

PROPOSED RESIDENTIAL DEVELOPMENT, LEE LANE, ROYSTON (0255) (PLANNING REF: 2013/1073)
TRAFFIC IMPACT NOTE – REVISED TRAFFIC IMPACT ANALYSIS – JANUARY 2014

Introduction

This note will discuss the likely traffic impact of the proposed residential development site off Lee Lane in the Royston area of Barnsley and in particular the impact on the following junctions on the local highway network;

- A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane staggered crossroads.
- B6428 Lee Lane/B6132 Station Road/B6428 Midland Road/B6132 Church Street signal controlled junction.

Following post application discussions with the highways officers at Barnsley Metropolitan Borough Council (BMBC) a revised Transport Assessment was submitted which included the forecast traffic generation relating the proposals for 250 residential units off Wakefield Road in Mapplewick (Planning Reference 2013/1073) which was subsequently refused planning permission at planning committee on the 21st January 2014.

These development flows were included to solely provide an extremely robust assessment of the local highway network and given that this development does not benefit from a planning consent these have been removed from the traffic flows for the purposes of this Traffic Impact Note.

The revised traffic flows minus the Wakefield Road Mapplewick planning application are displayed in **Appendix 1**.

A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane Junction

Within the informal comments received from the highways officers at BMBC, concerns were raised regarding the existing operation of the above junction. Therefore, for completeness, an additional site visit has been undertaken to measure the existing carriageways width of the Lee Lane and Shaw Lane arms of the junction.

These on-site observations indicated that the modelling parameters inputted into PICADY model were correct although minor reductions to the Shaw Lane arm have been made to reflect the width of the existing pedestrian refuge.

Table 1 below summarises the results of the 2022 Base and 'With Development' whilst the full PICADY Output is contained within **Appendix 2**.

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Arm	2022 Base						2022 With Development					
	AM Peak			PM Peak			AM Peak			PM Peak		
	RFC	Max Q	Max Delay	RFC	Max Q	Max Delay	RFC	Max Q	Max Delay	RFC	Max Q	Max Delay
Shaw Lane (left turn)	0.931	5	1.00	0.300	0	0.25	1.014	5	1.28	0.465	1	0.36
Shaw Lane (right turn to Lee Lane)	0.972	10	0.54	0.831	4	0.49	1.010	13	1.02	0.886	6	0.58
A61 Wakefield Road (nb) right turn to Lee Lane	0.110	0	0.11	0.109	0	0.11	0.134	0	0.12	0.172	0	0.12
Lee Lane (left turn)	0.114	0	0.15	0.203	0	0.15	0.253	0	0.18	0.279	0	0.17
Lee Lane (right turn to Shaw Lane)	0.603	2	0.30	0.553	1	0.28	0.726	2	0.39	0.643	2	0.33
A61 Wakefield Road (sb) right turn to Shaw Lane	0.148	0	0.12	0.157	0	0.12	0.151	0	0.12	0.158	0	0.12

Table 1 – Summary of PICADY Output for A61 Wakefield Road/B6428 Shaw Lane/B6428 Lee Lane Junction – 2022 Base and ‘With Development’ Scenarios

As can be seen in Table 1 above, the A61 Wakefield Road/B6428 Shaw Lane/B6428 Lee Lane junction is forecast to operate within the ‘desired minimum’ RFC of 0.850 in the 2022 Base Scenarios all arms apart from on the B6428 Shaw Lane in the Weekday AM peak periods.

With the addition of the development traffic the B6428 Shaw Lane arm is forecast to operate with an RFC of slightly over 1.00 whilst in the PM peak the right-turn movement out of Shaw Lane is forecast to have an RFC of 0.886.

However, it is worth noting advice from TRL, which states that;

‘Generally values of 0.85 for unsignalled junctions have been used extensively and...although it is understandable why such values are popular, and genuinely have their place, there may be a tendency for these values to become the ONLY goal, at the expense of evaluating situations in a more thorough and useful way...There are a number of reasons why you should not rely on just one single acceptable maximum value of RFC. For example: RFC values vary throughout a peak, and can rise and fall sharply or slowly. An RFC value of 1.2 might not matter with a very low flow..’

Clearly, based on the above, an RFC over 0.85 should not necessarily be considered unacceptable. Given the maximum levels of queuing and delay that are predicted to occur at the junction and bearing in mind that this level of operational would only occur during a short period each weekday, it is questionable as to whether any junction improvements would not be justified, in our view, the additional traffic associated with the proposed development.

Notwithstanding the above, as discussed with the BMBC, a potential improvement scheme for the Shaw Lane arm of the junction can be provided. Consideration of the junction geometry and how it reveals that queues for right turning vehicles can extend back and block vehicles wishing to turn left onto the A61. To improve this situation a small improvement could be implemented at the junction that trims back the northern kerb line to allow a wider carriageway width to allow left turning vehicles to pass any right turning queue at the junction and vice versa.

The potential improvement scheme is shown on Plan 1 and can be wholly accommodated within the current limits of adopted highway, whilst Plan 2 shows that up to 4 large cars can queue in the extending left-turn flare prior to preventing right-turning vehicles from reaching the give-way line.

To assess the operation of the potential improvement scheme the PICADY model has been amended to reflect the layout show in Plan 2. Table 2 below summarises the results of the 2022 'With Development' whilst the full output is contained within **Appendix 3**.

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Arm	2022 With Development					
	AM Peak			PM Peak		
	RFC	Max Q	Max Delay	RFC	Max Q	Max Delay
Shaw Lane (left turn)	0.500	1	0.29	0.181	0	0.18
Shaw Lane (right turn to Lee Lane)	0.888	6	0.57	0.805	4	0.42
A61 Wakefield Road (nb) right turn to Lee Lane	0.132	0	0.11	0.172	0	0.12
Lee Lane (left turn)	0.248	0	0.18	0.278	0	0.17
Lee Lane (right turn to Shaw Lane)	0.718	2	0.38	0.641	2	0.33
A61 Wakefield Road (sb) right turn to Shaw Lane	0.151	0	0.12	0.158	0	0.12

Table 2 – Summary of PICADY Output for A61 Wakefield Road/B6428 Shaw Lane/B6428 Lee Lane Junction – 2022 ‘With Development’ Scenarios – With Improvement Scheme

As can be seen in Table 2, the potential improvement scheme on the Shaw Lane arm of the junction will reduce the forecast RFC, Max Queue and Max Delay to below those forecast for the 2022 Base scenarios. It is therefore concluded that the improvement scheme will more than mitigate the impact of the proposed development.

B6428 Lee Lane/B6132 Station Road/B6428 Midland Road/B6132 Church Street Junction

Within the revised Transport Assessment reference was made to the fact that as part of the former Royston High School development, the operation of this particular junction will be improved by the implementation of MOVA, however, no specific analysis was undertaken which included these improvements.

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In order to incorporate the improved junction performance provided by MOVA within the LINSIG model, a series of factors have been developed by JCT, which can be applied to the standard saturation flows calculated within LINSIG that utilises the formulae presented within TRL Research Paper 67 (RR67). The derivation of these factors is presented in the paper 'We know it's good, but just how good is it?' by Damian Meehan (JCT Consultancy), which was published in Traffic Engineering and Control (TEC) in September 2003.

The research conducted examined improvements in saturation flows as a result of MOVA control and concluded that for villages such as Royston, a factor of 1.039 can be applied to RR67 saturation flows within LINSIG to account for the presence of MOVA control. This factor has therefore been utilised within the LINSIG model of the junction.

Table 3 below summarises the results of the revised LINSIG analysis for the 2022 Base and 'With Development' scenarios whilst the full output is contained within **Appendix 4**.

Link	2022 Base Flows						2022 With Development Flows					
	AM Peak			PM Peak			AM Peak			PM Peak		
	DOS	MMQ	Delay (secs)	DOS	MMQ	Delay (secs)	DOS	MMQ	Delay (secs)	DOS	MMQ	Delay (secs)
Midland Road	81.4	12	52	93.7	18	87	95.9	12	59	95.9	20	100
Church Street	83.3	16	62	92.6	18	78	85.1	14	56	95.3	20	90
Station Road	46.9	6	35	83.5	10	63	45.7	6	34	90.8	12	87
High Street	83.3	8	56	92.0	14	69	86.3	9	59	94.5	17	82
PRC +/-	+8.1			-4.1			+4.1			-6.6		

Table 5 - Summary of LINSIG for High St/Midland Rd/Church St/Station Rd –With MOVA

Adjustments

As can be seen from Table 5, for the 2022 'base' traffic flow scenario the junction is predicted to operate within its capacity in the morning peak and around its capacity in the evening peak. This remains the case following the addition of the development traffic, with minimal increases in the degree of saturation and mean maximum queues on each arm of the junction.

It should be noted that the maximum increase in delay is that of 24 seconds on the Station Road arm in the PM Peak, but such an increase in delay is negligible and would be unnoticeable to drivers and similar to the daily variation in flow that they would experience every day.

Given the above analysis it is therefore concluded that the proposed residential development will have a minimal impact on the operation of the B6428 Lee Lane/B6132 Station Road/B6428 Midland Road/B6132 Church Street signal controlled junction.

Summary

This note has considered the impact of the proposed residential development at Lee Lane in Royston. The following conclusions can be drawn from this note:

- The existing A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane staggered crossroad junction is forecast to operate in excess of the 'desired minimum' in the 2022 base scenarios.
- With the addition of the proposed development traffic the RFC is forecast to increase to over 1.00 on Shaw Lane in the AM peak but the actual increases in vehicle queuing and delay are minimal.
- A minor improvement scheme can be provided on the Shaw Lane arm of the junction which will not only mitigate the impact of the proposed development but also improve the operation of the junction.
- The proposed development will have a negligible impact on the operation of the A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane Junction with minimal increases in the queuing and delay of vehicles.

It is therefore concluded that the proposed development of the site would accord with the NPPF as the residual cumulative impacts of development cannot be considered severe.

January 2014

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Enclosures

Plans

Plan 1 – Potential Improvement Scheme - A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane

Plan 2 – Potential Improvement Scheme – Left-turn flare storage

Appendices

Appendix 1 – Revised Traffic Flows – Minus Wakefield Road, Mapplewick Planning Application

Appendix 2 – PICADY Output - A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane – Existing Layout

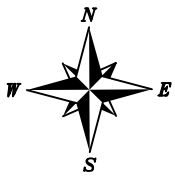
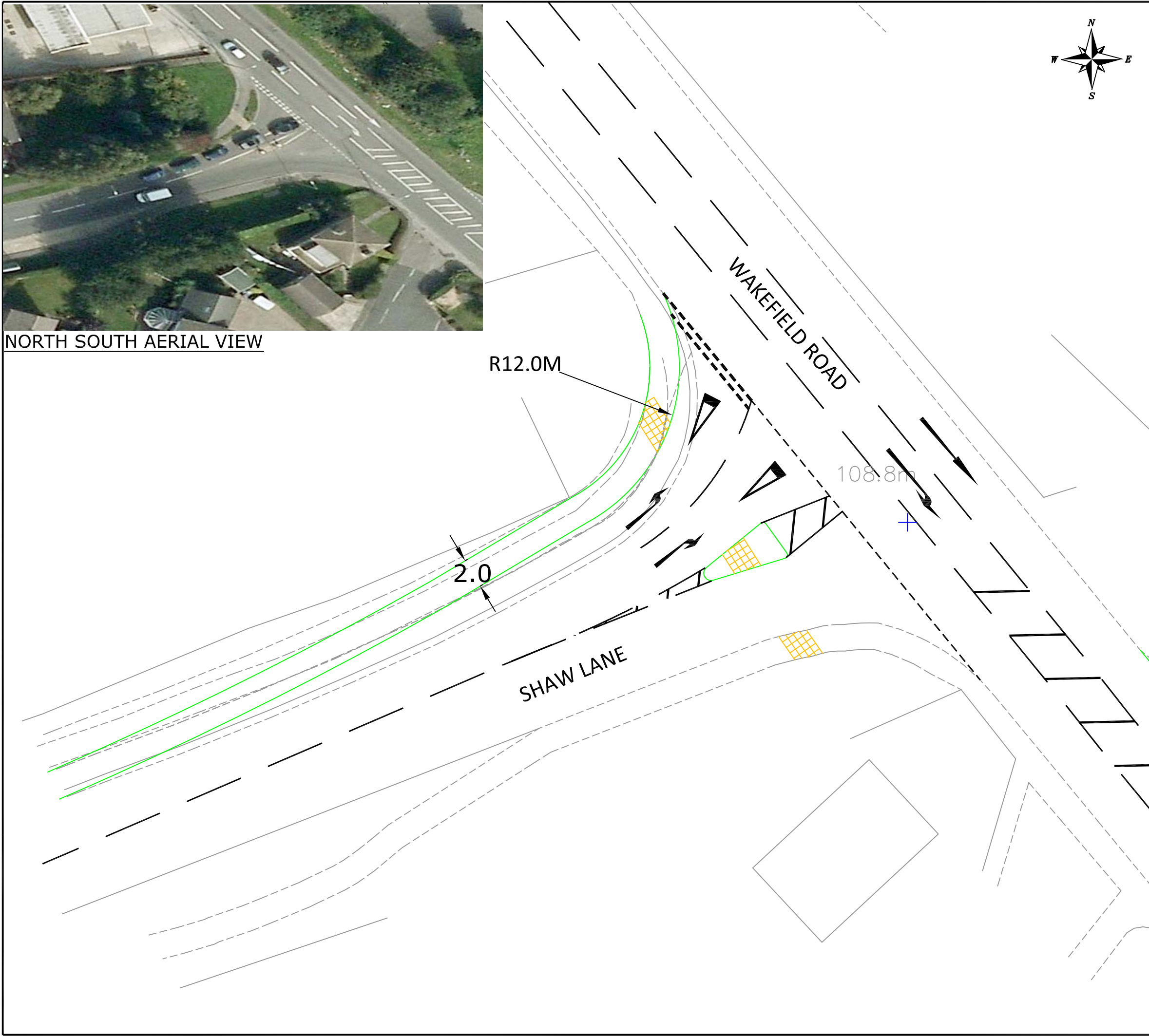
Appendix 3 – PICADY Output - A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane – Proposed Improvement Scheme

Appendix 4 – LINSIG Output - B6428 Lee Lane/B6132 Station Road/B6428 Midland Road/B6132 Church Street With MOVA Adjustment

PLANS



NORTH SOUTH AERIAL VIEW



NOTES

PLAN 1

REV.	DETAILS	DRAWN	CHECKED	DATE
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CLIENT:
STRATEGIC LAND GROUP

PROJECT:
LEE LANE, ROYSTON

DRAWING TITLE:
POTENTIAL JUNCTION IMPROVEMENTS AT WAKEFIELD ROAD/SHAW LANE

SCALES:
1:250 @ A3

DRAWN:	JC	CHECKED:	TSB	DATE:	JAN 14
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6th Floor, Quay House
Quay Street
Manchester, M3 3JE

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

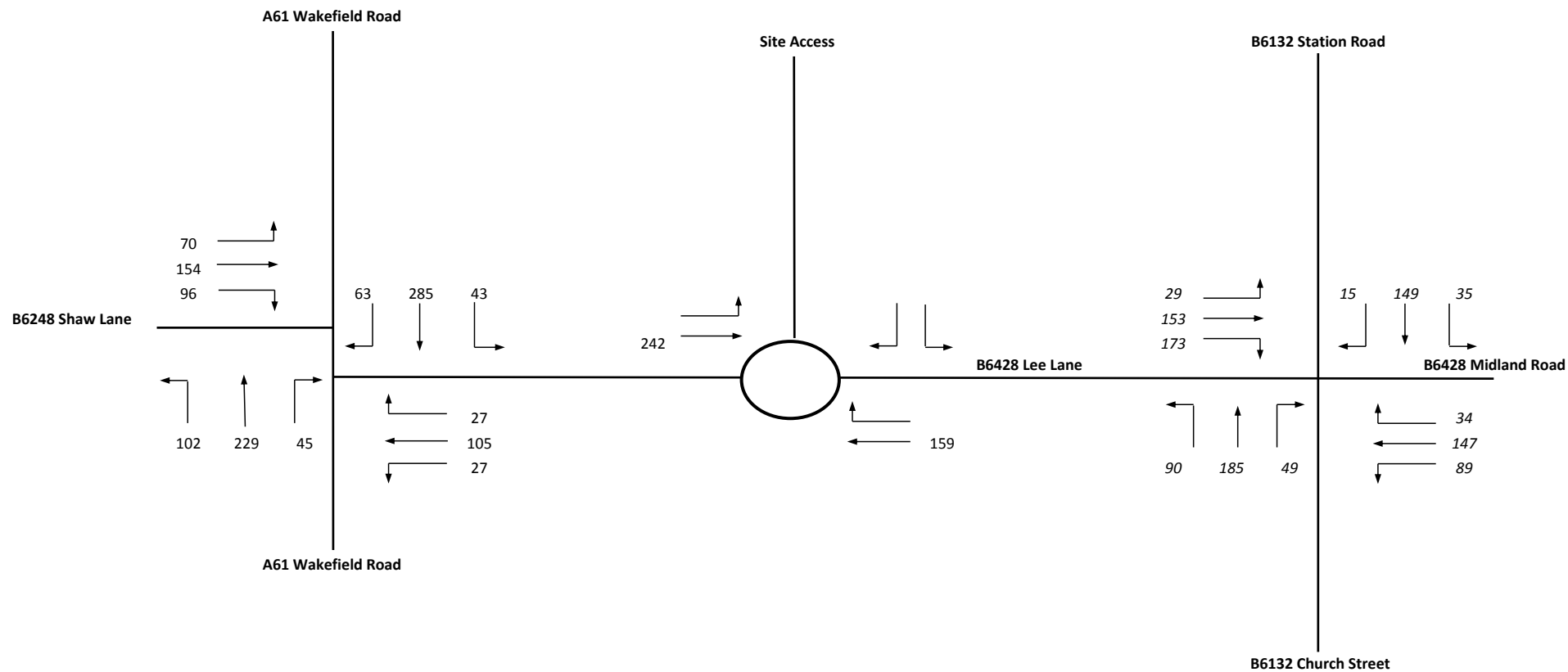


DRAWING NUMBER:	0255-06	REVISION:	.
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APPENDICES

APPENDIX 1

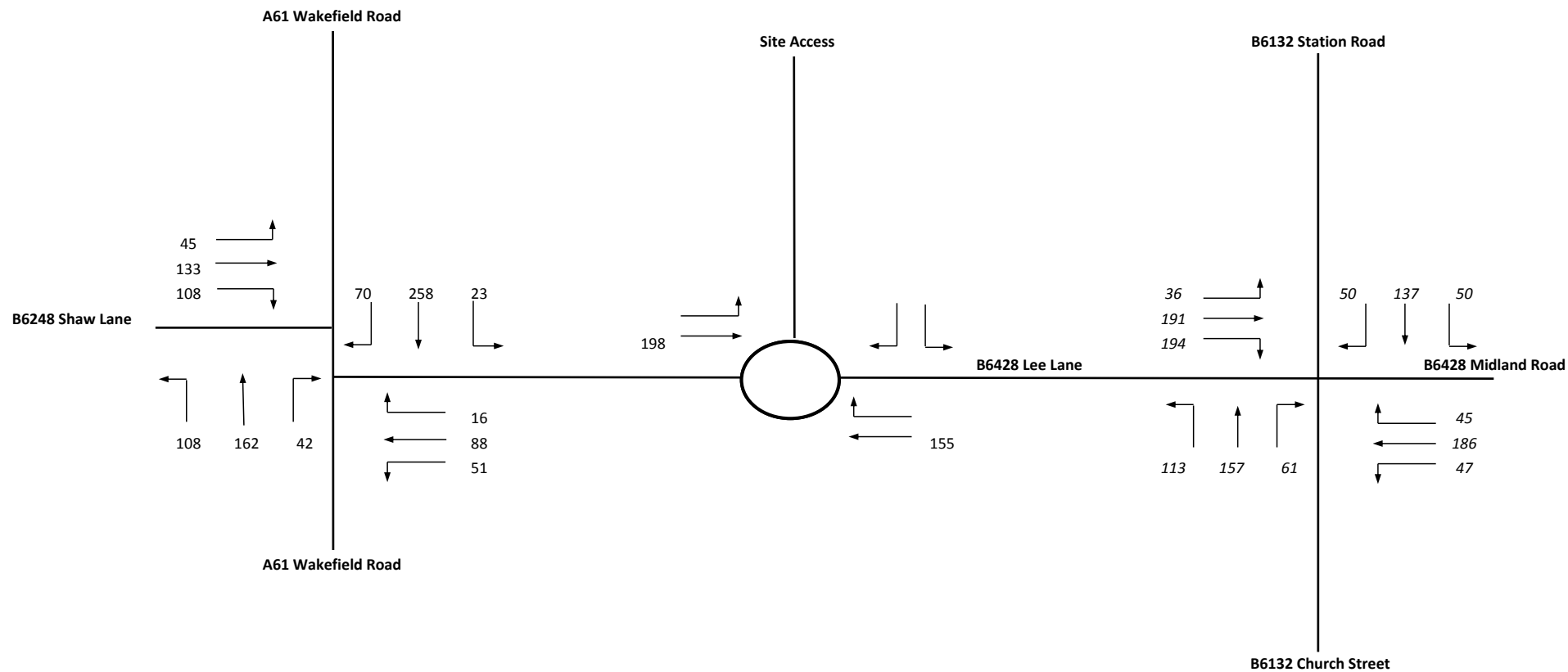
Revised Traffic Flows – Minus Wakefield Road, Mapplewick Planning Application



\$\$\$ 2009 Traffic Counts From Pell Frischman TA

\$\$\$ 2012 Traffic Counts from BGH TA

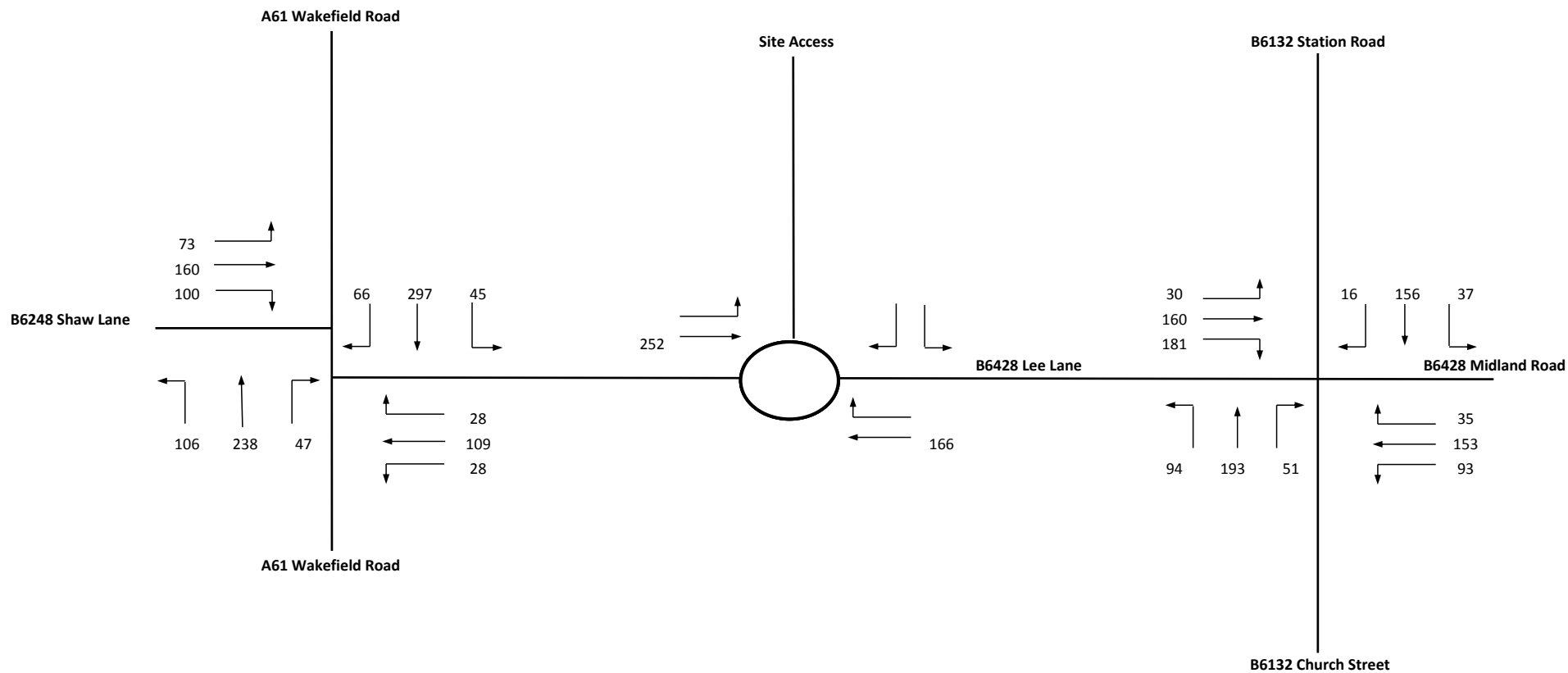
Figure 1 - Weekday AM Peak Surveyed Flows



\$\$\$ 2009 Traffic Counts From Pell Frischman TA

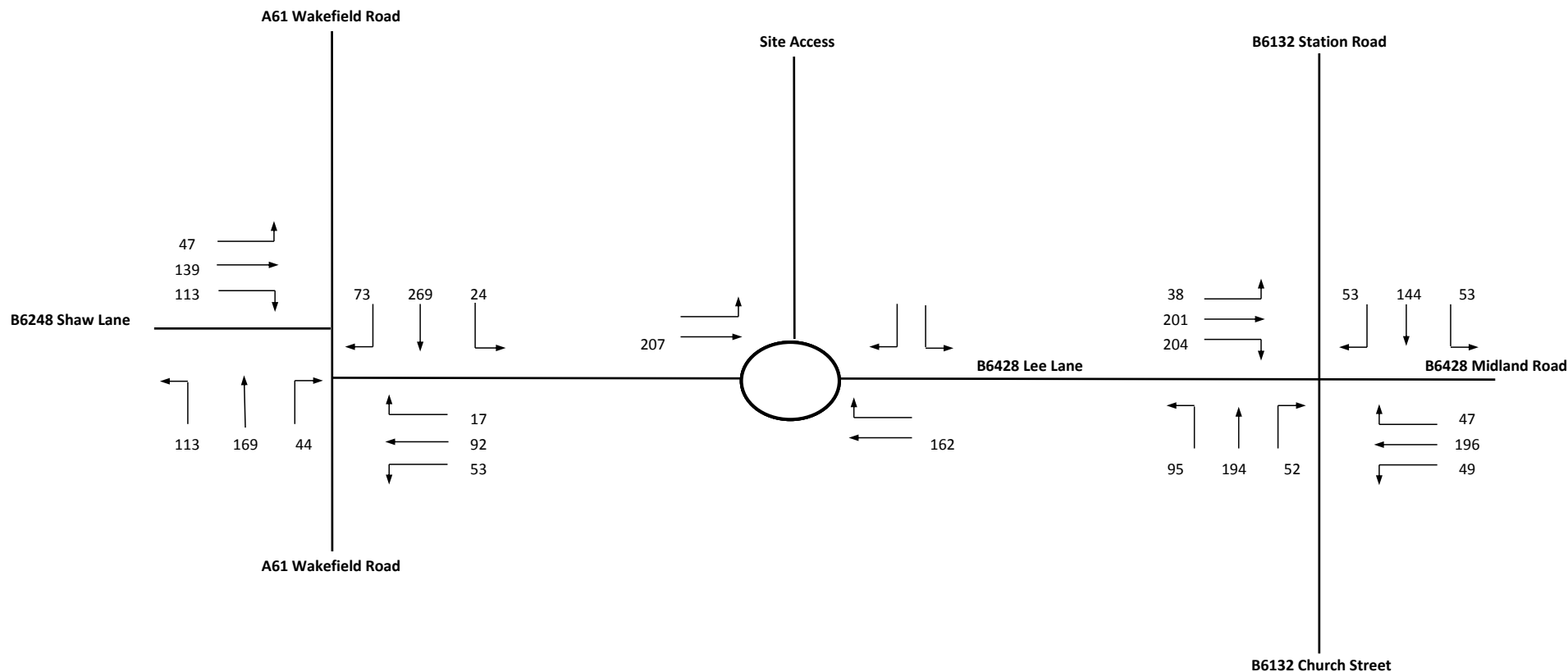
\$\$\$ 2012 Traffic Counts from BGH TA

Figure 2 - Weekday PM Peak Surveyed Flows



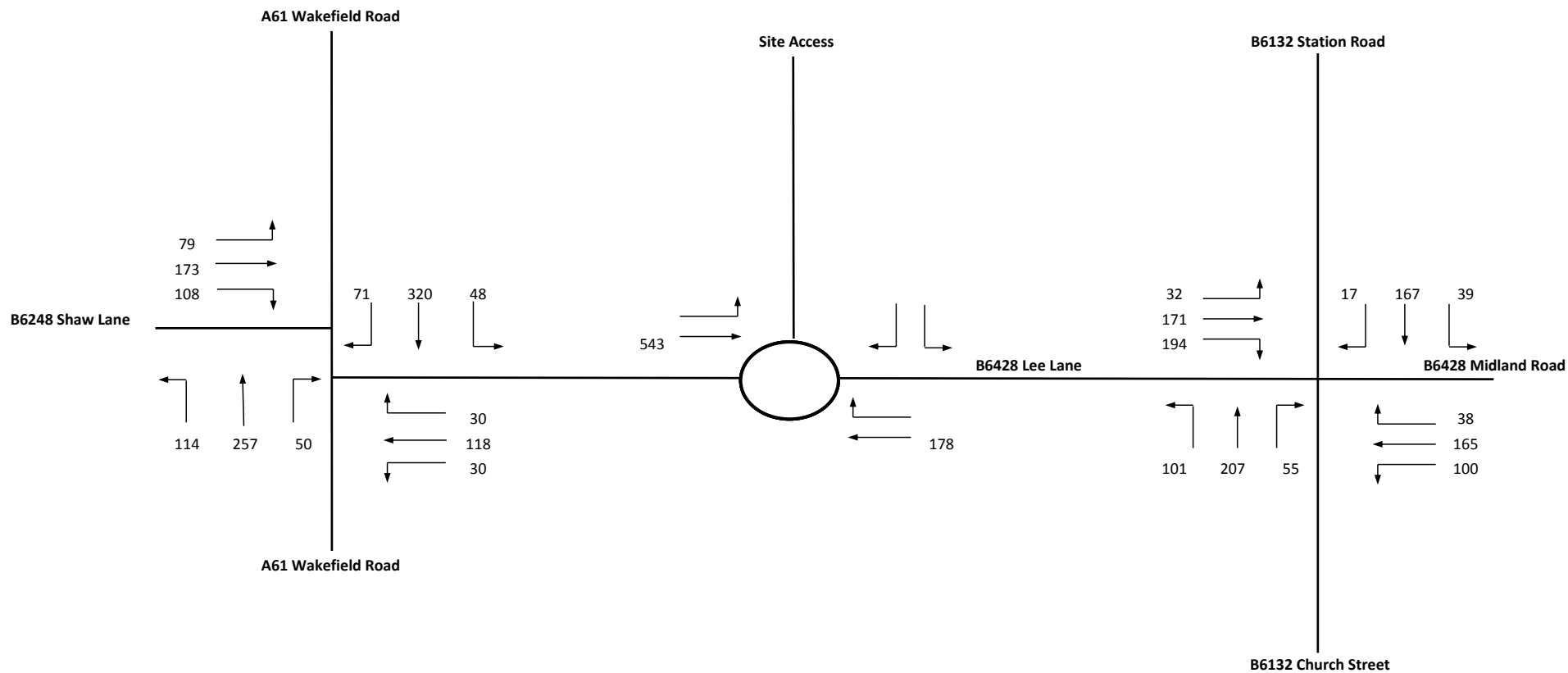
2009 - 2017 NTEM Adjusted Growth Factor 1.044
 2012 - 2017 NTEM Adjusted Growth Factor 1.041 (As per the BGH TA)

