

Jackson Brickworks App Ref: 133700/FO/2022

Transport Assessment Addendum

Response to Highways Comments: Junction Modelling Update

VN201804 Post App TN02

Introduction

1. Full planning permission is sought for Phase 1 (a residential development of 378 dwellings including a community hub) and outline planning permission is sought for Phase 2 (a residential development for 338 dwellings and a new secondary school) at Jacksons Brickworks.
2. A Transport Assessment (TA) dated May 2022 was submitted in support of the planning application. Manchester City Council (MCC) highways and Transport for Greater Manchester (TfGM) have recently made a number of comments in relation to a Transport Assessment (TA) and Travel Plan (TP). A Transport Assessment Addendum Note (TN01) provided a response to the majority of the comments received, however this did not incorporate a response regarding a number of junction modelling queries as Vectos were awaiting signal timing data at the time.
3. This Addendum Modelling Note provides a response regarding the outstanding junction modelling information and supplements the Addendum Technical Note.

A62 Oldham Road / Monsall Road / Grimshaw Lane

4. TfGM commented:
 - *“Grimshaw Lane has been modelled incorrectly. Phase E should be modelled as a left/ahead filter rather than a right turn indicative arrow. The minimum for phase E is incorrect;*
 - *The cycle time used is incorrect.”*
5. The junction modelling has been revised to reflect the TfGM comments.
6. The revised model results are set out in **Table 1** overleaf with the full modelling output files provided as **Appendix A** of this Note.

Table 1: A62 Oldham Rd / Monsall Rd / Grimshaw Ln Junction Assessment

Lane Ref.	Lane Description	AM Peak		PM Peak	
		DoS (%)	Queue (PCU)	DoS (%)	Queue (PCU)
Baseline					
1/1	Monsall Rd (All Directions)	88.7	16	37.1	4
2/2+2/1	A62 Oldham Rd (E) – L & Ahead	90.0	27	69.9	16
2/3	A62 Oldham Rd (E) – R & Ahead	89.2	17	38.3	2
3/1	Grimshaw Ln – Ahead & L	69.6	14	65.1	12
3/2	Grimshaw Ln – R	60.5	2	48.8	4
4/1	A62 Oldham Rd (W) – L & Ahead	88.1	14	74.1	17
4/2	A62 Oldham Rd (W) – R & Ahead	89.1	15	75.2	18
PRC (%)		0.0		19.6	
Baseline (including Committed Development)					
1/1	Monsall Rd (All Directions)	80.2	15	38.7	5
2/2+2/1	A62 Oldham Rd (E) – L & Ahead	105.4	65	76.9	18
2/3	A62 Oldham Rd (E) – R & Ahead	98.9	24	48.3	2
3/1	Grimshaw Ln – Ahead & L	66.0	14	68.1	13
3/2	Grimshaw Ln – R	91.4	8	78.1	7
4/1	A62 Oldham Rd (W) – L & Ahead	93.2	16	75.4	18
4/2	A62 Oldham Rd (W) – R & Ahead	95.9	19	76.8	19
PRC (%)		-17.1		15.3	
Baseline + Development					
1/1	Monsall Rd (All Directions)	80.2	15	38.7	5
2/2+2/1	A62 Oldham Rd (E) – L & Ahead	103.6	57	76.7	18
2/3	A62 Oldham Rd (E) – R & Ahead	107.4	46	53.7	3
3/1	Grimshaw Ln – Ahead & L	66.0	14	68.1	13
3/2	Grimshaw Ln – R	91.4	8	78.1	7
4/1	A62 Oldham Rd (W) – L & Ahead	97.8	20	77.0	18
4/2	A62 Oldham Rd (W) – R & Ahead	97.4	20	78.3	19
PRC (%)		-19.4		15.0	

7. This demonstrates that the junction is operating satisfactorily in the PM peak, with a maximum DoS of up to 78%.

8. In the AM peak period the junction is operating at or around it's theoretical capacity. The results of the Development scenario are not materially different to the Baseline with Committed Development scenario.
9. As a consequence, the impact of the forecast development traffic is not regarded as severe.

A62 Oldham Road / The Gateway / Ten Acres Lane

10. TfGM commented:
 - *“Phase L has been omitted in stage 4”*
11. Phase L applies to the pedestrian crossing of the A62 Oldham Road northbound. It was previously operating in two of the four stages, but can also operate in Stage 4.
12. This has been added to stage 4 of the junction staging. This has no impact on the model results submitted in the TA. For completeness, the results are reproduced in **Table 2** overleaf with the full modelling output files provided as **Appendix B** of this Note.

Table 2: A62 Oldham Road / The Gateway / Ten Acres Lane Junction Assessment

Lane Ref.	Lane Description	AM Peak		PM Peak	
		DoS (%)	Queue (PCU)	DoS (%)	Queue (PCU)
Baseline					
1/2+1/1	A62 Oldham Rd N – L & Ahead	22.9	4	72.5	14
1/3	A62 Oldham Rd N – Ahead	12.0	2	67.6	16
2/1	The Gateway - L	4.6	1	14.4	2
2/2	The Gateway - R	19.4	2	31.7	4
3/1	A62 Oldham Rd S – Ahead	55.3	12	23.1	4
3/2	A62 Oldham Rd S – Ahead	61.2	14	26.5	5
3/3+3/4	A62 Oldham Rd S – R	5.2	0	1.5	0
4/1	A62 S Upstream – Ahead & L	40.6	0	19.5	0
4/2	A62 S Upstream – Ahead	31.7	0	14.4	0
4/3	A62 S Upstream – Ahead	1.5	0	0.4	0
5/2+5/1	Ten Acres Ln – L & R	25.9	0	20.5	1
8/1	A62 N – TAL Connector - Ahead	11.7	0	32.1	0
8/2+8/3	A62 N – TAL Connector – R+ Ahead	14.0	7	33.7	20
PRC (%)		46.9		24.1	
Baseline (including Committed Development)					
1/2+1/1	A62 Oldham Rd N – L & Ahead	26.4	4	84.9	21
1/3	A62 Oldham Rd N – Ahead	18.6	3	82.1	23
2/1	The Gateway - L	5.3	1	14.4	2
2/2	The Gateway - R	28.8	3	33.5	4
3/1	A62 Oldham Rd S – Ahead	62.8	14	26.4	4
3/2	A62 Oldham Rd S – Ahead	67.6	17	29.6	6
3/3+3/4	A62 Oldham Rd S – R	5.2	0	1.5	0
4/1	A62 S Upstream – Ahead & L	44.4	0	21.2	0
4/2	A62 S Upstream – Ahead	35.3	0	16.2	0
4/3	A62 S Upstream – Ahead	1.5	0	0.4	0
5/2+5/1	Ten Acres Ln – L & R	30.7	1	23.6	1
8/1	A62 N – TAL Connector - Ahead	13.2	0	37.2	0
8/2+8/3	A62 N – TAL Connector – R+ Ahead	17.2	8	39.9	25
PRC (%)		33.2		6.0	

Baseline + Development					
1/2+1/1	A62 Oldham Rd N – L & Ahead	75.0	11	86.3	21
1/3	A62 Oldham Rd N – Ahead	14.8	2	83.8	24
2/1	The Gateway - L	4.5	1	15.8	2
2/2	The Gateway - R	28.8	3	33.5	4
3/1	A62 Oldham Rd S – Ahead	65.5	16	27.0	5
3/2	A62 Oldham Rd S – Ahead	71.2	19	30.4	6
3/3+3/4	A62 Oldham Rd S – R	3.2	0	2.5	0
4/1	A62 S Upstream – Ahead & L	47.5	0	23.7	0
4/2	A62 S Upstream – Ahead	35.4	0	16.7	0
4/3	A62 S Upstream – Ahead	1.5	0	0.4	0
5/2+5/1	Ten Acres Ln – L & R	75.4	4	36.3	2
8/1	A62 N – TAL Connector - Ahead	20.2	0	38.0	0
8/2+8/3	A62 N – TAL Connector – R+ Ahead	35.1	7	41.4	27
PRC (%)		19.4		4.3	

13. This demonstrates that the junction is operating satisfactory in both the AM and PM peak periods. The maximum DoS of up to 75.4% in the AM peak and up to 86.3% in the PM peak.

A62 Oldham Road / Thorp Road / Lowcross Road

14. TfGM commented:
- “The cycle time used is incorrect.
 - Thorp Road should be modelled as 1 lane plus 1 flare.
 - Oldham Road west should be modelled as 2 lanes plus 2 flares.
 - Oldham Road east should be modelled as 2 lanes plus 1 flare.
 - The ‘maximum right turns in intergreen’ values for Lowcross Road and Thorp Road are too high.
 - The staging used is incorrect.”
15. The junction modelling has been revised to reflect the TfGM comments.

16. The results are set out in **Table 3** overleaf with the full modelling output files provided as **Appendix C** of this Note.

Table 3: A62 Oldham Road / Thorp Road / Lowcross Road Junction Assessment

Lane Ref.	Lane Description	AM Peak		PM Peak	
		DoS (%)	Queue (PCU)	DoS (%)	Queue (PCU)
Baseline					
1/2+1/1	A62 (W) – Ahead & L	27.0	4	74.3	14
1/3+1/4	A62 (W) – Ahead & R	22.9	3	63.8	11
2/1	A62 (E) – Ahead & L	68.2	13	61.5	13
2/2+2/3	A62 (E) – Ahead & R	73.3	15	64.8	6
3/1+3/2	Thorp Rd – L & Ahead & R	79.2	13	66.5	8
4/1	Lowcross Rd – All Directions	13.5	2	81.9	9
PRC (%)		13.6		9.9	
Baseline (including Committed Development)					
1/2+1/1	A62 (W) – Ahead & L	33.8	5	81.0	16
1/3+1/4	A62 (W) – Ahead & R	27.8	4	72.3	13
2/1	A62 (E) – Ahead & L	78.3	17	69.6	15
2/2+2/3	A62 (E) – Ahead & R	82.3	19	80.7	7
3/1+3/2	Thorp Rd – L & Ahead & R	79.2	13	66.7	8
4/1	Lowcross Rd – All Directions	13.5	2	82.3	9
PRC (%)		9.4		9.4	
Baseline + Development					
1/2+1/1	A62 (W) – Ahead & L	42.0	6	82.9	16
1/3+1/4	A62 (W) – Ahead & R	35.2	5	75.4	14
2/1	A62 (E) – Ahead & L	80.7	18	74.6	17
2/2+2/3	A62 (E) – Ahead & R	84.3	20	80.7	8
3/1+3/2	Thorp Rd – L & Ahead & R	83.6	14	67.9	8
4/1	Lowcross Rd – All Directions	13.5	2	82.3	9
PRC (%)		6.7		8.5	

17. This demonstrates that the junction is operating satisfactory in both the AM and PM peak periods. The maximum DoS of up to 84.3% in the AM peak and up to 82.9% in the PM peak

A62 Oldham Road / Dean Lane / Old Church Street

18. TfGM commented:
 - *“The cycle time used is incorrect.*
 - *The intergreens and phase minimums used are incorrect.*
 - *The staging used is incorrect.”*
19. The junction modelling has been revised to reflect the TfGM comments.
20. The junction operates under SCOOT Control, so the green times are variable throughout the day. The maximum cycle time for this junction is 104 seconds. The model features an ‘all red’ pedestrian stage. It has been assumed that this is called in alternate cycles and thus the model is ‘double-cycled’ with a total cycle time of 208 seconds. This is consistent with the approach taken to the junction modelling submitted with the TA.
21. The results are set out in **Table 4** overleaf with the full model outputs provided as **Appendix D** of this Note.

Table 4: A62 Oldham Road / Dean Lane / Old Church Street Junction Assessment

Lane Ref.	Lane Description	AM Peak		PM Peak	
		DoS (%)	Queue (PCU)	DoS (%)	Queue (PCU)
Baseline					
1/1	A62 (W) – Ahead & L	29.1	5	87.2	29
1/2+1/3	A62 (W) – Ahead & R	31.5	6	91.7	37
2/1	A62 (E) – Ahead & L	77.2	19	36.4	8
2/2+2/3	A62 (E) – Ahead & R	80.1	21	39.0	9
3/1	Dean Ln – All Directions	62.7	11	86.6	14
4/1	Old Church St – All Directions	86.5	13	98.2	22
PRC (%)		4.1		-9.2	
Baseline (including Committed Development)					
1/1	A62 (W) – Ahead & L	34.8	6	97.0	42
1/2+1/3	A62 (W) – Ahead & R	36.8	7	97.7	48
2/1	A62 (E) – Ahead & L	85.5	23	40.1	9
2/2+2/3	A62 (E) – Ahead & R	88.3	26	42.9	10
3/1	Dean Ln – All Directions	64.2	12	85.0	14
4/1	Old Church St – All Directions	88.1	13	97.3	20
PRC (%)		1.9		-8.6	
Baseline + Development					
1/1	A62 (W) – Ahead & L	38.5	7	97.9	44
1/2+1/3	A62 (W) – Ahead & R	40.0	8	98.5	51
2/1	A62 (E) – Ahead & L	87.7	24	41.6	9
2/2+2/3	A62 (E) – Ahead & R	90.4	28	44.3	10
3/1	Dean Ln – All Directions	64.2	12	85.0	13
4/1	Old Church St – All Directions	88.1	13	97.3	20
PRC (%)		-0.5		-9.5	

22. This demonstrates that the junction is operating satisfactorily in the AM peak with a maximum DoS of 90.4% in the development scenario. This is only a marginal increase from the maximum DoS of 88.3% in the Baseline scenario.

23. The junction is operating close to capacity in the PM peak with a maximum DoS of up to 98.5% on the A62 West arm. This is only a marginal increase from the maximum DoS of 97.7% in the Baseline scenario.

Summary

24. This Note presents an update of the junction modelling of four junction in the A62 Oldham Road corridor.
25. Junction modelling was initially presented in the TA dated May 2022 which was submitted in support of the planning application for development at Jacksons Brickworks, Newton Heath. Manchester City Council (MCC) highways and Transport for Greater Manchester (TfGM) have recently made a number of comments in relation to a TA and this includes some comments from TfGM regarding the junction modelling. The Linsig models have been updated to reflect these comments and the results are presented in this Note.
26. The results can be summarised as follows:
- A62 Oldham Road / Monsall Road / Grimshaw Lane: In the AM peak period the junction is operating at or around it's theoretical capacity, though the impact of the development traffic is not significant. The junction operates satisfactorily in PM peak.
 - A62 Oldham Road / The Gateway / Ten Acres Lane: The results are unchanged from those presented in the TA. The junction operates satisfactorily in both the AM and PM peak periods.
 - A62 Oldham Road / Thorp Road / Lowcross Road: The junction operates satisfactorily in both the AM and PM peak periods
 - A62 Oldham Road / Dean Lane / Old Church Street: The junction is operating satisfactorily in the AM peak. In the PM peak, the junction is operating at around it's theoretical capacity, though the impact of the development traffic is negligible.
27. Overall, the above reflects the conclusions that where previously drawn in the TA. It is not considered that the proposed development will have any material impact at these junctions and would not meet the NPPF test of severe impact.

Appendix A - A62 Oldham Road / Monsall Road / Grimshaw Lane

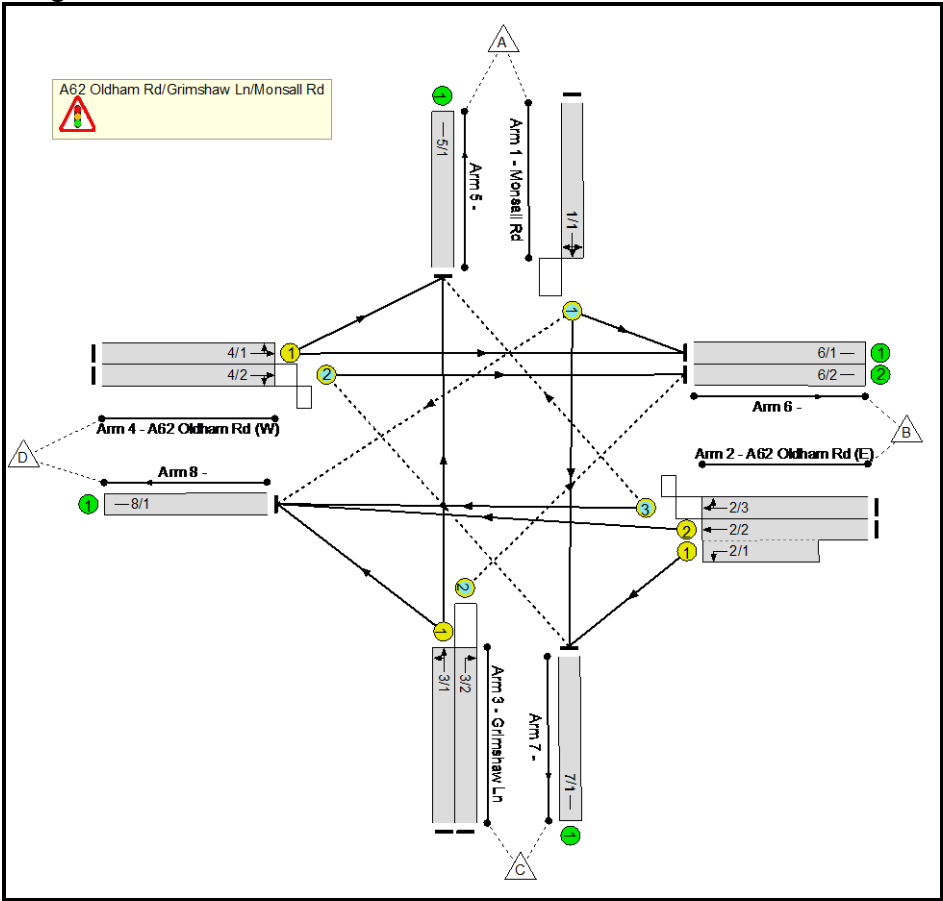
Full Input Data And Results

Full Input Data And Results

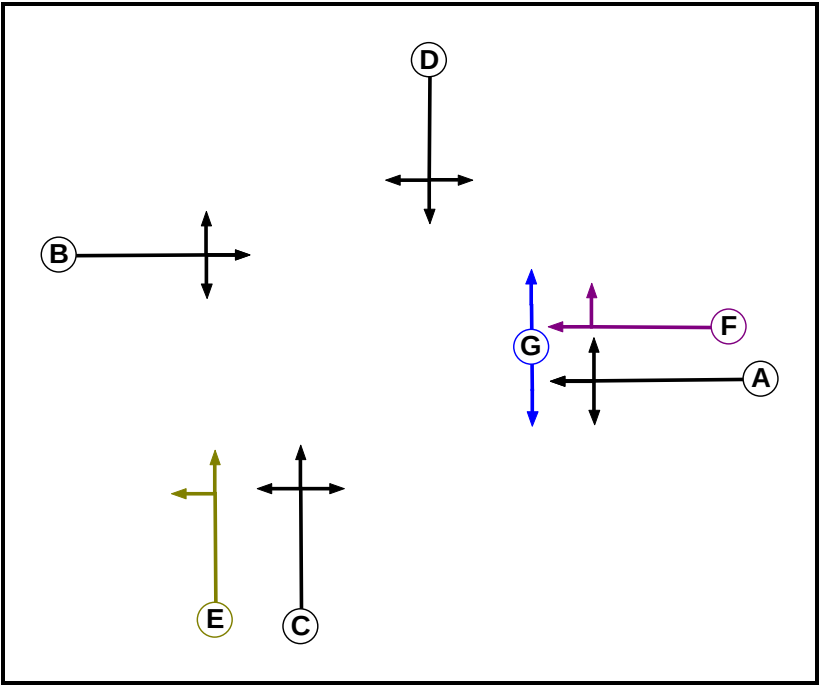
User and Project Details

Project:	Jacksons Brickworks
Title:	
Location:	Newton Heath, Manchester
Client:	Nuvu Developments
Model Purpose:	Capacity Assessment
Additional detail:	
File name:	A62 J1 - Grimshaw Ln - Monsall Rd.lsg3x
Author:	James Whitton
Company:	Vectos North Ltd
Address:	

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	Filter	C	0	0
F	Ind. Arrow	A	4	4
G	Pedestrian		8	8

Full Input Data And Results

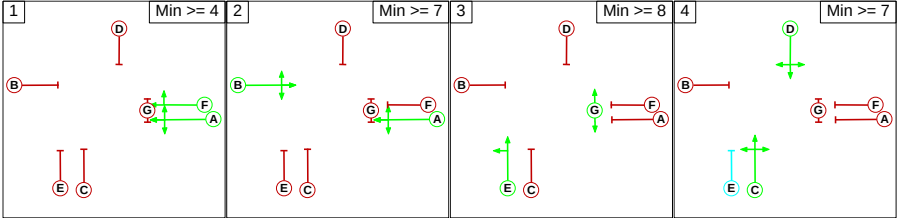
Phase Intergreens Matrix

Terminating Phase	Starting Phase							
		A	B	C	D	E	F	G
	A		-	7	7	7	-	7
	B	-		7	7	7	7	7
	C	6	6		-	-	6	6
	D	6	6	-		-	6	6
	E	6	6	-	-		6	-
	F	-	5	7	7	7		7
	G	6	6	6	6	-	6	

Phases in Stage

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

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		5	7	7
	2	7		7	7
	3	X	X		6
	4	6	6	6	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Monsall Rd)	8/1 (Right)	1439	0	3/1	1.09	All	2.60	2.60	0.50	3	2.00
2/3 (A62 Oldham Rd (E))	5/1 (Right)	1439	0	4/1	1.09	All	2.80	1.00	0.50	3	2.00
				4/2	1.09	To 6/2 (Ahead)					
3/2 (Grimshaw Ln)	6/2 (Right)	1439	0	1/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	3.00	-	0.50	3	3.00
4/2 (A62 Oldham Rd (W))	7/1 (Right)	1439	0	2/2	1.09	All	2.50	1.00	0.50	3	2.00
				2/1	1.09	All					
				2/3	1.09	To 8/1 (Ahead)					

Full Input Data And Results

Lane Input Data

Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd												
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 (Monsall Rd)	O	D	2	3	60.0	Geom	-	4.85	0.00	Y	Arm 6 Left	15.00
											Arm 7 Ahead	Inf
											Arm 8 Right	22.00
2/1 (A62 Oldham Rd (E))	U	A	2	3	8.0	Geom	-	2.85	0.00	Y	Arm 7 Left	15.00
2/2 (A62 Oldham Rd (E))	U	A	2	3	60.0	Geom	-	2.85	0.00	N	Arm 8 Ahead	Inf
2/3 (A62 Oldham Rd (E))	O	A F	2	3	60.0	Geom	-	2.85	0.00	N	Arm 5 Right	15.00
											Arm 8 Ahead	Inf
3/1 (Grimshaw Ln)	U	C E	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	18.00
3/2 (Grimshaw Ln)	O	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Right	15.00
4/1 (A62 Oldham Rd (W))	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
4/2 (A62 Oldham Rd (W))	O	B	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	15.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Base Flows AM'	08:00	09:00	01:00	
2: 'Base Flows PM'	17:00	18:00	01:00	
3: 'Base + Com Dev AM'	08:00	09:00	01:00	
4: 'Base + Com Dev PM'	17:00	18:00	01:00	
5: 'Base + Com Dev + Dev AM'	08:00	09:00	01:00	
6: 'Base + Com Dev + Dev PM'	17:00	18:00	01:00	

Scenario 1: 'Baseline AM' (FG1: 'Base Flows AM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

	Destination					
Origin		A	B	C	D	Tot.
	A	0	70	275	121	466
	B	151	0	165	1226	1542
	C	447	70	0	95	612
	D	64	716	9	0	789
	Tot.	662	856	449	1442	3409

Traffic Lane Flows

Lane	Scenario 1: Baseline AM
Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd	
1/1	466
2/1 (short)	165
2/2 (with short)	936(In) 771(Out)
2/3	606
3/1	542
3/2	70
4/1	375
4/2	414
5/1	662
6/1	381
6/2	475
7/1	449
8/1	1442

Scenario 2: 'Baseline PM' (FG2: 'Base Flows PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

	Destination					
Origin		A	B	C	D	Tot.
	A	0	73	92	0	165
	B	54	0	144	684	882
	C	402	131	0	47	580
	D	1	1323	26	0	1350
	Tot.	457	1527	262	731	2977

Traffic Lane Flows

Lane	Scenario 2: Baseline PM
Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd	
1/1	165
2/1 (short)	144
2/2 (with short)	794(In) 650(Out)
2/3	88
3/1	449
3/2	131
4/1	658
4/2	692
5/1	457
6/1	730
6/2	797
7/1	262
8/1	731

Scenario 3: 'Future Year (inc CD) AM' (FG3: 'Base + Com Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	79	286	121	486
	B	153	0	225	1243	1621
	C	459	159	0	103	721
	D	64	764	14	0	842
	Tot.	676	1002	525	1467	3670

Traffic Lane Flows

Lane	Scenario 3: Future Year (inc CD) AM
Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd	
1/1	486
2/1 (short)	225
2/2 (with short)	1030(In) 805(Out)
2/3	591
3/1	562
3/2	159
4/1	397
4/2	445
5/1	676
6/1	412
6/2	590
7/1	525
8/1	1467

Scenario 4: 'Future Year (inc CD) PM' (FG4: 'Base + Com Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	75	97	0	172
	B	62	0	212	728	1002
	C	415	204	0	54	673
	D	1	1336	33	0	1370
	Tot.	478	1615	342	782	3217

Traffic Lane Flows

Lane	Scenario 4: Future Year (inc CD) PM
Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd	
1/1	172
2/1 (short)	212
2/2 (with short)	887(In) 675(Out)
2/3	115
3/1	469
3/2	204
4/1	670
4/2	700
5/1	478
6/1	744
6/2	871
7/1	342
8/1	782

Scenario 5: 'Future Year + Dev AM' (FG5: 'Base + Com Dev + Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	79	286	121	486
	B	153	0	225	1295	1673
	C	459	159	0	103	721
	D	64	796	14	0	874
	Tot.	676	1034	525	1519	3754

Traffic Lane Flows

Lane	Scenario 5: Future Year + Dev AM
Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd	
1/1	486
2/1 (short)	225
2/2 (with short)	1013(In) 788(Out)
2/3	660
3/1	562
3/2	159
4/1	417
4/2	457
5/1	676
6/1	432
6/2	602
7/1	525
8/1	1519

Scenario 6: 'Future Year + Dev PM' (FG6: 'Base + Com Dev + Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

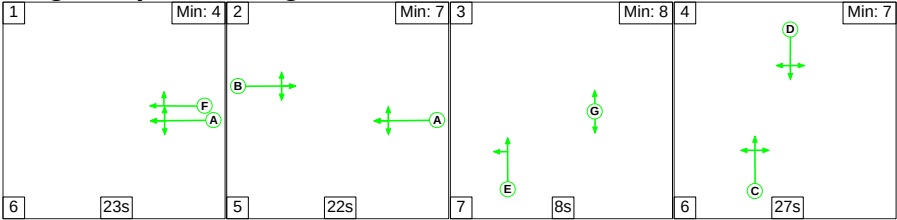
Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	75	97	0	172
	B	62	0	212	745	1019
	C	415	204	0	54	673
	D	1	1364	33	0	1398
	Tot.	478	1643	342	799	3262

Traffic Lane Flows

Lane	Scenario 6: Future Year + Dev PM
Junction: A62 Oldham Rd/Grimshaw Ln/Monsall Rd	
1/1	172
2/1 (short)	212
2/2 (with short)	885(In) 673(Out)
2/3	134
3/1	469
3/2	204
4/1	684
4/2	714
5/1	478
6/1	758
6/2	885
7/1	342
8/1	799

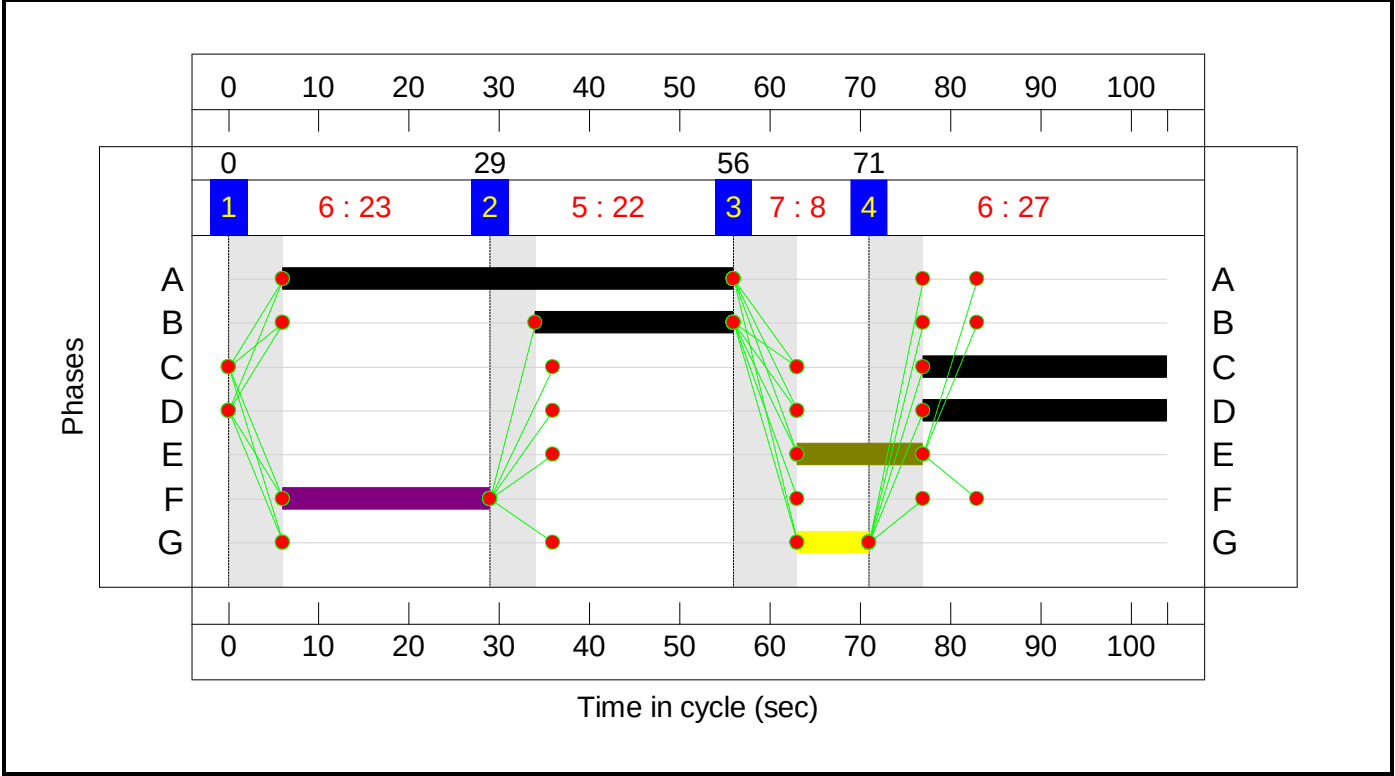
Scenario 1: 'Baseline AM' (FG1: 'Base Flows AM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	23	22	8	27
Change Point	0	29	56	71

Signal Timings Diagram



Full Input Data And Results

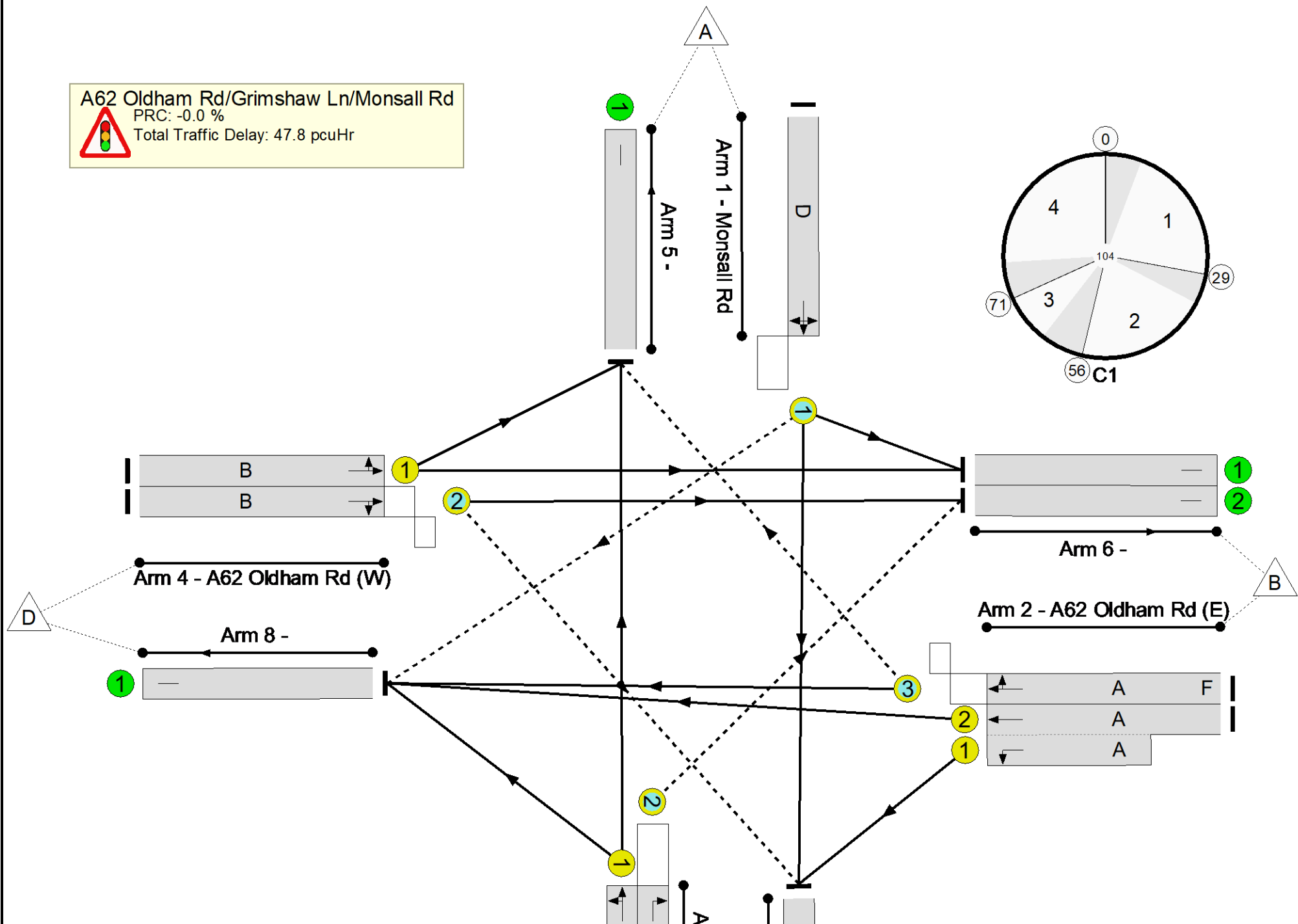
Network Layout Diagram

A62 Oldham Rd/Grimshaw Ln/Monsall Rd



PRC: -0.0 %

Total Traffic Delay: 47.8 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	-	-		-	-	-	-	-	-	90.0%
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	N/A	-	-		-	-	-	-	-	-	90.0%
1/1	Monsall Rd Left Ahead Right	O	N/A	N/A	D		1	27	-	466	2033	526	88.7%
2/2+2/1	A62 Oldham Rd (E) Left Ahead	U	N/A	N/A	A		1	50	-	936	2040:1727	856+183	90.0 : 90.0%
2/3	A62 Oldham Rd (E) Right Ahead	O	N/A	N/A	A	F	1	50	23	606	1990	680	89.2%
3/1	Grimshaw Ln Ahead Left	U	N/A	N/A	C	E	1	41	14	542	1927	778	69.6%
3/2	Grimshaw Ln Right	O	N/A	N/A	C		1	27	-	70	1764	116	60.5%
4/1	A62 Oldham Rd (W) Left Ahead	U	N/A	N/A	B		1	22	-	375	1924	425	88.1%
4/2	A62 Oldham Rd (W) Ahead Right	O	N/A	N/A	B		1	22	-	414	2100	464	89.1%
5/1		U	N/A	N/A	-		-	-	-	662	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	381	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	475	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	449	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1442	Inf	Inf	0.0%

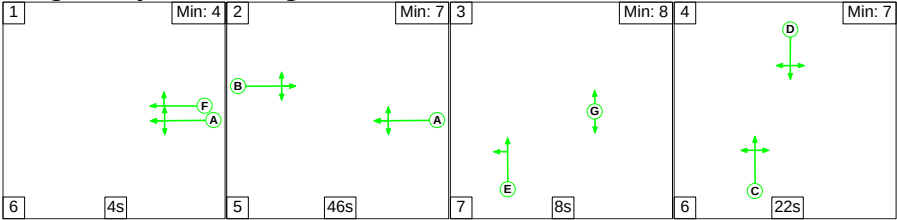
Full Input Data And Results

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	-	-	173	113	65	26.9	20.2	0.7	47.8	-	-	-	-
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	173	113	65	26.9	20.2	0.7	47.8	-	-	-	-
1/1	466	466	120	0	1	4.7	3.5	0.2	8.4	64.6	12.8	3.5	16.3
2/2+2/1	936	936	-	-	-	5.9	4.2	-	10.1	38.7	22.5	4.2	26.7
2/3	606	606	0	113	38	3.3	3.7	0.2	7.2	42.6	12.8	3.7	16.5
3/1	542	542	-	-	-	3.9	1.1	-	5.0	33.3	12.9	1.1	14.1
3/2	70	70	53	0	17	0.6	0.7	0.4	1.7	85.8	1.5	0.7	2.3
4/1	375	375	-	-	-	4.1	3.3	-	7.4	70.7	10.4	3.3	13.7
4/2	414	414	1	0	8	4.5	3.6	0.0	8.1	70.8	11.5	3.6	15.1
5/1	662	662	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	381	381	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	475	475	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	449	449	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1442	1442	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -0.0 Total Delay for Signalled Lanes (pcuHr): 47.79 Cycle Time (s): 104 PRC Over All Lanes (%): -0.0 Total Delay Over All Lanes(pcuHr): 47.79													

