Bassetlaw Local Plan

A60 / B6041 Cannon Crossroads, Worksop

Bassetlaw District Council

December 2022

Prepared on Behalf of Tetra Tech Limited. Registered in England number: 01959704

tetratecheurope.com

Tetra Tech Leicester, Executive Park, Avalon Way, Anstey, Leicester, United Kingdom, LE7 7GR
Registered Office: 3 Sovereign Square, Sovereign Street, Leeds, United Kingdom, LS1 4ER

Document Control

Document:	Bassetlaw Local Plan – Cannon Crossroads Note
Project:	Bassetlaw Local Plan
Client:	Bassetlaw District Council
Job Number:	784-A102341
File Origin:	Bassetlaw Local Plan - Cannon Crossroads_Rev1.docx

Revision:	1	**Status:**	Final
Date:	December 2022		
Prepared by: ASG		**Checked by:** RJH	**Approved By:** ASG
Description of revision: For issue.			

Revision:	2	**Status:**	Final
Date:	January 2023		
Prepared by: ASG		**Checked by:** RJH	**Approved By:** ASG
Description of revision: Further testing as requested by NCC.			

Revision:		**Status:**	
Date:			
Prepared by:		**Checked by:**	**Approved By:**
Description of revision:			

Revision:		**Status:**	
Date:			
Prepared by:		**Checked by:**	**Approved By:**
Description of revision:			

Contents

Tables

Appendices

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 This note summarises the results of AM / PM peak period traffic capacity assessments of the A60 / B6041 Cannon Crossroads junction in Worksop. Assessments have been undertaken for the existing traffic signal junction layout and for a committed highway improvement to replace the signal junction with a priority roundabout.

1.1.2 The capacity assessments have been undertaken at the request of the local highway authority, Nottinghamshire County Council (NCC), to provide reassurance that the committed highway improvement will still offer operational traffic capacity benefits at the end of the Bassetlaw Local Plan period (2038) with Bassetlaw Local Plan development in place.

2 EXISTING JUNCTION

2.1 A60 / B6041 CANNON CROSSROADS

2.1.1 The A60 / B6041 junction is located north of the Worksop central area and is the intersection between the A60 Carlton Road (aligned north-south) and the B6041 Thievesdale Lane / Raymoth Lane (aligned east-west). The existing junction layout is shown in **Image 1** below and comprises a signal controlled crossroads junction.

2.1.2 Locally the junction is known as the Cannon Crossroads and takes it's name from the Cannon Public House situated on the south-eastern quadrant of the junction.

Image 1 - Existing Junction Layout

Image © Google

3 COMMITTED HIGHWAY IMPROVEMENT

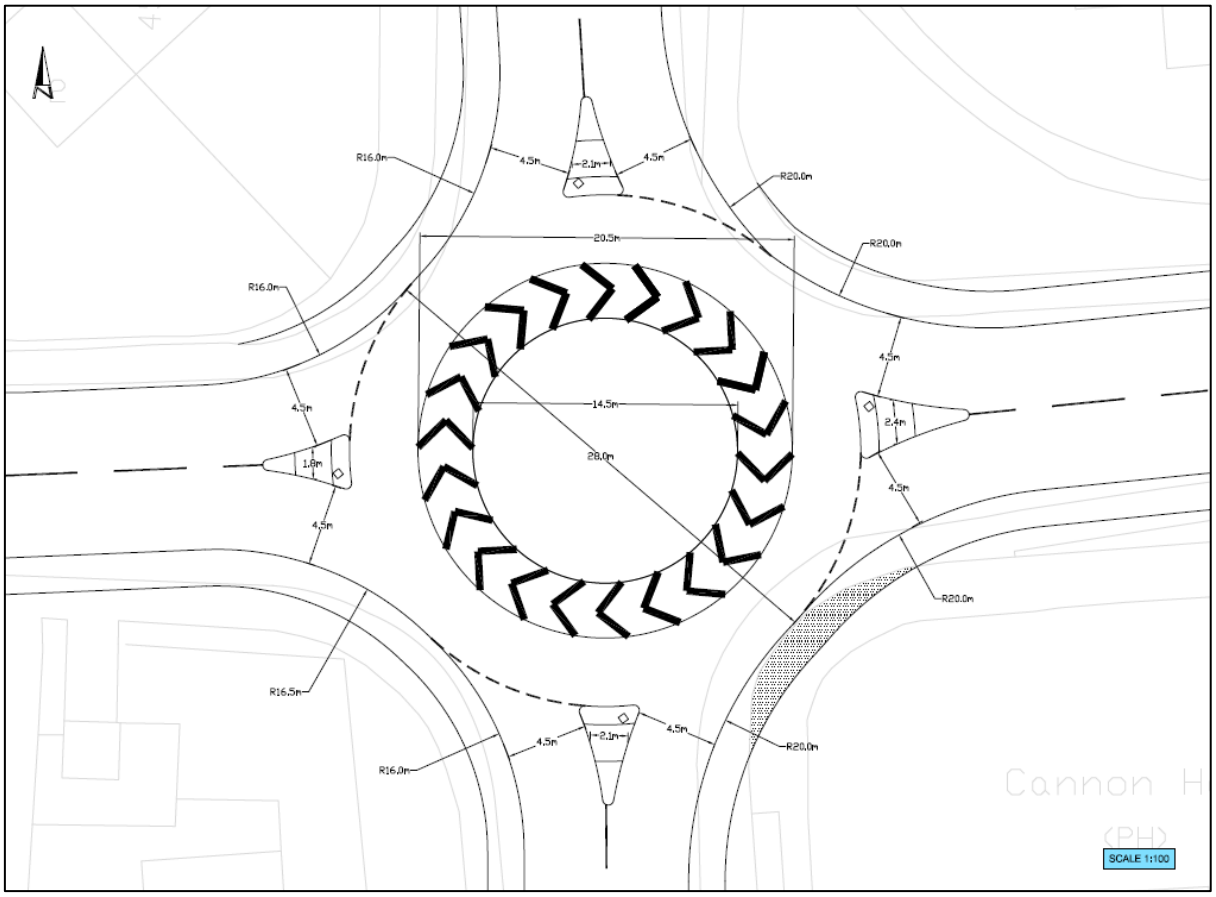
3.1 ROUNDABOUT IMPROVEMENT

3.1.1 NCC has provided details of a committed highway improvement to replace the existing signal controlled junction with a 28m ICD standard priority roundabout. The improvement is shown in drawing number NCCSK3-CC dated July 2017, a copy of which can be found in **Appendix A**. An extract from this drawing is reproduced below as **Image 2**.

3.1.2 NCC are understood to have secured Section 106 Agreement (S106) financial contributions from developers towards delivery of the improvement shown in **Image 2** below. The improvement scheme requires a small area of third-party land from the frontage of the Cannon Public House. This is shown shaded in grey in **Image 2** below.

3.1.3 NCC also provided a copy of the ARCADY traffic model used to develop the proposed improvement scheme. The ARCADY model contained the 2025 AM / PM peak period design flows used to test the traffic capacity of the proposed roundabout. These flows are discussed further in the next section.

Image 2 – Extract Showing NCC Roundabout Improvement



4 CAPACITY ASSESSMENTS

4.1 ASSESSMENT YEARS

4.1.1 Traffic capacity assessments have been undertaken for the AM / PM peak periods for the following scenarios:

- **2021 Base Flows** – traffic survey from Tuesday 12th October 2021.
- **Test 1** – NCC Design Flows (2025) taken from supplied ARCADY model.
- **Test 2** – ADC Design Flows (2037) from the Transport Assessment for Peaks Hill Farm.
- **Test 3** – Tetra Tech Design Flows (2038) from the Bassetlaw Transport Study.

4.1.2 The Base Flows have been provided by ADC and are taken from a traffic survey undertaken on Tuesday 21st October 2021 as part of study work in support of Peaks Hill Farm.

4.1.3 The NCC Design Flows (2025) have been taken from the ARCADY model supplied by NCC. It is understood that these flows were used to develop the committed highway improvement shown in drawing number NCCSK3-CC.

4.1.4 The 2037 Design Flows have been provided by ADC from the Transport Assessment report for Peaks Hill Farm. The 2037 Design Flows include committed development traffic, TEMPro traffic growth between 2021 and 2037 (adjusted to avoid double counting committed development traffic) and development traffic from the full build-out of the Peaks Hill Farm allocation site.

4.1.5 The 2038 Tetra Tech Design Flows comprise the 2021 Base Flows mentioned above, committed development traffic flows between 2021 and 2038 and Local Plan development flows to 2038. Committed development and Local Plan development traffic flows have been taken from the VISUM model used to inform the Bassetlaw Transport Study.

4.2 EXISTING SIGNAL JUNCTION

4.2.1 The operation of the existing signal controlled junction has been assessed using the LinSIG computer programme, which is the 'industry standard' traffic modelling software package used for assessing the capacity of signal controlled junctions.

4.2.2 At signal-controlled junctions a Reserve Capacity (RC) or degree of overload is used to indicate whether a junction operates 'within' its theoretical capacity. The RC is the percentage of all round traffic growth, which a junction can accommodate within its capacity. When there is no RC, a degree of overload is the percentage by which the traffic flows exceed the capacity of the junction. Experience with RC calculations at existing junctions indicates that queuing does not become particularly noticeable until the degree of overload reaches 10% (i.e. -11% RC).

For the purposes of comparison with priority junctions and roundabouts, it can be assumed that a RC of 0% (and a Degree of Saturation of 90%) roughly equates to an RFC of 0.85.

4.2.3 The results of the capacity assessments are summarised in the following tables. Full outputs can be found in **Appendix B**.

Table 1 – Existing Signal Junction – 2021 Base Year

Arm	2021 Base Year Flows			
	AM		PM	
	Degree of Saturation (%)	Mean Max Q	Degree of Saturation (%)	Mean Max Q
A60 Carlton Road North	111.9	52.0	117.1	47.3
B6041 Thievesdale Lane	112.7	34.1	119.2	56.5
A60 Carlton Road South	111.6	29.7	118.3	45.4
B6041 Raymoth Lane	113.9	37.1	118.7	46.5
PRC	-26.5		-32.5	
Total Delay	128.36		171.29	

Table 2 – Existing Signal Junction – Test 1

Arm	2025 NCC Design Flows			
	AM		PM	
	Degree of Saturation (%)	Mean Max Q	Degree of Saturation (%)	Mean Max Q
A60 Carlton Road North	134.8	119.7	173.5	161.9
B6041 Thievesdale Lane	167.5	136.0	212.6	243.3
A60 Carlton Road South	183.7	140.0	149.8	108.2
B6041 Raymoth Lane	224.5	207.4	203.7	201.4
PRC	-149.4		-136.2	
Total Delay	572.55		680.75	

Table 3 – Existing Signal Junction – Test 2

Arm	2037 ADC Design Flows			
	AM		PM	
	Degree of Saturation (%)	Mean Max Q	Degree of Saturation (%)	Mean Max Q
A60 Carlton Road North	183.9	285.7	180.5	180.2
B6041 Thievesdale Lane	183.3	136.9	181.8	167.2
A60 Carlton Road South	174.3	120.2	188.0	198.1
B6041 Raymoth Lane	174.3	121.5	182.7	154.4
PRC	-104.4		-108.9	
Total Delay	633.29		668.0	

Table 4 – Existing Signal Junction – Test 3

Arm	2038 Tetra Tech Design Flows			
	AM		PM	
	Degree of Saturation (%)	Mean Max Q	Degree of Saturation (%)	Mean Max Q
A60 Carlton Road North	121.9	139.8	168.9	167.0
B6041 Thievesdale Lane	237.7	166.2	167.5	183.4
A60 Carlton Road South	289.9	160.1	166.2	125.9
B6041 Raymoth Lane	283.4	154.1	168.5	104.8
PRC	-222.0		-87.6	
Total Delay	582.89		551.45	

4.2.4 The results presented in the previous tables demonstrate that the existing signal controlled junction is forecast to operate beyond capacity with significant queues on all arms in all scenarios tested.

4.3 ROUNDABOUT IMPROVEMENT

4.3.1 The operation of the committed roundabout improvement has been tested using the ARCADY module of the Junctions 9 computer programme, which is the 'industry standard' traffic modelling computer software package used for assessing the capacity of priority roundabouts.

4.3.2 A Ratio of Flow to Capacity (RFC) value below 0.85 indicates that a junction operates 'within' capacity. An RFC value between 0.85 and 1.00 indicates that there may be occasions during the period modelled when queues will develop, and delays occur. An RFC value greater than 1.00 indicates that a junction operates 'above' capacity.

4.3.3 The roundabout geometry in the ARCADY model supplied by NCC was checked against drawing number NCCSK3-CC (see **Appendix A**) and a minor amendment was made to adjust the values for Entry Radius (R) so that the modelled geometry matches the drawing. No other changes were made to the model.

4.3.4 The results of the ARCADY capacity assessments are summarised in the tables on the next page. Full outputs can be found in **Appendix B**. The results demonstrate that the proposed roundabout works within capacity in both peaks in the 2021 Base Year. In the 2025 Design Year one arm in each peak slightly exceeds 0.85 RFC with minimal queues (6.4 PCU maximum queue length).

4.3.5 In the 2037 Design Year Arm A (A60 Carlton Road North) exceeds capacity in the AM peak with a maximum queue of 56.6 PCU. Arm C (A60 Carlton Road South) slightly exceeds 0.85 RFC in the PM peak (7.1 PCU maximum queue length). All other arms operate within capacity in both peaks.

4.3.6 In the 2038 Design Year Arm A (A60 Carlton Road North) exceeds capacity in the AM peak with a maximum queue of 67.4 PCU. All other arms are forecast to operate satisfactorily in both peaks.

4.3.7 The committed NCC roundabout improvement will therefore accommodate forecast design flows to the end of the Local Plan period (2038) with queueing on only one arm in the AM peak. The forecast operation of the improved roundabout junction in 2038 with Local Plan development is significantly better in comparison to the operation of the existing signal junction.

4.3.8 No trip discounts for sustainable travel have been applied in the 2038 Design Flows taken from the Bassetlaw Transport Study for committed developments or Local Plan developments. The Design Flows are therefore robust in this regard.

Table 5 – Roundabout Improvement – 2021 Base Year

Arm	2021 Base Year Flows			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	0.55	1.2	0.41	0.7
B6041 Thievesdale Lane	0.36	0.6	0.46	0.9
A60 Carlton Road South	0.32	0.5	0.42	0.7
B6041 Raymoth Lane	0.36	0.6	0.42	0.7

Table 6 – Roundabout Improvement – Test 1

Arm	2025 NCC Design Flows			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	0.86	5.4	0.72	2.5
B6041 Thievesdale Lane	0.64	1.8	0.88	6.4
A60 Carlton Road South	0.63	1.6	0.67	2.0
B6041 Raymoth Lane	0.76	3.1	0.81	4.0

Table 7 – Roundabout Improvement – Test 2

Arm	2037 ADC Design Flows			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	1.09	56.6	0.71	2.4
B6041 Thievesdale Lane	0.67	2.0	0.70	2.2
A60 Carlton Road South	0.56	1.2	0.89	7.1
B6041 Raymoth Lane	0.52	1.1	0.79	3.6

Table 8 – Roundabout Improvement – Test 3

Arm	2038 Tetra Tech Design Flows			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	1.11	67.4	0.67	2.0
B6041 Thievesdale Lane	0.59	1.4	0.81	4.1
A60 Carlton Road South	0.48	0.9	0.69	2.2
B6041 Raymoth Lane	0.47	0.9	0.58	1.4

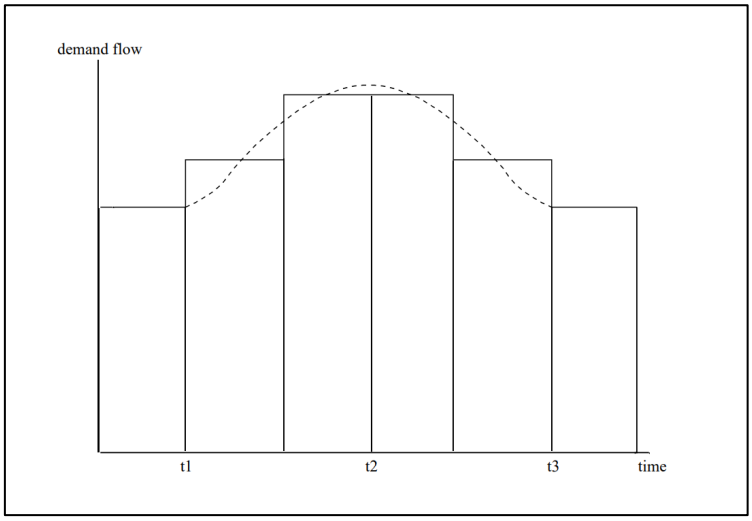
4.4 FURTHER TESTING

4.4.1 No account was originally taken of any redistribution of traffic due to the proposed new distributor road through the Peaks Hill Farm allocation linking the A60 and B6045. This new route will provide an alternative east-west route for traffic on the north side of Worksop, thereby potentially reducing traffic flows on Thievesdale Lane and Farmers Branch and reducing turning movements at the Cannon crossroads. The potential redistribution of traffic is difficult to quantify and therefore no allowance was included for within the original assessments at the Cannon Crossroads to ensure for a robust analysis.

4.4.2 Following receipt of the initial findings NCC requested further tests to examine the impact of the potential redistribution of traffic at the Cannon Crossroads. Tests have therefore been undertaken that reduce the ahead movements on the A60 and turning movements between the A60 and Thievesdale Lane by 5% and 10% as an approximation of the potential benefits of the new link road.

4.4.3 A further test has also been undertaken that applies a flat demand profile within the ARCADY model used to test the roundabout operation. The default ARCADY settings apply a synthesised demand profile which includes 'warm-up' and 'cool-down' periods either side of the central hour. the Junctions 9 user guide states "*This is based on assumptions about the typical shape of the traffic profile at a typical site and so may not be suitable for all sites.*"

4.4.4 The synthesised demand profile starts at approximately 75% of the entered demand and increases over time to peak at approximately 115% of the entered demand in the centre of the modelled period. The synthesised demand profile then declines back to approximately 75% of the entered demand at the end of the modelled period. This is illustrated in the graph below taken from the Junctions 9 user guide.



4.4.5 The synthesised demand profile artificially increases the total demand by approximately 15% in the centre of the modelled period and it can be seen from the detailed ARCADY outputs in **Appendix B** that outside of this central 30 minute period the junction either operates within capacity, or forecast queueing is significantly reduced in all scenarios.

4.4.6 A further test has therefore been undertaken using the FLAT profile with ARCADY where the entered demand remains constant throughout the modelled period.

4.4.7 A summary of the additional traffic capacity assessments that have been undertaken for the AM / PM peak periods is as follows:

- **Test 4** - Tetra Tech Design Flows (2038) - A60-B6041 Flows Reduced by 5%
- **Test 5** - Tetra Tech Design Flows (2038) - A60-B6041 Flows Reduced by 10%
- **Test 6** – TT Design Flows (2038) – ARCADY FLAT Demand Profile
- **Test 7** – TT Design Flows (2038) – A60-B6041 Flows Reduced by 5% (FLAT Profile)
- **Test 8** – TT Design Flows (2038) – A60-B6041 Flows Reduced by 10% (FLAT Profile)

4.4.8 The results form these assessments are summarised in the following tables. Full outputs can be found in **Appendix B**.

Table 9 – Roundabout Improvement – Test 4

Arm	2038 Tetra Tech Design Flows – A60-B6041 Reduced by 5%			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	1.06	44.7	0.64	1.8
B6041 Thievesdale Lane	0.58	1.3	0.78	3.5
A60 Carlton Road South	0.46	0.8	0.66	1.9
B6041 Raymoth Lane	0.46	0.8	0.57	1.3

Table 10 – Roundabout Improvement – Test 5

Arm	2038 Tetra Tech Design Flows – A60-B6041 Reduced by 10%			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	1.01	26.4	0.62	1.6
B6041 Thievesdale Lane	0.56	1.3	0.75	3.0
A60 Carlton Road South	0.44	0.8	0.62	1.6
B6041 Raymoth Lane	0.45	0.8	0.55	1.2

Table 11 – Roundabout Improvement – Test 6

Arm	2038 Tetra Tech Design Flows (FLAT profile in ARCADY)			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	0.99	30.2	0.60	1.5
B6041 Thievesdale Lane	0.53	1.1	0.72	2.5
A60 Carlton Road South	0.42	0.7	0.60	1.5
B6041 Raymoth Lane	0.41	0.7	0.50	1.0

Table 12 – Roundabout Improvement – Test 7

Arm	2038 Tetra Tech Design Flows – A60-B6041 Reduced by 5% (FLAT profile in ARCADY)			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	0.94	14.4	0.57	1.3
B6041 Thievesdale Lane	0.52	1.1	0.69	2.2
A60 Carlton Road South	0.41	0.7	0.57	1.3
B6041 Raymoth Lane	0.40	0.7	0.49	0.9

Table 13 – Roundabout Improvement – Test 8

Arm	2038 Tetra Tech Design Flows – A60-B6041 Reduced by 10% (FLAT profile in ARCADY)			
	AM		PM	
	RFC	Q	RFC	Q
A60 Carlton Road North	0.90	8.6	0.55	1.2
B6041 Thievesdale Lane	0.50	1.0	0.67	2.0
A60 Carlton Road South	0.39	0.6	0.54	1.2
B6041 Raymoth Lane	0.40	0.7	0.48	0.9

4.4.9 As can be seen from **Table 9** and **Table 10** above reducing the movements through the junction to approximate the benefits of the proposed new link road through the Peaks Hill Farm allocation has a positive impact on the operation of the junction and forecast queuing on the A60 northern arm is reduced to between 26 and 45 PCU.

4.4.10 The results of the assessment to remove the ARCADY synthesised demand profile are summarised in **Table 11**, **Table 12** and **Table 13** on the previous page. The results demonstrate that by removing the synthesised demand profile forecast queuing on the A60 northern arm is reduced to between 9 and 14 PCU.

5 SUMMARY

5.1 BACKGROUND

5.1.1 This note summarises the results of AM / PM peak period traffic capacity assessments of the A60 / B6041 Cannon Crossroads junction in Worksop. Assessments have been undertaken for the existing traffic signal junction layout and for a roundabout improvement proposed by NCC.

5.1.2 The capacity assessments have been undertaken at the request of NCC, to provide reassurance that the committed highway improvement will still offer operational traffic capacity benefits at the end of the Bassetlaw Local Plan period (2038) with Bassetlaw Local Plan development in place.

5.2 RESULTS

5.2.1 The operation of the existing signal controlled junction has been assessed using the LinSIG computer programme. The results demonstrate that the existing signal controlled junction is forecast to operate beyond capacity with significant queues on all arms in all scenarios tested.

5.2.2 The operation of the committed roundabout improvement has been tested using ARCADY traffic modelling computer software. The results demonstrate that the proposed roundabout improvement will accommodate forecast design flows to the end of the Local Plan period with queueing on only one arm (A60 Carlton Road North) in the AM peak. All other arms operate within capacity which is a significant improvement compared to the operation of the existing signal junction where extensive queuing of between 104 PCU to 183 PCU is forecast on all arms in both peaks (see **Table 4** on page 8).

5.2.3 The forecast operation of the roundabout improvement in 2038 with Local Plan development traffic is therefore significantly better than the operation of the existing signal junction layout.

5.3 FURTHER TESTING

5.3.1 At the request of NCC further testing has been undertaken to estimate the potential benefits of the proposed Peaks Hill Farm link road on the operation of the Cannon Crossroads junction. The proposed link road will provide an alternative east-west connection between the A60 Carlton Road and the B6045 Blyth Road which has the potential to reduce traffic flows through the Cannon Crossroads junction.

5.3.2 Tests have been undertaken that reduce the ahead movements on the A60 and turning movements between the A60 and Thievesdale Lane by 5% and 10% as an approximation of the potential benefits of the new link road. Reducing these movements has a positive impact on the operation of the junction and forecast queuing on the A60 northern arm is reduced to between 26 and 45 PCU.

5.3.3 A further test has therefore been undertaken using the FLAT profile with ARCADY where the entered demand remains constant throughout the modelled period and the results demonstrate that by removing the synthesised demand profile forecast queuing on the A60 northern arm is reduced to between 9 and 14 PCU.

5.4 SUMMARY

5.4.1 The assessment demonstrates that the committed roundabout improvement will accommodate forecast design flows to the end of the Local Plan period with queueing on only one arm (A60 Carlton Road North) in the AM peak only. All other arms operate acceptably.

5.4.2 Compared to the operation of the existing signal controlled junction this is a significant improvement as the existing signal junction is forecast to have extensive queuing of between 104 PCU and 183 PCU on all arms in both peaks.

