

APPENDIX K

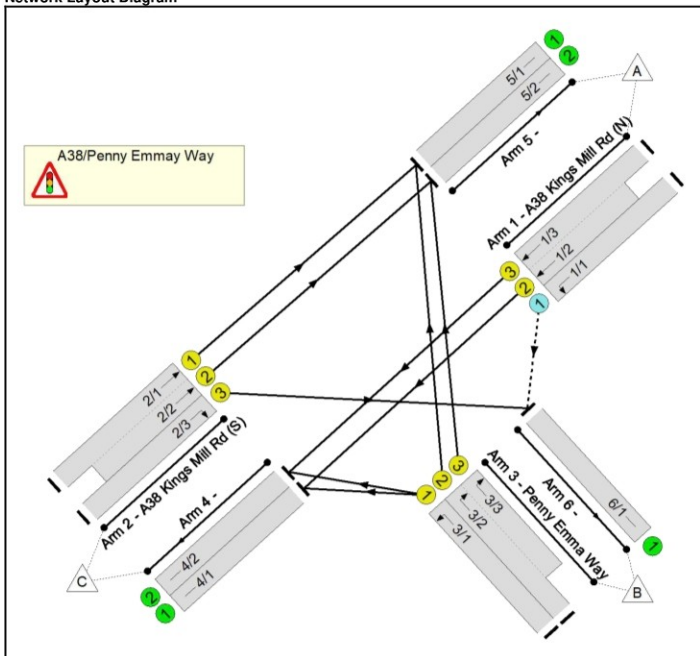
JUNCTION 1: A38/PENNY EMMA WAY SIGNAL CONTROLLED
JUNCTION

Full Input Data And Results
Full Input Data And Results

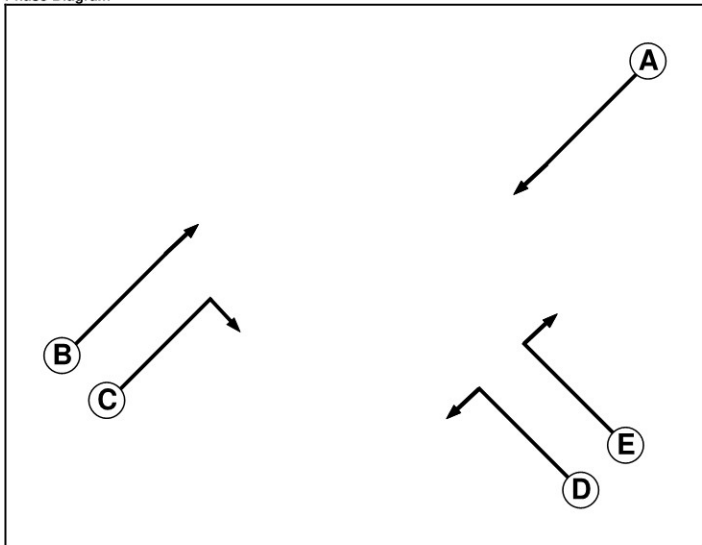
User and Project Details

Project:	Newark Road, Sutton in Ashfield
Title:	A38 Kingsmill Road East/Penny Emma Way T-Junction
Location:	
Additional detail:	
File name:	Jct 1 - A38-Penny Emmay Way Existing LinSig Model.lsg3x
Author:	
Company:	ADC Infrastructure Limited
Address:	City Buildings, Carrington Street, Nottingham NG1 7FG

Network Layout Diagram



Phase Diagram



Phase Input Data

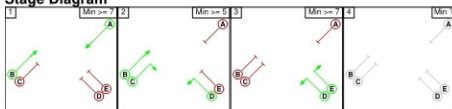
Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7

Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	E
Terminating Phase	A			7	9	9
	B					7
	C	7				7
	D	6				
	E	6	6	6		

Phases in Stage

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

Stage Diagram**Phase Delays**

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

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		9	9	X
	2	7		7	X
	3	6	6		X
	4	X	X	X	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A38/Penny Emmay Way											
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 (A38 Kings Mill Rd (N))	6/1 (Left)	715	0	2/3	0.22	All	-	-	-	-	-