Full Input Data And Results

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

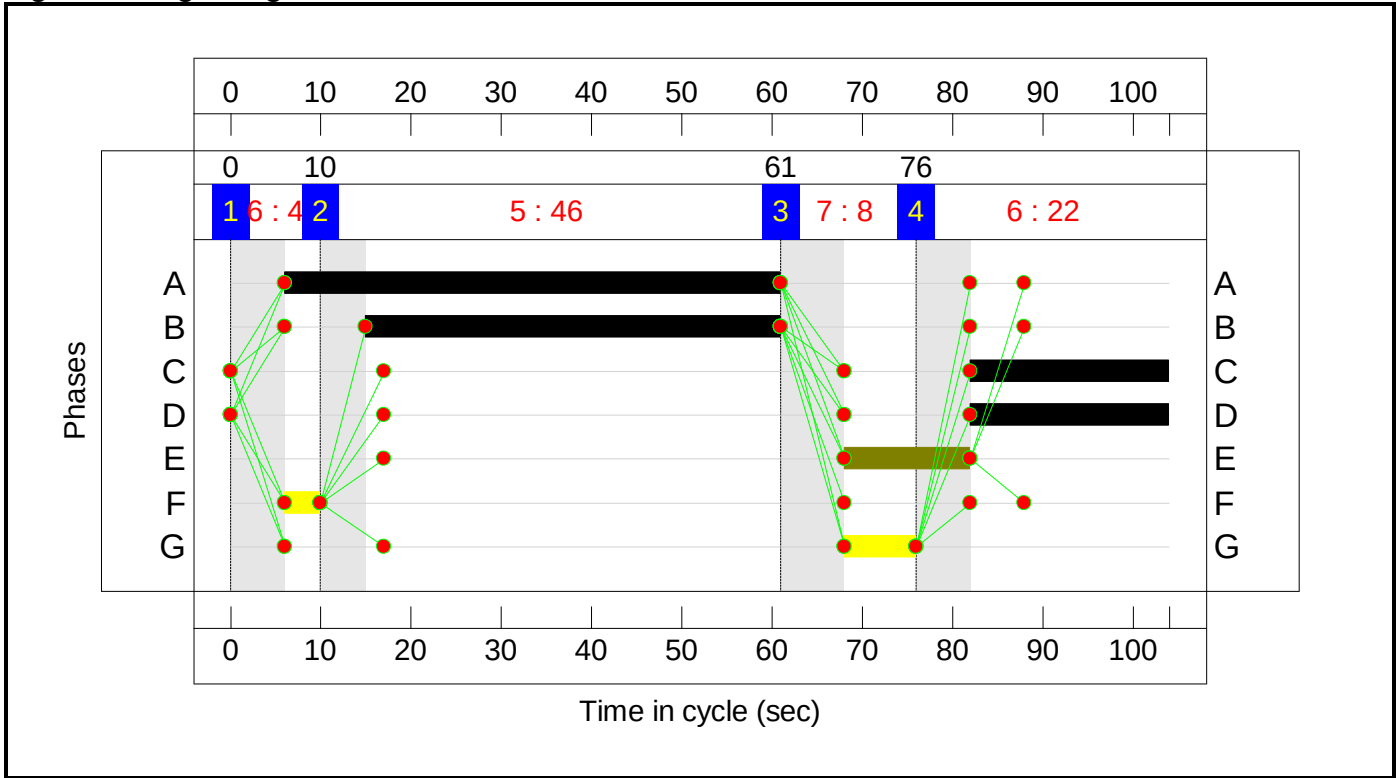
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	4	46	8	22
Change Point	0	10	61	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

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	-	-		-	-	-	-	-	-	75.2%
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	N/A	-	-		-	-	-	-	-	-	75.2%
1/1	Monsall Rd Left Ahead Right	O	N/A	N/A	D		1	22	-	165	2011	445	37.1%
2/2+2/1	A62 Oldham Rd (E) Left Ahead	U	N/A	N/A	A		1	55	-	794	2040:1727	930+206	69.9 : 69.9%
2/3	A62 Oldham Rd (E) Right Ahead	O	N/A	N/A	A	F	1	55	4	88	1922	230	38.3%
3/1	Grimshaw Ln Ahead Left	U	N/A	N/A	C	E	1	36	14	449	1938	689	65.1%
3/2	Grimshaw Ln Right	O	N/A	N/A	C		1	22	-	131	1764	269	48.8%
4/1	A62 Oldham Rd (W) Left Ahead	U	N/A	N/A	B		1	46	-	658	1965	888	74.1%
4/2	A62 Oldham Rd (W) Ahead Right	O	N/A	N/A	B		1	46	-	692	2097	920	75.2%
5/1		U	N/A	N/A	-		-	-	-	457	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	730	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	797	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	262	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	731	Inf	Inf	0.0%

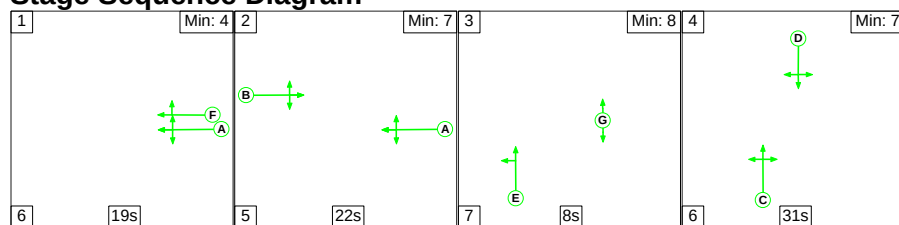
Full Input Data And Results

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	-	-	155	28	28	19.0	6.1	0.4	25.5	-	-	-	-
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	155	28	28	19.0	6.1	0.4	25.5	-	-	-	-
1/1	165	165	0	0	0	1.6	0.3	0.0	1.9	40.8	4.0	0.3	4.3
2/2+2/1	794	794	-	-	-	3.6	1.2	-	4.7	21.4	14.3	1.2	15.5
2/3	88	88	0	28	26	0.3	0.3	0.2	0.8	31.6	1.2	0.3	1.5
3/1	449	449	-	-	-	3.5	0.9	-	4.4	35.5	10.9	0.9	11.8
3/2	131	131	130	0	1	1.3	0.5	0.2	2.0	54.0	3.4	0.5	3.9
4/1	658	658	-	-	-	4.3	1.4	-	5.7	31.2	15.5	1.4	16.9
4/2	692	692	25	0	0	4.5	1.5	0.0	6.1	31.5	16.5	1.5	18.0
5/1	457	457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	730	730	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	797	797	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	262	262	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	731	731	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 19.6 Total Delay for Signalled Lanes (pcuHr): 25.52 Cycle Time (s): 104 PRC Over All Lanes (%): 19.6 Total Delay Over All Lanes(pcuHr): 25.52													

Full Input Data And Results

Scenario 3: 'Future Year (inc CD) AM' (FG3: 'Base + Com Dev AM', Plan 1: 'Network Control Plan 1')

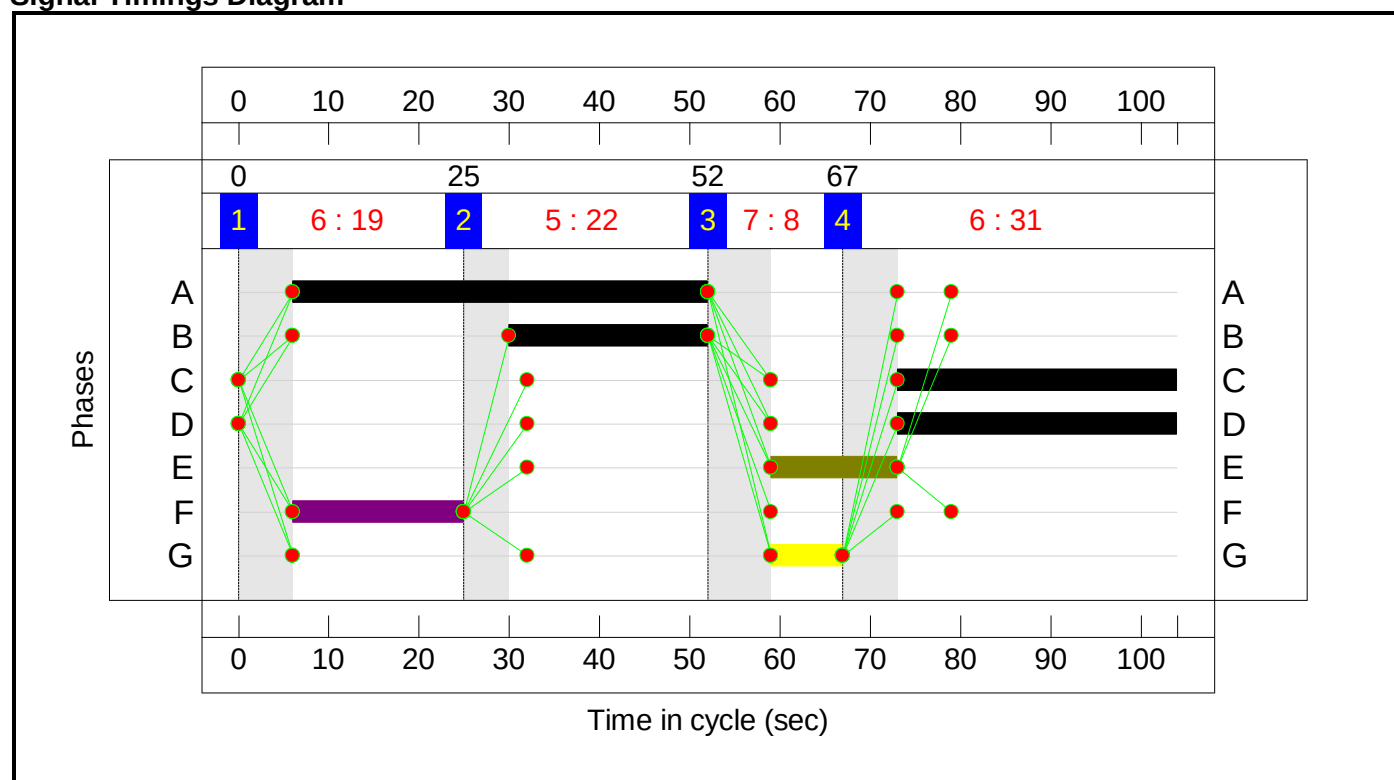
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	19	22	8	31
Change Point	0	25	52	67

Signal Timings Diagram



Full Input Data And Results

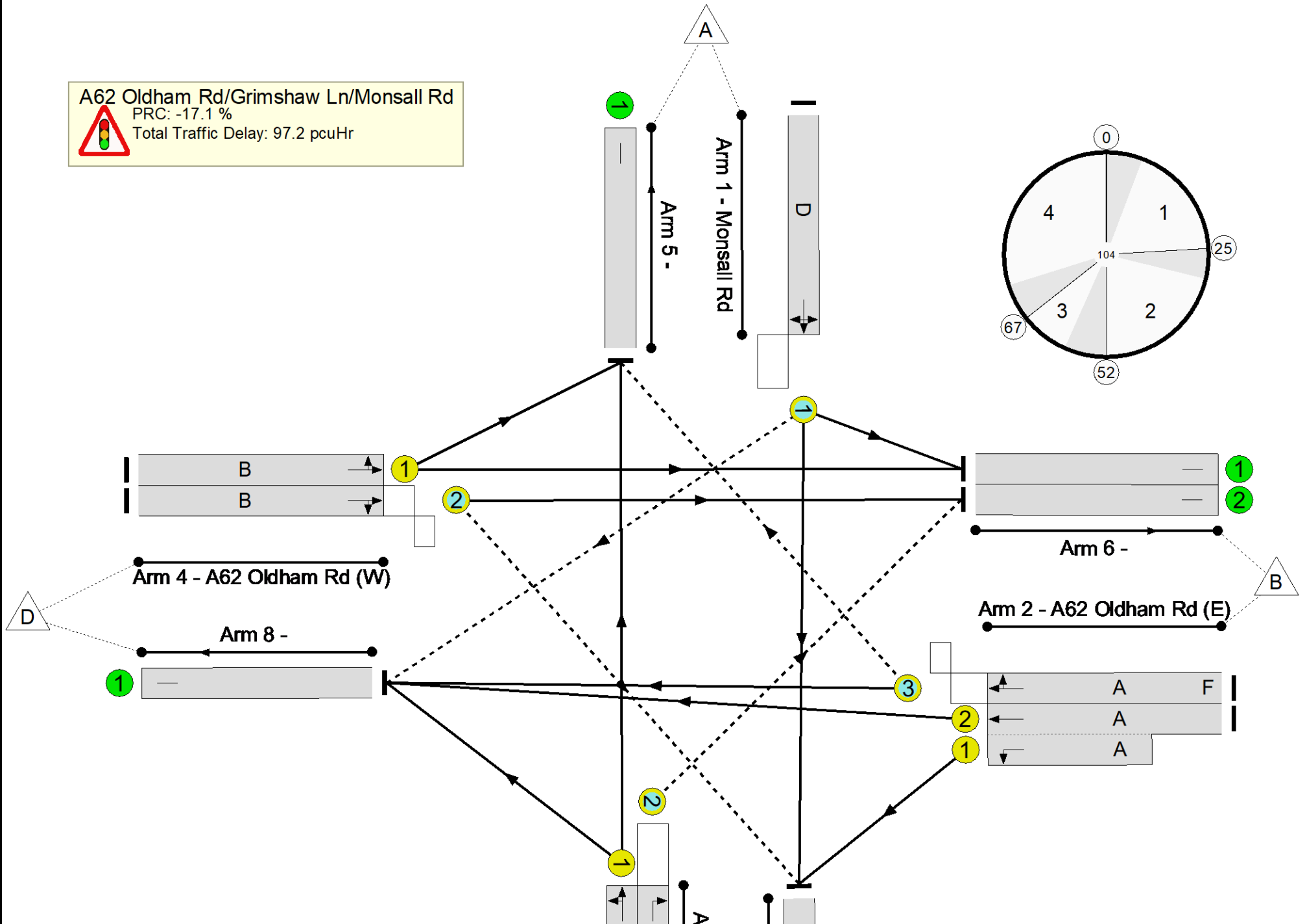
Network Layout Diagram

A62 Oldham Rd/Grimshaw Ln/Monsall Rd



PRC: -17.1 %

Total Traffic Delay: 97.2 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	-	-		-	-	-	-	-	-	105.4%
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	N/A	-	-		-	-	-	-	-	-	105.4%
1/1	Monsall Rd Left Ahead Right	O	N/A	N/A	D		1	31	-	486	2032	606	80.2%
2/2+2/1	A62 Oldham Rd (E) Left Ahead	U	N/A	N/A	A		1	46	-	1030	2040:1727	764+213	105.4 : 105.4%
2/3	A62 Oldham Rd (E) Right Ahead	O	N/A	N/A	A	F	1	46	19	591	1989	598	98.9%
3/1	Grimshaw Ln Ahead Left	U	N/A	N/A	C	E	1	45	14	562	1926	852	66.0%
3/2	Grimshaw Ln Right	O	N/A	N/A	C		1	31	-	159	1764	174	91.4%
4/1	A62 Oldham Rd (W) Left Ahead	U	N/A	N/A	B		1	22	-	397	1926	426	93.2%
4/2	A62 Oldham Rd (W) Ahead Right	O	N/A	N/A	B		1	22	-	445	2098	464	95.9%
5/1		U	N/A	N/A	-		-	-	-	676	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	412	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	590	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	525	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1467	Inf	Inf	0.0%

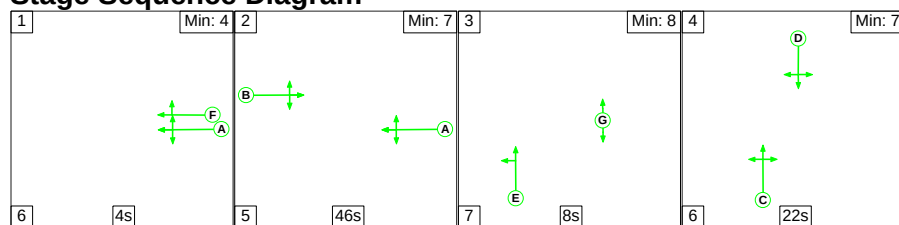
Full Input Data And Results

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	-	-	210	104	135	32.9	63.1	1.2	97.2	-	-	-	-
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	210	104	135	32.9	63.1	1.2	97.2	-	-	-	-
1/1	486	486	120	0	1	4.5	2.0	0.1	6.6	48.6	12.8	2.0	14.8
2/2+2/1	1030	977	-	-	-	10.4	34.1	-	44.5	155.4	30.8	34.1	64.8
2/3	591	598	0	104	51	3.8	10.6	0.2	14.6	89.2	13.6	10.6	24.2
3/1	562	562	-	-	-	3.6	1.0	-	4.5	29.0	12.6	1.0	13.6
3/2	159	159	90	0	69	1.4	3.6	0.8	5.7	129.8	4.5	3.6	8.1
4/1	397	397	-	-	-	4.4	5.1	-	9.5	85.8	11.2	5.1	16.3
4/2	445	445	0	0	14	5.0	6.8	0.0	11.8	95.6	12.6	6.8	19.4
5/1	678	678	-	-	-	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
6/2	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	513	513	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1430	1430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -17.1 Total Delay for Signalled Lanes (pcuHr): 97.20 Cycle Time (s): 104 PRC Over All Lanes (%): -17.1 Total Delay Over All Lanes(pcuHr): 97.20													

Full Input Data And Results

Scenario 4: 'Future Year (inc CD) PM' (FG4: 'Base + Com Dev PM', Plan 1: 'Network Control Plan 1')

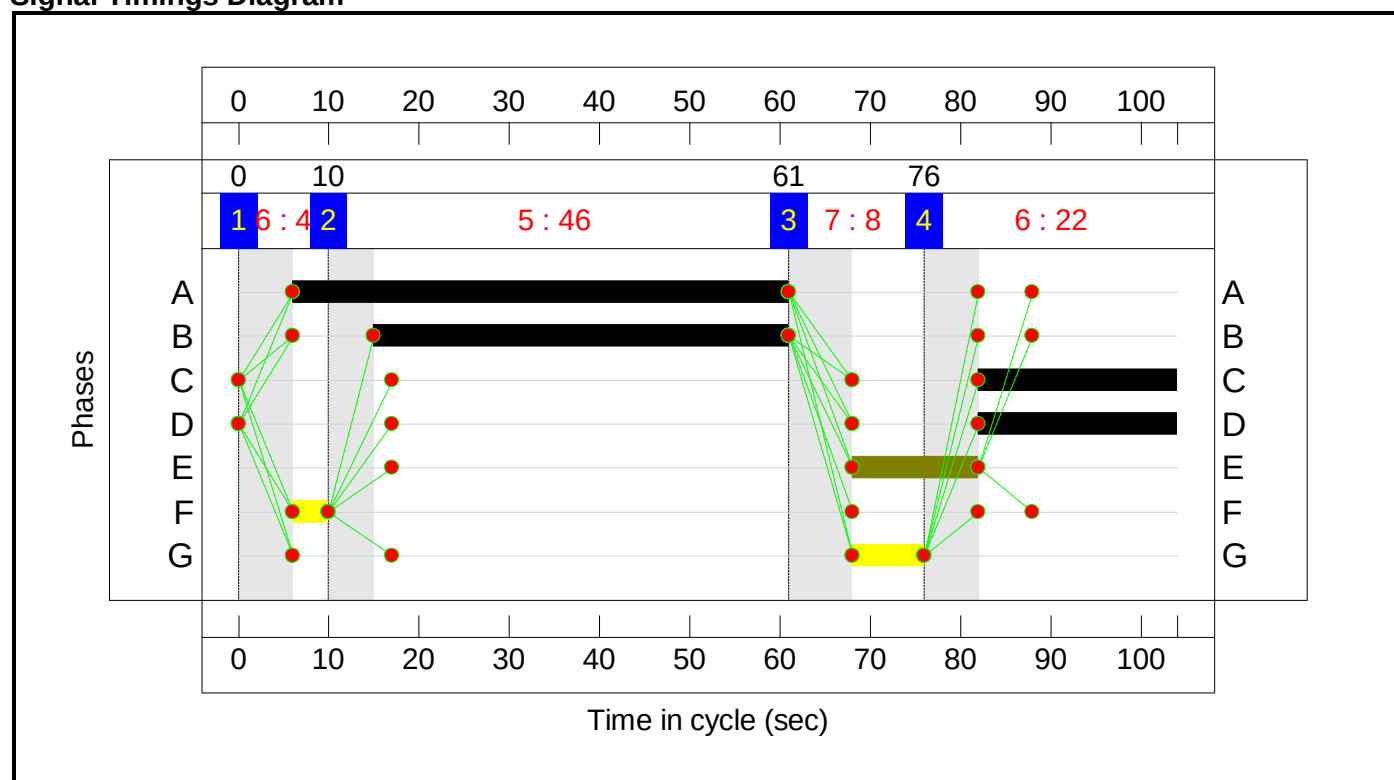
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	4	46	8	22
Change Point	0	10	61	76

Signal Timings Diagram



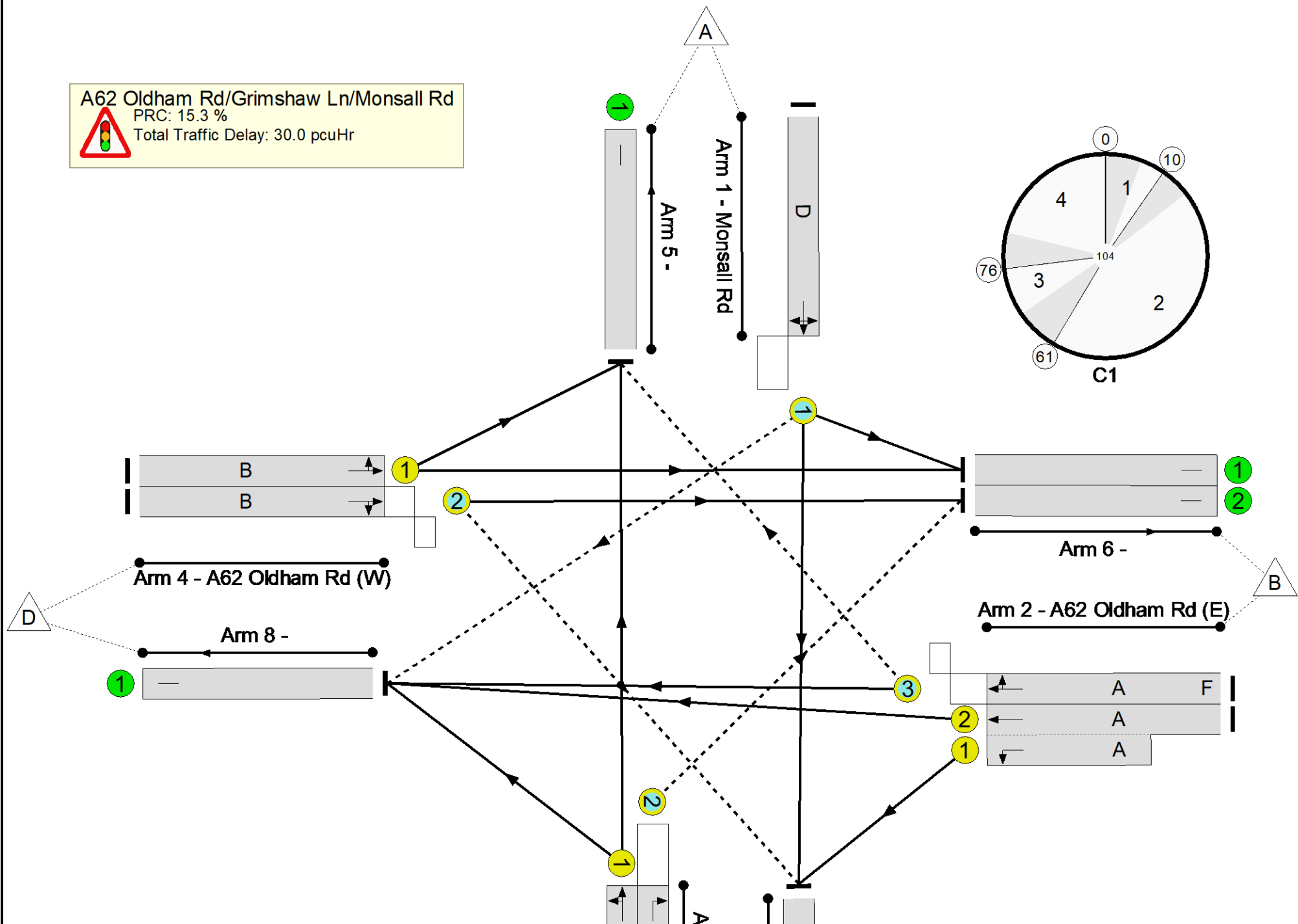
Full Input Data And Results

Network Layout Diagram

A62 Oldham Rd/Grimshaw Ln/Monsall Rd

PRC: 15.3 %

Total Traffic Delay: 30.0 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	-	-		-	-	-	-	-	-	78.1%
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	N/A	-	-		-	-	-	-	-	-	78.1%
1/1	Monsall Rd Left Ahead Right	O	N/A	N/A	D		1	22	-	172	2012	445	38.7%
2/2+2/1	A62 Oldham Rd (E) Left Ahead	U	N/A	N/A	A		1	55	-	887	2040:1727	878+276	76.9 : 76.9%
2/3	A62 Oldham Rd (E) Right Ahead	O	N/A	N/A	A	F	1	55	4	115	1936	238	48.3%
3/1	Grimshaw Ln Ahead Left	U	N/A	N/A	C	E	1	36	14	469	1936	689	68.1%
3/2	Grimshaw Ln Right	O	N/A	N/A	C		1	22	-	204	1764	261	78.1%
4/1	A62 Oldham Rd (W) Left Ahead	U	N/A	N/A	B		1	46	-	670	1965	888	75.4%
4/2	A62 Oldham Rd (W) Ahead Right	O	N/A	N/A	B		1	46	-	700	2095	912	76.8%
5/1		U	N/A	N/A	-		-	-	-	478	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	744	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	871	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	342	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	782	Inf	Inf	0.0%

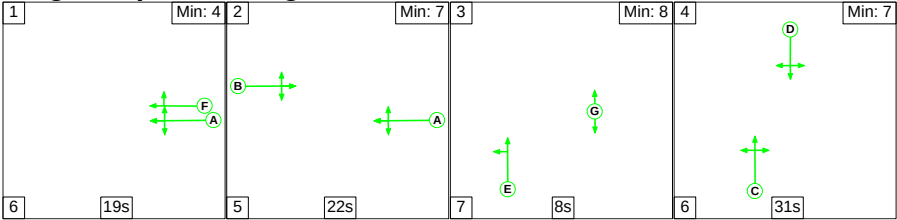
Full Input Data And Results

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Full Input Data And Results

Scenario 5: 'Future Year + Dev AM' (FG5: 'Base + Com Dev + Dev AM', Plan 1: 'Network Control Plan 1')

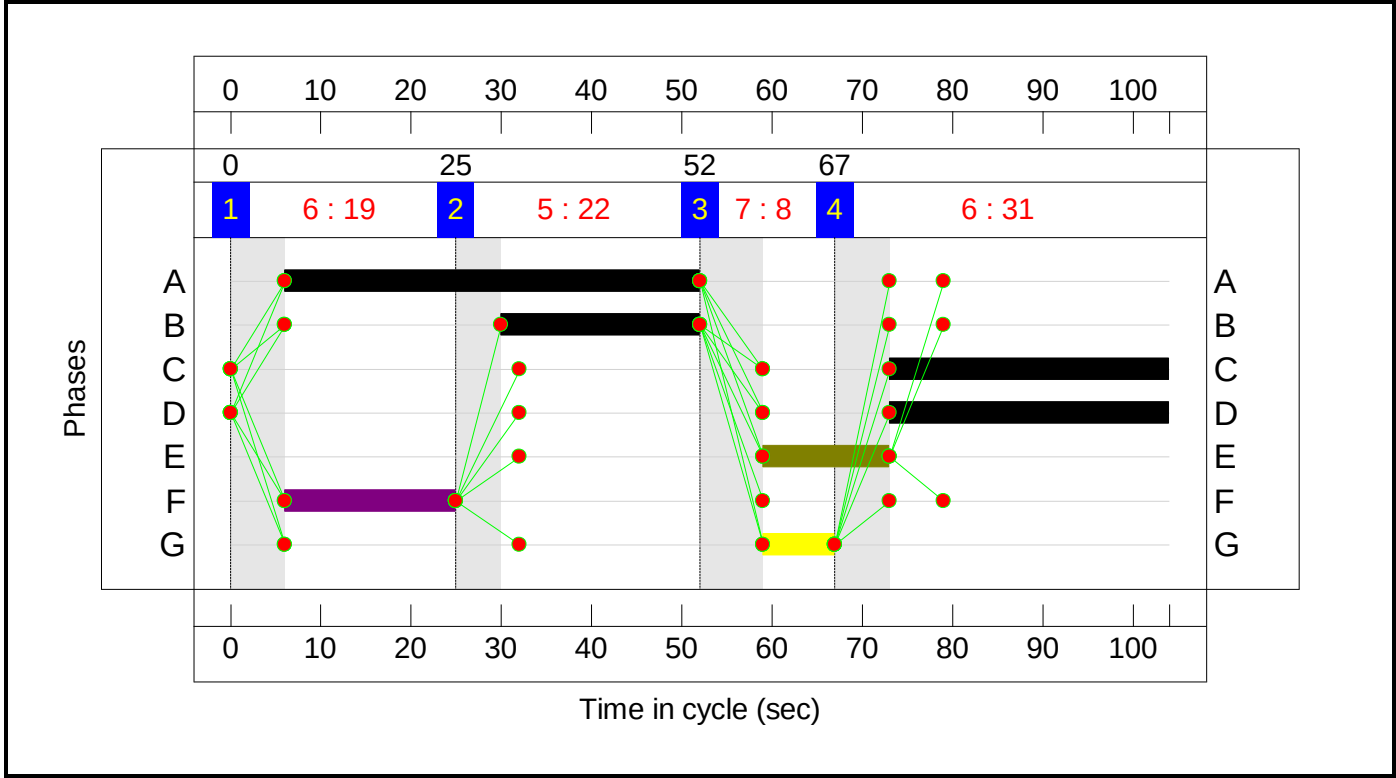
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	19	22	8	31
Change Point	0	25	52	67

Signal Timings Diagram



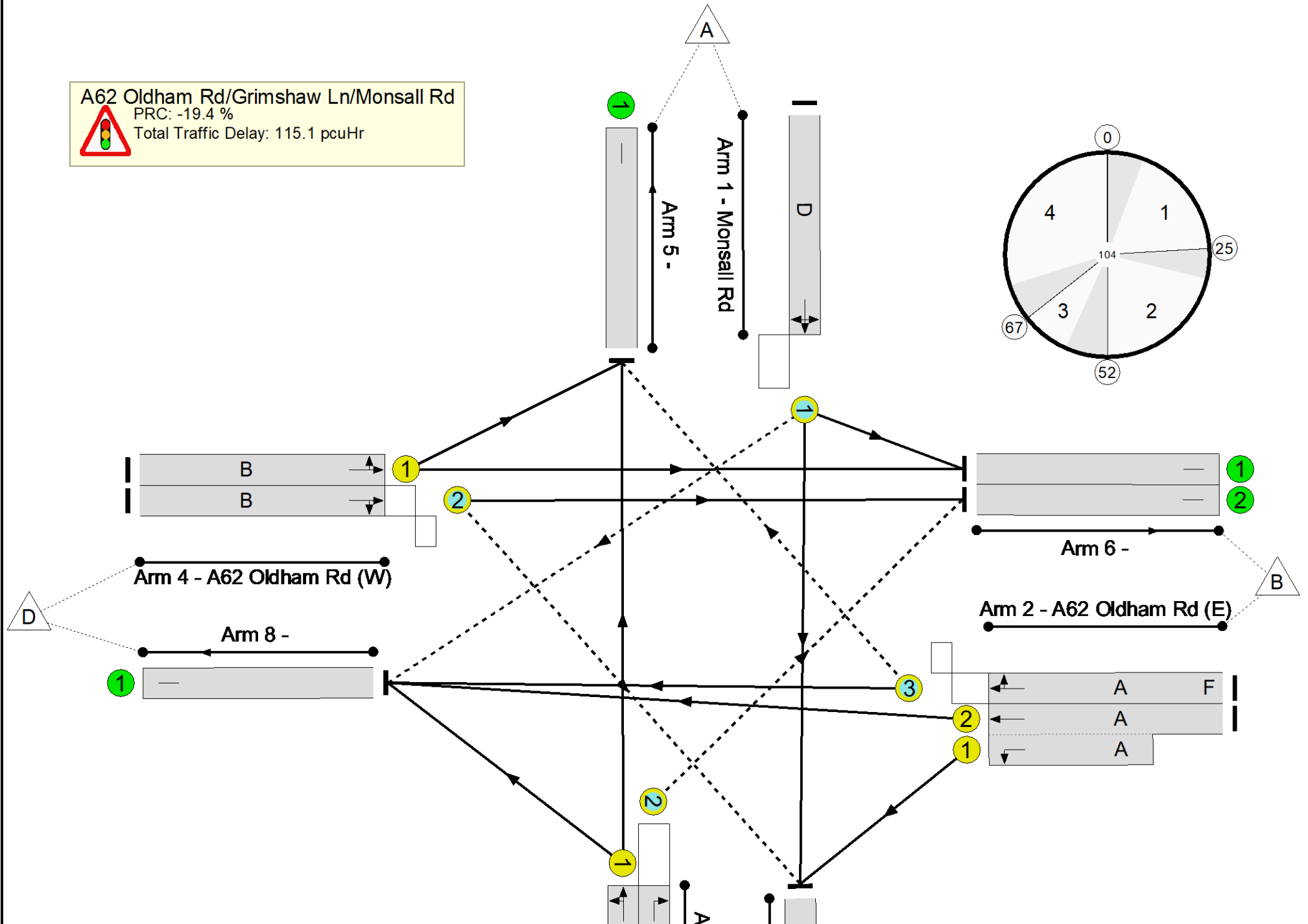
Full Input Data And Results

Network Layout Diagram

A62 Oldham Rd/Grimshaw Ln/Monsall Rd

PRC: -19.4 %

Total Traffic Delay: 115.1 pcuHr



Full Input Data And Results

Network Results

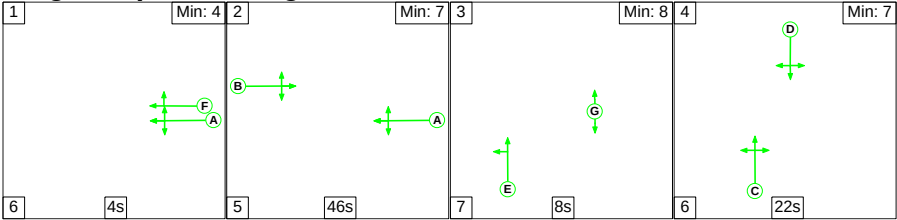
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	107.4%
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	N/A	-	-		-	-	-	-	-	-	107.4%
1/1	Monsall Rd Left Ahead Right	O	N/A	N/A	D		1	31	-	486	2032	606	80.2%
2/2+2/1	A62 Oldham Rd (E) Left Ahead	U	N/A	N/A	A		1	46	-	1013	2040:1727	761+217	103.6 : 103.6%
2/3	A62 Oldham Rd (E) Right Ahead	O	N/A	N/A	A	F	1	46	19	660	1994	614	107.4%
3/1	Grimshaw Ln Ahead Left	U	N/A	N/A	C	E	1	45	14	562	1926	852	66.0%
3/2	Grimshaw Ln Right	O	N/A	N/A	C		1	31	-	159	1764	174	91.4%
4/1	A62 Oldham Rd (W) Left Ahead	U	N/A	N/A	B		1	22	-	417	1928	426	97.8%
4/2	A62 Oldham Rd (W) Ahead Right	O	N/A	N/A	B		1	22	-	457	2099	464	98.4%
5/1		U	N/A	N/A	-		-	-	-	676	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	525	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1519	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	-	-	210	93	133	34.8	79.1	1.2	115.1	-	-	-	-
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	210	93	133	34.8	79.1	1.2	115.1	-	-	-	-
1/1	486	486	120	0	1	4.5	2.0	0.1	6.6	48.6	12.8	2.0	14.8
2/2+2/1	1013	978	-	-	-	9.3	26.8	-	36.2	128.5	29.7	26.8	56.5
2/3	660	614	0	93	49	6.2	28.6	0.3	35.1	191.6	17.5	28.6	46.1
3/1	562	562	-	-	-	3.6	1.0	-	4.5	29.0	12.6	1.0	13.6
3/2	159	159	90	0	69	1.4	3.6	0.8	5.7	129.8	4.5	3.6	8.1
4/1	417	417	-	-	-	4.7	8.1	-	12.8	110.4	11.9	8.1	20.1
4/2	457	457	0	0	14	5.1	9.0	0.0	14.2	111.9	13.1	9.0	22.1
5/1	665	665	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	517	517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1457	1457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -19.4 Total Delay for Signalled Lanes (pcuHr): 115.11 Cycle Time (s): 104 PRC Over All Lanes (%): -19.4 Total Delay Over All Lanes(pcuHr): 115.11													

Full Input Data And Results
Scenario 6: 'Future Year + Dev PM' (FG6: 'Base + Com Dev + Dev PM', Plan 1: 'Network Control Plan 1')

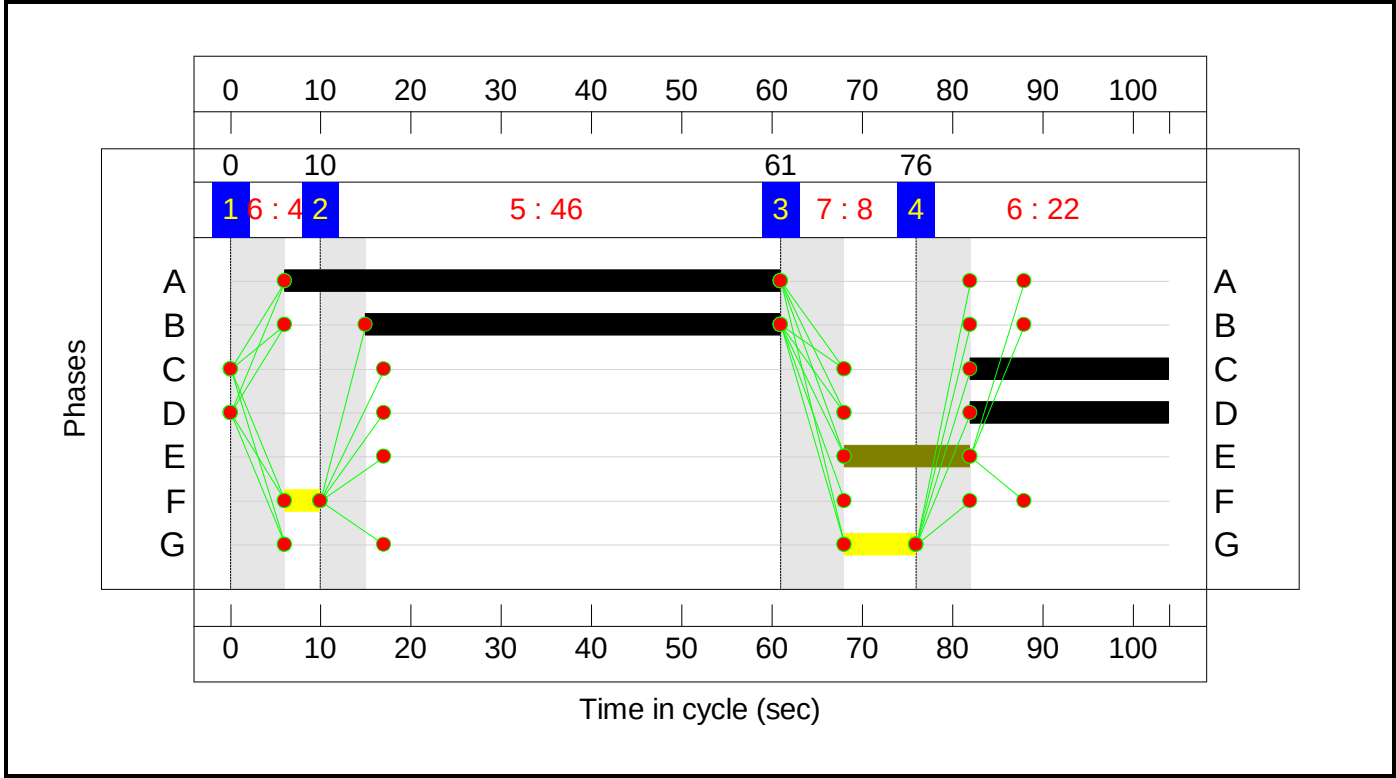
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	4	46	8	22
Change Point	0	10	61	76