5.4.3 Tests have been undertaken to simulate the likely benefits of the new link road which will be provided as part of the Peaks Hill Farm allocation between the A60 and B6045. These demonstrate that the link road is likely to contribute towards improved junction performance at the Cannon Crossroads with forecast queuing on the A60 northern arm reduced to between 26 and 45 PCU depending on the level of relief provided by the link road.

5.4.4 A further test has also been undertaken to remove the onerous synthesised demand profile used within the ARCADY model. Combined with the benefits of the new link road this reduces forecast queuing on the A60 northern arm to between 9 and 14 PCU.

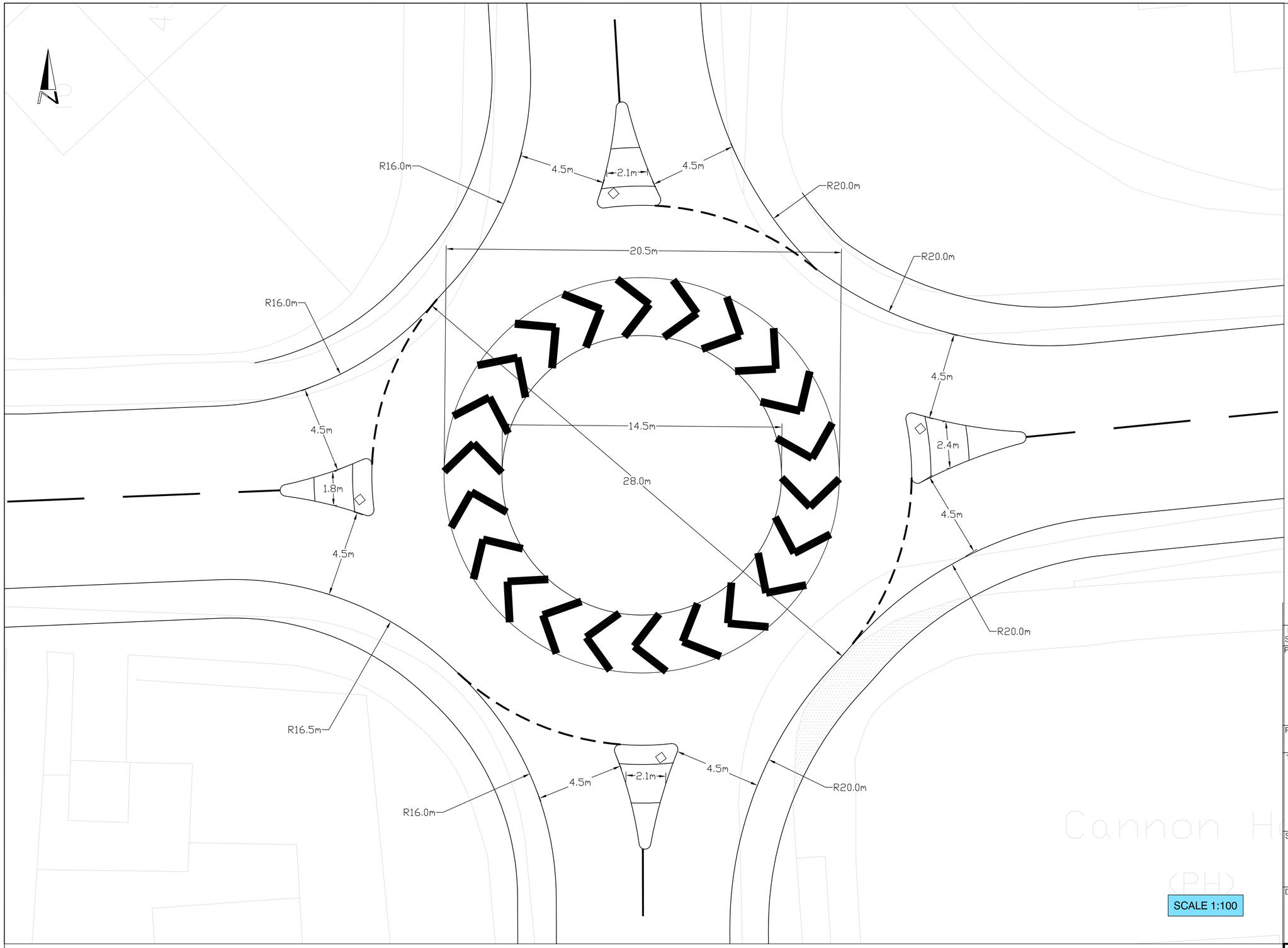
5.4.5 The forecast operation of the roundabout improvement in 2038 with Local Plan development traffic is therefore significantly better than the operation of the existing signal junction layout and on that basis the operation of the junction is considered acceptable.

5.4.6 In terms of NPPF paragraph 111 there is no unacceptable impact in terms of highway safety and the residual cumulative impacts are not severe.

5.4.7 No trip discounts for sustainable travel have been applied in the 2038 Design Flows taken from the Bassetlaw Transport Study for committed developments or Local Plan developments. The Design Flows are therefore robust in this regard.

APPENDICES

APPENDIX A – PROPOSED ROUNDABOUT



SKETCH LAYOUT

Rev Status	Description	Drawn	Ch'kd	Auth	Date

Project

CANNON CROSSROADS WORKSOP

Property No.	Project No.

Title

PROPOSED LAYOUT SKETCH (FEASIBILITY)

Scale	Drawn	Date
N.T.S.	M Cleggett	07/2016
	Ch'kd	Date
	Auth / Traced	

Drawing No. Rev

NCCSK3-CC

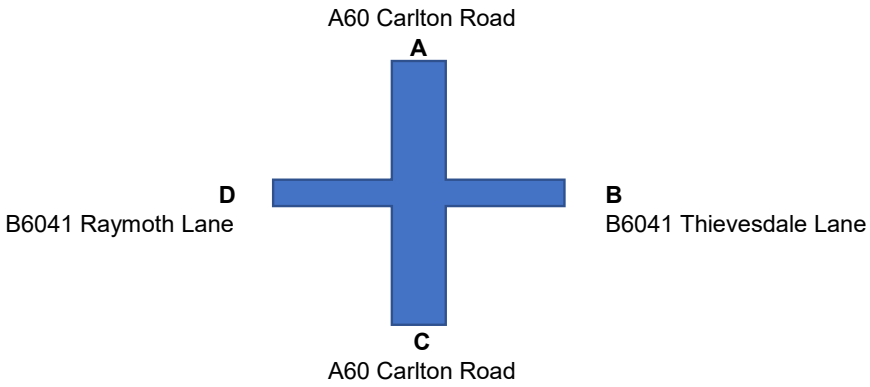
Nottinghamshire County Council

Environment & Resources
Trent Bridge House, Fox Road,
West Bridgford, Nottingham NG2 6BJ
Tel: 08449 808080

APPENDIX B – CAPACITY ASSESSMENTS

Design Flows

Assessment of the A60 Carlton Road / B6041 Raymoth Lane Junction (Cannon Crossroads)



Summary of Design Flows

2021 Base Flows - PCU

AM	A	B	C	D
A	0	150	257	134
B	86	0	52	189
C	200	40	0	54
D	63	236	45	0

PM	A	B	C	D
A	0	121	191	93
B	144	0	44	258
C	248	54	0	66
D	105	220	48	0

Test 1 - NCC Design Flows (2025) Flows from supplied ARCADY Model - PCU

AM	A	B	C	D
A	0	156	371	165
B	158	0	74	290
C	317	144	0	45
D	117	425	63	0

PM	A	B	C	D
A	0	122	337	153
B	186	0	180	366
C	329	112	0	68
D	182	381	74	0

Test 2 - ADC Design Flows (2037) from the Transport Assessment for Peaks Hill Farm - PCU

AM	A	B	C	D
A	0	215	577	230
B	115	0	89	268
C	335	56	0	66
D	101	290	56	0

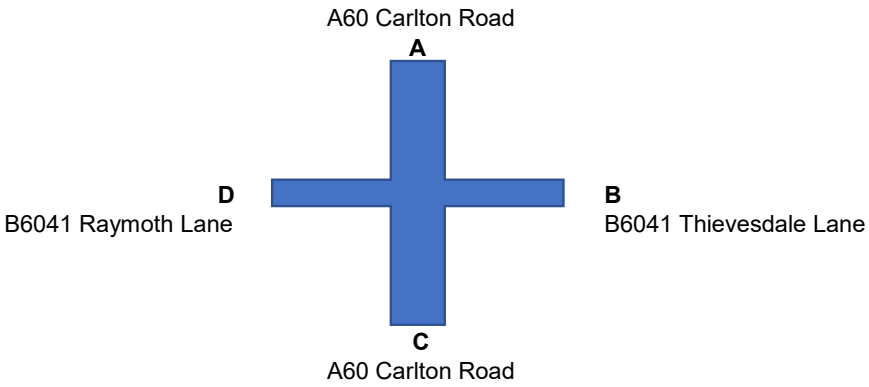
PM	A	B	C	D
A	0	159	347	144
B	203	0	63	318
C	532	83	0	81
D	186	295	60	0

Test 3 - Tetra Tech Design Flows (2038) from the Bassetlaw Transport Study - PCU

AM	A	B	C	D
A	0	398	525	134
B	194	0	42	229
C	299	53	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	215	345	93
B	350	0	57	304
C	392	49	0	66
D	105	252	48	0

Assessment of the A60 Carlton Road / B6041 Raymoth Lane Junction (Cannon Crossroads)



Test 1 - NCC Flows from supplied ARCADY Model

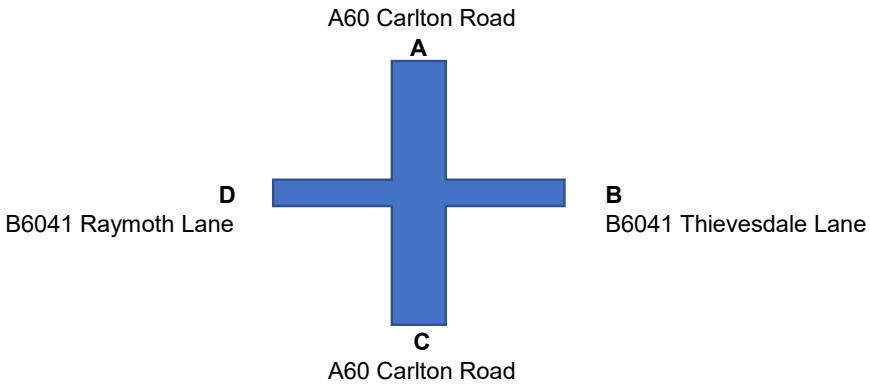
2025 Design Flows (Taken from ARCADY model supplied by NCC) - assumed to be in PCU

AM	A	B	C	D
A	0	156	371	165
B	158	0	74	290
C	317	144	0	45
D	117	425	63	0

Note: Flows transposed to match arm labelling above

PM	A	B	C	D
A	0	122	337	153
B	186	0	180	366
C	329	112	0	68
D	182	381	74	0

Assessment of the A60 Carlton Road / B6041 Raymoth Lane Junction (Cannon Crossroads)



Test 2 - ADC Flows from the Transport Assessment for Peaks Hill Farm

2021 Base Flows - PCU

AM	A	B	C	D
A	0	150	257	134
B	86	0	52	189
C	200	40	0	54
D	63	236	45	0

PM	A	B	C	D
A	0	121	191	93
B	144	0	44	258
C	248	54	0	66
D	105	220	48	0

Survey undertaken on Tuesday 12/10/2021

2037 Reference Case (Base + Committed) - PCU

AM	A	B	C	D
A	0	215	406	197
B	115	0	89	268
C	269	56	0	66
D	90	290	56	0

PM	A	B	C	D
A	0	159	274	131
B	203	0	63	318
C	376	83	0	81
D	155	295	60	0

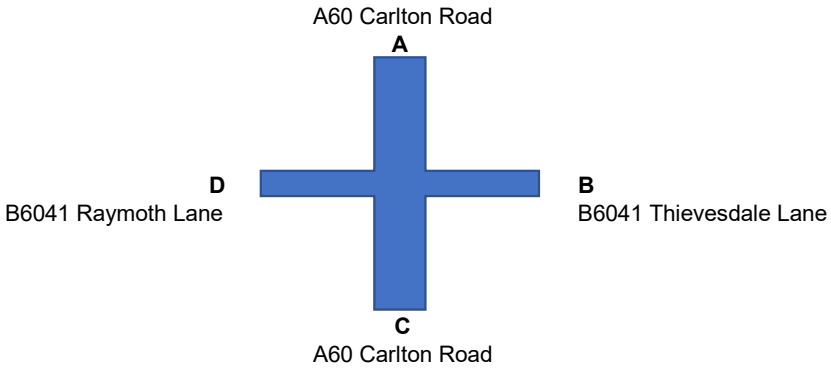
List of committed developments at end of spreadsheet

2037 Design Flows (Base + Committed + Peaks Hill Farm) - PCU

AM	A	B	C	D
A	0	215	577	230
B	115	0	89	268
C	335	56	0	66
D	101	290	56	0

PM	A	B	C	D
A	0	159	347	144
B	203	0	63	318
C	532	83	0	81
D	186	295	60	0

Assessment of the A60 Carlton Road / B6041 Raymoth Lane Junction (Cannon Crossroads)



Test 3 - Tetra Tech Flows from the Bassetlaw Transport Study

2021 Base Flows - PCU

AM	A	B	C	D
A	0	150	257	134
B	86	0	52	189
C	200	40	0	54
D	63	236	45	0

PM	A	B	C	D
A	0	121	191	93
B	144	0	44	258
C	248	54	0	66
D	105	220	48	0

Survey undertaken on Tuesday 12/10/2021

2038 Committed Development - PCU

AM	A	B	C	D
A	0	110	149	0
B	57	0	3	40
C	32	2	0	0
D	0	43	0	0

PM	A	B	C	D
A	0	44	64	0
B	138	0	2	46
C	72	1	0	0
D	0	32	0	0

Committed development flows taken from Bassetlaw Transport Study

2038 Base + Committed Development - PCU

AM	A	B	C	D
A	0	260	406	134
B	143	0	55	229
C	232	42	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	165	255	93
B	282	0	46	304
C	320	55	0	66
D	105	252	48	0

2038 Local Plan Development - PCU

AM	A	B	C	D
A	0	138	119	0
B	51	0	-13	0
C	66	11	0	0
D	0	0	0	0

PM	A	B	C	D
A	0	50	90	0
B	68	0	11	0
C	72	-6	0	0
D	0	0	0	0

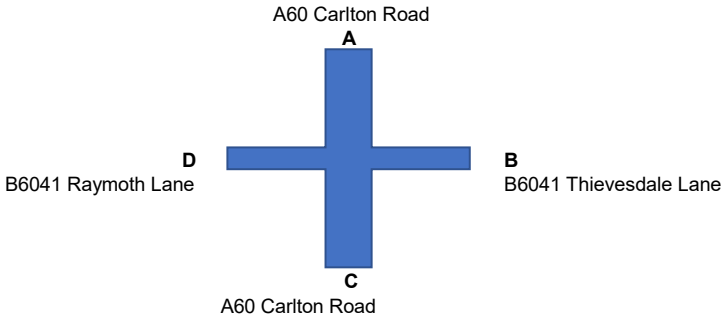
Local Plan development flows taken from Bassetlaw Transport Study

2038 Base + Committed + Local Plan - PCU

AM	A	B	C	D
A	0	398	525	134
B	194	0	42	229
C	299	53	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	215	345	93
B	350	0	57	304
C	392	49	0	66
D	105	252	48	0

Assessment of the A60 Carlton Road / B6041 Raymoth Lane Junction (Cannon Crossroads)



Test 4 - Tetra Tech Flows from the Bassetlaw Transport Study

2021 Base Flows - PCU

AM	A	B	C	D
A	0	150	257	134
B	86	0	52	189
C	200	40	0	54
D	63	236	45	0

PM	A	B	C	D
A	0	121	191	93
B	144	0	44	258
C	248	54	0	66
D	105	220	48	0

Survey undertaken on Tuesday 12/10/2021

2038 Committed Development - PCU

AM	A	B	C	D
A	0	110	149	0
B	57	0	3	40
C	32	2	0	0
D	0	43	0	0

PM	A	B	C	D
A	0	44	64	0
B	138	0	2	46
C	72	1	0	0
D	0	32	0	0

Committed development flows taken from Bassetlaw Transport Study

2038 Base + Committed Development - PCU

AM	A	B	C	D
A	0	260	406	134
B	143	0	55	229
C	232	42	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	165	255	93
B	282	0	46	304
C	320	55	0	66
D	105	252	48	0

2038 Local Plan Development - PCU

AM	A	B	C	D
A	0	138	119	0
B	51	0	-13	0
C	66	11	0	0
D	0	0	0	0

PM	A	B	C	D
A	0	50	90	0
B	68	0	11	0
C	72	-6	0	0
D	0	0	0	0

Local Plan development flows taken from Bassetlaw Transport Study

2038 Base + Committed + Local Plan - PCU

AM	A	B	C	D
A	0	398	525	134
B	194	0	42	229
C	299	53	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	215	345	93
B	350	0	57	304
C	392	49	0	66
D	105	252	48	0

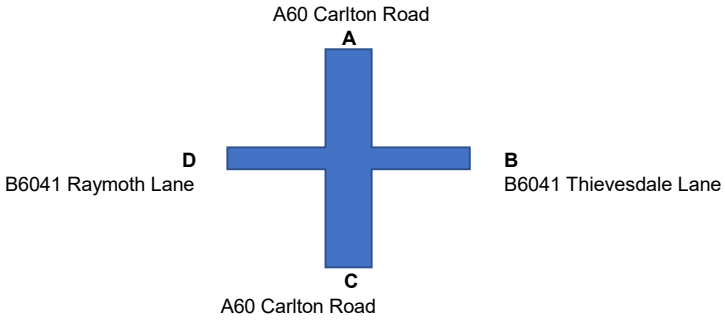
2038 Base + Committed + Local Plan - 5% Reduction on A60 - PCU

AM	A	B	C	D
A	0	378	499	134
B	185	0	42	229
C	284	53	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	204	328	93
B	333	0	57	304
C	373	49	0	66
D	105	252	48	0

Movements reduced by 5%

Assessment of the A60 Carlton Road / B6041 Raymoth Lane Junction (Cannon Crossroads)



Test 5 - Tetra Tech Flows from the Bassetlaw Transport Study

2021 Base Flows - PCU

AM	A	B	C	D
A	0	150	257	134
B	86	0	52	189
C	200	40	0	54
D	63	236	45	0

PM	A	B	C	D
A	0	121	191	93
B	144	0	44	258
C	248	54	0	66
D	105	220	48	0

Survey undertaken on Tuesday 12/10/2021

2038 Committed Development - PCU

AM	A	B	C	D
A	0	110	149	0
B	57	0	3	40
C	32	2	0	0
D	0	43	0	0

PM	A	B	C	D
A	0	44	64	0
B	138	0	2	46
C	72	1	0	0
D	0	32	0	0

Committed development flows taken from Bassetlaw Transport Study

2038 Base + Committed Development - PCU

AM	A	B	C	D
A	0	260	406	134
B	143	0	55	229
C	232	42	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	165	255	93
B	282	0	46	304
C	320	55	0	66
D	105	252	48	0

2038 Local Plan Development - PCU

AM	A	B	C	D
A	0	138	119	0
B	51	0	-13	0
C	66	11	0	0
D	0	0	0	0

PM	A	B	C	D
A	0	50	90	0
B	68	0	11	0
C	72	-6	0	0
D	0	0	0	0

Local Plan development flows taken from Bassetlaw Transport Study

2038 Base + Committed + Local Plan - PCU

AM	A	B	C	D
A	0	398	525	134
B	194	0	42	229
C	299	53	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	215	345	93
B	350	0	57	304
C	392	49	0	66
D	105	252	48	0

2038 Base + Committed + Local Plan - 10% Reduction on A60 - PCU

AM	A	B	C	D
A	0	358	473	134
B	175	0	42	229
C	269	53	0	54
D	63	279	45	0

PM	A	B	C	D
A	0	194	311	93
B	315	0	57	304
C	353	49	0	66
D	105	252	48	0

Movements reduced by 10%

Assessment of the A60 Carlton Road / B6041 Raymoth Lane Junction (Cannon Crossroads)

Committed Developments included in the Design Flows supplied by ADC:

14/00213/OUT – Mixed use development of 380 dwellings and 19,000sq.m of office development on land south of Gateford Road.
14/00431/OUT – Residential development (750 dwellings) at Gateford Park (circa 486 dwellings remaining at time of traffic surveys).
15/01477/OUT – Mixed use development of 182 dwellings and employment uses on land west of Blyth Road
(note: circa 170 dwellings remaining at time of traffic surveys and majority of employment uses will form part of the proposed Peaks Hill Farm development).
14/00223/OUT - Mixed use development of 175 dwellings and employment uses on land at Shireoaks Common (circa 108 dwellings remaining at time of traffic surveys).
16/00725/FUL – Residential development (80 dwellings, 36 remaining at time of traffic surveys) of former Dormer Tool site.
18/00337/FUL – Residential development (111 dwellings) on land south of Tylden Road.
20/00183/FUL – Residential development (54 dwellings) on site of former Mansfield Knitwear.
19/00852/FUL – Residential development (127 dwellings) on land off Queen Elizabeth Crescent.
18/00737/OUT – Employment and Distribution development (93,00sq.m, of which 42,679sq.m remaining at time of traffic surveys) at Manton Wood Business Park.
15/01457/FUL – Residential development (400 dwellings) on former Firbeck Colliery.
15/01605/OUT – Residential development (300 dwellings) on land off Chestnut Road, Langold.
17/01462/OUT – Residential development (165 dwellings) on land off Doncaster Road, Langold.
21/01584/FUL – Hybrid application for discount foodstore, restaurant/café, and 71 residential units on land east of Carlton Road/Blyth Road junction.

Original ARCADY Geometry from NCC Supplied Model:

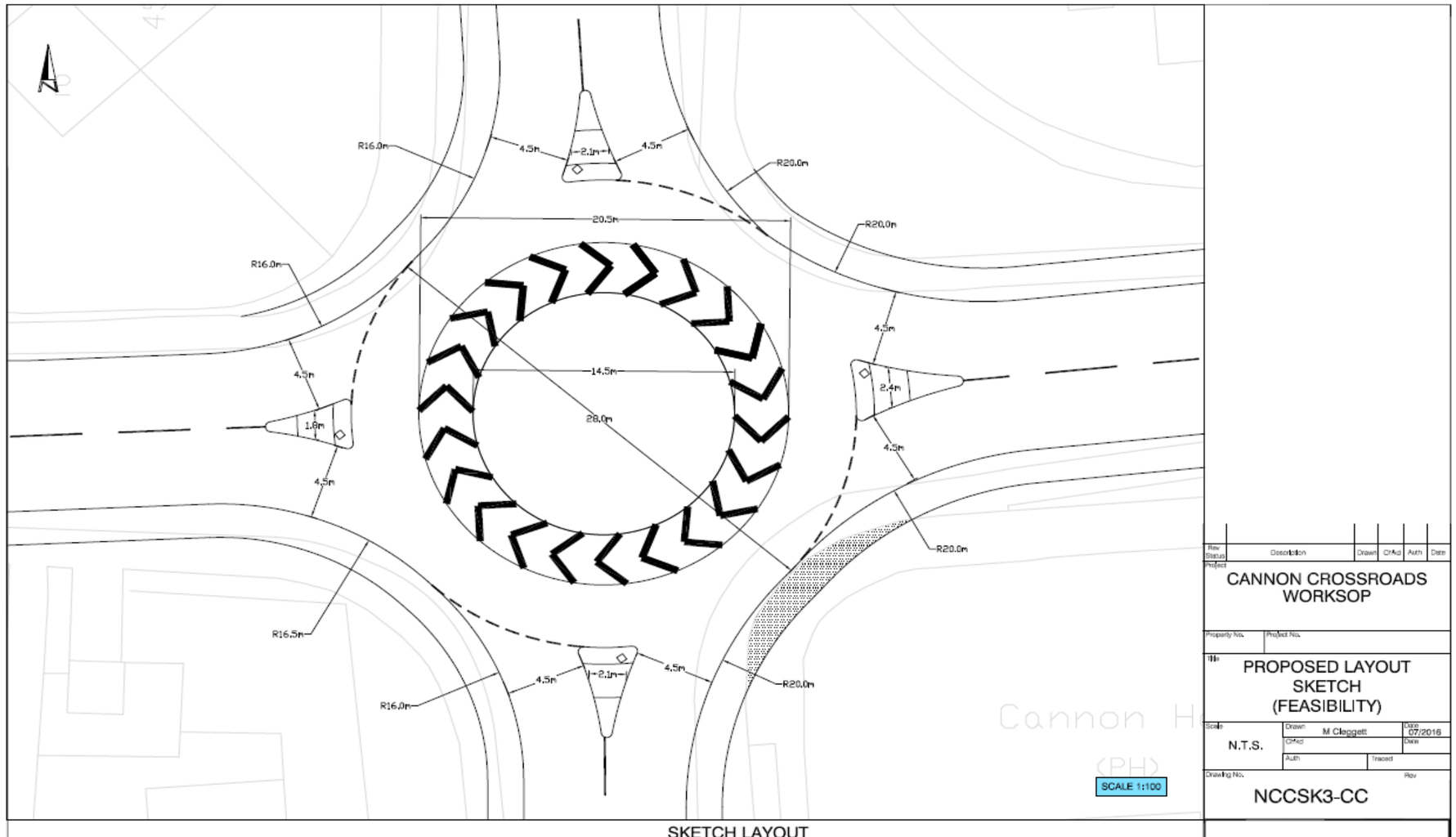
ARM	V(m)	E(m)	I'(m)	R(m)	D(m)	PHI(deg)
A	3.65	4.5	10	12	28	35
B	3.5	4.5	10	12	28	35
C	3.65	4.5	10	12	28	35
D	3.5	4.5	10	12	28	35

A - A60 North
B - B6041 Thievesdale Lane
C - A60 South
D - B6041 Raymoth Lane

Revised ARCADY Geometry Inputs:

ARM	V(m)	E(m)	I'(m)	R(m)	D(m)	PHI(deg)
A	3.65	4.5	10	20	28	35
B	3.5	4.5	10	20	28	35
C	3.65	4.5	10	16	28	35
D	3.5	4.5	10	16	28	35

Values for R amended to match geometry in plan below.
All other geometry remains the same as the NCC original model.