Full Input Data And Results

Lane Input Data

Junction: A38/Penny Emma Way												
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 (A38 Kings Mill Rd (N))	O		2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Left	20.00
1/2 (A38 Kings Mill Rd (N))	U	A	2	3	13.9	Geom	-	3.00	0.00	Y	Arm 4 Ahead	Inf
1/3 (A38 Kings Mill Rd (N))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Ahead	Inf
2/1 (A38 Kings Mill Rd (S))	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
2/2 (A38 Kings Mill Rd (S))	U	B	2	3	13.9	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
2/3 (A38 Kings Mill Rd (S))	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Right	15.00
3/1 (Penny Emma Way)	U	D	2	3	14.8	Geom	-	3.50	0.00	Y	Arm 4 Left	20.00
3/2 (Penny Emma Way)	U	E	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Right	12.00
3/3 (Penny Emma Way)	U	E	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 5 Right	12.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	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	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 Observed AM'	08:00	09:00	01:00	
2: '2022 Observed PM'	17:00	18:00	01:00	
3: '2032 Bkg AM'	08:00	09:00	01:00	
4: '2032 Bkg PM'	17:00	18:00	01:00	
5: '2032 WD AM'	08:00	09:00	01:00	
6: '2032 WD PM'	17:00	18:00	01:00	

Scenario 1: '2022 Observed AM' (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	158	1058	1216
	B	116	0	322	438
	C	1065	383	0	1448
	Tot.	1181	541	1380	3102

Traffic Lane Flows

Lane	Scenario 1: 2022 Observed AM
Junction: A38/Penny Emmay Way	
1/1	158
1/2 (short)	529
1/3 (with short)	1058(In) 529(Out)
2/1 (with short)	1065(In) 533(Out)
2/2 (short)	532
2/3	383
3/1	322
3/2 (with short)	116(In) 58(Out)
3/3 (short)	58
4/1	690
4/2	690
5/1	591
5/2	590
6/1	541

Lane Saturation Flows

Junction: A38/Penny Emma Way								
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 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 6 Left	20.00	100.0 %	1781	1781
1/2 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/3 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
2/1 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/2 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/3 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 6 Right	15.00	100.0 %	1741	1741
3/1 (Penny Emma Way)	3.50	0.00	Y	Arm 4 Left	20.00	100.0 %	1828	1828
3/2 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2022 Observed PM' (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	114	995	1109
	B	229	0	456	685
	C	1118	258	0	1376
	Tot.	1347	372	1451	3170

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2022 Observed PM
Junction: A38/Penny Emmay Way	
1/1	114
1/2 (short)	498
1/3 (with short)	995(In) 497(Out)
2/1 (with short)	1118(In) 559(Out)
2/2 (short)	559
2/3	258
3/1	456
3/2 (with short)	229(In) 114(Out)
3/3 (short)	115
4/1	726
4/2	725
5/1	673
5/2	674
6/1	372

Lane Saturation Flows

Junction: A38/Penny Emma Way								
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 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 6 Left	20.00	100.0 %	1781	1781
1/2 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/3 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
2/1 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/2 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/3 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 6 Right	15.00	100.0 %	1741	1741
3/1 (Penny Emma Way)	3.50	0.00	Y	Arm 4 Left	20.00	100.0 %	1828	1828
3/2 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2032 Bkg AM' (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	172	1150	1322
	B	126	0	350	476
	C	1158	417	0	1575
	Tot.	1284	589	1500	3373

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2032 Bkg AM
Junction: A38/Penny Emmay Way	
1/1	172
1/2 (short)	575
1/3 (with short)	1150(In) 575(Out)
2/1 (with short)	1158(In) 579(Out)
2/2 (short)	579
2/3	417
3/1	350
3/2 (with short)	126(In) 63(Out)
3/3 (short)	63
4/1	750
4/2	750
5/1	642
5/2	642
6/1	589

Lane Saturation Flows

Junction: A38/Penny Emma Way								
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 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 6 Left	20.00	100.0 %	1781	1781
1/2 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/3 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
2/1 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/2 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/3 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 6 Right	15.00	100.0 %	1741	1741
3/1 (Penny Emma Way)	3.50	0.00	Y	Arm 4 Left	20.00	100.0 %	1828	1828
3/2 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2032 Bkg PM' (FG4: '2032 Bkg PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	124	1081	1205
	B	249	0	495	744
	C	1215	280	0	1495
	Tot.	1464	404	1576	3444

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2032 Bkg PM
Junction: A38/Penny Emmay Way	
1/1	124
1/2 (short)	541
1/3 (with short)	1081(In) 540(Out)
2/1 (with short)	1215(In) 608(Out)
2/2 (short)	607
2/3	280
3/1	495
3/2 (with short)	249(In) 124(Out)
3/3 (short)	125
4/1	788
4/2	788
5/1	732
5/2	732
6/1	404