Signal Timings Diagram



Full Input Data And Results

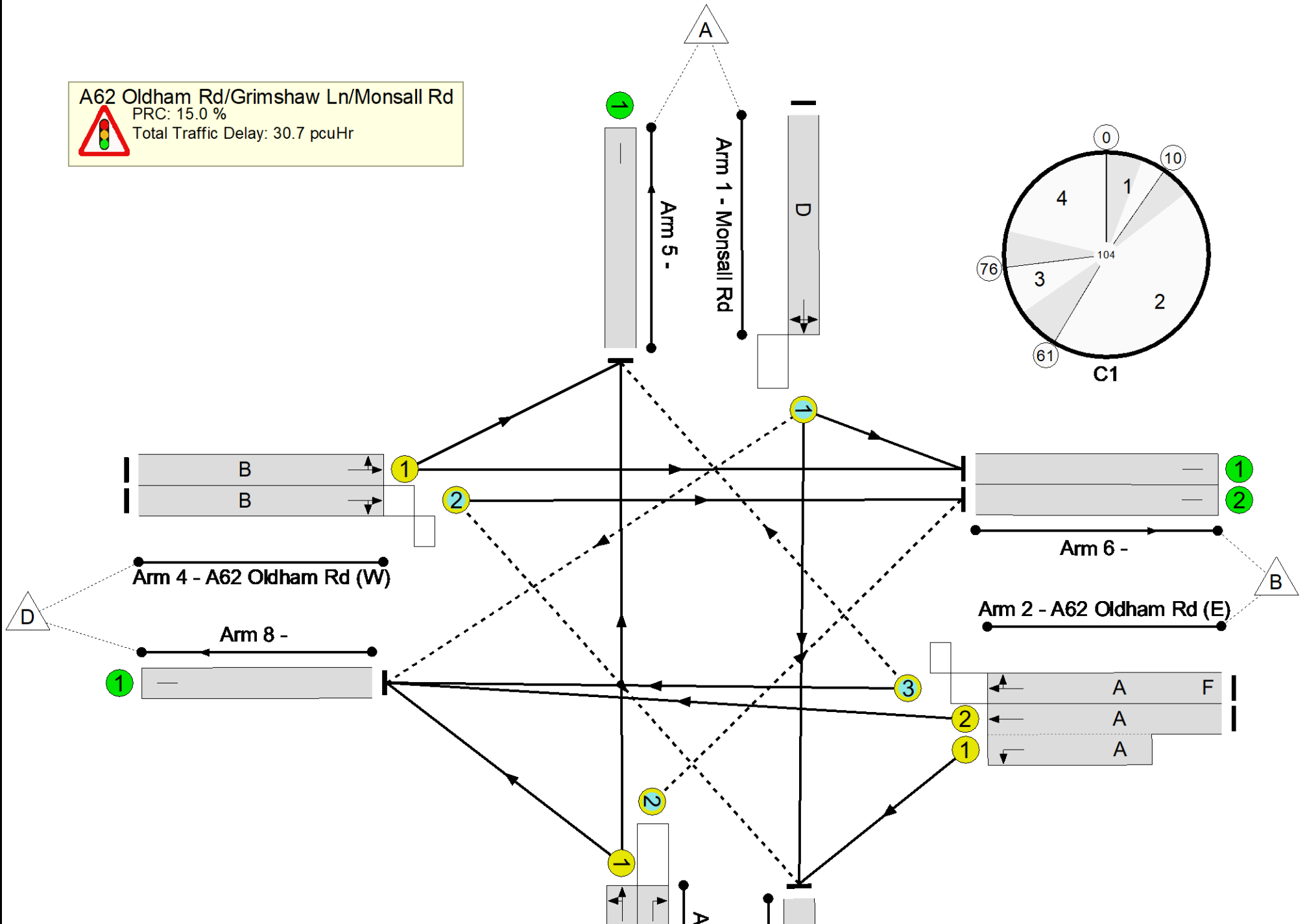
Network Layout Diagram

A62 Oldham Rd/Grimshaw Ln/Monsall Rd



PRC: 15.0 %

Total Traffic Delay: 30.7 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	-	-		-	-	-	-	-	-	78.3%
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	N/A	-	-		-	-	-	-	-	-	78.3%
1/1	Monsall Rd Left Ahead Right	O	N/A	N/A	D		1	22	-	172	2012	445	38.7%
2/2+2/1	A62 Oldham Rd (E) Left Ahead	U	N/A	N/A	A		1	55	-	885	2040:1727	877+276	76.7 : 76.7%
2/3	A62 Oldham Rd (E) Right Ahead	O	N/A	N/A	A	F	1	55	4	134	1950	250	53.7%
3/1	Grimshaw Ln Ahead Left	U	N/A	N/A	C	E	1	36	14	469	1936	689	68.1%
3/2	Grimshaw Ln Right	O	N/A	N/A	C		1	22	-	204	1764	261	78.1%
4/1	A62 Oldham Rd (W) Left Ahead	U	N/A	N/A	B		1	46	-	684	1965	888	77.0%
4/2	A62 Oldham Rd (W) Ahead Right	O	N/A	N/A	B		1	46	-	714	2095	912	78.3%
5/1		U	N/A	N/A	-		-	-	-	478	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	758	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	885	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	342	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	799	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	-	-	214	32	53	21.4	8.7	0.6	30.7	-	-	-	-
A62 Oldham Rd/Grimshaw Ln/Monsall Rd	-	-	214	32	53	21.4	8.7	0.6	30.7	-	-	-	-
1/1	172	172	0	0	0	1.6	0.3	0.0	2.0	41.1	4.2	0.3	4.5
2/2+2/1	885	885	-	-	-	4.1	1.6	-	5.7	23.3	16.4	1.6	18.0
2/3	134	134	0	32	30	0.4	0.6	0.2	1.2	33.0	1.9	0.6	2.5
3/1	469	469	-	-	-	3.7	1.1	-	4.8	36.6	11.5	1.1	12.5
3/2	204	204	182	0	22	2.2	1.7	0.4	4.2	74.0	5.6	1.7	7.2
4/1	684	684	-	-	-	4.6	1.6	-	6.2	32.6	16.5	1.6	18.2
4/2	714	714	32	0	1	4.7	1.8	0.1	6.6	33.3	17.5	1.8	19.2
5/1	478	478	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	758	758	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	885	885	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	342	342	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	799	799	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 15.0 Total Delay for Signalled Lanes (pcuHr): 30.69 Cycle Time (s): 104 PRC Over All Lanes (%): 15.0 Total Delay Over All Lanes(pcuHr): 30.69													

Appendix B - A62 Oldham Road / The Gateway / Ten Acres Lane

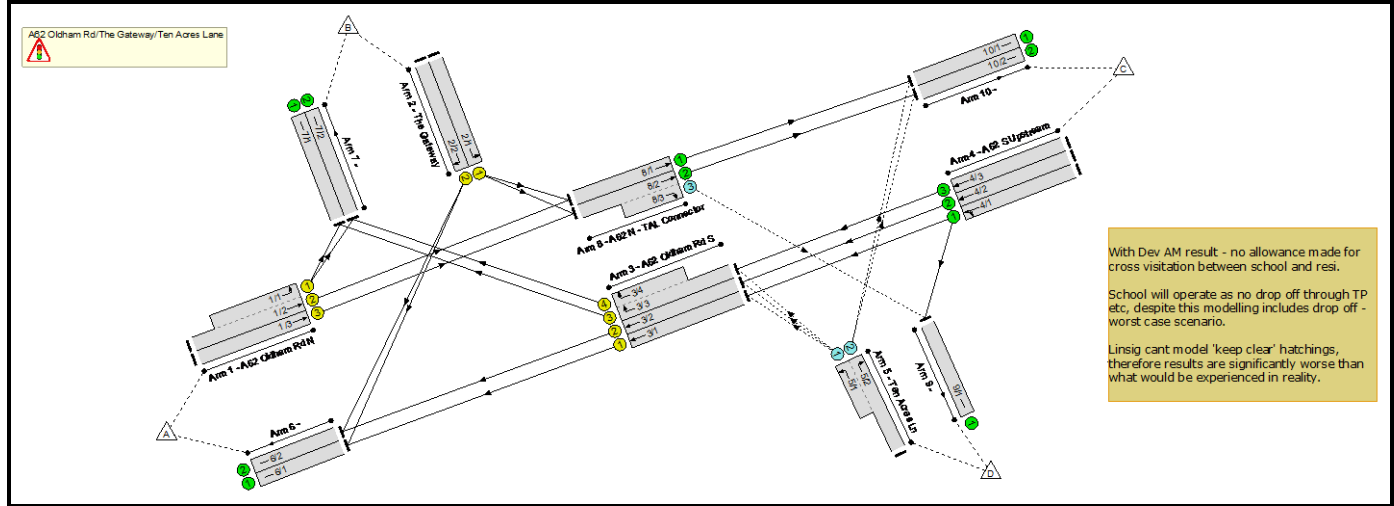
Full Input Data And Results

Full Input Data And Results

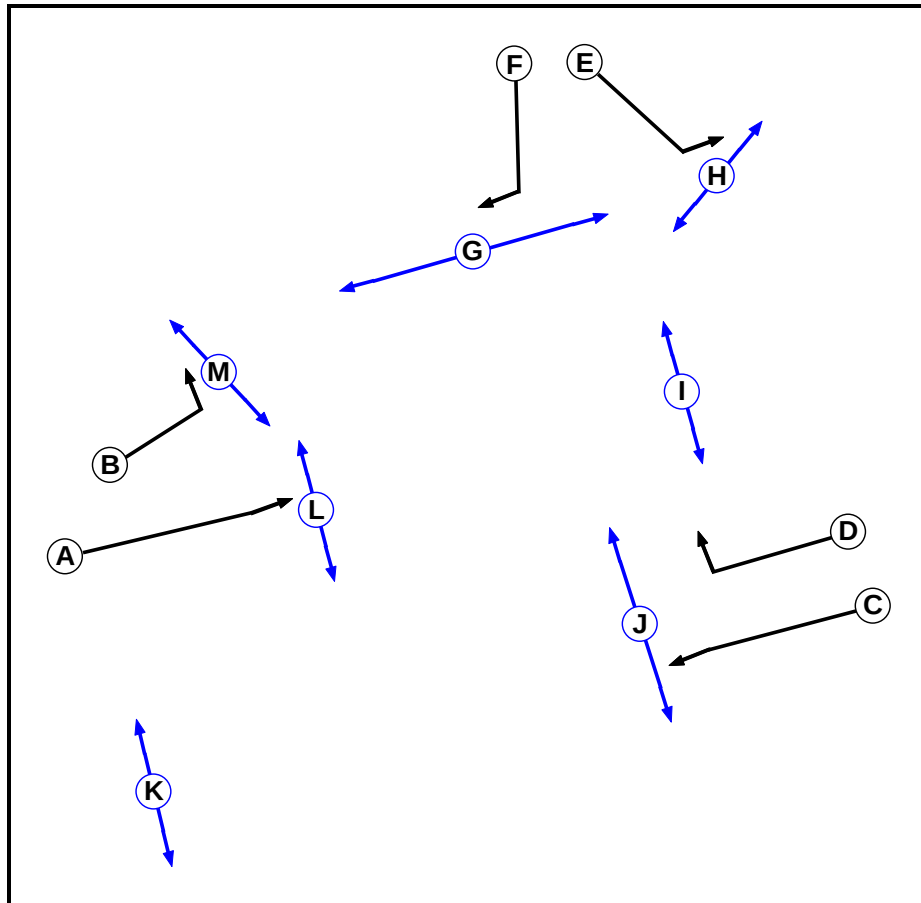
User and Project Details

Project:	Jacksons Brickworks
Title:	
Location:	Newton Heath, Manchester
Client:	Nuvu Developments
Additional detail:	
File name:	A62 J2 - The Gateway - Ten Acres Ln.lsg3x
Author:	James Whitton
Company:	Vectos North
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	5
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		5	5
H	Pedestrian		5	1
I	Pedestrian		5	3
J	Pedestrian		10	10
K	Pedestrian		5	5
L	Pedestrian		5	5
M	Pedestrian		5	0

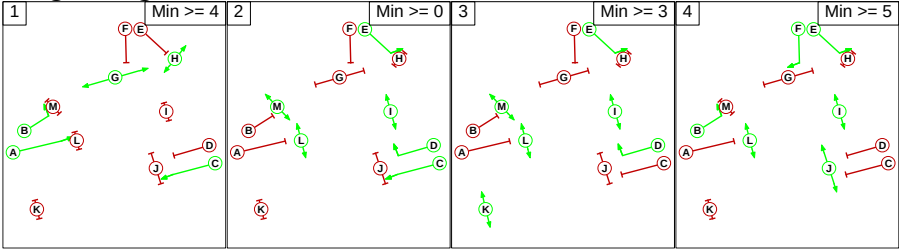
Phase Intergreens Matrix

Terminating Phase	Starting Phase													
		A	B	C	D	E	F	G	H	I	J	K	L	M
	A		-	-	5	8	6	-	-	9	-	-	5	-
	B	-		-	4	-	-	-	-	-	-	-	-	5
	C	-	-		-	-	5	-	-	-	5	10	-	-
	D	8	10	-		-	5	9	-	-	5	-	-	-
	E	4	-	-	-		-	-	5	-	-	-	-	-
	F	5	-	6	6	-		5	-	-	-	11	-	-
	G	-	-	-	8	-	8		-	-	-	-	-	-
	H	-	-	-	-	6	-	-		-	-	-	-	-
	I	6	-	-	-	-	-	-	-		-	-	-	-
	J	-	-	11	11	-	-	-	-	-		-	-	-
	K	-	-	6	-	-	5	-	-	-	-		-	-
	L	8	-	-	-	-	-	-	-	-	-	-		-
	M	-	5	-	-	-	-	-	-	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B C G H
2	C D E I L M
3	D E I K L M
4	B E F I J L

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	3	3
1	2	B	Losing	4	4
1	2	H	Losing	5	5
1	3	A	Losing	3	3
1	3	B	Losing	4	4
1	3	H	Losing	5	5
1	4	A	Losing	2	2
1	4	C	Losing	3	3
1	4	H	Losing	4	4
2	1	I	Losing	2	2
2	1	M	Losing	5	5
2	4	M	Losing	5	5
3	1	I	Losing	2	2
3	1	M	Losing	5	5
3	4	M	Losing	5	5
4	1	E	Losing	12	12
4	1	F	Losing	12	12
4	1	I	Losing	12	12

Prohibited Stage Change

	To Stage				
From Stage	1	2	3	4	
	1		12	12	11
	2	10		10	10
	3	10	6		10
	4	18	11	11	

Give-Way Lane Input Data

Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane											
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)
5/1 (Ten Acres Ln)	3/1 (Left)	715	0	4/1	0.22	To 3/1 (Ahead)	-	-	-	-	-
				4/2	0.22	To 3/2 (Ahead)					
				4/3	0.22	To 3/3 (Ahead)					
				4/1	0.22	To 3/1 (Ahead)					
	3/2 (Left)	715	0	4/2	0.22	To 3/2 (Ahead)					
				4/3	0.22	To 3/3 (Ahead)					
	3/3 (Left)	715	0	4/1	0.22	To 3/1 (Ahead)					
				4/2	0.22	To 3/2 (Ahead)					
				4/3	0.22	To 3/3 (Ahead)					
5/2 (Ten Acres Ln)	10/1 (Right)	600	0	4/1	0.22	To 3/1 (Ahead)	-	-	-	-	-
				4/2	0.22	To 3/2 (Ahead)					
				4/3	0.22	To 3/3 (Ahead)					
				8/1	0.19	To 10/1 (Ahead)					
				8/2	0.19	To 10/2 (Ahead)					
				8/3	0.19	To 9/1 (Right)					
	10/2 (Right)	600	0	4/1	0.22	To 3/1 (Ahead)					
				4/2	0.22	To 3/2 (Ahead)					
				4/3	0.22	To 3/3 (Ahead)					
				8/1	0.19	To 10/1 (Ahead)					
				8/2	0.19	To 10/2 (Ahead)					
				8/3	0.19	To 9/1 (Right)					
8/3 (A62 N -	9/1 (Right)	850	0	4/1	0.35	All	-	-	-	-	-
				4/2	0.35	All					

Full Input Data And Results

TAL Connector)				4/3	0.35	All					
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Lane Input Data

Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane												
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 (A62 Oldham Rd N)	U	B	2	3	9.6	Geom	-	2.60	0.00	Y	Arm 7 Left	30.00
1/2 (A62 Oldham Rd N)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
1/3 (A62 Oldham Rd N)	U	A	2	3	60.0	Geom	-	4.00	0.00	N	Arm 8 Ahead	Inf
2/1 (The Gateway)	U	E	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 8 Left	25.00
2/2 (The Gateway)	U	F	2	3	60.0	Geom	-	3.75	0.00	N	Arm 6 Right	25.00
3/1 (A62 Oldham Rd S)	U	C	2	3	60.0	Geom	-	3.75	0.00	Y	Arm 6 Ahead	Inf
3/2 (A62 Oldham Rd S)	U	C	2	3	60.0	Geom	-	3.75	0.00	N	Arm 6 Ahead	Inf
3/3 (A62 Oldham Rd S)	U	D	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 7 Right	25.00
3/4 (A62 Oldham Rd S)	U	D	2	3	8.0	Geom	-	3.60	0.00	N	Arm 7 Right	22.00
4/1 (A62 S Upstream)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Ahead	Inf
											Arm 9 Left	10.00
4/2 (A62 S Upstream)	U		2	3	60.0	Geom	-	3.45	0.00	N	Arm 3 Ahead	Inf
4/3 (A62 S Upstream)	U		2	3	23.5	Geom	-	3.75	0.00	N	Arm 3 Ahead	Inf
5/1 (Ten Acres Ln)	O		2	3	6.0	Geom	-	4.80	0.00	Y	Arm 3 Left	20.00
5/2 (Ten Acres Ln)	O		2	3	60.0	Geom	-	4.80	0.00	N	Arm 10 Right	20.00
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

8/1 (A62 N - TAL Connector)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Ahead	Inf
8/2 (A62 N - TAL Connector)	U		2	3	60.0	Geom	-	3.90	0.00	N	Arm 10 Ahead	Inf
8/3 (A62 N - TAL Connector)	O		2	3	6.4	Geom	-	3.25	0.00	N	Arm 9 Right	9.00
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Base AM'	08:00	09:00	01:00	
2: 'Base PM'	17:00	18:00	01:00	
3: 'Base + Com Dev AM'	08:00	09:00	01:00	
4: 'Base + Com Dev PM'	17:00	18:00	01:00	
5: 'Base + Com Dev + Dev AM'	08:00	09:00	01:00	
6: 'Base + Com Dev + Dev PM'	17:00	18:00	01:00	

Scenario 1: 'Base AM' (FG1: 'Base AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	14	274	42	330
	B	86	0	32	5	123
	C	1255	31	0	181	1467
	D	63	2	67	0	132
	Tot.	1404	47	373	228	2052

Traffic Lane Flows

Lane	Scenario 1: Base AM
Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane	
1/1 (short)	14
1/2 (with short)	211(In) 197(Out)
1/3	119
2/1	37
2/2	86
3/1	603
3/2	715
3/3 (with short)	33(In) 17(Out)
3/4 (short)	16
4/1	771
4/2	665
4/3	31
5/1 (short)	65
5/2 (with short)	132(In) 67(Out)
6/1	646
6/2	758
7/1	24
7/2	23
8/1	229
8/2 (with short)	124(In) 77(Out)
8/3 (short)	47
9/1	228
10/1	263
10/2	110

Full Input Data And Results

Lane Saturation Flows

Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane								
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 (A62 Oldham Rd N)	2.60	0.00	Y	Arm 7 Left	30.00	100.0 %	1786	1786
1/2 (A62 Oldham Rd N)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 Oldham Rd N)	4.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2155	2155
2/1 (The Gateway)	3.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1882	1882
2/2 (The Gateway)	3.75	0.00	N	Arm 6 Right	25.00	100.0 %	2009	2009
3/1 (A62 Oldham Rd S)	3.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1990	1990
3/2 (A62 Oldham Rd S)	3.75	0.00	N	Arm 6 Ahead	Inf	100.0 %	2130	2130
3/3 (A62 Oldham Rd S)	3.60	0.00	Y	Arm 7 Right	25.00	100.0 %	1863	1863
3/4 (A62 Oldham Rd S)	3.60	0.00	N	Arm 7 Right	22.00	100.0 %	1980	1980
4/1 (A62 S Upstream)	3.50	0.00	Y	Arm 3 Ahead	Inf	76.5 %	1898	1898
				Arm 9 Left	10.00	23.5 %		
4/2 (A62 S Upstream)	3.45	0.00	N	Arm 3 Ahead	Inf	100.0 %	2100	2100
4/3 (A62 S Upstream)	3.75	0.00	N	Arm 3 Ahead	Inf	100.0 %	2130	2130
5/1 (Ten Acres Ln)	4.80	0.00	Y	Arm 3 Left	20.00	100.0 %	1949	1949
5/2 (Ten Acres Ln)	4.80	0.00	N	Arm 10 Right	20.00	100.0 %	2079	2079
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1 (A62 N - TAL Connector)	3.50	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1965	1965
8/2 (A62 N - TAL Connector)	3.90	0.00	N	Arm 10 Ahead	Inf	100.0 %	2145	2145
8/3 (A62 N - TAL Connector)	3.25	0.00	N	Arm 9 Right	9.00	100.0 %	1783	1783
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

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

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	175	1135	84	1394
	B	141	0	107	8	256
	C	538	9	0	129	676
	D	23	0	58	0	81
	Tot.	702	184	1300	221	2407

Traffic Lane Flows

Lane	Scenario 2: Base PM
Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane	
1/1 (short)	175
1/2 (with short)	722(In) 547(Out)
1/3	672
2/1	115
2/2	141
3/1	252
3/2	309
3/3 (with short)	9(In) 5(Out)
3/4 (short)	4
4/1	364
4/2	303
4/3	9
5/1 (short)	23
5/2 (with short)	81(In) 58(Out)
6/1	322
6/2	380
7/1	93
7/2	91
8/1	630
8/2 (with short)	704(In) 612(Out)
8/3 (short)	92
9/1	221
10/1	659
10/2	641

[illegible]

Full Input Data And Results

Scenario 3: 'Future Year Base (Inc CD) - AM' (FG3: 'Base + Com Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	24	363	44	431
	B	128	0	37	5	170
	C	1403	31	0	182	1616
	D	71	2	67	0	140
	Tot.	1602	57	467	231	2357

Traffic Lane Flows

Lane	Scenario 3: Future Year Base (Inc CD) - AM
Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane	
1/1 (short)	24
1/2 (with short)	246(In) 222(Out)
1/3	185
2/1	42
2/2	128
3/1	685
3/2	789
3/3 (with short)	33(In) 17(Out)
3/4 (short)	16
4/1	844
4/2	741
4/3	31
5/1 (short)	73
5/2 (with short)	140(In) 67(Out)
6/1	749
6/2	853
7/1	29
7/2	28
8/1	259
8/2 (with short)	190(In) 141(Out)
8/3 (short)	49
9/1	231
10/1	293
10/2	174

Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane								
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 (A62 Oldham Rd N)	2.60	0.00	Y	Arm 7 Left	30.00	100.0 %	1786	1786
1/2 (A62 Oldham Rd N)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 Oldham Rd N)	4.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2155	2155
2/1 (The Gateway)	3.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1882	1882
2/2 (The Gateway)	3.75	0.00	N	Arm 6 Right	25.00	100.0 %	2009	2009
3/1 (A62 Oldham Rd S)	3.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1990	1990
3/2 (A62 Oldham Rd S)	3.75	0.00	N	Arm 6 Ahead	Inf	100.0 %	2130	2130
3/3 (A62 Oldham Rd S)	3.60	0.00	Y	Arm 7 Right	25.00	100.0 %	1863	1863
3/4 (A62 Oldham Rd S)	3.60	0.00	N	Arm 7 Right	22.00	100.0 %	1980	1980
4/1 (A62 S Upstream)	3.50	0.00	Y	Arm 3 Ahead	Inf	78.4 %	1903	1903
				Arm 9 Left	10.00	21.6 %		
4/2 (A62 S Upstream)	3.45	0.00	N	Arm 3 Ahead	Inf	100.0 %	2100	2100
4/3 (A62 S Upstream)	3.75	0.00	N	Arm 3 Ahead	Inf	100.0 %	2130	2130
5/1 (Ten Acres Ln)	4.80	0.00	Y	Arm 3 Left	20.00	100.0 %	1949	1949
5/2 (Ten Acres Ln)	4.80	0.00	N	Arm 10 Right	20.00	100.0 %	2079	2079
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1 (A62 N - TAL Connector)	3.50	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1965	1965
8/2 (A62 N - TAL Connector)	3.90	0.00	N	Arm 10 Ahead	Inf	100.0 %	2145	2145
8/3 (A62 N - TAL Connector)	3.25	0.00	N	Arm 9 Right	9.00	100.0 %	1783	1783
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: 'Future Year Base (Inc CD) - PM' (FG4: 'Base + Com Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	213	1363	90	1666
	B	149	0	107	8	264
	C	609	9	0	130	748
	D	24	0	58	0	82
	Tot.	782	222	1528	228	2760

Traffic Lane Flows

Lane	Scenario 4: Future Year Base (Inc CD) - PM
Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane	
1/1 (short)	213
1/2 (with short)	849(In) 636(Out)
1/3	817
2/1	115
2/2	149
3/1	288
3/2	345
3/3 (with short)	9(In) 5(Out)
3/4 (short)	4
4/1	398
4/2	341
4/3	9
5/1 (short)	24
5/2 (with short)	82(In) 58(Out)
6/1	362
6/2	420
7/1	112
7/2	110
8/1	731
8/2 (with short)	837(In) 739(Out)
8/3 (short)	98
9/1	228
10/1	760
10/2	768

Full Input Data And Results

Lane Saturation Flows

Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane								
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 (A62 Oldham Rd N)	2.60	0.00	Y	Arm 7 Left	30.00	100.0 %	1786	1786
1/2 (A62 Oldham Rd N)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 Oldham Rd N)	4.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2155	2155
2/1 (The Gateway)	3.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1882	1882
2/2 (The Gateway)	3.75	0.00	N	Arm 6 Right	25.00	100.0 %	2009	2009
3/1 (A62 Oldham Rd S)	3.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1990	1990
3/2 (A62 Oldham Rd S)	3.75	0.00	N	Arm 6 Ahead	Inf	100.0 %	2130	2130
3/3 (A62 Oldham Rd S)	3.60	0.00	Y	Arm 7 Right	25.00	100.0 %	1863	1863
3/4 (A62 Oldham Rd S)	3.60	0.00	N	Arm 7 Right	22.00	100.0 %	1980	1980
4/1 (A62 S Upstream)	3.50	0.00	Y	Arm 3 Ahead	Inf	67.3 %	1873	1873
4/2 (A62 S Upstream)	3.45	0.00	N	Arm 9 Left	10.00	32.7 %		
4/2 (A62 S Upstream)	3.45	0.00	N	Arm 3 Ahead	Inf	100.0 %	2100	2100
4/3 (A62 S Upstream)	3.75	0.00	N	Arm 3 Ahead	Inf	100.0 %	2130	2130
5/1 (Ten Acres Ln)	4.80	0.00	Y	Arm 3 Left	20.00	100.0 %	1949	1949
5/2 (Ten Acres Ln)	4.80	0.00	N	Arm 10 Right	20.00	100.0 %	2079	2079
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1 (A62 N - TAL Connector)	3.50	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1965	1965
8/2 (A62 N - TAL Connector)	3.90	0.00	N	Arm 10 Ahead	Inf	100.0 %	2145	2145
8/3 (A62 N - TAL Connector)	3.25	0.00	N	Arm 9 Right	9.00	100.0 %	1783	1783
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: 'Future Year + Dev - AM ' (FG5: 'Base + Com Dev + Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	24	363	76	463
	B	128	0	37	17	182
	C	1403	31	0	238	1672
	D	142	2	157	0	301
	Tot.	1673	57	557	331	2618

Traffic Lane Flows

Lane	Scenario 5: Future Year + Dev - AM
Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane	
1/1 (short)	24
1/2 (with short)	383(In) 359(Out)
1/3	80
2/1	54
2/2	128
3/1	714
3/2	831
3/3 (with short)	33(In) 17(Out)
3/4 (short)	16
4/1	898
4/2	743
4/3	31
5/1 (short)	144
5/2 (with short)	301(In) 157(Out)
6/1	778
6/2	895
7/1	29
7/2	28
8/1	396
8/2 (with short)	97(In) 4(Out)
8/3 (short)	93
9/1	331
10/1	475
10/2	82

Full Input Data And Results

Lane Saturation Flows

Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane								
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 (A62 Oldham Rd N)	2.60	0.00	Y	Arm 7 Left	30.00	100.0 %	1786	1786
1/2 (A62 Oldham Rd N)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 Oldham Rd N)	4.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2155	2155
2/1 (The Gateway)	3.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1882	1882
2/2 (The Gateway)	3.75	0.00	N	Arm 6 Right	25.00	100.0 %	2009	2009
3/1 (A62 Oldham Rd S)	3.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1990	1990
3/2 (A62 Oldham Rd S)	3.75	0.00	N	Arm 6 Ahead	Inf	100.0 %	2130	2130
3/3 (A62 Oldham Rd S)	3.60	0.00	Y	Arm 7 Right	25.00	100.0 %	1863	1863
3/4 (A62 Oldham Rd S)	3.60	0.00	N	Arm 7 Right	22.00	100.0 %	1980	1980
4/1 (A62 S Upstream)	3.50	0.00	Y	Arm 3 Ahead	Inf	73.5 %	1890	1890
				Arm 9 Left	10.00	26.5 %		
4/2 (A62 S Upstream)	3.45	0.00	N	Arm 3 Ahead	Inf	100.0 %	2100	2100
4/3 (A62 S Upstream)	3.75	0.00	N	Arm 3 Ahead	Inf	100.0 %	2130	2130
5/1 (Ten Acres Ln)	4.80	0.00	Y	Arm 3 Left	20.00	100.0 %	1949	1949
5/2 (Ten Acres Ln)	4.80	0.00	N	Arm 10 Right	20.00	100.0 %	2079	2079
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1 (A62 N - TAL Connector)	3.50	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1965	1965
8/2 (A62 N - TAL Connector)	3.90	0.00	N	Arm 10 Ahead	Inf	100.0 %	2145	2145
8/3 (A62 N - TAL Connector)	3.25	0.00	N	Arm 9 Right	9.00	100.0 %	1783	1783
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 6: 'Future Year + Dev - PM ' (FG6: 'Base + Com Dev + Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	213	1363	118	1694
	B	149	0	107	19	275
	C	609	9	0	179	797
	D	41	6	87	0	134
	Tot.	799	228	1557	316	2900

Traffic Lane Flows

Lane	Scenario 6: Future Year + Dev - PM
Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane	
1/1 (short)	213
1/2 (with short)	861(In) 648(Out)
1/3	833
2/1	126
2/2	149
3/1	295
3/2	355
3/3 (with short)	15(In) 8(Out)
3/4 (short)	7
4/1	438
4/2	350
4/3	9
5/1 (short)	47
5/2 (with short)	134(In) 87(Out)
6/1	369
6/2	430
7/1	115
7/2	113
8/1	747
8/2 (with short)	860(In) 723(Out)
8/3 (short)	137
9/1	316
10/1	791
10/2	766

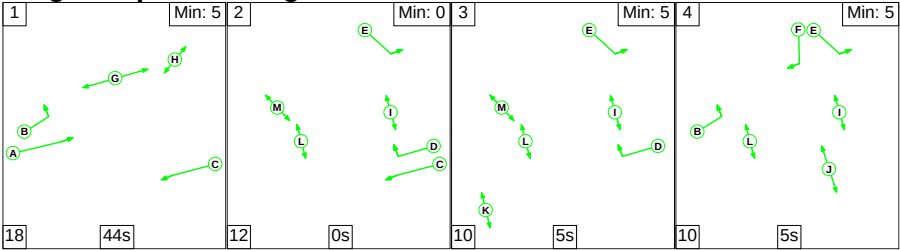
Full Input Data And Results

Lane Saturation Flows

Junction: A62 Oldham Rd/The Gateway/Ten Acres Lane								
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 (A62 Oldham Rd N)	2.60	0.00	Y	Arm 7 Left	30.00	100.0 %	1786	1786
1/2 (A62 Oldham Rd N)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 Oldham Rd N)	4.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2155	2155
2/1 (The Gateway)	3.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1882	1882
2/2 (The Gateway)	3.75	0.00	N	Arm 6 Right	25.00	100.0 %	2009	2009
3/1 (A62 Oldham Rd S)	3.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1990	1990
3/2 (A62 Oldham Rd S)	3.75	0.00	N	Arm 6 Ahead	Inf	100.0 %	2130	2130
3/3 (A62 Oldham Rd S)	3.60	0.00	Y	Arm 7 Right	25.00	100.0 %	1863	1863
3/4 (A62 Oldham Rd S)	3.60	0.00	N	Arm 7 Right	22.00	100.0 %	1980	1980
4/1 (A62 S Upstream)	3.50	0.00	Y	Arm 3 Ahead	Inf	59.1 %	1852	1852
4/2 (A62 S Upstream)	3.45	0.00	N	Arm 9 Left	10.00	40.9 %		
4/2 (A62 S Upstream)	3.45	0.00	N	Arm 3 Ahead	Inf	100.0 %	2100	2100
4/3 (A62 S Upstream)	3.75	0.00	N	Arm 3 Ahead	Inf	100.0 %	2130	2130
5/1 (Ten Acres Ln)	4.80	0.00	Y	Arm 3 Left	20.00	100.0 %	1949	1949
5/2 (Ten Acres Ln)	4.80	0.00	N	Arm 10 Right	20.00	100.0 %	2079	2079
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1 (A62 N - TAL Connector)	3.50	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1965	1965
8/2 (A62 N - TAL Connector)	3.90	0.00	N	Arm 10 Ahead	Inf	100.0 %	2145	2145
8/3 (A62 N - TAL Connector)	3.25	0.00	N	Arm 9 Right	9.00	100.0 %	1783	1783
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf

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

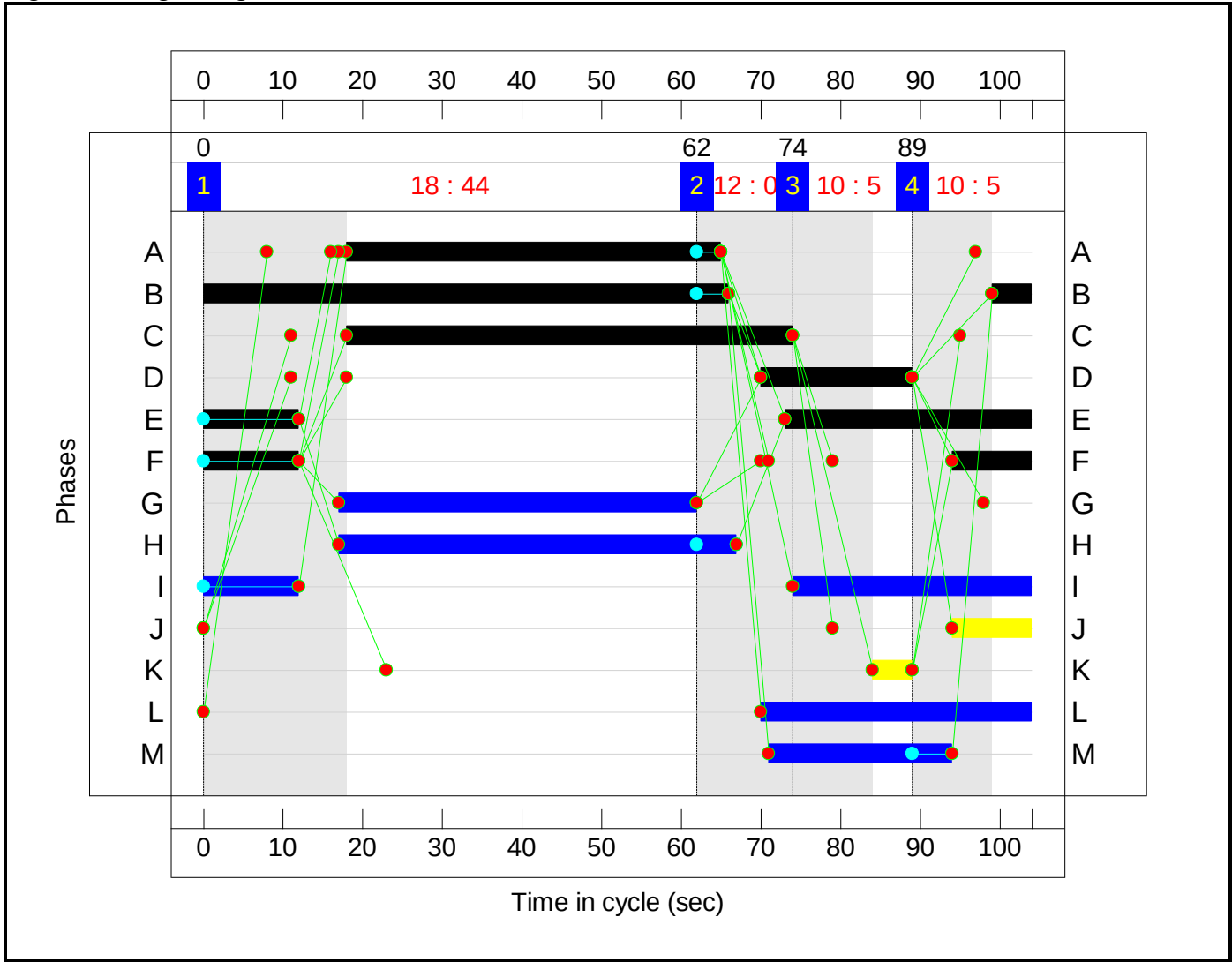
Stage Sequence Diagram



Stage Timings

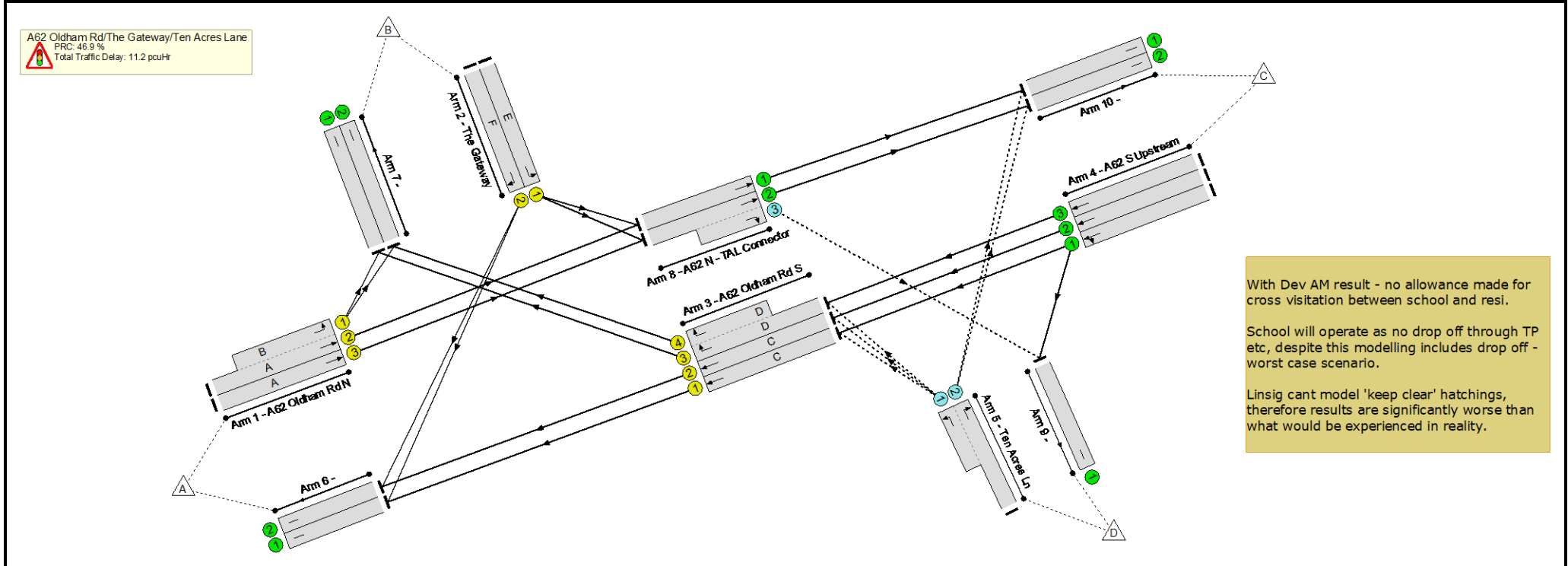
Stage	1	2	3	4
Duration	44	0	5	5
Change Point	0	62	74	89