SKETCH LAYOUT

Rev	Description	Drawn	Ch'kd	Auth	Date
Status					

Project
CANNON CROSSROADS WORKSOP

Property No. | Project No.

Title
PROPOSED LAYOUT SKETCH (FEASIBILITY)

Scale	Drawn	Date
N.T.S.	M Cleggett	07/2016
	Ch'kd	Date
	Auth	Traced

Drawing No. | Rev
NCCSK3-CC

Environment & Resources
Trent Bridge House, Fox Road,
West Bridgford, Nottingham NG2 6BJ
Tel: 08449 808080

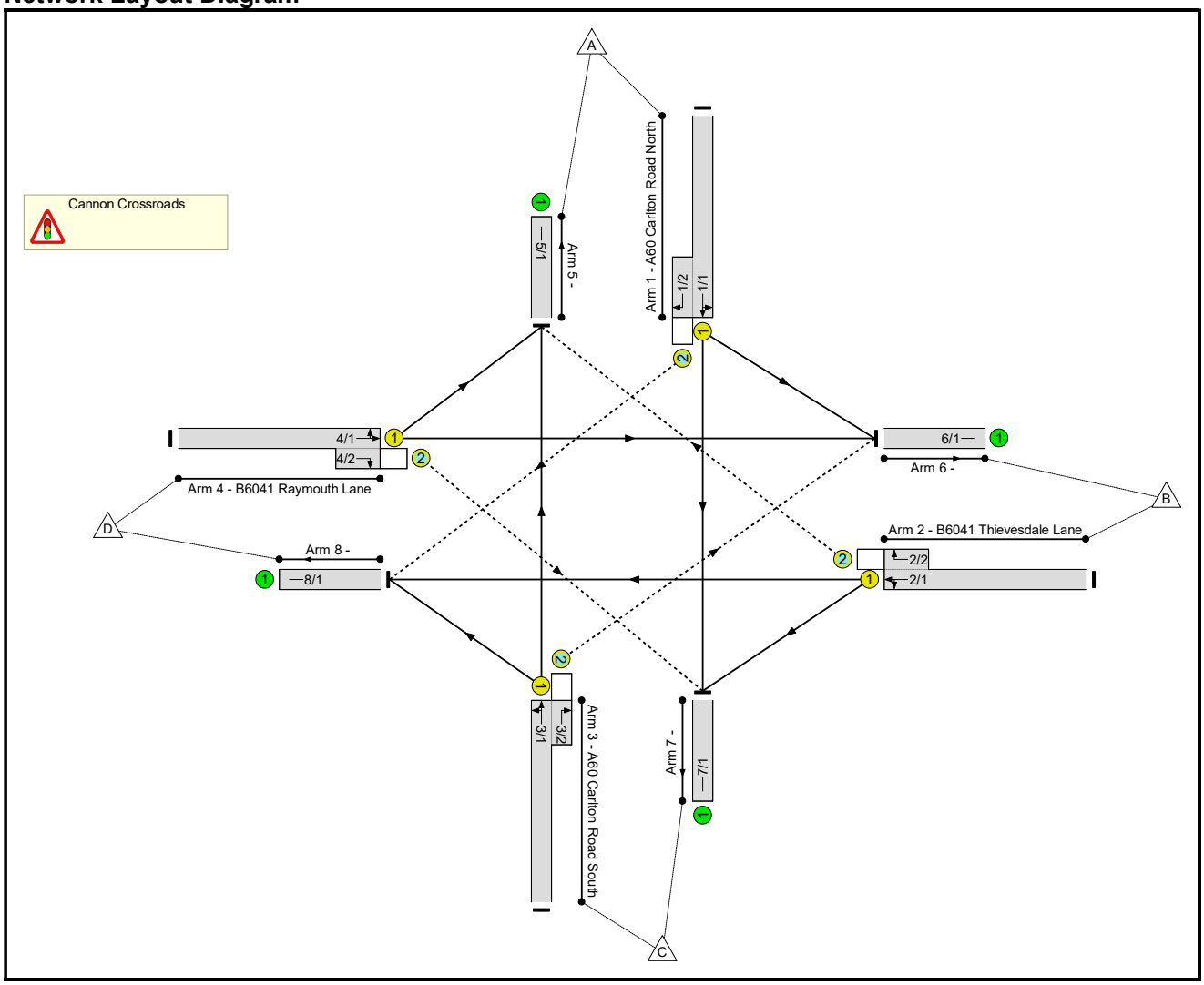
LinSIG Report

Full Input Data And Results

User and Project Details

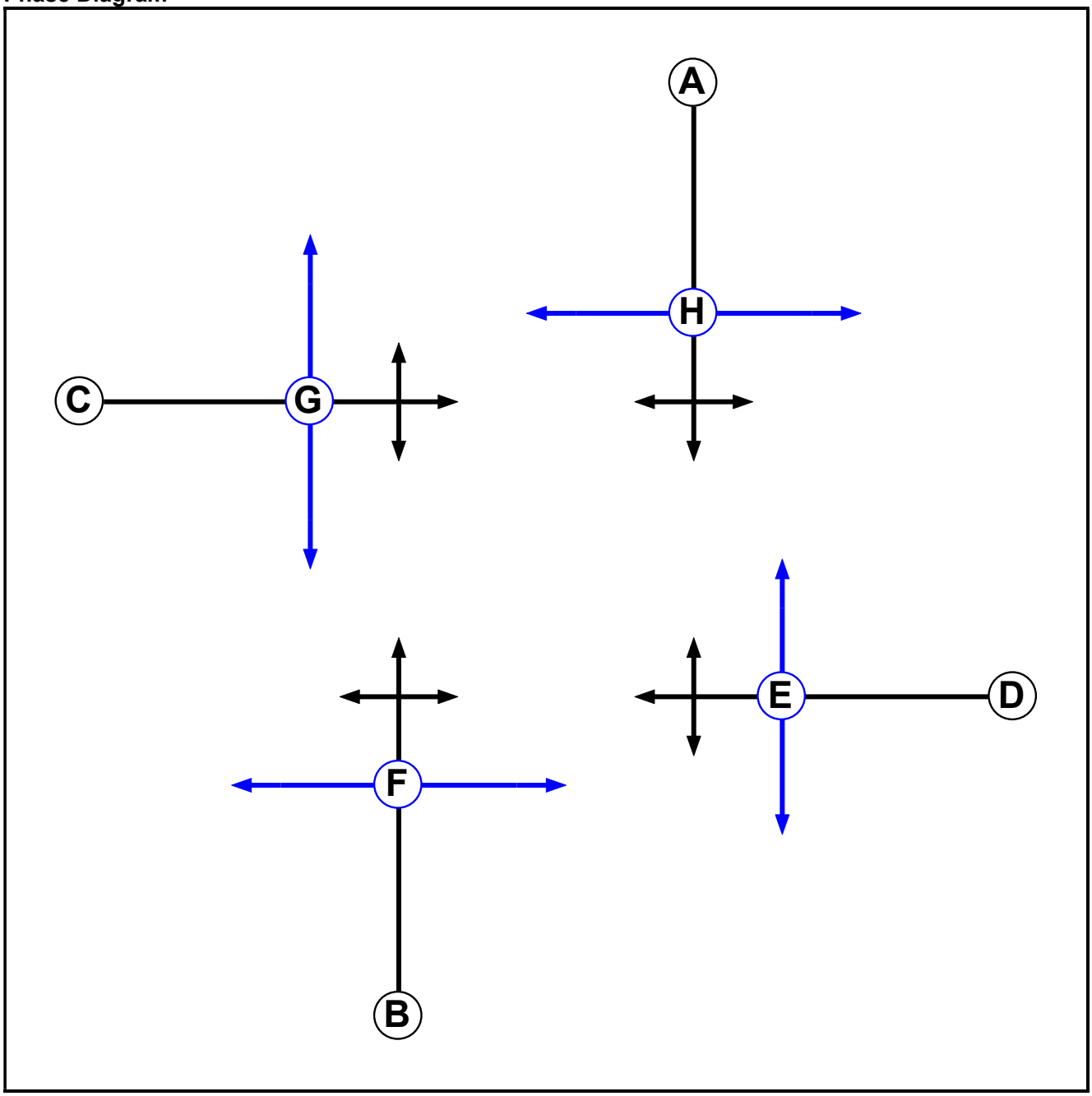
Project:	**ADC1944 Peaks Hill Farm, Worksop**
Title:	
Location:	
Client:	HLM/CFG
Site Ref(s):	J9 - Cannon Crossroads
Additional detail:	
File name:	Cannon Crossroads_TEST FLOWS.lsg3x
Author:	
Company:	ADC Infrastructure
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

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

Full Input Data And Results

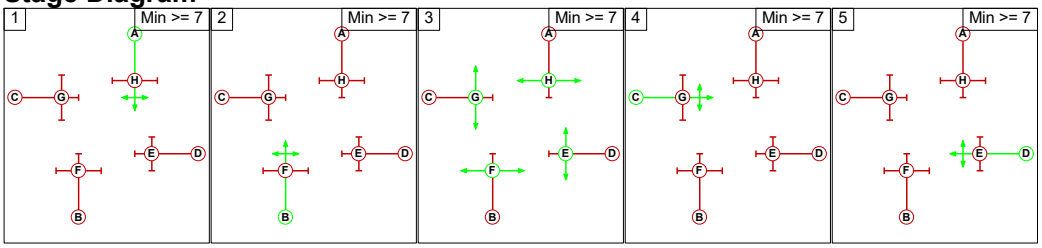
Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		7	8	6	9	9	9	9
	B	7		6	8	10	10	10	10
	C	8	8		6	9	9	9	9
	D	8	8	3		9	9	9	9
	E	5	5	5	5		-	-	-
	F	5	5	5	5	-		-	-
	G	5	5	5	5	-	-		-
	H	5	5	5	5	-	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

		To Stage				
		1	2	3	4	5
From Stage	1		7	9	8	6
	2	7		10	6	8
	3	5	5		5	5
	4	8	8	9		6
	5	8	8	9	3	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Cannon Crossroads											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/2 (A60 Carlton Road North)	8/1 (Right)	1439	0	3/1	1.09	All	2.00	-	0.50	2	2.00
2/2 (B6041 Thievesdale Lane)	5/1 (Right)	1439	0	4/1	1.09	All	2.00	-	0.50	2	2.00
3/2 (A60 Carlton Road South)	6/1 (Right)	1439	0	1/1	1.09	All	2.00	-	0.50	2	2.00
4/2 (B6041 Raymouth Lane)	7/1 (Right)	1439	0	2/1	1.09	All	2.00	-	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Cannon Crossroads												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (A60 Carlton Road North)	U	A	2	3	60.0	Geom	-	2.50	0.00	Y	Arm 6 Left	11.00
											Arm 7 Ahead	Inf
1/2 (A60 Carlton Road North)	O	A	2	3	4.5	Geom	-	2.50	0.00	N	Arm 8 Right	11.00
2/1 (B6041 Thievesdale Lane)	U	D	2	3	60.0	Geom	-	2.25	0.00	Y	Arm 7 Left	12.00
											Arm 8 Ahead	Inf
2/2 (B6041 Thievesdale Lane)	O	D	2	3	3.3	Geom	-	2.40	0.00	N	Arm 5 Right	6.00
3/1 (A60 Carlton Road South)	U	B	2	3	60.0	Geom	-	2.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
3/2 (A60 Carlton Road South)	O	B	2	3	3.3	Geom	-	2.40	0.00	N	Arm 6 Right	Inf
4/1 (B6041 Raymouth Lane)	U	C	2	3	60.0	Geom	-	2.40	0.00	Y	Arm 5 Left	11.00
											Arm 6 Ahead	Inf
4/2 (B6041 Raymouth Lane)	O	C	2	3	3.3	Geom	-	2.50	0.00	N	Arm 7 Right	6.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2021 Base AM'	07:30	08:30	01:00	
2: '2021 Base PM'	16:30	17:30	01:00	
3: 'NCC Design Flows (2025) AM'	07:30	08:30	01:00	
4: 'NCC Design Flows (2025) PM'	16:30	17:30	01:00	
5: 'ADC Design Flows (2037) AM'	07:30	08:30	01:00	
6: 'ADC Design Flows (2037) PM'	16:30	17:30	01:00	
7: 'TT Design Flows (2038) AM'	07:30	08:30	01:00	
8: 'TT Design Flows (2038) PM'	16:30	17:30	01:00	

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	150	257	134	541
	B	86	0	52	189	327
	C	200	40	0	54	294
	D	63	236	45	0	344
	Tot.	349	426	354	377	1506

Traffic Lane Flows

Lane	Scenario 1: 2021 Base AM
Junction: Cannon Crossroads	
1/1 (with short)	541(In) 407(Out)
1/2 (short)	134
2/1 (with short)	327(In) 241(Out)
2/2 (short)	86
3/1 (with short)	294(In) 254(Out)
3/2 (short)	40
4/1 (with short)	344(In) 299(Out)
4/2 (short)	45
5/1	349
6/1	426
7/1	354
8/1	377

Full Input Data And Results

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	36.9 %	1776	1776
				Arm 7 Ahead	Inf	63.1 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	21.6 %	1792	1792
				Arm 8 Ahead	Inf	78.4 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	78.7 %	1812	1812
				Arm 8 Left	11.00	21.3 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	21.1 %	1803	1803
				Arm 6 Ahead	Inf	78.9 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	121	191	93	405
	B	144	0	44	258	446
	C	248	54	0	66	368
	D	105	220	48	0	373
	Tot.	497	395	283	417	1592

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2021 Base PM
Junction: Cannon Crossroads	
1/1 (with short)	405(In) 312(Out)
1/2 (short)	93
2/1 (with short)	446(In) 302(Out)
2/2 (short)	144
3/1 (with short)	368(In) 314(Out)
3/2 (short)	54
4/1 (with short)	373(In) 325(Out)
4/2 (short)	48
5/1	497
6/1	395
7/1	283
8/1	417

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	38.8 %	1771	1771
				Arm 7 Ahead	Inf	61.2 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	14.6 %	1807	1807
				Arm 8 Ahead	Inf	85.4 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	79.0 %	1813	1813
				Arm 8 Left	11.00	21.0 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	32.3 %	1777	1777
				Arm 6 Ahead	Inf	67.7 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'NCC Design Flows (2025) AM' (FG3: 'NCC Design Flows (2025) AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	156	371	165	692
	B	158	0	74	290	522
	C	317	144	0	45	506
	D	117	425	63	0	605
	Tot.	592	725	508	500	2325

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: NCC Design Flows (2025) AM
Junction: Cannon Crossroads	
1/1 (with short)	692(In) 527(Out)
1/2 (short)	165
2/1 (with short)	522(In) 364(Out)
2/2 (short)	158
3/1 (with short)	506(In) 362(Out)
3/2 (short)	144
4/1 (with short)	605(In) 542(Out)
4/2 (short)	63
5/1	592
6/1	725
7/1	508
8/1	500

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	29.6 %	1793	1793
				Arm 7 Ahead	Inf	70.4 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	20.3 %	1794	1794
				Arm 8 Ahead	Inf	79.7 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	87.6 %	1834	1834
				Arm 8 Left	11.00	12.4 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	21.6 %	1802	1802
				Arm 6 Ahead	Inf	78.4 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'NCC Design Flows (2025) PM' (FG4: 'NCC Design Flows (2025) PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	122	337	153	612
	B	186	0	180	366	732
	C	329	112	0	68	509
	D	182	381	74	0	637
	Tot.	697	615	591	587	2490

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: NCC Design Flows (2025) PM
Junction: Cannon Crossroads	
1/1 (with short)	612(In) 459(Out)
1/2 (short)	153
2/1 (with short)	732(In) 546(Out)
2/2 (short)	186
3/1 (with short)	509(In) 397(Out)
3/2 (short)	112
4/1 (with short)	637(In) 563(Out)
4/2 (short)	74
5/1	697
6/1	615
7/1	591
8/1	587

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	26.6 %	1800	1800
				Arm 7 Ahead	Inf	73.4 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	33.0 %	1767	1767
				Arm 8 Ahead	Inf	67.0 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	82.9 %	1822	1822
				Arm 8 Left	11.00	17.1 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	32.3 %	1777	1777
				Arm 6 Ahead	Inf	67.7 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'ADC Design Flows (2037) AM' (FG5: 'ADC Design Flows (2037) AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	215	577	230	1022
	B	115	0	89	268	472
	C	335	56	0	66	457
	D	101	290	56	0	447
	Tot.	551	561	722	564	2398

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: ADC Design Flows (2037) AM
Junction: Cannon Crossroads	
1/1 (with short)	1022(In) 792(Out)
1/2 (short)	230
2/1 (with short)	472(In) 357(Out)
2/2 (short)	115
3/1 (with short)	457(In) 401(Out)
3/2 (short)	56
4/1 (with short)	447(In) 391(Out)
4/2 (short)	56
5/1	551
6/1	561
7/1	722
8/1	564

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	27.1 %	1798	1798
				Arm 7 Ahead	Inf	72.9 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	24.9 %	1784	1784
				Arm 8 Ahead	Inf	75.1 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	83.5 %	1824	1824
				Arm 8 Left	11.00	16.5 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	25.8 %	1792	1792
				Arm 6 Ahead	Inf	74.2 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'ADC Design Flows (2037) PM' (FG6: 'ADC Design Flows (2037) PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	159	347	144	650
	B	203	0	63	318	584
	C	532	83	0	81	696
	D	186	295	60	0	541
	Tot.	921	537	470	543	2471

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: ADC Design Flows (2037) PM
Junction: Cannon Crossroads	
1/1 (with short)	650(In) 506(Out)
1/2 (short)	144
2/1 (with short)	584(In) 381(Out)
2/2 (short)	203
3/1 (with short)	696(In) 613(Out)
3/2 (short)	83
4/1 (with short)	541(In) 481(Out)
4/2 (short)	60
5/1	921
6/1	537
7/1	470
8/1	543

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	31.4 %	1788	1788
				Arm 7 Ahead	Inf	68.6 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	16.5 %	1803	1803
				Arm 8 Ahead	Inf	83.5 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	86.8 %	1832	1832
				Arm 8 Left	11.00	13.2 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	38.7 %	1762	1762
				Arm 6 Ahead	Inf	61.3 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 7: 'TT Design Flows (2038) AM' (FG7: 'TT Design Flows (2038) AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	398	525	134	1057
	B	194	0	42	229	465
	C	299	53	0	54	406
	D	63	279	45	0	387
	Tot.	556	730	612	417	2315

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 7: TT Design Flows (2038) AM
Junction: Cannon Crossroads	
1/1 (with short)	1057(In) 923(Out)
1/2 (short)	134
2/1 (with short)	465(In) 271(Out)
2/2 (short)	194
3/1 (with short)	406(In) 353(Out)
3/2 (short)	53
4/1 (with short)	387(In) 342(Out)
4/2 (short)	45
5/1	556
6/1	730
7/1	612
8/1	417

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	43.1 %	1761	1761
				Arm 7 Ahead	Inf	56.9 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	15.5 %	1805	1805
				Arm 8 Ahead	Inf	84.5 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	84.7 %	1827	1827
				Arm 8 Left	11.00	15.3 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	18.4 %	1810	1810
				Arm 6 Ahead	Inf	81.6 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 8: 'TT Design Flows (2038) PM' (FG8: 'TT Design Flows (2038) PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	215	345	93	653
	B	350	0	57	304	711
	C	392	49	0	66	507
	D	105	252	48	0	405
	Tot.	847	516	450	463	2276

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: TT Design Flows (2038) PM
Junction: Cannon Crossroads	
1/1 (with short)	653(In) 560(Out)
1/2 (short)	93
2/1 (with short)	711(In) 361(Out)
2/2 (short)	350
3/1 (with short)	507(In) 458(Out)
3/2 (short)	49
4/1 (with short)	405(In) 357(Out)
4/2 (short)	48
5/1	847
6/1	516
7/1	450
8/1	463

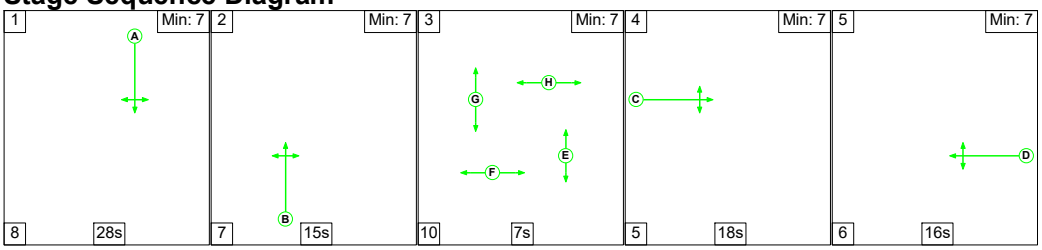
Full Input Data And Results

Lane Saturation Flows

Junction: Cannon Crossroads								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A60 Carlton Road North)	2.50	0.00	Y	Arm 6 Left	11.00	38.4 %	1772	1772
				Arm 7 Ahead	Inf	61.6 %		
1/2 (A60 Carlton Road North)	2.50	0.00	N	Arm 8 Right	11.00	100.0 %	1764	1764
2/1 (B6041 Thievesdale Lane)	2.25	0.00	Y	Arm 7 Left	12.00	15.8 %	1804	1804
				Arm 8 Ahead	Inf	84.2 %		
2/2 (B6041 Thievesdale Lane)	2.40	0.00	N	Arm 5 Right	6.00	100.0 %	1596	1596
3/1 (A60 Carlton Road South)	2.50	0.00	Y	Arm 5 Ahead	Inf	85.6 %	1829	1829
				Arm 8 Left	11.00	14.4 %		
3/2 (A60 Carlton Road South)	2.40	0.00	N	Arm 6 Right	Inf	100.0 %	1995	1995
4/1 (B6041 Raymouth Lane)	2.40	0.00	Y	Arm 5 Left	11.00	29.4 %	1783	1783
				Arm 6 Ahead	Inf	70.6 %		
4/2 (B6041 Raymouth Lane)	2.50	0.00	N	Arm 7 Right	6.00	100.0 %	1604	1604
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