Lane Saturation Flows

Junction: A38/Penny Emma Way								
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 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 6 Left	20.00	100.0 %	1781	1781
1/2 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/3 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
2/1 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/2 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/3 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 6 Right	15.00	100.0 %	1741	1741
3/1 (Penny Emma Way)	3.50	0.00	Y	Arm 4 Left	20.00	100.0 %	1828	1828
3/2 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2032 WD AM' (FG5: '2032 WD AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	173	1150	1323
	B	130	0	358	488
	C	1158	419	0	1577
	Tot.	1288	592	1508	3388

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2032 WD AM
Junction: A38/Penny Emmay Way	
1/1	173
1/2 (short)	575
1/3 (with short)	1150(In) 575(Out)
2/1 (with short)	1158(In) 579(Out)
2/2 (short)	579
2/3	419
3/1	358
3/2 (with short)	130(In) 65(Out)
3/3 (short)	65
4/1	754
4/2	754
5/1	644
5/2	644
6/1	592

Lane Saturation Flows

Junction: A38/Penny Emma Way								
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 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 6 Left	20.00	100.0 %	1781	1781
1/2 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/3 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
2/1 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/2 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/3 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 6 Right	15.00	100.0 %	1741	1741
3/1 (Penny Emma Way)	3.50	0.00	Y	Arm 4 Left	20.00	100.0 %	1828	1828
3/2 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2032 WD PM' (FG6: '2032 WD PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	128	1081	1209
	B	250	0	497	747
	C	1215	289	0	1504
	Tot.	1465	417	1578	3460

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2032 WD PM
Junction: A38/Penny Emmay Way	
1/1	128
1/2 (short)	541
1/3 (with short)	1081(In) 540(Out)
2/1 (with short)	1215(In) 608(Out)
2/2 (short)	607
2/3	289
3/1	497
3/2 (with short)	250(In) 125(Out)
3/3 (short)	125
4/1	789
4/2	789
5/1	733
5/2	732
6/1	417

Lane Saturation Flows

Junction: A38/Penny Emma Way								
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 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 6 Left	20.00	100.0 %	1781	1781
1/2 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/3 (A38 Kings Mill Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
2/1 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/2 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
2/3 (A38 Kings Mill Rd (S))	3.00	0.00	Y	Arm 6 Right	15.00	100.0 %	1741	1741
3/1 (Penny Emma Way)	3.50	0.00	Y	Arm 4 Left	20.00	100.0 %	1828	1828
3/2 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Right	12.00	100.0 %	1702	1702
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2022 Observed AM' (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

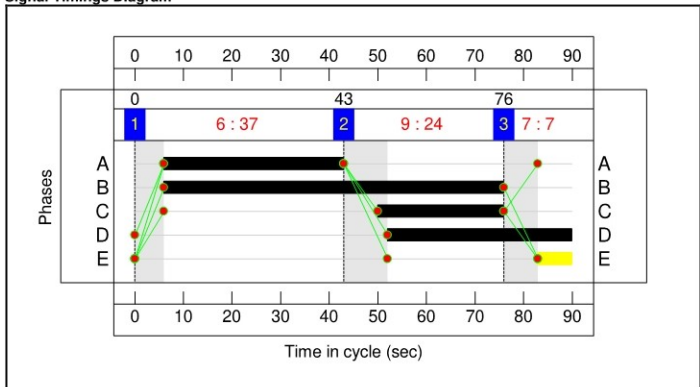
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	37	24	7
Change Point	0	43	76

Signal Timings 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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	76.1%
A38/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	76.1%
1/1	A38 Kings Mill Rd (N) Left	O	N/A	N/A	-		-	-	-	158	1781	631	25.1%
1/3+1/2	A38 Kings Mill Rd (N) Ahead	U	N/A	N/A	A		1	37	-	1058	1915:1915	695+695	76.1 : 76.1%
2/1+2/2	A38 Kings Mill Rd (S) Ahead	U	N/A	N/A	B		1	70	-	1065	1915:1915	958+957	55.6 : 55.6%
2/3	A38 Kings Mill Rd (S) Right	U	N/A	N/A	C		1	26	-	383	1741	522	73.3%
3/1	Penny Emma Way Left	U	N/A	N/A	D		1	38	-	322	1828	792	40.6%
3/2+3/3	Penny Emma Way Right	U	N/A	N/A	E		1	7	-	116	1702:1702	151+151	38.3 : 38.3%
4/1		U	N/A	N/A	-		-	-	-	690	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	690	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	591	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	590	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	541	Inf	Inf	0.0%