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	61.2%
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	N/A	-	-		-	-	-	-	-	-	61.2%
1/2+1/1	A62 Oldham Rd N Left Ahead	U	N/A	N/A	A B		1	47:71	-	211	1940:1786	859+61	22.9 : 22.9%
1/3	A62 Oldham Rd N Ahead	U	N/A	N/A	A		1	47	-	119	2155	995	12.0%
2/1	The Gateway Left	U	N/A	N/A	E		1	43	-	37	1882	796	4.6%
2/2	The Gateway Right	U	N/A	N/A	F		1	22	-	86	2009	444	19.4%
3/1	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	603	1990	1091	55.3%
3/2	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	715	2130	1167	61.2%
3/3+3/4	A62 Oldham Rd S Right	U	N/A	N/A	D		1	19	-	33	1863:1980	324+305	5.2 : 5.2%
4/1	A62 S Upstream Ahead Left	U	N/A	N/A	-		-	-	-	771	1898	1898	40.6%
4/2	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	665	2100	2100	31.7%
4/3	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	31	2130	2130	1.5%
5/2+5/1	Ten Acres Ln Left Right	O	N/A	N/A	-		-	-	-	132	2079:1949	259+251	25.9 : 25.9%
6/1		U	N/A	N/A	-		-	-	-	646	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	758	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	24	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	23	Inf	Inf	0.0%
8/1	A62 N - TAL Connector Ahead	U	N/A	N/A	-		-	-	-	229	1965	1965	11.7%

Full Input Data And Results

8/2+8/3	A62 N - TAL Connector Right Ahead	U+O	N/A	N/A	-		-	-	-	124	2145:1783	551+337	14.0 : 14.0%
9/1		U	N/A	N/A	-		-	-	-	228	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	110	Inf	Inf	0.0%

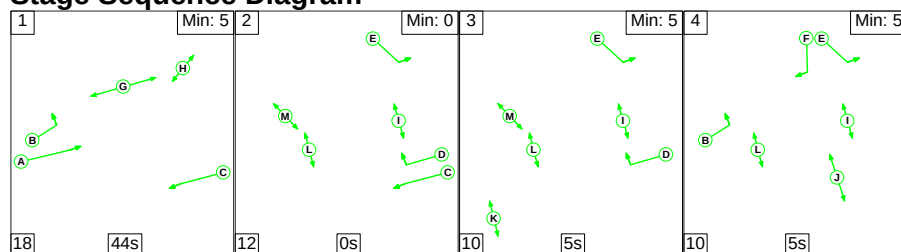
Full Input Data And Results

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	-	-	311	0	0	8.5	2.7	0.0	11.2	-	-	-	-
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	311	0	0	8.5	2.7	0.0	11.2	-	-	-	-
1/2+1/1	211	211	-	-	-	0.9	0.1	-	1.1	18.6	3.4	0.1	3.5
1/3	119	119	-	-	-	0.5	0.1	-	0.6	18.0	2.0	0.1	2.0
2/1	37	37	-	-	-	0.2	0.0	-	0.2	20.1	0.6	0.0	0.7
2/2	86	86	-	-	-	0.8	0.1	-	0.9	38.0	2.0	0.1	2.1
3/1	603	603	-	-	-	2.6	0.6	-	3.2	18.9	11.2	0.6	11.8
3/2	715	715	-	-	-	3.2	0.8	-	4.0	20.0	13.9	0.8	14.7
3/3+3/4	33	33	-	-	-	0.3	0.0	-	0.3	37.3	0.4	0.0	0.4
4/1	771	771	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
4/2	665	665	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
4/3	31	31	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
5/2+5/1	132	132	264	0	0	0.0	0.2	-	0.2	5.0	0.2	0.2	0.4
6/1	646	646	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	758	758	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	24	24	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	23	23	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	229	229	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
8/2+8/3	124	124	47	0	0	0.0	0.1	-	0.1	2.6	7.0	0.1	7.0
9/1	228	228	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	110	110	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 46.9 Total Delay for Signalled Lanes (pcuHr): 10.27 Cycle Time (s): 104 PRC Over All Lanes (%): 46.9 Total Delay Over All Lanes(pcuHr): 11.19													

Full Input Data And Results

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

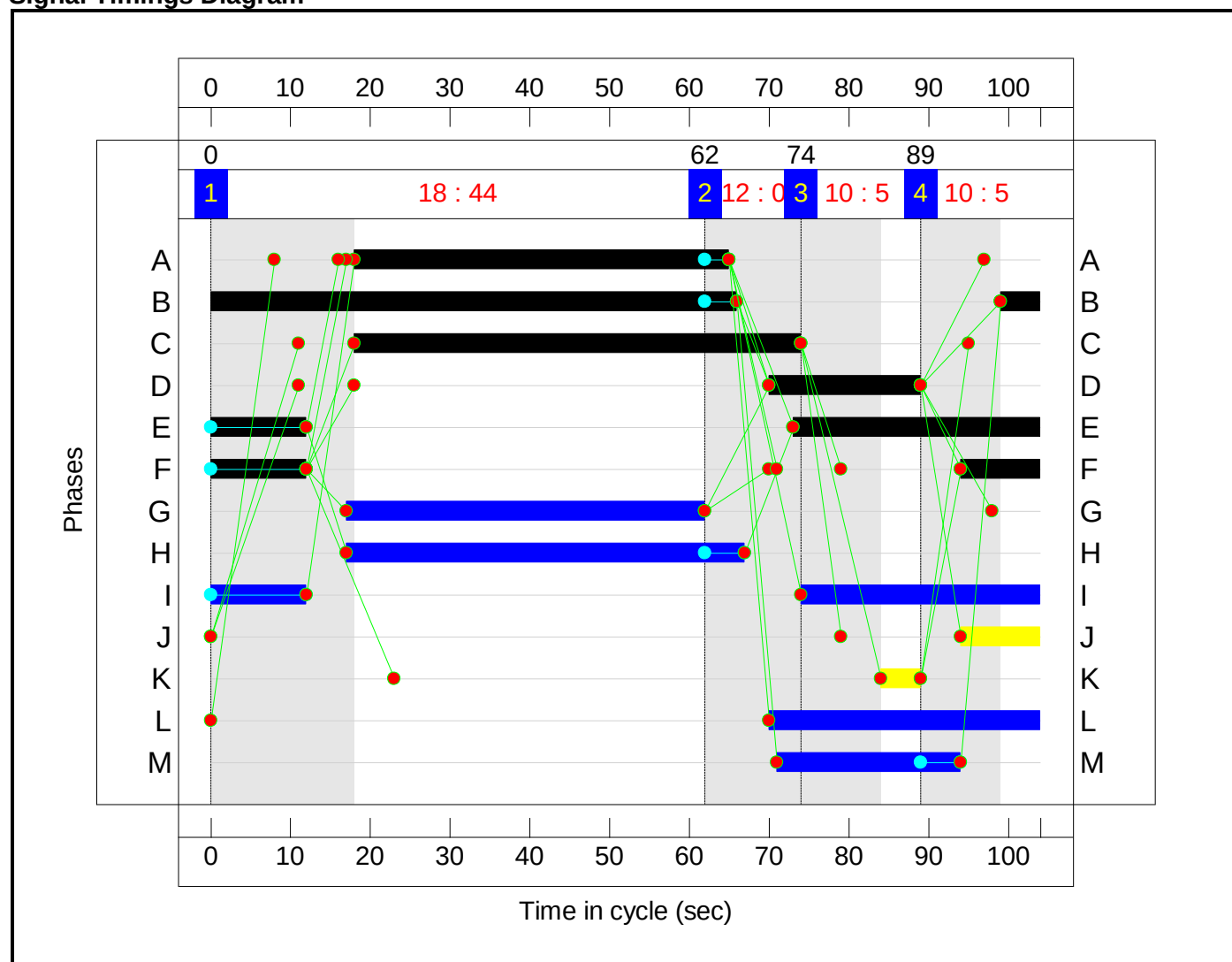
Stage Sequence Diagram



Stage Timings

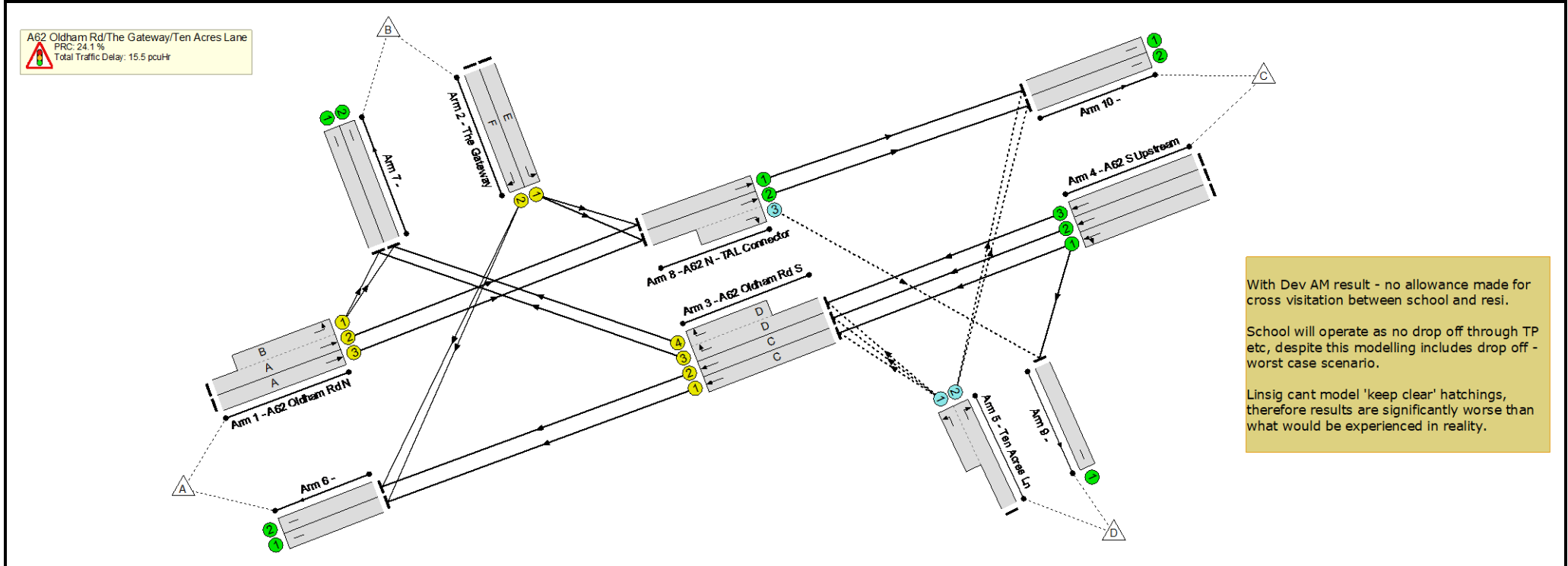
Stage	1	2	3	4
Duration	44	0	5	5
Change Point	0	62	74	89

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	72.5%
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	N/A	-	-		-	-	-	-	-	-	72.5%
1/2+1/1	A62 Oldham Rd N Left Ahead	U	N/A	N/A	A B		1	47:71	-	722	1940:1786	754+241	72.5 : 72.5%
1/3	A62 Oldham Rd N Ahead	U	N/A	N/A	A		1	47	-	672	2155	995	67.6%
2/1	The Gateway Left	U	N/A	N/A	E		1	43	-	115	1882	796	14.4%
2/2	The Gateway Right	U	N/A	N/A	F		1	22	-	141	2009	444	31.7%
3/1	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	252	1990	1091	23.1%
3/2	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	309	2130	1167	26.5%
3/3+3/4	A62 Oldham Rd S Right	U	N/A	N/A	D		1	19	-	9	1863:1980	328+262	1.5 : 1.5%
4/1	A62 S Upstream Ahead Left	U	N/A	N/A	-		-	-	-	364	1866	1866	19.5%
4/2	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	303	2100	2100	14.4%
4/3	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	9	2130	2130	0.4%
5/2+5/1	Ten Acres Ln Left Right	O	N/A	N/A	-		-	-	-	81	2079:1949	283+112	20.5 : 20.5%
6/1		U	N/A	N/A	-		-	-	-	322	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	380	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	93	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	91	Inf	Inf	0.0%
8/1	A62 N - TAL Connector Ahead	U	N/A	N/A	-		-	-	-	630	1965	1965	32.1%

Full Input Data And Results

8/2+8/3	A62 N - TAL Connector Right Ahead	U+O	N/A	N/A	-		-	-	-	704	2145:1783	1816+273	33.7 : 33.7%
9/1		U	N/A	N/A	-		-	-	-	221	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	659	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	641	Inf	Inf	0.0%

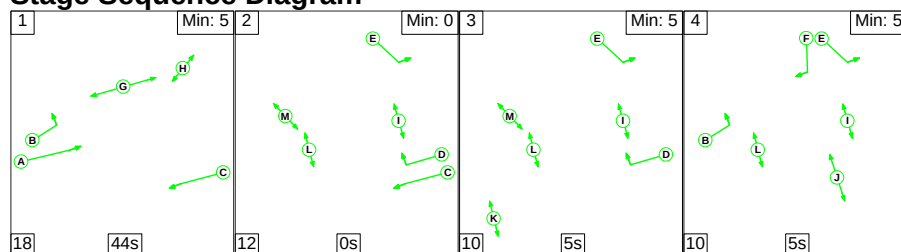
Full Input Data And Results

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	-	-	254	0	0	11.6	3.8	0.0	15.5	-	-	-	-
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	254	0	0	11.6	3.8	0.0	15.5	-	-	-	-
1/2+1/1	722	722	-	-	-	3.5	1.3	-	4.8	24.0	12.8	1.3	14.1
1/3	672	672	-	-	-	4.1	1.0	-	5.1	27.5	15.1	1.0	16.2
2/1	115	115	-	-	-	0.6	0.1	-	0.7	21.1	2.0	0.1	2.1
2/2	141	141	-	-	-	1.3	0.2	-	1.6	39.9	3.4	0.2	3.6
3/1	252	252	-	-	-	0.9	0.2	-	1.0	14.3	3.7	0.2	3.9
3/2	309	309	-	-	-	1.1	0.2	-	1.2	14.5	4.6	0.2	4.8
3/3+3/4	9	9	-	-	-	0.1	0.0	-	0.1	37.4	0.1	0.0	0.1
4/1	364	364	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
4/2	303	303	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
4/3	9	9	-	-	-	0.0	0.0	-	0.0	0.8	0.0	0.0	0.0
5/2+5/1	81	81	162	0	0	0.1	0.1	-	0.2	8.9	0.5	0.1	0.7
6/1	322	322	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	380	380	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	93	93	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	91	91	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	630	630	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
8/2+8/3	704	704	92	0	0	0.0	0.3	-	0.3	1.5	20.0	0.3	20.2
9/1	221	221	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	659	659	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	641	641	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 24.1 Total Delay for Signalled Lanes (pcuHr): 14.52 Cycle Time (s): 104 PRC Over All Lanes (%): 24.1 Total Delay Over All Lanes(pcuHr): 15.45													

Full Input Data And Results

Scenario 3: 'Future Year Base (Inc CD) - AM' (FG3: 'Base + Com Dev AM', Plan 1: 'Network Control Plan 1')

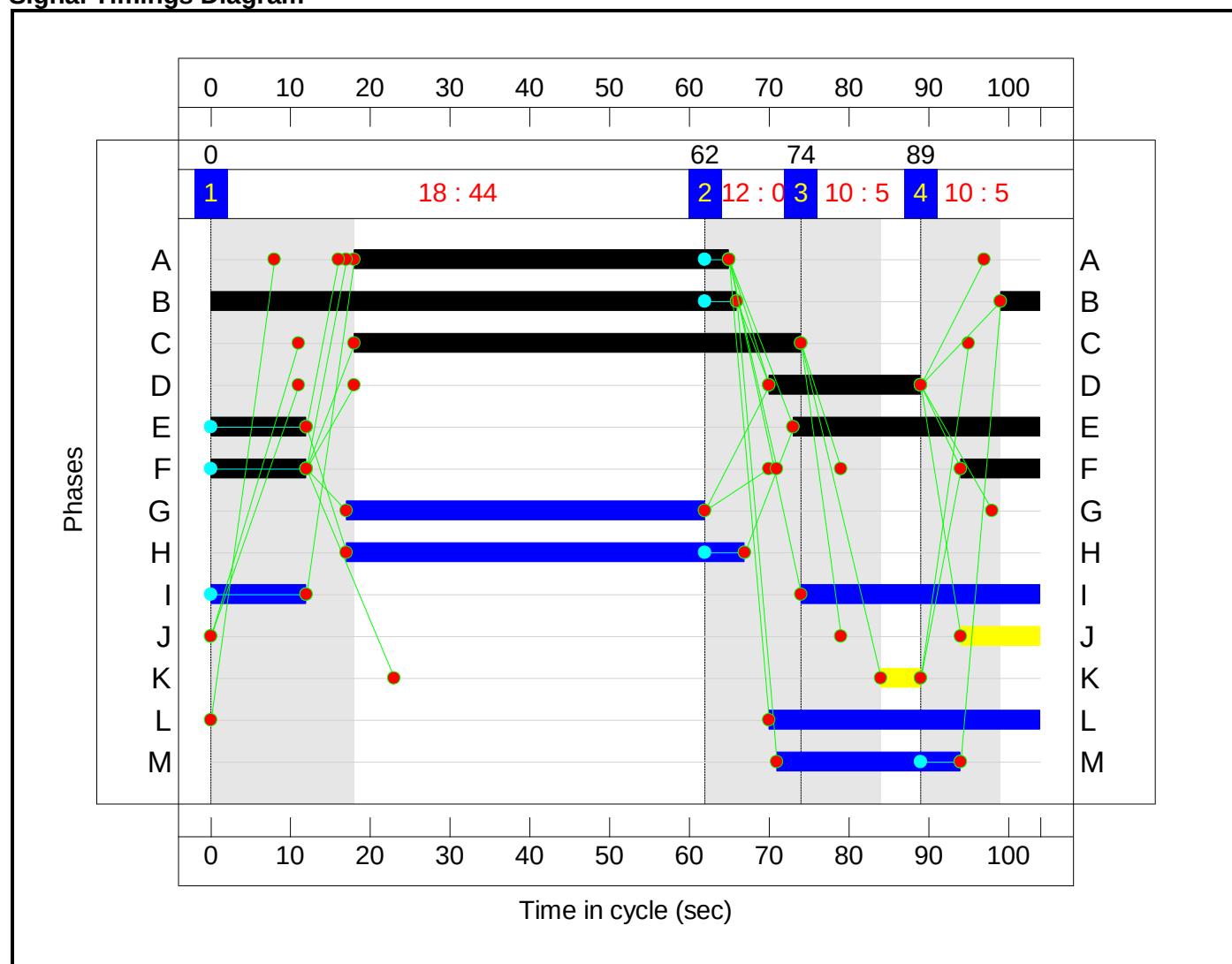
Stage Sequence Diagram



Stage Timings

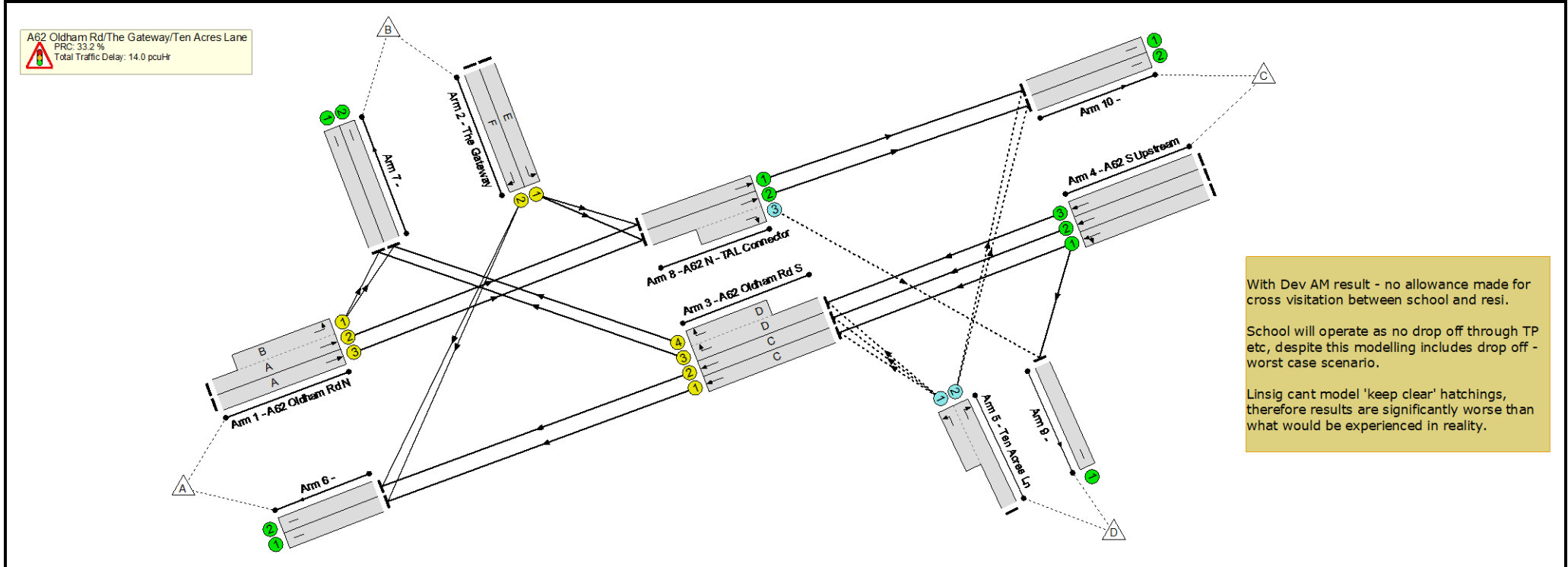
Stage	1	2	3	4
Duration	44	0	5	5
Change Point	0	62	74	89

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	67.6%
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	N/A	-	-		-	-	-	-	-	-	67.6%
1/2+1/1	A62 Oldham Rd N Left Ahead	U	N/A	N/A	A B		1	47:71	-	246	1940:1786	840+91	26.4 : 26.4%
1/3	A62 Oldham Rd N Ahead	U	N/A	N/A	A		1	47	-	185	2155	995	18.6%
2/1	The Gateway Left	U	N/A	N/A	E		1	43	-	42	1882	796	5.3%
2/2	The Gateway Right	U	N/A	N/A	F		1	22	-	128	2009	444	28.8%
3/1	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	685	1990	1091	62.8%
3/2	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	789	2130	1167	67.6%
3/3+3/4	A62 Oldham Rd S Right	U	N/A	N/A	D		1	19	-	33	1863:1980	324+305	5.2 : 5.2%
4/1	A62 S Upstream Ahead Left	U	N/A	N/A	-		-	-	-	844	1903	1903	44.4%
4/2	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	741	2100	2100	35.3%
4/3	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	31	2130	2130	1.5%
5/2+5/1	Ten Acres Ln Left Right	O	N/A	N/A	-		-	-	-	140	2079:1949	218+237	30.7 : 30.7%
6/1		U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	853	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	29	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	28	Inf	Inf	0.0%
8/1	A62 N - TAL Connector Ahead	U	N/A	N/A	-		-	-	-	259	1965	1965	13.2%

Full Input Data And Results

8/2+8/3	A62 N - TAL Connector Right Ahead	U+O	N/A	N/A	-		-	-	-	190	2145:1783	818+284	17.2 : 17.2%
9/1		U	N/A	N/A	-		-	-	-	231	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	293	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	174	Inf	Inf	0.0%

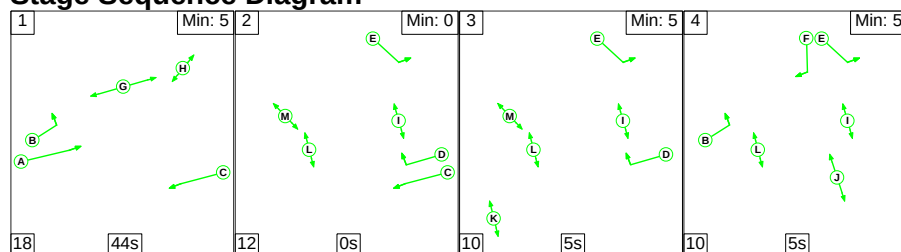
Full Input Data And Results

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	-	-	329	0	0	10.5	3.5	0.0	14.0	-	-	-	-
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	329	0	0	10.5	3.5	0.0	14.0	-	-	-	-
1/2+1/1	246	246	-	-	-	1.1	0.2	-	1.3	18.5	3.9	0.2	4.1
1/3	185	185	-	-	-	0.8	0.1	-	1.0	18.7	3.1	0.1	3.2
2/1	42	42	-	-	-	0.2	0.0	-	0.2	20.1	0.7	0.0	0.7
2/2	128	128	-	-	-	1.2	0.2	-	1.4	39.4	3.1	0.2	3.3
3/1	685	685	-	-	-	3.1	0.8	-	3.9	20.6	13.5	0.8	14.4
3/2	789	789	-	-	-	3.7	1.0	-	4.7	21.6	16.2	1.0	17.3
3/3+3/4	33	33	-	-	-	0.3	0.0	-	0.3	37.3	0.4	0.0	0.4
4/1	844	844	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
4/2	741	741	-	-	-	0.0	0.3	-	0.3	1.3	0.0	0.3	0.3
4/3	31	31	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
5/2+5/1	140	140	280	0	0	0.0	0.2	-	0.2	6.1	0.3	0.2	0.5
6/1	749	749	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	853	853	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	29	29	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	28	28	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	259	259	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
8/2+8/3	190	190	49	0	0	0.0	0.1	-	0.1	2.2	7.6	0.1	7.7
9/1	231	231	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	174	174	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 33.2 Total Delay for Signalled Lanes (pcuHr): 12.86 Cycle Time (s): 104 PRC Over All Lanes (%): 33.2 Total Delay Over All Lanes(pcuHr): 13.97													

Full Input Data And Results

Scenario 4: 'Future Year Base (Inc CD) - PM' (FG4: 'Base + Com Dev PM', Plan 1: 'Network Control Plan 1')

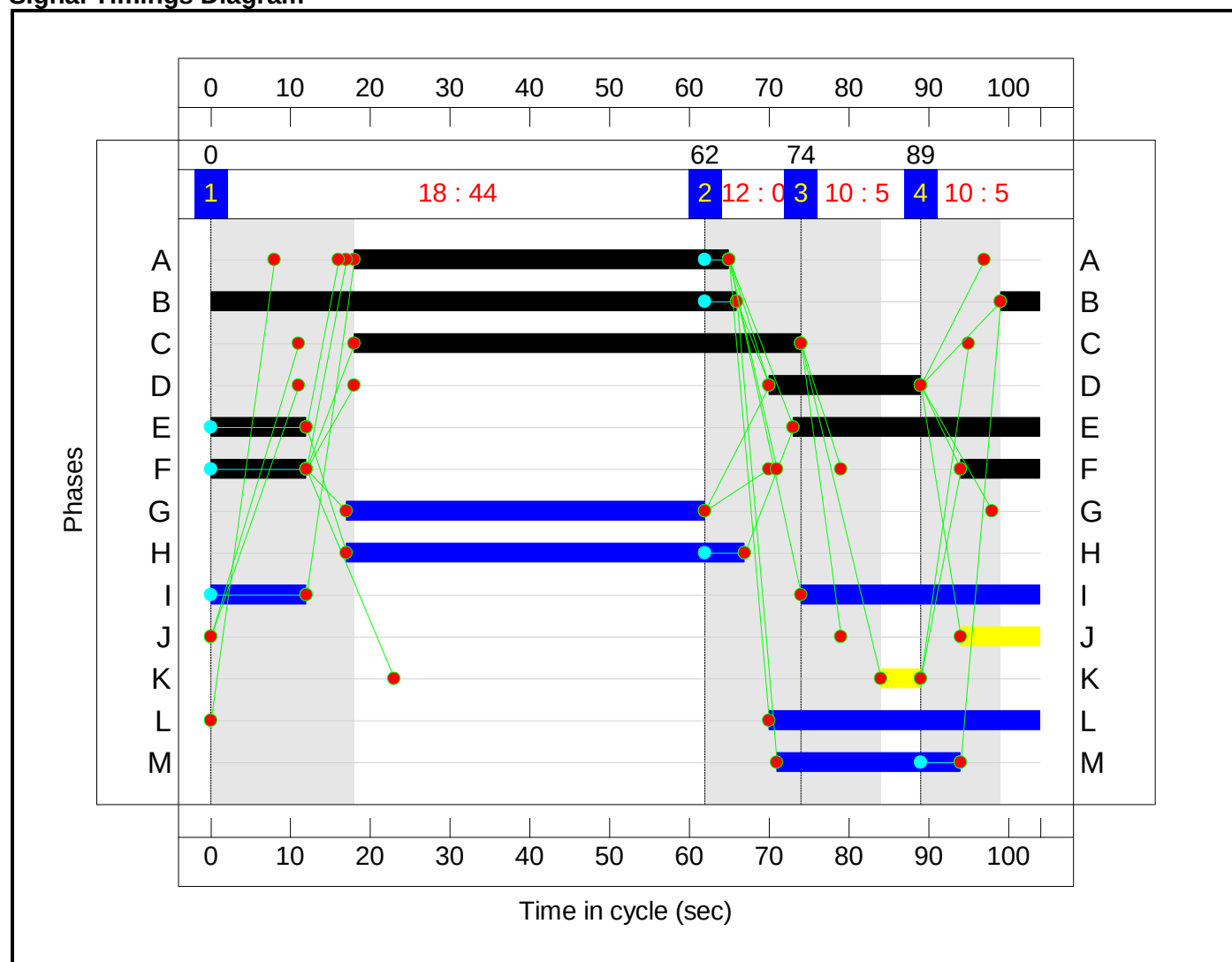
Stage Sequence Diagram



Stage Timings

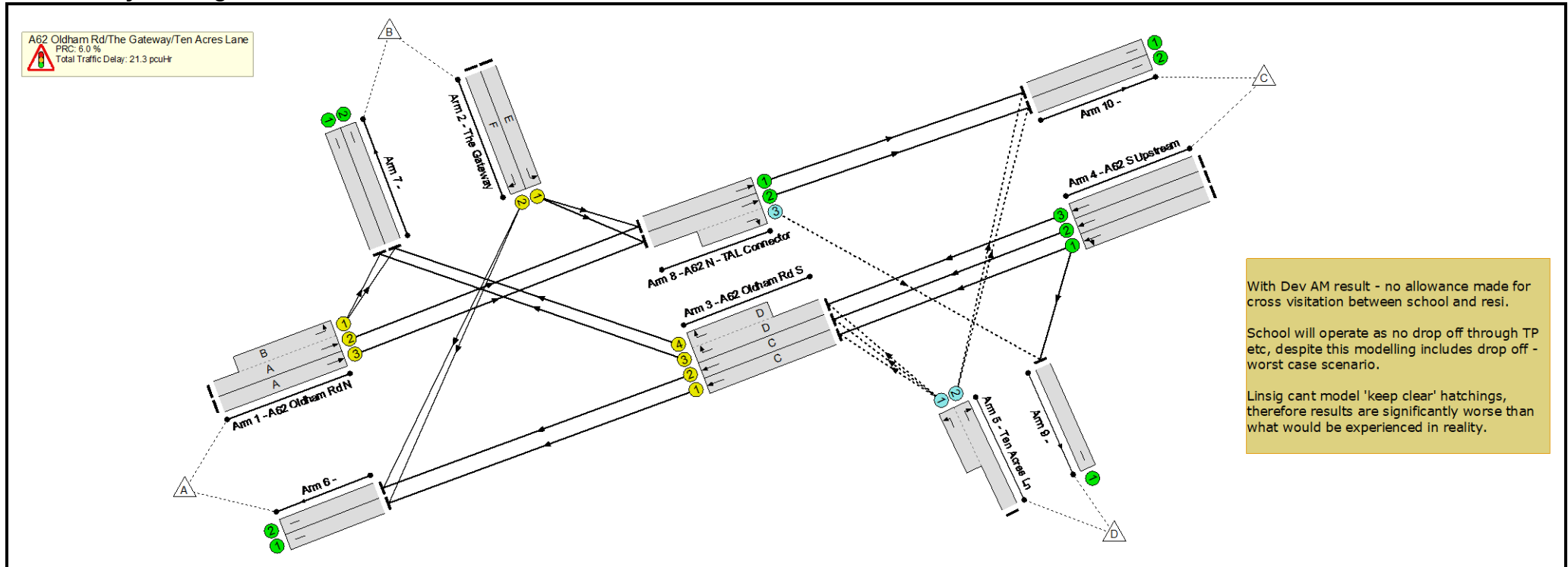
Stage	1	2	3	4
Duration	44	0	5	5
Change Point	0	62	74	89

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	84.9%
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	N/A	-	-		-	-	-	-	-	-	84.9%
1/2+1/1	A62 Oldham Rd N Left Ahead	U	N/A	N/A	A B		1	47:71	-	849	1940:1786	749+251	84.9 : 84.9%
1/3	A62 Oldham Rd N Ahead	U	N/A	N/A	A		1	47	-	817	2155	995	82.1%
2/1	The Gateway Left	U	N/A	N/A	E		1	43	-	115	1882	796	14.4%
2/2	The Gateway Right	U	N/A	N/A	F		1	22	-	149	2009	444	33.5%
3/1	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	288	1990	1091	26.4%
3/2	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	345	2130	1167	29.6%
3/3+3/4	A62 Oldham Rd S Right	U	N/A	N/A	D		1	19	-	9	1863:1980	328+262	1.5 : 1.5%
4/1	A62 S Upstream Ahead Left	U	N/A	N/A	-		-	-	-	398	1873	1873	21.2%
4/2	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	341	2100	2100	16.2%
4/3	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	9	2130	2130	0.4%
5/2+5/1	Ten Acres Ln Left Right	O	N/A	N/A	-		-	-	-	82	2079:1949	246+102	23.6 : 23.6%
6/1		U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	420	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	110	Inf	Inf	0.0%
8/1	A62 N - TAL Connector Ahead	U	N/A	N/A	-		-	-	-	731	1965	1965	37.2%

Full Input Data And Results

8/2+8/3	A62 N - TAL Connector Right Ahead	U+O	N/A	N/A	-		-	-	-	837	2145:1783	1850+245	39.9 : 39.9%
9/1		U	N/A	N/A	-		-	-	-	228	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	760	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	768	Inf	Inf	0.0%

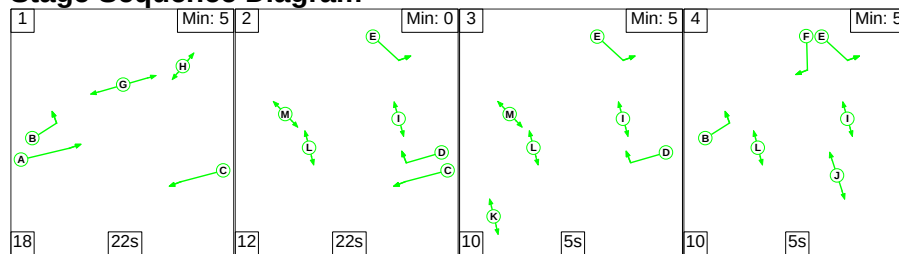
Full Input Data And Results

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	-	-	262	0	0	14.6	6.7	0.0	21.3	-	-	-	-
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	262	0	0	14.6	6.7	0.0	21.3	-	-	-	-
1/2+1/1	849	849	-	-	-	4.6	2.7	-	7.3	30.9	17.9	2.7	20.6
1/3	817	817	-	-	-	5.5	2.2	-	7.8	34.2	20.4	2.2	22.7
2/1	115	115	-	-	-	0.6	0.1	-	0.7	21.1	2.0	0.1	2.1
2/2	149	149	-	-	-	1.4	0.3	-	1.7	40.2	3.6	0.3	3.9
3/1	288	288	-	-	-	1.0	0.2	-	1.2	14.7	4.3	0.2	4.5
3/2	345	345	-	-	-	1.2	0.2	-	1.4	14.9	5.4	0.2	5.6
3/3+3/4	9	9	-	-	-	0.1	0.0	-	0.1	37.4	0.1	0.0	0.1
4/1	398	398	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
4/2	341	341	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
4/3	9	9	-	-	-	0.0	0.0	-	0.0	0.8	0.0	0.0	0.0
5/2+5/1	82	82	164	0	0	0.1	0.2	-	0.3	13.0	0.8	0.2	0.9
6/1	362	362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	110	110	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	731	731	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
8/2+8/3	837	837	98	0	0	0.1	0.3	-	0.4	1.7	25.1	0.3	25.4
9/1	228	228	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	760	760	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	768	768	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 6.0 Total Delay for Signalled Lanes (pcuHr): 20.06 Cycle Time (s): 104 PRC Over All Lanes (%): 6.0 Total Delay Over All Lanes(pcuHr): 21.29													

Full Input Data And Results

Scenario 5: 'Future Year + Dev - AM ' (FG5: 'Base + Com Dev + Dev AM', Plan 1: 'Network Control Plan 1')