**Figure 3 - Weekday AM Peak
2017 Growthed Flows**



2009 - 2017 NTEM Adjusted Growth Factor 1.051
 2012 - 2017 NTEM Adjusted Growth Factor 1.043 (As per the BGH TA)

**Figure 4 - Weekday PM Peak
2017 Growthed Flows**



2009 - 2022 NTEM Adjusted Growth Factor 1.120
 2012 - 2022 NTEM Adjusted Growth Factor 1.122

**Figure 5 - Weekday AM Peak
2022 Growthed Flows**

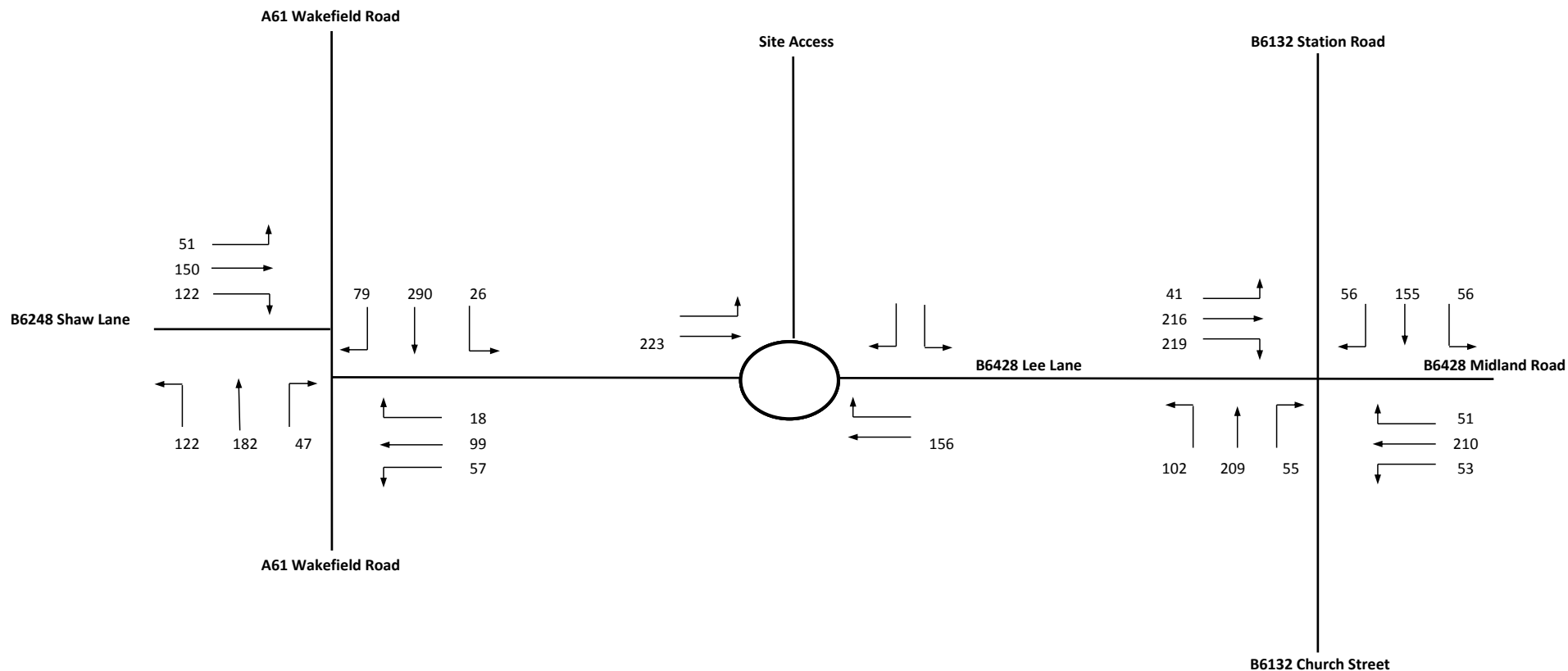


**Figure 6 - Weekday PM Peak
2022 Growthed Flows**

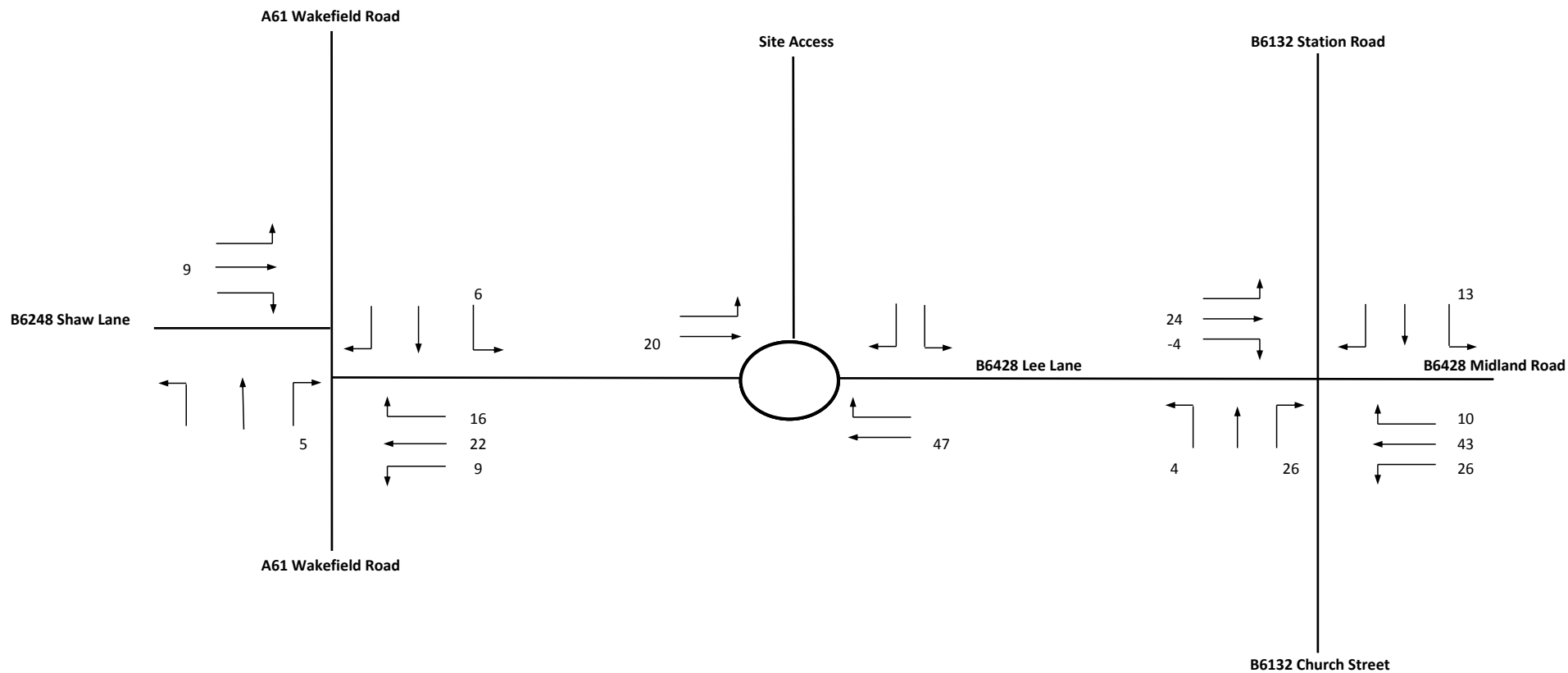


Figure 7 - Weekday AM Peak
Committed Development Flows - Former Royston High School Site

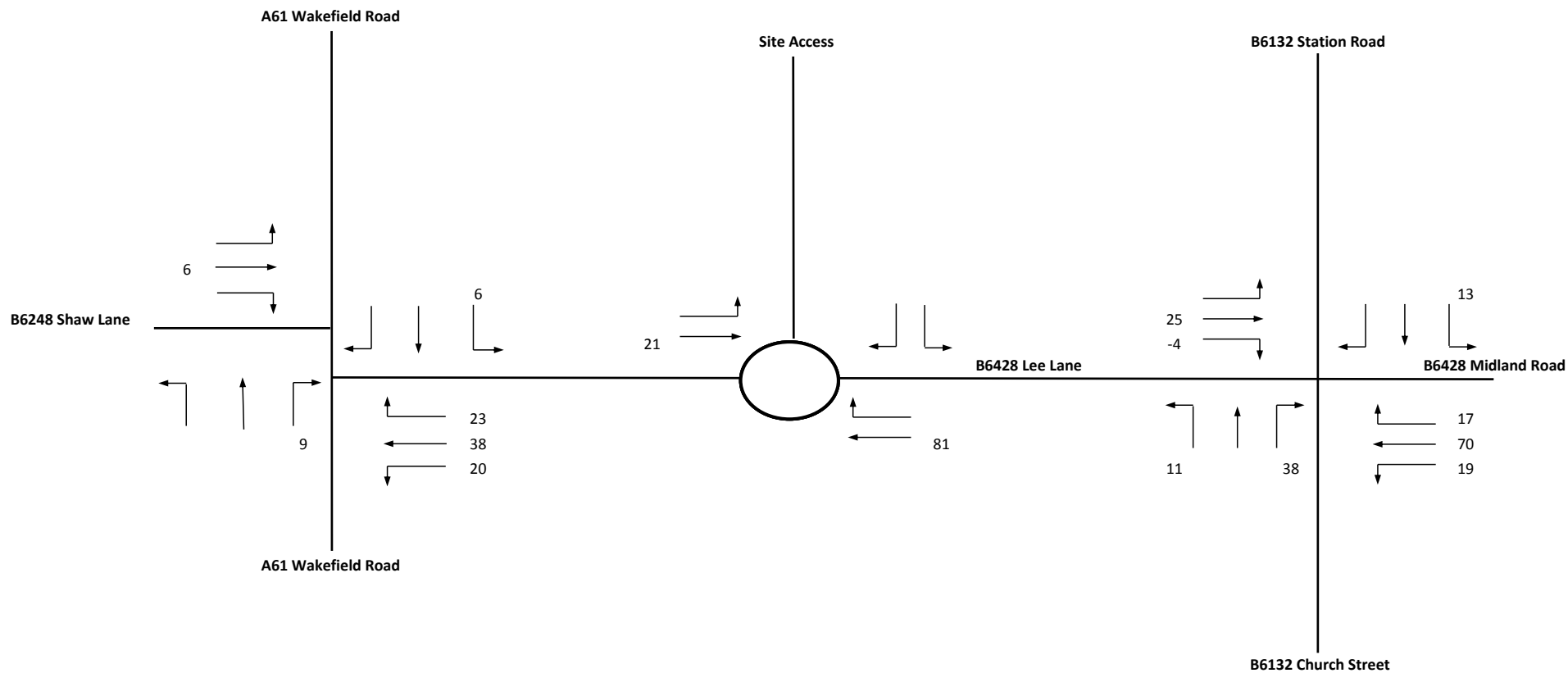


Figure 8 - Weekday PM Peak
Committed Development Flows - Former Royston High School Site

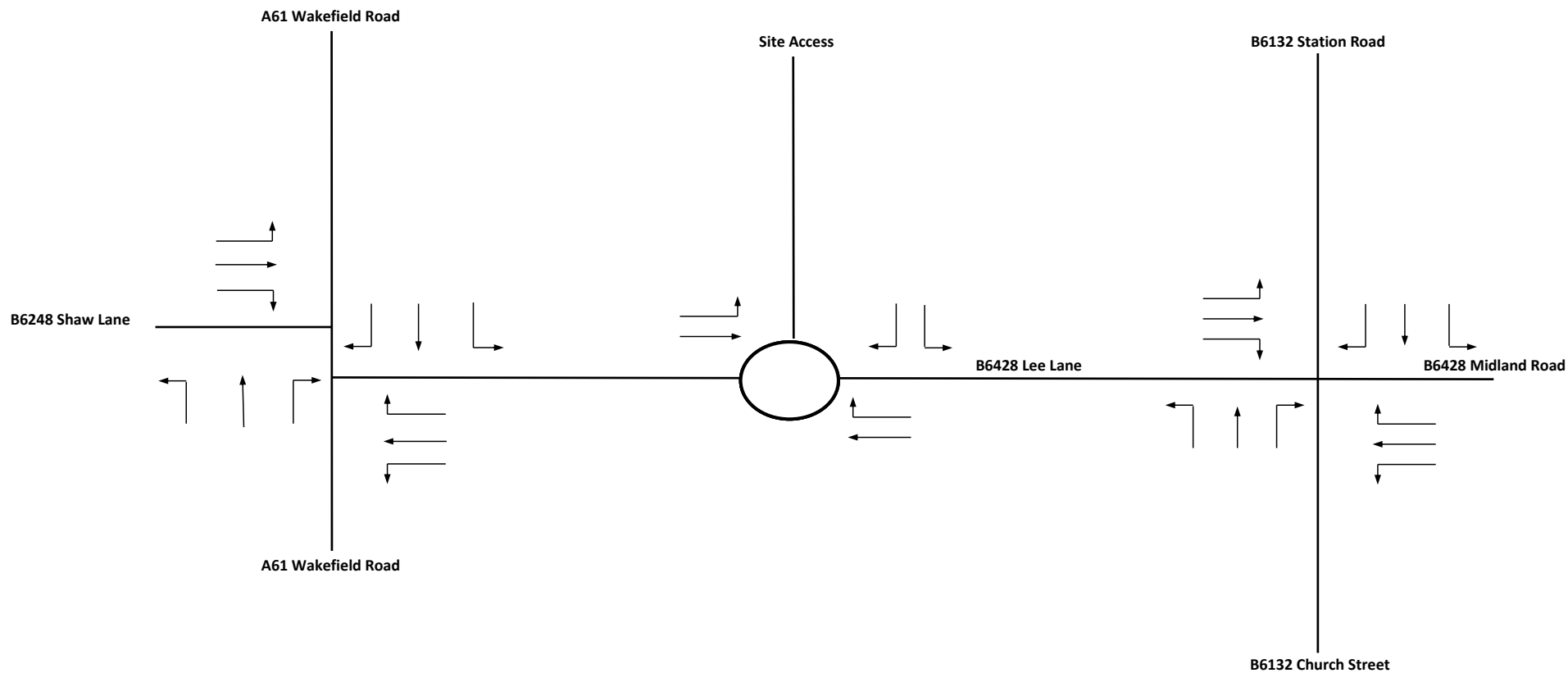


Figure 9 - Weekday AM Peak
Committed Development Flows - Land West of Wakefield Road, Mapplewell

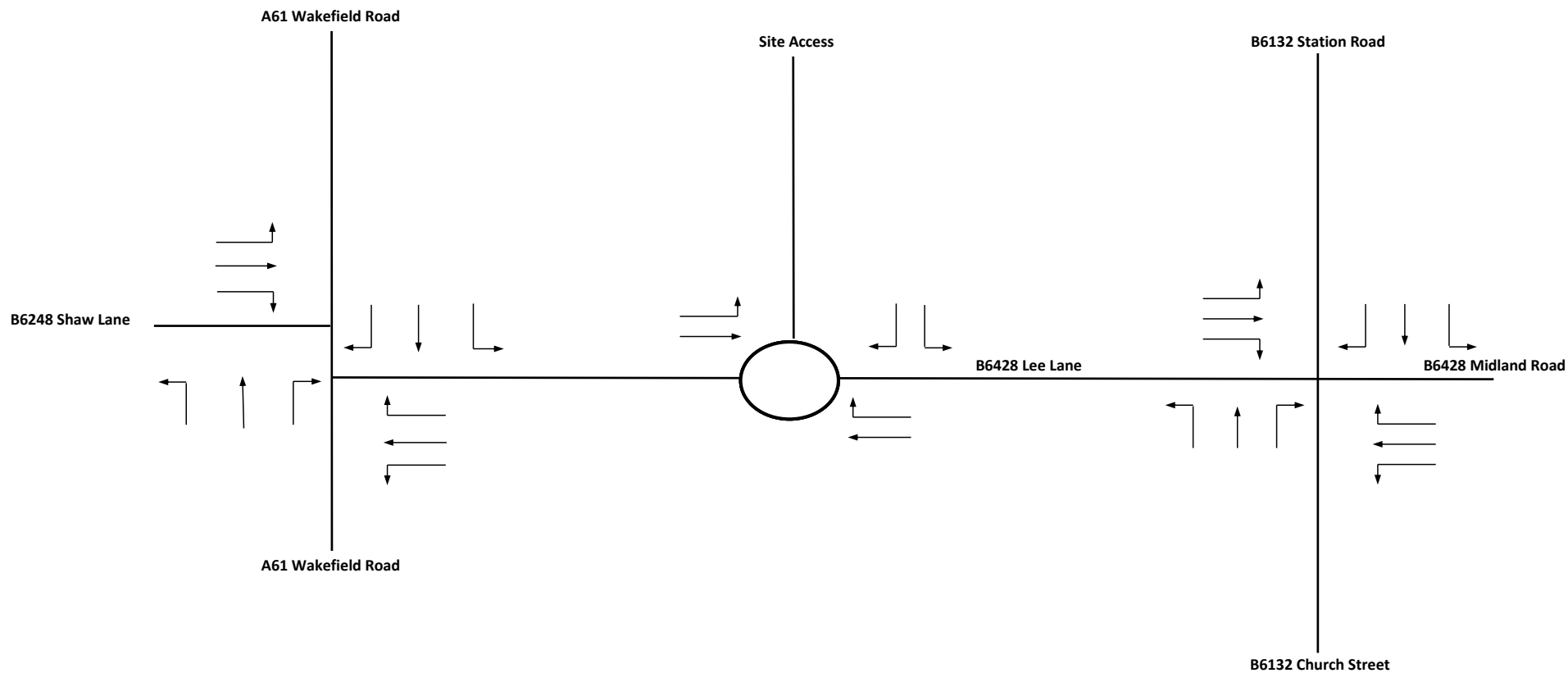


Figure 10 - Weekday PM Peak
Committed Development Flows - Land West of Wakefield Road, Mapplewell

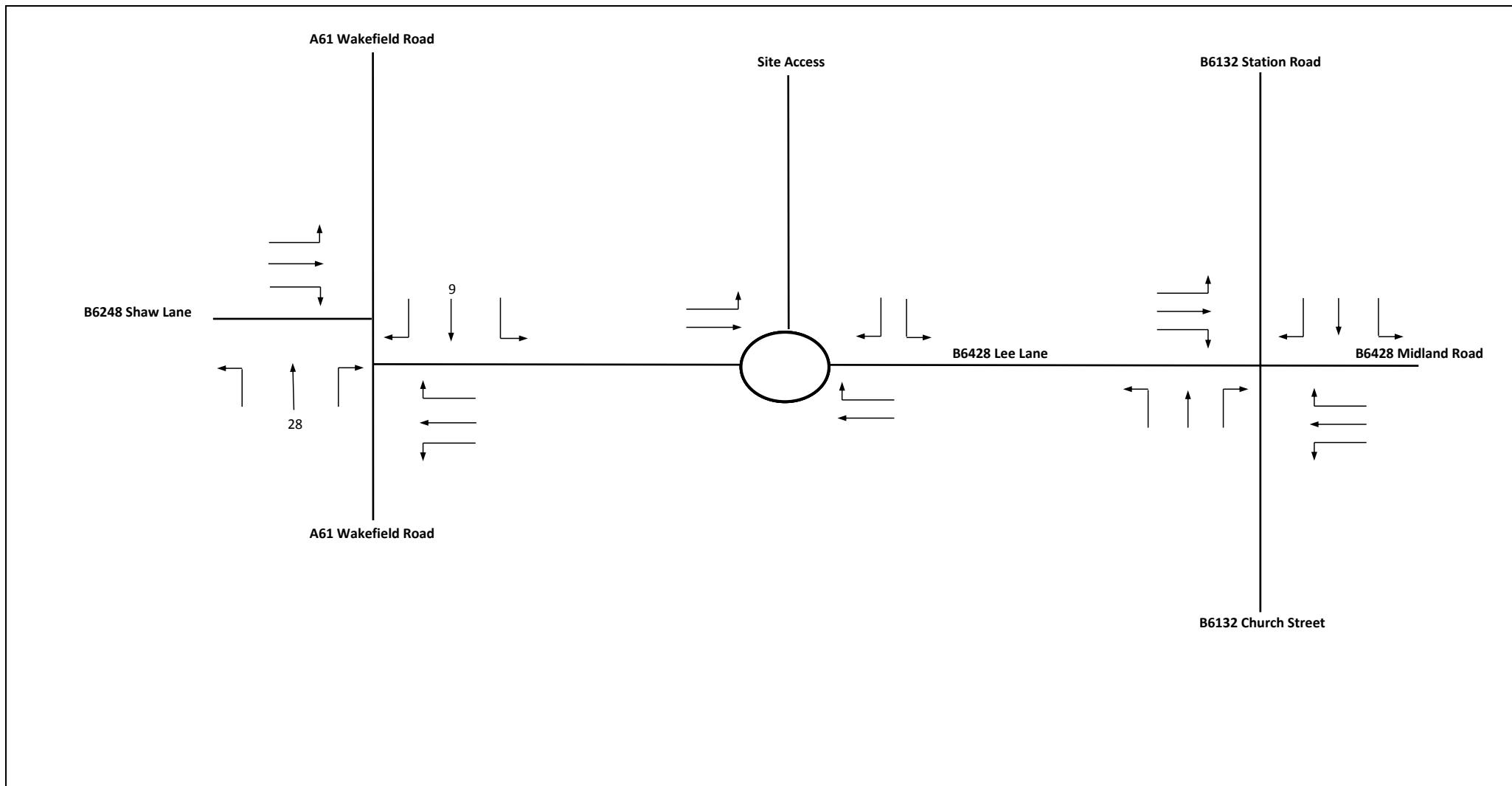


Figure 11 - Weekday AM Peak
Committed Development Flows - North Gawber Development

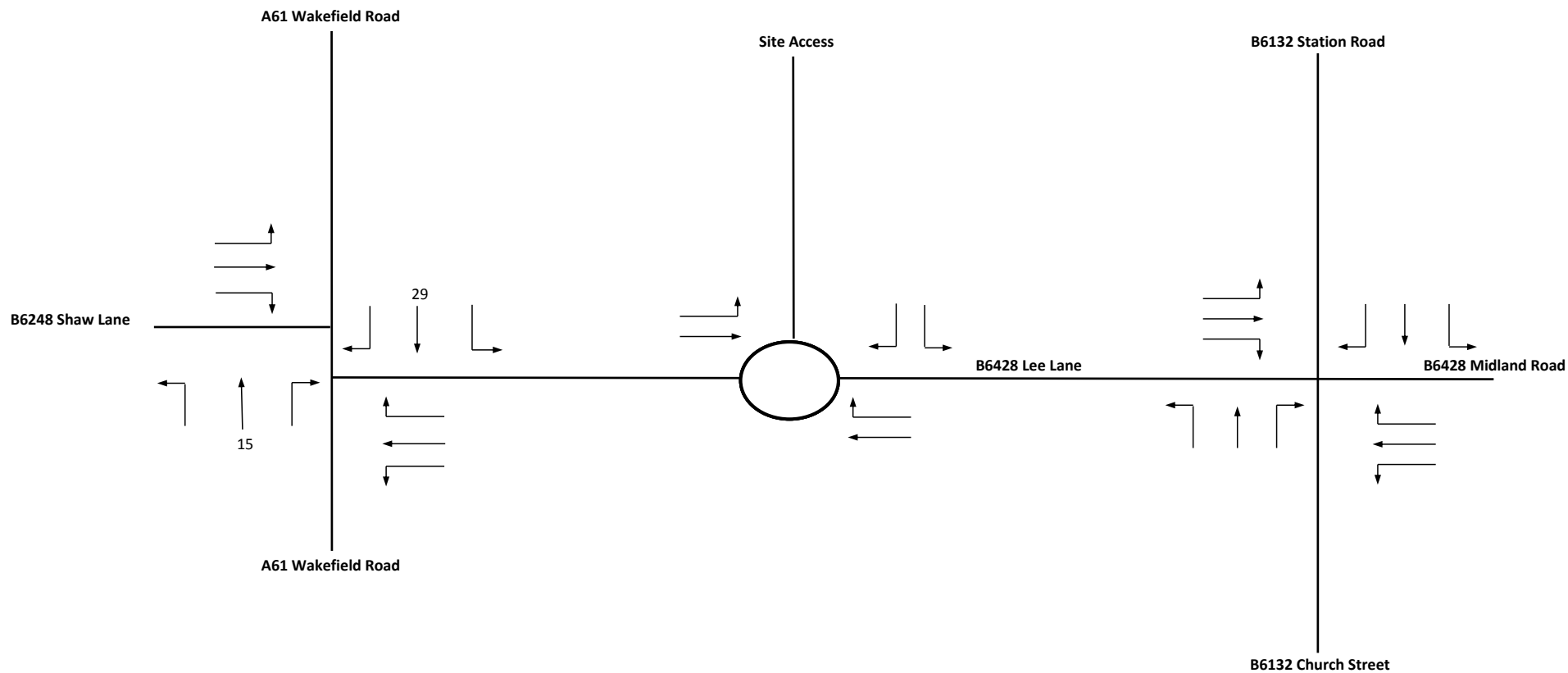


Figure 12 - Weekday PM Peak
Committed Development Flows - North Gawber Development