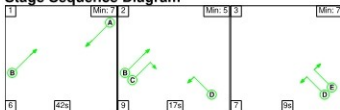
Full Input Data And Results

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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	47	111	0	12.7	4.4	0.0	17.1	-	-	-	-
A38/Penny Emma Way	-	-	47	111	0	12.7	4.4	0.0	17.1	-	-	-	-
1/1	158	158	47	111	0	0.0	0.2	-	0.2	3.8	0.0	0.2	0.2
1/3+1/2	1058	1058	-	-	-	6.1	1.6	-	7.7	26.1	10.4	1.6	12.0
2/1+2/2	1065	1065	-	-	-	0.8	0.6	-	1.4	4.9	3.8	0.6	4.5
2/3	383	383	-	-	-	3.0	1.3	-	4.4	40.9	8.5	1.3	9.9
3/1	322	322	-	-	-	1.6	0.3	-	1.9	21.4	5.5	0.3	5.8
3/2+3/3	116	116	-	-	-	1.2	0.3	-	1.6	48.3	1.4	0.3	1.7
4/1	690	690	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	690	690	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	591	591	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	541	541	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		18.3	Total Delay for Signalled Lanes (pcuHr):		16.95	Cycle Time (s): 90				
			PRC Over All Lanes (%):		18.3	Total Delay Over All Lanes (pcuHr):		17.11					

Full Input Data And Results

Scenario 2: '2022 Observed PM' (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')

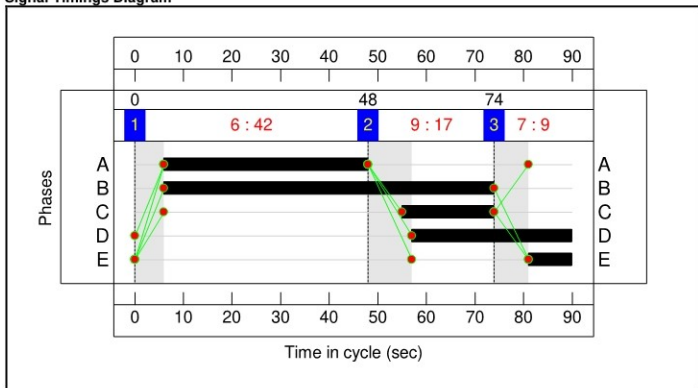
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	42	17	9
Change Point	0	48	74

Signal Timings 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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	66.7%
A38/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	66.7%
1/1	A38 Kings Mill Rd (N) Left	O	N/A	N/A	-		-	-	-	114	1781	658	17.3%
1/3+1/2	A38 Kings Mill Rd (N) Ahead	U	N/A	N/A	A		1	42	-	995	1915:1915	748+749	66.5 : 66.5%
2/1+2/2	A38 Kings Mill Rd (S) Ahead	U	N/A	N/A	B		1	68	-	1118	1915:1915	957+957	58.4 : 58.4%
2/3	A38 Kings Mill Rd (S) Right	U	N/A	N/A	C		1	19	-	258	1741	387	66.7%
3/1	Penny Emma Way Left	U	N/A	N/A	D		1	33	-	456	1828	691	66.0%
3/2+3/3	Penny Emma Way Right	U	N/A	N/A	E		1	9	-	229	1702:1702	189+189	60.3 : 60.8%
4/1		U	N/A	N/A	-		-	-	-	726	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	725	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	673	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	674	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	372	Inf	Inf	0.0%

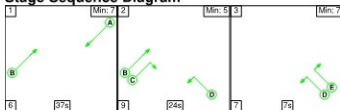
Full Input Data And Results

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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	25	89	0	13.3	4.5	0.0	17.8	-	-	-	-
A38/Penny Emma Way	-	-	25	89	0	13.3	4.5	0.0	17.8	-	-	-	-
1/1	114	114	25	89	0	0.0	0.1	-	0.1	3.3	0.0	0.1	0.1
1/3+1/2	995	995	-	-	-	4.6	1.0	-	5.6	20.2	8.7	1.0	9.7
2/1+2/2	1118	1118	-	-	-	1.1	0.7	-	1.8	5.7	4.5	0.7	5.2
2/3	258	258	-	-	-	2.3	1.0	-	3.3	45.7	5.9	1.0	6.9
3/1	456	456	-	-	-	2.9	1.0	-	3.9	30.8	9.4	1.0	10.3
3/2+3/3	229	229	-	-	-	2.4	0.8	-	3.2	50.1	2.7	0.8	3.5
4/1	726	726	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	725	725	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	673	673	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	674	674	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	372	372	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		35.0	Total Delay for Signalled Lanes (pcuHr):		17.71	Cycle Time (s):		90		
			PRC Over All Lanes (%):		35.0	Total Delay Over All Lanes(pcuHr):		17.82					

Full Input Data And Results

Scenario 3: '2032 Bkg AM' (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')