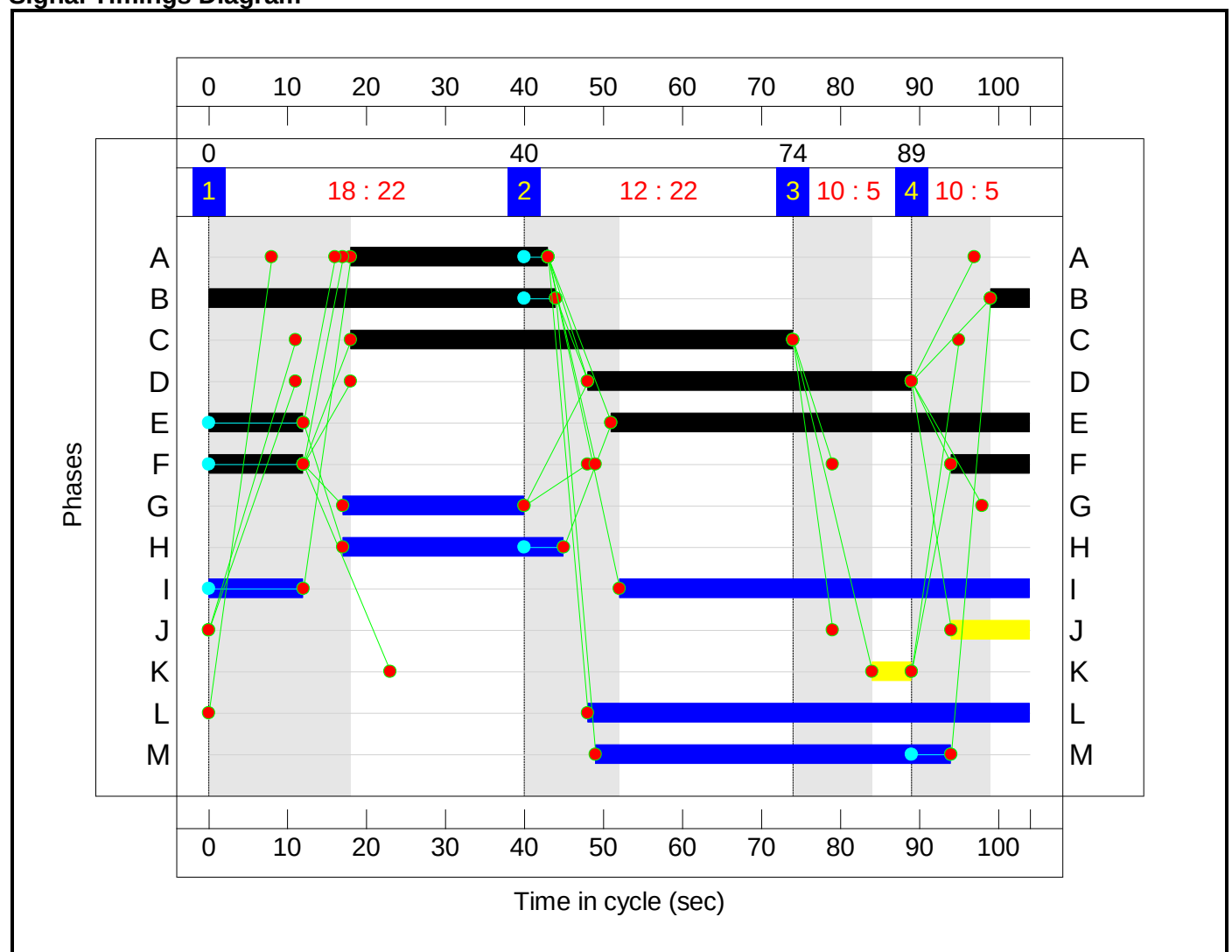
Stage Sequence Diagram



Stage Timings

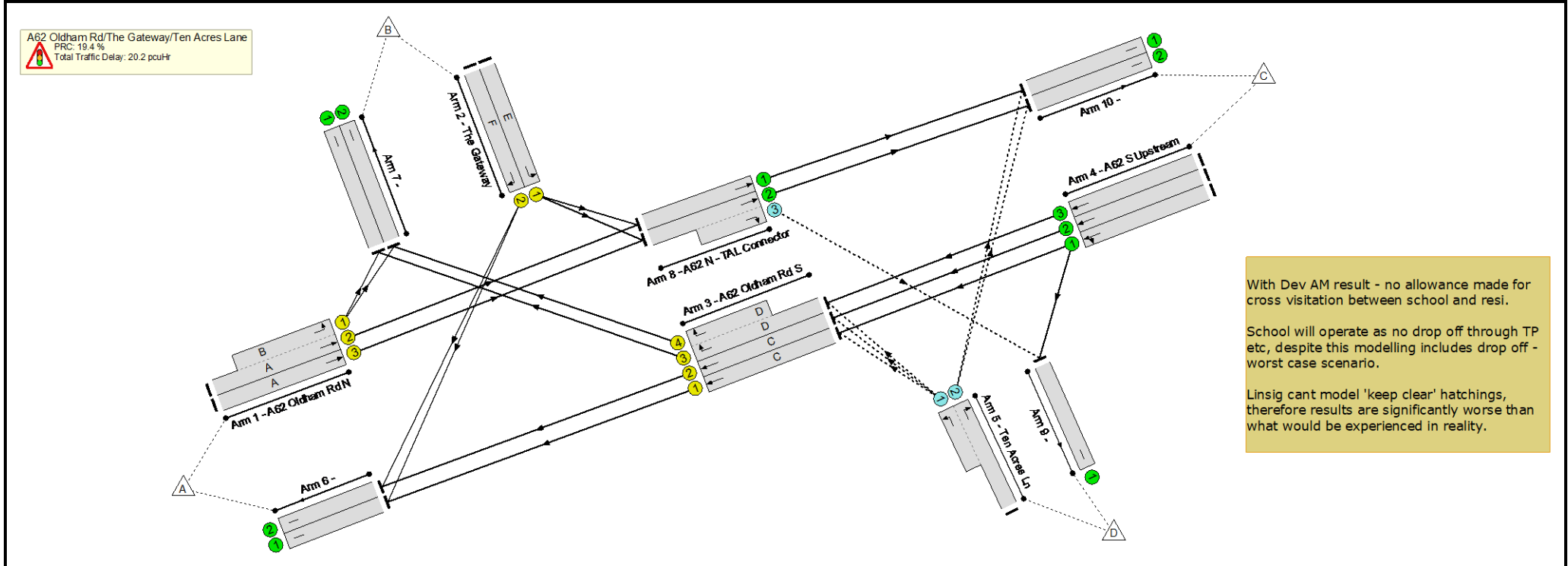
Stage	1	2	3	4
Duration	22	22	5	5
Change Point	0	40	74	89

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	75.4%
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	N/A	-	-		-	-	-	-	-	-	75.4%
1/2+1/1	A62 Oldham Rd N Left Ahead	U	N/A	N/A	A B		1	25:49	-	383	1940:1786	479+32	75.0 : 75.0%
1/3	A62 Oldham Rd N Ahead	U	N/A	N/A	A		1	25	-	80	2155	539	14.8%
2/1	The Gateway Left	U	N/A	N/A	E		1	65	-	54	1882	1194	4.5%
2/2	The Gateway Right	U	N/A	N/A	F		1	22	-	128	2009	444	28.8%
3/1	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	714	1990	1091	65.5%
3/2	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	831	2130	1167	71.2%
3/3+3/4	A62 Oldham Rd S Right	U	N/A	N/A	D		1	41	-	33	1863:1980	533+502	3.2 : 3.2%
4/1	A62 S Upstream Ahead Left	U	N/A	N/A	-		-	-	-	898	1890	1890	47.5%
4/2	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	743	2100	2100	35.4%
4/3	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	31	2130	2130	1.5%
5/2+5/1	Ten Acres Ln Left Right	O	N/A	N/A	-		-	-	-	301	2079:1949	208+191	75.4 : 75.4%
6/1		U	N/A	N/A	-		-	-	-	778	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	895	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	29	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	28	Inf	Inf	0.0%
8/1	A62 N - TAL Connector Ahead	U	N/A	N/A	-		-	-	-	396	1965	1965	20.2%

Full Input Data And Results

8/2+8/3	A62 N - TAL Connector Right Ahead	U+O	N/A	N/A	-		-	-	-	97	2145:1783	11+265	35.1 : 35.1%
9/1		U	N/A	N/A	-		-	-	-	331	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	475	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	82	Inf	Inf	0.0%

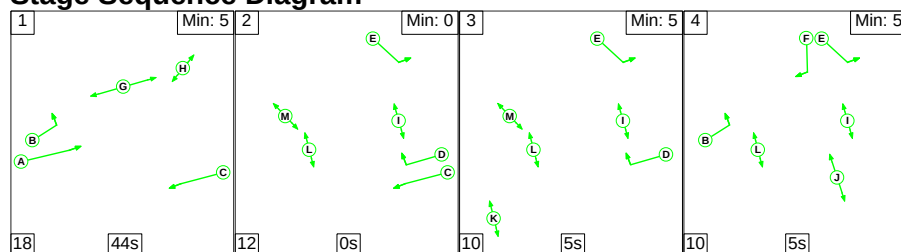
Full Input Data And Results

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	-	-	695	0	0	13.6	6.6	0.0	20.2	-	-	-	-
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	695	0	0	13.6	6.6	0.0	20.2	-	-	-	-
1/2+1/1	383	383	-	-	-	3.7	1.5	-	5.1	48.3	9.5	1.5	10.9
1/3	80	80	-	-	-	0.7	0.1	-	0.8	34.3	1.8	0.1	1.9
2/1	54	54	-	-	-	0.1	0.0	-	0.1	8.7	0.6	0.0	0.6
2/2	128	128	-	-	-	1.2	0.2	-	1.4	39.4	3.1	0.2	3.3
3/1	714	714	-	-	-	3.3	0.9	-	4.2	21.3	14.5	0.9	15.4
3/2	831	831	-	-	-	4.0	1.2	-	5.2	22.7	17.8	1.2	19.0
3/3+3/4	33	33	-	-	-	0.2	0.0	-	0.2	20.6	0.3	0.0	0.3
4/1	898	898	-	-	-	0.0	0.5	-	0.5	1.8	0.0	0.5	0.5
4/2	743	743	-	-	-	0.0	0.3	-	0.3	1.3	0.0	0.3	0.3
4/3	31	31	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
5/2+5/1	301	301	602	0	0	0.3	1.5	-	1.8	21.2	2.5	1.5	4.0
6/1	778	778	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	895	895	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	29	29	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	28	28	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	396	396	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
8/2+8/3	97	97	93	0	0	0.2	0.3	-	0.5	17.7	7.0	0.3	7.2
9/1	331	331	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	475	475	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	82	82	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 20.0 Total Delay for Signalled Lanes (pcuHr): 17.10 Cycle Time (s): 104 PRC Over All Lanes (%): 19.4 Total Delay Over All Lanes(pcuHr): 20.21													

Full Input Data And Results

Scenario 6: 'Future Year + Dev - PM ' (FG6: 'Base + Com Dev + Dev PM', Plan 1: 'Network Control Plan 1')

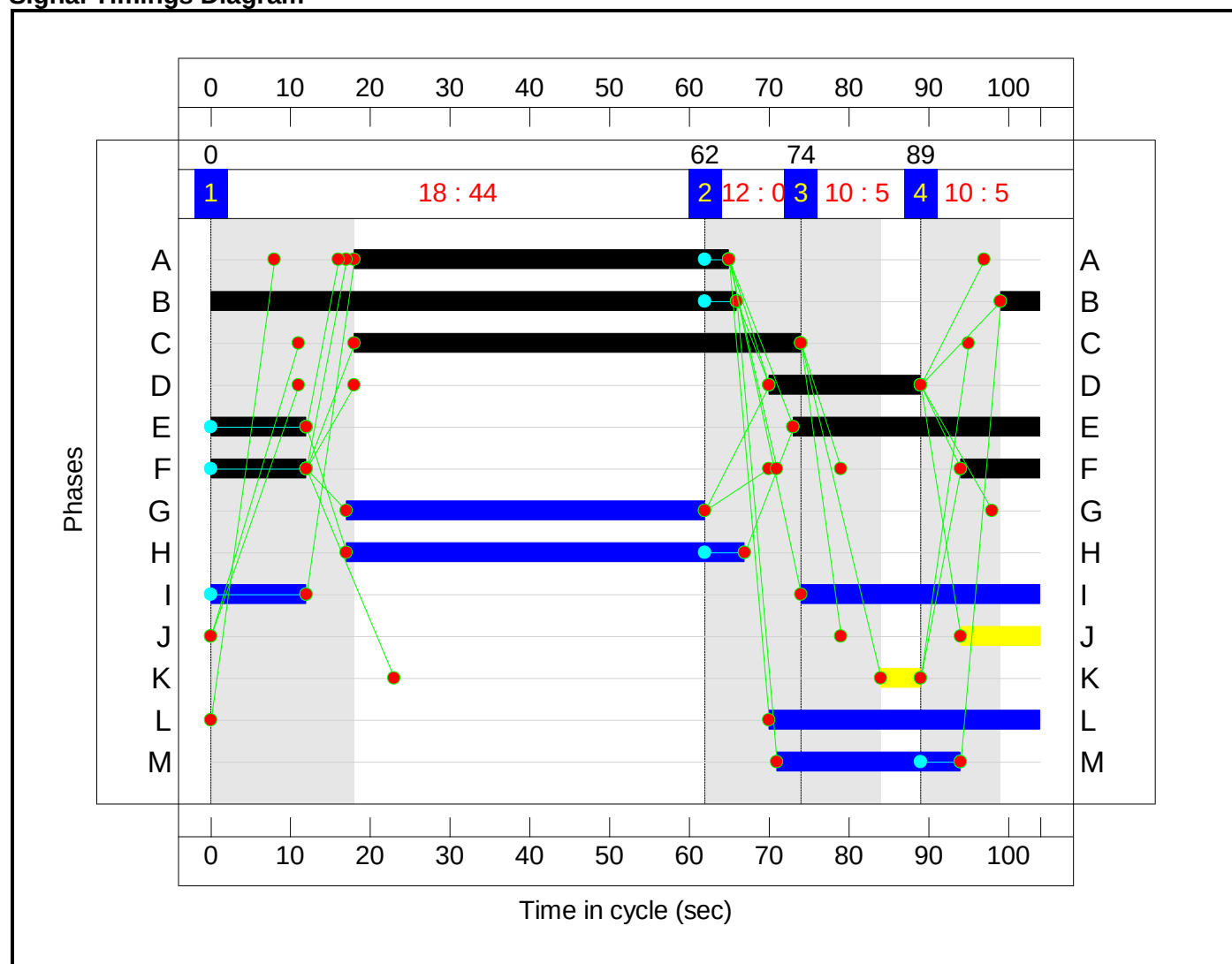
Stage Sequence Diagram



Stage Timings

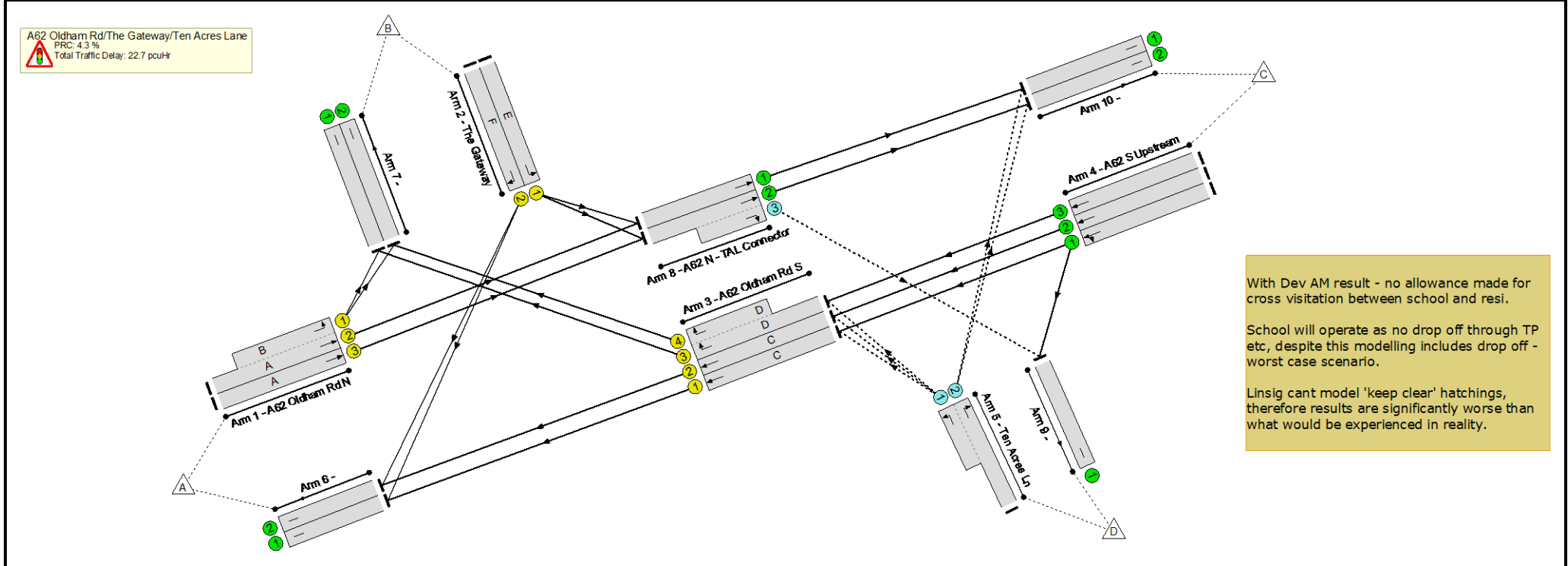
Stage	1	2	3	4
Duration	44	0	5	5
Change Point	0	62	74	89

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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%
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	N/A	-	-		-	-	-	-	-	-	86.3%
1/2+1/1	A62 Oldham Rd N Left Ahead	U	N/A	N/A	A B		1	47:71	-	861	1940:1786	751+247	86.3 : 86.3%
1/3	A62 Oldham Rd N Ahead	U	N/A	N/A	A		1	47	-	833	2155	995	83.8%
2/1	The Gateway Left	U	N/A	N/A	E		1	43	-	126	1882	796	15.8%
2/2	The Gateway Right	U	N/A	N/A	F		1	22	-	149	2009	444	33.5%
3/1	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	295	1990	1091	27.0%
3/2	A62 Oldham Rd S Ahead	U	N/A	N/A	C		1	56	-	355	2130	1167	30.4%
3/3+3/4	A62 Oldham Rd S Right	U	N/A	N/A	D		1	19	-	15	1863:1980	326+285	2.5 : 2.5%
4/1	A62 S Upstream Ahead Left	U	N/A	N/A	-		-	-	-	438	1852	1852	23.7%
4/2	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	350	2100	2100	16.7%
4/3	A62 S Upstream Ahead	U	N/A	N/A	-		-	-	-	9	2130	2130	0.4%
5/2+5/1	Ten Acres Ln Left Right	O	N/A	N/A	-		-	-	-	134	2079:1949	240+130	36.3 : 36.3%
6/1		U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	430	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	115	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	113	Inf	Inf	0.0%
8/1	A62 N - TAL Connector Ahead	U	N/A	N/A	-		-	-	-	747	1965	1965	38.0%

Full Input Data And Results

8/2+8/3	A62 N - TAL Connector Right Ahead	U+O	N/A	N/A	-		-	-	-	860	2145:1783	1747+331	41.4 : 41.4%
9/1		U	N/A	N/A	-		-	-	-	316	Inf	Inf	0.0%
10/1		U	N/A	N/A	-		-	-	-	791	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	766	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	-	-	405	0	0	15.2	7.5	0.0	22.7	-	-	-	-
A62 Oldham Rd/The Gateway/Ten Acres Lane	-	-	405	0	0	15.2	7.5	0.0	22.7	-	-	-	-
1/2+1/1	861	861	-	-	-	4.7	3.0	-	7.7	32.3	18.4	3.0	21.5
1/3	833	833	-	-	-	5.7	2.5	-	8.2	35.4	21.1	2.5	23.6
2/1	126	126	-	-	-	0.6	0.1	-	0.7	21.2	2.2	0.1	2.3
2/2	149	149	-	-	-	1.4	0.3	-	1.7	40.2	3.6	0.3	3.9
3/1	295	295	-	-	-	1.0	0.2	-	1.2	14.7	4.5	0.2	4.7
3/2	355	355	-	-	-	1.3	0.2	-	1.5	15.0	5.5	0.2	5.7
3/3+3/4	15	15	-	-	-	0.1	0.0	-	0.2	37.3	0.2	0.0	0.2
4/1	438	438	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
4/2	350	350	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
4/3	9	9	-	-	-	0.0	0.0	-	0.0	0.8	0.0	0.0	0.0
5/2+5/1	134	134	268	0	0	0.3	0.3	-	0.5	14.6	1.3	0.3	1.6
6/1	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	430	430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	115	115	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	113	113	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	747	747	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
8/2+8/3	860	860	137	0	0	0.1	0.4	-	0.4	1.9	26.3	0.4	26.6
9/1	316	316	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	791	791	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	766	766	-	-	-	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): 21.16 Cycle Time (s): 104 PRC Over All Lanes (%): 4.3 Total Delay Over All Lanes(pcuHr): 22.71													

Appendix C - A62 Oldham Road / The Gateway / Ten Acres Lane

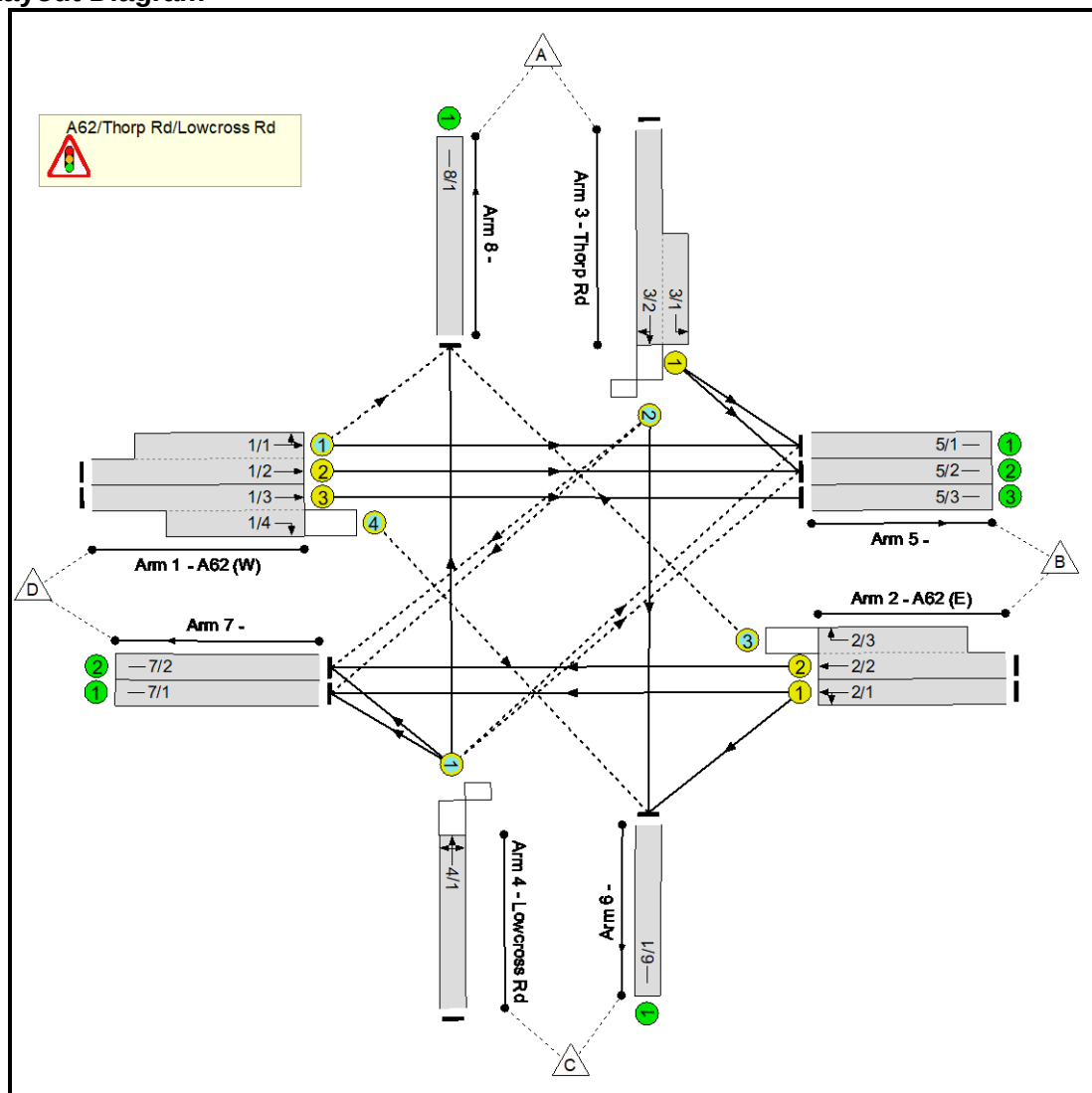
Full Input Data And Results

Full Input Data And Results

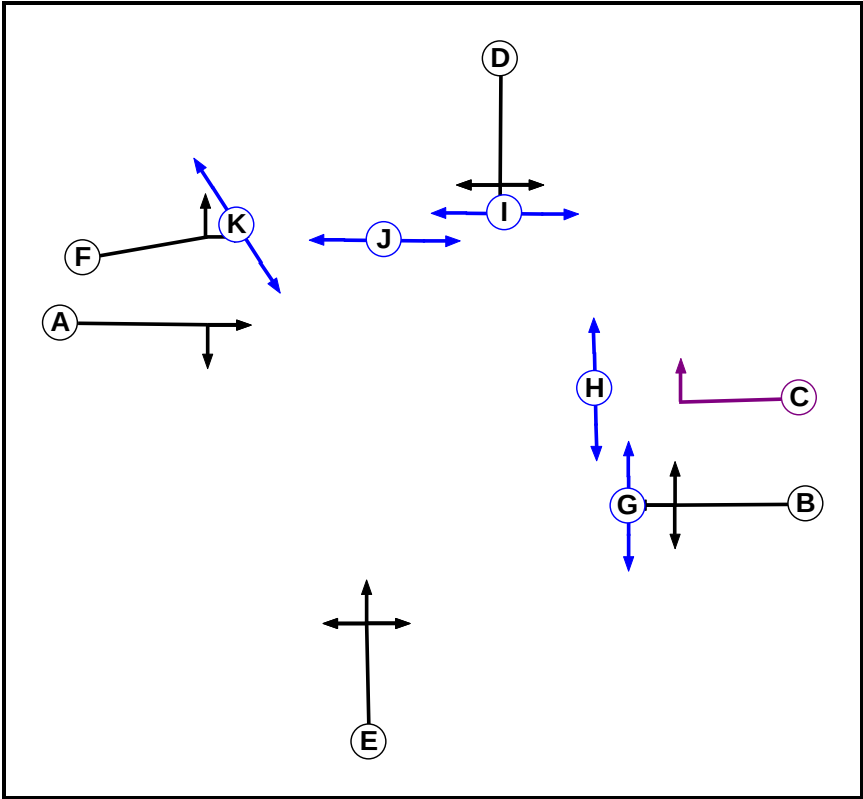
User and Project Details

Project:	Jacksons Brickworks
Title:	
Location:	
Client:	Nuvu Development Ltd
Additional detail:	
File name:	A62 J3 - Thorp Rd - Lowcross Rd.lsg3x
Author:	James Whitton
Company:	Vectos North
Address:	

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	Ind. Arrow	B	5	5
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		6	6
H	Pedestrian		6	6
I	Pedestrian		5	5
J	Pedestrian		5	5
K	Pedestrian		5	5

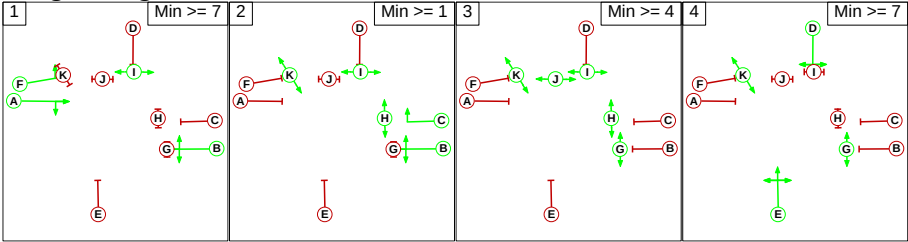
Phase Intergreens Matrix

Terminating Phase	Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K
	A		-	4	6	6	-	-	8	-	-	-
	B	-		-	6	6	-	5	-	-	10	-
	C	7	-		6	6	-	5	-	-	10	-
	D	7	7	7		-	-	-	8	5	-	-
	E	7	7	7	-		8	-	9	-	8	-
	F	-	-	-	-	4		-	-	-	-	5
	G	-	8	8	-	-	-		-	-	-	-
	H	8	-	-	8	8	-	-		-	-	-
	I	-	-	-	5	-	-	-	-		-	-
	J	-	5	5	-	5	-	-	-	-		-
	K	-	-	-	-	-	5	-	-	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	F	Losing	5	5
1	4	F	Losing	1	1
1	4	I	Losing	1	1
2	4	B	Losing	2	2
2	4	I	Losing	3	3
4	1	D	Losing	1	1
4	1	E	Losing	1	1
4	1	K	Losing	3	3
4	3	D	Losing	1	1

Prohibited Stage Change

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

Full Input Data And Results

Give-Way Lane Input Data

Junction: A62/Thorp Rd/Lowcross Rd											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (A62 (W))	8/1 (Left)	715	0	2/3	0.22	To 8/1 (Right)	-	-	-	-	-
1/4 (A62 (W))	6/1 (Right)	1439	0	2/1	1.09	All	3.00	-	0.50	3	3.00
				2/2	1.09	To 7/2 (Ahead)					
2/3 (A62 (E))	8/1 (Right)	1439	0	1/1	1.09	To 5/1 (Ahead)	3.00	-	0.50	3	3.00
				1/2	1.09	All					
				1/3	1.09	All					
3/2 (Thorp Rd)	7/1 (Right)	1439	0	4/1	1.09	To 7/1 (Left) To 7/2 (Left) To 8/1 (Ahead)	3.00	1.00	0.50	3	3.00
	7/2 (Right)	1439	0	4/1	1.09	To 7/1 (Left) To 7/2 (Left) To 8/1 (Ahead)					
4/1 (Lowcross Rd)	5/1 (Right)	1439	0	3/2	1.09	To 6/1 (Ahead)	3.00	1.00	0.50	3	3.00
				3/1	1.09	All					
	5/2 (Right)	1439	0	3/1	1.09	All					
				3/2	1.09	To 6/1 (Ahead)					

Lane Input Data

Junction: A62/Thorp Rd/Lowcross Rd												
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 (A62 (W))	O	F	2	3	19.1	Geom	-	4.25	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	30.00
1/2 (A62 (W))	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
1/3 (A62 (W))	U	A	2	3	60.0	Geom	-	3.25	0.00	N	Arm 5 Ahead	Inf
1/4 (A62 (W))	O	A	2	3	8.0	Geom	-	3.25	0.00	Y	Arm 6 Right	20.00
2/1 (A62 (E))	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Left	10.00
											Arm 7 Ahead	Inf
2/2 (A62 (E))	U	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 7 Ahead	Inf
2/3 (A62 (E))	O	B C	2	3	13.9	Geom	-	3.25	0.00	Y	Arm 8 Right	15.00
3/1 (Thorp Rd)	U	D	2	3	6.4	Geom	-	3.25	0.00	Y	Arm 5 Left	15.00
3/2 (Thorp Rd)	O	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Right	15.00
4/1 (Lowcross Rd)	O	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Right	Inf
											Arm 7 Left	Inf
											Arm 8 Ahead	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Base AM'	08:00	09:00	01:00	
2: 'Base PM'	17:00	18:00	01:00	
3: 'Base + Com Dev AM'	08:00	09:00	01:00	
4: 'Base + Com Dev PM'	17:00	18:00	01:00	
5: 'Base + Com Dev + Dev AM'	08:00	09:00	01:00	
6: 'Base + Com Dev + Dev PM'	17:00	18:00	01:00	

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

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	135	2	384	521
	B	74	0	13	1068	1155
	C	2	27	0	57	86
	D	48	310	16	0	374
	Tot.	124	472	31	1509	2136

Traffic Lane Flows

Lane	Scenario 1: Baseline AM
Junction: A62/Thorp Rd/Lowcross Rd	
1/1 (short)	61
1/2 (with short)	222(In) 161(Out)
1/3 (with short)	152(In) 136(Out)
1/4 (short)	16
2/1	513
2/2 (with short)	642(In) 568(Out)
2/3 (short)	74
3/1 (short)	135
3/2 (with short)	521(In) 386(Out)
4/1	86
5/1	93
5/2	243
5/3	136
6/1	31
7/1	720
7/2	789
8/1	124

Lane Saturation Flows

Junction: A62/Thorp Rd/Lowcross Rd								
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 (A62 (W))	4.25	0.00	Y	Arm 5 Ahead	Inf	21.3 %	1963	1963
				Arm 8 Left	30.00	78.7 %		
1/2 (A62 (W))	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 (W))	3.25	0.00	N	Arm 5 Ahead	Inf	100.0 %	2080	2080
1/4 (A62 (W))	3.25	0.00	Y	Arm 6 Right	20.00	100.0 %	1805	1805
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Left	10.00	2.5 %	1908	1908
				Arm 7 Ahead	Inf	97.5 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 7 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.25	0.00	Y	Arm 8 Right	15.00	100.0 %	1764	1764
3/1 (Thorp Rd)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
3/2 (Thorp Rd)	3.25	0.00	Y	Arm 6 Ahead	Inf	0.5 %	1764	1764
				Arm 7 Right	15.00	99.5 %		
4/1 (Lowcross Rd)	3.25	0.00	Y	Arm 5 Right	Inf	31.4 %	1940	1940
				Arm 7 Left	Inf	66.3 %		
				Arm 8 Ahead	Inf	2.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'Baseline PM' (FG2: 'Base PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

	Destination					
Origin		A	B	C	D	Tot.
	A	0	264	0	136	400
	B	205	0	16	525	746
	C	0	181	0	63	244
	D	30	1244	26	0	1300
	Tot.	235	1689	42	724	2690

Traffic Lane Flows

Lane	Scenario 2: Baseline PM
Junction: A62/Thorp Rd/Lowcross Rd	
1/1 (short)	388
1/2 (with short)	859(In) 471(Out)
1/3 (with short)	441(In) 415(Out)
1/4 (short)	26
2/1 2/2 (with short)	541 205(In) 0(Out)
2/3 (short)	205
3/1 (short)	264
3/2 (with short)	400(In) 136(Out)
4/1	244
5/1	580
5/2	694
5/3	415
6/1	42
7/1	624
7/2	100
8/1	235

Lane Saturation Flows

Junction: A62/Thorp Rd/Lowcross Rd								
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 (A62 (W))	4.25	0.00	Y	Arm 5 Ahead	Inf	92.3 %	2032	2032
				Arm 8 Left	30.00	7.7 %		
1/2 (A62 (W))	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 (W))	3.25	0.00	N	Arm 5 Ahead	Inf	100.0 %	2080	2080
1/4 (A62 (W))	3.25	0.00	Y	Arm 6 Right	20.00	100.0 %	1805	1805
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Left	10.00	3.0 %	1907	1907
				Arm 7 Ahead	Inf	97.0 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 7 Ahead	Inf	0.0 %	2055	2055
2/3 (A62 (E))	3.25	0.00	Y	Arm 8 Right	15.00	100.0 %	1764	1764
3/1 (Thorp Rd)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
3/2 (Thorp Rd)	3.25	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1764	1764
				Arm 7 Right	15.00	100.0 %		
4/1 (Lowcross Rd)	3.25	0.00	Y	Arm 5 Right	Inf	74.2 %	1940	1940
				Arm 7 Left	Inf	25.8 %		
				Arm 8 Ahead	Inf	0.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'Future Year (inc CD) AM' (FG3: 'Base + Com Dev AM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

Crossed Flow						
	Destination					
Origin		A	B	C	D	Tot.
	A	0	137	2	384	523
	B	74	0	13	1217	1304
	C	2	27	0	57	86
	D	48	399	16	0	463
	Tot.	124	563	31	1658	2376

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: Future Year (inc CD) AM
Junction: A62/Thorp Rd/Lowcross Rd	
1/1 (short)	78
1/2 (with short)	280(In) 202(Out)
1/3 (with short)	183(In) 167(Out)
1/4 (short)	16
2/1	589
2/2 (with short)	715(In) 641(Out)
2/3 (short)	74
3/1 (short)	137
3/2 (with short)	523(In) 386(Out)
4/1	86
5/1	111
5/2	285
5/3	167
6/1	31
7/1	796
7/2	862
8/1	124

Lane Saturation Flows

Junction: A62/Thorp Rd/Lowcross Rd								
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 (A62 (W))	4.25	0.00	Y	Arm 5 Ahead	Inf	38.5 %	1979	1979
				Arm 8 Left	30.00	61.5 %		
1/2 (A62 (W))	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 (W))	3.25	0.00	N	Arm 5 Ahead	Inf	100.0 %	2080	2080
1/4 (A62 (W))	3.25	0.00	Y	Arm 6 Right	20.00	100.0 %	1805	1805
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Left	10.00	2.2 %	1909	1909
				Arm 7 Ahead	Inf	97.8 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 7 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.25	0.00	Y	Arm 8 Right	15.00	100.0 %	1764	1764
3/1 (Thorp Rd)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
3/2 (Thorp Rd)	3.25	0.00	Y	Arm 6 Ahead	Inf	0.5 %	1764	1764
				Arm 7 Right	15.00	99.5 %		
4/1 (Lowcross Rd)	3.25	0.00	Y	Arm 5 Right	Inf	31.4 %	1940	1940
				Arm 7 Left	Inf	66.3 %		
				Arm 8 Ahead	Inf	2.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'Future Year (inc CD) PM' (FG4: 'Base + Com Dev PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	265	0	136	401
	B	207	0	16	597	820
	C	0	181	0	63	244
	D	30	1393	26	0	1449
	Tot.	237	1839	42	796	2914

Traffic Lane Flows

Lane	Scenario 4: Future Year (inc CD) PM
Junction: A62/Thorp Rd/Lowcross Rd	
1/1 (short)	437
1/2 (with short)	951(In) 514(Out)
1/3 (with short)	498(In) 472(Out)
1/4 (short)	26
2/1	613
2/2 (with short)	207(In) 0(Out)
2/3 (short)	207
3/1 (short)	265
3/2 (with short)	401(In) 136(Out)
4/1	244
5/1	629
5/2	738
5/3	472
6/1	42
7/1	696
7/2	100
8/1	237

Lane Saturation Flows

Junction: A62/Thorp Rd/Lowcross Rd								
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 (A62 (W))	4.25	0.00	Y	Arm 5 Ahead	Inf	93.1 %	2033	2033
				Arm 8 Left	30.00	6.9 %		
1/2 (A62 (W))	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 (W))	3.25	0.00	N	Arm 5 Ahead	Inf	100.0 %	2080	2080
1/4 (A62 (W))	3.25	0.00	Y	Arm 6 Right	20.00	100.0 %	1805	1805
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Left	10.00	2.6 %	1908	1908
				Arm 7 Ahead	Inf	97.4 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 7 Ahead	Inf	0.0 %	2055	2055
2/3 (A62 (E))	3.25	0.00	Y	Arm 8 Right	15.00	100.0 %	1764	1764
3/1 (Thorp Rd)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
3/2 (Thorp Rd)	3.25	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1764	1764
				Arm 7 Right	15.00	100.0 %		
4/1 (Lowcross Rd)	3.25	0.00	Y	Arm 5 Right	Inf	74.2 %	1940	1940
				Arm 7 Left	Inf	25.8 %		
				Arm 8 Ahead	Inf	0.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'Future Year + Dev AM' (FG5: 'Base + Com Dev + Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Crosstabs: Row 1						
	Destination					
Origin		A	B	C	D	Tot.
	A	0	137	2	405	544
	B	74	0	13	1252	1339
	C	2	27	0	57	86
	D	81	456	16	0	553
	Tot.	157	620	31	1714	2522

Traffic Lane Flows

Lane	Scenario 5: Future Year + Dev AM
Junction: A62/Thorp Rd/Lowcross Rd	
1/1 (short)	90
1/2 (with short)	323(In) 233(Out)
1/3 (with short)	230(In) 214(Out)
1/4 (short)	16
2/1	607
2/2 (with short)	732(In) 658(Out)
2/3 (short)	74
3/1 (short)	137
3/2 (with short)	544(In) 407(Out)
4/1	86
5/1	90
5/2	316
5/3	214
6/1	31
7/1	824
7/2	890
8/1	157

Lane Saturation Flows

Junction: A62/Thorp Rd/Lowcross Rd								
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 (A62 (W))	4.25	0.00	Y	Arm 5 Ahead	Inf	10.0 %	1952	1952
				Arm 8 Left	30.00	90.0 %		
1/2 (A62 (W))	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 (W))	3.25	0.00	N	Arm 5 Ahead	Inf	100.0 %	2080	2080
1/4 (A62 (W))	3.25	0.00	Y	Arm 6 Right	20.00	100.0 %	1805	1805
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Left	10.00	2.1 %	1909	1909
				Arm 7 Ahead	Inf	97.9 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 7 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.25	0.00	Y	Arm 8 Right	15.00	100.0 %	1764	1764
3/1 (Thorp Rd)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
3/2 (Thorp Rd)	3.25	0.00	Y	Arm 6 Ahead	Inf	0.5 %	1764	1764
				Arm 7 Right	15.00	99.5 %		
4/1 (Lowcross Rd)	3.25	0.00	Y	Arm 5 Right	Inf	31.4 %	1940	1940
				Arm 7 Left	Inf	66.3 %		
				Arm 8 Ahead	Inf	2.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'Future Year + Dev PM' (FG6: 'Base + Com Dev + Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

