306	389	0.0	2.7	29.339	D
D - A421 Standing Way (S)	1097	274	434	1360	0.807	1081	1287	0.0	3.9	12.329	B

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 - Tattenhoe Street	643	161	1243	656	0.981	608	478	2.4	11.0	55.132	F
B - A421 Standing Way (N)	1708	427	449	1701	1.005	1639	1402	4.3	21.7	38.198	E
C - Tattenhoe Lane	378	94	1639	303	1.247	295	449	2.7	23.3	187.807	F
D - A421 Standing Way (S)	1310	327	452	1347	0.973	1269	1482	3.9	14.0	35.042	E

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 - Tattenhoe Street	788	197	1310	618	1.275	615	481	11.0	54.3	206.936	F
B - A421 Standing Way (N)	2092	523	457	1695	1.234	1692	1467	21.7	121.7	159.749	F
C - Tattenhoe Lane	463	116	1689	277	1.673	276	460	23.3	69.9	629.874	F
D - A421 Standing Way (S)	1604	401	442	1354	1.185	1349	1523	14.0	77.9	132.286	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 - Tattenhoe Street	788	197	1314	615	1.280	615	482	54.3	97.5	454.423	F
B - A421 Standing Way (N)	2092	523	457	1695	1.235	1694	1471	121.7	221.2	368.948	F
C - Tattenhoe Lane	463	116	1691	276	1.679	276	461	69.9	116.7	1237.025	F
D - A421 Standing Way (S)	1604	401	442	1354	1.185	1353	1524	77.9	140.7	297.121	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 - Tattenhoe Street	643	161	1306	620	1.037	619	481	97.5	103.6	593.235	F
B - A421 Standing Way (N)	1708	427	459	1693	1.009	1691	1465	221.2	225.5	478.332	F
C - Tattenhoe Lane	378	94	1689	277	1.366	276	462	116.7	142.1	1694.476	F
D - A421 Standing Way (S)	1310	327	442	1354	0.968	1344	1523	140.7	132.1	365.588	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 - Tattenhoe Street	539	135	1305	620	0.868	614	482	103.6	84.6	552.281	F
B - A421 Standing Way (N)	1431	358	457	1695	0.844	1688	1463	225.5	161.2	413.042	F
C - Tattenhoe Lane	316	79	1685	279	1.135	279	460	142.1	151.5	1911.129	F
D - A421 Standing Way (S)	1097	274	444	1353	0.811	1342	1520	132.1	70.8	273.648	F

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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	506.49	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
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 - Tattenhoe Street		ONE HOUR	✓	713	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1834	100.000
C - Tattenhoe Lane		ONE HOUR	✓	419	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1412	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	273	183
	B - A421 Standing Way (N)	213	15	185	1422
	C - Tattenhoe Lane	242	119	0	58
	D - A421 Standing Way (S)	139	1210	63	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3
	C - Tattenhoe Lane	0	0	0	2
	D - A421 Standing Way (S)	0	3	2	0

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 - Tattenhoe Street	1.27	554.56	96.9	F	655	982
B - A421 Standing Way (N)	1.19	372.95	178.7	F	1683	2525
C - Tattenhoe Lane	1.65	1745.09	140.4	F	385	577
D - A421 Standing Way (S)	1.16	296.80	117.7	F	1296	1944

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 - Tattenhoe Street	537	134	1044	768	0.699	528	441	0.0	2.2	14.528	B
B - A421 Standing Way (N)	1381	345	387	1747	0.791	1367	1186	0.0	3.6	9.155	A
C - Tattenhoe Lane	316	79	1366	446	0.707	307	387	0.0	2.2	24.521	C
D - A421 Standing Way (S)	1063	266	436	1359	0.782	1049	1237	0.0	3.4	11.192	B

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 - Tattenhoe Street	641	160	1217	670	0.957	613	490	2.2	9.4	48.099	E
B - A421 Standing Way (N)	1649	412	449	1701	0.969	1605	1381	3.6	14.7	28.913	D
C - Tattenhoe Lane	377	94	1602	323	1.168	311	452	2.2	18.7	149.142	F
D - A421 Standing Way (S)	1269	317	469	1335	0.951	1238	1444	3.4	11.3	30.048	D