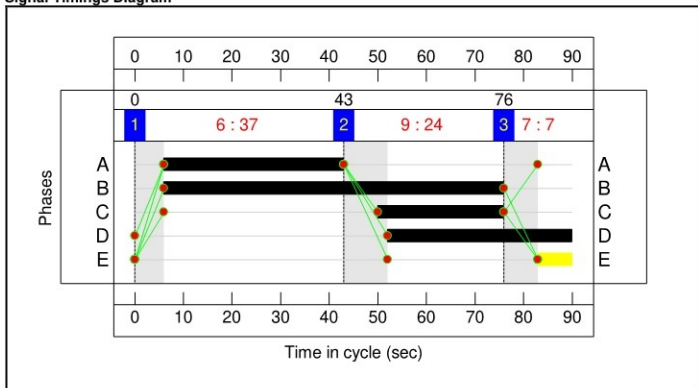
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	37	24	7
Change Point	0	43	76

Signal Timings 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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
A38/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
1/1	A38 Kings Mill Rd (N) Left	O	N/A	N/A	-		-	-	-	172	1781	623	27.6%
1/3+1/2	A38 Kings Mill Rd (N) Ahead	U	N/A	N/A	A		1	37	-	1150	1915:1915	695+695	82.7 : 82.7%
2/1+2/2	A38 Kings Mill Rd (S) Ahead	U	N/A	N/A	B		1	70	-	1158	1915:1915	957+957	60.5 : 60.5%
2/3	A38 Kings Mill Rd (S) Right	U	N/A	N/A	C		1	26	-	417	1741	522	79.8%
3/1	Penny Emma Way Left	U	N/A	N/A	D		1	38	-	350	1828	792	44.2%
3/2+3/3	Penny Emma Way Right	U	N/A	N/A	E		1	7	-	126	1702:1702	151+151	41.6 : 41.6%
4/1		U	N/A	N/A	-		-	-	-	750	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	750	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	642	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	642	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	589	Inf	Inf	0.0%

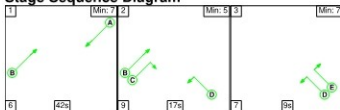
Full Input Data And Results

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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	52	120	0	14.2	6.0	0.0	20.2	-	-	-	-
A38/Penny Emma Way	-	-	52	120	0	14.2	6.0	0.0	20.2	-	-	-	-
1/1	172	172	52	120	0	0.0	0.2	-	0.2	4.0	0.0	0.2	0.2
1/3+1/2	1150	1150	-	-	-	6.9	2.3	-	9.2	28.8	11.8	2.3	14.2
2/1+2/2	1158	1158	-	-	-	0.9	0.8	-	1.7	5.3	4.3	0.8	5.1
2/3	417	417	-	-	-	3.4	1.9	-	5.3	45.5	9.5	1.9	11.4
3/1	350	350	-	-	-	1.7	0.4	-	2.1	21.9	6.1	0.4	6.5
3/2+3/3	126	126	-	-	-	1.4	0.4	-	1.7	49.0	1.5	0.4	1.8
4/1	750	750	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	750	750	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	642	642	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	642	642	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	589	589	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		8.8	Total Delay for Signalled Lanes (pcuHr):		20.01	Cycle Time (s): 90				
			PRC Over All Lanes (%):		8.8	Total Delay Over All Lanes (pcuHr):		20.20					

Full Input Data And Results

Scenario 4: '2032 Bkg PM' (FG4: '2032 Bkg PM', Plan 1: 'Network Control Plan 1')

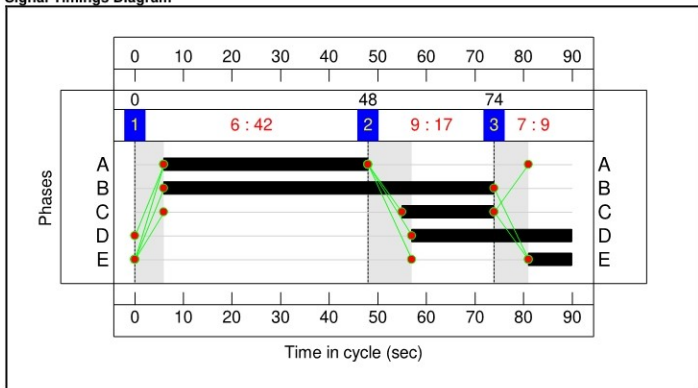
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	42	17	9
Change Point	0	48	74