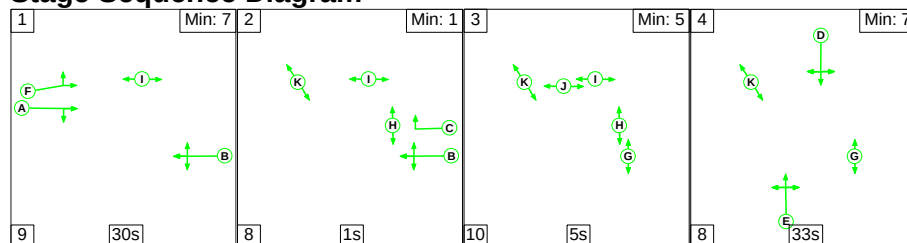
	Destination					
Origin		A	B	C	D	Tot.
	A	0	265	0	154	419
	B	207	0	16	641	864
	C	0	181	0	63	244
	D	41	1411	26	0	1478
	Tot.	248	1857	42	858	3005

Traffic Lane Flows

Lane	Scenario 6: Future Year + Dev PM
Junction: A62/Thorp Rd/Lowcross Rd	
1/1 (short)	433
1/2 (with short)	959(In) 526(Out)
1/3 (with short)	519(In) 493(Out)
1/4 (short)	26
2/1	657
2/2 (with short)	207(In) 0(Out)
2/3 (short)	207
3/1 (short)	265
3/2 (with short)	419(In) 154(Out)
4/1	244
5/1	614
5/2	750
5/3	493
6/1	42
7/1	749
7/2	109
8/1	248

Lane Saturation Flows

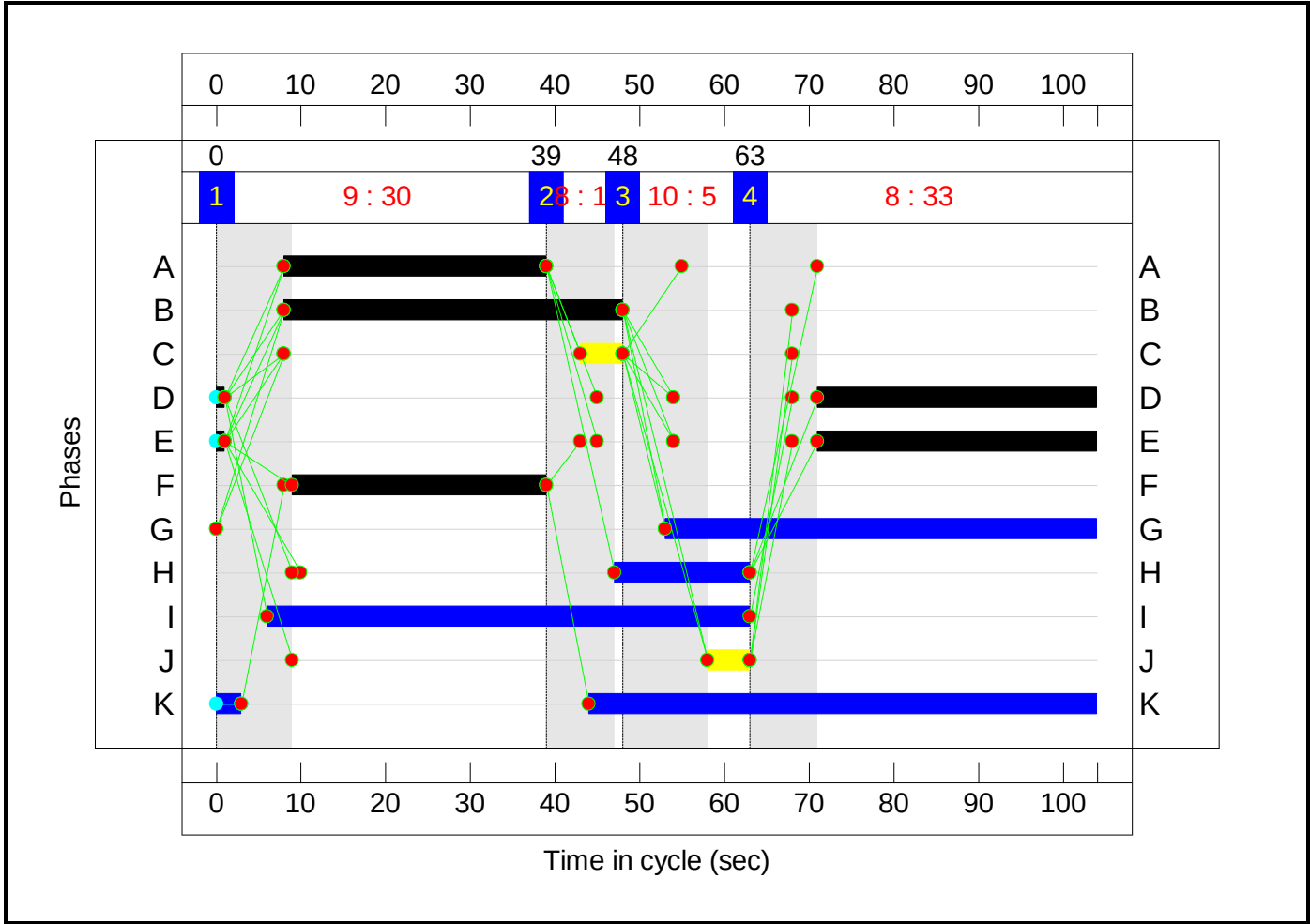
Junction: A62/Thorp Rd/Lowcross Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A62 (W))	4.25	0.00	Y	Arm 5 Ahead	Inf	90.5 %	2030	2030
				Arm 8 Left	30.00	9.5 %		
1/2 (A62 (W))	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
1/3 (A62 (W))	3.25	0.00	N	Arm 5 Ahead	Inf	100.0 %	2080	2080
1/4 (A62 (W))	3.25	0.00	Y	Arm 6 Right	20.00	100.0 %	1805	1805
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Left	10.00	2.4 %	1908	1908
				Arm 7 Ahead	Inf	97.6 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 7 Ahead	Inf	0.0 %	2055	2055
2/3 (A62 (E))	3.25	0.00	Y	Arm 8 Right	15.00	100.0 %	1764	1764
3/1 (Thorp Rd)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
3/2 (Thorp Rd)	3.25	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1764	1764
				Arm 7 Right	15.00	100.0 %		
4/1 (Lowcross Rd)	3.25	0.00	Y	Arm 5 Right	Inf	74.2 %	1940	1940
				Arm 7 Left	Inf	25.8 %		
				Arm 8 Ahead	Inf	0.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'Baseline AM' (FG1: 'Base AM', Plan 1: 'Network Control Plan 1')**Stage Sequence Diagram**

Stage Timings

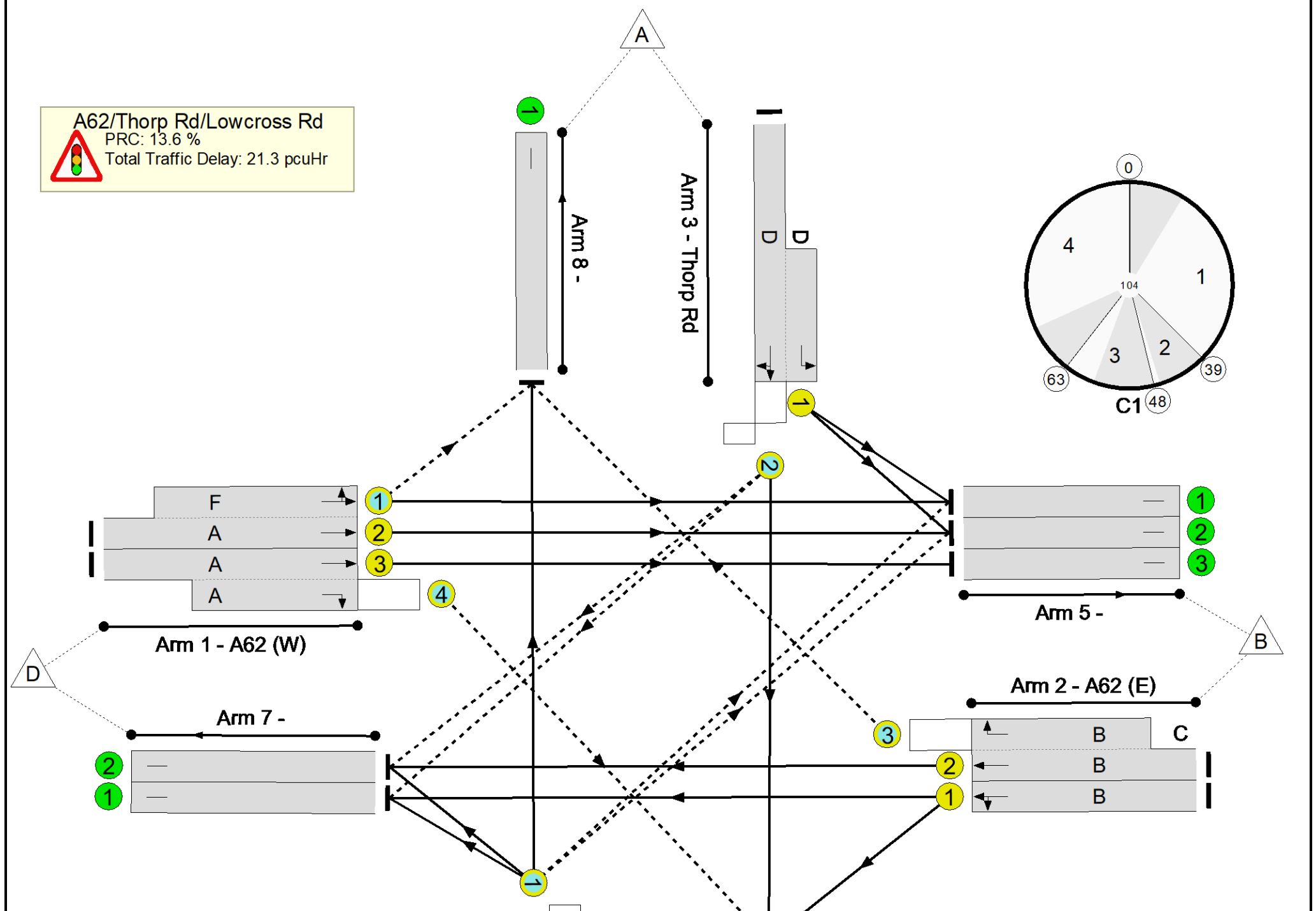
Stage	1	2	3	4
Duration	30	1	5	33
Change Point	0	39	48	63

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	79.2%
A62/Thorp Rd/Lowcross Rd	-	-	N/A	-	-		-	-	-	-	-	-	79.2%
1/2+1/1	A62 (W) Ahead Left	U+O	N/A	N/A	A F		1	31:30	-	222	1940:1963	597+231	27.0 : 26.4%
1/3+1/4	A62 (W) Ahead Right	U+O	N/A	N/A	A		1	31	-	152	2080:1805	594+70	22.9 : 22.9%
2/1	A62 (E) Left Ahead	U	N/A	N/A	B		1	40	-	513	1908	752	68.2%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B	C	1	40	5	642	2055:1764	775+101	73.3 : 73.3%
3/2+3/1	Thorp Rd Left Ahead Right	O+U	N/A	N/A	D		1	34	-	521	1764:1764	487+170	79.2 : 79.2%
4/1	Lowcross Rd Right Left Ahead	O	N/A	N/A	E		1	34	-	86	1940	636	13.5%
5/1		U	N/A	N/A	-		-	-	-	93	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	243	Inf	Inf	0.0%
5/3		U	N/A	N/A	-		-	-	-	136	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	31	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	720	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	789	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	124	Inf	Inf	0.0%

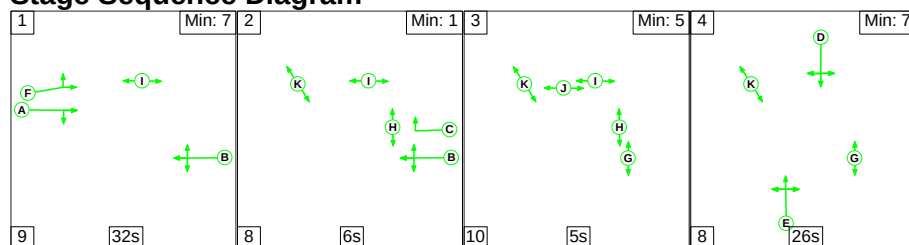
Full Input Data And Results

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Full Input Data And Results

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

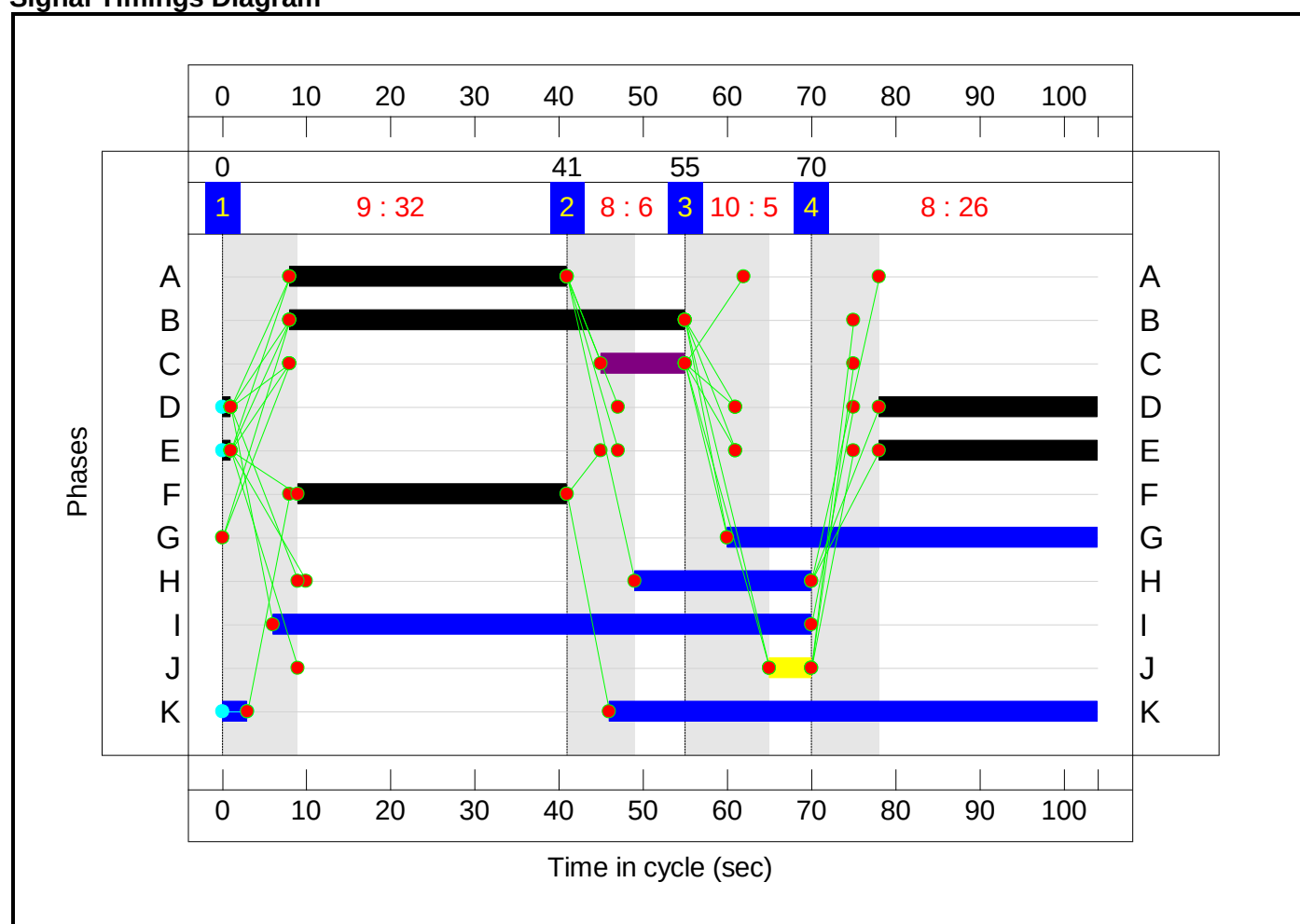
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	32	6	5	26
Change Point	0	41	55	70

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

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	-	-		-	-	-	-	-	-	81.9%
A62/Thorp Rd/Lowcross Rd	-	-	N/A	-	-		-	-	-	-	-	-	81.9%
1/2+1/1	A62 (W) Ahead Left	U+O	N/A	N/A	A F		1	33:32	-	859	1940:2032	634+522	74.3 : 74.3%
1/3+1/4	A62 (W) Ahead Right	U+O	N/A	N/A	A		1	33	-	441	2080:1805	650+41	63.8 : 63.8%
2/1	A62 (E) Left Ahead	U	N/A	N/A	B		1	47	-	541	1907	880	61.5%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B	C	1	47	10	205	2055:1764	0+316	0.0 : 64.8%
3/2+3/1	Thorp Rd Left Ahead Right	O+U	N/A	N/A	D		1	27	-	400	1764:1764	205+397	66.5 : 66.5%
4/1	Lowcross Rd Right Left Ahead	O	N/A	N/A	E		1	27	-	244	1940	298	81.9%
5/1		U	N/A	N/A	-		-	-	-	580	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	694	Inf	Inf	0.0%
5/3		U	N/A	N/A	-		-	-	-	415	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	42	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	624	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	100	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	235	Inf	Inf	0.0%

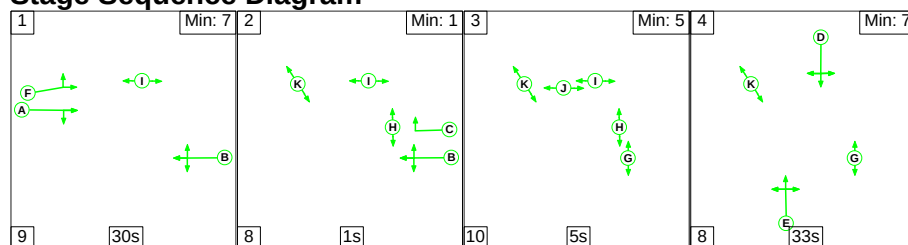
Full Input Data And Results

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	-	-	357	192	29	21.6	7.1	1.6	30.2	-	-	-	-
A62/Thorp Rd/Lowcross Rd	-	-	357	192	29	21.6	7.1	1.6	30.2	-	-	-	-
1/2+1/1	859	859	29	1	0	7.4	1.4	-	8.8	37.1	12.0	1.4	13.5
1/3+1/4	441	441	26	0	0	3.6	0.9	0.1	4.6	37.3	10.2	0.9	11.0
2/1	541	541	-	-	-	3.2	0.8	-	4.0	26.3	11.7	0.8	12.5
2/2+2/3	205	205	9	190	6	1.4	0.9	1.0	3.3	58.3	5.5	0.9	6.4
3/2+3/1	400	400	133	0	3	3.5	1.0	0.0	4.6	41.0	6.5	1.0	7.5
4/1	244	244	160	0	21	2.5	2.1	0.4	5.0	73.6	6.8	2.1	8.9
5/1	580	580	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	694	694	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	415	415	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	42	42	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	624	624	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	100	100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	235	235	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 9.9 Total Delay for Signalled Lanes (pcuHr): 30.24 Cycle Time (s): 104 PRC Over All Lanes (%): 9.9 Total Delay Over All Lanes(pcuHr): 30.24													

Full Input Data And Results

Scenario 3: 'Future Year (inc CD) AM' (FG3: 'Base + Com Dev AM', Plan 1: 'Network Control Plan 1')

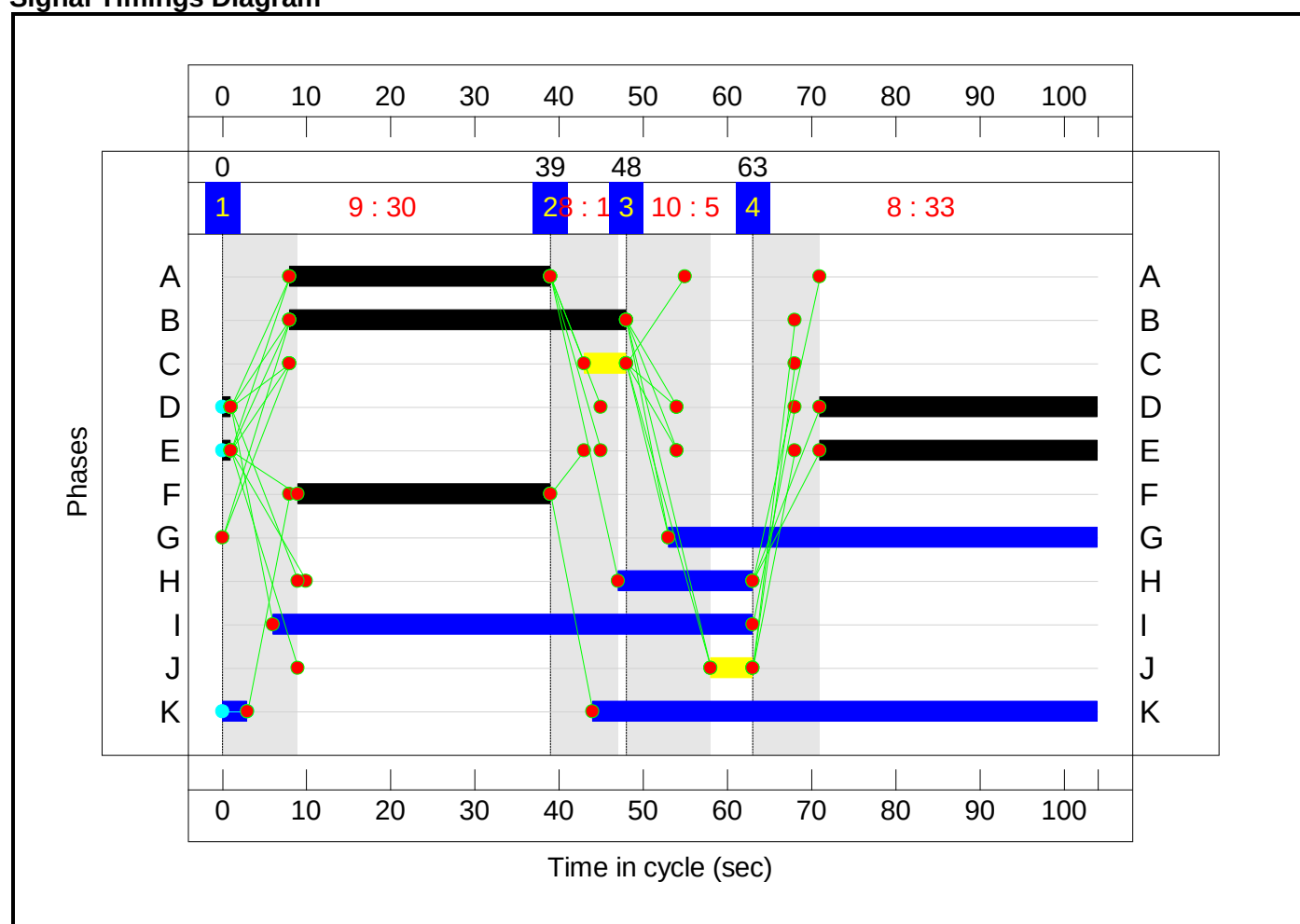
Stage Sequence Diagram



Stage Timings

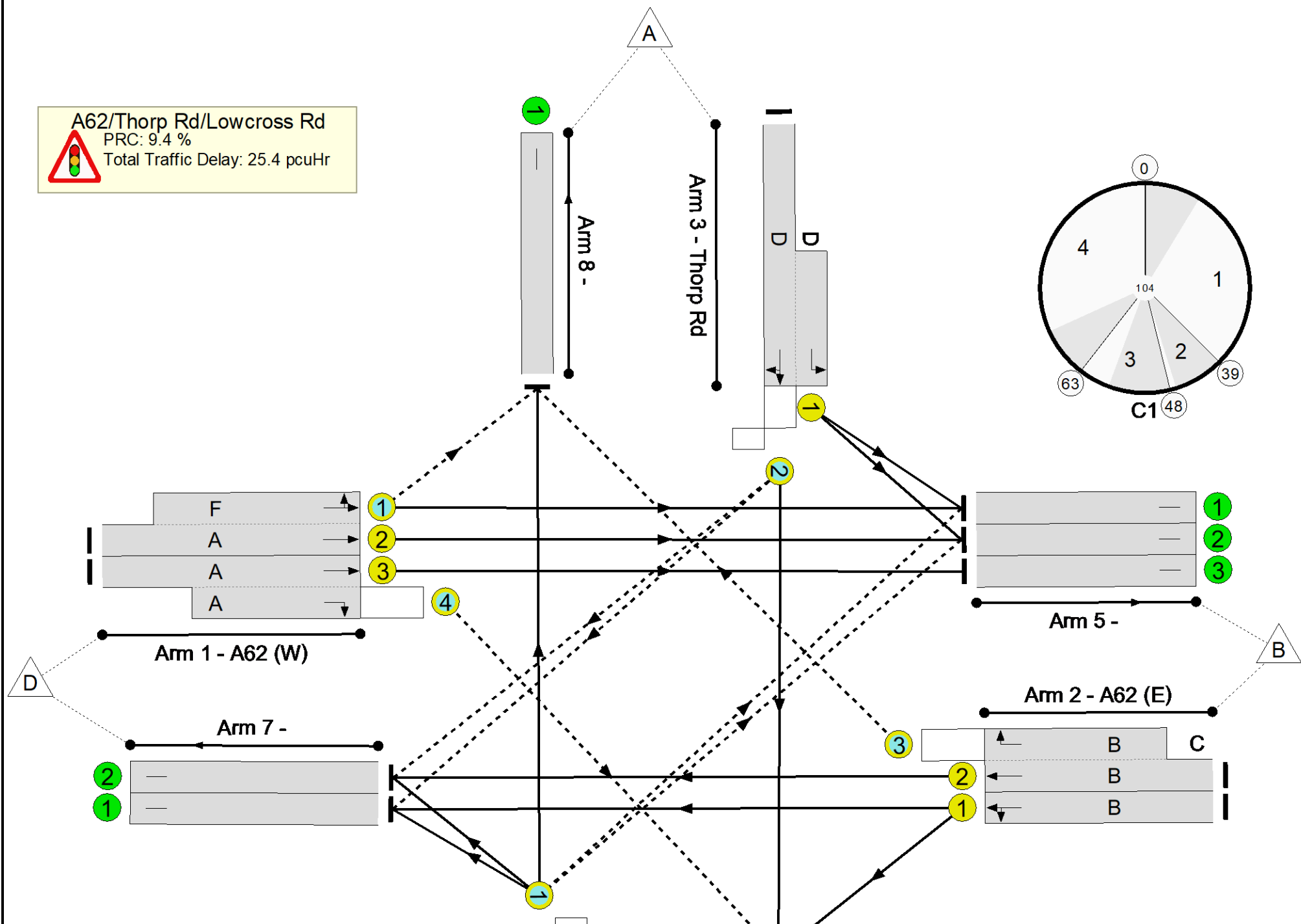
Stage	1	2	3	4
Duration	30	1	5	33
Change Point	0	39	48	63

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	82.3%
A62/Thorp Rd/Lowcross Rd	-	-	N/A	-	-		-	-	-	-	-	-	82.3%
1/2+1/1	A62 (W) Ahead Left	U+O	N/A	N/A	A F		1	31:30	-	280	1940:1979	597+230	33.8 : 33.8%
1/3+1/4	A62 (W) Ahead Right	U+O	N/A	N/A	A		1	31	-	183	2080:1805	601+58	27.8 : 27.8%
2/1	A62 (E) Left Ahead	U	N/A	N/A	B		1	40	-	589	1909	753	78.3%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B	C	1	40	5	715	2055:1764	779+90	82.3 : 82.3%
3/2+3/1	Thorp Rd Left Ahead Right	O+U	N/A	N/A	D		1	34	-	523	1764:1764	487+173	79.2 : 79.2%
4/1	Lowcross Rd Right Left Ahead	O	N/A	N/A	E		1	34	-	86	1940	636	13.5%
5/1		U	N/A	N/A	-		-	-	-	111	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	285	Inf	Inf	0.0%
5/3		U	N/A	N/A	-		-	-	-	167	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	31	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	796	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	862	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	124	Inf	Inf	0.0%

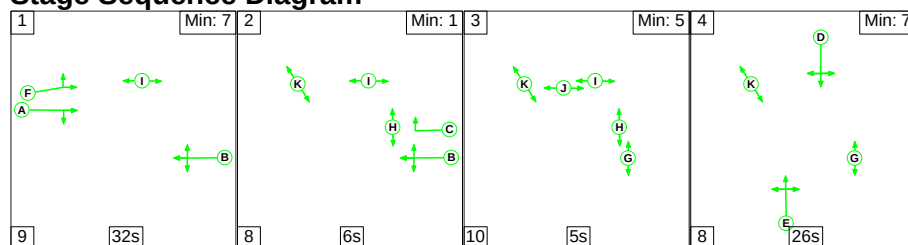
Full Input Data And Results

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	-	-	521	13	15	18.3	6.4	0.7	25.4	-	-	-	-
A62/Thorp Rd/Lowcross Rd	-	-	521	13	15	18.3	6.4	0.7	25.4	-	-	-	-
1/2+1/1	280	280	42	6	0	2.2	0.3	-	2.4	31.1	4.5	0.3	4.7
1/3+1/4	183	183	11	0	5	1.4	0.2	0.1	1.7	33.4	3.6	0.2	3.8
2/1	589	589	-	-	-	4.5	1.8	-	6.3	38.4	14.9	1.8	16.7
2/2+2/3	715	715	65	7	2	5.4	2.3	0.1	7.7	39.0	16.5	2.3	18.7
3/2+3/1	523	523	377	0	7	4.3	1.9	0.4	6.6	45.4	10.8	1.9	12.7
4/1	86	86	26	0	1	0.6	0.1	0.0	0.7	27.9	1.7	0.1	1.8
5/1	111	111	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	285	285	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	167	167	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	31	31	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	796	796	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	862	862	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	124	124	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 9.4 Total Delay for Signalled Lanes (pcuHr): 25.40 Cycle Time (s): 104 PRC Over All Lanes (%): 9.4 Total Delay Over All Lanes(pcuHr): 25.40													

Full Input Data And Results

Scenario 4: 'Future Year (inc CD) PM' (FG4: 'Base + Com Dev PM', Plan 1: 'Network Control Plan 1')

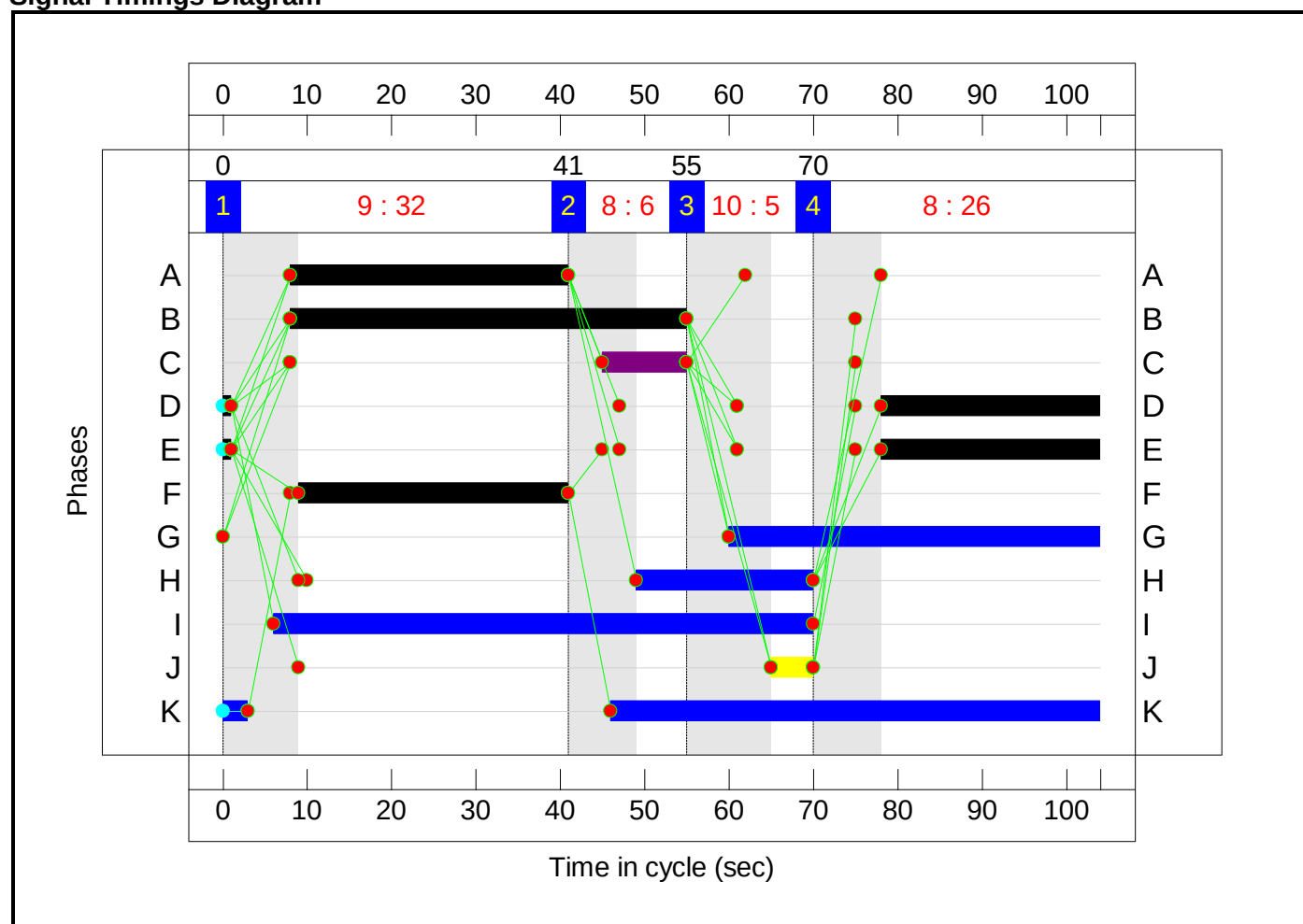
Stage Sequence Diagram



Stage Timings

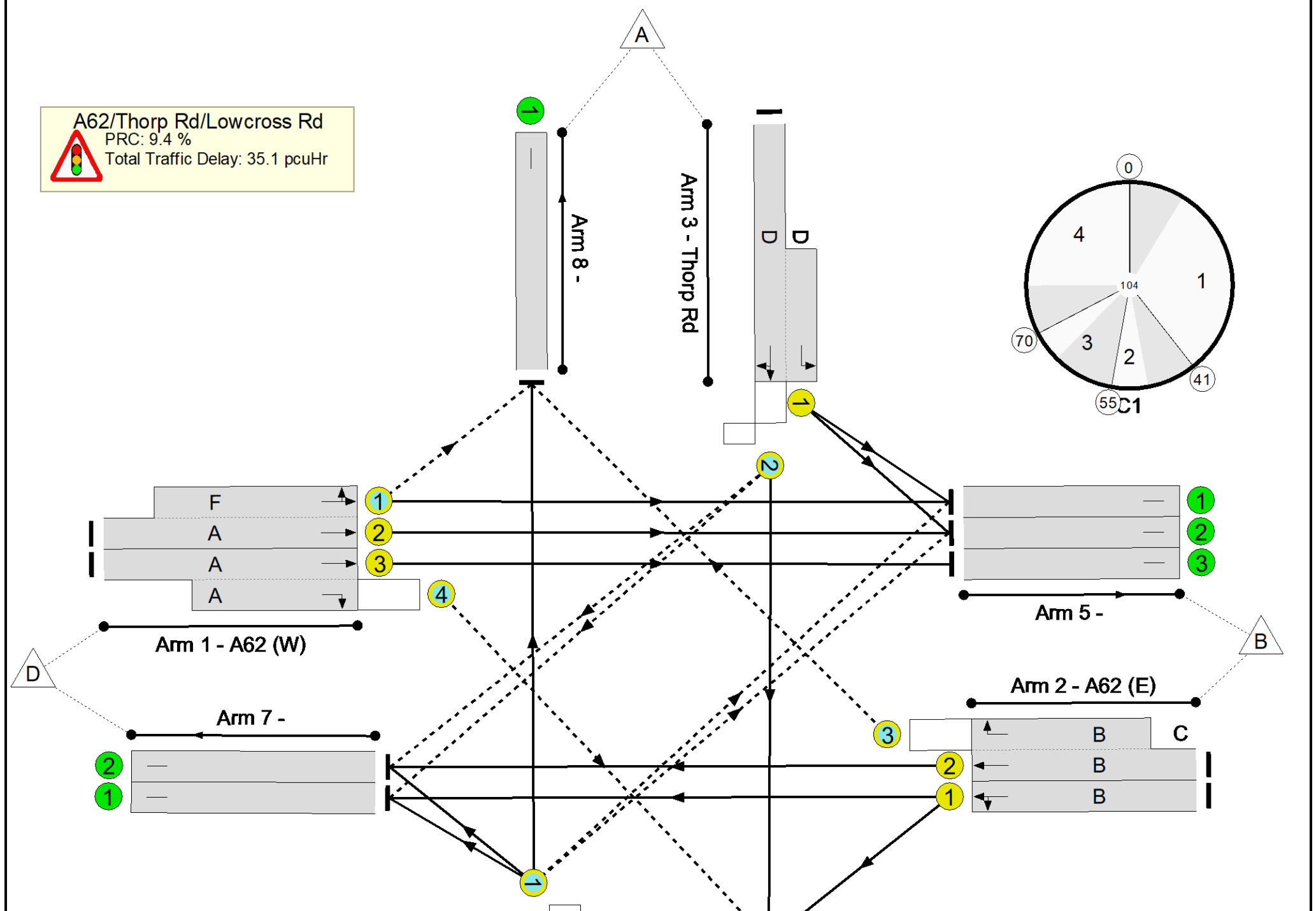
Stage	1	2	3	4
Duration	32	6	5	26
Change Point	0	41	55	70

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	82.3%
A62/Thorp Rd/Lowcross Rd	-	-	N/A	-	-		-	-	-	-	-	-	82.3%
1/2+1/1	A62 (W) Ahead Left	U+O	N/A	N/A	A F		1	33:32	-	951	1940:2033	634+539	81.0 : 81.0%
1/3+1/4	A62 (W) Ahead Right	U+O	N/A	N/A	A		1	33	-	498	2080:1805	653+36	72.3 : 72.3%
2/1	A62 (E) Left Ahead	U	N/A	N/A	B		1	47	-	613	1908	881	69.6%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B	C	1	47	10	207	2055:1764	0+257	0.0 : 80.7%
3/2+3/1	Thorp Rd Left Ahead Right	O+U	N/A	N/A	D		1	27	-	401	1764:1764	204+397	66.7 : 66.7%
4/1	Lowcross Rd Right Left Ahead	O	N/A	N/A	E		1	27	-	244	1940	297	82.3%
5/1		U	N/A	N/A	-		-	-	-	629	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	738	Inf	Inf	0.0%
5/3		U	N/A	N/A	-		-	-	-	472	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	42	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	696	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	100	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	237	Inf	Inf	0.0%

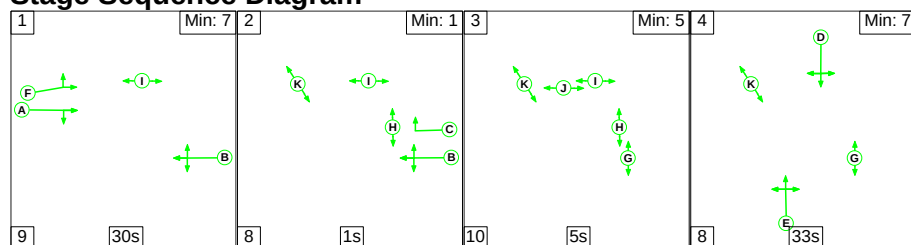
Full Input Data And Results

[illegible]