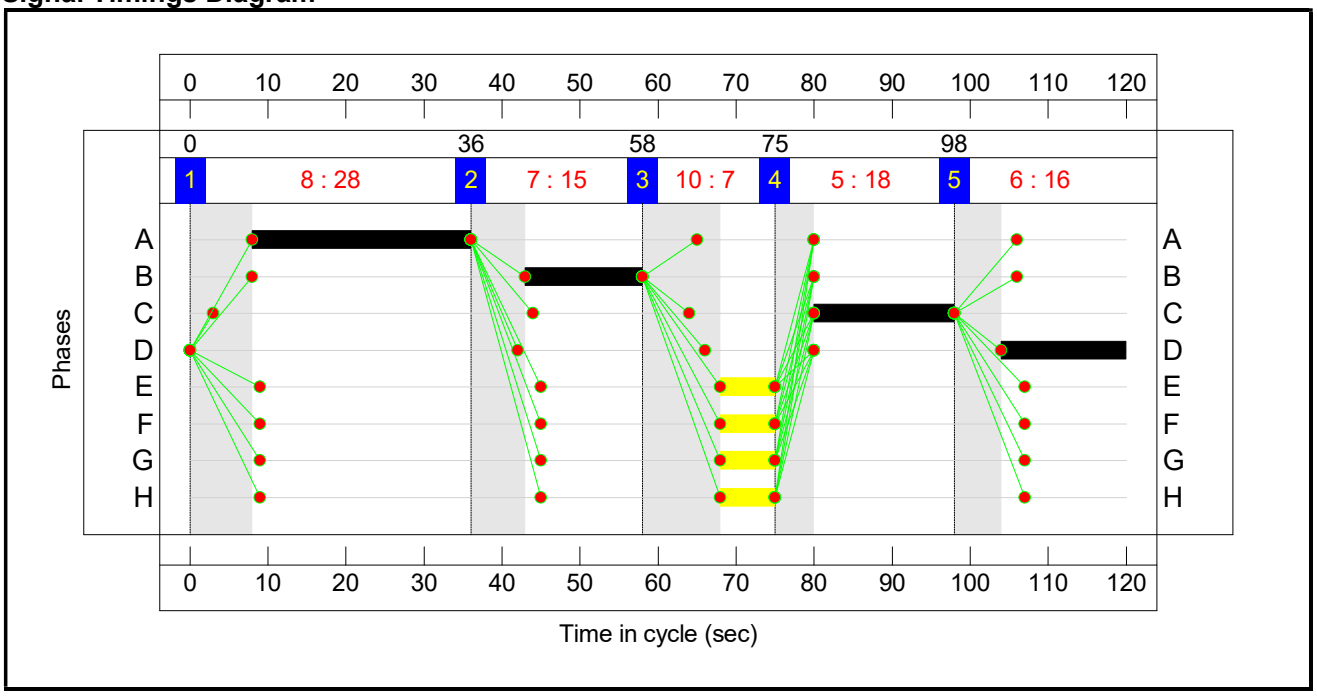


Stage Timings

Stage	1	2	3	4	5
Duration	28	15	7	18	16
Change Point	0	36	58	75	98

Full Input Data And Results

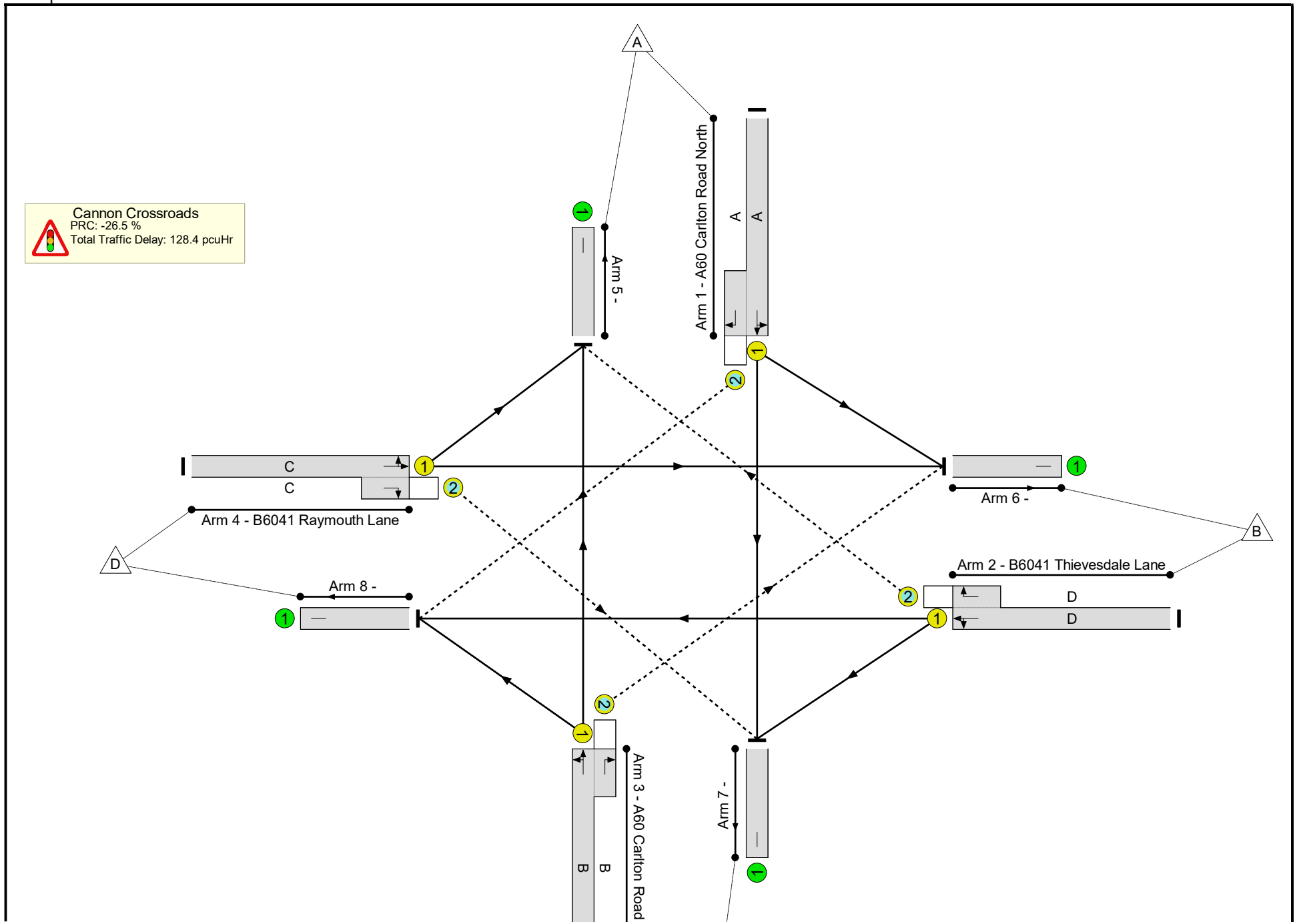
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**113.9%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**113.9%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	28	-	541	1776:1764	364+120	111.9 : 111.9%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	16	-	327	1792:1596	214+76	112.7 : 112.7%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	15	-	294	1812:1995	228+36	111.6 : 111.6%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	18	-	344	1803:1604	263+40	113.9 : 113.9%
5/1		U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	426	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	354	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	377	Inf	Inf	0.0%

Full Input Data And Results

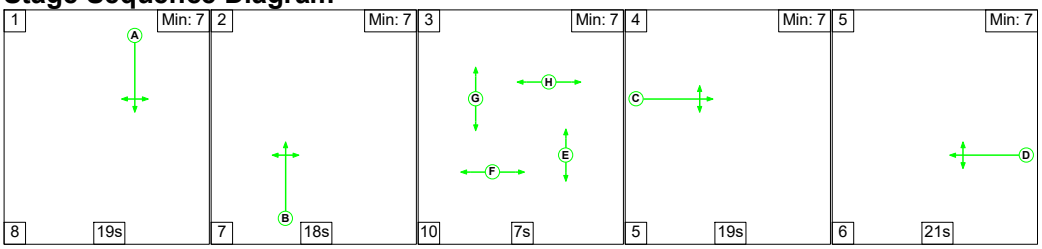
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**248**	**23**	**29.7**	**98.7**	**0.0**	**128.4**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**248**	**23**	**29.7**	**98.7**	**0.0**	**128.4**	**-**	**-**	**-**	**-**
1/1+1/2	541	483	0	112	7	10.1	32.9	0.0	43.0	286.4	19.1	32.9	52.0
2/1+2/2	327	290	0	69	8	7.2	22.2	0.0	29.4	323.5	11.9	22.2	34.1
3/1+3/2	294	263	0	32	4	5.8	19.2	0.0	24.9	305.2	10.5	19.2	29.7
4/1+4/2	344	302	0	36	4	6.6	24.4	0.0	31.0	324.6	12.7	24.4	37.1
5/1	311	311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	377	377	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	315	315	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	336	336	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -26.5 Total Delay for Signalled Lanes (pcuHr): 128.36 Cycle Time (s): 120
PRC Over All Lanes (%): -26.5 Total Delay Over All Lanes(pcuHr): 128.36

Full Input Data And Results

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

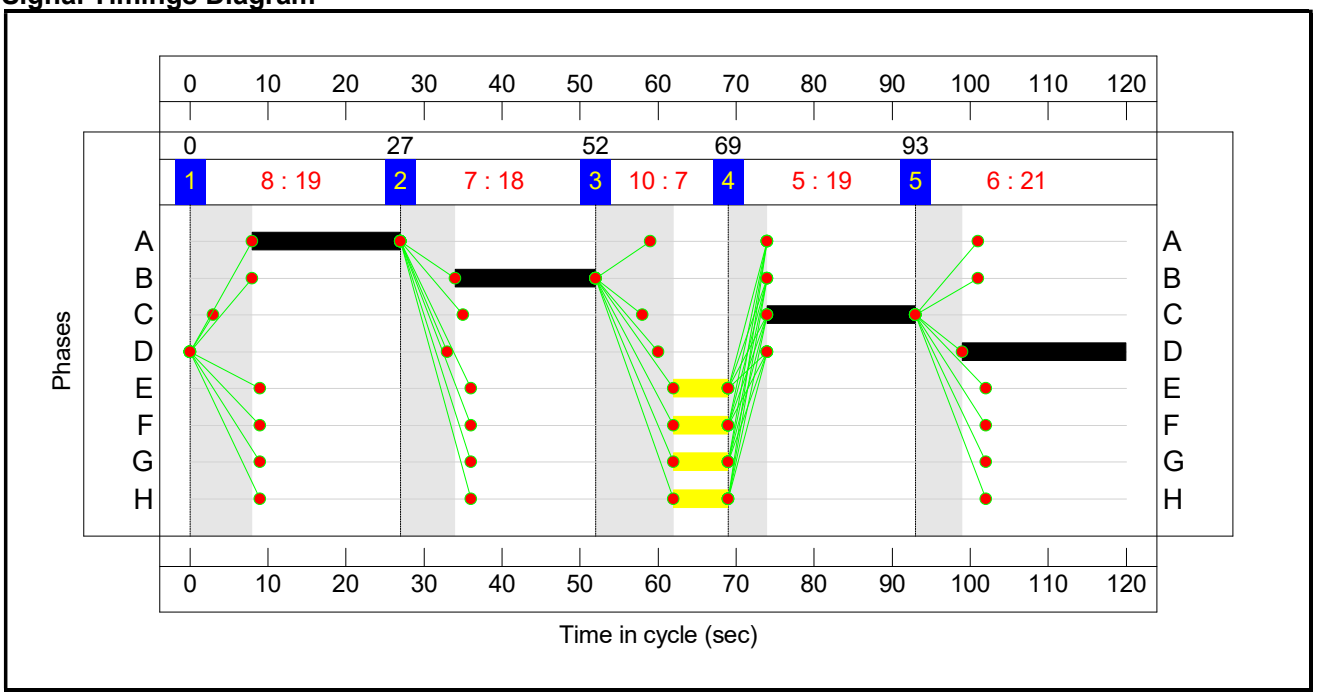
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	19	18	7	19	21
Change Point	0	27	52	69	93

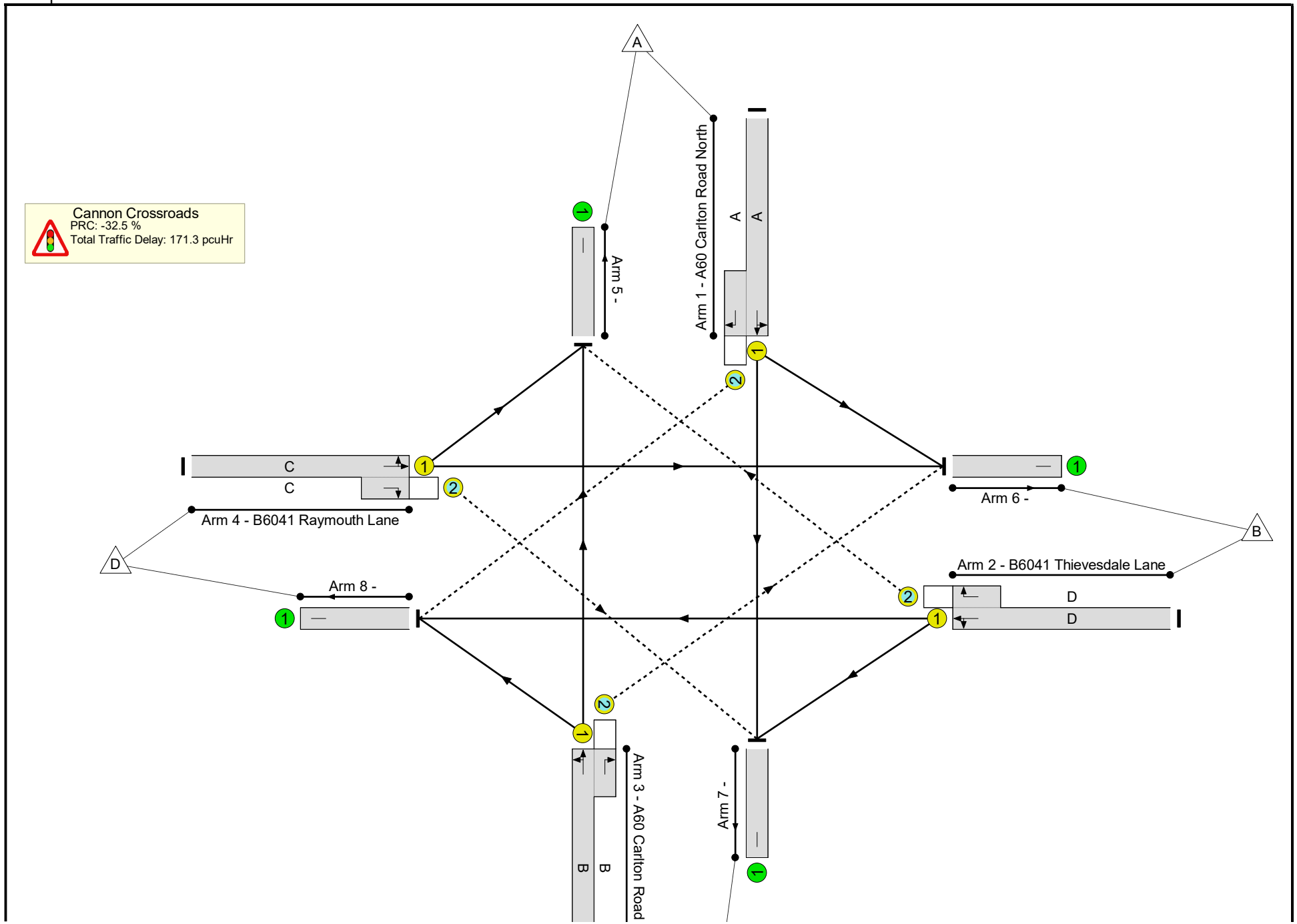
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.2%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.2%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	19	-	405	1771:1764	266+79	117.1 : 117.1%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	21	-	446	1807:1596	253+121	119.2 : 119.2%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	18	-	368	1813:1995	265+46	118.3 : 118.3%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	19	-	373	1777:1604	274+40	118.7 : 118.7%
5/1		U	N/A	N/A	-		-	-	-	497	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	395	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	283	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	417	Inf	Inf	0.0%

Full Input Data And Results

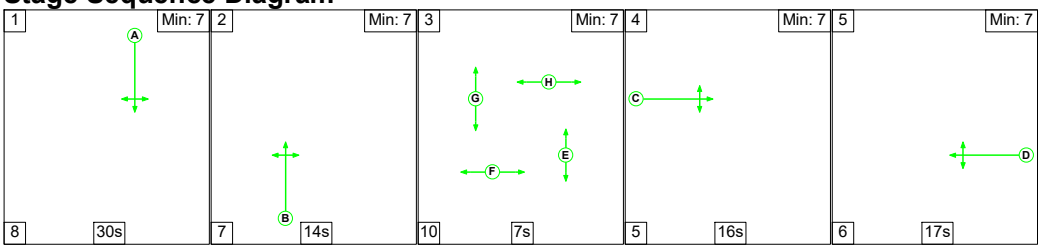
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**262**	**24**	**36.0**	**135.3**	**0.0**	**171.3**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**262**	**24**	**36.0**	**135.3**	**0.0**	**171.3**	**-**	**-**	**-**	**-**
1/1+1/2	405	346	0	73	7	9.2	32.7	0.0	41.9	372.2	14.6	32.7	47.3
2/1+2/2	446	374	0	111	9	11.0	38.8	0.0	49.8	402.1	17.7	38.8	56.5
3/1+3/2	368	311	0	41	4	8.2	31.4	0.0	39.6	387.4	13.9	31.4	45.4
4/1+4/2	373	314	0	37	4	7.7	32.3	0.0	40.0	386.2	14.2	32.3	46.5
5/1	419	419	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	334	334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	352	352	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -32.5 Total Delay for Signalled Lanes (pcuHr): 171.29 Cycle Time (s): 120
PRC Over All Lanes (%): -32.5 Total Delay Over All Lanes(pcuHr): 171.29

Full Input Data And Results

Scenario 3: 'NCC Design Flows (2025) AM' (FG3: 'NCC Design Flows (2025) AM', Plan 1: 'Network Control Plan 1')

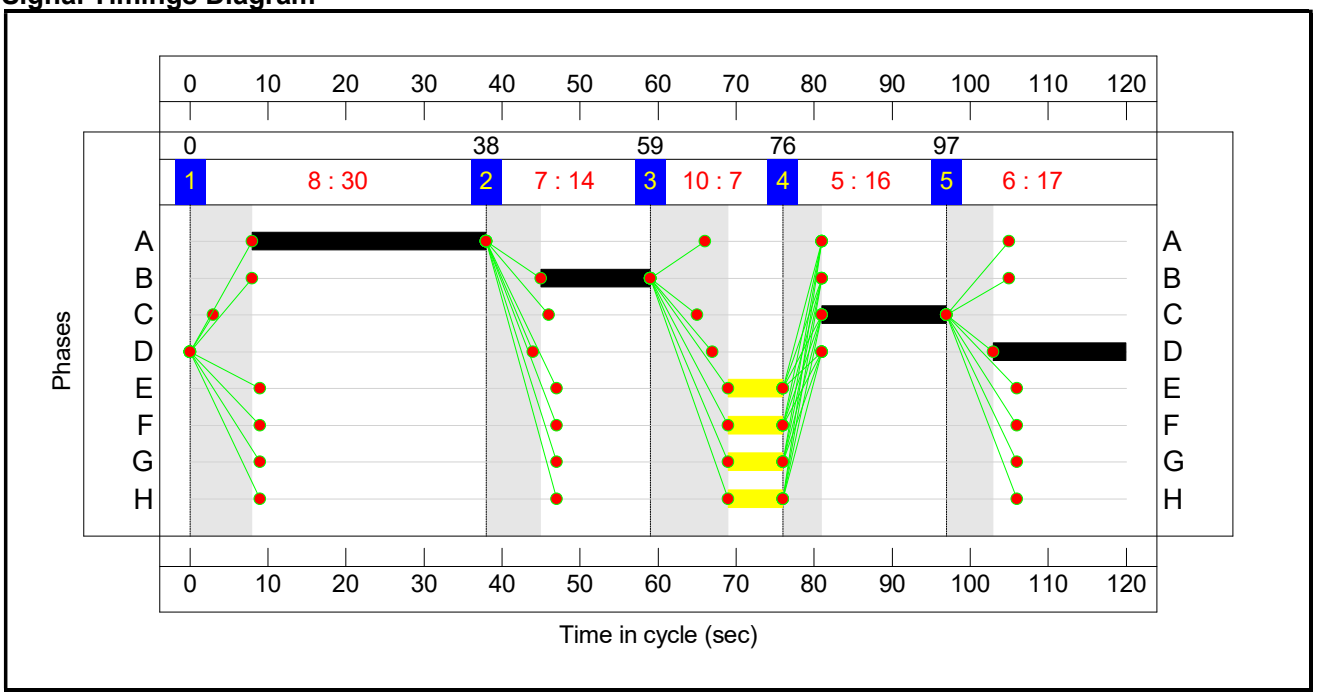
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	30	14	7	16	17
Change Point	0	38	59	76	97

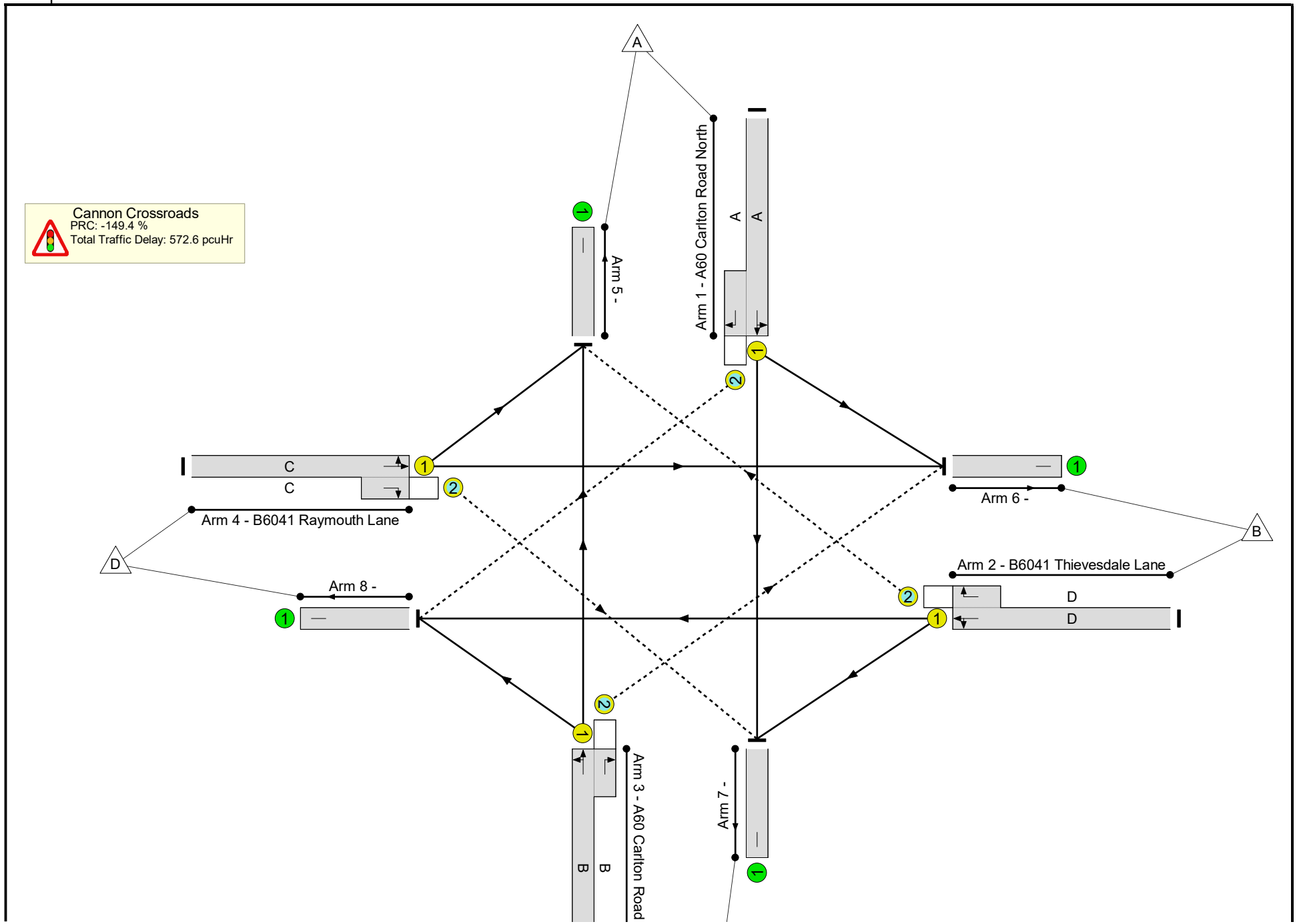
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**224.5%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**224.5%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	30	-	692	1793:1764	391+122	134.8 : 134.8%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	17	-	522	1794:1596	217+94	167.5 : 167.5%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	14	-	506	1834:1995	197+78	183.7 : 183.7%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	16	-	605	1802:1604	241+28	224.5 : 224.5%
5/1		U	N/A	N/A	-		-	-	-	592	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	725	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	508	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	500	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**295**	**28**	**89.8**	**482.7**	**0.0**	**572.6**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**295**	**28**	**89.8**	**482.7**	**0.0**	**572.6**	**-**	**-**	**-**	**-**
1/1+1/2	692	513	0	115	7	19.1	91.3	0.0	110.4	574.2	28.4	91.3	119.7
2/1+2/2	522	312	0	86	9	21.8	106.4	0.0	128.2	884.1	29.6	106.4	136.0
3/1+3/2	506	275	0	69	9	19.1	116.4	0.0	135.5	964.0	23.7	116.4	140.0
4/1+4/2	605	270	0	25	3	29.9	168.6	0.0	198.5	1181.1	38.8	168.6	207.4
5/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	383	383	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	347	347	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	320	320	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