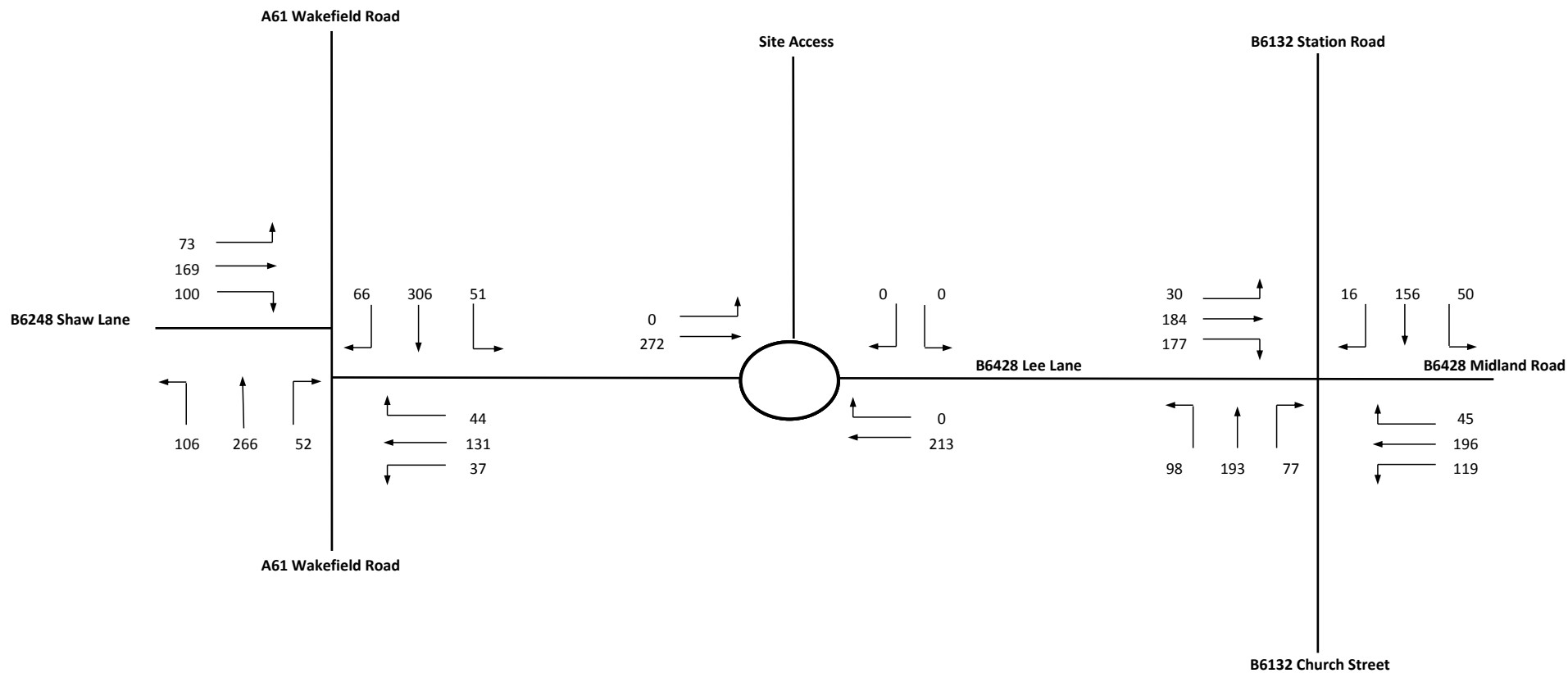


**Figure 13 - Weekday AM Peak
2017 Base Flows**

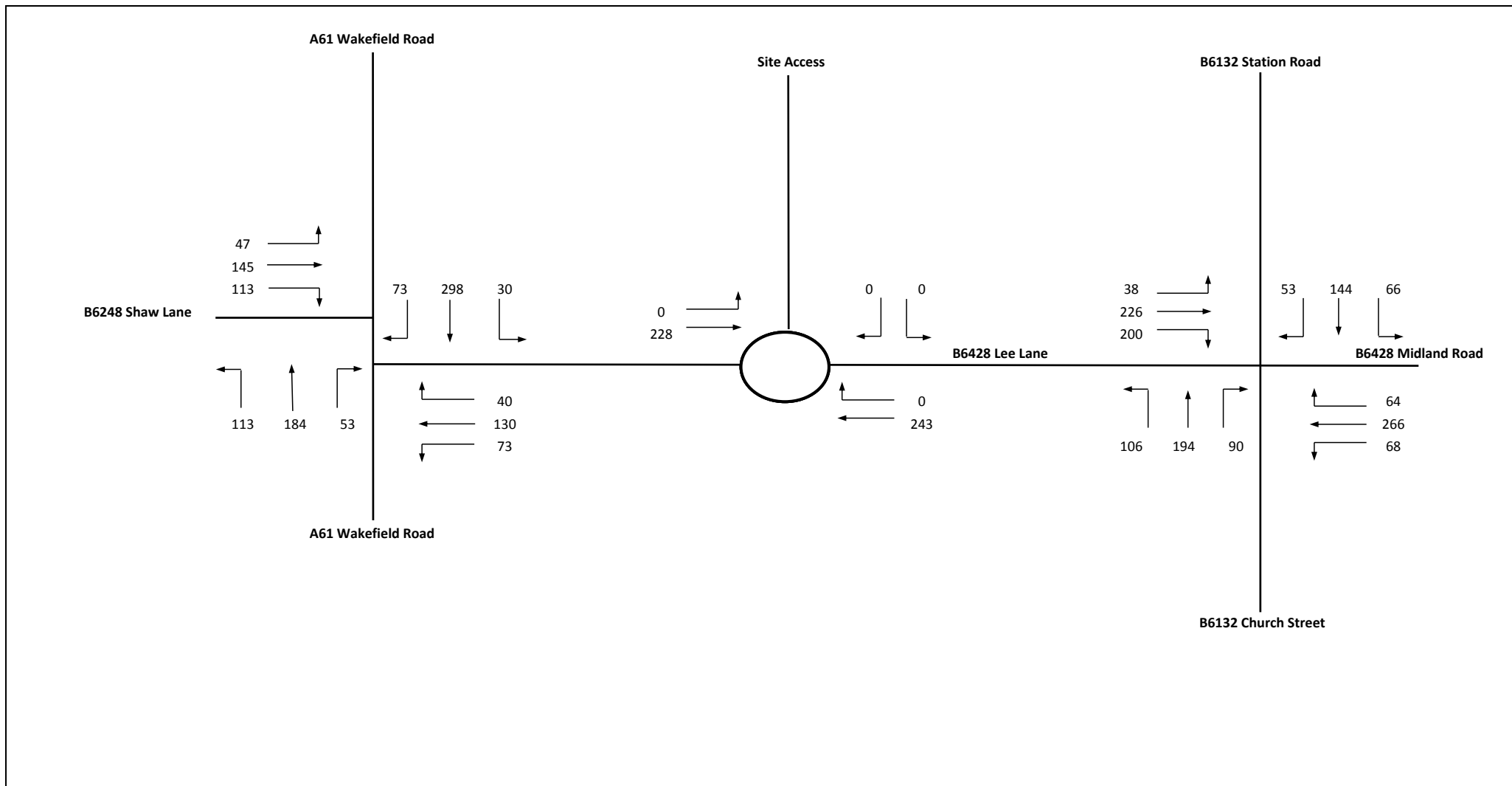
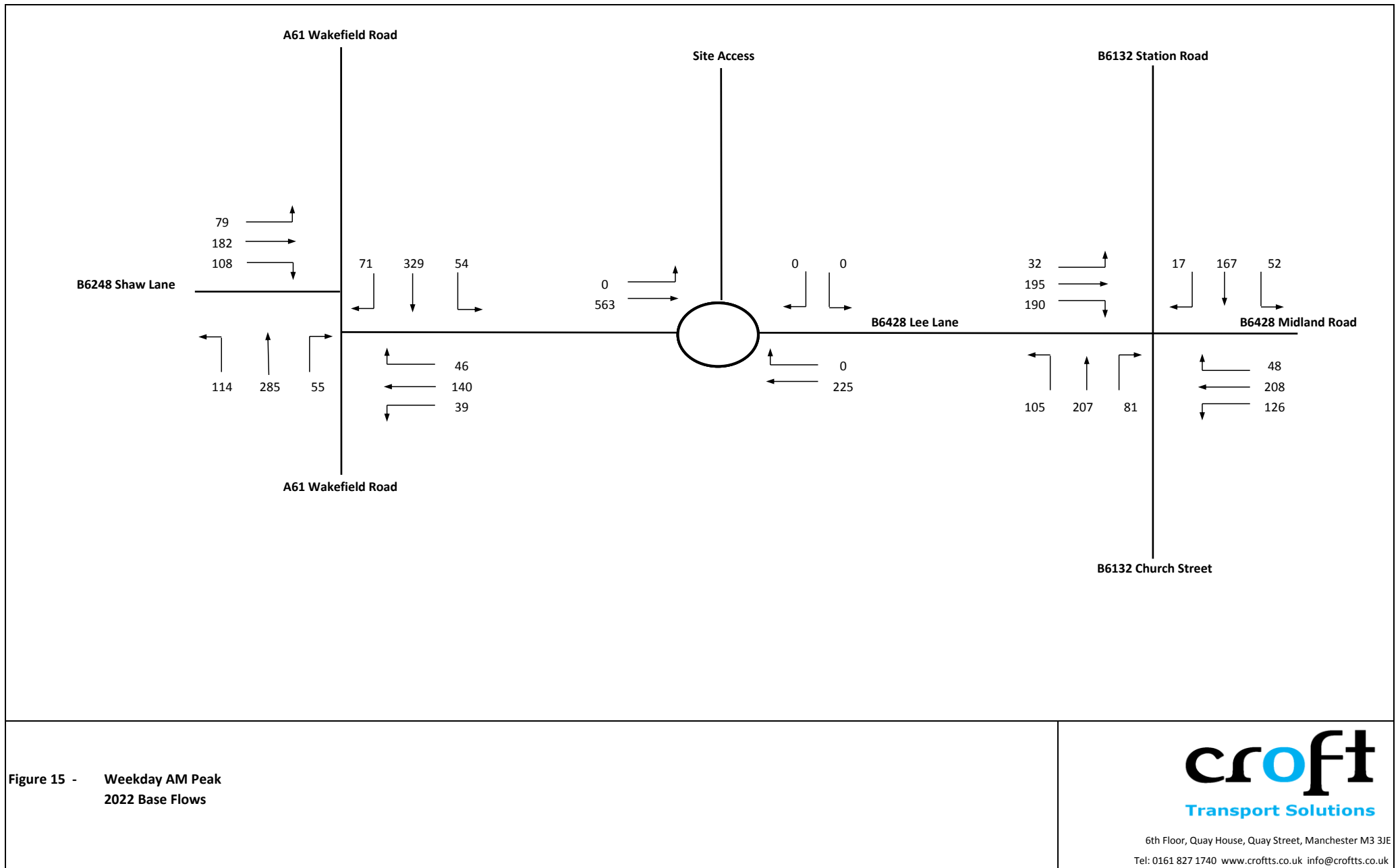


Figure 14 - Weekday PM Peak
2017 Base Flows



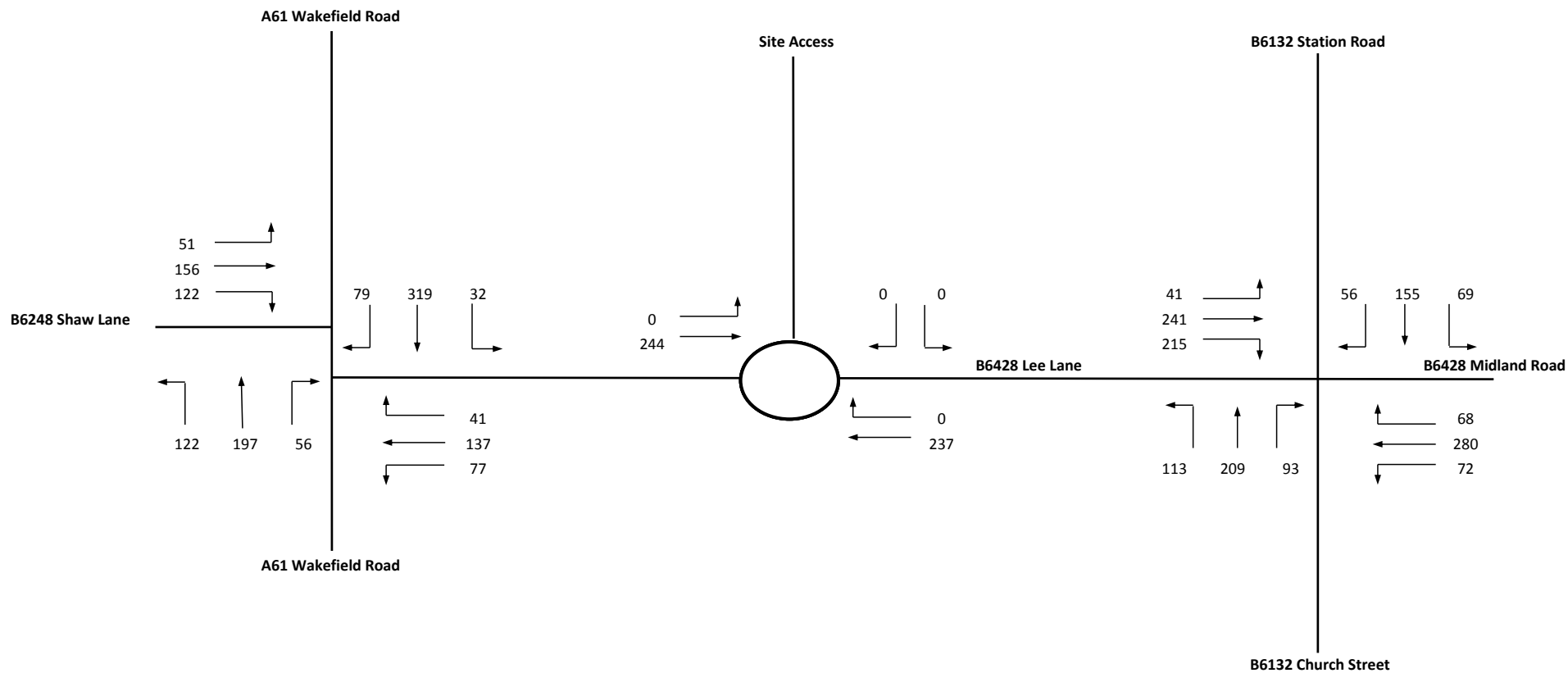


Figure 16 - Weekday PM Peak
2022 Base Flows

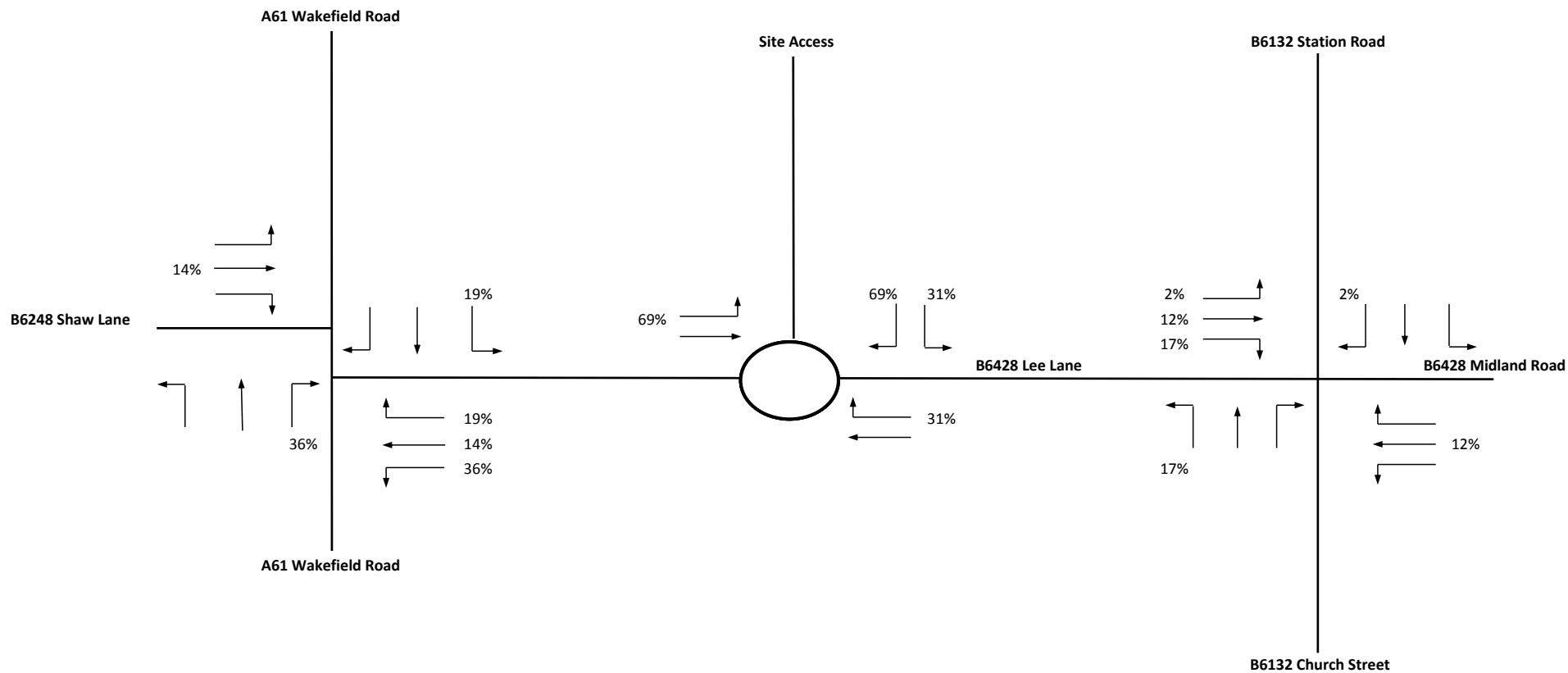


Figure 17 - Weekday AM and PM Peak
Proposed Trip Distribution

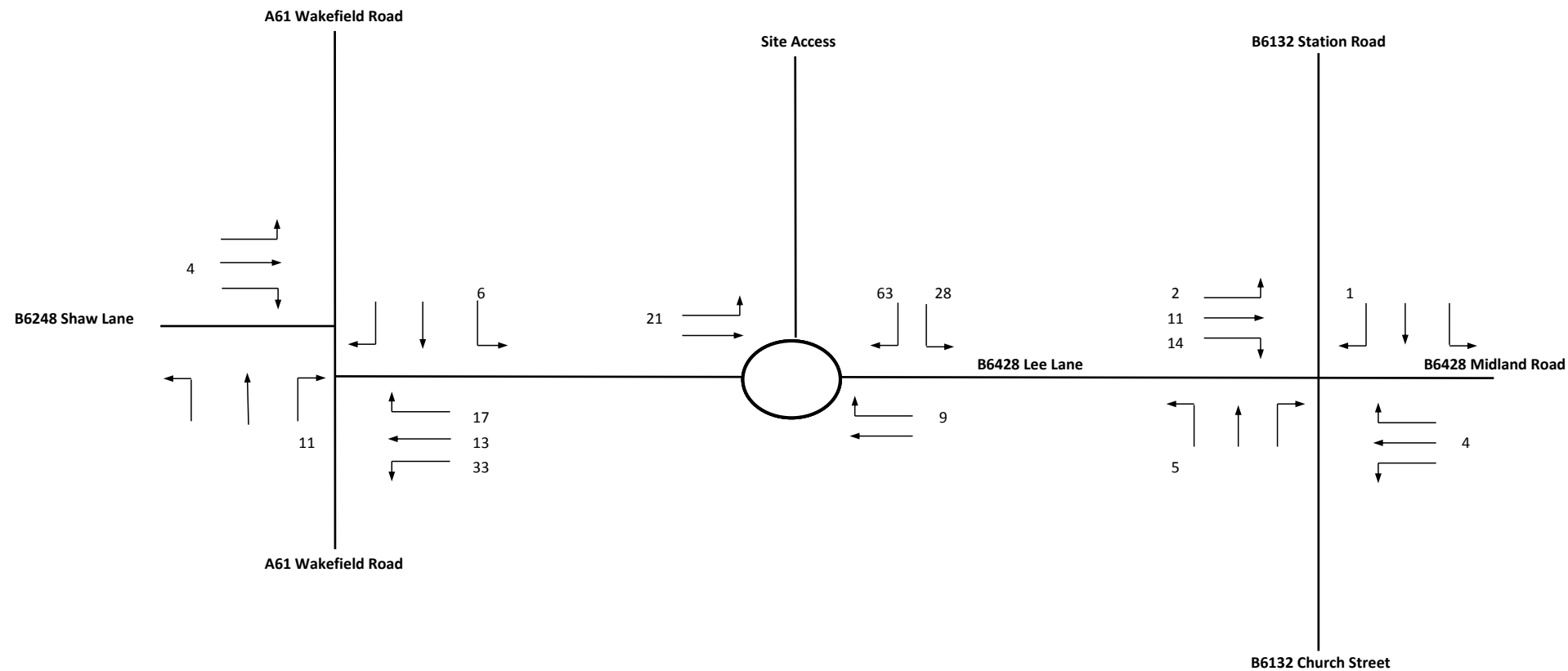
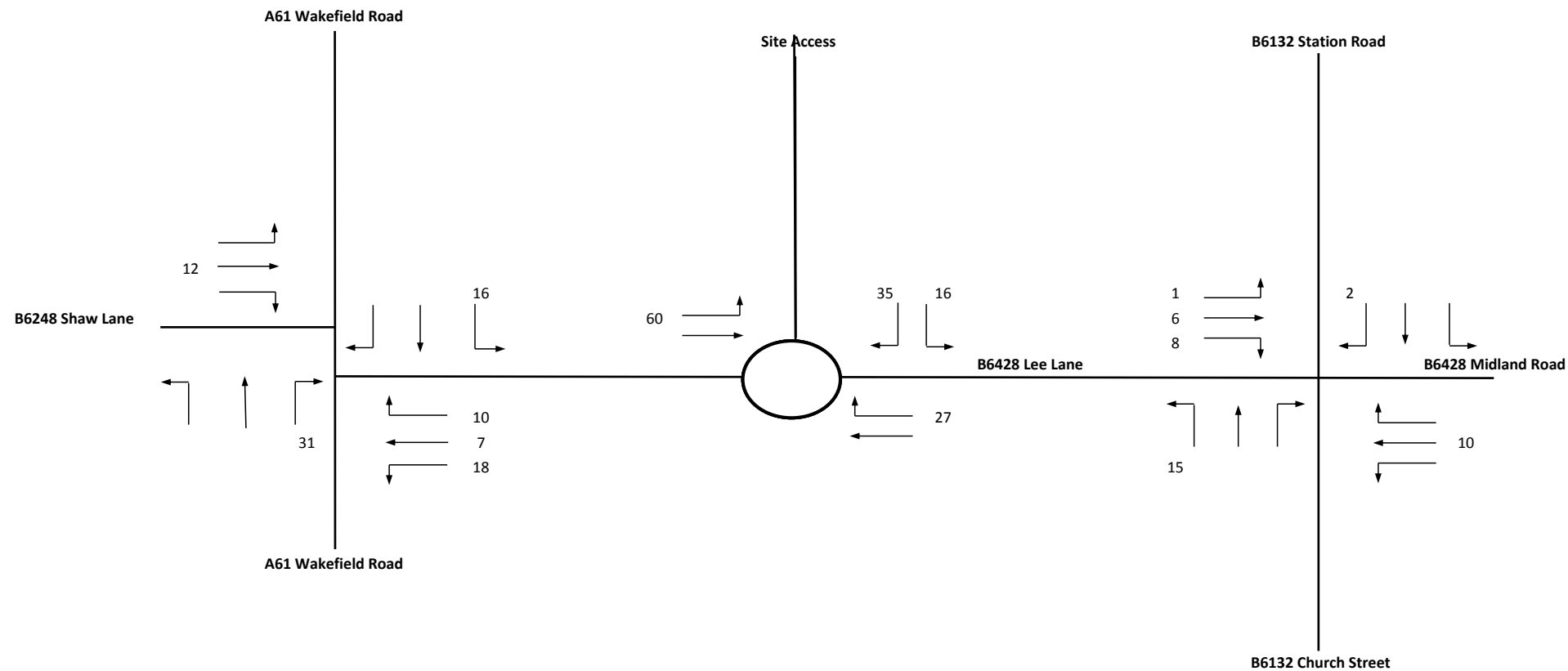