Full Input Data And Results

Scenario 5: 'Future Year + Dev AM' (FG5: 'Base + Com Dev + Dev AM', Plan 1: 'Network Control Plan 1')

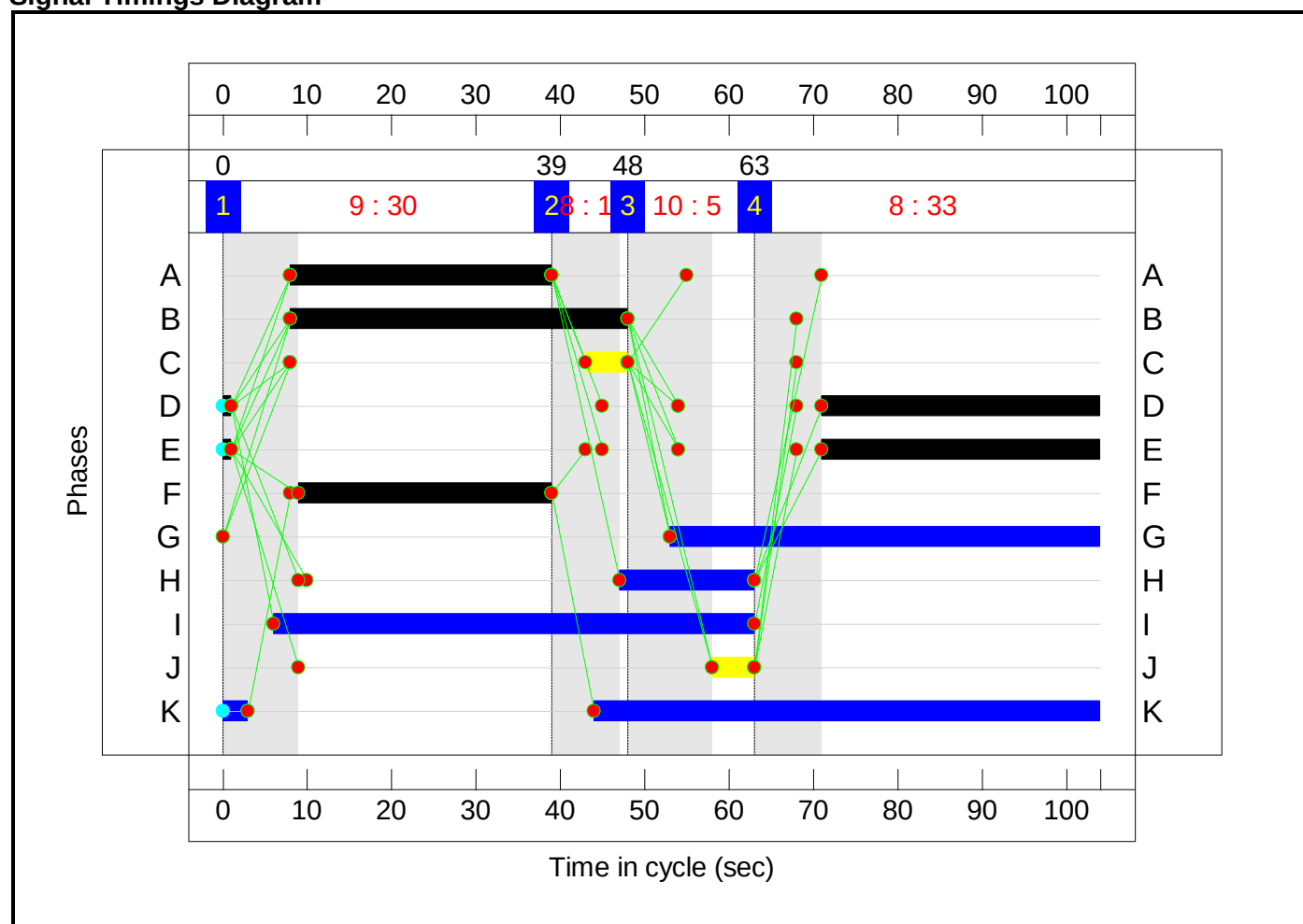
Stage Sequence Diagram



Stage Timings

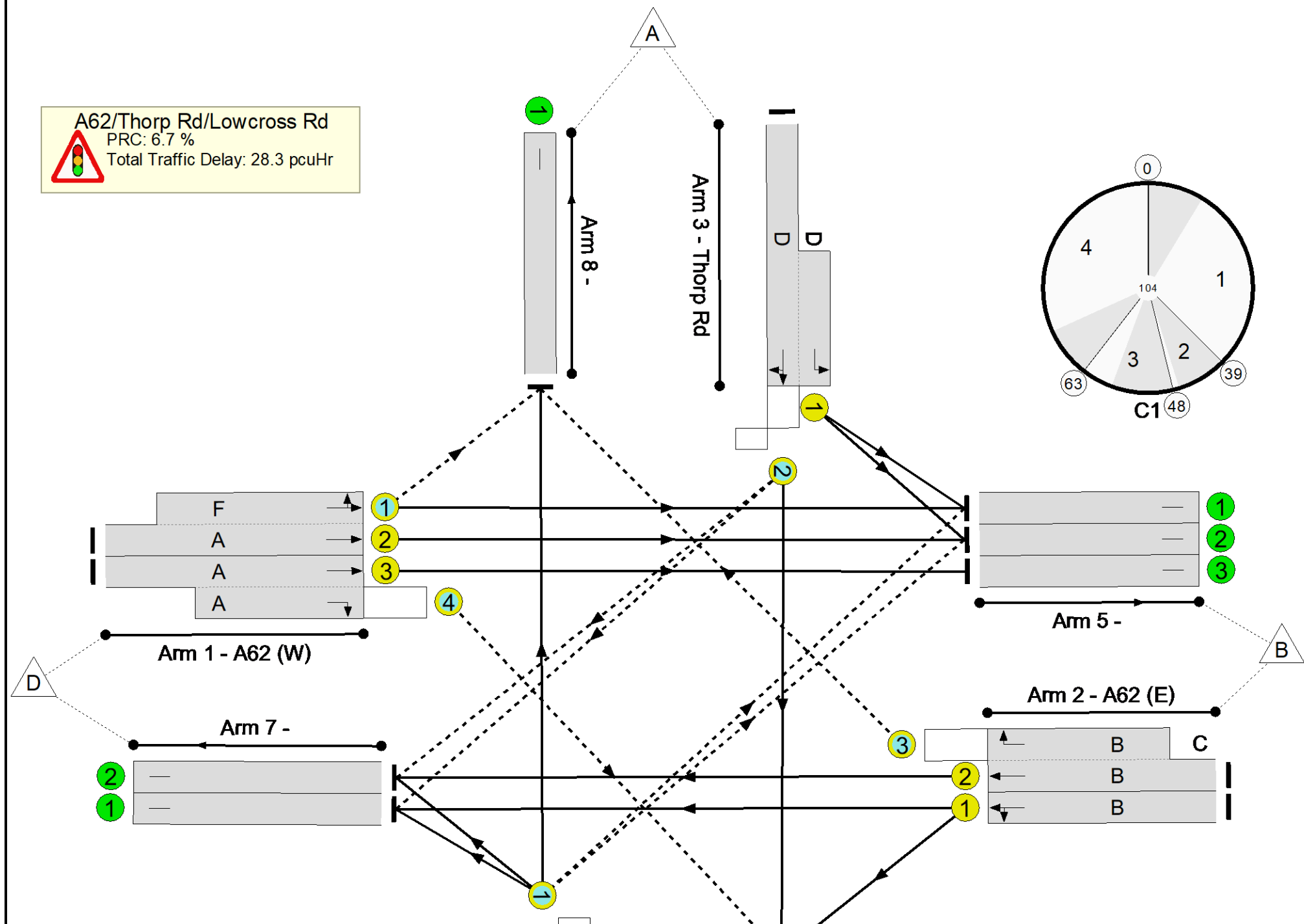
Stage	1	2	3	4
Duration	30	1	5	33
Change Point	0	39	48	63

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	84.3%
A62/Thorp Rd/Lowcross Rd	-	-	N/A	-	-		-	-	-	-	-	-	84.3%
1/2+1/1	A62 (W) Ahead Left	U+O	N/A	N/A	A F		1	31:30	-	323	1940:1952	597+215	39.0 : 42.0%
1/3+1/4	A62 (W) Ahead Right	U+O	N/A	N/A	A		1	31	-	230	2080:1805	608+45	35.2 : 35.2%
2/1	A62 (E) Left Ahead	U	N/A	N/A	B		1	40	-	607	1909	753	80.7%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B	C	1	40	5	732	2055:1764	780+88	84.3 : 84.3%
3/2+3/1	Thorp Rd Left Ahead Right	O+U	N/A	N/A	D		1	34	-	544	1764:1764	487+164	83.6 : 83.6%
4/1	Lowcross Rd Right Left Ahead	O	N/A	N/A	E		1	34	-	86	1940	636	13.5%
5/1		U	N/A	N/A	-		-	-	-	90	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	316	Inf	Inf	0.0%
5/3		U	N/A	N/A	-		-	-	-	214	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	31	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	824	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	890	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	157	Inf	Inf	0.0%

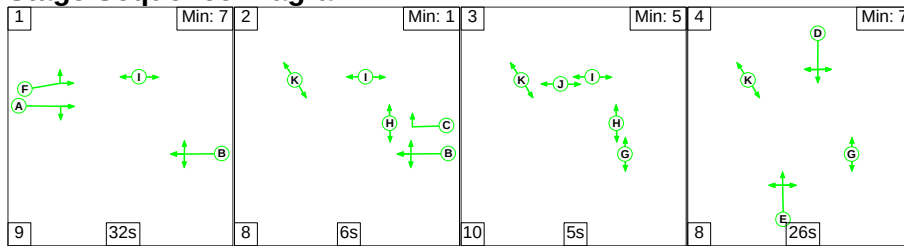
Full Input Data And Results

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	-	-	567	15	21	19.7	7.7	0.8	28.3	-	-	-	-
A62/Thorp Rd/Lowcross Rd	-	-	567	15	21	19.7	7.7	0.8	28.3	-	-	-	-
1/2+1/1	323	323	74	7	0	2.6	0.3	-	2.9	32.2	5.2	0.3	5.6
1/3+1/4	230	230	6	0	10	1.8	0.3	0.1	2.2	34.2	4.8	0.3	5.0
2/1	607	607	-	-	-	4.7	2.0	-	6.7	40.0	15.5	2.0	17.5
2/2+2/3	732	732	63	9	2	5.6	2.6	0.1	8.3	40.8	17.4	2.6	20.0
3/2+3/1	544	544	397	0	8	4.6	2.4	0.5	7.5	49.5	11.7	2.4	14.2
4/1	86	86	26	0	1	0.6	0.1	0.0	0.7	27.8	1.7	0.1	1.8
5/1	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	316	316	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	214	214	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	31	31	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	824	824	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	890	890	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	157	157	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 6.7 Total Delay for Signalled Lanes (pcuHr): 28.27 Cycle Time (s): 104 PRC Over All Lanes (%): 6.7 Total Delay Over All Lanes(pcuHr): 28.27													

Full Input Data And Results

Scenario 6: 'Future Year + Dev PM' (FG6: 'Base + Com Dev + Dev PM', Plan 1: 'Network Control Plan 1')

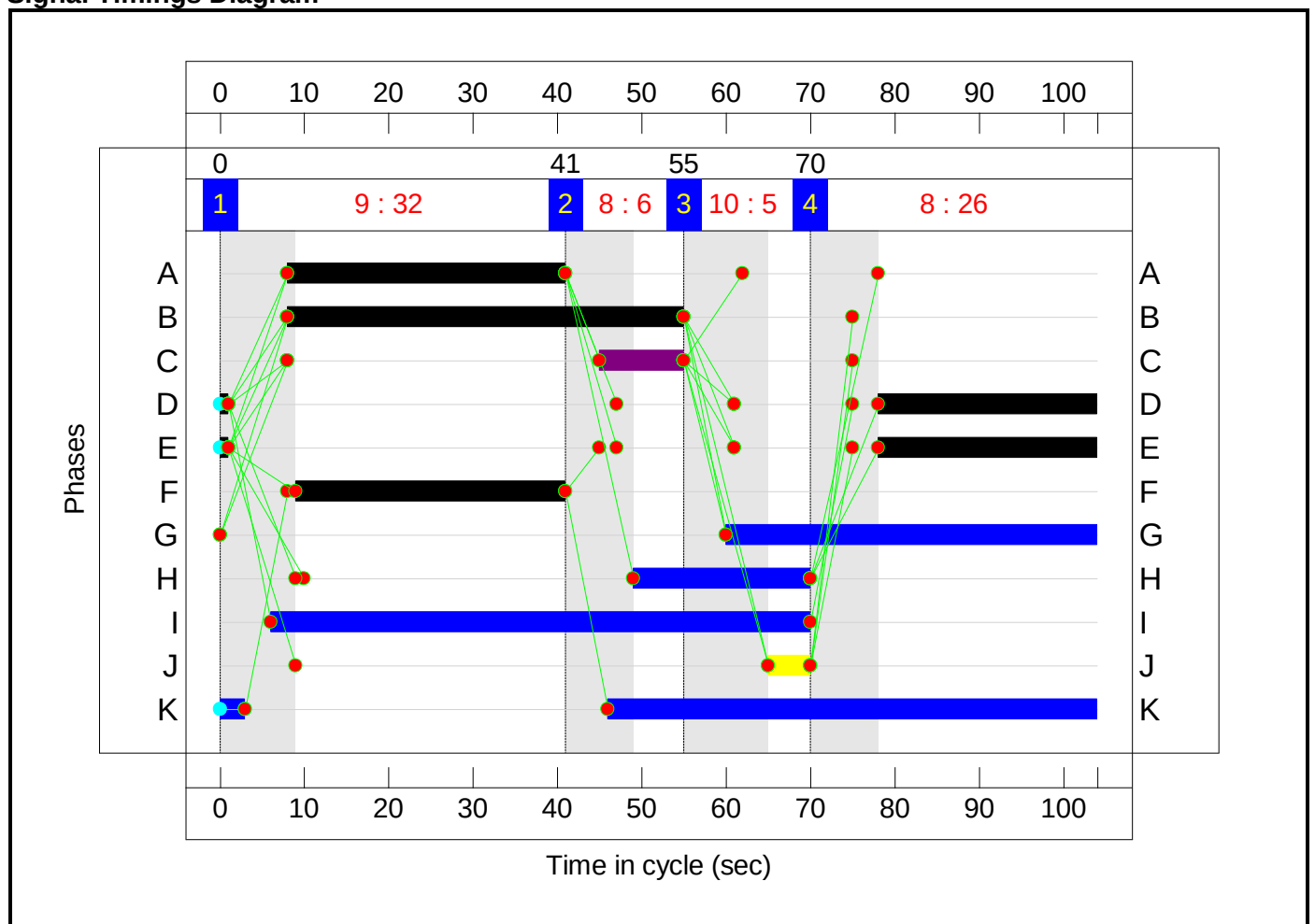
Stage Sequence Diagram



Stage Timings

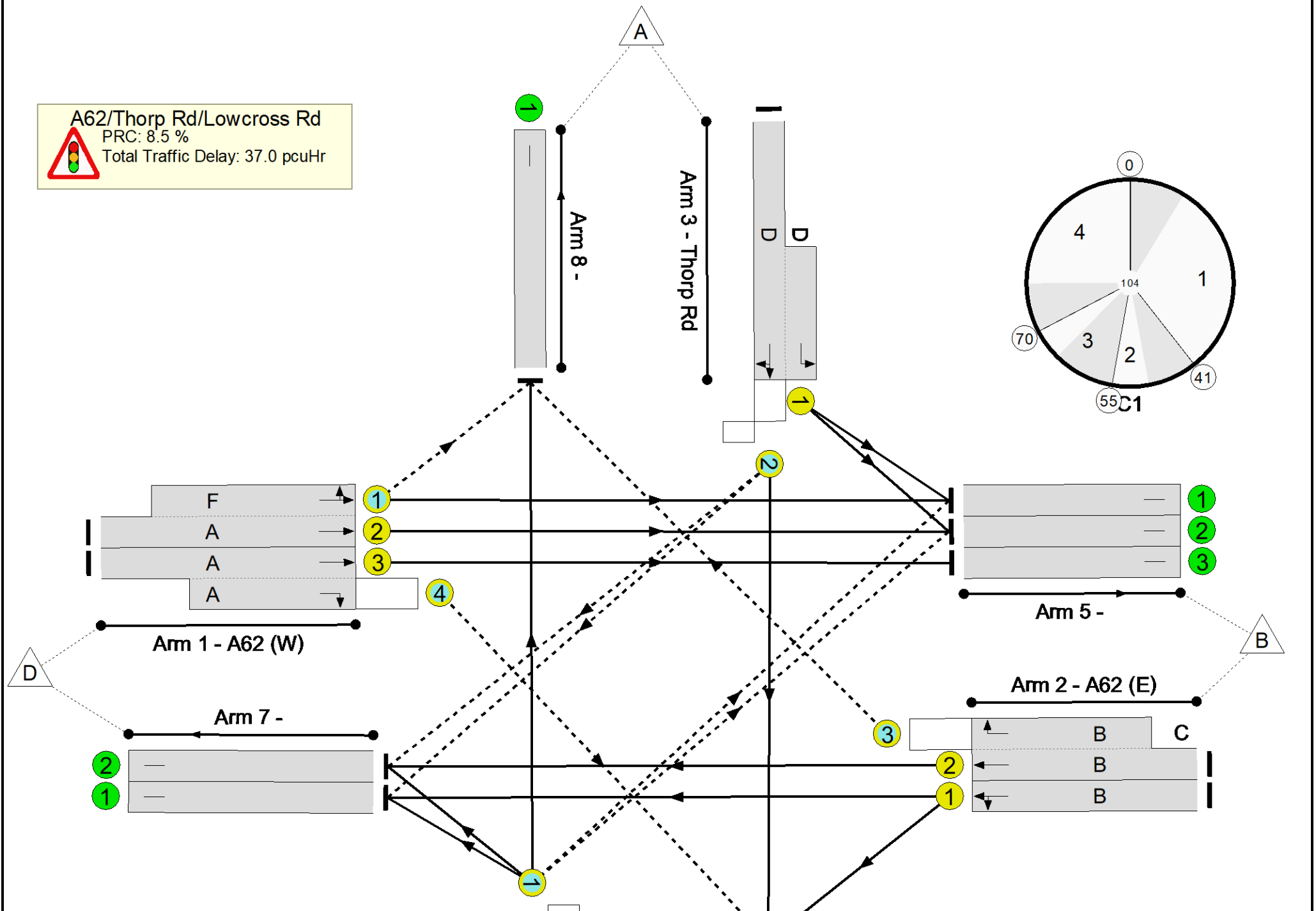
Stage	1	2	3	4
Duration	32	6	5	26
Change Point	0	41	55	70

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



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	-	-		-	-	-	-	-	-	82.9%
A62/Thorp Rd/Lowcross Rd	-	-	N/A	-	-		-	-	-	-	-	-	82.9%
1/2+1/1	A62 (W) Ahead Left	U+O	N/A	N/A	A F		1	33:32	-	959	1940:2030	634+522	82.9 : 82.9%
1/3+1/4	A62 (W) Ahead Right	U+O	N/A	N/A	A		1	33	-	519	2080:1805	654+34	75.4 : 75.4%
2/1	A62 (E) Left Ahead	U	N/A	N/A	B		1	47	-	657	1908	881	74.6%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B	C	1	47	10	207	2055:1764	0+257	0.0 : 80.7%
3/2+3/1	Thorp Rd Left Ahead Right	O+U	N/A	N/A	D		1	27	-	419	1764:1764	227+390	67.9 : 67.9%
4/1	Lowcross Rd Right Left Ahead	O	N/A	N/A	E		1	27	-	244	1940	297	82.3%
5/1		U	N/A	N/A	-		-	-	-	614	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	750	Inf	Inf	0.0%
5/3		U	N/A	N/A	-		-	-	-	493	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	42	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	109	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	248	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	-	-	375	203	31	25.0	10.5	1.6	37.0	-	-	-	-
A62/Thorp Rd/Lowcross Rd	-	-	375	203	31	25.0	10.5	1.6	37.0	-	-	-	-
1/2+1/1	959	959	39	2	0	8.6	2.4	-	11.0	41.2	14.0	2.4	16.4
1/3+1/4	519	519	26	0	0	4.4	1.5	0.2	6.1	42.3	12.8	1.5	14.3
2/1	657	657	-	-	-	4.2	1.5	-	5.6	30.9	15.5	1.5	17.0
2/2+2/3	207	207	0	201	6	1.5	1.9	1.0	4.4	76.9	5.8	1.9	7.7
3/2+3/1	419	419	151	0	3	3.7	1.0	0.1	4.8	41.4	6.6	1.0	7.7
4/1	244	244	159	0	22	2.5	2.1	0.4	5.0	74.4	6.8	2.1	8.9
5/1	614	614	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	750	750	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	42	42	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	749	749	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	109	109	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	248	248	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 8.5 Total Delay for Signalled Lanes (pcuHr): 37.01 Cycle Time (s): 104 PRC Over All Lanes (%): 8.5 Total Delay Over All Lanes(pcuHr): 37.01													

Appendix D - A62 Oldham Road / Dean Lane / Old Church Street

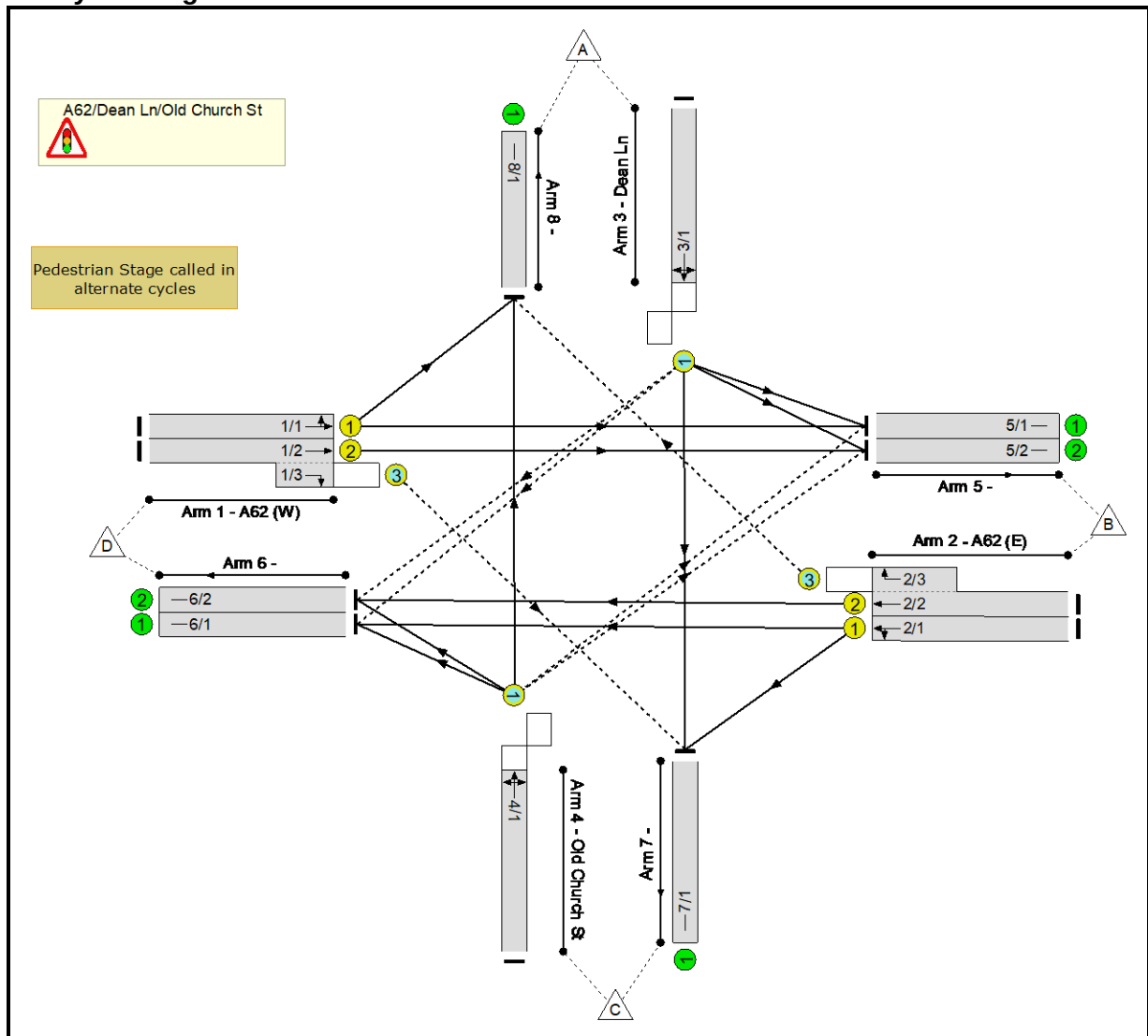
Full Input Data And Results

Full Input Data And Results

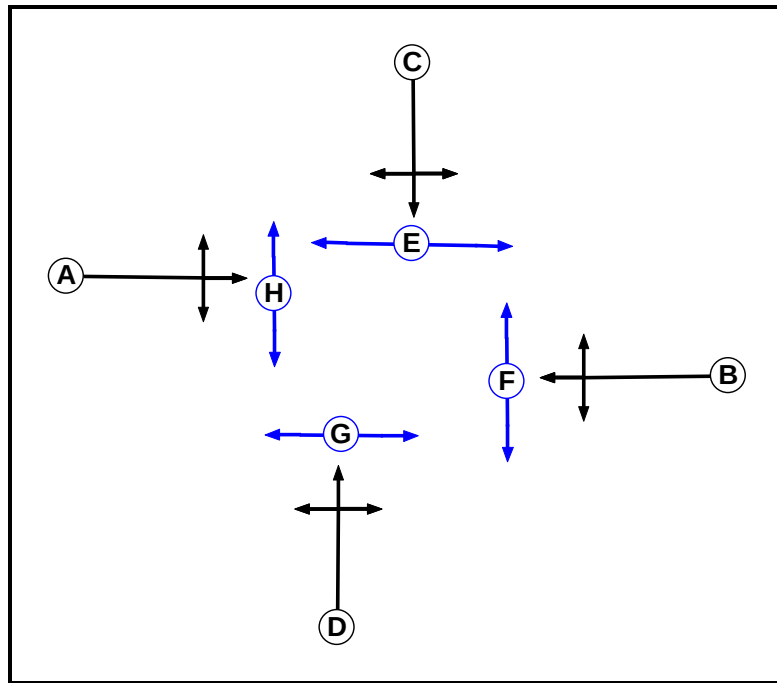
User and Project Details

Project:	Jacksons Brickworks
Title:	
Location:	
Client:	Nuvu Development Ltd
Additional detail:	
File name:	A62 J4 - Dean Ln - Old Church St.lsg3x
Author:	James Whitton
Company:	Vectos North
Address:	

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		7	7
F	Pedestrian		12	12
G	Pedestrian		7	7
H	Pedestrian		12	12

Full Input Data And Results

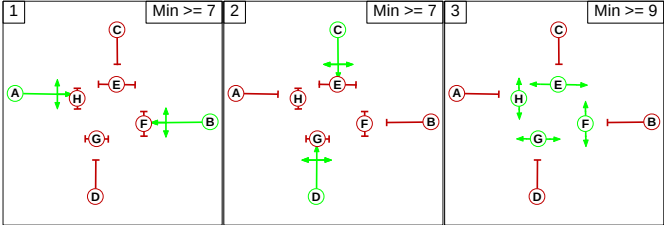
Phase Intergreens Matrix

Terminating Phase	Starting Phase								
		A	B	C	D	E	F	G	H
	A		-	7	7	9	8	11	5
	B	-		7	7	11	5	8	8
	C	8	7		-	5	9	10	12
	D	8	8	-		10	12	5	9
	E	10	10	10	10		-	-	-
	F	10	10	10	10	-		-	-
	G	10	10	10	10	-	-		-
	H	10	10	10	10	-	-	-	

Phases in Stage

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

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
	1	7	11
	2	8	12
	3	10	10

Full Input Data And Results

Give-Way Lane Input Data

Junction: A62/Dean Ln/Old Church St											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/3 (A62 (W))	7/1 (Right)	1439	0	2/2	1.09	All	2.80	-	0.50	3	2.00
				2/1	1.09	All					
2/3 (A62 (E))	8/1 (Right)	1439	0	1/1	1.09	All	2.80	-	0.50	3	2.00
				1/2	1.09	All					
3/1 (Dean Ln)	6/1 (Right)	1439	0	4/1	1.09	To 6/1 (Left) To 6/2 (Left) To 8/1 (Ahead)	3.80	2.00	0.50	4	3.00
	6/2 (Right)	1439	0	4/1	1.09	To 6/1 (Left) To 6/2 (Left) To 8/1 (Ahead)					
4/1 (Old Church St)	5/1 (Right)	1439	0	3/1	1.09	To 5/1 (Left) To 5/2 (Left) To 7/1 (Ahead)	3.50	2.00	0.50	4	3.00
	5/2 (Right)	1439	0	3/1	1.09	To 5/1 (Left) To 5/2 (Left) To 7/1 (Ahead)					

Full Input Data And Results

Lane Input Data

Junction: A62/Dean Ln/Old Church St												
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 (A62 (W))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	20.00
1/2 (A62 (W))	U	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
1/3 (A62 (W))	O	A	2	3	3.5	Geom	-	3.00	0.00	N	Arm 7 Right	15.00
2/1 (A62 (E))	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	8.00
2/2 (A62 (E))	U	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 6 Ahead	Inf
2/3 (A62 (E))	O	B	2	3	5.2	Geom	-	3.00	0.00	N	Arm 8 Right	15.00
3/1 (Dean Ln)	O	C	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 5 Left	15.00
											Arm 6 Right	15.00
											Arm 7 Ahead	Inf
4/1 (Old Church St)	O	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Right	15.00
											Arm 6 Left	15.00
											Arm 8 Ahead	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Base AM'	08:00	09:00	01:00	
2: 'Base PM'	17:00	18:00	01:00	
3: 'Base + Com Dev AM'	08:00	09:00	01:00	
4: 'Base + Com Dev PM'	17:00	18:00	01:00	
5: 'Base + Com Dev + Dev AM'	08:00	09:00	01:00	
6: 'Base + Com Dev + Dev PM'	17:00	18:00	01:00	

Scenario 1: 'Baseline AM' (FG1: 'Base AM', Plan 2: 'Double Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	3	265	169	437
	B	29	0	1	1264	1294
	C	50	231	0	68	349
	D	214	265	7	0	486
	Tot.	293	499	273	1501	2566

Traffic Lane Flows

Lane	Scenario 1: Baseline AM
Junction: A62/Dean Ln/Old Church St	
1/1	214
1/2 (with short)	272(In) 265(Out)
1/3 (short)	7
2/1	611
2/2 (with short)	683(In) 654(Out)
2/3 (short)	29
3/1	437
4/1	349
5/1	118
5/2	381
6/1	728
6/2	773
7/1	273
8/1	293

Lane Saturation Flows

Junction: A62/Dean Ln/Old Church St								
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 (A62 (W))	3.00	0.00	Y	Arm 5 Ahead	Inf	0.0 %	1781	1781
				Arm 8 Left	20.00	100.0 %		
1/2 (A62 (W))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A62 (W))	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Ahead	Inf	99.8 %	1914	1914
				Arm 7 Left	8.00	0.2 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.00	0.00	N	Arm 8 Right	15.00	100.0 %	1868	1868
				Arm 5 Left	15.00	0.7 %		
3/1 (Dean Ln)	4.50	0.00	Y	Arm 6 Right	15.00	38.7 %	1987	1987
				Arm 7 Ahead	Inf	60.6 %		
4/1 (Old Church St)	3.50	0.00	Y	Arm 5 Right	15.00	66.2 %	1810	1810
				Arm 6 Left	15.00	19.5 %		
				Arm 8 Ahead	Inf	14.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'Baseline PM' (FG2: 'Base PM', Plan 2: 'Double Cycle')**Traffic Flows, Desired****Desired Flow :**

	Destination					
		A	B	C	D	Tot.
Origin	A	0	88	248	46	382
	B	27	0	0	789	816
	C	324	25	0	67	416
	D	645	1115	140	0	1900
	Tot.	996	1228	388	902	3514

Traffic Lane Flows

Lane	Scenario 2: Baseline PM
Junction: A62/Dean Ln/Old Church St	
1/1	859
1/2 (with short)	1041(In) 901(Out)
1/3 (short)	140
2/1	379
2/2 (with short)	437(In) 410(Out)
2/3 (short)	27
3/1	382
4/1	416
5/1	271
5/2	957
6/1	435
6/2	467
7/1	388
8/1	996

Lane Saturation Flows

Junction: A62/Dean Ln/Old Church St								
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 (A62 (W))	3.00	0.00	Y	Arm 5 Ahead	Inf	24.9 %	1813	1813
				Arm 8 Left	20.00	75.1 %		
1/2 (A62 (W))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A62 (W))	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Ahead Arm 7 Left	Inf 8.00	100.0 % 0.0 %	1915	1915
2/2 (A62 (E))	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.00	0.00	N	Arm 8 Right	15.00	100.0 %	1868	1868
3/1 (Dean Ln)	4.50	0.00	Y	Arm 5 Left	15.00	23.0 %	1995	1995
				Arm 6 Right	15.00	12.0 %		
				Arm 7 Ahead	Inf	64.9 %		
4/1 (Old Church St)	3.50	0.00	Y	Arm 5 Right	15.00	6.0 %	1922	1922
				Arm 6 Left	15.00	16.1 %		
				Arm 8 Ahead	Inf	77.9 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'Future Year (inc CD) AM' (FG3: 'Base + Com Dev AM', Plan 2: 'Double Cycle')**Traffic Flows, Desired****Desired Flow :**

	Destination					
		A	B	C	D	Tot.
Origin	A	0	3	265	179	447
	B	30	0	1	1399	1430
	C	50	235	0	72	357
	D	221	345	11	0	577
	Tot.	301	583	277	1650	2811

Traffic Lane Flows

Lane	Scenario 3: Future Year (inc CD) AM
Junction: A62/Dean Ln/Old Church St	
1/1	259
1/2 (with short)	318(In) 307(Out)
1/3 (short)	11
2/1	677
2/2 (with short)	753(In) 723(Out)
2/3 (short)	30
3/1	447
4/1	357
5/1	158
5/2	425
6/1	801
6/2	849
7/1	277
8/1	301

Lane Saturation Flows

Junction: A62/Dean Ln/Old Church St								
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 (A62 (W))	3.00	0.00	Y	Arm 5 Ahead	Inf	14.7 %	1800	1800
				Arm 8 Left	20.00	85.3 %		
1/2 (A62 (W))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A62 (W))	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Ahead Arm 7 Left	Inf 8.00	99.9 % 0.1 %	1914	1914
2/2 (A62 (E))	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.00	0.00	N	Arm 8 Right	15.00	100.0 %	1868	1868
3/1 (Dean Ln)	4.50	0.00	Y	Arm 5 Left	15.00	0.7 %	1984	1984
				Arm 6 Right	15.00	40.0 %		
				Arm 7 Ahead	Inf	59.3 %		
4/1 (Old Church St)	3.50	0.00	Y	Arm 5 Right	15.00	65.8 %	1809	1809
				Arm 6 Left	15.00	20.2 %		
				Arm 8 Ahead	Inf	14.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'Future Year (inc CD) PM' (FG4: 'Base + Com Dev PM', Plan 2: 'Double Cycle')**Traffic Flows, Desired****Desired Flow :**

		Destination				
Origin		A	B	C	D	Tot.
	A	0	88	249	46	383
	B	28	0	0	862	890
	C	324	30	0	68	422
	D	670	1229	151	0	2050
	Tot.	1022	1347	400	976	3745

Traffic Lane Flows

Lane	Scenario 4: Future Year (inc CD) PM
Junction: A62/Dean Ln/Old Church St	
1/1	950
1/2 (with short)	1100(In) 949(Out)
1/3 (short)	151
2/1	414
2/2 (with short)	476(In) 448(Out)
2/3 (short)	28
3/1	383
4/1	422
5/1	339
5/2	1008
6/1	471
6/2	505
7/1	400
8/1	1022

Lane Saturation Flows

Junction: A62/Dean Ln/Old Church St								
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 (A62 (W))	3.00	0.00	Y	Arm 5 Ahead	Inf	29.5 %	1819	1819
				Arm 8 Left	20.00	70.5 %		
1/2 (A62 (W))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A62 (W))	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
				Arm 7 Left	8.00	0.0 %		
2/2 (A62 (E))	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.00	0.00	N	Arm 8 Right	15.00	100.0 %	1868	1868
				Arm 5 Left	15.00	23.0 %		
3/1 (Dean Ln)	4.50	0.00	Y	Arm 6 Right	15.00	12.0 %	1995	1995
				Arm 7 Ahead	Inf	65.0 %		
4/1 (Old Church St)	3.50	0.00	Y	Arm 5 Right	15.00	7.1 %	1920	1920
				Arm 6 Left	15.00	16.1 %		
				Arm 8 Ahead	Inf	76.8 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'Future Year + Dev AM' (FG5: 'Base + Com Dev + Dev AM', Plan 2: 'Double Cycle')**Traffic Flows, Desired****Desired Flow :**

Problem 10-1						
	Destination					
Origin		A	B	C	D	Tot.
	A	0	3	265	179	447
	B	30	0	1	1434	1465
	C	50	235	0	72	357
	D	221	402	11	0	634
	Tot.	301	640	277	1685	2903

Traffic Lane Flows

Lane	Scenario 5: Future Year + Dev AM
Junction: A62/Dean Ln/Old Church St	
1/1	288
1/2 (with short)	346(In) 335(Out)
1/3 (short)	11
2/1	694
2/2 (with short)	771(In) 741(Out)
2/3 (short)	30
3/1	447
4/1	357
5/1	187
5/2	453
6/1	818
6/2	867
7/1	277
8/1	301

Lane Saturation Flows

Junction: A62/Dean Ln/Old Church St								
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 (A62 (W))	3.00	0.00	Y	Arm 5 Ahead	Inf	23.3 %	1811	1811
				Arm 8 Left	20.00	76.7 %		
1/2 (A62 (W))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A62 (W))	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Ahead Arm 7 Left	Inf 8.00	99.9 % 0.1 %	1914	1914
2/2 (A62 (E))	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.00	0.00	N	Arm 8 Right	15.00	100.0 %	1868	1868
3/1 (Dean Ln)	4.50	0.00	Y	Arm 5 Left	15.00	0.7 %	1984	1984
				Arm 6 Right	15.00	40.0 %		
				Arm 7 Ahead	Inf	59.3 %		
4/1 (Old Church St)	3.50	0.00	Y	Arm 5 Right	15.00	65.8 %	1809	1809
				Arm 6 Left	15.00	20.2 %		
				Arm 8 Ahead	Inf	14.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'Future Year + Dev PM' (FG6: 'Base + Com Dev + Dev PM', Plan 2: 'Double Cycle')**Traffic Flows, Desired****Desired Flow :**

	Destination					
		A	B	C	D	Tot.
Origin	A	0	88	249	46	383
	B	28	0	0	893	921
	C	324	30	0	68	422
	D	670	1247	151	0	2068
	Tot.	1022	1365	400	1007	3794