Signal Timings Diagram



Full Input Data And Results

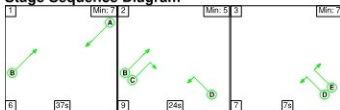
Network Results

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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	72.4%
A38/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	72.4%
1/1	A38 Kings Mill Rd (N) Left	O	N/A	N/A	-		-	-	-	124	1781	653	19.0%
1/3+1/2	A38 Kings Mill Rd (N) Ahead	U	N/A	N/A	A		1	42	-	1081	1915:1915	748+749	72.2 : 72.2%
2/1+2/2	A38 Kings Mill Rd (S) Ahead	U	N/A	N/A	B		1	68	-	1215	1915:1915	958+957	63.4 : 63.4%
2/3	A38 Kings Mill Rd (S) Right	U	N/A	N/A	C		1	19	-	280	1741	387	72.4%
3/1	Penny Emma Way Left	U	N/A	N/A	D		1	33	-	495	1828	691	71.7%
3/2+3/3	Penny Emma Way Right	U	N/A	N/A	E		1	9	-	249	1702:1702	189+189	65.6 : 66.1%
4/1		U	N/A	N/A	-		-	-	-	788	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	788	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	732	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	732	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	404	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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	28	96	0	14.8	5.8	0.0	20.6	-	-	-	-
A38/Penny Emma Way	-	-	28	96	0	14.8	5.8	0.0	20.6	-	-	-	-
1/1	124	124	28	96	0	0.0	0.1	-	0.1	3.4	0.0	0.1	0.1
1/3+1/2	1081	1081	-	-	-	5.1	1.3	-	6.4	21.4	9.8	1.3	11.1
2/1+2/2	1215	1215	-	-	-	1.2	0.9	-	2.1	6.2	5.1	0.9	5.9
2/3	280	280	-	-	-	2.5	1.3	-	3.8	48.9	6.5	1.3	7.7
3/1	495	495	-	-	-	3.3	1.2	-	4.5	33.0	10.4	1.2	11.7
3/2+3/3	249	249	-	-	-	2.7	0.9	-	3.6	52.1	3.0	0.9	3.9
4/1	788	788	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	788	788	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	732	732	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	732	732	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	404	404	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		24.4	Total Delay for Signalled Lanes (pcuHr):		20.45	Cycle Time (s):		90		
			PRC Over All Lanes (%):		24.4	Total Delay Over All Lanes (pcuHr):		20.56					

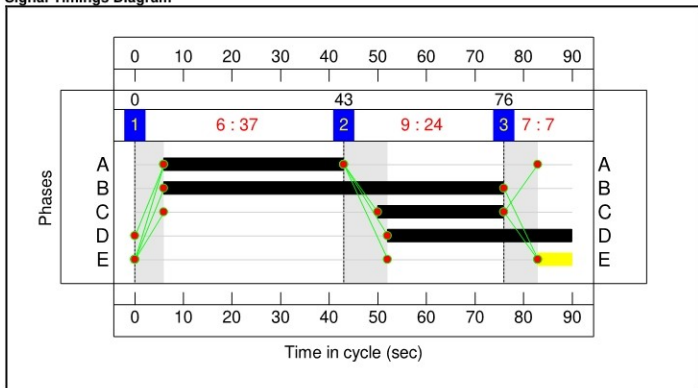
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	37	24	7
Change Point	0	43	76

Signal Timings 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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
A38/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
1/1	A38 Kings Mill Rd (N) Left	O	N/A	N/A	-		-	-	-	173	1781	623	27.8%
1/3+1/2	A38 Kings Mill Rd (N) Ahead	U	N/A	N/A	A		1	37	-	1150	1915:1915	695+695	82.7 : 82.7%
2/1+2/2	A38 Kings Mill Rd (S) Ahead	U	N/A	N/A	B		1	70	-	1158	1915:1915	957+957	60.5 : 60.5%
2/3	A38 Kings Mill Rd (S) Right	U	N/A	N/A	C		1	26	-	419	1741	522	80.2%
3/1	Penny Emma Way Left	U	N/A	N/A	D		1	38	-	358	1828	792	45.2%
3/2+3/3	Penny Emma Way Right	U	N/A	N/A	E		1	7	-	130	1702:1702	151+151	43.0 : 43.0%
4/1		U	N/A	N/A	-		-	-	-	754	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	754	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	644	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	644	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	592	Inf	Inf	0.0%