**Figure 18 - Weekday AM Peak
Proposed Residential Development Flows**



ARR 86
DEP 51

**Figure 19 - Weekday PM Peak
Proposed Residential Development Flows**

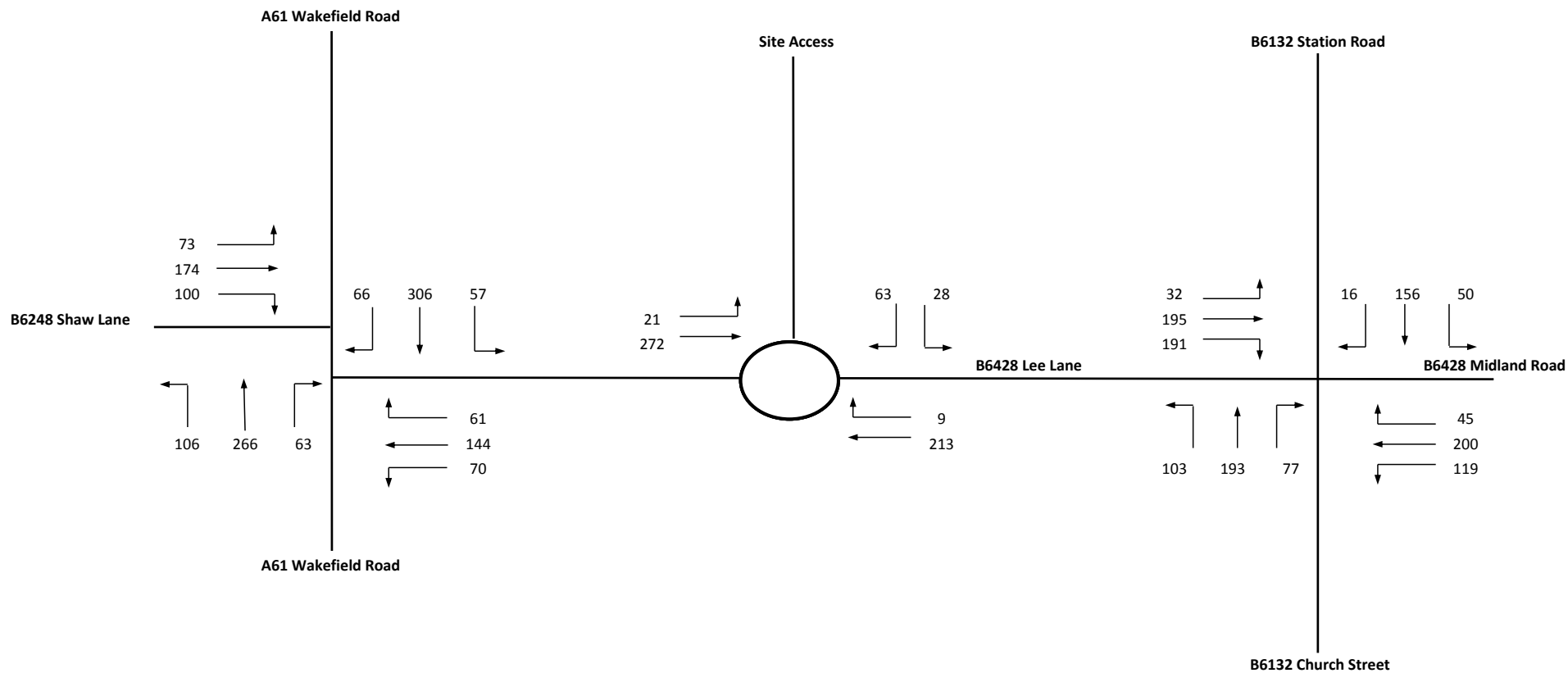


Figure 20 - Weekday AM Peak
2017 With Development Flows

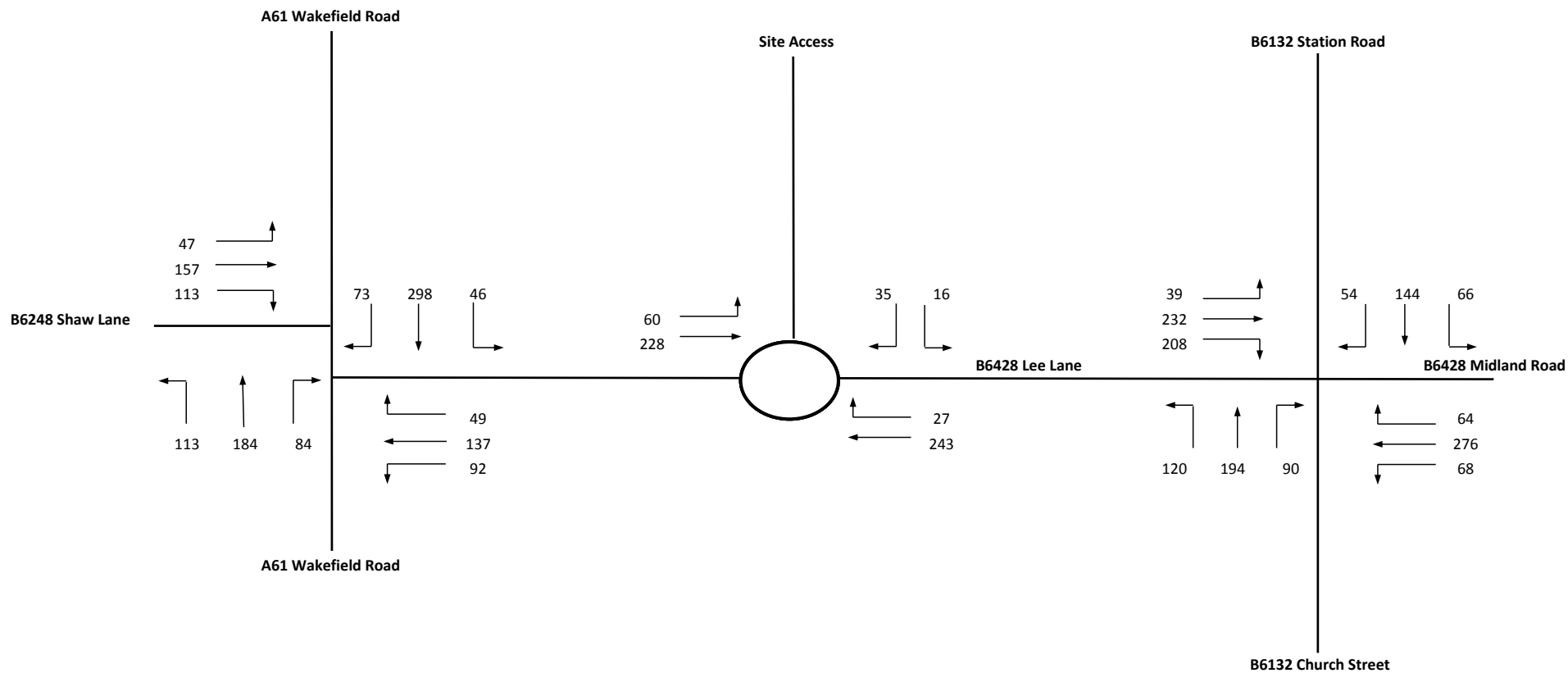


Figure 21 - Weekday PM Peak
2017 With Development Flows

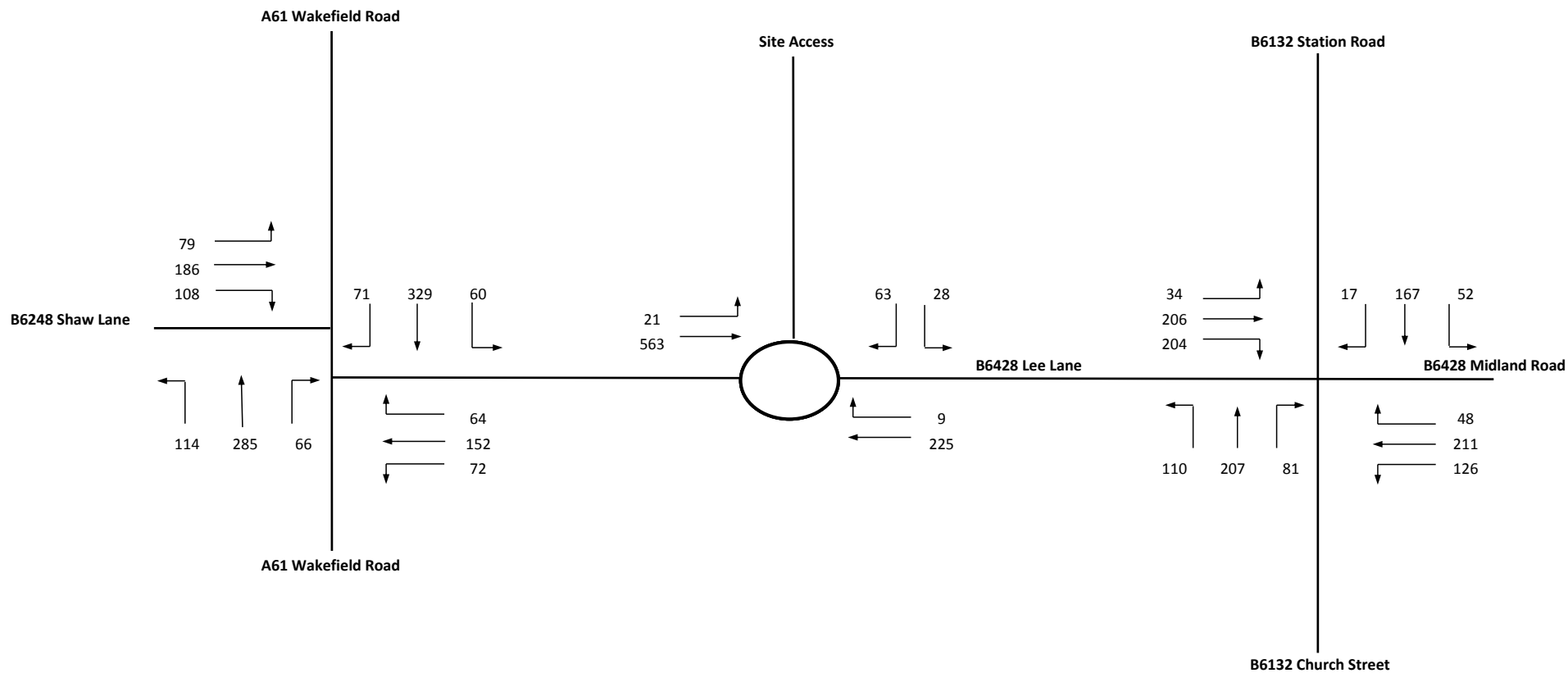


Figure 22 - Weekday AM Peak
2022 With Development Flows

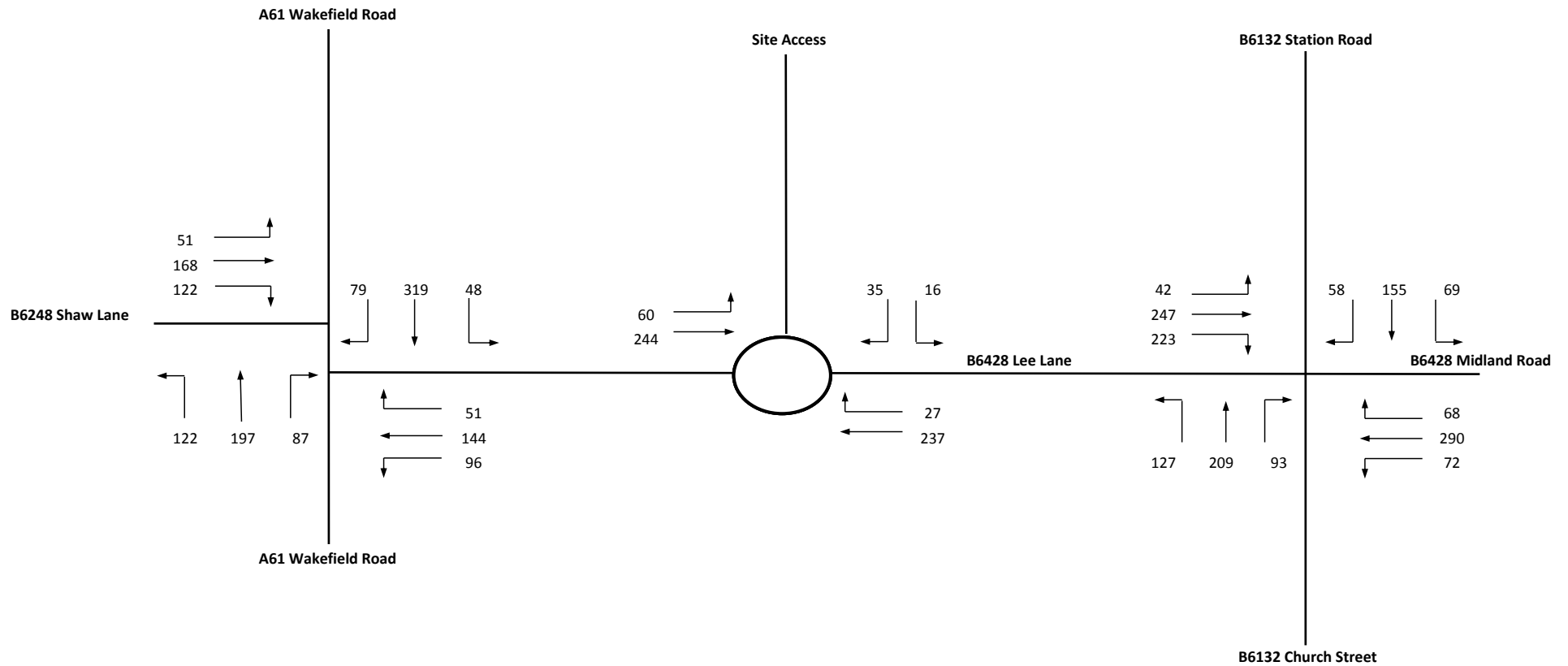


**Figure 23 - Weekday PM Peak
2022 With Development Flows**

APPENDIX 2

**PICADY Output – A61 Wakefield Road/B6248 Shaw
Lane/B6248 Lee Lane Staggered Crossroad Junction –
Existing Layout**

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
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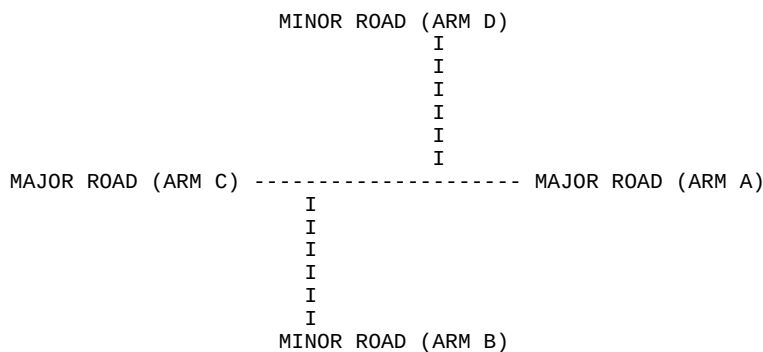
Run with file:-
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Wakefield Road-Shaw Lane-Lee Lane Staggered Junction-2022 Base Flows (22.01.13).vpi"
(drive-on-the-left) at 16:00:02 on Wednesday, 22 January 2014

RUN INFORMATION

RUN TITLE : A61 Wakefield Road-Shaw Lane-Lee Lane Stagger
LOCATION : Lee Lane, Royston
DATE : 18/12/13
CLIENT :
ENUMERATOR : Croft
JOB NUMBER : 0255
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS A61 Wakefield Road (NB)
ARM B IS B6248 Shaw Lane
ARM C IS A61 Wakefield Road (SB)
ARM D IS B6428 Lee Lane

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 3.00 M.	I	(WA-D) 3.00 M.	I
I	- VISIBILITY	I	(VC-B)130.00 M.	I	(VA-D)250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	NO (0)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 55.0 M.	I	(VD-A) 40.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 35.0 M.	I	(VD-C) 65.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) -	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	10.00 M.	I
I	WIDTH AT 5 M FROM JUNCTION	I	6.40 M.	I	8.00 M.	I
I	WIDTH AT 10 M FROM JUNCTION	I	3.60 M.	I	5.00 M.	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.40 M.	I	4.25 M.	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.40 M.	I	3.50 M.	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	2 VEHS	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	0.00		0.00	0.00		0.00		0.00		I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-AD	STREAM	A-C	STREAM A-D	STREAM	D-A	STREAM	D-B	STREAM	I
I	0.00		0.00	0.00		0.00		0.00		I

* Due to the presence of a flare, data is not available

I		Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I		STREAM	C-A	STREAM C-B	STREAM	C-D	STREAM	C-D	STREAM	I
I			0.00		0.00		0.00			I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM D-A	STREAM	C-A	STREAM D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	0.00		0.00	0.00		0.00		0.00		I

* Due to the presence of a flare, data is not available

D-BC Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM D-BC	STREAM	C-A	STREAM B-A	STREAM	C-D	STREAM	B-D	STREAM	I
I	0.00		0.00	0.00		0.00		0.00		I

* Due to the presence of a flare, data is not available

I		Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I		STREAM	A-C	STREAM A-B	STREAM	A-D	STREAM	A-D	STREAM	I
I			0.00		0.00		0.00			I

* Due to the presence of a flare, data is not available

C-B Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM	STREAM	A-C	STREAM	A-B	STREAM	A-D	STREAM	A-D	I

A-D Stream

TRAFFIC DEMAND DATA

Demand set: 2022 Base Flows - AM Peak

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

Demand set: 2022 Base Flows - AM Peak

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

FOR DEMAND SET 2022 Base Flows - AM Peak
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
B-C	0.99	7.28	0.136		0.00	0.16	2.2		0.16
B-AD	3.64	6.88	0.529		0.00	1.08	14.7		0.30
A-B	1.43								
A-C	3.58								
A-D	0.69	10.47	0.066		0.00	0.07	1.0		0.10
D-A	0.49	8.48	0.058		0.00	0.06	0.9		0.13
D-BC	2.33	7.16	0.326		0.00	0.47	6.7		0.20
C-D	0.68								
C-A	4.13								
C-B	0.89	9.76	0.091		0.00	0.10	1.4		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-C	1.18	5.52	0.214		0.16	0.27	3.8		0.23
B-AD	4.35	6.34	0.686		1.08	2.00	26.8		0.47
A-B	1.71								
A-C	4.27								
A-D	0.82	9.95	0.083		0.07	0.09	1.3		0.11
D-A	0.58	7.79	0.075		0.06	0.08	1.2		0.14
D-BC	2.79	6.56	0.425		0.47	0.72	10.2		0.26
C-D	0.81								
C-A	4.93								
C-B	1.06	9.36	0.114		0.10	0.13	1.9		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	1.45	1.66	0.875		0.27	3.06	32.0		2.04
B-AD	5.32	5.52	0.964		2.00	7.41	79.9		1.31
A-B	2.09								
A-C	5.23								
A-D	1.01	9.24	0.109		0.09	0.12	1.8		0.12
D-A	0.72	6.41	0.112		0.08	0.12	1.8		0.18
D-BC	3.41	5.73	0.596		0.72	1.38	18.9		0.42
C-D	0.99								
C-A	6.04								
C-B	1.30	8.81	0.148		0.13	0.17	2.5		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	1.45	1.56	0.931		3.06	4.53	58.1		3.19
B-AD	5.32	5.48	0.972		7.41	10.11	133.0		1.99
A-B	2.09								
A-C	5.23								
A-D	1.01	9.13	0.110		0.12	0.12	1.8		0.12
D-A	0.72	6.26	0.114		0.12	0.13	1.9		0.18
D-BC	3.41	5.66	0.603		1.38	1.46	21.4		0.44
C-D	0.99								
C-A	6.04								
C-B	1.30	8.80	0.148		0.17	0.17	2.6		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	1.18	4.36	0.272		4.53	0.38	9.7		0.38
B-AD	4.35	6.24	0.696		10.11	2.58	62.1		0.87
A-B	1.71								
A-C	4.27								
A-D	0.82	9.77	0.084		0.12	0.09	1.4		0.11
D-A	0.58	7.63	0.077		0.13	0.08	1.3		0.14
D-BC	2.79	6.45	0.432		1.46	0.78	12.6		0.28
C-D	0.81								
C-A	4.93								
C-B	1.06	9.34	0.114		0.17	0.13	2.0		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.99	7.06	0.140		0.38	0.17	2.6		0.17
B-AD	3.64	6.87	0.530		2.58	1.17	19.4		0.33
A-B	1.43								
A-C	3.58								
A-D	0.69	10.41	0.066		0.09	0.07	1.1		0.10
D-A	0.49	8.43	0.058		0.08	0.06	1.0		0.13
D-BC	2.33	7.13	0.327		0.78	0.50	7.8		0.21
C-D	0.68								
C-A	4.13								
C-B	0.89	9.74	0.091		0.13	0.10	1.6		0.11

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.2
08.00	0.3
08.15	3.1 ***
08.30	4.5 *****
08.45	0.4
09.00	0.2

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	1.1 *
08.00	2.0 **
08.15	7.4 *****
08.30	10.1 *****
08.45	2.6 ***
09.00	1.2 *

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.1
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1

QUEUE FOR STREAM		D-A
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.1	
08.00	0.1	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	

QUEUE FOR STREAM		D-BC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.5	
08.00	0.7	*
08.15	1.4	*
08.30	1.5	*
08.45	0.8	*
09.00	0.5	

QUEUE FOR STREAM		C-B
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.1	
08.00	0.1	
08.15	0.2	
08.30	0.2	
08.45	0.1	
09.00	0.1	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN/VEH)	I
I	B-C	I	108.7	I	72.5	I	108.5	I	1.00	I
I	B-AD	I	399.2	I	266.1	I	335.9	I	0.84	I
I	A-B	I	156.9	I	104.6	I	I	I	I	I
I	A-C	I	392.3	I	261.5	I	I	I	I	I
I	A-D	I	75.7	I	50.5	I	8.5	I	0.11	I
I	D-A	I	53.7	I	35.8	I	8.0	I	0.15	I
I	D-BC	I	256.0	I	170.7	I	77.7	I	0.30	I
I	C-D	I	74.3	I	49.6	I	I	I	I	I
I	C-A	I	452.8	I	301.9	I	I	I	I	I
I	C-B	I	97.7	I	65.2	I	12.0	I	0.12	I
I	ALL	I	2067.4	I	1378.3	I	550.5	I	0.27	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	STREAM	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I		STREAM	C-A	STREAM	C-B	STREAM	C-D				I
I		0.00		0.00		0.00		0.00			I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	I	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

D-BC Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	STREAM	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I		STREAM	A-C	STREAM	A-B	STREAM	A-D				I
I		0.00		0.00		0.00		0.00			I

* Due to the presence of a flare, data is not available

C-B Stream

I Intercept For I STREAM C-B	Slope For STREAM C-B	Opposing A-C	Slope For STREAM A-B	Opposing D-C	Slope For STREAM D-C	Opposing D-B	I
I 705.78	I 0.27	I 0.27	I 0.27	I 0.27	I 0.27	I 0.27	I

A-D Stream

I Intercept For I STREAM A-D	Slope For STREAM A-D	Opposing C-A	Slope For STREAM C-D	Opposing B-A	Slope For STREAM B-A	Opposing B-D	I
I 705.78	I 0.30	I 0.30	I 0.30	I 0.30	I 0.30	I 0.30	I

TRAFFIC DEMAND DATA

I ARM	I FLOW	I SCALE(%)	I
I A	I 100	I 100	I
I B	I 100	I 100	I
I C	I 100	I 100	I
I D	I 100	I 100	I

Demand set: 2022 Base Flows - PM Peak

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I TO RISE I IS REACHED I FALLING	I RATE OF FLOW (VEH/MIN) I BEFORE I AT TOP I AFTER I PEAK I OF PEAK I PEAK	I
I ARM A	I 15.00 I 45.00 I 75.00	I 4.69 I 7.03 I 4.69	I
I ARM B	I 15.00 I 45.00 I 75.00	I 4.11 I 6.17 I 4.11	I
I ARM C	I 15.00 I 45.00 I 75.00	I 5.38 I 8.06 I 5.38	I
I ARM D	I 15.00 I 45.00 I 75.00	I 3.19 I 4.78 I 3.19	I

Demand set: 2022 Base Flows - PM Peak

I	I TURNING PROPORTIONS I TURNING COUNTS I (PERCENTAGE OF H.V.S)	I
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D	I
I 16.30 - 18.00	I ARM A I 0.000 I 0.325 I 0.525 I 0.149 I 0.0 I 122.0 I 197.0 I 56.0 I (0.0)I (0.0)I (0.0)I (0.0)	I
	I ARM B I 0.371 I 0.000 I 0.155 I 0.474 I 122.0 I 0.0 I 51.0 I 156.0 I (0.0)I (0.0)I (0.0)I (0.0)	I
	I ARM C I 0.742 I 0.184 I 0.000 I 0.074 I 319.0 I 79.0 I 0.0 I 32.0 I (0.0)I (0.0)I (0.0)I (0.0)	I
	I ARM D I 0.302 I 0.537 I 0.161 I 0.000 I 77.0 I 137.0 I 41.0 I 0.0 I (0.0)I (0.0)I (0.0)I (0.0)	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 Base Flows - PM Peak
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	0.64	7.83	0.082		0.00	0.09	1.3		0.14
B-AD	3.49	7.24	0.482		0.00	0.90	12.4		0.26
A-B	1.53								
A-C	2.47								
A-D	0.70	10.63	0.066		0.00	0.07	1.0		0.10
D-A	0.97	8.78	0.110		0.00	0.12	1.8		0.13
D-BC	2.23	7.25	0.308		0.00	0.44	6.2		0.20
C-D	0.40								
C-A	4.00								
C-B	0.99	10.06	0.099		0.00	0.11	1.6		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	0.76	6.43	0.119		0.09	0.13	1.9		0.18
B-AD	4.17	6.79	0.614		0.90	1.50	20.7		0.37
A-B	1.83								
A-C	2.95								
A-D	0.84	10.15	0.083		0.07	0.09	1.3		0.11
D-A	1.15	8.15	0.142		0.12	0.16	2.4		0.14
D-BC	2.67	6.70	0.398		0.44	0.64	9.2		0.25
C-D	0.48								
C-A	4.78								
C-B	1.18	9.72	0.122		0.11	0.14	2.0		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	0.94	3.51	0.266		0.13	0.35	4.9		0.38
B-AD	5.10	6.15	0.830		1.50	3.79	46.9		0.75
A-B	2.24								
A-C	3.62								
A-D	1.03	9.50	0.108		0.09	0.12	1.8		0.12
D-A	1.41	7.02	0.201		0.16	0.25	3.6		0.18
D-BC	3.27	5.94	0.550		0.64	1.16	16.1		0.36
C-D	0.59								
C-A	5.85								
C-B	1.45	9.26	0.157		0.14	0.18	2.7		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	0.94	3.12	0.300		0.35	0.41	6.0		0.46
B-AD	5.10	6.14	0.831		3.79	4.23	60.7		0.89
A-B	2.24								
A-C	3.62								
A-D	1.03	9.45	0.109		0.12	0.12	1.8		0.12
D-A	1.41	6.95	0.203		0.25	0.25	3.8		0.18
D-BC	3.27	5.91	0.553		1.16	1.20	17.8		0.38
C-D	0.59								
C-A	5.85								
C-B	1.45	9.25	0.157		0.18	0.18	2.8		0.13

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	0.76	6.06	0.126		0.41	0.15	2.3		0.19	I
I	B-AD	4.17	6.77	0.615		4.23	1.70	29.5		0.43	I
I	A-B	1.83									I
I	A-C	2.95									I
I	A-D	0.84	10.08	0.083		0.12	0.09	1.4		0.11	I
I	D-A	1.15	8.07	0.143		0.25	0.17	2.6		0.14	I
I	D-BC	2.67	6.66	0.401		1.20	0.69	10.9		0.25	I
I	C-D	0.48									I
I	C-A	4.78									I
I	C-B	1.18	9.70	0.122		0.18	0.14	2.2		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.64	7.70	0.083		0.15	0.09	1.4		0.14	I
I	B-AD	3.49	7.23	0.483		1.70	0.96	15.5		0.27	I
I	A-B	1.53									I
I	A-C	2.47									I
I	A-D	0.70	10.60	0.066		0.09	0.07	1.1		0.10	I
I	D-A	0.97	8.74	0.111		0.17	0.13	1.9		0.13	I
I	D-BC	2.23	7.23	0.309		0.69	0.46	7.1		0.20	I
I	C-D	0.40									I
I	C-A	4.00									I
I	C-B	0.99	10.05	0.099		0.14	0.11	1.7		0.11	I
I											I

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.4
17.30	0.4
17.45	0.1
18.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.9	*
17.00	1.5	*
17.15	3.8	****
17.30	4.2	****
17.45	1.7	**
18.00	1.0	*

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-A	
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.2
18.00	0.1

QUEUE FOR STREAM D-BC	
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.4
17.00	0.6 *
17.15	1.2 *
17.30	1.2 *
17.45	0.7 *
18.00	0.5

QUEUE FOR STREAM C-B	
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I
I		I		I	(MIN/VEH)	I	(MIN)	I
I	B-C	I	70.2	I	46.8	I	17.8	I
I	B-AD	I	382.6	I	255.1	I	185.8	I
I	A-B	I	167.9	I	111.9	I		I
I	A-C	I	271.2	I	180.8	I		I
I	A-D	I	77.1	I	51.4	I	8.4	I
I	D-A	I	106.0	I	70.7	I	16.1	I
I	D-BC	I	245.0	I	163.3	I	67.4	I
I	C-D	I	44.0	I	29.4	I		I
I	C-A	I	439.1	I	292.7	I		I
I	C-B	I	108.7	I	72.5	I	12.9	I
I	ALL	I	1911.9	I	1274.6	I	308.3	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

===== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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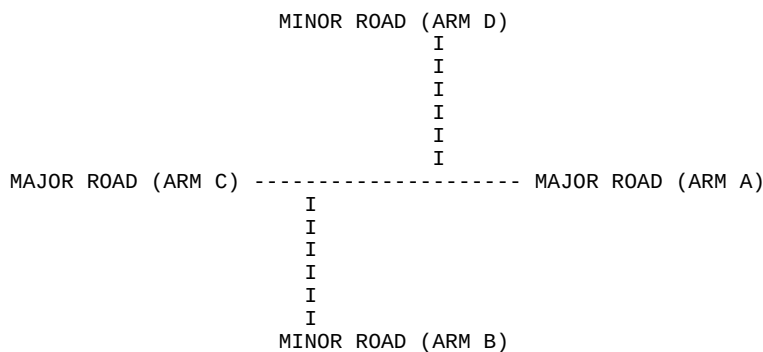
Run with file:-
"Z:\projects\0255 Lee Lane, Royston\Picady\
Wakefield Road-Shaw Lane-Lee Lane Staggered Junction-2022 With Development Flows(22.01.13).vpi"
(drive-on-the-left) at 16:05:30 on Wednesday, 22 January 2014

RUN INFORMATION

RUN TITLE : A61 Wakefield Road-Shaw Lane-Lee Lane Stagger
LOCATION : Lee Lane, Royston
DATE : 18/12/13
CLIENT :
ENUMERATOR : Croft
JOB NUMBER : 0255
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS A61 Wakefield Road (NB)
ARM B IS B6248 Shaw Lane
ARM C IS A61 Wakefield Road (SB)
ARM D IS B6428 Lee Lane

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 3.00 M.	I	(WA-D) 3.00 M.	I
I	- VISIBILITY	I	(VC-B)130.00 M.	I	(VA-D)250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	NO (0)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 55.0 M.	I	(VD-A) 40.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 35.0 M.	I	(VD-C) 65.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) -	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	10.00 M.	I
I	WIDTH AT 5 M FROM JUNCTION	I	6.40 M.	I	8.00 M.	I
I	WIDTH AT 10 M FROM JUNCTION	I	3.60 M.	I	5.00 M.	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.40 M.	I	4.25 M.	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.40 M.	I	3.50 M.	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 1 PCU	I	2 VEHS	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D	STREAM C-D	I
I	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D	STREAM A-D	I
I	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

C-B Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I

I	STREAM C-B	STREAM A-C	STREAM A-B	STREAM D-C	STREAM D-B	I
I	705.78	0.27	0.27	0.27	0.27	I

A-D Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM A-D	STREAM	C-A	STREAM	C-D	STREAM	B-A	STREAM	B-D	I
I	705.78		0.30		0.30		0.30		0.30	I

TRAFFIC DEMAND DATA

I	ARM	I	FLOW	SCALE(%)	I
I	A	I	100		I
I	B	I	100		I
I	C	I	100		I
I	D	I	100		I

Demand set: 2022 With Dev Flows - AM Peak

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I		I	FLOW STARTS I TOP OF PEAK I FLOW STOPS	I	BEFORE I AT TOP I AFTER	I
I		I	TO RISE I IS REACHED I FALLING	I	PEAK I OF PEAK I PEAK	I
I		I	I	I	I	I
I	ARM A	I	15.00 I 45.00 I 75.00	I	5.81 I 8.72 I 5.81	I
I	ARM B	I	15.00 I 45.00 I 75.00	I	4.66 I 6.99 I 4.66	I
I	ARM C	I	15.00 I 45.00 I 75.00	I	5.75 I 8.63 I 5.75	I
I	ARM D	I	15.00 I 45.00 I 75.00	I	3.60 I 5.40 I 3.60	I

Demand set: 2022 With Dev Flows - AM Peak

		TURNING PROPORTIONS											
		TURNING COUNTS											
		(PERCENTAGE OF H.V.S)											
TIME		FROM/TO	ARM	A	ARM	B	ARM	C	ARM	D			
07.30 - 09.00		ARM	A	0.000	0.245	0.613	0.142						
				0.0	114.0	285.0	66.0						
				(0.0)	(0.0)	(0.0)	(0.0)						
		ARM	B	0.290	0.000	0.212	0.499						
				108.0	0.0	79.0	186.0						
				(0.0)	(0.0)	(0.0)	(0.0)						
		ARM	C	0.715	0.154	0.000	0.130						
				329.0	71.0	0.0	60.0						
				(0.0)	(0.0)	(0.0)	(0.0)						
		ARM	D	0.250	0.528	0.222	0.000						
				72.0	152.0	64.0	0.0						
				(0.0)	(0.0)	(0.0)	(0.0)						