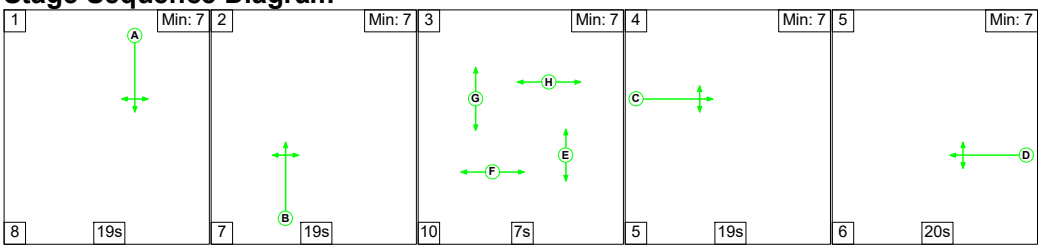
C1 PRC for Signalled Lanes (%): -149.4 Total Delay for Signalled Lanes (pcuHr): 572.55 Cycle Time (s): 120

PRC Over All Lanes (%): -149.4 Total Delay Over All Lanes(pcuHr): 572.55

Full Input Data And Results

Scenario 4: 'NCC Design Flows (2025) PM' (FG4: 'NCC Design Flows (2025) PM', Plan 1: 'Network Control Plan 1')

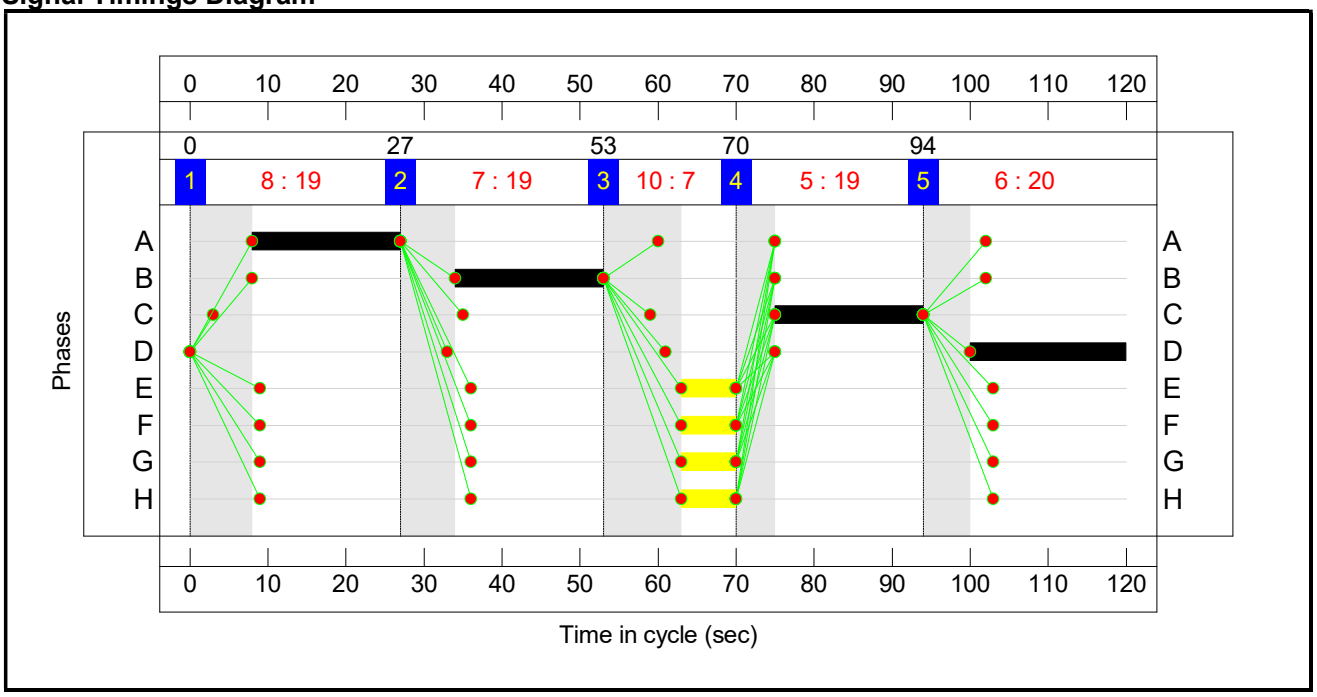
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	19	19	7	19	20
Change Point	0	27	53	70	94

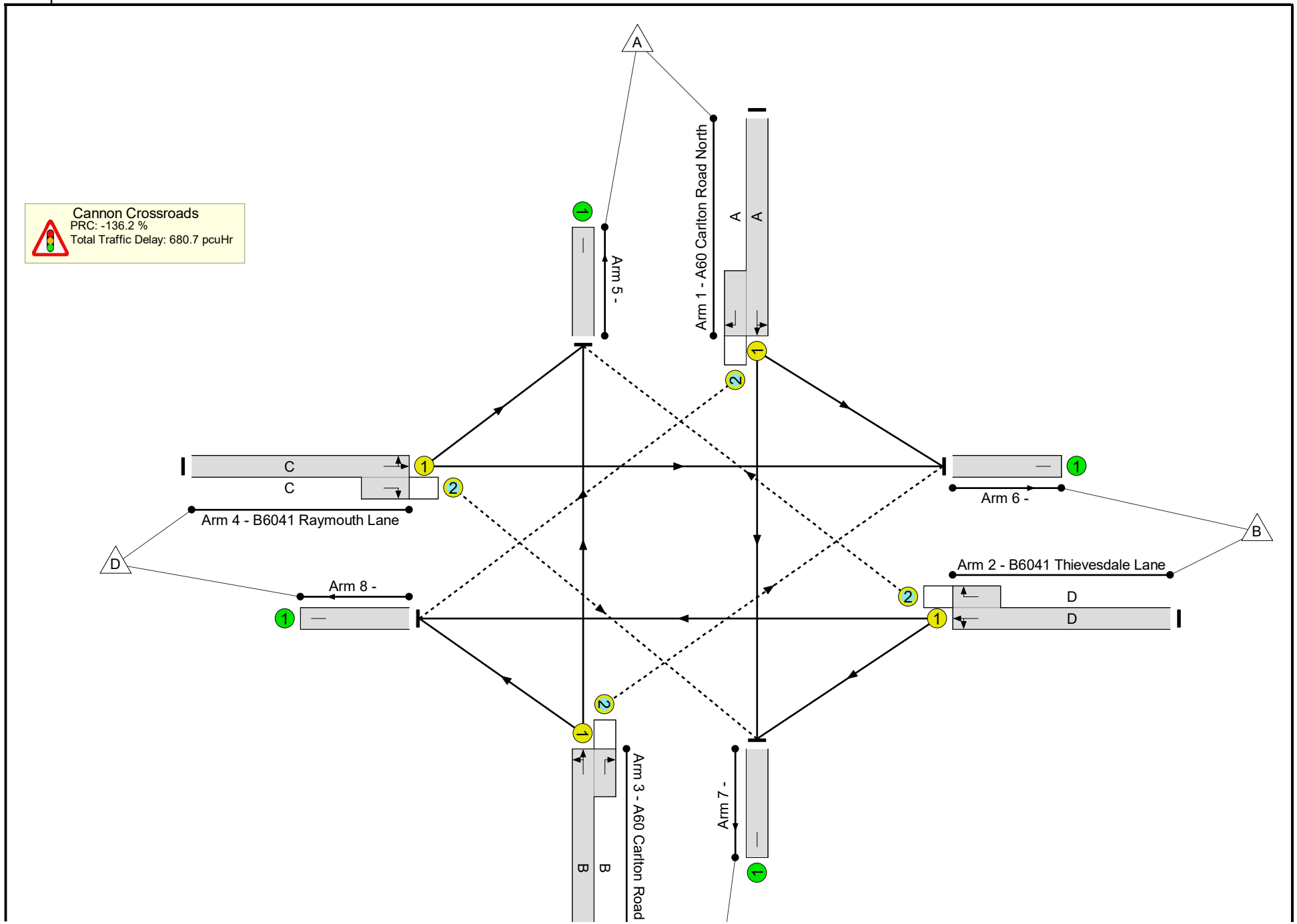
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**212.6%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**212.6%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	19	-	612	1800:1764	265+88	173.5 : 173.5%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	20	-	732	1767:1596	257+87	212.6 : 212.6%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	19	-	509	1822:1995	265+75	149.8 : 149.8%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	19	-	637	1777:1604	276+36	203.7 : 203.7%
5/1		U	N/A	N/A	-		-	-	-	697	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	615	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	591	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	587	Inf	Inf	0.0%

Full Input Data And Results

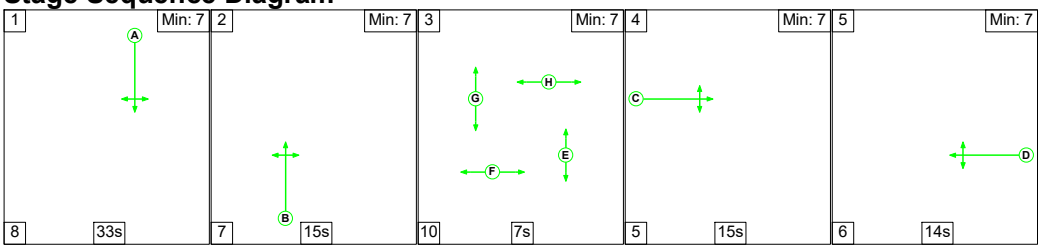
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**262**	**25**	**106.0**	**574.8**	**0.0**	**680.7**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**262**	**25**	**106.0**	**574.8**	**0.0**	**680.7**	**-**	**-**	**-**	**-**
1/1+1/2	612	353	0	81	7	24.3	130.8	0.0	155.1	912.3	31.1	130.8	161.9
2/1+2/2	732	344	0	80	7	36.7	194.8	0.0	231.5	1138.6	48.5	194.8	243.3
3/1+3/2	509	340	0	68	7	16.1	86.1	0.0	102.2	722.8	22.1	86.1	108.2
4/1+4/2	637	313	0	33	3	28.9	163.1	0.0	192.0	1084.8	38.3	163.1	201.4
5/1	396	396	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	315	315	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	306	306	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -136.2 Total Delay for Signalled Lanes (pcuHr): 680.75 Cycle Time (s): 120
PRC Over All Lanes (%): -136.2 Total Delay Over All Lanes(pcuHr): 680.75

Full Input Data And Results

Scenario 5: 'ADC Design Flows (2037) AM' (FG5: 'ADC Design Flows (2037) AM', Plan 1: 'Network Control Plan 1')

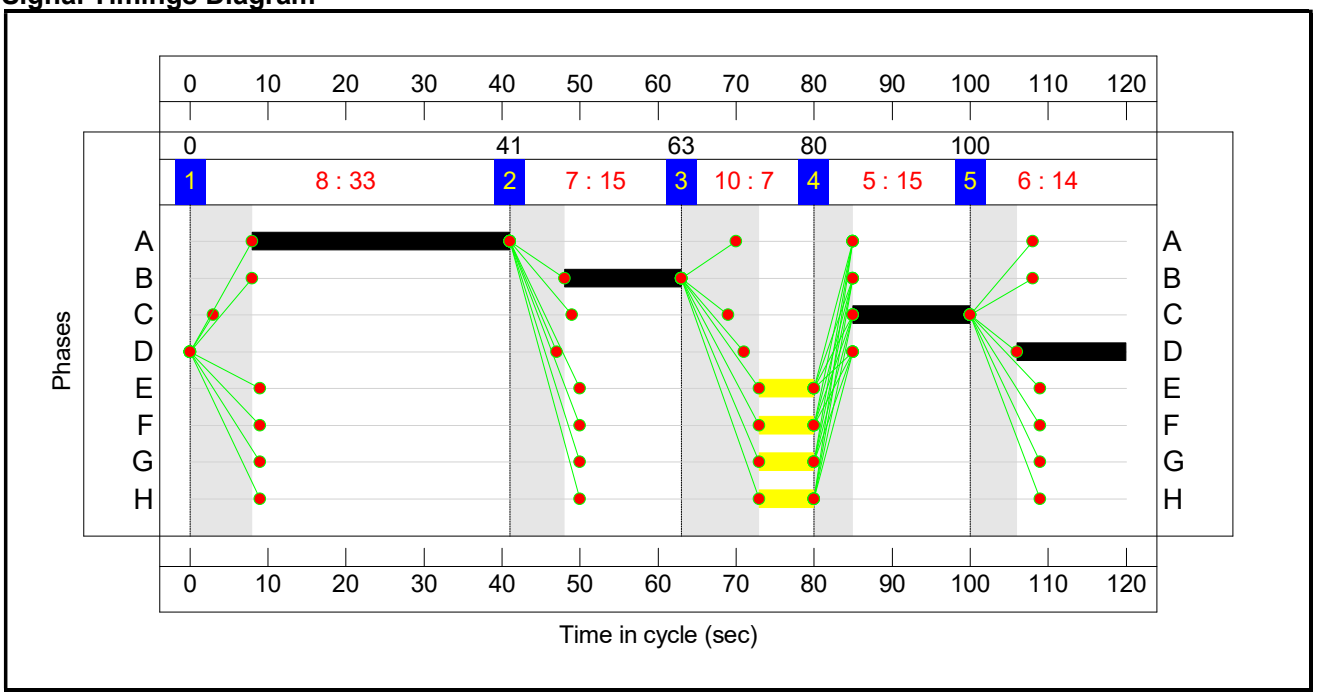
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	33	15	7	15	14
Change Point	0	41	63	80	100

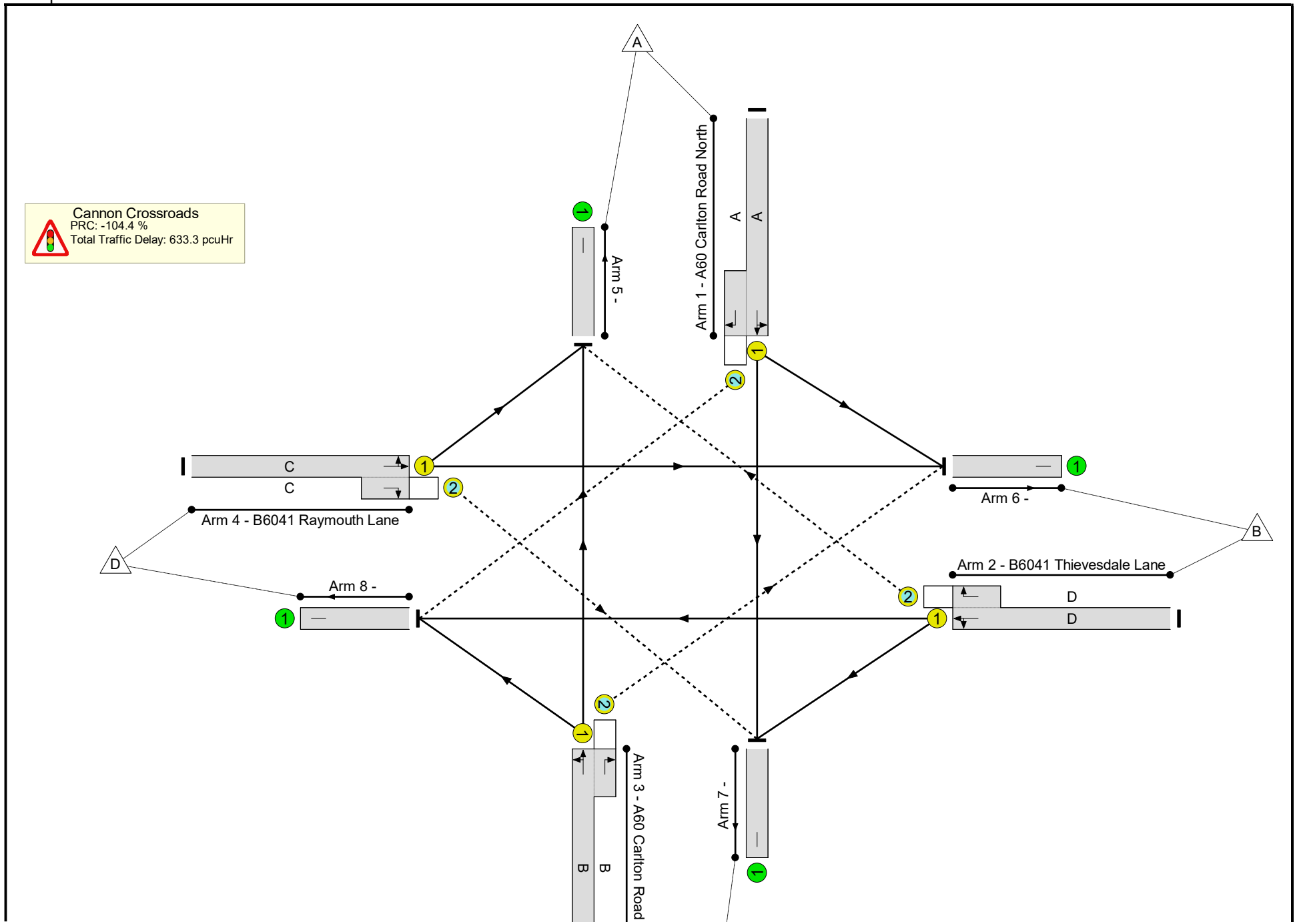
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**183.9%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**183.9%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	33	-	1022	1798:1764	431+125	183.9 : 183.9%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	14	-	472	1784:1596	195+63	183.3 : 183.3%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	15	-	457	1824:1995	230+32	174.3 : 174.3%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	15	-	447	1792:1604	224+32	174.3 : 174.3%
5/1		U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	561	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	722	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	564	Inf	Inf	0.0%

Full Input Data And Results

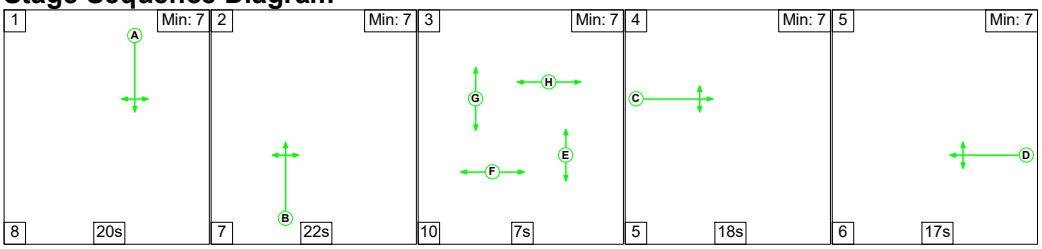
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**231**	**21**	**95.6**	**537.7**	**0.0**	**633.3**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**231**	**21**	**95.6**	**537.7**	**0.0**	**633.3**	**-**	**-**	**-**	**-**
1/1+1/2	1022	556	0	118	7	39.7	234.3	0.0	274.0	965.1	51.4	234.3	285.7
2/1+2/2	472	257	0	56	7	21.5	108.3	0.0	129.8	990.3	28.6	108.3	136.9
3/1+3/2	457	262	0	28	4	16.4	98.6	0.0	115.0	905.6	21.6	98.6	120.2
4/1+4/2	447	256	0	28	4	18.0	96.5	0.0	114.5	922.2	25.0	96.5	121.5
5/1	313	313	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	315	315	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -104.4 Total Delay for Signalled Lanes (pcuHr): 633.29 Cycle Time (s): 120
PRC Over All Lanes (%): -104.4 Total Delay Over All Lanes(pcuHr): 633.29

Full Input Data And Results

Scenario 6: 'ADC Design Flows (2037) PM' (FG6: 'ADC Design Flows (2037) PM', Plan 1: 'Network Control Plan 1')

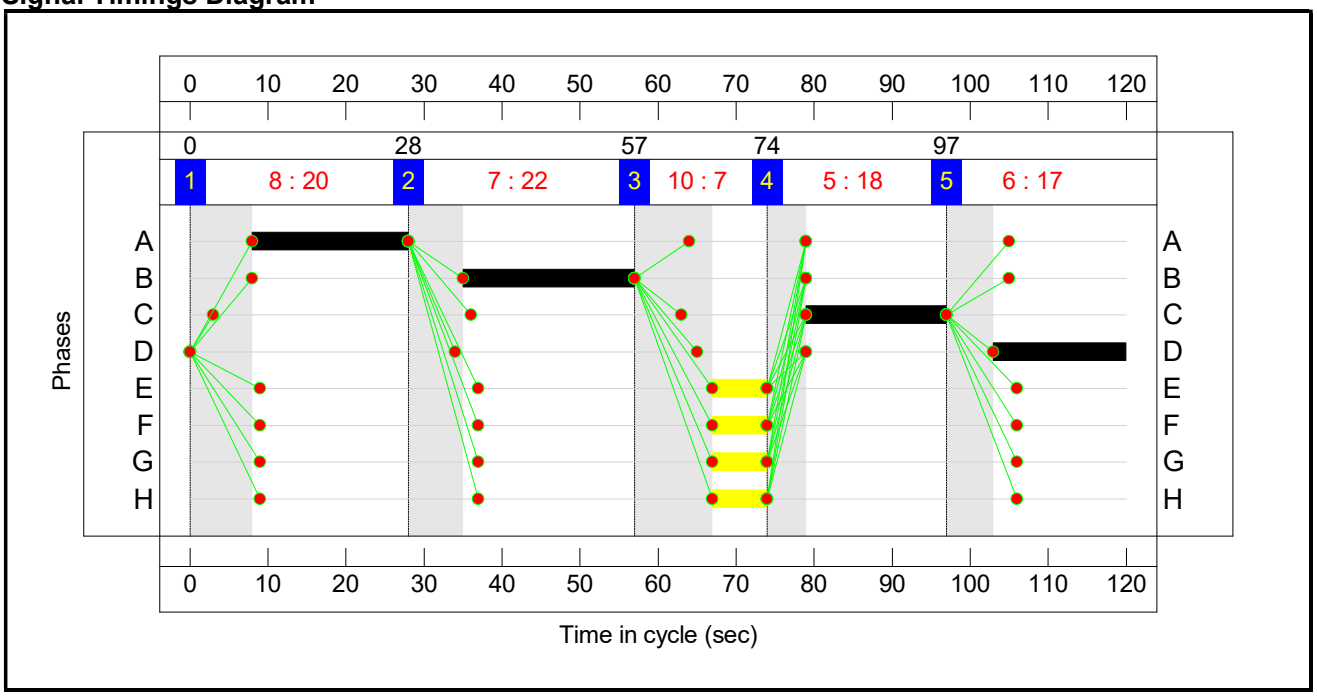
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	20	22	7	18	17
Change Point	0	28	57	74	97

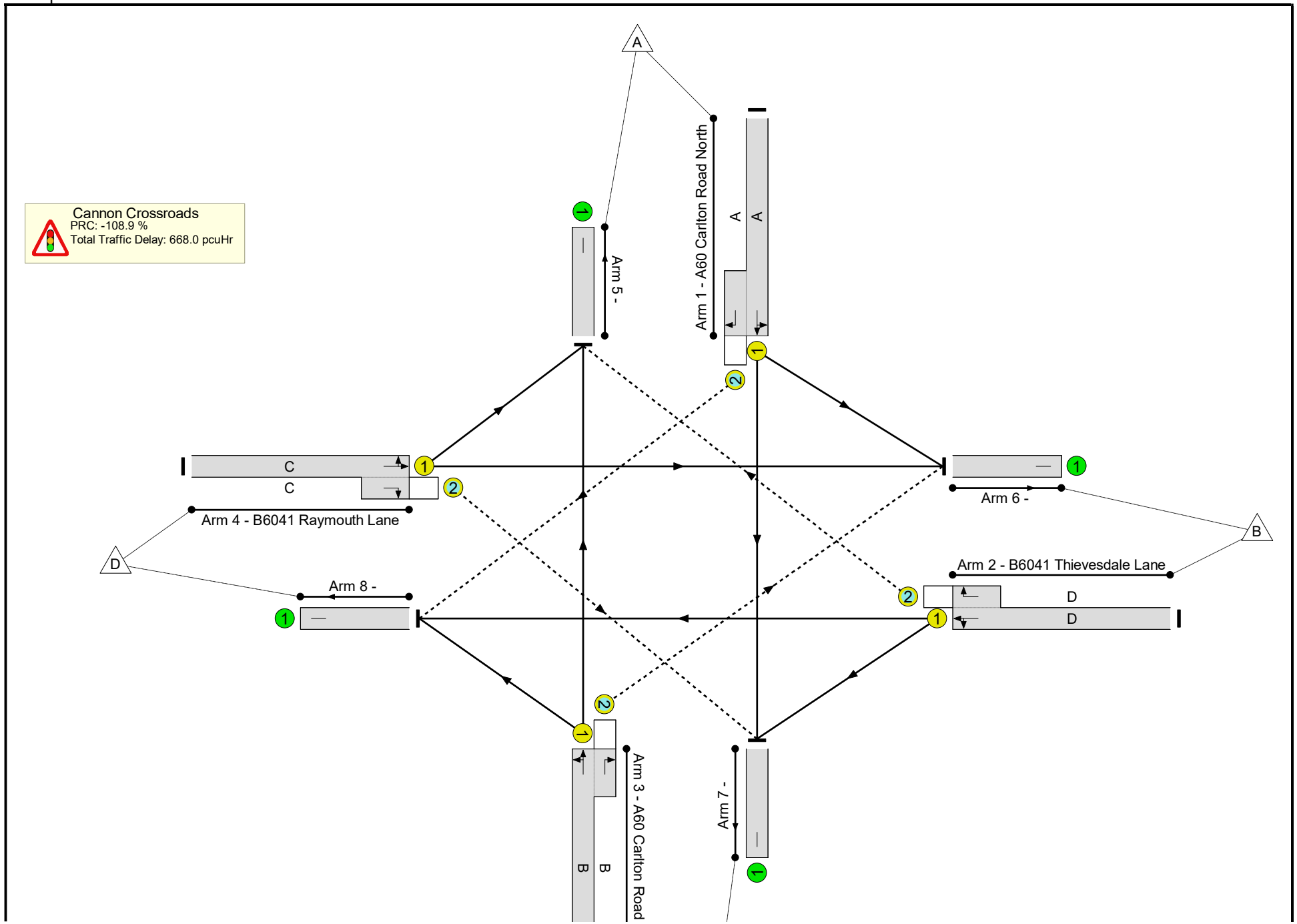
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**188.0%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**188.0%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	20	-	650	1788:1764	280+80	180.5 : 180.5%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	17	-	584	1803:1596	210+112	181.8 : 181.8%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	22	-	696	1832:1995	326+44	188.0 : 188.0%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	18	-	541	1762:1604	263+33	182.7 : 182.7%
5/1		U	N/A	N/A	-		-	-	-	921	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	537	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	470	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	543	Inf	Inf	0.0%