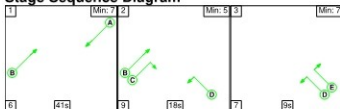
Full Input Data And Results

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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	52	121	0	14.4	6.0	0.0	20.4	-	-	-	-
A38/Penny Emma Way	-	-	52	121	0	14.4	6.0	0.0	20.4	-	-	-	-
1/1	173	173	52	121	0	0.0	0.2	-	0.2	4.0	0.0	0.2	0.2
1/3+1/2	1150	1150	-	-	-	6.9	2.3	-	9.2	28.8	11.8	2.3	14.2
2/1+2/2	1158	1158	-	-	-	0.9	0.8	-	1.7	5.3	4.3	0.8	5.1
2/3	419	419	-	-	-	3.4	2.0	-	5.3	45.8	9.5	2.0	11.5
3/1	358	358	-	-	-	1.8	0.4	-	2.2	22.1	6.3	0.4	6.7
3/2+3/3	130	130	-	-	-	1.4	0.4	-	1.8	49.3	1.5	0.4	1.9
4/1	754	754	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	754	754	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	644	644	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	644	644	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	592	592	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		8.8	Total Delay for Signalled Lanes (pcuHr):		20.20	Cycle Time (s): 90				
			PRC Over All Lanes (%):		8.8	Total Delay Over All Lanes(pcuHr):		20.39					

Full Input Data And Results

Scenario 6: '2032 WD PM' (FG6: '2032 WD PM', Plan 1: 'Network Control Plan 1')

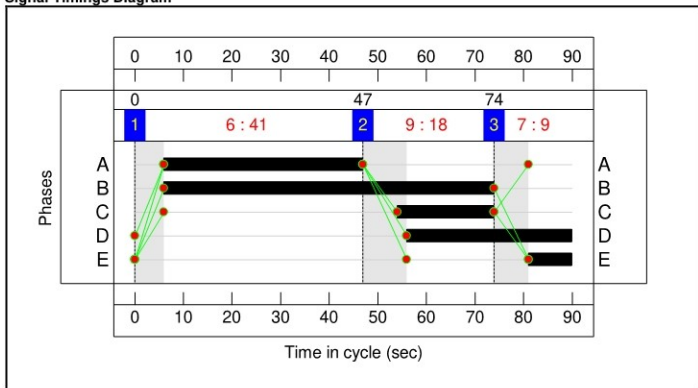
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	41	18	9
Change Point	0	47	74

Signal Timings 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: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	73.3%
A38/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	73.3%
1/1	A38 Kings Mill Rd (N) Left	O	N/A	N/A	-		-	-	-	128	1781	651	19.6%
1/3+1/2	A38 Kings Mill Rd (N) Ahead	U	N/A	N/A	A		1	41	-	1081	1915:1915	737+738	73.3 : 73.3%
2/1+2/2	A38 Kings Mill Rd (S) Ahead	U	N/A	N/A	B		1	68	-	1215	1915:1915	958+957	63.4 : 63.4%
2/3	A38 Kings Mill Rd (S) Right	U	N/A	N/A	C		1	20	-	289	1741	406	71.1%
3/1	Penny Emma Way Left	U	N/A	N/A	D		1	34	-	497	1828	711	69.9%
3/2+3/3	Penny Emma Way Right	U	N/A	N/A	E		1	9	-	250	1702:1702	189+189	66.1 : 66.1%
4/1		U	N/A	N/A	-		-	-	-	789	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	789	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	733	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	732	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	417	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A38 Kingsmill Road East/Penny Emma Way T-Junction	-	-	30	98	0	15.0	5.7	0.0	20.6	-	-	-	-
A38/Penny Emma Way	-	-	30	98	0	15.0	5.7	0.0	20.6	-	-	-	-
1/1	128	128	30	98	0	0.0	0.1	-	0.1	3.4	0.0	0.1	0.1
1/3+1/2	1081	1081	-	-	-	5.4	1.4	-	6.7	22.4	9.9	1.4	11.3
2/1+2/2	1215	1215	-	-	-	1.2	0.9	-	2.1	6.2	5.1	0.9	5.9
2/3	289	289	-	-	-	2.5	1.2	-	3.8	46.8	6.6	1.2	7.8
3/1	497	497	-	-	-	3.2	1.1	-	4.3	31.4	10.4	1.1	11.5
3/2+3/3	250	250	-	-	-	2.7	1.0	-	3.6	52.2	3.0	1.0	3.9
4/1	789	789	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	789	789	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	733	733	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	732	732	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	417	417	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		22.8	Total Delay for Signalled Lanes (pcuHr):		20.51	Cycle Time (s):		90		
			PRC Over All Lanes (%):		22.8	Total Delay Over All Lanes (pcuHr):		20.63					