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 With Dev Flows - AM Peak
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
B-C	0.99	7.11	0.139		0.00	0.16	2.3		0.16
B-AD	3.69	6.79	0.543		0.00	1.14	15.4		0.31
A-B	1.43								
A-C	3.58								
A-D	0.83	10.43	0.079		0.00	0.09	1.2		0.10
D-A	0.90	8.37	0.108		0.00	0.12	1.7		0.13
D-BC	2.71	7.01	0.387		0.00	0.61	8.6		0.23
C-D	0.75								
C-A	4.13								
C-B	0.89	9.65	0.092		0.00	0.10	1.5		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-C	1.18	5.22	0.227		0.16	0.29	4.1		0.25
B-AD	4.40	6.23	0.708		1.14	2.18	29.1		0.51
A-B	1.71								
A-C	4.27								
A-D	0.99	9.90	0.100		0.09	0.11	1.6		0.11
D-A	1.08	7.50	0.144		0.12	0.17	2.4		0.16
D-BC	3.24	6.40	0.506		0.61	0.99	13.9		0.31
C-D	0.90								
C-A	4.93								
C-B	1.06	9.23	0.115		0.10	0.13	1.9		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	1.45	1.43	1.014		0.29	4.37	41.9		2.82
B-AD	5.39	5.39	1.000		2.18	8.90	92.4		1.51
A-B	2.09								
A-C	5.23								
A-D	1.21	9.18	0.132		0.11	0.15	2.2		0.13
D-A	1.32	5.53	0.239		0.17	0.31	4.4		0.24
D-BC	3.96	5.54	0.715		0.99	2.22	29.0		0.58
C-D	1.10								
C-A	6.04								
C-B	1.30	8.66	0.150		0.13	0.18	2.6		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	1.45	1.55	0.934		4.37	5.38	73.6		3.81
B-AD	5.39	5.34	1.010		8.90	13.03	166.0		2.46
A-B	2.09								
A-C	5.23								
A-D	1.21	9.05	0.134		0.15	0.15	2.3		0.13
D-A	1.32	5.22	0.253		0.31	0.33	4.9		0.26
D-BC	3.96	5.46	0.726		2.22	2.43	35.3		0.65
C-D	1.10								
C-A	6.04								
C-B	1.30	8.64	0.151		0.18	0.18	2.6		0.14

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	08.30-08.45										I
I	B-C	1.18	3.55	0.334		5.38	0.52	15.0		0.56	I
I	B-AD	4.40	6.10	0.723		13.03	3.06	87.4		1.23	I
I	A-B	1.71									I
I	A-C	4.27									I
I	A-D	0.99	9.66	0.102		0.15	0.11	1.8		0.12	I
I	D-A	1.08	7.22	0.149		0.33	0.18	2.8		0.16	I
I	D-BC	3.24	6.26	0.517		2.43	1.12	18.5		0.35	I
I	C-D	0.90									I
I	C-A	4.93									I
I	C-B	1.06	9.20	0.116		0.18	0.13	2.0		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	08.45-09.00										I
I	B-C	0.99	6.83	0.145		0.52	0.17	2.7		0.17	I
I	B-AD	3.69	6.77	0.545		3.06	1.25	21.1		0.35	I
I	A-B	1.43									I
I	A-C	3.58									I
I	A-D	0.83	10.37	0.080		0.11	0.09	1.3		0.10	I
I	D-A	0.90	8.30	0.109		0.18	0.12	1.9		0.14	I
I	D-BC	2.71	6.97	0.389		1.12	0.65	10.3		0.24	I
I	C-D	0.75									I
I	C-A	4.13									I
I	C-B	0.89	9.63	0.092		0.13	0.10	1.6		0.11	I
I											I

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.2	
08.00	0.3	
08.15	4.4	****
08.30	5.4	*****
08.45	0.5	*
09.00	0.2	

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	1.1	*
08.00	2.2	**
08.15	8.9	*****
08.30	13.0	*****
08.45	3.1	***
09.00	1.3	*

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.1	
08.00	0.1	
08.15	0.2	
08.30	0.2	
08.45	0.1	
09.00	0.1	

QUEUE FOR STREAM		D-A
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.1	
08.00	0.2	
08.15	0.3	
08.30	0.3	
08.45	0.2	
09.00	0.1	

QUEUE FOR STREAM		D-BC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.6	*
08.00	1.0	*
08.15	2.2	**
08.30	2.4	**
08.45	1.1	*
09.00	0.7	*

QUEUE FOR STREAM		C-B
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.1	
08.00	0.1	
08.15	0.2	
08.30	0.2	
08.45	0.1	
09.00	0.1	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN/VEH)	I
I	B-C	I	108.7	I	72.5	I	139.6	I	1.28	I
I	B-AD	I	404.7	I	269.8	I	411.3	I	1.02	I
I	A-B	I	156.9	I	104.6	I	I	I	I	I
I	A-C	I	392.3	I	261.5	I	I	I	I	I
I	A-D	I	90.8	I	60.6	I	10.5	I	0.12	I
I	D-A	I	99.1	I	66.1	I	18.1	I	0.18	I
I	D-BC	I	297.3	I	198.2	I	115.6	I	0.39	I
I	C-D	I	82.6	I	55.1	I	I	I	I	I
I	C-A	I	452.8	I	301.9	I	I	I	I	I
I	C-B	I	97.7	I	65.2	I	12.2	I	0.12	I
I	ALL	I	2183.0	I	1455.3	I	707.3	I	0.32	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-C	STREAM	A-C	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	B-AD	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM	D-B	STREAM	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I		STREAM	C-A	STREAM	C-B	STREAM	C-D				I
I		0.00		0.00		0.00		0.00			I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-A	STREAM	C-A	STREAM	D-C	STREAM	A-B	STREAM	D-B	STREAM	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

D-BC Stream

I	Intercept	For	Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I	STREAM	D-BC	STREAM	C-A	STREAM	B-A	STREAM	C-D	STREAM	B-D	STREAM	I
I	0.00		0.00		0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

I		Slope	For	Opposing	Slope	For	Opposing	Slope	For	Opposing	I
I		STREAM	A-C	STREAM	A-B	STREAM	A-D				I
I		0.00		0.00		0.00		0.00			I

* Due to the presence of a flare, data is not available

C-B Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	STREAM	D-C	STREAM	D-B	I
I	705.78		0.27		0.27		0.27		0.27	I

A-D Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM A-D	STREAM	C-A	STREAM	C-D	STREAM	B-A	STREAM	B-D	I
I	705.78		0.30		0.30		0.30		0.30	I

TRAFFIC DEMAND DATA

I	ARM	I	FLOW	I	SCALE(%)	I
I	A	I	100	I		I
I	B	I	100	I		I
I	C	I	100	I		I
I	D	I	100	I		I

Demand set: 2022 With Dev Flows - PM Peak

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	I	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)				I					
			I	I	I	I	I	I	I						
											I	I	I		
														I	I
ARM			FLOW STARTS	TOP OF PEAK	FLOW STOPS	BEFORE	AT TOP	AFTER							
			TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK							

I	ARM	A	I	15.00	I	45.00	I	75.00	I	5.07	I	7.61	I	5.07	I
I	ARM	B	I	15.00	I	45.00	I	75.00	I	4.26	I	6.39	I	4.26	I
I	ARM	C	I	15.00	I	45.00	I	75.00	I	5.57	I	8.36	I	5.57	I
I	ARM	D	I	15.00	I	45.00	I	75.00	I	3.64	I	5.46	I	3.64	I

Demand set: 2022 With Dev Flows - PM Peak

I	TIME	I	FROM/TO	I	ARM	A	I	ARM	B	I	ARM	C	I	ARM	D	I
I	16.30 - 18.00	I	ARM A	I	0.000	I	0.300	I	0.485	I	0.214	I				
I		I		I	0.0	I	122.0	I	197.0	I	87.0	I				
I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I				
I		I	ARM B	I	0.358	I	0.000	I	0.150	I	0.493	I				
I		I		I	122.0	I	0.0	I	51.0	I	168.0	I				
I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I				
I		I	ARM C	I	0.715	I	0.177	I	0.000	I	0.108	I				
I		I		I	319.0	I	79.0	I	0.0	I	48.0	I				
I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I				
I		I	ARM D	I	0.330	I	0.495	I	0.175	I	0.000	I				
I		I		I	96.0	I	144.0	I	51.0	I	0.0	I				
I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I				

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 With Dev Flows - PM Peak
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	0.64	7.59	0.084		0.00	0.09	1.3		0.14
B-AD	3.64	7.16	0.508		0.00	0.99	13.7		0.27
A-B	1.53								
A-C	2.47								
A-D	1.09	10.53	0.104		0.00	0.11	1.7		0.11
D-A	1.20	8.66	0.139		0.00	0.16	2.3		0.13
D-BC	2.45	7.03	0.348		0.00	0.52	7.4		0.21
C-D	0.60								
C-A	4.00								
C-B	0.99	10.00	0.099		0.00	0.11	1.6		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	0.76	6.00	0.127		0.09	0.14	2.1		0.19
B-AD	4.35	6.69	0.649		0.99	1.73	23.6		0.41
A-B	1.83								
A-C	2.95								
A-D	1.30	10.02	0.130		0.11	0.15	2.2		0.11
D-A	1.44	7.92	0.182		0.16	0.22	3.2		0.15
D-BC	2.92	6.43	0.454		0.52	0.81	11.4		0.28
C-D	0.72								
C-A	4.78								
C-B	1.18	9.65	0.123		0.11	0.14	2.0		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	0.94	2.63	0.355		0.14	0.52	7.0		0.57
B-AD	5.32	6.03	0.883		1.73	4.95	58.4		0.92
A-B	2.24								
A-C	3.62								
A-D	1.60	9.34	0.171		0.15	0.20	3.0		0.13
D-A	1.76	6.44	0.273		0.22	0.37	5.3		0.21
D-BC	3.58	5.61	0.638		0.81	1.63	21.9		0.47
C-D	0.88								
C-A	5.85								
C-B	1.45	9.17	0.158		0.14	0.19	2.7		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	0.94	2.01	0.465		0.52	0.79	10.8		0.90
B-AD	5.32	6.01	0.886		4.95	5.83	81.8		1.19
A-B	2.24								
A-C	3.62								
A-D	1.60	9.27	0.172		0.20	0.21	3.1		0.13
D-A	1.76	6.30	0.279		0.37	0.38	5.7		0.22
D-BC	3.58	5.57	0.643		1.63	1.72	25.2		0.50
C-D	0.88								
C-A	5.85								
C-B	1.45	9.15	0.158		0.19	0.19	2.8		0.13

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	0.76	5.41	0.141		0.79	0.17	2.7		0.22	I
I	B-AD	4.35	6.67	0.651		5.83	2.02	37.6		0.53	I
I	A-B	1.83									I
I	A-C	2.95									I
I	A-D	1.30	9.92	0.131		0.21	0.15	2.3		0.12	I
I	D-A	1.44	7.79	0.185		0.38	0.23	3.6		0.16	I
I	D-BC	2.92	6.37	0.459		1.72	0.88	14.1		0.30	I
I	C-D	0.72									I
I	C-A	4.78									I
I	C-B	1.18	9.63	0.123		0.19	0.14	2.2		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.64	7.42	0.086		0.17	0.10	1.5		0.15	I
I	B-AD	3.64	7.15	0.509		2.02	1.07	17.4		0.30	I
I	A-B	1.53									I
I	A-C	2.47									I
I	A-D	1.09	10.49	0.104		0.15	0.12	1.8		0.11	I
I	D-A	1.20	8.60	0.140		0.23	0.16	2.5		0.14	I
I	D-BC	2.45	7.00	0.350		0.88	0.55	8.7		0.22	I
I	C-D	0.60									I
I	C-A	4.00									I
I	C-B	0.99	9.98	0.099		0.14	0.11	1.7		0.11	I
I											I

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.5	*
17.30	0.8	*
17.45	0.2	
18.00	0.1	

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	1.0	*
17.00	1.7	**
17.15	4.9	*****
17.30	5.8	*****
17.45	2.0	**
18.00	1.1	*

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.1	
17.00	0.1	
17.15	0.2	
17.30	0.2	
17.45	0.2	
18.00	0.1	

QUEUE FOR STREAM D-A	
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.2
17.00	0.2
17.15	0.4
17.30	0.4
17.45	0.2
18.00	0.2

QUEUE FOR STREAM D-BC	
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.5 *
17.00	0.8 *
17.15	1.6 **
17.30	1.7 **
17.45	0.9 *
18.00	0.5 *

QUEUE FOR STREAM C-B	
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I
I		I		I	(MIN/VEH)	I	(MIN)	I
I	B-C	I	70.2	I	46.8	I	25.4	I
I	B-AD	I	399.2	I	266.1	I	232.4	I
I	A-B	I	167.9	I	111.9	I		I
I	A-C	I	271.2	I	180.8	I		I
I	A-D	I	119.7	I	79.8	I	14.1	I
I	D-A	I	132.1	I	88.1	I	22.6	I
I	D-BC	I	268.4	I	178.9	I	88.8	I
I	C-D	I	66.1	I	44.0	I		I
I	C-A	I	439.1	I	292.7	I		I
I	C-B	I	108.7	I	72.5	I	13.0	I
I	ALL	I	2042.6	I	1361.7	I	396.3	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

===== end of file =====

APPENDIX 3

PICADY Output – A61 Wakefield Road/B6248 Shaw Lane/B6248 Lee Lane Staggered Crossroad Junction – Potential Improvement Scheme

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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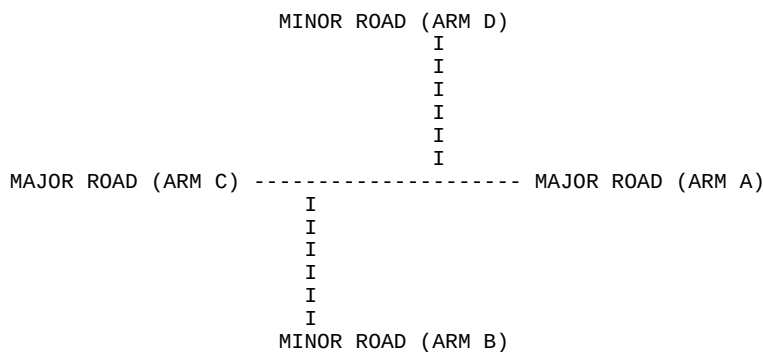
Run with file:-
"Z:\projects\0255 Lee Lane, Royston\Picady\
Wakefield Road-Shaw Lane-Lee Lane Staggered Junction -2022 With Development Flows(22.01.13)With Imp Scheme.vpi"
(drive-on-the-left) at 15:49:39 on Wednesday, 22 January 2014

RUN INFORMATION

RUN TITLE : A61 Wakefield Road-Shaw Lane-Lee Lane Stagger
LOCATION : Lee Lane, Royston
DATE : 18/12/13
CLIENT :
ENUMERATOR : Croft
JOB NUMBER : 0255
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS A61 Wakefield Road (NB)
ARM B IS B6248 Shaw Lane
ARM C IS A61 Wakefield Road (SB)
ARM D IS B6428 Lee Lane

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I	(WCR) 0.00 M.	I
I		I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 3.00 M.	I	(WA-D) 3.00 M.	I
I	- VISIBILITY	I	(VC-B)130.00 M.	I	(VA-D)250.00 M.	I
I	- BLOCKS TRAFFIC (SPACES)	I	NO (0)	I	NO (0)	I
I		I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 55.0 M.	I	(VD-A) 40.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 35.0 M.	I	(VD-C) 65.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I	(WD-A) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I	(WD-C) -	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I	10.00 M.	I
I	WIDTH AT 5 M FROM JUNCTION	I	10.00 M.	I	8.00 M.	I
I	WIDTH AT 10 M FROM JUNCTION	I	8.15 M.	I	5.00 M.	I
I	WIDTH AT 15 M FROM JUNCTION	I	6.95 M.	I	4.25 M.	I
I	WIDTH AT 20 M FROM JUNCTION	I	6.50 M.	I	3.50 M.	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 3 PCU	I	DERIVED: 2 PCU	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

B-C Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

B-AD Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM B-AD	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-B	STREAM C-D	STREAM C-D	I
I	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-A Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

D-BC Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-BC	STREAM C-A	STREAM B-A	STREAM C-D	STREAM B-D	I
I	0.00	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM A-C	STREAM A-B	STREAM A-D	STREAM A-D	I
I	0.00	0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

C-B Stream

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM D-C	STREAM A-B	STREAM D-B	I

I	STREAM C-B	STREAM A-C	STREAM A-B	STREAM D-C	STREAM D-B	I
I	705.78	0.27	0.27	0.27	0.27	I

A-D Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM A-D	STREAM	C-A	STREAM	C-D	STREAM	B-A	STREAM	B-D	I
I	705.78		0.30		0.30		0.30		0.30	I

TRAFFIC DEMAND DATA

I	ARM	I	FLOW	SCALE(%)	I
I	A	I	100		I
I	B	I	100		I
I	C	I	100		I
I	D	I	100		I

Demand set: 2022 With Development Flows - AM Peak

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I		I	FLOW STARTS I TOP OF PEAK I FLOW STOPS	I	BEFORE I AT TOP I AFTER	I
I		I	TO RISE I IS REACHED I FALLING	I	PEAK I OF PEAK I PEAK	I
I		I		I		I
I	ARM A	I	15.00 I 45.00 I 75.00	I	5.81 I 8.72 I 5.81	I
I	ARM B	I	15.00 I 45.00 I 75.00	I	4.66 I 6.99 I 4.66	I
I	ARM C	I	15.00 I 45.00 I 75.00	I	5.68 I 8.51 I 5.68	I
I	ARM D	I	15.00 I 45.00 I 75.00	I	3.60 I 5.40 I 3.60	I

Demand set: 2022 With Development Flows - AM Peak

I		I	TURNING PROPORTIONS	I
I		I	TURNING COUNTS	I
I		I	(PERCENTAGE OF H.V.S)	I
I	TIME	I	FROM/TO I ARM A I ARM B I ARM C I ARM D	I
I	07.30 - 09.00	I		I
I		I	ARM A	I
I		I	0.000 I 0.245 I 0.613 I 0.142	I
I		I	0.0 I 114.0 I 285.0 I 66.0	I
I		I	(0.0)I (0.0)I (0.0)I (0.0)	I
I		I		I
I		I	ARM B	I
I		I	0.290 I 0.000 I 0.212 I 0.499	I
I		I	108.0 I 0.0 I 79.0 I 186.0	I
I		I	(0.0)I (0.0)I (0.0)I (0.0)	I
I		I		I
I		I	ARM C	I
I		I	0.725 I 0.156 I 0.000 I 0.119	I
I		I	329.0 I 71.0 I 0.0 I 54.0	I
I		I	(0.0)I (0.0)I (0.0)I (0.0)	I
I		I		I
I		I	ARM D	I
I		I	0.250 I 0.528 I 0.222 I 0.000	I
I		I	72.0 I 152.0 I 64.0 I 0.0	I
I		I	(0.0)I (0.0)I (0.0)I (0.0)	I
I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 With Development Flows - AM Peak
AND FOR TIME PERIOD 1

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	08.30-08.45										I
I	B-C	1.18	6.68	0.177		0.93	0.22	3.5		0.19	I
I	B-AD	4.40	6.84	0.644		5.94	1.94	36.6		0.51	I
I	A-B	1.71									I
I	A-C	4.27									I
I	A-D	0.99	9.83	0.101		0.15	0.11	1.7		0.11	I
I	D-A	1.08	7.34	0.147		0.32	0.17	2.7		0.16	I
I	D-BC	3.24	6.35	0.510		2.37	1.08	17.9		0.34	I
I	C-D	0.81									I
I	C-A	4.93									I
I	C-B	1.06	9.20	0.116		0.18	0.13	2.0		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	08.45-09.00										I
I	B-C	0.99	8.15	0.122		0.22	0.14	2.2		0.14	I
I	B-AD	3.69	7.41	0.498		1.94	1.03	16.5		0.28	I
I	A-B	1.43									I
I	A-C	3.58									I
I	A-D	0.83	10.41	0.080		0.11	0.09	1.3		0.10	I
I	D-A	0.90	8.32	0.109		0.17	0.12	1.9		0.14	I
I	D-BC	2.71	6.99	0.387		1.08	0.65	10.3		0.24	I
I	C-D	0.68									I
I	C-A	4.13									I
I	C-B	0.89	9.63	0.092		0.13	0.10	1.6		0.11	I
I											I

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.1	
08.00	0.2	
08.15	0.6	*
08.30	0.9	*
08.45	0.2	
09.00	0.1	

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	1.0	*
08.00	1.7	**
08.15	5.0	*****
08.30	5.9	*****
08.45	1.9	**
09.00	1.0	*

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.1	
08.00	0.1	
08.15	0.1	
08.30	0.2	
08.45	0.1	
09.00	0.1	

QUEUE FOR STREAM		D-A
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.1	
08.00	0.2	
08.15	0.3	
08.30	0.3	
08.45	0.2	
09.00	0.1	

QUEUE FOR STREAM		D-BC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.6	*
08.00	1.0	*
08.15	2.2	**
08.30	2.4	**
08.45	1.1	*
09.00	0.6	*

QUEUE FOR STREAM		C-B
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	0.1	
08.00	0.1	
08.15	0.2	
08.30	0.2	
08.45	0.1	
09.00	0.1	

* Due to the presence of a flare, data is not available

C-B Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	STREAM	D-C	STREAM	D-B	I
I	705.78		0.27		0.27		0.27		0.27	I

A-D Stream

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM A-D	STREAM	C-A	STREAM	C-D	STREAM	B-A	STREAM	B-D	I
I	705.78		0.30		0.30		0.30		0.30	I

TRAFFIC DEMAND DATA

I	ARM	I	FLOW	SCALE(%)	I
I	A	I	100		I
I	B	I	100		I
I	C	I	100		I
I	D	I	100		I

Demand set: 2022 With Development Flows - PM Peak

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I		I	FLOW STARTS	I	BEFORE	I
I		I	TO RISE	I	AT TOP	I
I		I	IS REACHED	I	OF PEAK	I
I		I	FALLING	I	PEAK	I
I	ARM A	I	15.00	I	45.00	I
I	ARM B	I	15.00	I	45.00	I
I	ARM C	I	15.00	I	45.00	I
I	ARM D	I	15.00	I	45.00	I

Demand set: 2022 With Development Flows - PM Peak

I		I	TURNING PROPORTIONS	I
I		I	TURNING COUNTS	I
I		I	(PERCENTAGE OF H.V.S)	I
I	TIME	I	FROM/TO	I
I	16.30 - 18.00	I	ARM A	I
I		I	0.000	I
I		I	0.0	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	ARM B	I
I		I	0.358	I
I		I	0.000	I
I		I	0.150	I
I		I	0.493	I
I		I	122.0	I
I		I	0.0	I
I		I	51.0	I
I		I	168.0	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	ARM C	I
I		I	0.715	I
I		I	0.177	I
I		I	0.000	I
I		I	0.108	I
I		I	319.0	I
I		I	79.0	I
I		I	0.0	I
I		I	48.0	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	ARM D	I
I		I	0.330	I
I		I	0.495	I
I		I	0.175	I
I		I	0.000	I
I		I	96.0	I
I		I	144.0	I
I		I	51.0	I
I		I	0.0	I
I		I	(0.0)	I
I		I	(0.0)	I
I		I	(0.0)	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 With Development Flows - PM Peak
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	0.64	8.63	0.074		0.00	0.08	1.2		0.12
B-AD	3.64	7.78	0.468		0.00	0.85	11.9		0.24
A-B	1.53								
A-C	2.47								
A-D	1.09	10.53	0.104		0.00	0.11	1.7		0.11
D-A	1.20	8.66	0.139		0.00	0.16	2.3		0.13
D-BC	2.45	7.03	0.348		0.00	0.52	7.4		0.21
C-D	0.60								
C-A	4.00								
C-B	0.99	10.00	0.099		0.00	0.11	1.6		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	0.76	7.71	0.099		0.08	0.11	1.6		0.14
B-AD	4.35	7.29	0.596		0.85	1.40	19.5		0.33
A-B	1.83								
A-C	2.95								
A-D	1.30	10.02	0.130		0.11	0.15	2.2		0.11
D-A	1.44	7.92	0.182		0.16	0.22	3.2		0.15
D-BC	2.92	6.43	0.454		0.52	0.81	11.4		0.28
C-D	0.72								
C-A	4.78								
C-B	1.18	9.65	0.123		0.11	0.14	2.0		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	0.94	5.17	0.181		0.11	0.22	3.1		0.24
B-AD	5.32	6.62	0.804		1.40	3.39	42.8		0.65
A-B	2.24								
A-C	3.62								
A-D	1.60	9.34	0.171		0.15	0.20	3.0		0.13
D-A	1.76	6.45	0.273		0.22	0.37	5.3		0.21
D-BC	3.58	5.61	0.638		0.81	1.63	21.9		0.47
C-D	0.88								
C-A	5.85								
C-B	1.45	9.17	0.158		0.14	0.19	2.7		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	0.94	4.81	0.195		0.22	0.24	3.5		0.26
B-AD	5.32	6.61	0.805		3.39	3.69	53.5		0.74
A-B	2.24								
A-C	3.62								
A-D	1.60	9.30	0.172		0.20	0.21	3.1		0.13
D-A	1.76	6.34	0.278		0.37	0.38	5.6		0.22
D-BC	3.58	5.58	0.641		1.63	1.70	25.1		0.49
C-D	0.88								
C-A	5.85								
C-B	1.45	9.15	0.158		0.19	0.19	2.8		0.13

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.30-17.45										I
I	B-C	0.76	7.49	0.102		0.24	0.11	1.8		0.15	I
I	B-AD	4.35	7.27	0.597		3.69	1.56	26.5		0.37	I
I	A-B	1.83									I
I	A-C	2.95									I
I	A-D	1.30	9.97	0.131		0.21	0.15	2.3		0.12	I
I	D-A	1.44	7.82	0.184		0.38	0.23	3.6		0.16	I
I	D-BC	2.92	6.40	0.457		1.70	0.87	14.0		0.30	I
I	C-D	0.72									I
I	C-A	4.78									I
I	C-B	1.18	9.63	0.123		0.19	0.14	2.2		0.12	I
I											I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-C	0.64	8.56	0.075		0.11	0.08	1.3		0.13	I
I	B-AD	3.64	7.77	0.469		1.56	0.91	14.5		0.25	I
I	A-B	1.53									I
I	A-C	2.47									I
I	A-D	1.09	10.49	0.104		0.15	0.12	1.8		0.11	I
I	D-A	1.20	8.61	0.140		0.23	0.16	2.5		0.14	I
I	D-BC	2.45	7.00	0.349		0.87	0.55	8.6		0.22	I
I	C-D	0.60									I
I	C-A	4.00									I
I	C-B	0.99	9.98	0.099		0.14	0.11	1.7		0.11	I
I											I

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.9	*
17.00	1.4	*
17.15	3.4	***
17.30	3.7	****
17.45	1.6	**
18.00	0.9	*

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.1

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.2
17.00	0.2
17.15	0.4
17.30	0.4
17.45	0.2
18.00	0.2

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.5	*
17.00	0.8	*
17.15	1.6	**
17.30	1.7	**
17.45	0.9	*
18.00	0.5	*

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.1
18.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I
I		I		I	(MIN/VEH)	I	(MIN)	I
I	B-C	I	70.2	I	46.8	I	12.4	I
I	B-AD	I	399.2	I	266.1	I	168.6	I
I	A-B	I	167.9	I	111.9	I		I
I	A-C	I	271.2	I	180.8	I		I
I	A-D	I	119.7	I	79.8	I	14.0	I
I	D-A	I	132.1	I	88.1	I	22.5	I
I	D-BC	I	268.4	I	178.9	I	88.5	I
I	C-D	I	66.1	I	44.0	I		I
I	C-A	I	439.1	I	292.7	I		I
I	C-B	I	108.7	I	72.5	I	13.0	I
I	ALL	I	2042.6	I	1361.7	I	319.1	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