Full Input Data And Results

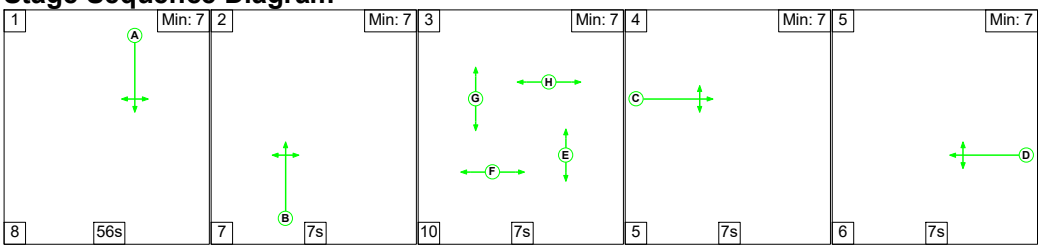
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**245**	**23**	**102.0**	**566.0**	**0.0**	**668.0**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**245**	**23**	**102.0**	**566.0**	**0.0**	**668.0**	**-**	**-**	**-**	**-**
1/1+1/2	650	360	0	73	7	26.6	146.1	0.0	172.6	956.2	34.1	146.1	180.2
2/1+2/2	584	321	0	102	10	26.3	132.5	0.0	158.7	978.6	34.7	132.5	167.2
3/1+3/2	696	370	0	40	4	26.7	163.9	0.0	190.6	985.9	34.2	163.9	198.1
4/1+4/2	541	296	0	30	3	22.5	123.5	0.0	146.0	971.5	30.9	123.5	154.4
5/1	496	496	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	294	294	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	298	298	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -108.9 Total Delay for Signalled Lanes (pcuHr): 668.00 Cycle Time (s): 120
PRC Over All Lanes (%): -108.9 Total Delay Over All Lanes(pcuHr): 668.00

Full Input Data And Results

Scenario 7: 'TT Design Flows (2038) AM' (FG7: 'TT Design Flows (2038) AM', Plan 1: 'Network Control Plan 1')

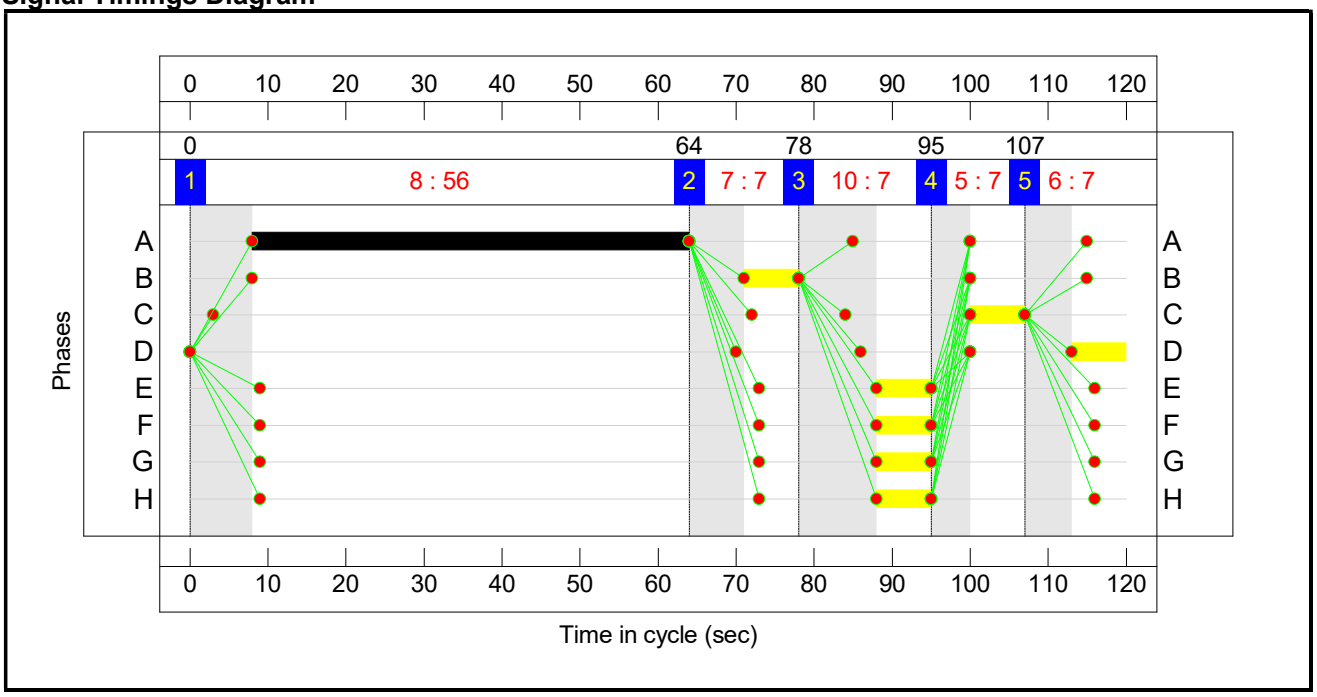
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	56	7	7	7	7
Change Point	0	64	78	95	107

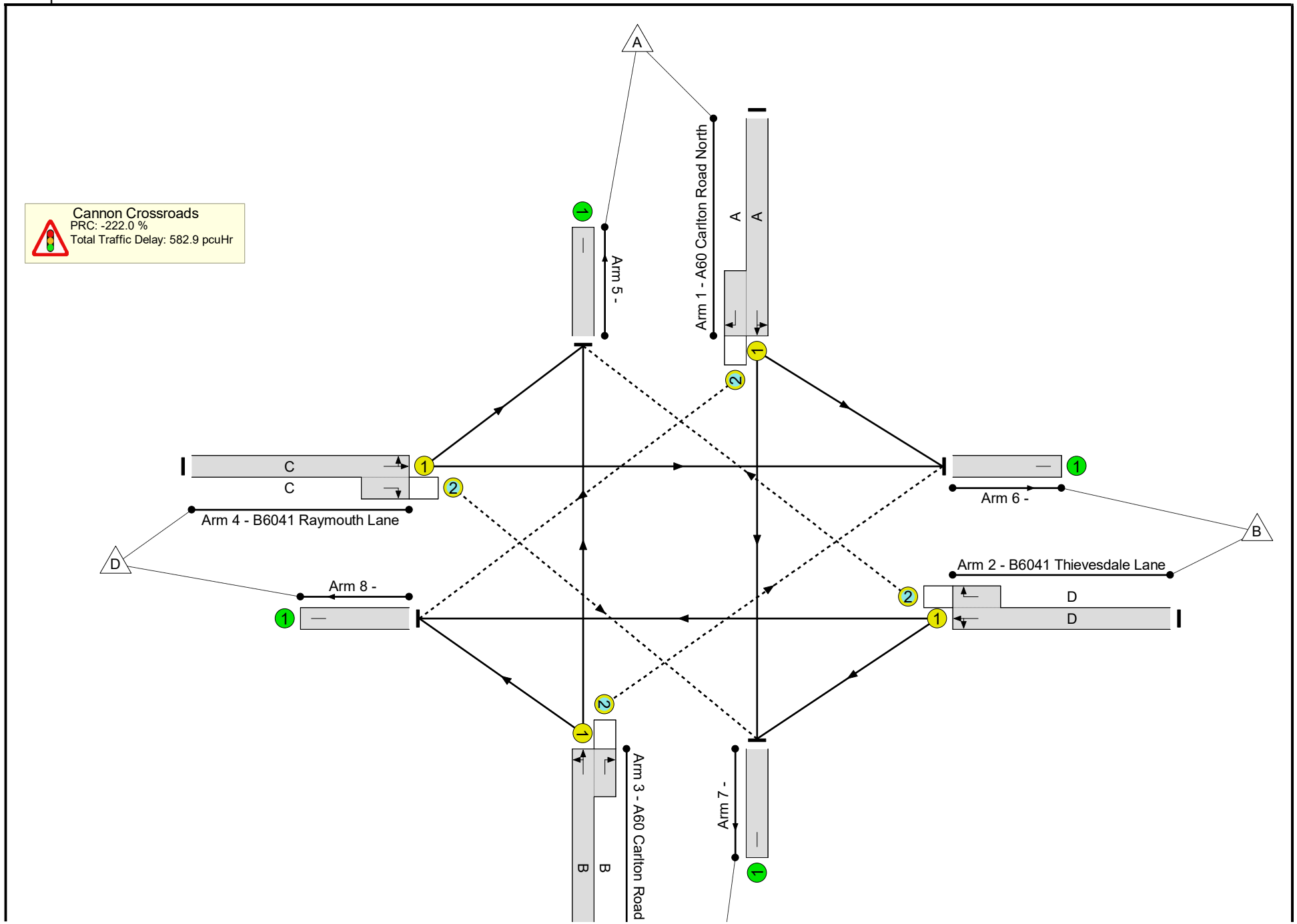
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**289.8%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**289.8%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	56	-	1057	1761:1764	757+110	121.9 : 121.9%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	7	-	465	1805:1596	114+82	237.7 : 237.7%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	7	-	406	1827:1995	122+18	289.8 : 289.8%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	7	-	387	1810:1604	121+16	283.4 : 283.4%
5/1		U	N/A	N/A	-		-	-	-	556	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	730	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	612	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	417	Inf	Inf	0.0%

Full Input Data And Results

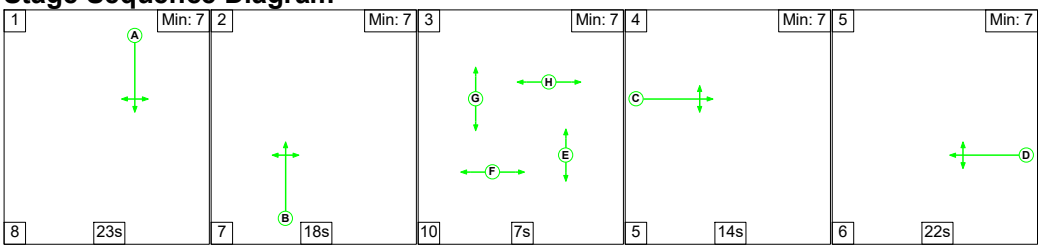
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**212**	**14**	**89.9**	**492.9**	**0.0**	**582.9**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**212**	**14**	**89.9**	**492.9**	**0.0**	**582.9**	**-**	**-**	**-**	**-**
1/1+1/2	1057	867	0	106	4	19.7	97.7	0.0	117.4	399.9	42.1	97.7	139.8
2/1+2/2	465	196	0	77	5	25.4	135.5	0.0	160.9	1246.0	30.7	135.5	166.2
3/1+3/2	406	140	0	14	4	22.5	133.7	0.0	156.2	1384.8	26.4	133.7	160.1
4/1+4/2	387	137	0	15	1	22.4	126.0	0.0	148.4	1380.0	28.1	126.0	154.1
5/1	207	207	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	443	443	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	464	464	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	225	225	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -222.0 Total Delay for Signalled Lanes (pcuHr): 582.89 Cycle Time (s): 120
PRC Over All Lanes (%): -222.0 Total Delay Over All Lanes(pcuHr): 582.89

Full Input Data And Results

Scenario 8: 'TT Design Flows (2038) PM' (FG8: 'TT Design Flows (2038) PM', Plan 1: 'Network Control Plan 1')

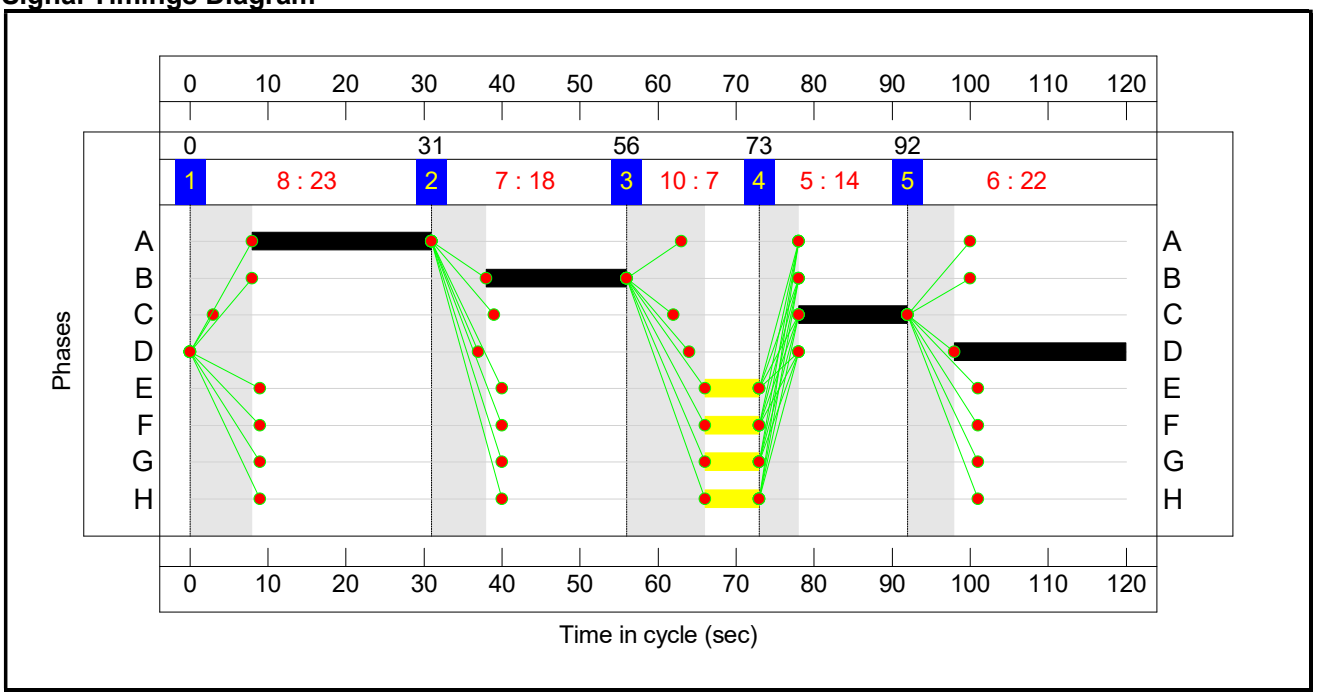
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	23	18	7	14	22
Change Point	0	31	56	73	92

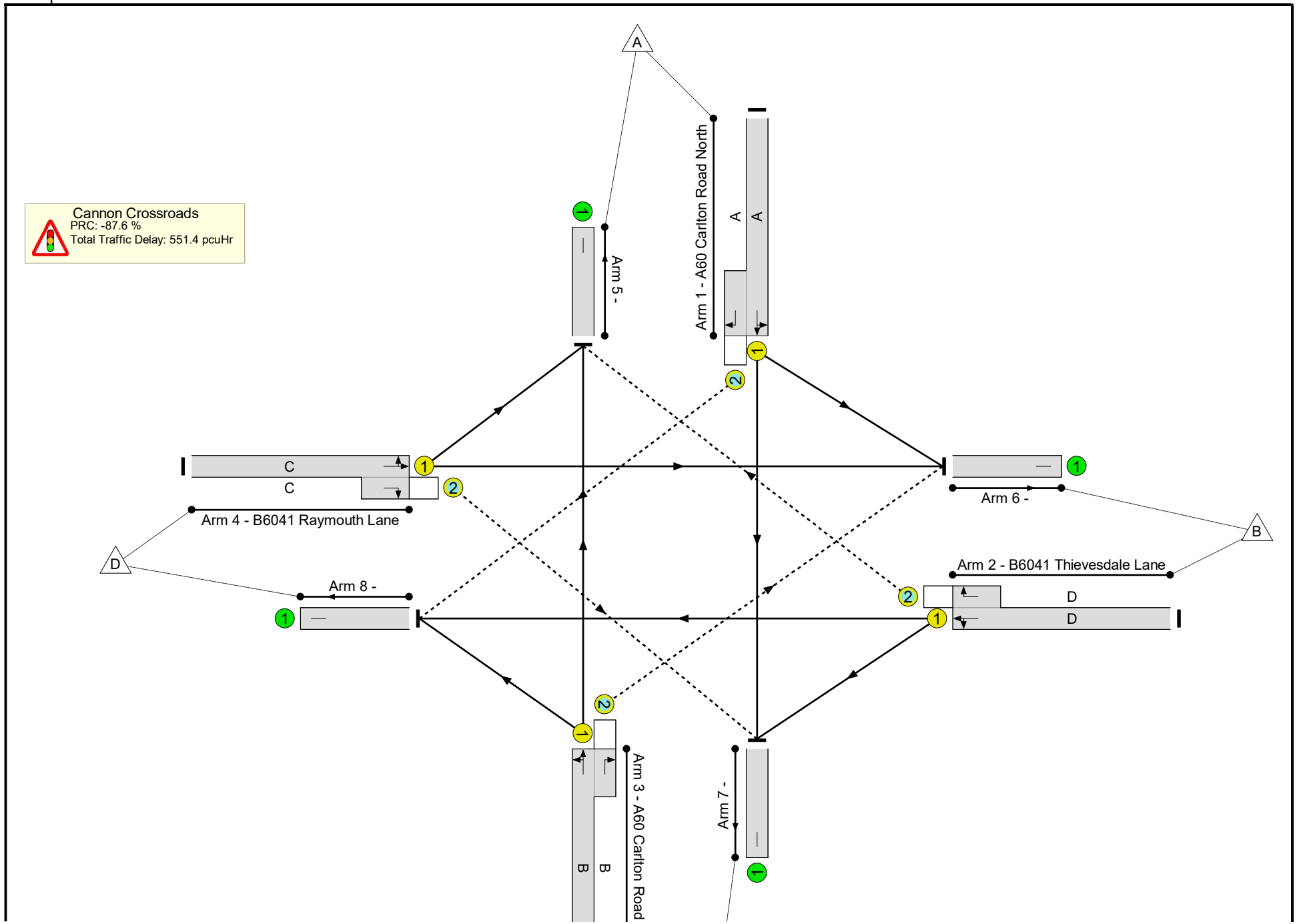
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**168.9%**
Cannon Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**168.9%**
1/1+1/2	A60 Carlton Road North Left Ahead Right	U+O	N/A	N/A	A		1	23	-	653	1772:1764	332+55	168.9 : 168.9%
2/1+2/2	B6041 Thievesdale Lane Right Left Ahead	U+O	N/A	N/A	D		1	22	-	711	1804:1596	216+209	167.5 : 167.5%
3/1+3/2	A60 Carlton Road South Ahead Right Left	U+O	N/A	N/A	B		1	18	-	507	1829:1995	276+29	166.2 : 166.2%
4/1+4/2	B6041 Raymouth Lane Left Ahead Right	U+O	N/A	N/A	C		1	14	-	405	1783:1604	212+28	168.5 : 168.5%
5/1		U	N/A	N/A	-		-	-	-	847	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	516	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	450	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	463	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**297**	**25**	**86.9**	**464.6**	**0.0**	**551.4**	**-**	**-**	**-**	**-**
Cannon Crossroads	**-**	**-**	**0**	**297**	**25**	**86.9**	**464.6**	**0.0**	**551.4**	**-**	**-**	**-**	**-**
1/1+1/2	653	387	0	51	4	24.8	134.4	0.0	159.1	877.4	32.6	134.4	167.0
2/1+2/2	711	425	0	195	14	29.0	144.5	0.0	173.5	878.4	39.0	144.5	183.4
3/1+3/2	507	305	0	27	3	17.8	102.2	0.0	120.0	852.0	23.7	102.2	125.9
4/1+4/2	405	240	0	25	3	15.3	83.6	0.0	98.8	878.4	21.2	83.6	104.8
5/1	507	507	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	306	306	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	276	276	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -87.6 Total Delay for Signalled Lanes (pcuHr): 551.45 Cycle Time (s): 120
PRC Over All Lanes (%): -87.6 Total Delay Over All Lanes(pcuHr): 551.45

ARCADY Report

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

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

Filename: CANNON ROUNDABOUT_TT Geometry Update.j9
Path: N:\Projects\B028000 - Worksop DPD TA\06 - Calculations\Junctions 9\Cannon Crossroads
Report generation date: 04/01/2023 12:31:29

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2021 Base									
Arm A	D1	1.2	7.36	0.55	A	D2	0.7	5.64	0.41	A
Arm B		0.6	5.66	0.36	A		0.9	6.32	0.46	A
Arm C		0.5	5.19	0.32	A		0.7	6.45	0.42	A
Arm D		0.6	5.35	0.36	A		0.7	6.35	0.42	A
	Test 1 - 2025 NCC Flows									
Arm A	D3	5.4	26.94	0.86	D	D4	2.5	13.95	0.72	B
Arm B		1.8	11.21	0.64	B		6.4	30.41	0.88	D
Arm C		1.6	10.78	0.63	B		2.0	13.10	0.67	B
Arm D		3.1	17.40	0.76	C		4.0	21.35	0.81	C
	Test 2 - ADC Flows 2037									
Arm A	D5	56.6	165.48	1.09	F	D6	2.4	12.12	0.71	B
Arm B		2.0	14.15	0.67	B		2.2	12.74	0.70	B
Arm C		1.2	9.01	0.56	A		7.1	35.48	0.89	E
Arm D		1.1	8.02	0.52	A		3.6	22.76	0.79	C
	Test 3 - Tetra Tech Flows 2038									
Arm A	D7	67.4	189.99	1.11	F	D8	2.0	10.33	0.67	B
Arm B		1.4	10.03	0.59	B		4.1	19.46	0.81	C
Arm C		0.9	7.40	0.48	A		2.2	14.37	0.69	B
Arm D		0.9	7.34	0.47	A		1.4	11.24	0.58	B
	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%									
Arm A	D9	44.7	134.00	1.06	F	D10	1.8	9.49	0.64	A
Arm B		1.3	9.76	0.58	A		3.5	16.87	0.78	C
Arm C		0.8	7.12	0.46	A		1.9	12.79	0.66	B
Arm D		0.8	7.13	0.46	A		1.3	10.52	0.57	B
	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%									
Arm A	D11	26.4	87.94	1.01	F	D12	1.6	8.80	0.62	A
Arm B		1.3	9.40	0.56	A		3.0	14.80	0.75	B
Arm C		0.8	6.85	0.44	A		1.6	11.45	0.62	B
Arm D		0.8	6.92	0.45	A		1.2	9.85	0.55	A

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

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

File summary

File Description

Title	CANNON CROSSROADS
Location	WORKSOP
Site number	
Date	28/06/2016
Version	1.0
Status	(new file)
Identifier	
Client	NCC HIGHWAYS
Jobnumber	
Enumerator	CLEGGETT-PC\matthew
Description	CANNON CROSSROADS MITIGATION SCENARIO TEST - CONVERSION FROM SIGNALS TO ROUNDABOUT