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 - Tattenhoe Street	785	196	1300	623	1.261	619	492	9.4	50.9	191.065	F
B - A421 Standing Way (N)	2020	505	458	1695	1.192	1690	1461	14.7	97.2	127.199	F
C - Tattenhoe Lane	462	115	1680	282	1.639	281	467	18.7	63.8	550.645	F
D - A421 Standing Way (S)	1555	389	454	1346	1.155	1338	1508	11.3	65.4	113.340	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 - Tattenhoe Street	785	196	1306	620	1.267	619	493	50.9	92.5	427.069	F
B - A421 Standing Way (N)	2020	505	458	1694	1.192	1694	1467	97.2	178.7	298.293	F
C - Tattenhoe Lane	462	115	1684	280	1.650	280	468	63.8	109.2	1120.521	F
D - A421 Standing Way (S)	1555	389	453	1346	1.155	1345	1511	65.4	117.7	252.012	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 - Tattenhoe Street	641	160	1296	625	1.026	624	493	92.5	96.9	554.556	F
B - A421 Standing Way (N)	1649	412	461	1693	0.974	1683	1459	178.7	170.1	372.948	F
C - Tattenhoe Lane	377	94	1676	284	1.326	284	468	109.2	132.4	1547.690	F
D - A421 Standing Way (S)	1269	317	456	1345	0.944	1333	1504	117.7	101.8	296.805	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 - Tattenhoe Street	537	134	1295	626	0.858	620	493	96.9	76.3	504.246	F
B - A421 Standing Way (N)	1381	345	458	1695	0.815	1685	1456	170.1	94.2	283.550	F
C - Tattenhoe Lane	316	79	1676	284	1.111	284	467	132.4	140.4	1745.092	F
D - A421 Standing Way (S)	1063	266	456	1345	0.791	1332	1504	101.8	34.6	187.325	F

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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	609.01	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 - Tattenhoe Street		ONE HOUR	✓	716	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1914	100.000
C - Tattenhoe Lane		ONE HOUR	✓	422	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1464	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	274	185
	B - A421 Standing Way (N)	213	15	185	1502
	C - Tattenhoe Lane	243	119	0	60
	D - A421 Standing Way (S)	141	1257	66	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3
	C - Tattenhoe Lane	0	0	0	2
	D - A421 Standing Way (S)	0	3	2	0

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 - Tattenhoe Street	1.28	603.40	105.4	F	657	986
B - A421 Standing Way (N)	1.24	501.10	237.7	F	1757	2635
C - Tattenhoe Lane	1.69	1949.16	154.5	F	387	581
D - A421 Standing Way (S)	1.19	375.23	144.0	F	1343	2015

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 - Tattenhoe Street	539	135	1079	748	0.721	530	441	0.0	2.4	15.828	C
B - A421 Standing Way (N)	1441	360	390	1744	0.827	1423	1218	0.0	4.4	10.718	B
C - Tattenhoe Lane	318	79	1425	415	0.765	307	389	0.0	2.8	30.557	D
D - A421 Standing Way (S)	1102	276	434	1360	0.810	1086	1297	0.0	4.0	12.516	B

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 - Tattenhoe Street	644	161	1247	653	0.986	608	476	2.4	11.4	56.545	F
B - A421 Standing Way (N)	1721	430	449	1701	1.012	1644	1406	4.4	23.6	40.475	E
C - Tattenhoe Lane	380	95	1645	300	1.264	293	449	2.8	24.4	196.166	F
D - A421 Standing Way (S)	1316	329	449	1349	0.975	1274	1489	4.0	14.4	35.768	E

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 - Tattenhoe Street	789	197	1312	616	1.279	613	479	11.4	55.2	210.713	F
B - A421 Standing Way (N)	2108	527	456	1695	1.243	1693	1469	23.6	127.3	167.375	F
C - Tattenhoe Lane	465	116	1690	276	1.681	276	459	24.4	71.6	647.299	F
D - A421 Standing Way (S)	1612	403	440	1355	1.189	1351	1526	14.4	79.8	135.002	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 - Tattenhoe Street	789	197	1315	614	1.284	614	480	55.2	98.9	461.496	F
B - A421 Standing Way (N)	2108	527	457	1695	1.243	1695	1472	127.3	230.5	384.513	F
C - Tattenhoe Lane	465	116	1692	276	1.687	276	460	71.6	118.9	1261.609	F
D - A421 Standing Way (S)	1612	403	440	1356	1.189	1355	1527	79.8	144.0	303.465	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 - Tattenhoe Street	644	161	1308	619	1.041	618	479	98.9	105.4	603.404	F
B - A421 Standing Way (N)	1721	430	459	1694	1.016	1692	1466	230.5	237.7	501.096	F
C - Tattenhoe Lane	380	95	1691	276	1.374	276	461	118.9	144.7	1726.896	F
D - A421 Standing Way (S)	1316	329	440	1355	0.971	1346	1527	144.0	136.5	375.232	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 - Tattenhoe Street	539	135	1307	619	0.871	613	480	105.4	86.8	564.949	F
B - A421 Standing Way (N)	1441	360	456	1696	0.850	1689	1464	237.7	175.8	441.345	F
C - Tattenhoe Lane	318	79	1686	279	1.141	279	458	144.7	154.5	1949.157	F
D - A421 Standing Way (S)	1102	276	442	1354	0.814	1345	1523	136.5	75.9	285.797	F