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APPENDIX 4

**LINSIG Output – B6428 Lee Lane/B6132 Station Road/B6428
Midland Road/B6132 Church Street Signal Junction**

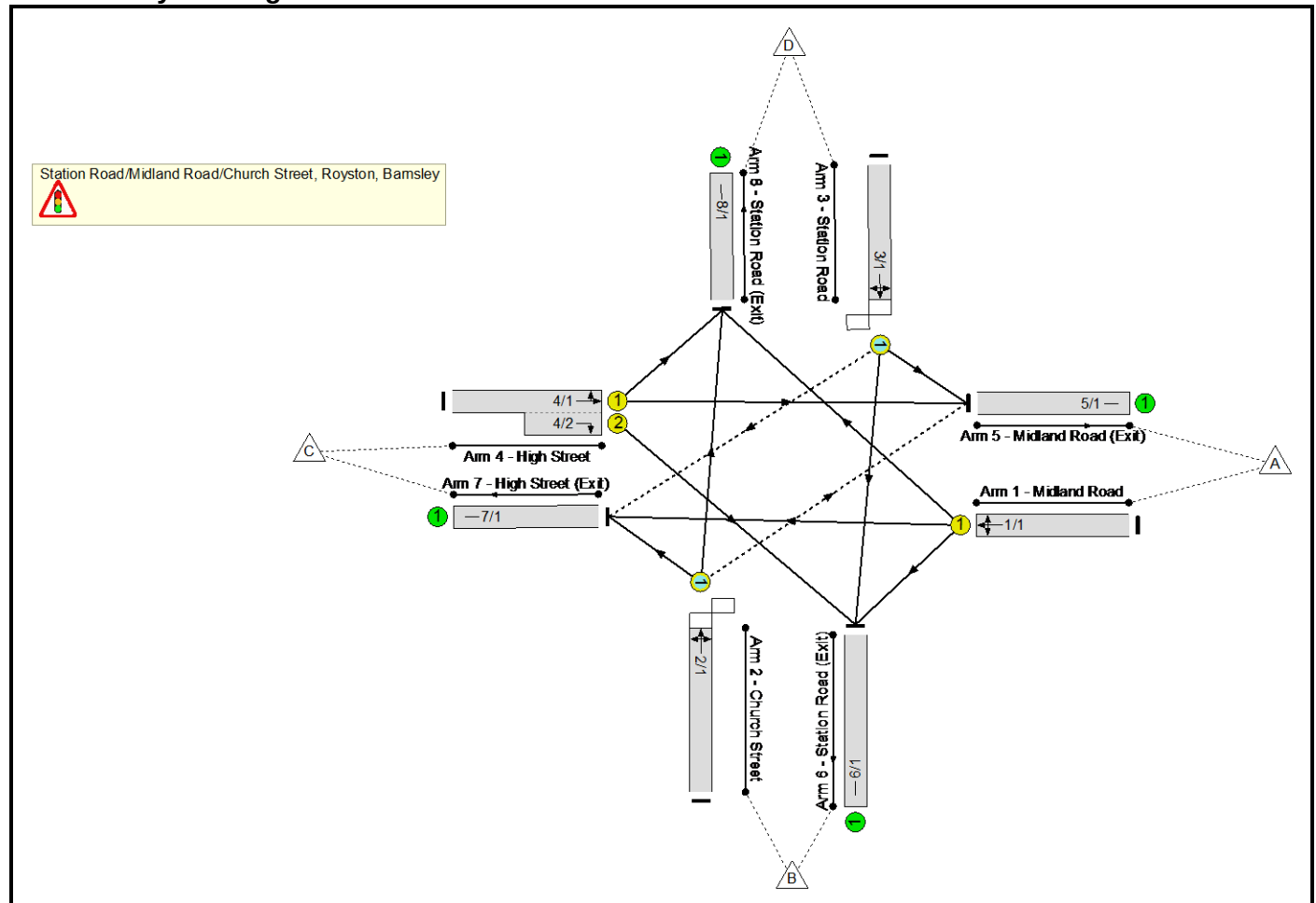
Full Input Data And Results

Full Input Data And Results

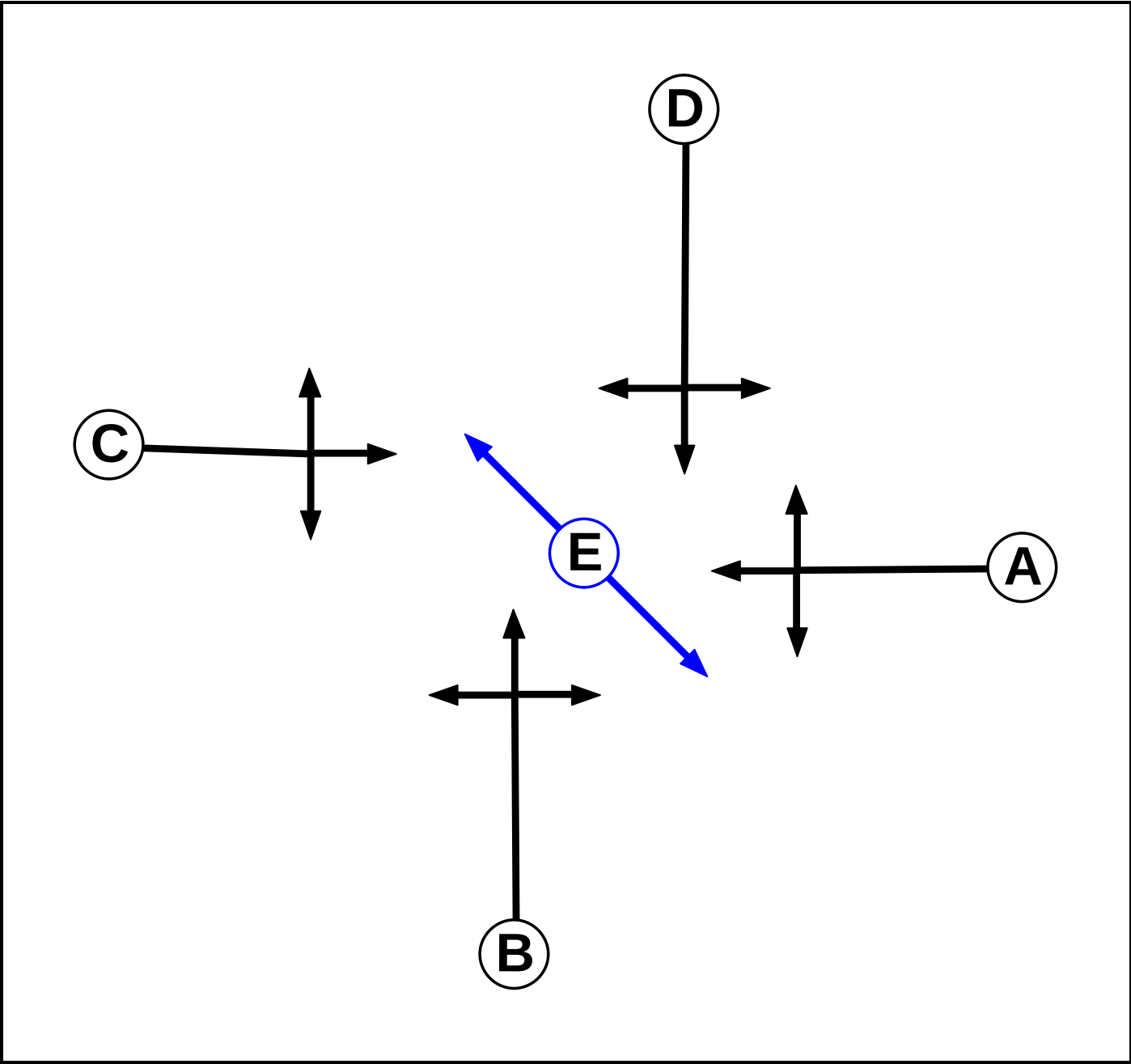
User and Project Details

Project:	Proposed Residential Development, Lee Lane, Royston
Title:	Station Road – Midland Road – Church Street – High Street
Location:	Royston
File name:	Station Road-Midland Road-Church Street-High Street_Revised January 2014.lsg3x
Author:	
Company:	Croft
Address:	
Notes:	Revisions made to reflect MOVA

Network Layout Diagram



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		8	8

Full Input Data And Results

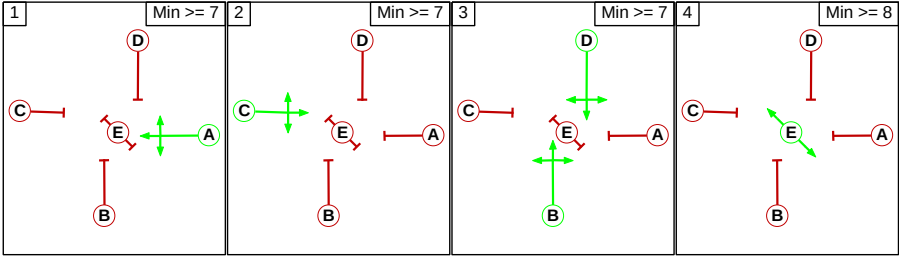
Phase Intergreens Matrix

Terminating Phase	Starting Phase				
	A	B	C	D	E
	A	7	7	7	8
	B	7	7	-	8
	C	6	7	7	8
	D	7	-	7	8
	E	10	10	10	10

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

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

Full Input Data And Results

Give-Way Lane Input Data

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley											
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)
2/1 (Church Street)	5/1 (Right)	1440	0	3/1	1.09	To 5/1 (Left) To 6/1 (Ahead)	2.00	1.00	0.50	2	2.00
3/1 (Station Road)	7/1 (Right)	1440	0	2/1	1.09	To 7/1 (Left) To 8/1 (Ahead)	2.00	1.00	0.50	2	2.00

Lane Input Data

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley												
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 (Midland Road)	U	A	2	3	60.0	User	1876	-	-	-	-	-
2/1 (Church Street)	O	B	2	3	60.0	User	1741	-	-	-	-	-
3/1 (Station Road)	O	D	2	3	60.0	User	1788	-	-	-	-	-
4/1 (High Street)	U	C	2	3	60.0	User	1966	-	-	-	-	-
4/2 (High Street)	U	C	2	3	5.2	User	2014	-	-	-	-	-
5/1 (Midland Road (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Station Road (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (High Street (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Station Road (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2017 Base Flows - AM Peak '	08:00	09:00	01:00	
2: '2017 Base Flows - PM Peak'	17:00	18:00	01:00	
3: '2022 Base Flows- AM Peak '	08:00	09:00	01:00	
4: '2022 Base Flows - PM Peak '	17:00	18:00	01:00	
5: '2017 With Development Flows - AM Peak '	08:00	09:00	01:00	
6: '2017 With Development Flows - PM Peak'	17:00	18:00	01:00	
7: '2022 With Development Flows- AM Peak '	08:00	09:00	01:00	
8: '2022 With Development Flows - PM Peak '	17:00	18:00	01:00	

Full Input Data And Results

Scenario 1: '2017 Base Flows - AM Peak' (FG1: '2017 Base Flows - AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	119	196	45	360
	B	77	0	98	193	368
	C	184	177	0	30	391
	D	50	156	16	0	222
	Tot.	311	452	310	268	1341

Traffic Lane Flows

Lane	Scenario 1: 2017 Base Flows - AM Peak
Junction: Station Road/Midland Road/Church Street, Royston, Barnsley	
1/1	360
2/1	368
3/1	222
4/1 (with short)	391(In) 214(Out)
4/2 (short)	177
5/1	311
6/1	452
7/1	310
8/1	268

Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2017 Base Flows - PM Peak' (FG2: '2017 Base Flows - PM Peak', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	68	266	64	398
	B	90	0	106	194	390
	C	226	200	0	38	464
	D	66	144	53	0	263
	Tot.	382	412	425	296	1515

Traffic Lane Flows

Lane	Scenario 2: 2017 Base Flows - PM Peak
Junction: Station Road/Midland Road/Church Street, Royston, Barnsley	
1/1	398
2/1	390
3/1	263
4/1 (with short)	464(In) 264(Out)
4/2 (short)	200
5/1	382
6/1	412
7/1	425
8/1	296

Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2022 Base Flows - AM Peak' (FG3: '2022 Base Flows- AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	126	208	48	382
	B	81	0	105	207	393
	C	195	190	0	32	417
	D	52	167	17	0	236
	Tot.	328	483	330	287	1428

Traffic Lane Flows

Lane	Scenario 3: 2022 Base Flows - AM Peak
Junction: Station Road/Midland Road/Church Street, Royston, Barnsley	
1/1	382
2/1	393
3/1	236
4/1 (with short)	417(In) 227(Out)
4/2 (short)	190
5/1	328
6/1	483
7/1	330
8/1	287

Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2022 Base Flows - PM Peak' (FG4: '2022 Base Flows - PM Peak ', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	72	280	68	420
	B	93	0	113	209	415
	C	241	215	0	41	497
	D	69	155	56	0	280
	Tot.	403	442	449	318	1612

Traffic Lane Flows

Lane	Scenario 4: 2022 Base Flows - PM Peak
Junction: Station Road/Midland Road/Church Street, Royston, Barnsley	
1/1	420
2/1	415
3/1	280
4/1 (with short)	497(In) 282(Out)
4/2 (short)	215
5/1	403
6/1	442
7/1	449
8/1	318

Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2017 With Development Flows - AM Peak' (FG5: '2017 With Development Flows - AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	119	200	45	364
	B	77	0	103	193	373
	C	195	191	0	32	418
	D	50	156	16	0	222
	Tot.	322	466	319	270	1377

Traffic Lane Flows

Lane	Scenario 5: 2017 With Development Flows - AM Peak
Junction: Station Road/Midland Road/Church Street, Royston, Barnsley	
1/1	364
2/1	373
3/1	222
4/1 (with short)	418(In) 227(Out)
4/2 (short)	191
5/1	322
6/1	466
7/1	319
8/1	270

Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2017 With Development Flows - PM Peak' (FG6: '2017 With Development Flows - PM Peak', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	68	276	64	408
	B	90	0	120	194	404
	C	232	208	0	39	479
	D	66	144	54	0	264
	Tot.	388	420	450	297	1555

Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 7: '2022 With Development Flows - AM Peak' (FG7: '2022 With Development Flows- AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	126	211	48	385
	B	81	0	110	207	398
	C	206	204	0	34	444
	D	52	167	17	0	236
	Tot.	339	497	338	289	1463

Traffic Lane Flows

Lane	Scenario 7: 2022 With Development Flows - AM Peak
Junction: Station Road/Midland Road/Church Street, Royston, Barnsley	
1/1	385
2/1	398
3/1	236
4/1 (with short)	444(In) 240(Out)
4/2 (short)	204
5/1	339
6/1	497
7/1	338
8/1	289

Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2022 With Development Flows - PM Peak' (FG8: '2022 With Development Flows - PM Peak ', Plan 1: 'Double Cycle Peds Every Other')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	72	290	68	430
	B	93	0	126	209	428
	C	247	223	0	42	512
	D	69	155	58	0	282
	Tot.	409	450	474	319	1652

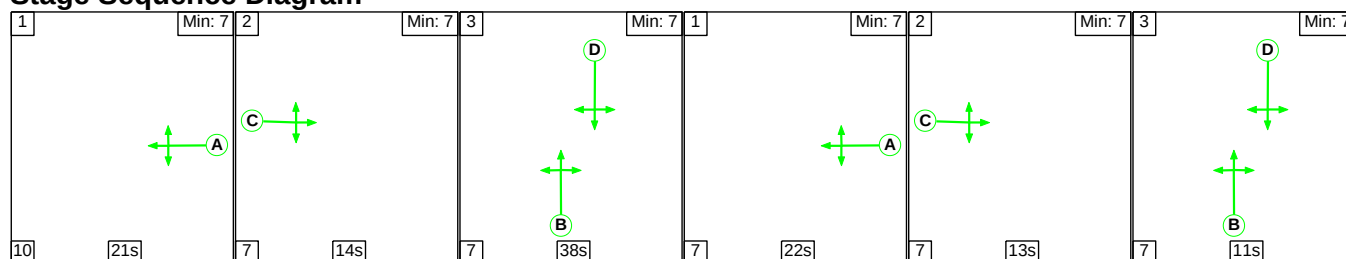
Traffic Lane Flows

Lane	Scenario 8: 2022 With Development Flows - PM Peak
Junction: Station Road/Midland Road/Church Street, Royston, Barnsley	
1/1	430
2/1	428
3/1	282
4/1 (with short)	512(In) 289(Out)
4/2 (short)	223
5/1	409
6/1	450
7/1	474
8/1	319

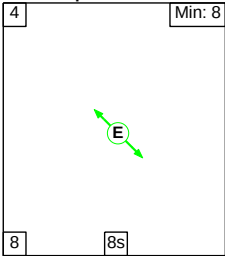
Lane Saturation Flows

Junction: Station Road/Midland Road/Church Street, Royston, Barnsley								
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 (Midland Road Lane 1)	This lane uses a directly entered Saturation Flow						1876	1876
2/1 (Church Street Lane 1)	This lane uses a directly entered Saturation Flow						1741	1741
3/1 (Station Road Lane 1)	This lane uses a directly entered Saturation Flow						1788	1788
4/1 (High Street Lane 1)	This lane uses a directly entered Saturation Flow						1966	1966
4/2 (High Street Lane 2)	This lane uses a directly entered Saturation Flow						2014	2014
5/1 (Midland Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (High Street (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Station Road (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2017 Base Flows - AM Peak' (FG1: '2017 Base Flows - AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

Stage Sequence Diagram

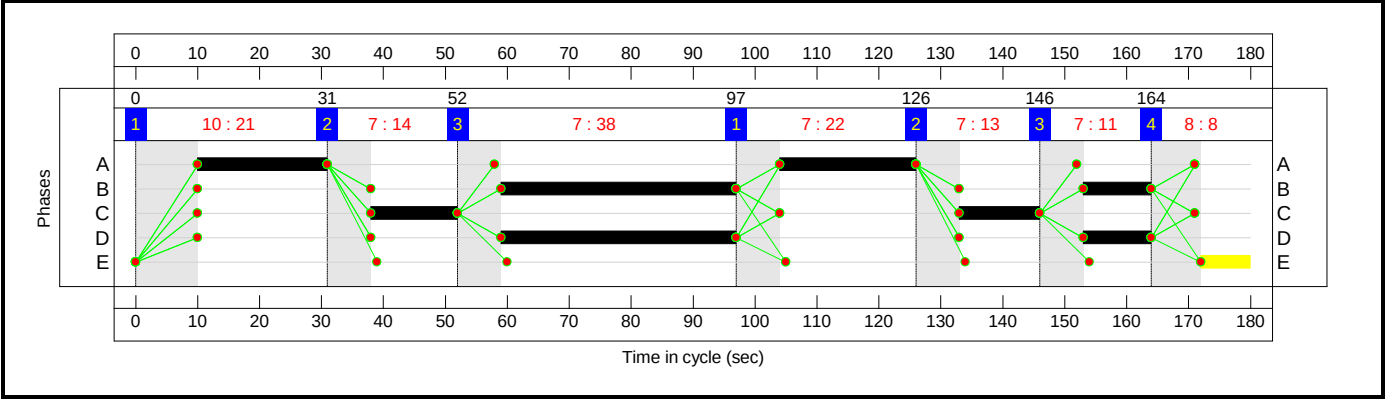
Full Input Data And Results



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	21	14	38	22	13	11	8
Change Point	0	31	52	97	126	146	164

Signal Timings Diagram



Full Input Data And Results

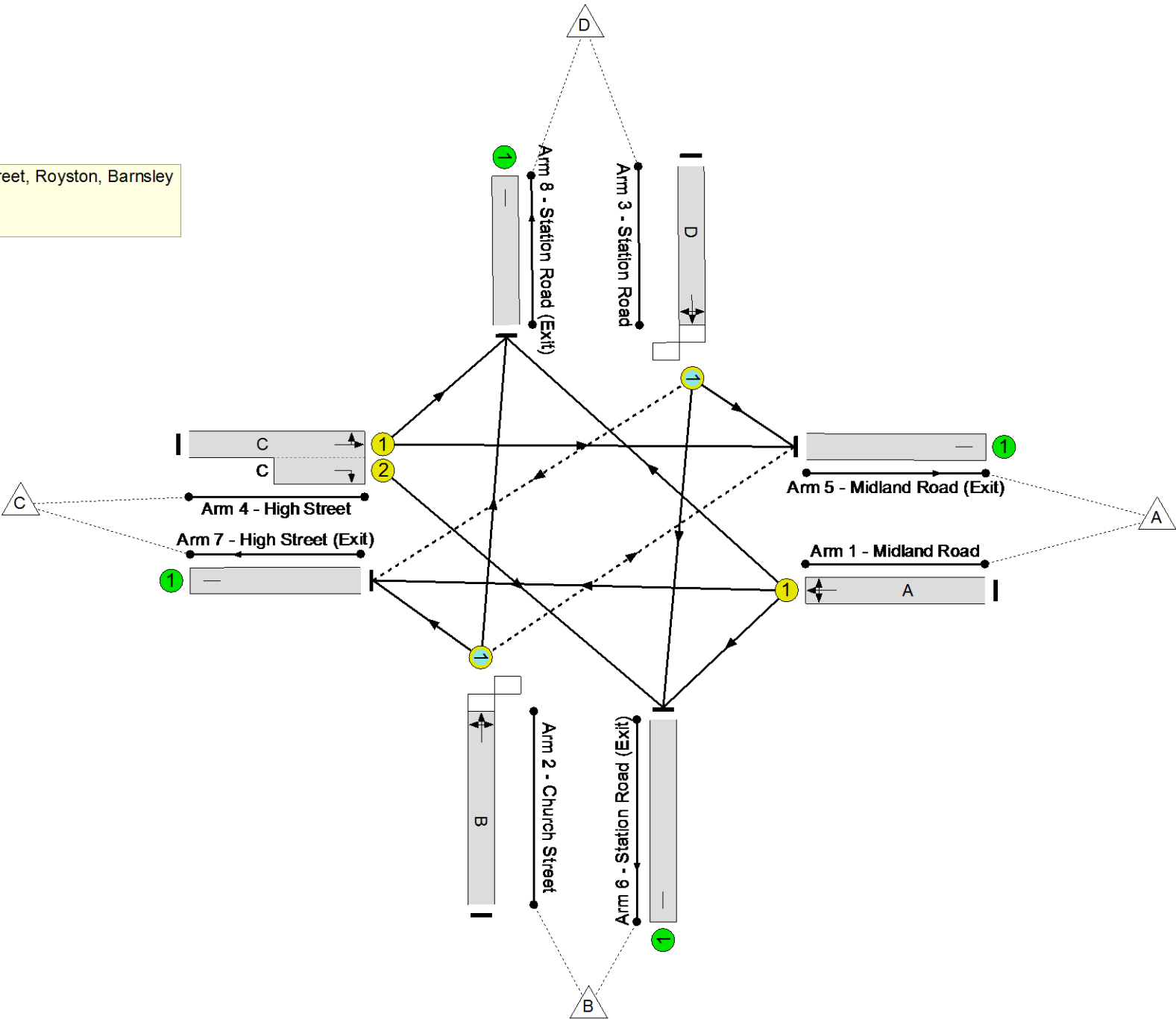
Network Layout Diagram

Full Input Data And Results

Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: 14.8 %

Total Traffic Delay: 17.9 pcuHr



Full Input Data And Results

Network Results

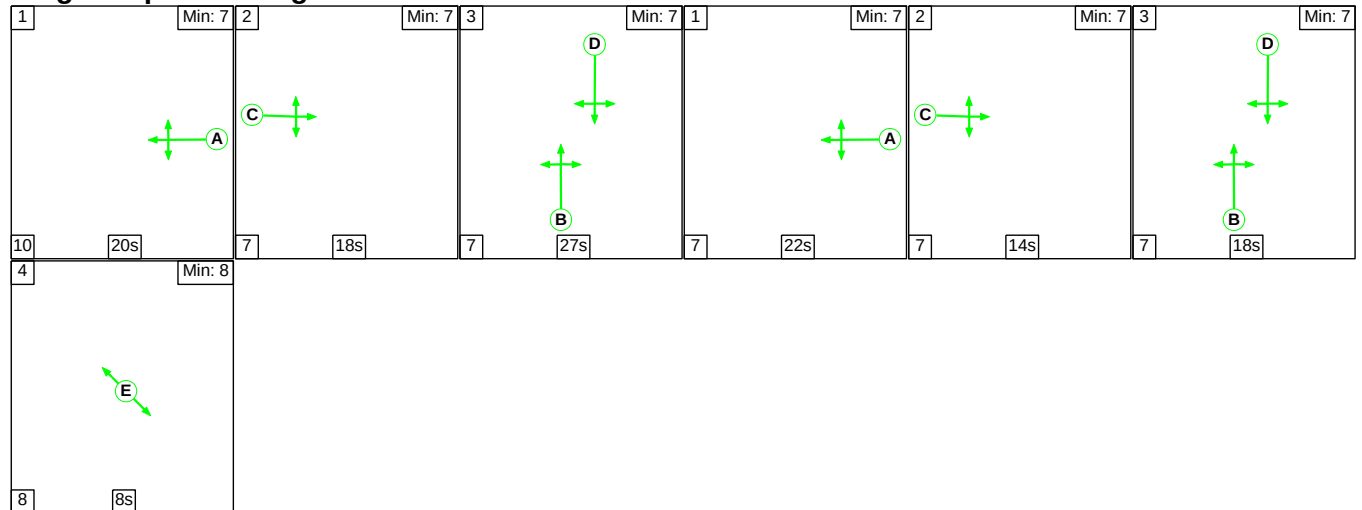
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	78.4%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	78.4%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	43	-	360	1876	469	76.8%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	49	-	368	1741	471	78.1%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	49	-	222	1788	507	43.8%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	27	-	391	1966:2014	499	78.4%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	311	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	452	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	310	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	268	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	-	-	87	0	6	12.3	5.5	0.1	17.9	-	-	-	-
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	87	0	6	12.3	5.5	0.1	17.9	-	-	-	-
1/1	360	360	-	-	-	3.1	1.6	-	4.8	47.5	8.9	1.6	10.5
2/1	368	368	74	0	3	3.6	1.7	0.1	5.4	53.2	11.1	1.7	12.8
3/1	222	222	13	0	3	1.7	0.4	0.0	2.1	33.6	5.2	0.4	5.6
4/1+4/2	391	391	-	-	-	3.8	1.8	-	5.6	51.5	5.4	1.8	7.2
5/1	311	311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	452	452	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	310	310	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	268	268	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 14.8 Total Delay for Signalled Lanes (pcuHr): 17.86 PRC Over All Lanes (%): 14.8 Total Delay Over All Lanes(pcuHr): 17.86 Cycle Time (s): 180													

Scenario 2: '2017 Base Flows - PM Peak' (FG2: '2017 Base Flows - PM Peak', Plan 1: 'Double Cycle Peds Every Other')

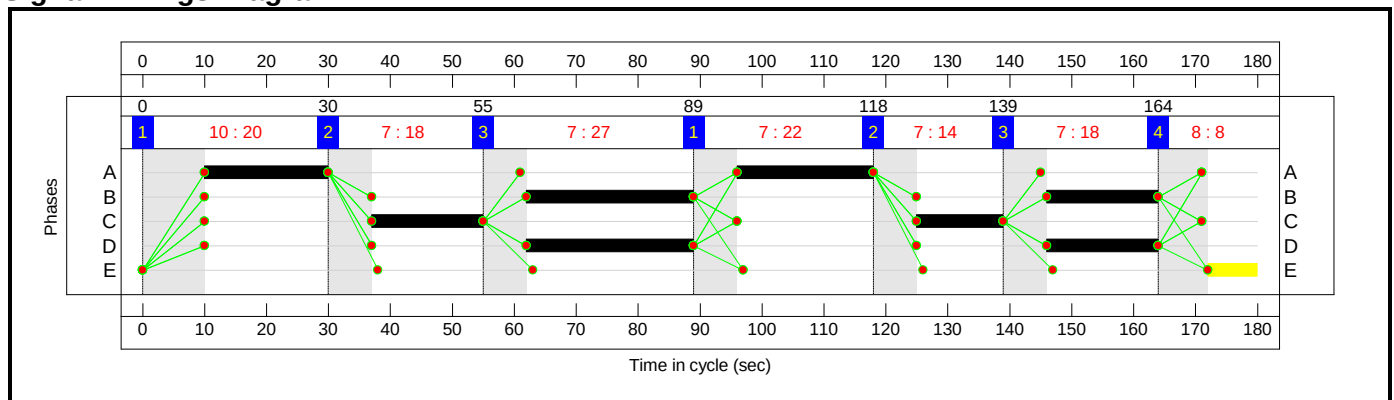
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	20	18	27	22	14	18	8
Change Point	0	30	55	89	118	139	164

Signal Timings Diagram



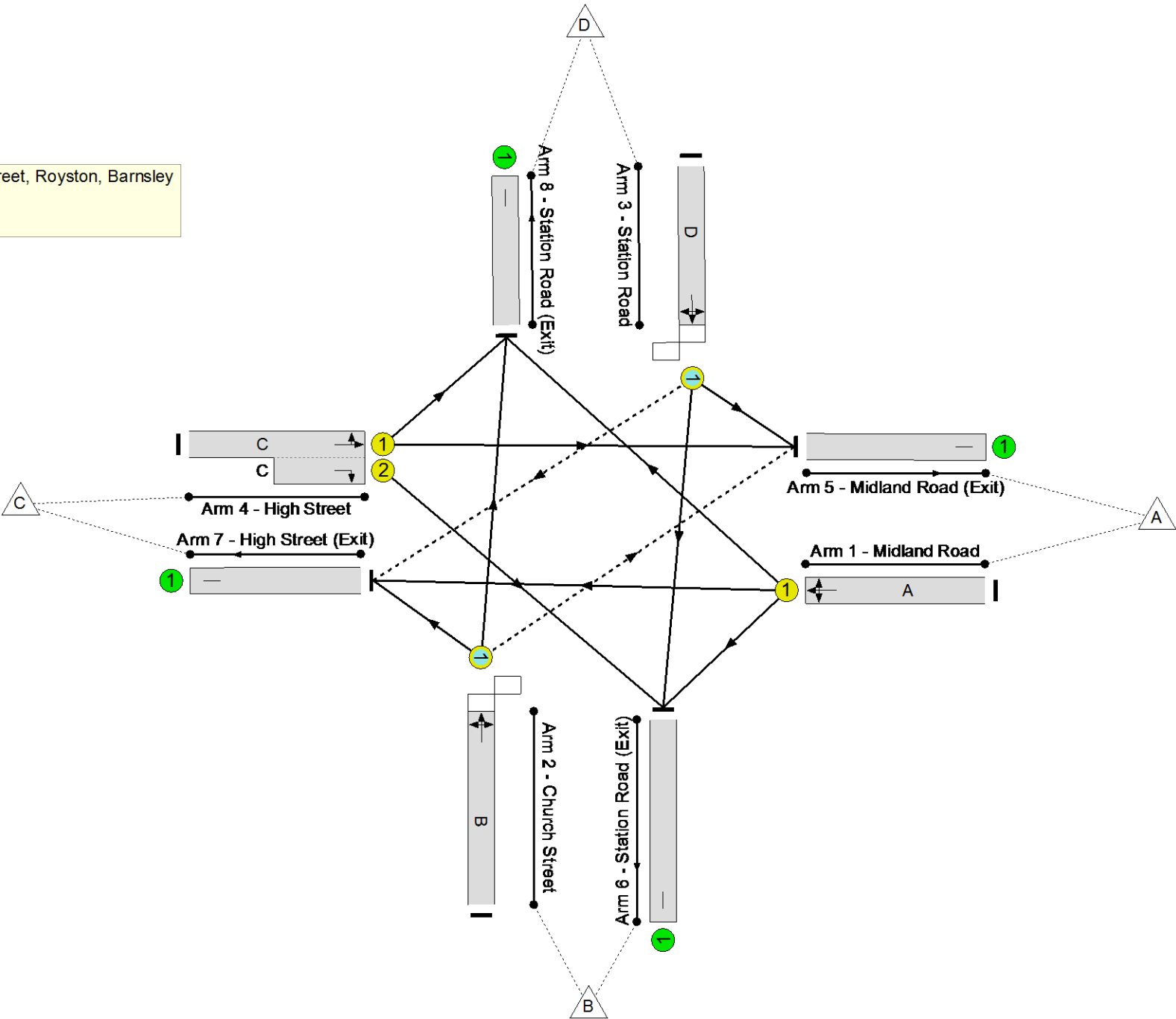
Full Input Data And Results

Network Layout Diagram

Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: 2.6 %

Total Traffic Delay: 25.4 pcuHr



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	-	-		-	-	-	-	-	-	87.7%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	87.7%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	42	-	398	1876	459	86.8%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	45	-	390	1741	445	87.7%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	45	-	263	1788	312	84.4%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	32	-	464	1966:2014	539	86.0%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	382	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	412	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	425	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	296	Inf	Inf	0.0%