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15
D2	2021 Base	PM	ONE HOUR	16:30	18:00	15
D3	Test 1 - 2025 NCC Flows	AM	ONE HOUR	07:45	09:15	15
D4	Test 1 - 2025 NCC Flows	PM	ONE HOUR	16:30	18:00	15
D5	Test 2 - ADC Flows 2037	AM	ONE HOUR	07:45	09:15	15
D6	Test 2 - ADC Flows 2037	PM	ONE HOUR	16:30	18:00	15
D7	Test 3 - Tetra Tech Flows 2038	AM	ONE HOUR	07:45	09:15	15
D8	Test 3 - Tetra Tech Flows 2038	PM	ONE HOUR	16:30	18:00	15
D9	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	AM	ONE HOUR	07:45	09:15	15
D10	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	PM	ONE HOUR	16:30	18:00	15
D11	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	AM	ONE HOUR	07:45	09:15	15
D12	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	PM	ONE HOUR	16:30	18:00	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	6.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A60 Carlton Rd North	
B	B6041 Thievesdale Lane	
C	A60 Carlton Rd South	
D	B6041 Raymoth Lane	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.65	4.50	10.0	20.0	28.0	35.0	
B	3.50	4.50	10.0	20.0	28.0	35.0	
C	3.65	4.50	10.0	16.0	28.0	35.0	
D	3.50	4.50	10.0	16.0	28.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.569	1286
B	0.566	1268
C	0.562	1270
D	0.559	1252

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)
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	541	100.000
B		✓	327	100.000
C		✓	294	100.000
D		✓	344	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	150	257	134
	B	86	0	52	189
	C	200	40	0	54
	D	63	236	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.55	7.36	1.2	A
B	0.36	5.66	0.6	A
C	0.32	5.19	0.5	A
D	0.36	5.35	0.6	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	407	241	1149	0.355	405	0.5	4.828	A
B	246	327	1083	0.227	245	0.3	4.290	A
C	221	306	1097	0.202	220	0.3	4.100	A
D	259	244	1115	0.232	258	0.3	4.191	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	486	288	1122	0.434	485	0.8	5.652	A
B	294	391	1046	0.281	294	0.4	4.780	A
C	264	367	1063	0.249	264	0.3	4.500	A
D	309	293	1088	0.284	309	0.4	4.616	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	596	353	1085	0.549	594	1.2	7.306	A
B	360	479	997	0.361	359	0.6	5.641	A
C	324	449	1017	0.318	323	0.5	5.180	A
D	379	358	1052	0.360	378	0.6	5.338	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	596	353	1085	0.549	596	1.2	7.363	A
B	360	480	996	0.361	360	0.6	5.658	A
C	324	450	1017	0.318	324	0.5	5.195	A
D	379	359	1051	0.360	379	0.6	5.351	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	486	289	1121	0.434	488	0.8	5.704	A
B	294	393	1045	0.281	295	0.4	4.802	A
C	264	369	1062	0.249	265	0.3	4.516	A
D	309	294	1088	0.284	310	0.4	4.632	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	407	242	1148	0.355	408	0.6	4.873	A
B	246	329	1082	0.228	247	0.3	4.314	A
C	221	308	1096	0.202	222	0.3	4.118	A
D	259	246	1115	0.232	259	0.3	4.212	A

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	6.18	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)
D2	2021 Base	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	405	100.000
B		✓	446	100.000
C		✓	368	100.000
D		✓	373	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	121	191	93
	B	144	0	44	258
	C	248	54	0	66
	D	105	220	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.41	5.64	0.7	A
B	0.46	6.32	0.9	A
C	0.42	6.45	0.7	A
D	0.42	6.35	0.7	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	305	241	1148	0.266	303	0.4	4.254	A
B	336	249	1127	0.298	334	0.4	4.531	A
C	277	371	1061	0.261	276	0.4	4.574	A
D	281	334	1065	0.264	279	0.4	4.572	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	364	289	1121	0.325	364	0.5	4.749	A
B	401	298	1099	0.365	400	0.6	5.148	A
C	331	444	1020	0.324	330	0.5	5.217	A
D	335	400	1028	0.326	335	0.5	5.188	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	446	354	1084	0.411	445	0.7	5.624	A
B	491	365	1061	0.463	490	0.9	6.287	A
C	405	544	964	0.420	404	0.7	6.421	A
D	411	490	978	0.420	410	0.7	6.322	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	446	355	1084	0.411	446	0.7	5.642	A
B	491	366	1061	0.463	491	0.9	6.316	A
C	405	545	963	0.421	405	0.7	6.449	A
D	411	491	978	0.420	411	0.7	6.349	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	364	290	1120	0.325	365	0.5	4.771	A
B	401	299	1098	0.365	402	0.6	5.177	A
C	331	446	1019	0.325	332	0.5	5.246	A
D	335	402	1027	0.326	336	0.5	5.215	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	305	243	1147	0.266	305	0.4	4.277	A
B	336	250	1126	0.298	336	0.4	4.561	A
C	277	373	1060	0.261	278	0.4	4.604	A
D	281	336	1064	0.264	281	0.4	4.604	A

Test 1 - 2025 NCC Flows, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	17.41	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	Test 1 - 2025 NCC Flows	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	692	100.000
B		✓	522	100.000
C		✓	506	100.000
D		✓	605	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	156	371	165
	B	158	0	74	290
	C	317	144	0	45
	D	117	425	63	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.86	26.94	5.4	D
B	0.64	11.21	1.8	B
C	0.63	10.78	1.6	B
D	0.76	17.40	3.1	C

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	521	472	1017	0.512	517	1.0	7.144	A
B	393	447	1015	0.387	390	0.6	5.745	A
C	381	458	1012	0.376	379	0.6	5.661	A
D	455	463	993	0.459	452	0.8	6.612	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	622	566	963	0.646	619	1.8	10.369	B
B	469	536	964	0.487	468	0.9	7.234	A
C	455	549	961	0.473	454	0.9	7.083	A
D	544	555	942	0.577	542	1.3	8.955	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	762	690	893	0.853	749	4.9	23.213	C
B	575	649	901	0.638	572	1.7	10.806	B
C	557	669	893	0.624	554	1.6	10.523	B
D	666	678	873	0.763	659	3.0	16.356	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	762	695	890	0.856	760	5.4	26.941	D
B	575	658	895	0.642	575	1.8	11.206	B
C	557	674	891	0.626	557	1.6	10.780	B
D	666	681	871	0.765	666	3.1	17.397	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	622	574	959	0.649	636	1.9	11.608	B
B	469	550	957	0.491	472	1.0	7.480	A
C	455	557	957	0.476	458	0.9	7.258	A
D	544	560	939	0.579	551	1.4	9.427	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	521	478	1014	0.514	524	1.1	7.405	A
B	393	454	1011	0.389	394	0.6	5.849	A
C	381	463	1009	0.377	382	0.6	5.754	A
D	455	468	991	0.460	458	0.9	6.782	A

Test 1 - 2025 NCC Flows, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	20.51	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	Test 1 - 2025 NCC Flows	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	612	100.000
B		✓	732	100.000
C		✓	509	100.000
D		✓	637	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	122	337	153
	B	186	0	180	366
	C	329	112	0	68
	D	182	381	74	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.72	13.95	2.5	B
B	0.88	30.41	6.4	D
C	0.67	13.10	2.0	B
D	0.81	21.35	4.0	C

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	461	424	1045	0.441	458	0.8	6.103	A
B	551	422	1029	0.535	547	1.1	7.394	A
C	383	527	974	0.394	381	0.6	6.046	A
D	480	469	990	0.484	476	0.9	6.951	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	550	508	997	0.552	548	1.2	8.001	A
B	658	505	982	0.670	655	2.0	10.895	B
C	458	631	915	0.500	456	1.0	7.823	A
D	573	562	938	0.610	570	1.5	9.719	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	674	617	934	0.721	669	2.5	13.308	B
B	806	616	919	0.877	791	5.8	25.428	D
C	560	763	840	0.667	557	1.9	12.519	B
D	701	683	870	0.806	692	3.7	19.343	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	674	624	931	0.724	673	2.5	13.949	B
B	806	621	917	0.879	803	6.4	30.410	D
C	560	774	834	0.672	560	2.0	13.097	B
D	701	689	867	0.809	700	4.0	21.355	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	550	517	991	0.555	555	1.3	8.352	A
B	658	512	978	0.673	675	2.1	12.504	B
C	458	648	905	0.505	461	1.0	8.176	A
D	573	571	933	0.614	582	1.6	10.523	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	461	429	1041	0.442	463	0.8	6.239	A
B	551	426	1026	0.537	555	1.2	7.696	A
C	383	534	969	0.395	385	0.7	6.172	A
D	480	474	987	0.486	482	1.0	7.172	A

Test 2 - ADC Flows 2037, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	76.52	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)
D5	Test 2 - ADC Flows 2037	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1022	100.000
B		✓	472	100.000
C		✓	457	100.000
D		✓	447	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	215	577	230
	B	115	0	89	268
	C	335	56	0	66
	D	101	290	56	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	1.09	165.48	56.6	F
B	0.67	14.15	2.0	B
C	0.56	9.01	1.2	A
D	0.52	8.02	1.1	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	769	301	1114	0.690	761	2.2	9.955	A
B	355	643	904	0.393	353	0.6	6.500	A
C	344	457	1013	0.340	342	0.5	5.353	A
D	337	379	1040	0.323	335	0.5	5.087	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	919	361	1080	0.850	907	5.0	19.617	C
B	424	767	834	0.509	423	1.0	8.724	A
C	411	547	962	0.427	410	0.7	6.510	A
D	402	454	998	0.402	401	0.7	6.019	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1125	441	1035	1.088	1015	32.6	79.858	F
B	520	863	780	0.666	516	1.9	13.468	B
C	503	647	906	0.555	501	1.2	8.853	A
D	492	555	942	0.522	491	1.1	7.942	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1125	443	1034	1.088	1029	56.6	165.478	F
B	520	875	773	0.672	519	2.0	14.155	B
C	503	653	903	0.558	503	1.2	9.008	A
D	492	557	941	0.523	492	1.1	8.023	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	919	363	1079	0.851	1060	21.2	136.145	F
B	424	888	765	0.554	427	1.3	10.731	B
C	411	585	941	0.437	413	0.8	6.841	A
D	402	457	997	0.403	403	0.7	6.085	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	769	303	1113	0.691	845	2.3	17.243	C
B	355	709	866	0.410	358	0.7	7.105	A
C	344	480	1000	0.344	345	0.5	5.509	A
D	337	382	1038	0.324	337	0.5	5.141	A

Test 2 - ADC Flows 2037, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	21.18	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	Test 2 - ADC Flows 2037	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	650	100.000
B		✓	584	100.000
C		✓	696	100.000
D		✓	541	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	159	347	144
	B	203	0	63	318
	C	532	83	0	81
	D	186	295	60	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.71	12.12	2.4	B
B	0.70	12.74	2.2	B
C	0.89	35.48	7.1	E
D	0.79	22.76	3.6	C

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	489	327	1099	0.445	486	0.8	5.839	A
B	440	412	1035	0.425	437	0.7	5.993	A
C	524	497	990	0.529	520	1.1	7.582	A
D	407	611	911	0.447	404	0.8	7.064	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	584	392	1063	0.550	583	1.2	7.476	A
B	525	494	988	0.531	523	1.1	7.718	A
C	626	596	935	0.669	622	2.0	11.401	B
D	486	732	843	0.577	484	1.3	9.972	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	716	475	1015	0.705	711	2.3	11.672	B
B	643	602	927	0.694	639	2.2	12.313	B
C	766	727	861	0.890	749	6.3	28.661	D
D	596	884	758	0.786	588	3.3	20.231	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	716	481	1012	0.707	715	2.4	12.120	B
B	643	606	925	0.695	643	2.2	12.743	B
C	766	732	858	0.893	763	7.1	35.480	E
D	596	898	750	0.794	595	3.6	22.761	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	584	402	1057	0.553	589	1.3	7.757	A
B	525	500	985	0.533	529	1.2	7.971	A
C	626	603	931	0.672	645	2.1	13.413	B
D	486	754	831	0.586	495	1.5	10.985	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	489	332	1097	0.446	491	0.8	5.960	A
B	440	416	1032	0.426	441	0.8	6.112	A
C	524	503	987	0.531	528	1.2	7.904	A
D	407	620	906	0.450	410	0.8	7.295	A

Test 3 - Tetra Tech Flows 2038, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	91.29	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)
D7	Test 3 - Tetra Tech Flows 2038	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1057	100.000
B		✓	465	100.000
C		✓	406	100.000
D		✓	387	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	398	525	134
	B	194	0	42	229
	C	299	53	0	54
	D	63	279	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	1.11	189.99	67.4	F
B	0.59	10.03	1.4	B
C	0.48	7.40	0.9	A
D	0.47	7.34	0.9	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	796	282	1125	0.707	786	2.3	10.369	B
B	350	524	971	0.360	348	0.6	5.754	A
C	306	416	1036	0.295	304	0.4	4.909	A
D	291	409	1024	0.285	290	0.4	4.896	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	950	338	1093	0.869	937	5.6	21.395	C
B	418	625	914	0.457	417	0.8	7.220	A
C	365	498	990	0.369	364	0.6	5.750	A
D	348	490	978	0.356	347	0.5	5.701	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1164	414	1050	1.108	1034	38.1	88.878	F
B	512	694	875	0.585	510	1.4	9.796	A
C	447	595	935	0.478	446	0.9	7.334	A
D	426	599	917	0.465	425	0.9	7.294	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1164	415	1049	1.109	1046	67.4	189.987	F
B	512	702	871	0.588	512	1.4	10.028	B
C	447	598	933	0.479	447	0.9	7.401	A
D	426	601	916	0.465	426	0.9	7.345	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	950	340	1092	0.870	1076	35.9	175.161	F
B	418	712	865	0.483	420	1.0	8.116	A
C	365	518	978	0.373	366	0.6	5.895	A
D	348	493	977	0.356	349	0.6	5.749	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	796	284	1124	0.708	929	2.6	31.973	D
B	350	613	921	0.380	351	0.6	6.338	A
C	306	437	1024	0.299	306	0.4	5.024	A
D	291	412	1022	0.285	292	0.4	4.937	A

Test 3 - Tetra Tech Flows 2038, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	14.24	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	Test 3 - Tetra Tech Flows 2038	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	653	100.000
B		✓	711	100.000
C		✓	507	100.000
D		✓	405	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	215	345	93
	B	350	0	57	304
	C	392	49	0	66
	D	105	252	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.67	10.33	2.0	B
B	0.81	19.46	4.1	C
C	0.69	14.37	2.2	B
D	0.58	11.24	1.4	B

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	492	261	1137	0.432	489	0.8	5.526	A
B	535	364	1062	0.504	531	1.0	6.735	A
C	382	558	956	0.399	379	0.7	6.215	A
D	305	591	922	0.331	303	0.5	5.783	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	587	313	1108	0.530	586	1.1	6.877	A
B	639	436	1021	0.626	637	1.6	9.301	A
C	456	669	894	0.510	454	1.0	8.168	A
D	364	709	856	0.425	363	0.7	7.287	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	719	382	1068	0.673	715	2.0	10.100	B
B	783	532	966	0.810	774	3.9	17.903	C
C	558	814	812	0.687	554	2.1	13.710	B
D	446	863	770	0.579	443	1.3	10.943	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	719	384	1067	0.674	719	2.0	10.326	B
B	783	535	965	0.811	782	4.1	19.457	C
C	558	822	808	0.691	558	2.2	14.371	B
D	446	870	766	0.582	446	1.4	11.240	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	587	316	1106	0.531	591	1.1	7.032	A
B	639	440	1019	0.627	649	1.7	9.947	A
C	456	681	887	0.514	460	1.1	8.517	A
D	364	720	850	0.428	367	0.8	7.482	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	492	264	1136	0.433	493	0.8	5.618	A
B	535	367	1060	0.505	538	1.0	6.931	A
C	382	565	952	0.401	383	0.7	6.347	A
D	305	598	918	0.332	306	0.5	5.896	A

Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	64.80	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)
D9	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1011	100.000
B		✓	456	100.000
C		✓	391	100.000
D		✓	387	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	378	499	134
	B	185	0	42	229
	C	284	53	0	54
	D	63	279	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	1.06	134.00	44.7	F
B	0.58	9.76	1.3	A
C	0.46	7.12	0.8	A
D	0.46	7.13	0.8	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	761	282	1125	0.677	753	2.0	9.485	A
B	343	505	982	0.350	341	0.5	5.601	A
C	294	410	1039	0.283	293	0.4	4.812	A
D	291	391	1034	0.282	290	0.4	4.830	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	909	338	1093	0.831	899	4.4	17.725	C
B	410	603	926	0.443	409	0.8	6.942	A
C	352	490	994	0.354	351	0.5	5.594	A
D	348	468	990	0.351	347	0.5	5.594	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1113	414	1050	1.060	1023	26.9	68.262	F
B	502	690	877	0.572	500	1.3	9.485	A
C	430	590	938	0.459	429	0.8	7.058	A
D	426	573	932	0.457	425	0.8	7.090	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1113	415	1049	1.061	1042	44.7	133.998	F
B	502	702	871	0.577	502	1.3	9.757	A
C	430	594	936	0.460	430	0.8	7.122	A
D	426	575	931	0.458	426	0.8	7.130	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	909	340	1092	0.832	1060	7.0	91.356	F
B	410	704	869	0.472	412	0.9	7.896	A
C	352	514	981	0.358	353	0.6	5.744	A
D	348	471	989	0.352	349	0.5	5.636	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	761	284	1124	0.677	780	2.2	11.028	B
B	343	523	972	0.353	345	0.6	5.752	A
C	294	416	1036	0.284	295	0.4	4.864	A
D	291	394	1032	0.282	292	0.4	4.869	A

Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	12.72	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	625	100.000
B		✓	694	100.000
C		✓	488	100.000
D		✓	405	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	204	328	93
	B	333	0	57	304
	C	373	49	0	66
	D	105	252	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.64	9.49	1.8	A
B	0.78	16.87	3.5	C
C	0.66	12.79	1.9	B
D	0.57	10.52	1.3	B

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	471	261	1137	0.414	468	0.7	5.356	A
B	522	351	1069	0.489	519	0.9	6.497	A
C	367	546	963	0.382	365	0.6	5.997	A
D	305	564	937	0.326	303	0.5	5.665	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	562	313	1108	0.507	561	1.0	6.561	A
B	624	421	1030	0.606	622	1.5	8.773	A
C	439	654	902	0.486	437	0.9	7.727	A
D	364	677	874	0.417	363	0.7	7.034	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	688	382	1068	0.644	685	1.8	9.328	A
B	764	514	977	0.782	757	3.3	15.849	C
C	537	797	822	0.654	534	1.8	12.344	B
D	446	825	791	0.564	444	1.3	10.292	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	688	384	1067	0.645	688	1.8	9.492	A
B	764	516	976	0.783	764	3.5	16.866	C
C	537	803	818	0.657	537	1.9	12.789	B
D	446	831	788	0.566	446	1.3	10.519	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	562	316	1106	0.508	565	1.0	6.690	A
B	624	424	1028	0.607	631	1.6	9.244	A
C	439	664	897	0.489	442	1.0	7.984	A
D	364	685	869	0.419	366	0.7	7.194	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	471	264	1136	0.414	472	0.7	5.433	A
B	522	354	1067	0.490	525	1.0	6.667	A
C	367	552	959	0.383	369	0.6	6.111	A
D	305	571	933	0.327	306	0.5	5.750	A

Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	43.38	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	965	100.000
B		✓	446	100.000
C		✓	376	100.000
D		✓	387	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	358	473	134
	B	175	0	42	229
	C	269	53	0	54
	D	63	279	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	1.01	87.94	26.4	F
B	0.56	9.40	1.3	A
C	0.44	6.85	0.8	A
D	0.45	6.92	0.8	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	727	282	1125	0.646	719	1.8	8.732	A
B	336	486	993	0.338	334	0.5	5.447	A
C	283	402	1044	0.271	282	0.4	4.716	A
D	291	372	1044	0.279	290	0.4	4.763	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	868	338	1093	0.794	860	3.6	15.010	C
B	401	582	939	0.427	400	0.7	6.672	A
C	338	482	999	0.338	337	0.5	5.438	A
D	348	446	1003	0.347	347	0.5	5.488	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1062	414	1050	1.012	1005	18.0	51.161	F
B	491	682	882	0.557	489	1.2	9.112	A
C	414	583	942	0.439	413	0.8	6.788	A
D	426	546	947	0.450	425	0.8	6.878	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1062	415	1049	1.012	1029	26.4	87.940	F
B	491	697	874	0.562	491	1.3	9.401	A
C	414	588	939	0.441	414	0.8	6.851	A
D	426	547	946	0.450	426	0.8	6.919	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	868	340	1092	0.794	956	4.3	37.339	E
B	401	642	905	0.443	403	0.8	7.200	A
C	338	498	990	0.341	339	0.5	5.540	A
D	348	448	1001	0.347	349	0.5	5.526	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	727	284	1124	0.646	736	1.9	9.509	A
B	336	497	987	0.340	337	0.5	5.553	A
C	283	407	1041	0.272	284	0.4	4.758	A
D	291	375	1042	0.280	292	0.4	4.800	A

Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	11.46	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	598	100.000
B		✓	676	100.000
C		✓	468	100.000
D		✓	405	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	194	311	93
	B	315	0	57	304
	C	353	49	0	66
	D	105	252	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.62	8.80	1.6	A
B	0.75	14.80	3.0	B
C	0.62	11.45	1.6	B
D	0.55	9.85	1.2	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	450	261	1137	0.396	448	0.6	5.201	A
B	509	338	1076	0.473	505	0.9	6.267	A
C	352	532	970	0.363	350	0.6	5.783	A
D	305	536	952	0.320	303	0.5	5.529	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	538	313	1108	0.485	536	0.9	6.291	A
B	608	405	1038	0.585	606	1.4	8.283	A
C	421	638	911	0.462	420	0.8	7.310	A
D	364	643	893	0.408	363	0.7	6.785	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	658	382	1068	0.617	656	1.6	8.681	A
B	744	496	987	0.754	738	2.9	14.122	B
C	515	778	832	0.619	512	1.6	11.151	B
D	446	784	814	0.548	444	1.2	9.677	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	658	384	1067	0.617	658	1.6	8.800	A
B	744	498	986	0.755	744	3.0	14.798	B
C	515	784	829	0.621	515	1.6	11.450	B
D	446	789	811	0.550	446	1.2	9.852	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	538	316	1106	0.486	540	1.0	6.390	A
B	608	408	1037	0.586	614	1.4	8.631	A
C	421	646	906	0.464	424	0.9	7.502	A
D	364	650	889	0.410	366	0.7	6.914	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	450	264	1136	0.396	451	0.7	5.269	A
B	509	341	1075	0.474	511	0.9	6.410	A
C	352	538	967	0.364	354	0.6	5.880	A
D	305	542	949	0.321	306	0.5	5.602	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

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

Filename: CANNON ROUNDABOUT_TT Geometry Update_Flat Profile.j9
Path: N:\Projects\B028000 - Worksop DPD TA\06 - Calculations\Junctions 9\Cannon Crossroads
Report generation date: 04/01/2023 12:29:41

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2021 Base									
Arm A	D1	1.0	6.40	0.49	A	D2	0.6	5.16	0.37	A
Arm B		0.5	5.19	0.32	A		0.7	5.68	0.41	A
Arm C		0.4	4.83	0.28	A		0.6	5.77	0.37	A
Arm D		0.5	4.96	0.32	A		0.6	5.72	0.37	A
	Test 1 - 2025 NCC Flows									
Arm A	D3	2.9	15.37	0.75	C	D4	1.7	10.26	0.64	B
Arm B		1.3	8.85	0.56	A		3.3	16.59	0.77	C
Arm C		1.2	8.59	0.55	A		1.4	9.88	0.58	A
Arm D		2.0	11.95	0.67	B		2.4	13.59	0.71	B
	Test 2 - ADC Flows 2037									
Arm A	D5	20.7	76.15	0.97	F	D6	1.7	9.32	0.63	A
Arm B		1.5	11.64	0.60	B		1.6	9.68	0.61	A
Arm C		1.0	7.68	0.49	A		3.4	17.98	0.78	C
Arm D		0.9	6.89	0.46	A		2.1	14.16	0.68	B
	Test 3 - Tetra Tech Flows 2038									
Arm A	D7	30.2	106.32	0.99	F	D8	1.5	8.29	0.60	A
Arm B		1.1	8.84	0.53	A		2.5	12.77	0.72	B
Arm C		0.7	6.53	0.42	A		1.5	10.50	0.60	B
Arm D		0.7	6.43	0.41	A		1.0	8.89	0.50	A
	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%									
Arm A	D9	14.4	53.48	0.94	F	D10	1.3	7.79	0.57	A
Arm B		1.1	8.40	0.52	A		2.2	11.67	0.69	B
Arm C		0.7	6.31	0.41	A		1.3	9.69	0.57	A
Arm D		0.7	6.28	0.40	A		0.9	8.47	0.49	A
	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%									
Arm A	D11	8.6	33.06	0.90	D	D12	1.2	7.36	0.55	A
Arm B		1.0	7.95	0.50	A		2.0	10.71	0.67	B
Arm C		0.6	6.09	0.39	A		1.2	8.97	0.54	A
Arm D		0.7	6.13	0.40	A		0.9	8.06	0.48	A