Traffic Lane Flows

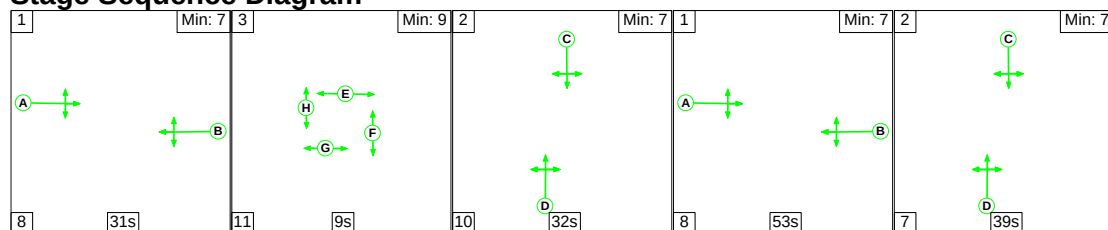
Lane	Scenario 6: Future Year + Dev PM
Junction: A62/Dean Ln/Old Church St	
1/1	959
1/2 (with short)	1109(In) 958(Out)
1/3 (short)	151
2/1	429
2/2 (with short)	492(In) 464(Out)
2/3 (short)	28
3/1	383
4/1	422
5/1	348
5/2	1017
6/1	486
6/2	521
7/1	400
8/1	1022

Lane Saturation Flows

Junction: A62/Dean Ln/Old Church St								
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 (A62 (W))	3.00	0.00	Y	Arm 5 Ahead	Inf	30.1 %	1820	1820
				Arm 8 Left	20.00	69.9 %		
1/2 (A62 (W))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A62 (W))	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
2/1 (A62 (E))	3.00	0.00	Y	Arm 6 Ahead Arm 7 Left	Inf 8.00	100.0 % 0.0 %	1915	1915
2/2 (A62 (E))	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/3 (A62 (E))	3.00	0.00	N	Arm 8 Right	15.00	100.0 %	1868	1868
3/1 (Dean Ln)	4.50	0.00	Y	Arm 5 Left	15.00	23.0 %	1995	1995
				Arm 6 Right	15.00	12.0 %		
				Arm 7 Ahead	Inf	65.0 %		
4/1 (Old Church St)	3.50	0.00	Y	Arm 5 Right	15.00	7.1 %	1920	1920
				Arm 6 Left	15.00	16.1 %		
				Arm 8 Ahead	Inf	76.8 %		
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'Baseline AM' (FG1: 'Base AM', Plan 2: 'Double Cycle')

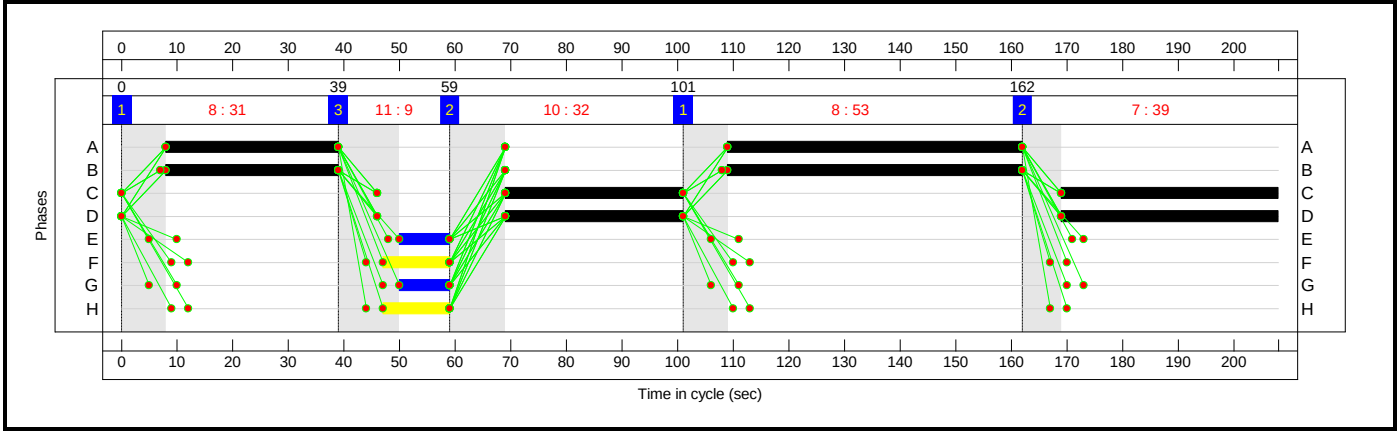
Stage Sequence Diagram



Stage Timings

Stage	1	3	2	1	2
Duration	31	9	32	53	39
Change Point	0	39	59	101	162

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

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	-	-		-	-	-	-	-	-	86.5%
A62/Dean Ln/Old Church St	-	-	N/A	-	-		-	-	-	-	-	-	86.5%
1/1	A62 (W) Ahead Left	U	N/A	N/A	A		2	84	-	214	1781	736	29.1%
1/2+1/3	A62 (W) Ahead Right	U+O	N/A	N/A	A		2	84	-	272	2055:1868	841+22	31.5 : 31.5%
2/1	A62 (E) Ahead Left	U	N/A	N/A	B		2	84	-	611	1914	791	77.2%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B		2	84	-	683	2055:1868	817+36	80.1 : 80.1%
3/1	Dean Ln Left Right Ahead	O	N/A	N/A	C		2	71	-	437	1987	697	62.7%
4/1	Old Church St Right Left Ahead	O	N/A	N/A	D		2	71	-	349	1810	404	86.5%
5/1		U	N/A	N/A	-		-	-	-	118	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	381	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	728	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	773	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	273	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	293	Inf	Inf	0.0%

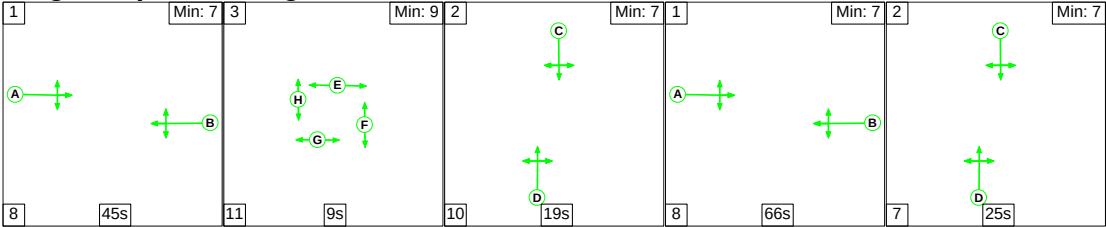
Full Input Data And Results

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	-	-	391	0	45	19.0	7.8	0.7	27.5	-	-	-	-
A62/Dean Ln/Old Church St	-	-	391	0	45	19.0	7.8	0.7	27.5	-	-	-	-
1/1	214	214	-	-	-	1.2	0.2	-	1.4	24.1	4.6	0.2	4.8
1/2+1/3	272	272	6	0	1	1.6	0.2	0.0	1.9	24.6	5.8	0.2	6.0
2/1	611	611	-	-	-	4.5	1.7	-	6.2	36.5	17.1	1.7	18.8
2/2+2/3	683	683	29	0	0	5.1	2.0	0.0	7.1	37.4	19.3	2.0	21.3
3/1	437	437	166	0	3	3.4	0.8	0.0	4.2	35.0	10.6	0.8	11.4
4/1	349	349	191	0	40	3.1	2.9	0.7	6.6	68.6	9.7	2.9	12.6
5/1	118	118	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	381	381	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	728	728	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	773	773	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	273	273	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 4.1 Total Delay for Signalled Lanes (pcuHr): 27.49 Cycle Time (s): 208 PRC Over All Lanes (%): 4.1 Total Delay Over All Lanes(pcuHr): 27.49													

Full Input Data And Results

Scenario 2: 'Baseline PM' (FG2: 'Base PM', Plan 2: 'Double Cycle')

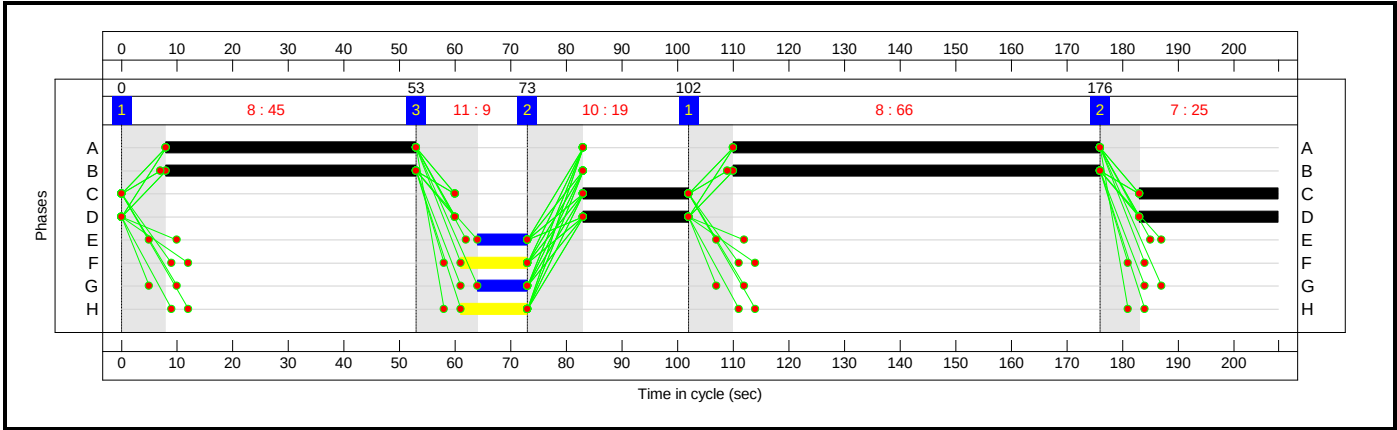
Stage Sequence Diagram



Stage Timings

Stage	1	3	2	1	2
Duration	45	9	19	66	25
Change Point	0	53	73	102	176

Signal Timings Diagram



Full Input Data And Results

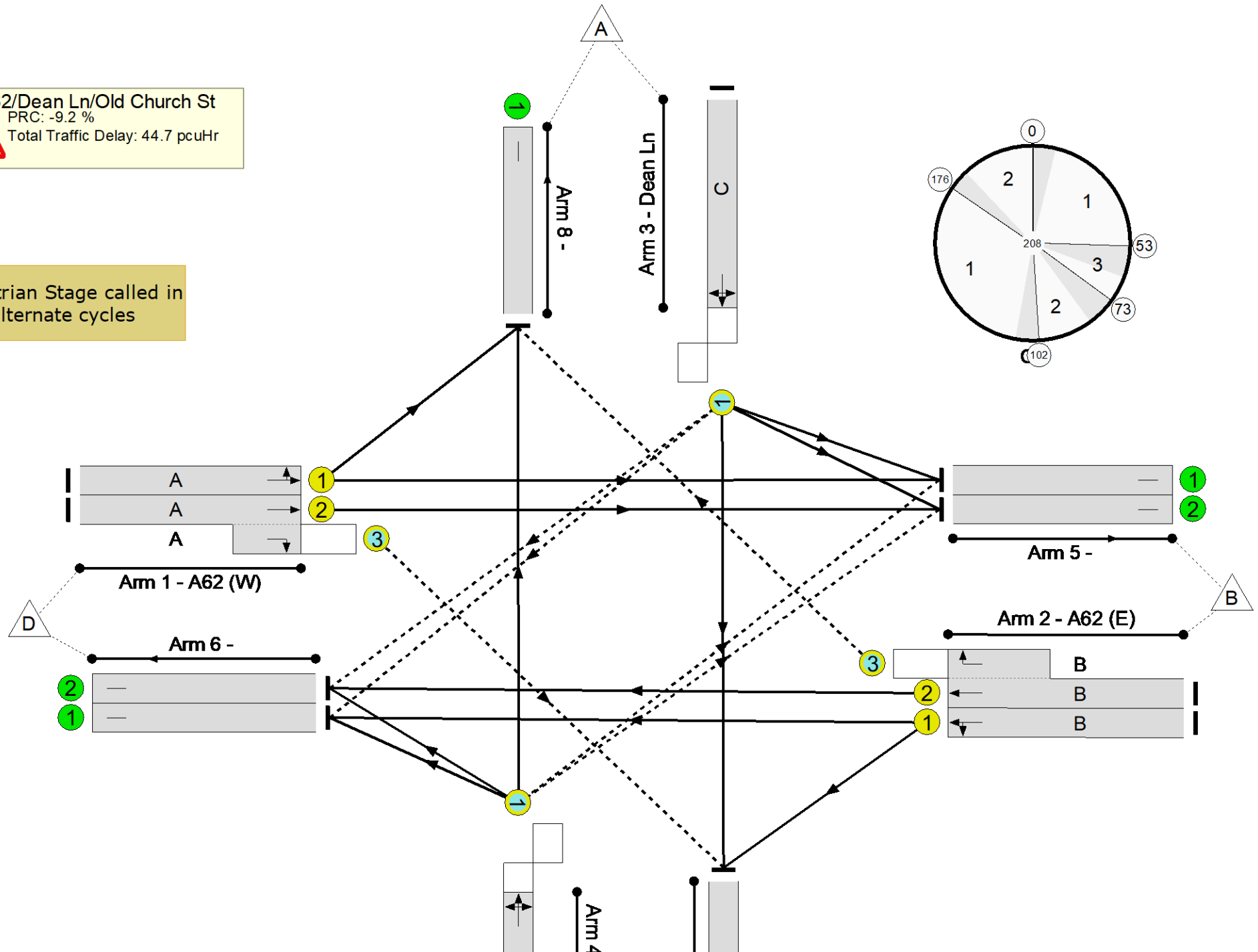
Network Layout Diagram

Full Input Data And Results

A62/Dean Ln/Old Church St
 PRC: -9.2 %
 Total Traffic Delay: 44.7 pcuHr



Pedestrian Stage called in alternate cycles



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	-	-		-	-	-	-	-	-	98.2%
A62/Dean Ln/Old Church St	-	-	N/A	-	-		-	-	-	-	-	-	98.2%
1/1	A62 (W) Ahead Left	U	N/A	N/A	A		2	111	-	859	1813	985	87.2%
1/2+1/3	A62 (W) Ahead Right	U+O	N/A	N/A	A		2	111	-	1041	2055:1868	982+153	91.7 : 91.7%
2/1	A62 (E) Ahead Left	U	N/A	N/A	B		2	111	-	379	1915	1040	36.4%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B		2	111	-	437	2055:1868	1052+69	39.0 : 39.0%
3/1	Dean Ln Left Right Ahead	O	N/A	N/A	C		2	44	-	382	1995	441	86.6%
4/1	Old Church St Right Left Ahead	O	N/A	N/A	D		2	44	-	416	1922	423	98.2%
5/1		U	N/A	N/A	-		-	-	-	271	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	957	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	467	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	388	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	996	Inf	Inf	0.0%

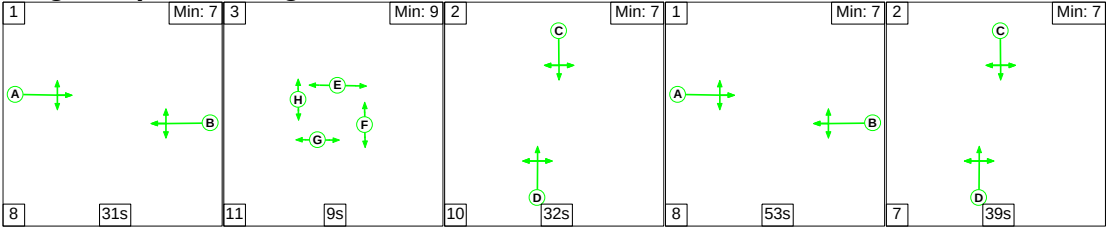
Full Input Data And Results

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Full Input Data And Results

Scenario 3: 'Future Year (inc CD) AM' (FG3: 'Base + Com Dev AM', Plan 2: 'Double Cycle')

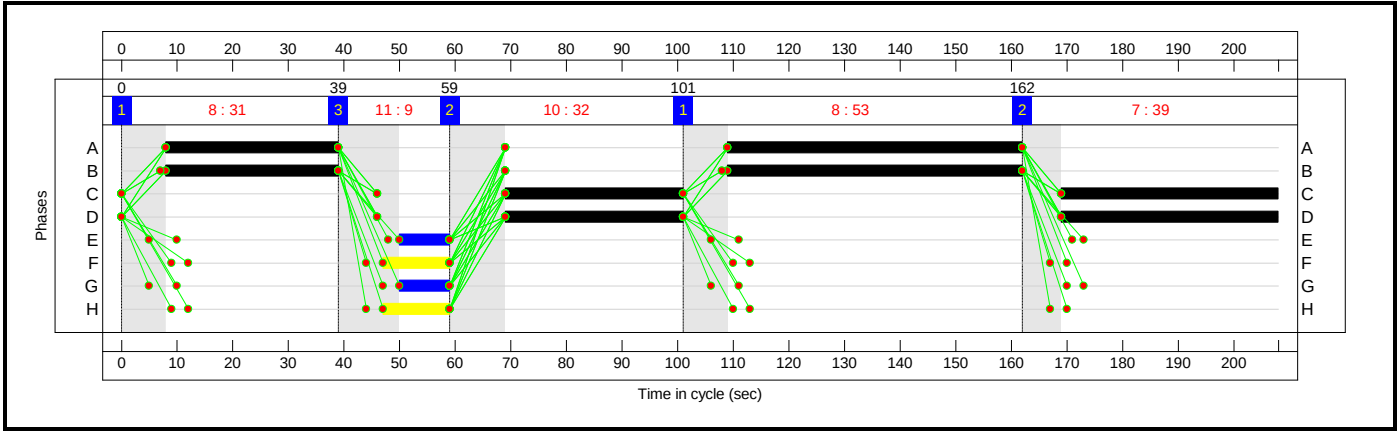
Stage Sequence Diagram



Stage Timings

Stage	1	3	2	1	2
Duration	31	9	32	53	39
Change Point	0	39	59	101	162

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

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	-	-		-	-	-	-	-	-	88.3%
A62/Dean Ln/Old Church St	-	-	N/A	-	-		-	-	-	-	-	-	88.3%
1/1	A62 (W) Ahead Left	U	N/A	N/A	A		2	84	-	259	1800	744	34.8%
1/2+1/3	A62 (W) Ahead Right	U+O	N/A	N/A	A		2	84	-	318	2055:1868	834+30	36.8 : 36.8%
2/1	A62 (E) Ahead Left	U	N/A	N/A	B		2	84	-	677	1914	791	85.5%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B		2	84	-	753	2055:1868	819+34	88.3 : 88.3%
3/1	Dean Ln Left Right Ahead	O	N/A	N/A	C		2	71	-	447	1984	696	64.2%
4/1	Old Church St Right Left Ahead	O	N/A	N/A	D		2	71	-	357	1809	405	88.1%
5/1		U	N/A	N/A	-		-	-	-	158	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	425	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	801	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	849	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	277	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	301	Inf	Inf	0.0%

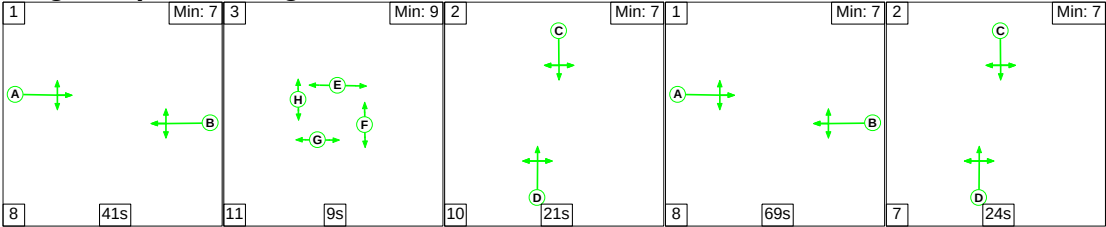
Full Input Data And Results

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	-	-	396	0	59	21.4	11.0	0.8	33.2	-	-	-	-
A62/Dean Ln/Old Church St	-	-	396	0	59	21.4	11.0	0.8	33.2	-	-	-	-
1/1	259	259	-	-	-	1.5	0.3	-	1.8	25.0	5.8	0.3	6.0
1/2+1/3	318	318	0	0	11	1.9	0.3	0.1	2.3	25.8	6.9	0.3	7.2
2/1	677	677	-	-	-	5.3	2.8	-	8.1	43.2	19.9	2.8	22.8
2/2+2/3	753	753	30	0	0	6.0	3.5	0.0	9.5	45.4	22.4	3.5	25.9
3/1	447	447	176	0	3	3.5	0.9	0.0	4.4	35.5	10.8	0.9	11.7
4/1	357	357	191	0	44	3.2	3.3	0.7	7.1	71.8	10.0	3.3	13.3
5/1	158	158	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	425	425	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	801	801	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	849	849	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	277	277	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	301	301	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 1.9 Total Delay for Signalled Lanes (pcuHr): 33.22 Cycle Time (s): 208 PRC Over All Lanes (%): 1.9 Total Delay Over All Lanes(pcuHr): 33.22													

Full Input Data And Results

Scenario 4: 'Future Year (inc CD) PM' (FG4: 'Base + Com Dev PM', Plan 2: 'Double Cycle')

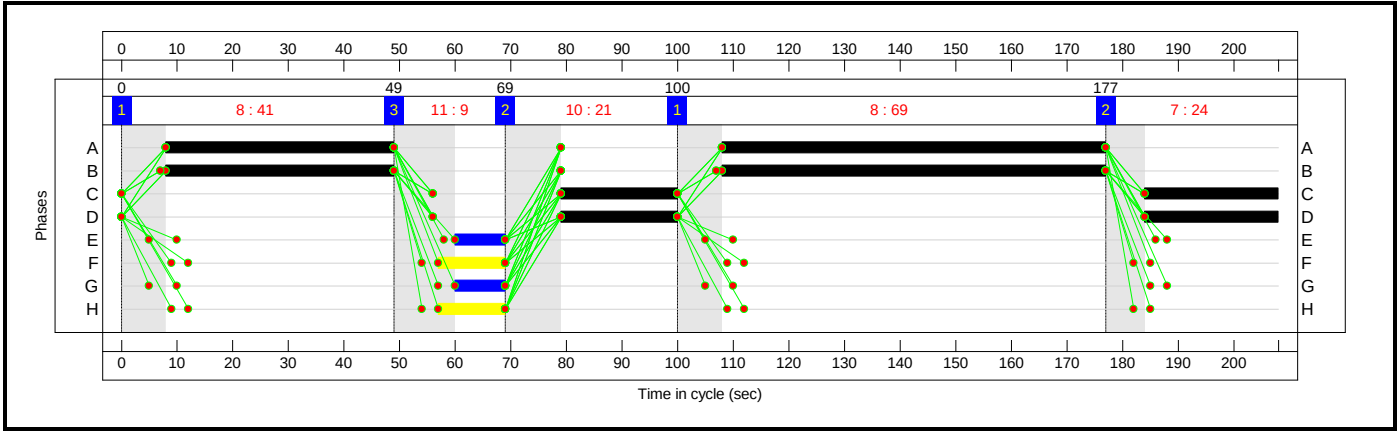
Stage Sequence Diagram



Stage Timings

Stage	1	3	2	1	2
Duration	41	9	21	69	24
Change Point	0	49	69	100	177

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

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	-	-		-	-	-	-	-	-	97.7%
A62/Dean Ln/Old Church St	-	-	N/A	-	-		-	-	-	-	-	-	97.7%
1/1	A62 (W) Ahead Left	U	N/A	N/A	A		2	110	-	950	1819	979	97.0%
1/2+1/3	A62 (W) Ahead Right	U+O	N/A	N/A	A		2	110	-	1100	2055:1868	971+155	97.7 : 97.7%
2/1	A62 (E) Ahead Left	U	N/A	N/A	B		2	110	-	414	1915	1031	40.1%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B		2	110	-	476	2055:1868	1045+65	42.9 : 42.9%
3/1	Dean Ln Left Right Ahead	O	N/A	N/A	C		2	45	-	383	1995	451	85.0%
4/1	Old Church St Right Left Ahead	O	N/A	N/A	D		2	45	-	422	1920	434	97.3%
5/1		U	N/A	N/A	-		-	-	-	339	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1008	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	471	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	505	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1022	Inf	Inf	0.0%

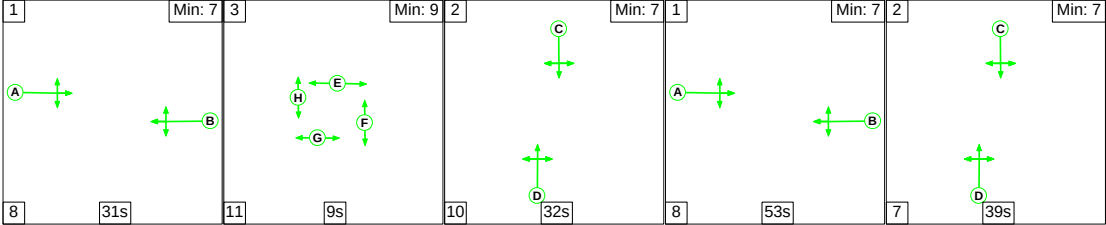
Full Input Data And Results

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	-	-	175	0	80	26.1	32.2	0.7	58.9	-	-	-	-
A62/Dean Ln/Old Church St	-	-	175	0	80	26.1	32.2	0.7	58.9	-	-	-	-
1/1	950	950	-	-	-	6.4	9.7	-	16.1	61.0	31.9	9.7	41.6
1/2+1/3	1100	1100	149	0	2	7.3	11.4	0.2	18.8	61.6	36.7	11.4	48.1
2/1	414	414	-	-	-	1.7	0.3	-	2.0	17.7	8.4	0.3	8.7
2/2+2/3	476	476	0	0	28	1.9	0.4	0.3	2.6	20.0	9.5	0.4	9.8
3/1	383	383	5	0	41	4.1	2.6	0.1	6.9	64.5	10.9	2.6	13.5
4/1	422	422	20	0	10	4.7	7.7	0.1	12.5	106.4	12.4	7.7	20.2
5/1	339	339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1008	1008	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	471	471	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	505	505	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1020	1020	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -8.6 Total Delay for Signalled Lanes (pcuHr): 58.95 Cycle Time (s): 208 PRC Over All Lanes (%): -8.6 Total Delay Over All Lanes(pcuHr): 58.95													

Full Input Data And Results

Scenario 5: 'Future Year + Dev AM' (FG5: 'Base + Com Dev + Dev AM', Plan 2: 'Double Cycle')

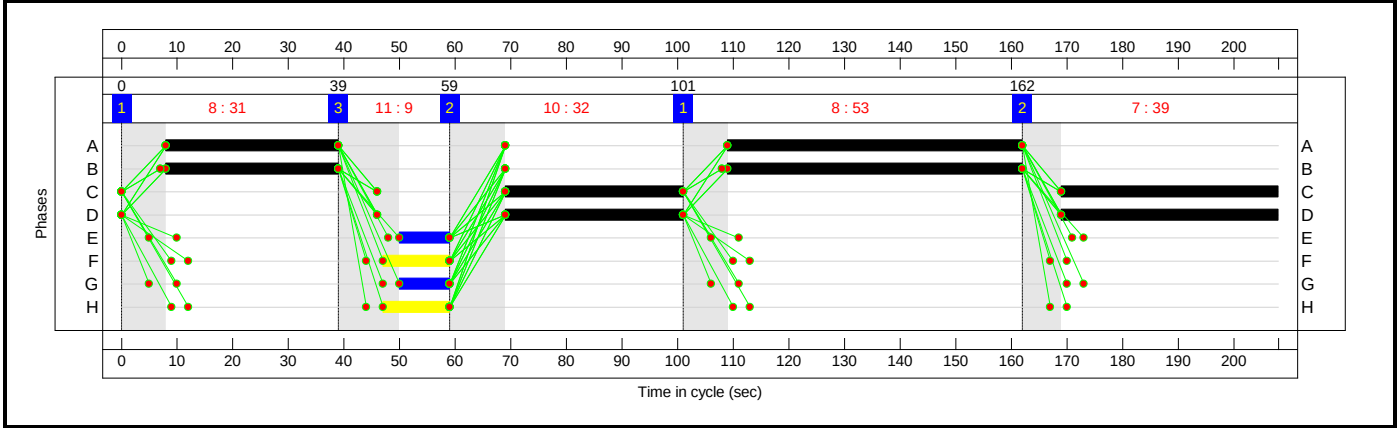
Stage Sequence Diagram



Stage Timings

Stage	1	3	2	1	2
Duration	31	9	32	53	39
Change Point	0	39	59	101	162

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

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	-	-		-	-	-	-	-	-	90.4%
A62/Dean Ln/Old Church St	-	-	N/A	-	-		-	-	-	-	-	-	90.4%
1/1	A62 (W) Ahead Left	U	N/A	N/A	A		2	84	-	288	1811	749	38.5%
1/2+1/3	A62 (W) Ahead Right	U+O	N/A	N/A	A		2	84	-	346	2055:1868	836+27	40.0 : 40.0%
2/1	A62 (E) Ahead Left	U	N/A	N/A	B		2	84	-	694	1914	791	87.7%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B		2	84	-	771	2055:1868	820+33	90.4 : 90.4%
3/1	Dean Ln Left Right Ahead	O	N/A	N/A	C		2	71	-	447	1984	696	64.2%
4/1	Old Church St Right Left Ahead	O	N/A	N/A	D		2	71	-	357	1809	405	88.1%
5/1		U	N/A	N/A	-		-	-	-	187	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	453	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	818	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	867	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	277	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	301	Inf	Inf	0.0%

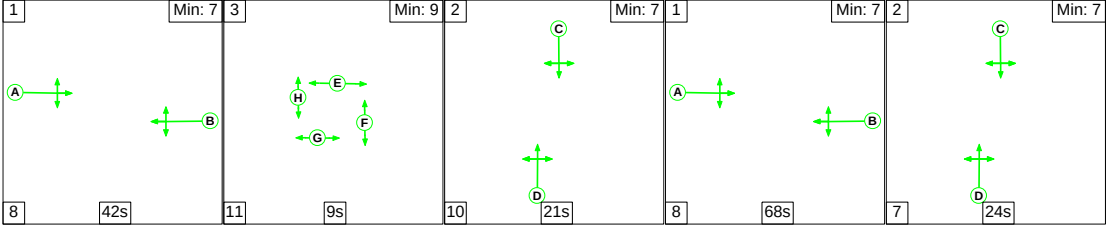
Full Input Data And Results

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	-	-	396	0	59	22.2	12.4	0.8	35.4	-	-	-	-
A62/Dean Ln/Old Church St	-	-	396	0	59	22.2	12.4	0.8	35.4	-	-	-	-
1/1	288	288	-	-	-	1.7	0.3	-	2.0	25.5	6.6	0.3	6.9
1/2+1/3	346	346	0	0	11	2.1	0.3	0.1	2.5	26.2	7.7	0.3	8.0
2/1	694	694	-	-	-	5.5	3.3	-	8.8	45.9	20.8	3.3	24.2
2/2+2/3	771	771	29	0	1	6.2	4.3	0.0	10.5	49.0	23.3	4.3	27.6
3/1	447	447	176	0	3	3.5	0.9	0.0	4.4	35.5	10.8	0.9	11.7
4/1	357	357	191	0	44	3.2	3.3	0.7	7.1	71.8	10.0	3.3	13.3
5/1	187	187	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	453	453	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	818	818	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	867	867	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	277	277	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	301	301	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -0.5 Total Delay for Signalled Lanes (pcuHr): 35.42 Cycle Time (s): 208 PRC Over All Lanes (%): -0.5 Total Delay Over All Lanes(pcuHr): 35.42													

Full Input Data And Results

Scenario 6: 'Future Year + Dev PM' (FG6: 'Base + Com Dev + Dev PM', Plan 2: 'Double Cycle')

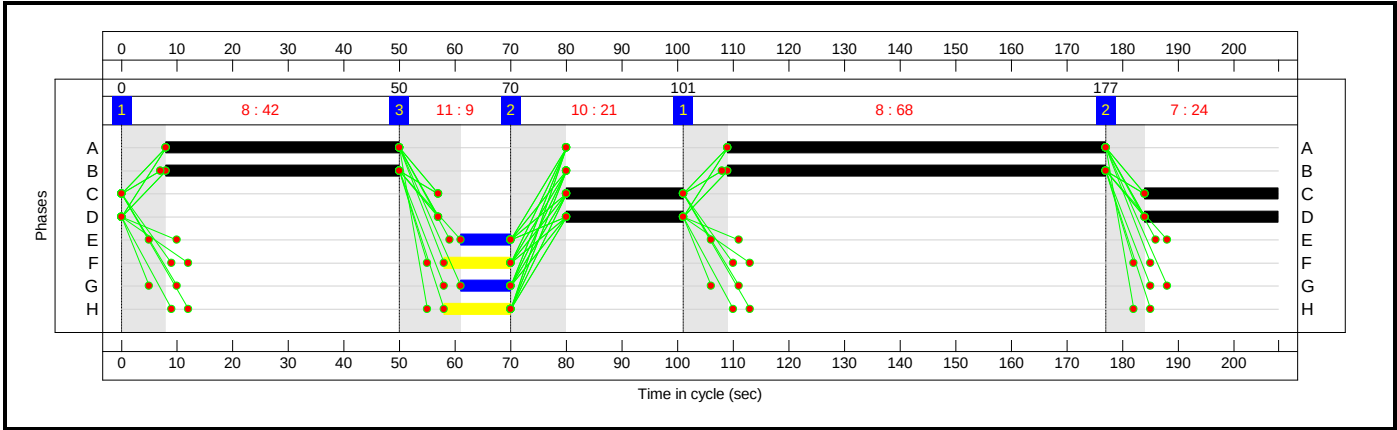
Stage Sequence Diagram



Stage Timings

Stage	1	3	2	1	2
Duration	42	9	21	68	24
Change Point	0	50	70	101	177

Signal Timings Diagram



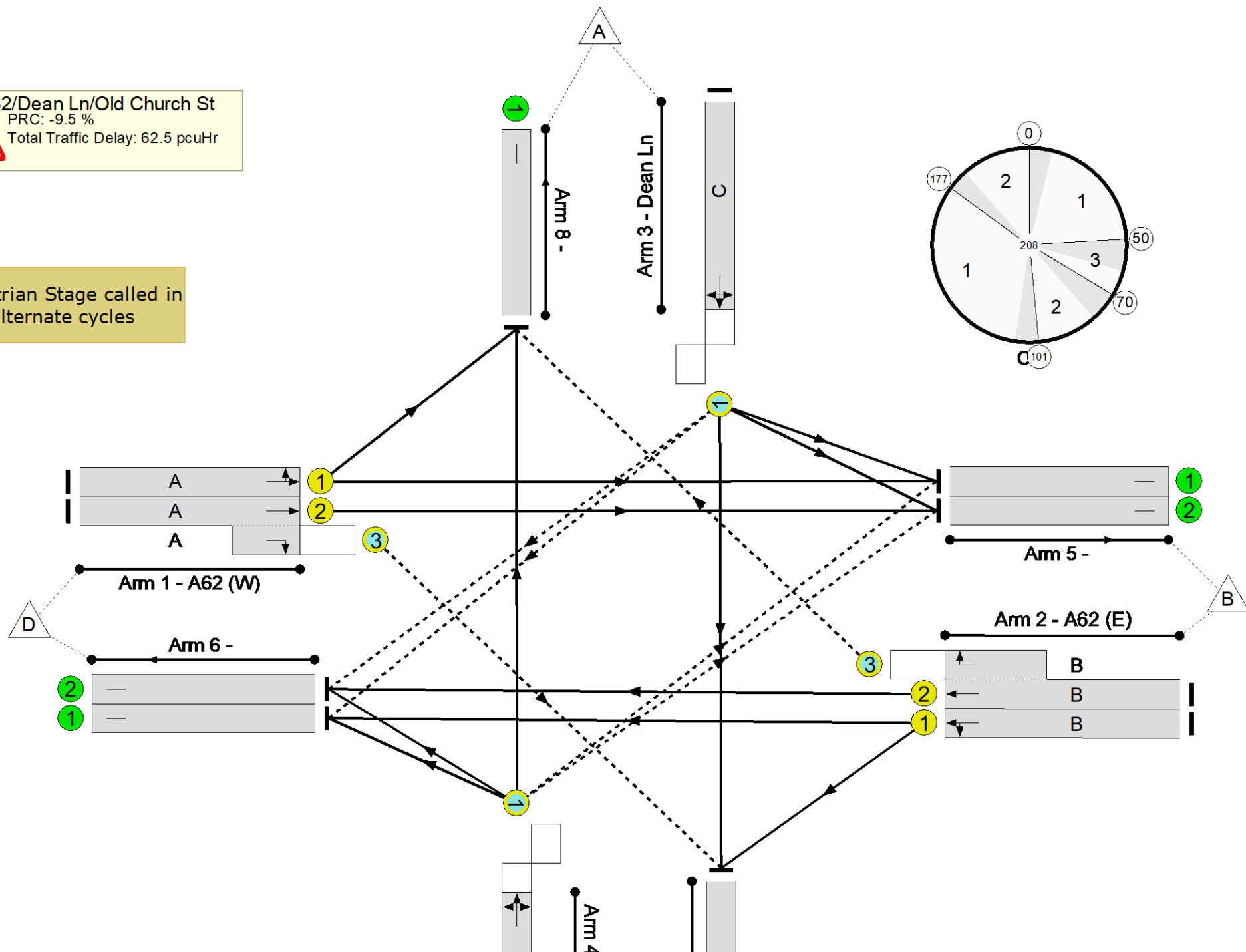
Full Input Data And Results

Network Layout Diagram

A62/Dean Ln/Old Church St
 PRC: -9.5 %
 Total Traffic Delay: 62.5 pcuHr



Pedestrian Stage called in
 alternate cycles



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	-	-		-	-	-	-	-	-	98.5%
A62/Dean Ln/Old Church St	-	-	N/A	-	-		-	-	-	-	-	-	98.5%
1/1	A62 (W) Ahead Left	U	N/A	N/A	A		2	110	-	959	1820	980	97.9%
1/2+1/3	A62 (W) Ahead Right	U+O	N/A	N/A	A		2	110	-	1109	2055:1868	972+153	98.5 : 98.5%
2/1	A62 (E) Ahead Left	U	N/A	N/A	B		2	110	-	429	1915	1031	41.6%
2/2+2/3	A62 (E) Ahead Right	U+O	N/A	N/A	B		2	110	-	492	2055:1868	1047+63	44.3 : 44.3%
3/1	Dean Ln Left Right Ahead	O	N/A	N/A	C		2	45	-	383	1995	451	85.0%
4/1	Old Church St Right Left Ahead	O	N/A	N/A	D		2	45	-	422	1920	434	97.3%
5/1		U	N/A	N/A	-		-	-	-	348	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1017	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	486	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	521	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1022	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	-	-	173	0	81	26.5	35.2	0.8	62.5	-	-	-	-
A62/Dean Ln/Old Church St	-	-	173	0	81	26.5	35.2	0.8	62.5	-	-	-	-
1/1	959	959	-	-	-	6.5	11.1	-	17.6	66.1	32.5	11.1	43.6
1/2+1/3	1109	1109	149	0	2	7.4	13.0	0.2	20.6	67.0	37.6	13.0	50.7
2/1	429	429	-	-	-	1.8	0.4	-	2.1	17.9	8.8	0.4	9.2
2/2+2/3	492	492	0	0	28	2.0	0.4	0.3	2.8	20.1	9.9	0.4	10.3
3/1	383	383	5	0	41	4.1	2.6	0.1	6.9	64.5	10.7	2.6	13.4
4/1	422	422	19	0	11	4.7	7.7	0.1	12.5	106.9	12.4	7.7	20.1
5/1	348	348	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1017	1017	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	486	486	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	521	521	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1020	1020	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -9.5 Total Delay for Signalled Lanes (pcuHr): 62.53 Cycle Time (s): 208 PRC Over All Lanes (%): -9.5 Total Delay Over All Lanes(pcuHr): 62.53													