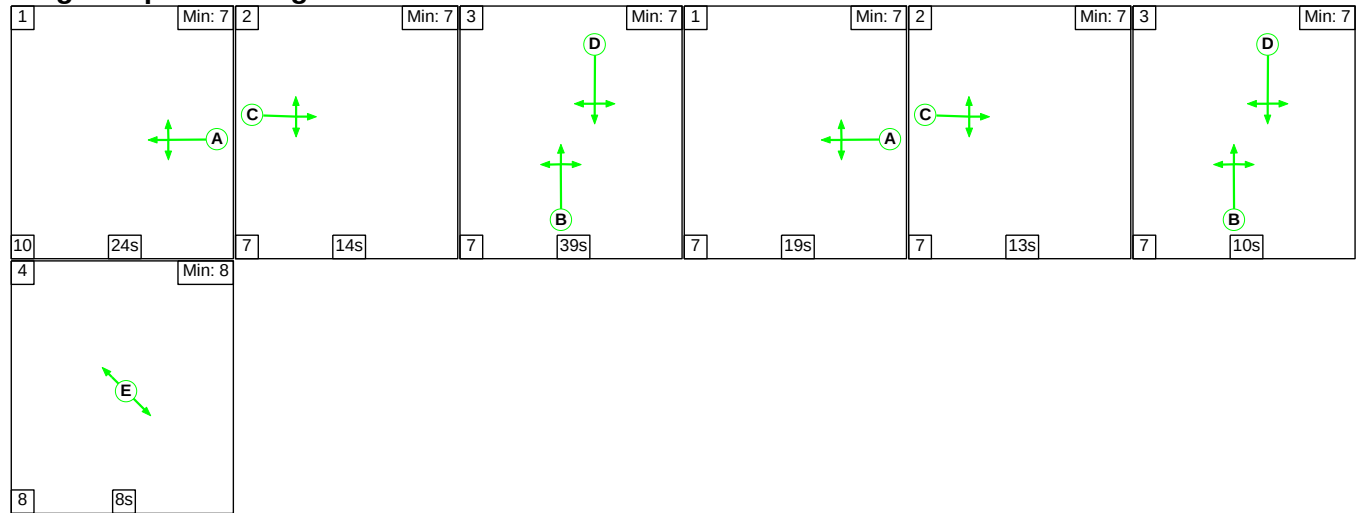
Full Input Data And Results

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	-	-	132	0	11	13.7	11.5	0.3	25.4	-	-	-	-
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	132	0	11	13.7	11.5	0.3	25.4	-	-	-	-
1/1	398	398	-	-	-	3.6	3.0	-	6.6	59.7	10.0	3.0	12.9
2/1	390	390	89	0	1	3.5	3.2	0.1	6.8	62.7	10.7	3.2	13.9
3/1	263	263	43	0	10	2.2	2.4	0.2	4.8	65.5	6.6	2.4	9.1
4/1+4/2	464	464	-	-	-	4.4	2.9	-	7.2	56.1	7.7	2.9	10.5
5/1	382	382	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	412	412	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	425	425	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	296	296	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 2.6 Total Delay for Signalled Lanes (pcuHr): 25.42 PRC Over All Lanes (%): 2.6 Total Delay Over All Lanes(pcuHr): 25.42 Cycle Time (s): 180													

Full Input Data And Results

Scenario 3: '2022 Base Flows - AM Peak' (FG3: '2022 Base Flows- AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

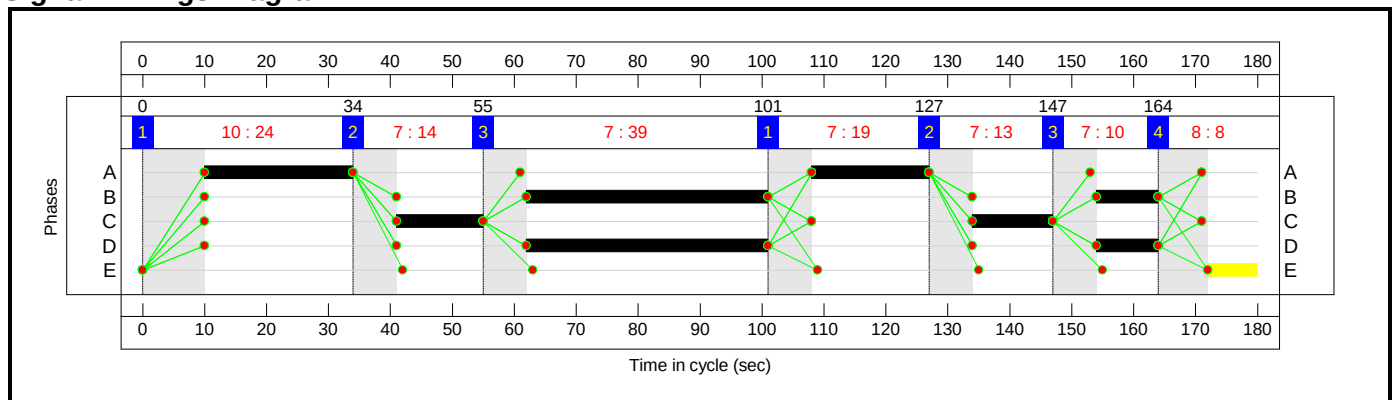
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	24	14	39	19	13	10	8
Change Point	0	34	55	101	127	147	164

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

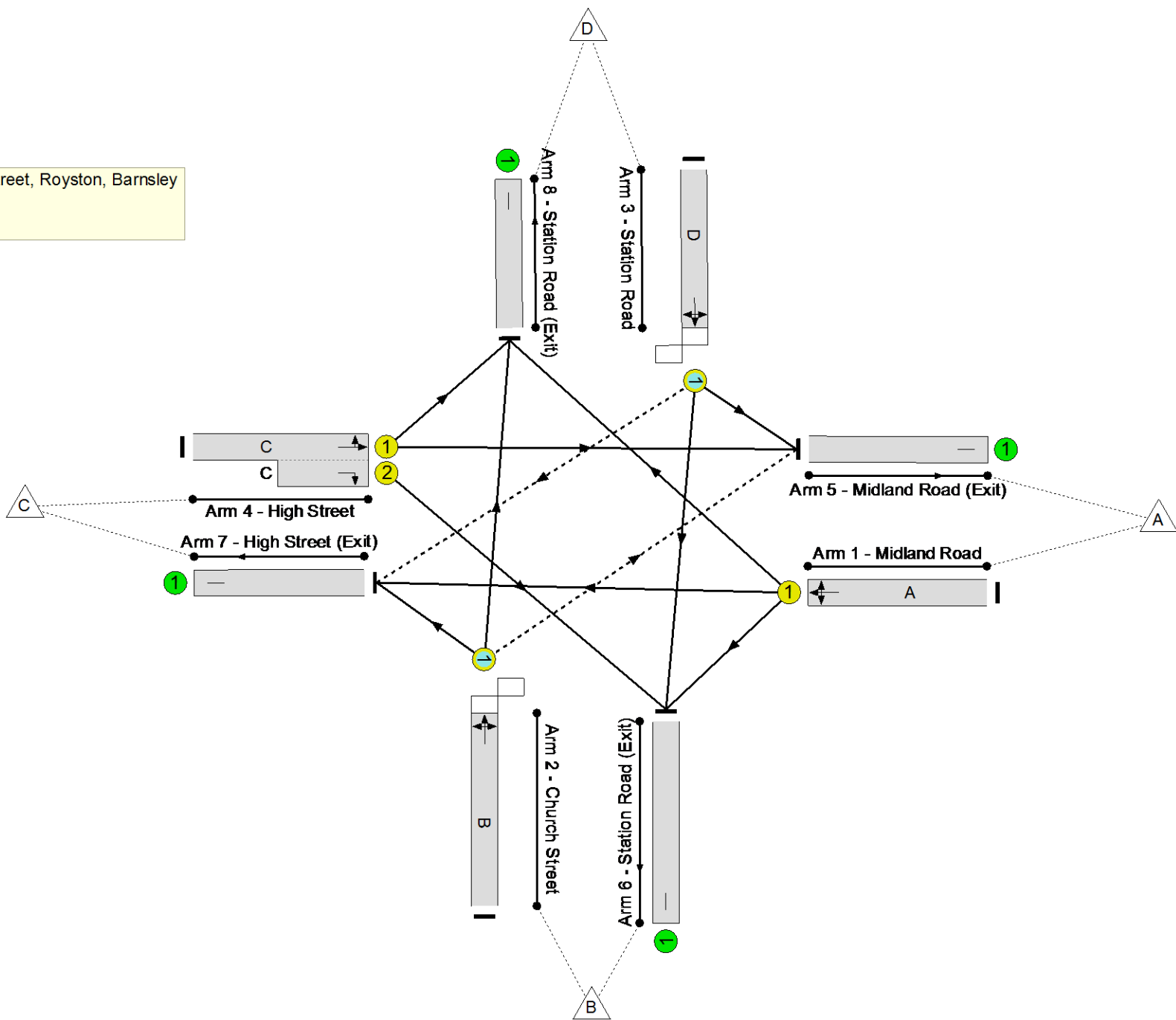
Full Input Data And Results



Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: 8.1 %

Total Traffic Delay: 21.0 pcuHr



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	-	-		-	-	-	-	-	-	83.3%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	83.3%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	43	-	382	1876	469	81.4%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	49	-	393	1741	472	83.3%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	49	-	236	1788	503	46.9%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	27	-	417	1966:2014	501	83.3%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	328	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	483	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	330	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	287	Inf	Inf	0.0%

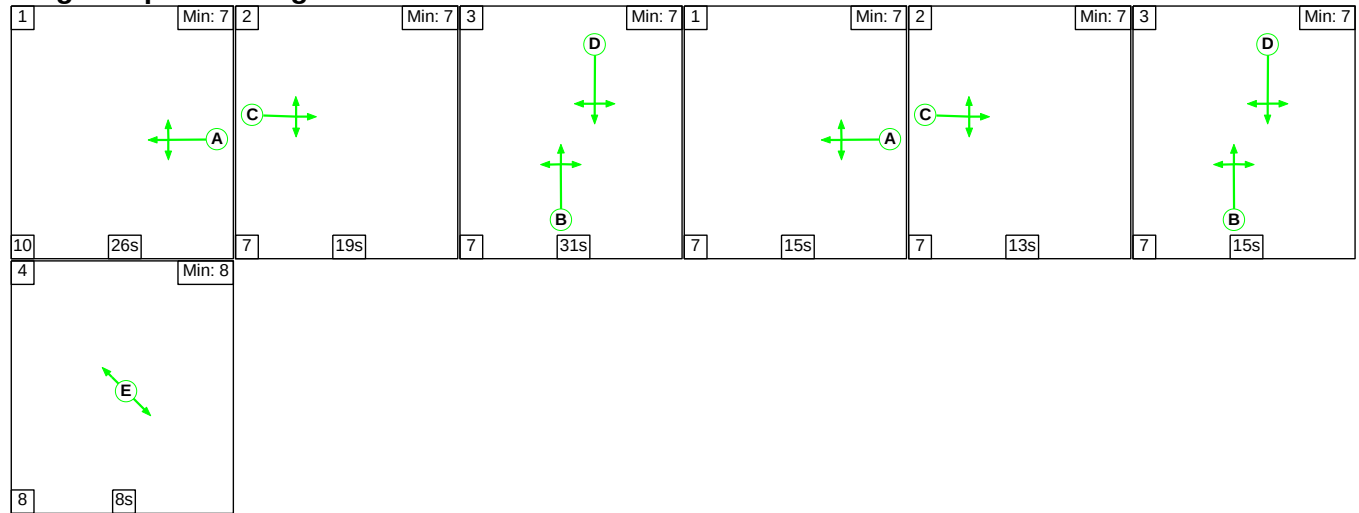
Full Input Data And Results

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	-	-	87	0	11	13.6	7.2	0.1	21.0	-	-	-	-
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	87	0	11	13.6	7.2	0.1	21.0	-	-	-	-
1/1	382	382	-	-	-	3.4	2.1	-	5.5	51.7	9.7	2.1	11.8
2/1	393	393	74	0	7	4.3	2.4	0.1	6.7	61.8	13.1	2.4	15.5
3/1	236	236	14	0	3	1.8	0.4	0.0	2.3	34.7	5.8	0.4	6.2
4/1+4/2	417	417	-	-	-	4.1	2.4	-	6.5	55.8	5.9	2.4	8.2
5/1	328	328	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	483	483	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	287	287	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 8.1 Total Delay for Signalled Lanes (pcuHr): 20.97 PRC Over All Lanes (%): 8.1 Total Delay Over All Lanes(pcuHr): 20.97 Cycle Time (s): 180													

Full Input Data And Results

Scenario 4: '2022 Base Flows - PM Peak' (FG4: '2022 Base Flows - PM Peak ', Plan 1: 'Double Cycle Peds Every Other')

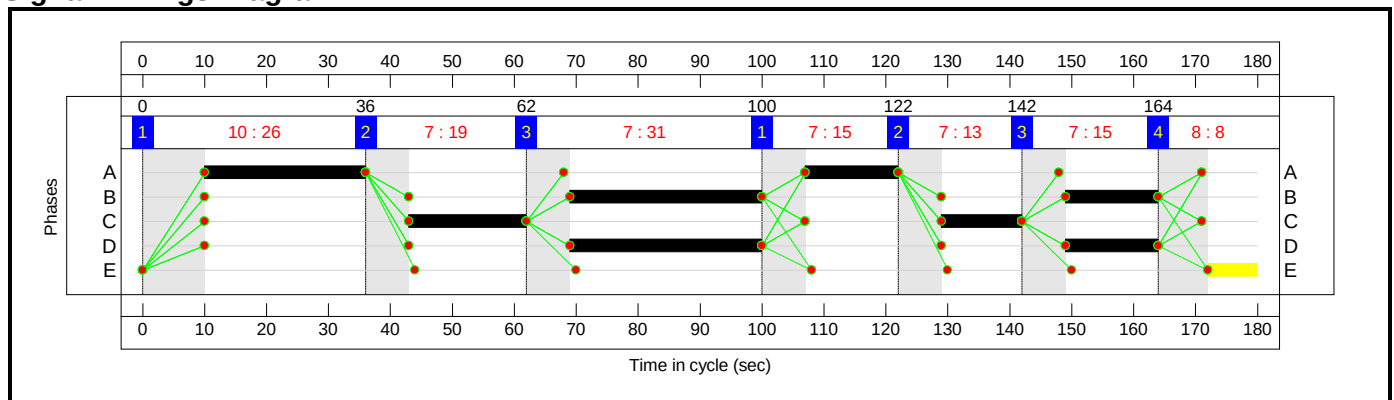
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	26	19	31	15	13	15	8
Change Point	0	36	62	100	122	142	164

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

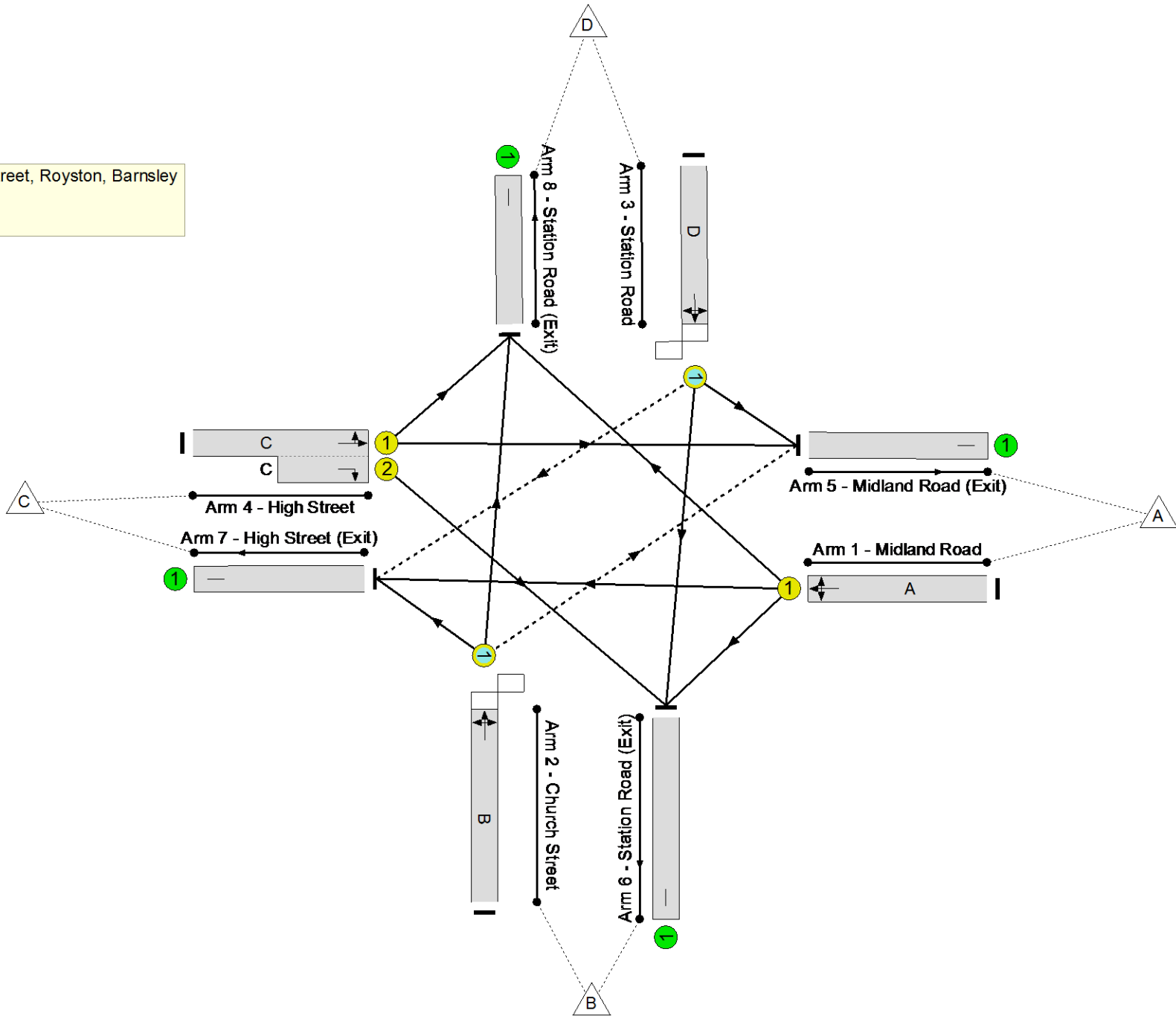
Full Input Data And Results



Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: -4.1 %

Total Traffic Delay: 33.5 pcuHr



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	-	-		-	-	-	-	-	-	93.7%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	93.7%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	41	-	420	1876	448	93.7%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	46	-	415	1741	448	92.6%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	46	-	280	1788	335	83.5%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	32	-	497	1966:2014	540	92.0%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	403	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	442	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	449	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%

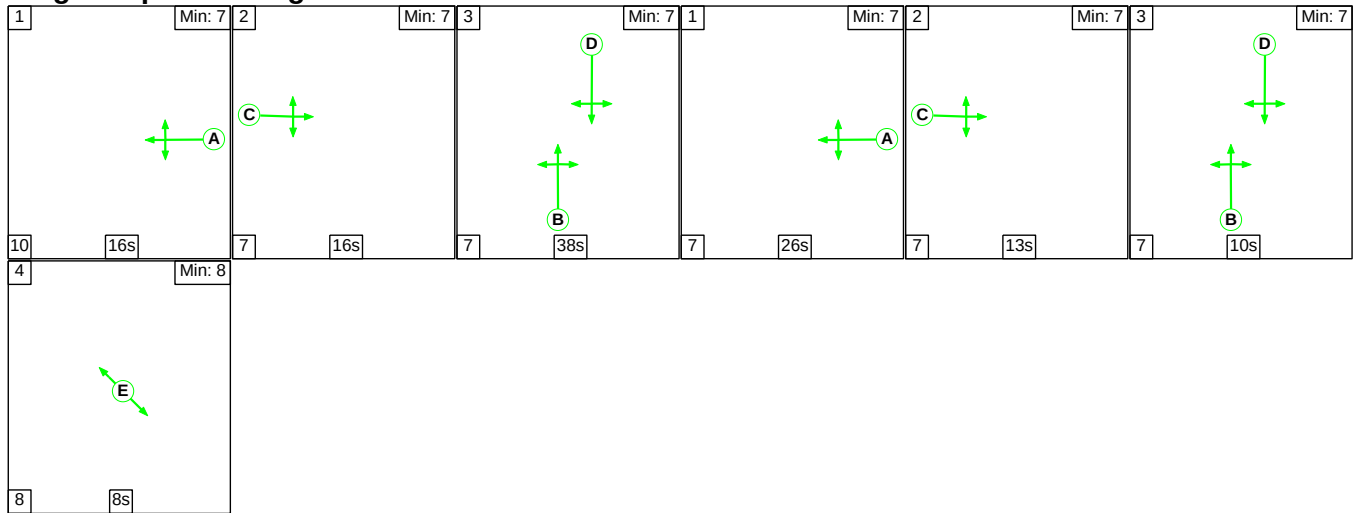
Full Input Data And Results

[illegible]

Full Input Data And Results

Scenario 5: '2017 With Development Flows - AM Peak' (FG5: '2017 With Development Flows - AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

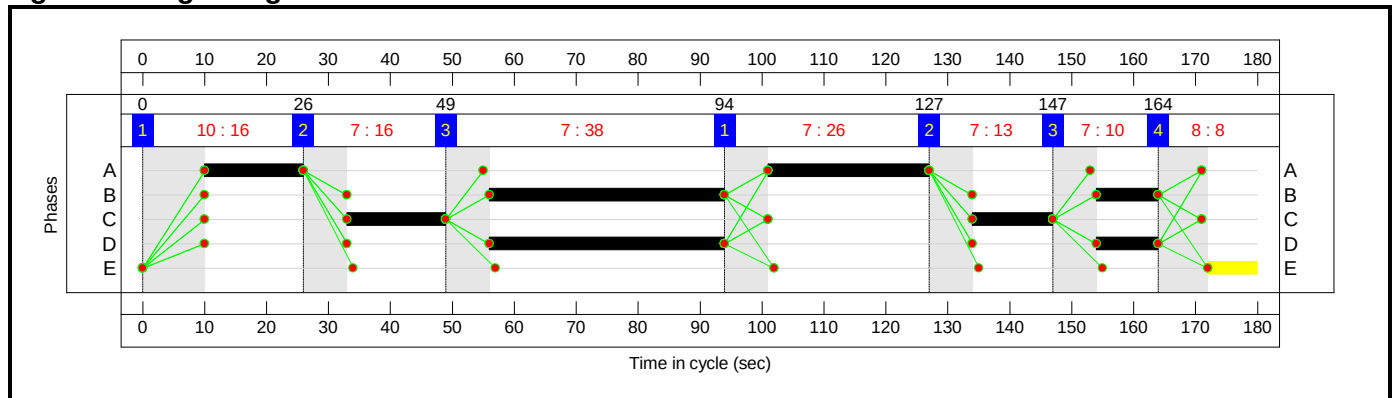
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	16	16	38	26	13	10	8
Change Point	0	26	49	94	127	147	164

Signal Timings Diagram



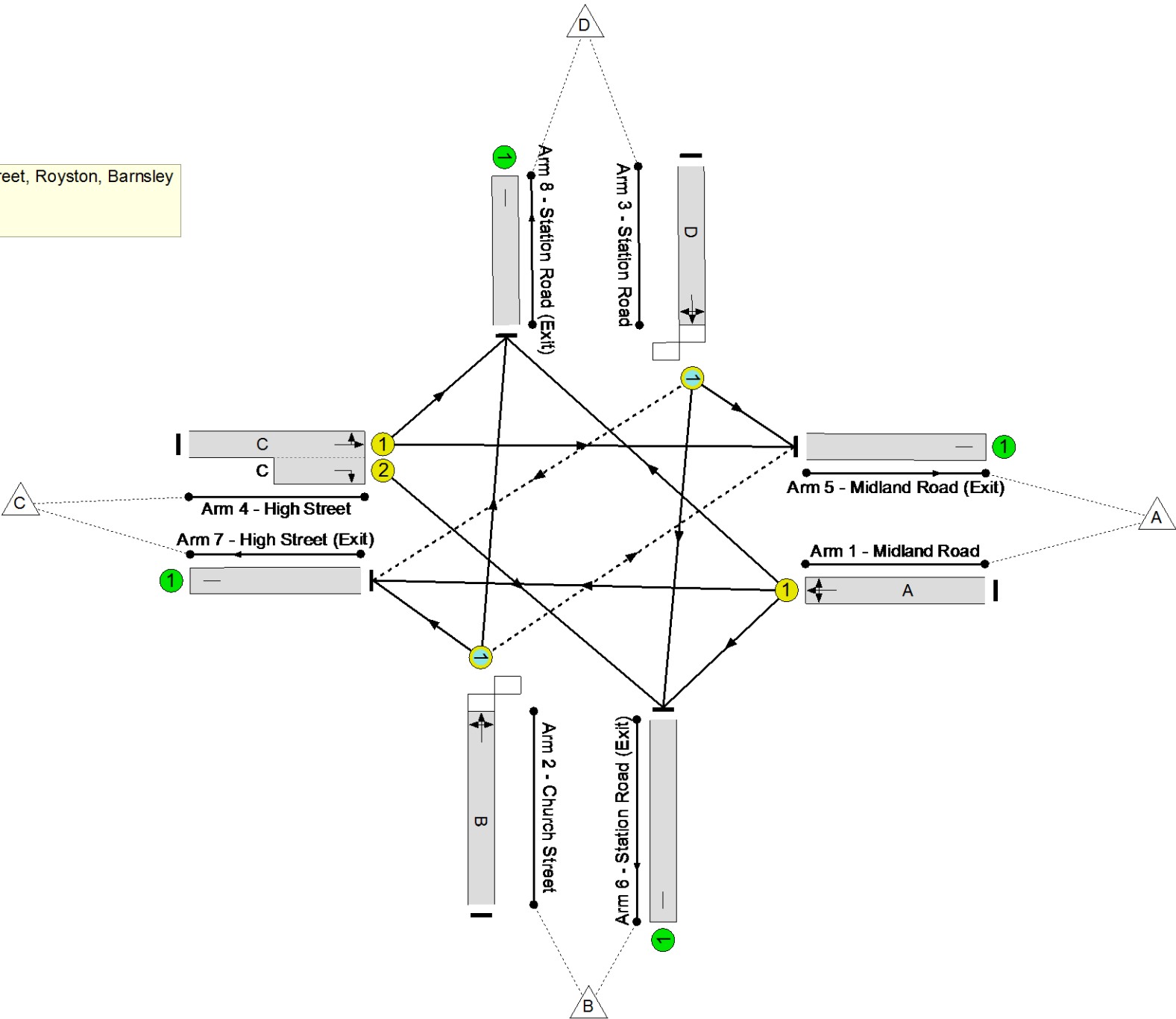
Full Input Data And Results

Network Layout Diagram

Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: 12.8 %

Total Traffic Delay: 19.2 pcuHr



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	-	-		-	-	-	-	-	-	79.8%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	79.8%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	42	-	364	1876	459	79.4%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	48	-	373	1741	471	79.2%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	48	-	222	1788	493	45.0%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	29	-	418	1966:2014	524	79.8%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	322	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	466	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	319	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	270	Inf	Inf	0.0%