2033 Base + CD + SP (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
J18	Windmill Hill Roundabout	Standard Roundabout		A, B, C, D	144.77	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
D22	2033 Base + CD + SP (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 - Tattenhoe Street		ONE HOUR	✓	703	100.000
B - A421 Standing Way (N)		ONE HOUR	✓	1495	100.000
C - Tattenhoe Lane		ONE HOUR	✓	415	100.000
D - A421 Standing Way (S)		ONE HOUR	✓	1170	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	2	255	274	172
	B - A421 Standing Way (N)	213	15	185	1082
	C - Tattenhoe Lane	243	119	0	53
	D - A421 Standing Way (S)	125	995	50	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Tattenhoe Street	B - A421 Standing Way (N)	C - Tattenhoe Lane	D - A421 Standing Way (S)
From	A - Tattenhoe Street	0	0	0	0
	B - A421 Standing Way (N)	1	0	0	3
	C - Tattenhoe Lane	0	0	0	2
	D - A421 Standing Way (S)	0	3	2	0

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 - Tattenhoe Street	1.17	269.61	61.4	F	645	968
B - A421 Standing Way (N)	0.98	46.23	20.3	E	1372	2058
C - Tattenhoe Lane	1.39	504.69	64.8	F	381	571
D - A421 Standing Way (S)	1.00	72.37	25.8	F	1074	1610

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 - Tattenhoe Street	529	132	880	861	0.615	523	435	0.0	1.5	10.467	B
B - A421 Standing Way (N)	1126	281	371	1760	0.639	1119	1032	0.0	1.7	5.549	A
C - Tattenhoe Lane	312	78	1110	581	0.538	308	380	0.0	1.1	12.979	B
D - A421 Standing Way (S)	881	220	441	1356	0.650	874	977	0.0	1.8	7.362	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 - Tattenhoe Street	632	158	1050	765	0.826	622	517	1.5	4.1	23.549	C
B - A421 Standing Way (N)	1344	336	441	1709	0.786	1337	1230	1.7	3.5	9.486	A
C - Tattenhoe Lane	373	93	1326	468	0.797	364	452	1.1	3.3	32.222	D
D - A421 Standing Way (S)	1052	263	524	1297	0.811	1043	1166	1.8	4.0	13.724	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 - Tattenhoe Street	774	194	1212	673	1.150	661	559	4.1	32.4	116.081	F
B - A421 Standing Way (N)	1646	412	474	1685	0.977	1597	1399	3.5	15.8	30.587	D
C - Tattenhoe Lane	457	114	1563	344	1.328	339	508	3.3	32.9	217.233	F
D - A421 Standing Way (S)	1288	322	541	1285	1.003	1230	1361	4.0	18.5	43.910	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 - Tattenhoe Street	774	194	1235	660	1.173	658	562	32.4	61.4	265.198	F
B - A421 Standing Way (N)	1646	412	474	1686	0.977	1628	1420	15.8	20.3	46.225	E
C - Tattenhoe Lane	457	114	1590	330	1.385	329	512	32.9	64.8	504.692	F
D - A421 Standing Way (S)	1288	322	538	1287	1.001	1259	1382	18.5	25.8	72.372	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 - Tattenhoe Street	632	158	1145	712	0.888	700	569	61.4	44.4	269.612	F
B - A421 Standing Way (N)	1344	336	495	1670	0.805	1408	1350	20.3	4.4	16.560	C
C - Tattenhoe Lane	373	93	1407	426	0.876	419	495	64.8	53.2	478.128	F
D - A421 Standing Way (S)	1052	263	583	1255	0.838	1131	1244	25.8	5.9	37.941	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 - Tattenhoe Street	529	132	959	818	0.647	699	563	44.4	2.0	69.631	F
B - A421 Standing Way (N)	1126	281	484	1678	0.671	1135	1174	4.4	2.1	6.734	A
C - Tattenhoe Lane	312	78	1168	551	0.567	519	451	53.2	1.6	175.578	F
D - A421 Standing Way (S)	881	220	628	1224	0.720	894	1059	5.9	2.7	11.315	B