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

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

File summary

File Description

Title	CANNON CROSSROADS
Location	WORKSOP
Site number	
Date	28/06/2016
Version	1.0
Status	(new file)
Identifier	
Client	NCC HIGHWAYS
Jobnumber	
Enumerator	CLEGGETT-PC\matthew
Description	CANNON CROSSROADS MITIGATION SCENARIO TEST - CONVERSION FROM SIGNALS TO ROUNDABOUT

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2021 Base	AM	FLAT	07:45	09:15	90	15
D2	2021 Base	PM	FLAT	16:30	18:00	90	15
D3	Test 1 - 2025 NCC Flows	AM	FLAT	07:45	09:15	90	15
D4	Test 1 - 2025 NCC Flows	PM	FLAT	16:30	18:00	90	15
D5	Test 2 - ADC Flows 2037	AM	FLAT	07:45	09:15	90	15
D6	Test 2 - ADC Flows 2037	PM	FLAT	16:30	18:00	90	15
D7	Test 3 - Tetra Tech Flows 2038	AM	FLAT	07:45	09:15	90	15
D8	Test 3 - Tetra Tech Flows 2038	PM	FLAT	16:30	18:00	90	15
D9	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	AM	FLAT	07:45	09:15	90	15
D10	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	PM	FLAT	16:30	18:00	90	15
D11	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	AM	FLAT	07:45	09:15	90	15
D12	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	PM	FLAT	16:30	18:00	90	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	5.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A60 Carlton Rd North	
B	B6041 Thievesdale Lane	
C	A60 Carlton Rd South	
D	B6041 Raymoth Lane	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.65	4.50	10.0	20.0	28.0	35.0	
B	3.50	4.50	10.0	20.0	28.0	35.0	
C	3.65	4.50	10.0	16.0	28.0	35.0	
D	3.50	4.50	10.0	16.0	28.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.569	1286
B	0.566	1268
C	0.562	1270
D	0.559	1252

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 period length (min)	Time segment length (min)
D1	2021 Base	AM	FLAT	07:45	09:15	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	541	100.000
B		✓	327	100.000
C		✓	294	100.000
D		✓	344	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	150	257	134
	B	86	0	52	189
	C	200	40	0	54
	D	63	236	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.49	6.40	1.0	A
B	0.32	5.19	0.5	A
C	0.28	4.83	0.4	A
D	0.32	4.96	0.5	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	541	319	1104	0.490	537	0.9	6.311	A
B	327	433	1023	0.320	325	0.5	5.147	A
C	294	406	1041	0.282	292	0.4	4.798	A
D	344	324	1071	0.321	342	0.5	4.927	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	541	321	1103	0.490	541	1.0	6.405	A
B	327	436	1021	0.320	327	0.5	5.186	A
C	294	409	1040	0.283	294	0.4	4.826	A
D	344	326	1070	0.322	344	0.5	4.959	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	541	321	1103	0.490	541	1.0	6.405	A
B	327	436	1021	0.320	327	0.5	5.186	A
C	294	409	1040	0.283	294	0.4	4.826	A
D	344	326	1070	0.322	344	0.5	4.959	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	541	321	1103	0.490	541	1.0	6.405	A
B	327	436	1021	0.320	327	0.5	5.186	A
C	294	409	1040	0.283	294	0.4	4.826	A
D	344	326	1070	0.322	344	0.5	4.959	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	541	321	1103	0.490	541	1.0	6.405	A
B	327	436	1021	0.320	327	0.5	5.186	A
C	294	409	1040	0.283	294	0.4	4.826	A
D	344	326	1070	0.322	344	0.5	4.959	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	541	321	1103	0.490	541	1.0	6.405	A
B	327	436	1021	0.320	327	0.5	5.186	A
C	294	409	1040	0.283	294	0.4	4.826	A
D	344	326	1070	0.322	344	0.5	4.959	A

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	5.58	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 period length (min)	Time segment length (min)
D2	2021 Base	PM	FLAT	16:30	18:00	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	405	100.000
B		✓	446	100.000
C		✓	368	100.000
D		✓	373	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	121	191	93
	B	144	0	44	258
	C	248	54	0	66
	D	105	220	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.37	5.16	0.6	A
B	0.41	5.68	0.7	A
C	0.37	5.77	0.6	A
D	0.37	5.72	0.6	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	405	320	1104	0.367	403	0.6	5.120	A
B	446	330	1081	0.413	443	0.7	5.623	A
C	368	492	993	0.371	366	0.6	5.717	A
D	373	443	1004	0.371	371	0.6	5.661	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	405	322	1102	0.367	405	0.6	5.161	A
B	446	332	1080	0.413	446	0.7	5.678	A
C	368	495	991	0.371	368	0.6	5.773	A
D	373	446	1003	0.372	373	0.6	5.715	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	405	322	1102	0.367	405	0.6	5.161	A
B	446	332	1080	0.413	446	0.7	5.678	A
C	368	495	991	0.371	368	0.6	5.773	A
D	373	446	1003	0.372	373	0.6	5.715	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	405	322	1102	0.367	405	0.6	5.161	A
B	446	332	1080	0.413	446	0.7	5.678	A
C	368	495	991	0.371	368	0.6	5.773	A
D	373	446	1003	0.372	373	0.6	5.715	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	405	322	1102	0.367	405	0.6	5.161	A
B	446	332	1080	0.413	446	0.7	5.678	A
C	368	495	991	0.371	368	0.6	5.774	A
D	373	446	1003	0.372	373	0.6	5.715	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	405	322	1102	0.367	405	0.6	5.161	A
B	446	332	1080	0.413	446	0.7	5.678	A
C	368	495	991	0.371	368	0.6	5.774	A
D	373	446	1003	0.372	373	0.6	5.715	A

Test 1 - 2025 NCC Flows, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	11.54	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D3	Test 1 - 2025 NCC Flows	AM	FLAT	07:45	09:15	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	692	100.000
B		✓	522	100.000
C		✓	506	100.000
D		✓	605	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	156	371	165
	B	158	0	74	290
	C	317	144	0	45
	D	117	425	63	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.75	15.37	2.9	C
B	0.56	8.85	1.3	A
C	0.55	8.59	1.2	A
D	0.67	11.95	2.0	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	624	930	0.744	681	2.7	13.902	B
B	522	590	934	0.559	517	1.2	8.535	A
C	506	606	929	0.545	501	1.2	8.332	A
D	605	613	909	0.665	597	1.9	11.280	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	632	926	0.747	692	2.9	15.281	C
B	522	599	929	0.562	522	1.3	8.836	A
C	506	613	925	0.547	506	1.2	8.582	A
D	605	619	906	0.668	605	2.0	11.926	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	632	926	0.747	692	2.9	15.340	C
B	522	599	929	0.562	522	1.3	8.844	A
C	506	613	925	0.547	506	1.2	8.587	A
D	605	619	906	0.668	605	2.0	11.942	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	632	926	0.747	692	2.9	15.357	C
B	522	599	929	0.562	522	1.3	8.845	A
C	506	613	925	0.547	506	1.2	8.589	A
D	605	619	906	0.668	605	2.0	11.947	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	632	926	0.747	692	2.9	15.367	C
B	522	599	929	0.562	522	1.3	8.847	A
C	506	613	925	0.547	506	1.2	8.589	A
D	605	619	906	0.668	605	2.0	11.949	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	632	926	0.747	692	2.9	15.371	C
B	522	599	929	0.562	522	1.3	8.847	A
C	506	613	925	0.547	506	1.2	8.589	A
D	605	619	906	0.668	605	2.0	11.949	B

Test 1 - 2025 NCC Flows, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	12.89	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D4	Test 1 - 2025 NCC Flows	PM	FLAT	16:30	18:00	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	612	100.000
B		✓	732	100.000
C		✓	509	100.000
D		✓	637	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	122	337	153
	B	186	0	180	366
	C	329	112	0	68
	D	182	381	74	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.64	10.26	1.7	B
B	0.77	16.59	3.3	C
C	0.58	9.88	1.4	A
D	0.71	13.59	2.4	B

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	612	559	967	0.633	605	1.7	9.776	A
B	732	558	952	0.769	720	3.1	14.782	B
C	509	694	880	0.579	504	1.3	9.449	A
D	637	619	906	0.703	628	2.3	12.574	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	612	567	963	0.635	612	1.7	10.240	B
B	732	564	949	0.772	731	3.2	16.461	C
C	509	705	874	0.583	509	1.4	9.864	A
D	637	627	902	0.706	637	2.3	13.541	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	612	567	963	0.636	612	1.7	10.251	B
B	732	564	949	0.772	732	3.3	16.541	C
C	509	705	873	0.583	509	1.4	9.874	A
D	637	627	902	0.706	637	2.4	13.575	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	612	567	963	0.636	612	1.7	10.253	B
B	732	564	949	0.772	732	3.3	16.566	C
C	509	705	873	0.583	509	1.4	9.877	A
D	637	627	902	0.706	637	2.4	13.584	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	612	567	963	0.636	612	1.7	10.256	B
B	732	564	949	0.772	732	3.3	16.580	C
C	509	705	873	0.583	509	1.4	9.877	A
D	637	627	902	0.706	637	2.4	13.590	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	612	567	963	0.636	612	1.7	10.256	B
B	732	564	949	0.772	732	3.3	16.589	C
C	509	705	873	0.583	509	1.4	9.879	A
D	637	627	902	0.706	637	2.4	13.593	B

Test 2 - ADC Flows 2037, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	37.49	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D5	Test 2 - ADC Flows 2037	AM	FLAT	07:45	09:15	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1022	100.000
B		✓	472	100.000
C		✓	457	100.000
D		✓	447	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	215	577	230
	B	115	0	89	268
	C	335	56	0	66
	D	101	290	56	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.97	76.15	20.7	F
B	0.60	11.64	1.5	B
C	0.49	7.68	1.0	A
D	0.46	6.89	0.9	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1022	399	1059	0.965	975	11.7	33.511	D
B	472	826	801	0.590	466	1.4	10.604	B
C	457	598	934	0.490	453	0.9	7.438	A
D	447	501	972	0.460	444	0.8	6.775	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1022	402	1057	0.967	1008	15.1	55.844	F
B	472	852	786	0.601	472	1.5	11.448	B
C	457	610	927	0.493	457	1.0	7.656	A
D	447	506	969	0.461	447	0.8	6.891	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1022	402	1057	0.967	1014	17.2	63.989	F
B	472	856	783	0.603	472	1.5	11.553	B
C	457	611	926	0.493	457	1.0	7.672	A
D	447	506	969	0.461	447	0.9	6.892	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1022	402	1057	0.967	1016	18.7	69.286	F
B	472	858	782	0.603	472	1.5	11.599	B
C	457	612	926	0.494	457	1.0	7.677	A
D	447	506	969	0.461	447	0.9	6.892	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1022	402	1057	0.967	1018	19.8	73.153	F
B	472	859	782	0.604	472	1.5	11.625	B
C	457	612	926	0.494	457	1.0	7.681	A
D	447	506	969	0.461	447	0.9	6.892	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1022	402	1057	0.967	1018	20.7	76.146	F
B	472	860	781	0.604	472	1.5	11.641	B
C	457	612	926	0.494	457	1.0	7.683	A
D	447	506	969	0.461	447	0.9	6.892	A

Test 2 - ADC Flows 2037, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	12.90	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D6	Test 2 - ADC Flows 2037	PM	FLAT	16:30	18:00	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	650	100.000
B		✓	584	100.000
C		✓	696	100.000
D		✓	541	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	159	347	144
	B	203	0	63	318
	C	532	83	0	81
	D	186	295	60	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.63	9.32	1.7	A
B	0.61	9.68	1.6	A
C	0.78	17.98	3.4	C
D	0.68	14.16	2.1	B

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	650	431	1040	0.625	644	1.6	8.937	A
B	584	545	959	0.609	578	1.5	9.300	A
C	696	658	900	0.774	683	3.2	15.835	C
D	541	805	802	0.674	533	2.0	13.016	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	650	438	1037	0.627	650	1.7	9.304	A
B	584	551	956	0.611	584	1.5	9.665	A
C	696	665	896	0.777	695	3.3	17.812	C
D	541	817	795	0.680	541	2.1	14.096	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	650	438	1036	0.627	650	1.7	9.312	A
B	584	551	956	0.611	584	1.6	9.672	A
C	696	665	896	0.777	696	3.4	17.915	C
D	541	818	795	0.680	541	2.1	14.143	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	650	438	1036	0.627	650	1.7	9.314	A
B	584	551	956	0.611	584	1.6	9.674	A
C	696	665	896	0.777	696	3.4	17.950	C
D	541	818	795	0.680	541	2.1	14.157	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	650	438	1036	0.627	650	1.7	9.315	A
B	584	551	956	0.611	584	1.6	9.674	A
C	696	665	896	0.777	696	3.4	17.966	C
D	541	818	795	0.681	541	2.1	14.161	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	650	438	1036	0.627	650	1.7	9.317	A
B	584	551	956	0.611	584	1.6	9.676	A
C	696	665	896	0.777	696	3.4	17.977	C
D	541	818	795	0.681	541	2.1	14.164	B

Test 3 - Tetra Tech Flows 2038, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	52.54	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 period length (min)	Time segment length (min)
D7	Test 3 - Tetra Tech Flows 2038	AM	FLAT	07:45	09:15	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1057	100.000
B		✓	465	100.000
C		✓	406	100.000
D		✓	387	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	398	525	134
	B	194	0	42	229
	C	299	53	0	54
	D	63	279	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.99	106.32	30.2	F
B	0.53	8.84	1.1	A
C	0.42	6.53	0.7	A
D	0.41	6.43	0.7	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1057	374	1073	0.985	1001	14.0	37.302	E
B	465	669	889	0.523	461	1.1	8.318	A
C	406	546	963	0.422	403	0.7	6.402	A
D	387	542	949	0.408	384	0.7	6.341	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1057	377	1071	0.987	1036	19.2	67.022	F
B	465	691	877	0.530	465	1.1	8.732	A
C	406	554	958	0.424	406	0.7	6.519	A
D	387	546	947	0.409	387	0.7	6.428	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1057	377	1071	0.987	1042	22.9	80.741	F
B	465	695	875	0.532	465	1.1	8.784	A
C	406	555	958	0.424	406	0.7	6.525	A
D	387	546	947	0.409	387	0.7	6.428	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1057	377	1071	0.987	1045	25.8	90.970	F
B	465	697	874	0.532	465	1.1	8.810	A
C	406	556	957	0.424	406	0.7	6.528	A
D	387	546	947	0.409	387	0.7	6.428	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1057	377	1071	0.987	1047	28.2	99.277	F
B	465	698	873	0.533	465	1.1	8.824	A
C	406	556	957	0.424	406	0.7	6.529	A
D	387	546	947	0.409	387	0.7	6.428	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1057	377	1071	0.987	1049	30.2	106.318	F
B	465	699	872	0.533	465	1.1	8.837	A
C	406	556	957	0.424	406	0.7	6.531	A
D	387	546	947	0.409	387	0.7	6.428	A

Test 3 - Tetra Tech Flows 2038, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	10.29	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D8	Test 3 - Tetra Tech Flows 2038	PM	FLAT	16:30	18:00	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	653	100.000
B		✓	711	100.000
C		✓	507	100.000
D		✓	405	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	215	345	93
	B	350	0	57	304
	C	392	49	0	66
	D	105	252	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.60	8.29	1.5	A
B	0.72	12.77	2.5	B
C	0.60	10.50	1.5	B
D	0.50	8.89	1.0	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	653	346	1089	0.600	647	1.5	8.045	A
B	711	482	995	0.714	701	2.4	11.899	B
C	507	737	855	0.593	501	1.4	10.023	B
D	405	781	815	0.497	401	1.0	8.611	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	653	349	1087	0.601	653	1.5	8.288	A
B	711	486	993	0.716	711	2.5	12.731	B
C	507	747	850	0.597	507	1.5	10.486	B
D	405	791	810	0.500	405	1.0	8.879	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	653	349	1087	0.601	653	1.5	8.292	A
B	711	486	993	0.716	711	2.5	12.755	B
C	507	747	850	0.597	507	1.5	10.497	B
D	405	791	810	0.500	405	1.0	8.884	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	653	349	1087	0.601	653	1.5	8.292	A
B	711	486	993	0.716	711	2.5	12.763	B
C	507	747	850	0.597	507	1.5	10.500	B
D	405	791	810	0.500	405	1.0	8.887	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	653	349	1087	0.601	653	1.5	8.294	A
B	711	486	993	0.716	711	2.5	12.765	B
C	507	747	850	0.597	507	1.5	10.500	B
D	405	791	810	0.500	405	1.0	8.887	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	653	349	1087	0.601	653	1.5	8.294	A
B	711	486	993	0.716	711	2.5	12.768	B
C	507	747	850	0.597	507	1.5	10.501	B
D	405	791	810	0.500	405	1.0	8.887	A

Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	27.97	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 period length (min)	Time segment length (min)
D9	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	AM	FLAT	07:45	09:15	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1011	100.000
B		✓	456	100.000
C		✓	391	100.000
D		✓	387	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	378	499	134
	B	185	0	42	229
	C	284	53	0	54
	D	63	279	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.94	53.48	14.4	F
B	0.52	8.40	1.1	A
C	0.41	6.31	0.7	A
D	0.40	6.28	0.7	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1011	374	1073	0.943	972	9.7	29.220	D
B	456	653	898	0.508	452	1.0	8.000	A
C	391	539	967	0.405	388	0.7	6.197	A
D	387	518	963	0.402	384	0.7	6.198	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1011	377	1071	0.944	1003	11.8	44.596	E
B	456	673	887	0.514	456	1.0	8.344	A
C	391	547	962	0.406	391	0.7	6.300	A
D	387	522	960	0.403	387	0.7	6.278	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1011	377	1071	0.944	1007	12.8	48.681	E
B	456	675	886	0.515	456	1.1	8.375	A
C	391	547	962	0.406	391	0.7	6.304	A
D	387	522	960	0.403	387	0.7	6.278	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1011	377	1071	0.944	1008	13.5	50.950	F
B	456	676	885	0.515	456	1.1	8.388	A
C	391	548	962	0.407	391	0.7	6.305	A
D	387	522	960	0.403	387	0.7	6.278	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1011	377	1071	0.944	1009	14.0	52.429	F
B	456	677	885	0.515	456	1.1	8.394	A
C	391	548	962	0.407	391	0.7	6.306	A
D	387	522	960	0.403	387	0.7	6.278	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1011	377	1071	0.944	1010	14.4	53.477	F
B	456	677	885	0.515	456	1.1	8.397	A
C	391	548	962	0.407	391	0.7	6.307	A
D	387	522	960	0.403	387	0.7	6.278	A

Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	9.55	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 period length (min)	Time segment length (min)
D10	Test 4 - Tetra Tech Flows 2038 - A60 Reduced 5%	PM	FLAT	16:30	18:00	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	625	100.000
B		✓	694	100.000
C		✓	488	100.000
D		✓	405	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	204	328	93
	B	333	0	57	304
	C	373	49	0	66
	D	105	252	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.57	7.79	1.3	A
B	0.69	11.67	2.2	B
C	0.57	9.69	1.3	A
D	0.49	8.47	0.9	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	346	1089	0.574	620	1.3	7.592	A
B	694	465	1005	0.691	685	2.1	11.001	B
C	488	721	864	0.565	483	1.3	9.325	A
D	405	746	835	0.485	401	0.9	8.234	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	349	1087	0.575	625	1.3	7.787	A
B	694	469	1002	0.692	694	2.2	11.644	B
C	488	730	859	0.568	488	1.3	9.684	A
D	405	755	830	0.488	405	0.9	8.461	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	349	1087	0.575	625	1.3	7.789	A
B	694	469	1002	0.692	694	2.2	11.659	B
C	488	730	859	0.568	488	1.3	9.690	A
D	405	755	830	0.488	405	0.9	8.464	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	349	1087	0.575	625	1.3	7.791	A
B	694	469	1002	0.692	694	2.2	11.669	B
C	488	730	859	0.568	488	1.3	9.693	A
D	405	755	830	0.488	405	0.9	8.466	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	349	1087	0.575	625	1.3	7.791	A
B	694	469	1002	0.692	694	2.2	11.668	B
C	488	730	859	0.568	488	1.3	9.695	A
D	405	755	830	0.488	405	0.9	8.466	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	349	1087	0.575	625	1.3	7.791	A
B	694	469	1002	0.692	694	2.2	11.668	B
C	488	730	859	0.568	488	1.3	9.695	A
D	405	755	830	0.488	405	0.9	8.467	A

Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	18.45	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D11	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	AM	FLAT	07:45	09:15	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	965	100.000
B		✓	446	100.000
C		✓	376	100.000
D		✓	387	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	358	473	134
	B	175	0	42	229
	C	269	53	0	54
	D	63	279	45	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.90	33.06	8.6	D
B	0.50	7.95	1.0	A
C	0.39	6.09	0.6	A
D	0.40	6.13	0.7	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	965	374	1073	0.900	937	6.9	23.239	C
B	446	634	909	0.491	442	0.9	7.653	A
C	376	531	971	0.387	374	0.6	5.996	A
D	387	493	976	0.396	384	0.6	6.055	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	965	377	1071	0.901	962	7.8	30.949	D
B	446	650	900	0.496	446	1.0	7.923	A
C	376	537	968	0.389	376	0.6	6.085	A
D	387	497	974	0.397	387	0.7	6.128	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	965	377	1071	0.901	964	8.1	32.081	D
B	446	651	899	0.496	446	1.0	7.938	A
C	376	538	967	0.389	376	0.6	6.086	A
D	387	497	974	0.397	387	0.7	6.129	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	965	377	1071	0.901	964	8.4	32.584	D
B	446	651	899	0.496	446	1.0	7.943	A
C	376	538	967	0.389	376	0.6	6.087	A
D	387	497	974	0.397	387	0.7	6.129	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	965	377	1071	0.901	964	8.5	32.871	D
B	446	652	899	0.496	446	1.0	7.945	A
C	376	538	967	0.389	376	0.6	6.087	A
D	387	497	974	0.397	387	0.7	6.129	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	965	377	1071	0.901	965	8.6	33.058	D
B	446	652	899	0.496	446	1.0	7.946	A
C	376	538	967	0.389	376	0.6	6.087	A
D	387	497	974	0.397	387	0.7	6.129	A

Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	8.90	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 period length (min)	Time segment length (min)
D12	Test 5 - Tetra Tech Flows 2038 - A60 Reduced 10%	PM	FLAT	16:30	18:00	90	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	598	100.000
B		✓	676	100.000
C		✓	468	100.000
D		✓	405	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	194	311	93
	B	315	0	57	304
	C	353	49	0	66
	D	105	252	48	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.55	7.36	1.2	A
B	0.67	10.71	2.0	B
C	0.54	8.97	1.2	A
D	0.48	8.06	0.9	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	598	346	1089	0.549	593	1.2	7.196	A
B	676	448	1014	0.667	668	1.9	10.196	B
C	468	704	874	0.536	463	1.1	8.682	A
D	405	710	856	0.473	401	0.9	7.869	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	598	349	1087	0.550	598	1.2	7.357	A
B	676	452	1012	0.668	676	2.0	10.696	B
C	468	712	869	0.538	468	1.2	8.960	A
D	405	717	851	0.476	405	0.9	8.059	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	598	349	1087	0.550	598	1.2	7.360	A
B	676	452	1012	0.668	676	2.0	10.705	B
C	468	712	869	0.538	468	1.2	8.965	A
D	405	717	851	0.476	405	0.9	8.064	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	598	349	1087	0.550	598	1.2	7.360	A
B	676	452	1012	0.668	676	2.0	10.709	B
C	468	712	869	0.538	468	1.2	8.967	A
D	405	717	851	0.476	405	0.9	8.064	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	598	349	1087	0.550	598	1.2	7.360	A
B	676	452	1012	0.668	676	2.0	10.709	B
C	468	712	869	0.538	468	1.2	8.967	A
D	405	717	851	0.476	405	0.9	8.064	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	598	349	1087	0.550	598	1.2	7.360	A
B	676	452	1012	0.668	676	2.0	10.711	B
C	468	712	869	0.538	468	1.2	8.967	A
D	405	717	851	0.476	405	0.9	8.064	A