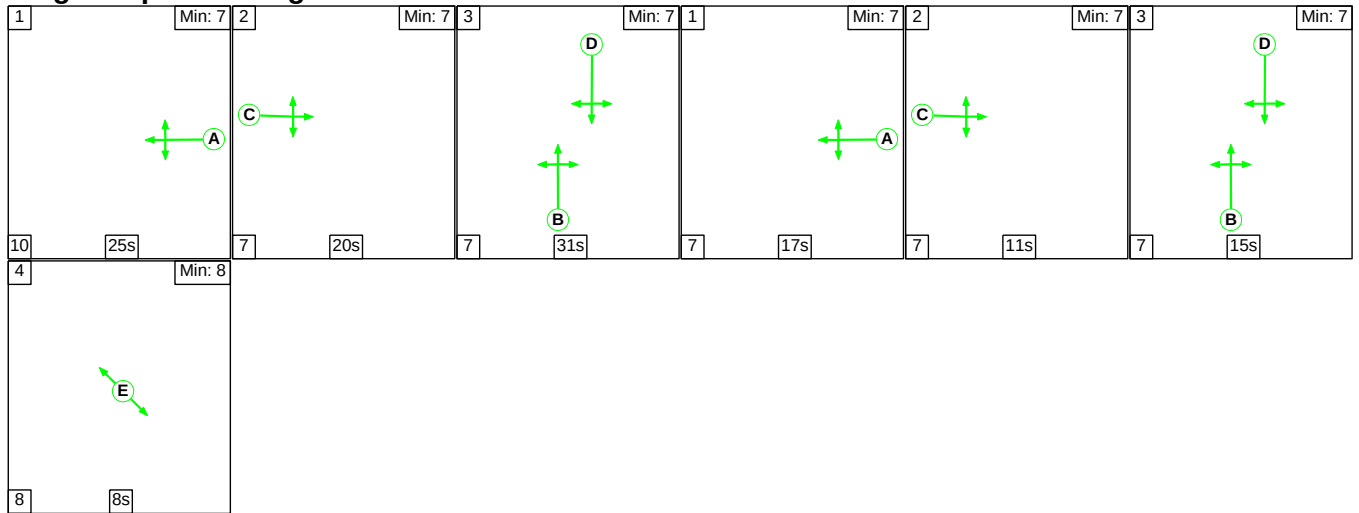
Full Input Data And Results

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	-	-	78	0	15	13.1	6.0	0.1	19.2	-	-	-	-
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	78	0	15	13.1	6.0	0.1	19.2	-	-	-	-
1/1	364	364	-	-	-	3.2	1.9	-	5.1	50.4	9.2	1.9	11.1
2/1	373	373	66	0	11	4.1	1.8	0.1	6.0	58.1	11.9	1.8	13.7
3/1	222	222	12	0	4	1.7	0.4	0.0	2.1	34.1	5.0	0.4	5.4
4/1+4/2	418	418	-	-	-	4.1	1.9	-	6.0	51.5	6.7	1.9	8.6
5/1	322	322	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	466	466	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	270	270	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 12.8 Total Delay for Signalled Lanes (pcuHr): 19.20 PRC Over All Lanes (%): 12.8 Total Delay Over All Lanes(pcuHr): 19.20 Cycle Time (s): 180													

Full Input Data And Results

Scenario 6: '2017 With Development Flows - PM Peak' (FG6: '2017 With Development Flows - PM Peak', Plan 1: 'Double Cycle Peds Every Other')

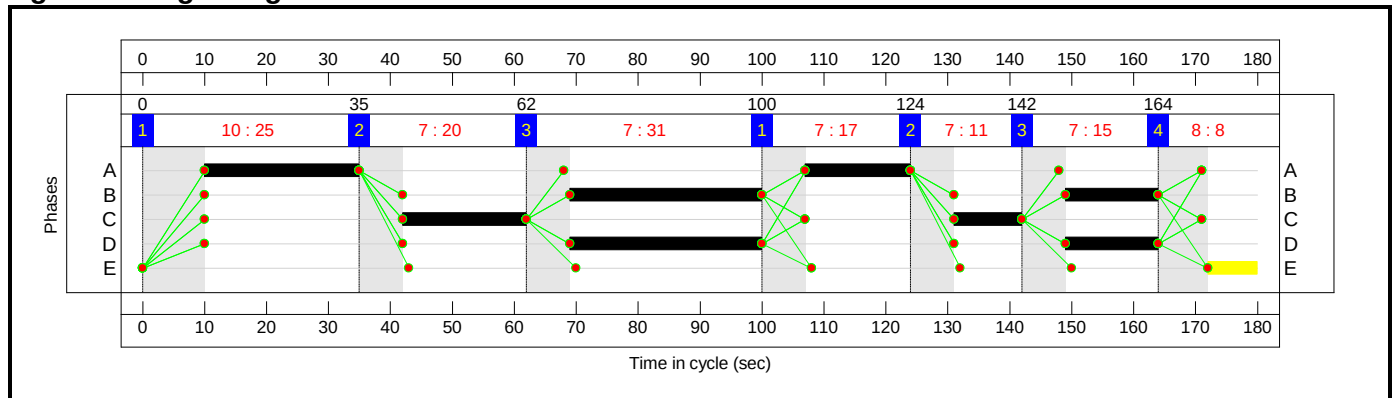
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	25	20	31	17	11	15	8
Change Point	0	35	62	100	124	142	164

Signal Timings Diagram



Full Input Data And Results

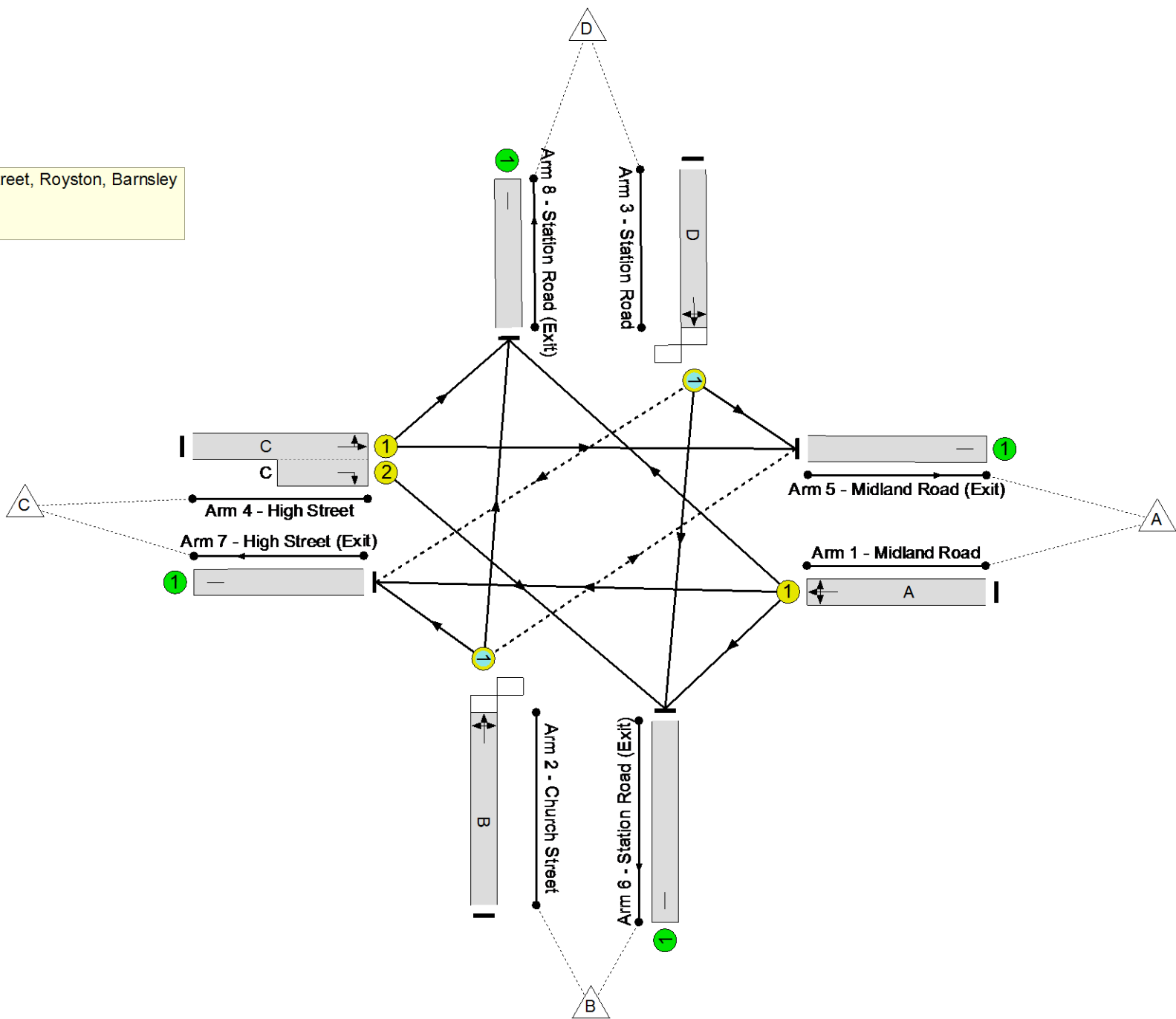
Network Layout Diagram



Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: -0.3 %

Total Traffic Delay: 28.7 pcuHr



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	-	-		-	-	-	-	-	-	90.3%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	90.3%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	42	-	408	1876	459	89.0%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	46	-	404	1741	449	90.0%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	46	-	264	1788	317	83.2%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	31	-	479	1966:2014	530	90.3%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	388	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	420	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	450	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	297	Inf	Inf	0.0%

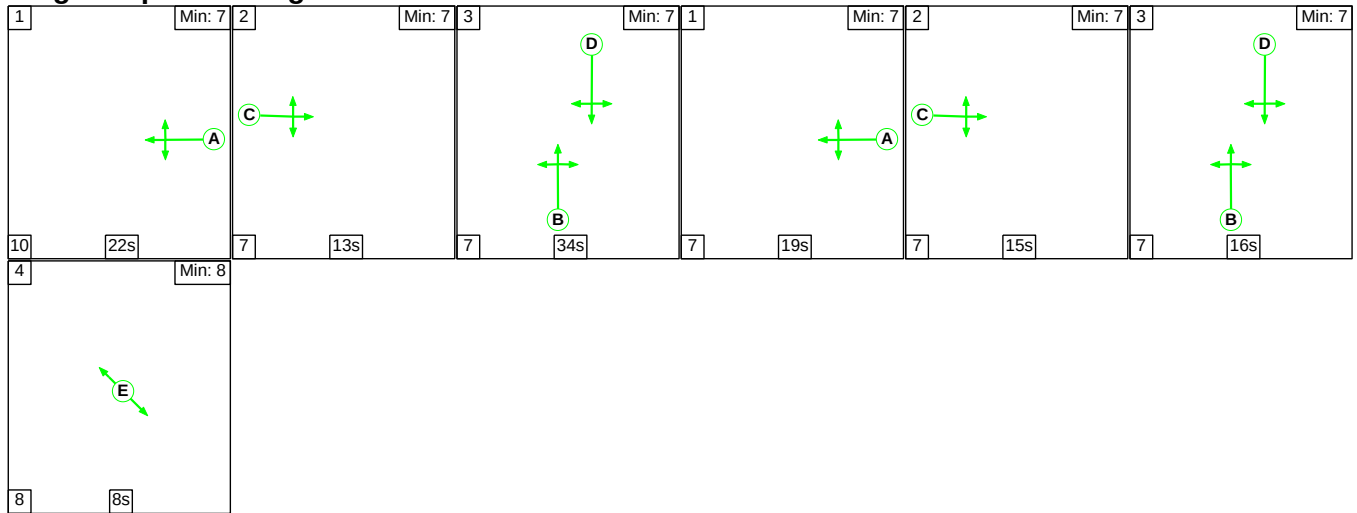
Full Input Data And Results

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	-	-	128	0	16	14.8	13.7	0.2	28.7	-	-	-	-
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	128	0	16	14.8	13.7	0.2	28.7	-	-	-	-
1/1	408	408	-	-	-	4.1	3.5	-	7.6	67.0	10.2	3.5	13.8
2/1	404	404	89	0	1	3.8	3.8	0.1	7.8	69.2	12.3	3.8	16.2
3/1	264	264	39	0	15	2.2	2.3	0.2	4.7	64.1	7.3	2.3	9.5
4/1+4/2	479	479	-	-	-	4.6	4.0	-	8.6	65.0	8.5	4.0	12.5
5/1	388	388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	450	450	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	297	297	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1													
PRC for Signalled Lanes (%):				-0.3	Total Delay for Signalled Lanes (pcuHr):			28.70	Cycle Time (s): 180				
PRC Over All Lanes (%):				-0.3	Total Delay Over All Lanes(pcuHr):			28.70					

Full Input Data And Results

Scenario 7: '2022 With Development Flows - AM Peak' (FG7: '2022 With Development Flows- AM Peak ', Plan 1: 'Double Cycle Peds Every Other')

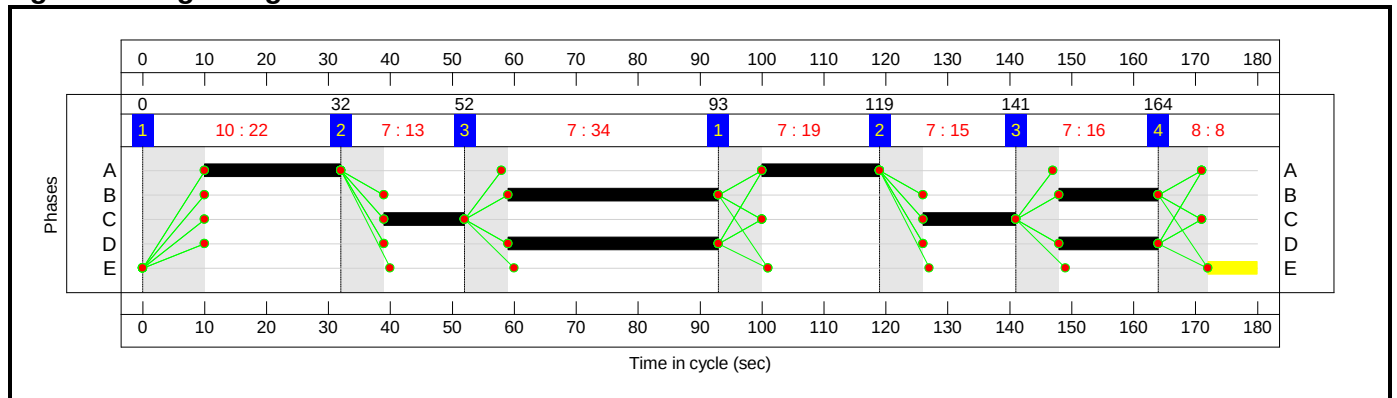
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	22	13	34	19	15	16	8
Change Point	0	32	52	93	119	141	164

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

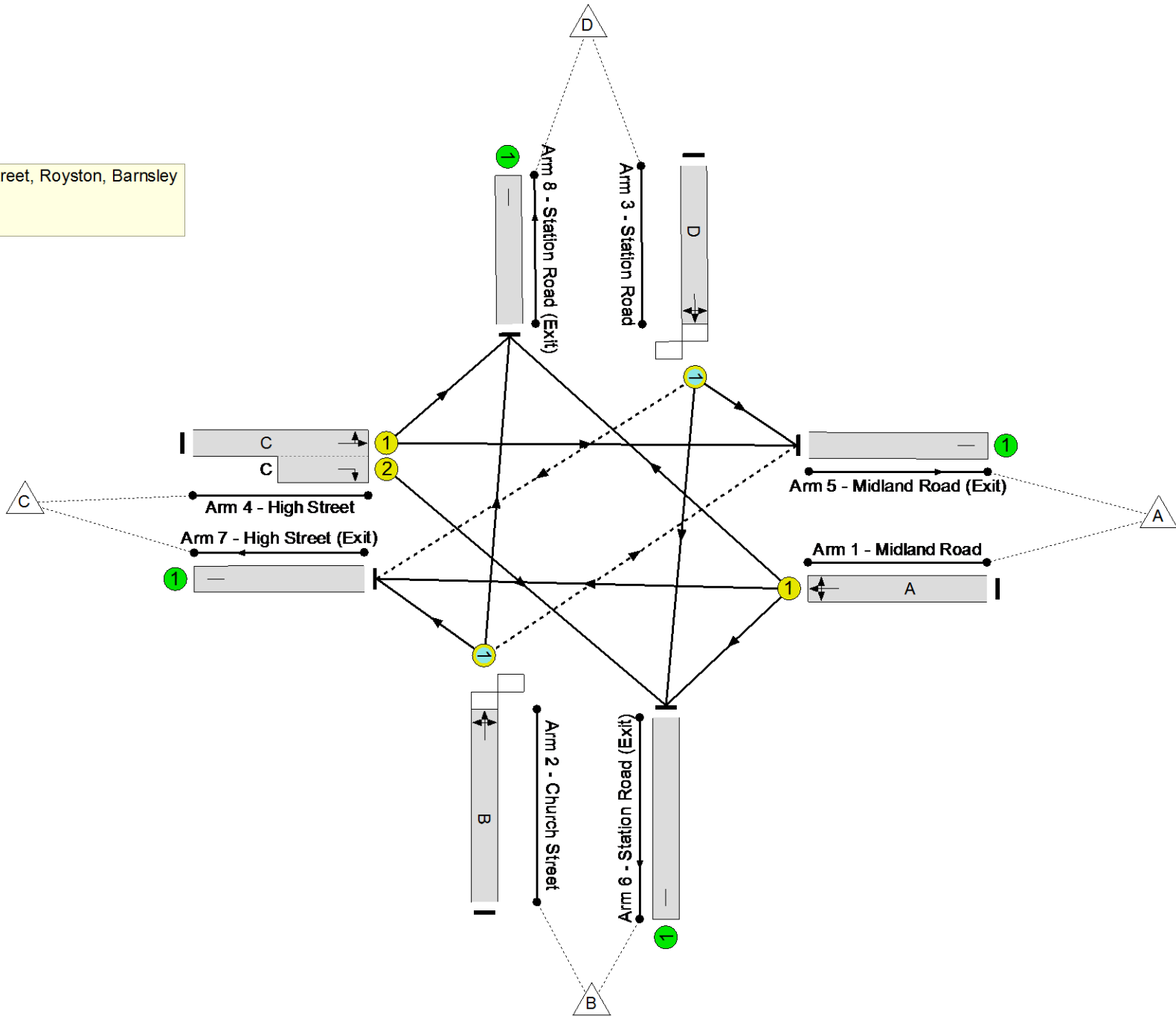
Full Input Data And Results



Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: 4.3 %

Total Traffic Delay: 22.0 pcuHr



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	-	-		-	-	-	-	-	-	86.3%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	86.3%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	41	-	385	1876	448	85.9%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	50	-	398	1741	468	85.1%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	50	-	236	1788	517	45.7%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	28	-	444	1966:2014	515	86.3%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	339	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	497	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	338	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	289	Inf	Inf	0.0%

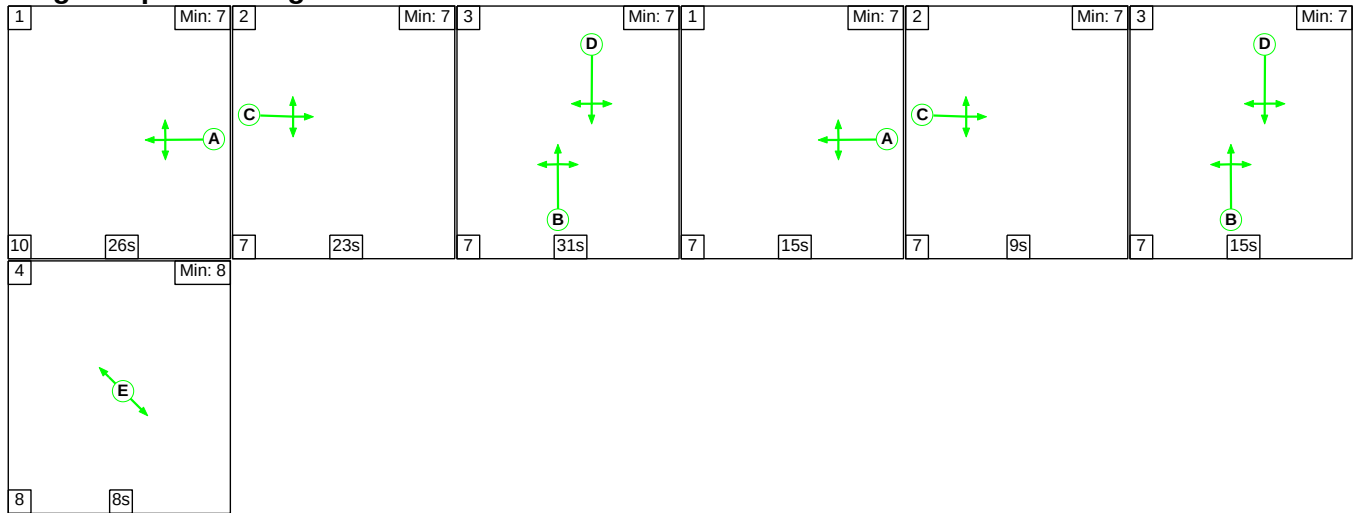
Full Input Data And Results

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	-	-	95	0	3	13.1	8.8	0.1	22.0	-	-	-	-
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	95	0	3	13.1	8.8	0.1	22.0	-	-	-	-
1/1	385	385	-	-	-	3.5	2.8	-	6.3	59.0	9.4	2.8	12.2
2/1	398	398	79	0	2	3.5	2.7	0.1	6.2	55.9	11.1	2.7	13.7
3/1	236	236	17	0	0	1.8	0.4	0.0	2.2	33.6	5.6	0.4	6.0
4/1+4/2	444	444	-	-	-	4.4	2.9	-	7.3	58.8	6.4	2.9	9.3
5/1	339	339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	497	497	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 4.3 Total Delay for Signalled Lanes (pcuHr): 21.95 Cycle Time (s): 180 PRC Over All Lanes (%): 4.3 Total Delay Over All Lanes(pcuHr): 21.95													

Full Input Data And Results

Scenario 8: '2022 With Development Flows - PM Peak' (FG8: '2022 With Development Flows - PM Peak ', Plan 1: 'Double Cycle Peds Every Other')

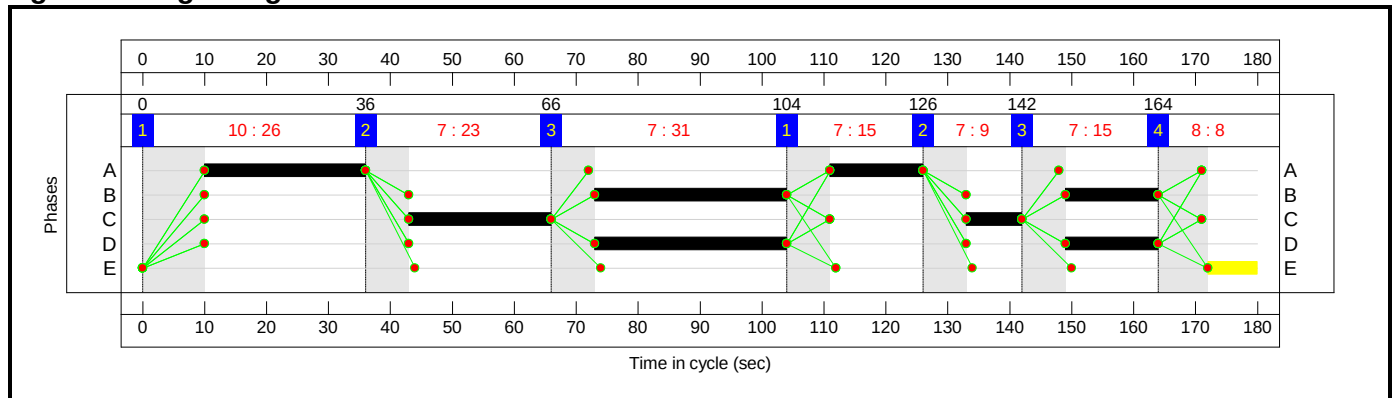
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	1	2	3	4
Duration	26	23	31	15	9	15	8
Change Point	0	36	66	104	126	142	164

Signal Timings Diagram



Full Input Data And Results

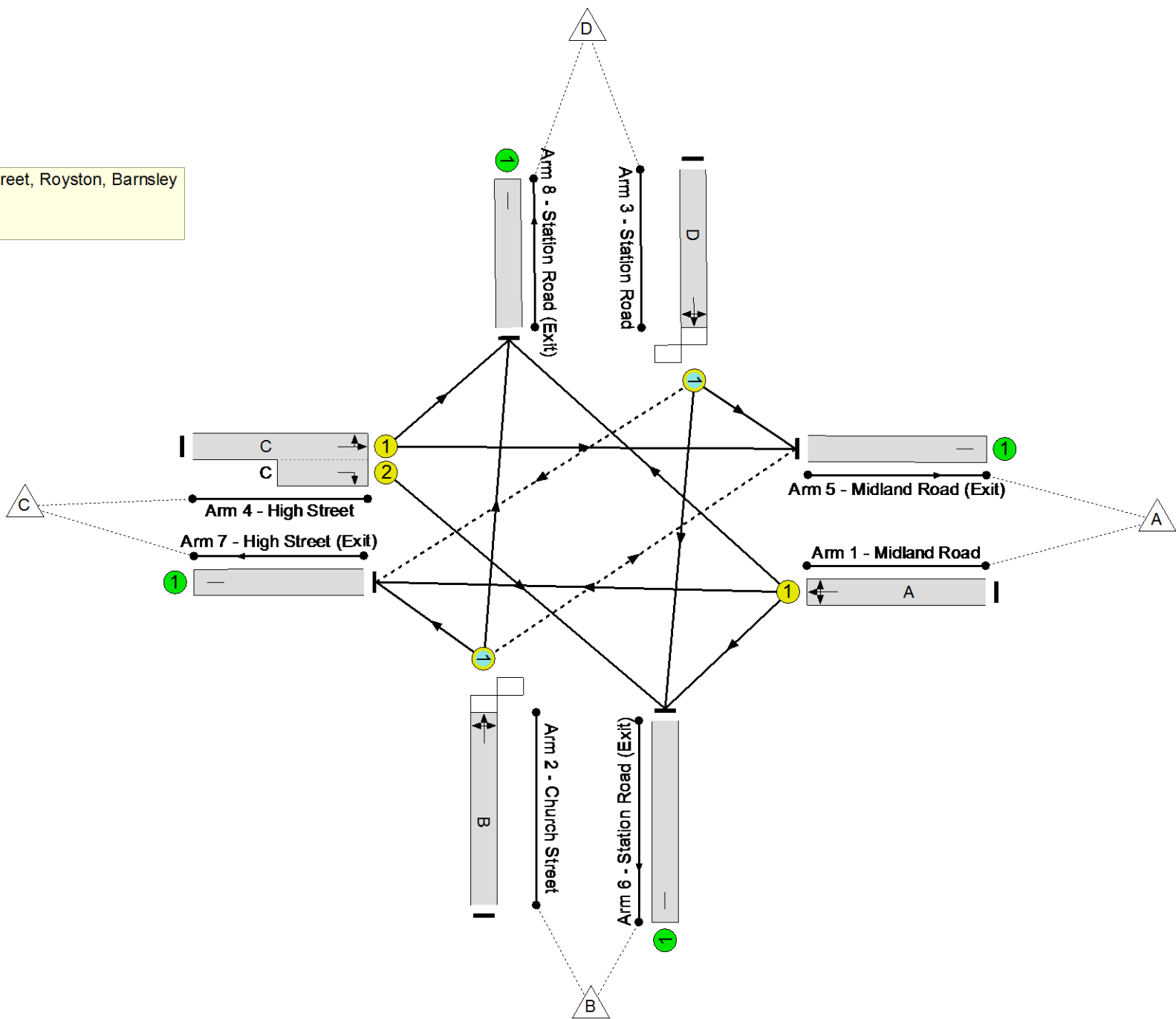
Network Layout Diagram



Station Road/Midland Road/Church Street, Royston, Barnsley

PRC: -6.6 %

Total Traffic Delay: 41.1 pcuHr



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	-	-		-	-	-	-	-	-	95.9%
Station Road/Midland Road/Church Street, Royston, Barnsley	-	-	N/A	-	-		-	-	-	-	-	-	95.9%
1/1	Midland Road Left Ahead Right	U	N/A	N/A	A		2	41	-	430	1876	448	95.9%
2/1	Church Street Right Left Ahead	O	N/A	N/A	B		2	46	-	428	1741	449	95.3%
3/1	Station Road Left Ahead Right	O	N/A	N/A	D		2	46	-	282	1788	311	90.8%
4/1+4/2	High Street Ahead Right Left	U	N/A	N/A	C		2	32	-	512	1966:2014	542	94.5%
5/1	Midland Road (Exit)	U	N/A	N/A	-		-	-	-	409	Inf	Inf	0.0%
6/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	450	Inf	Inf	0.0%
7/1	High Street (Exit)	U	N/A	N/A	-		-	-	-	474	Inf	Inf	0.0%
8/1	Station Road (Exit)	U	N/A	N/A	-		-	-	-	319	Inf	Inf	0.0%

Full Input Data And Results

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