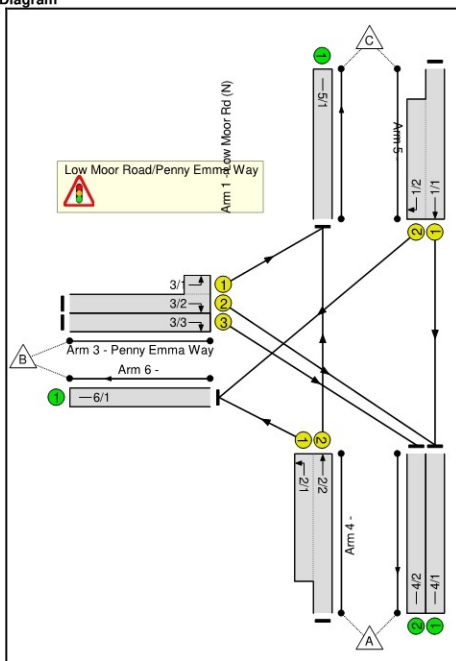
APPENDIX L

JUNCTION 2: B6021 LOWMOOR ROAD/PENNY EMMA
WAY/KIRKBY FOLLY ROAD SIGNAL CONTROLLED JUNCTION

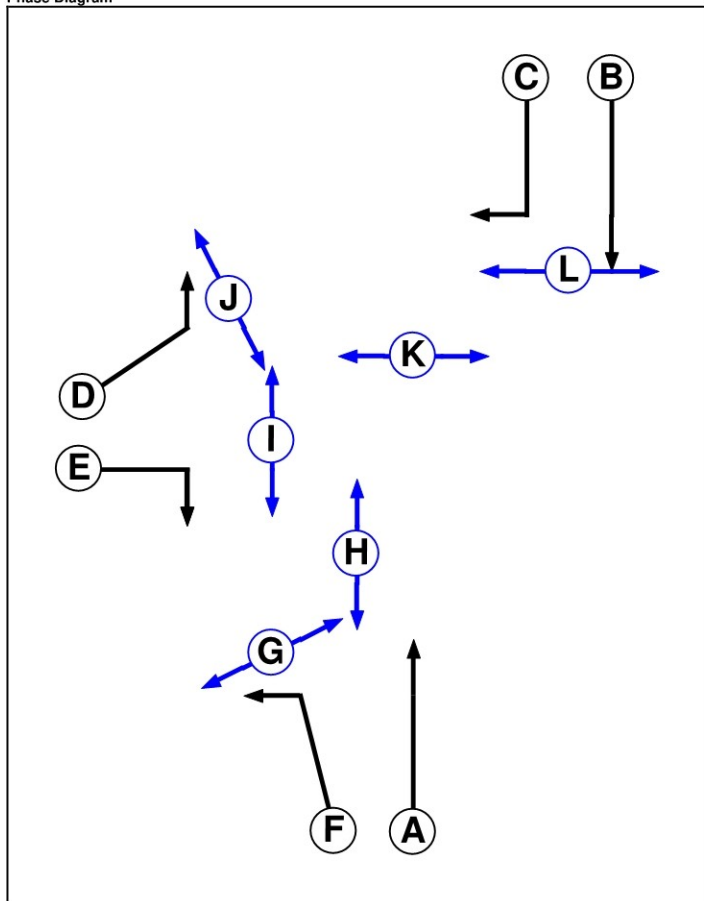
User and Project Details

Project:	Newark Road, Sutton in Ashfield
Title:	Low Moor Road/Penny Emma Way T-Junction
Location:	
Additional detail:	
File name:	Jct 2 - Low Moor Road-Penny Emma Way Existing LinSig Model.lsg3x
Author:	
Company:	ADC Infrastructure Limited
Address:	

Network Layout Diagram



Phase Diagram



Full Input Data And Results

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	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		5	4
H	Pedestrian		6	6
I	Pedestrian		6	6
J	Pedestrian		6	6
K	Pedestrian		5	4
L	Pedestrian		6	6

Phase Intergreens Matrix

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

Phases in Stage

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

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
2	1	G	Losing	1	1
2	1	K	Losing	1	1
2	3	G	Losing	1	1
3	1	K	Losing	1	1

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		9	9
	2	10		10
	3	7	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Low Moor Road/Penny Emma Way

There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Low Moor Road/Penny Emma Way												
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 (Low Moor Rd (N))	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Ahead	Inf
1/2 (Low Moor Rd (N))	U	C	2	3	11.7	Geom	-	3.00	0.00	Y	Arm 6 Right	12.00
2/1 (Low Moor Rd (S))	U	F	2	3	12.2	Geom	-	3.00	0.00	Y	Arm 6 Left	15.00
2/2 (Low Moor Rd (S))	U	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
3/1 (Penny Emma Way)	U	D	2	3	2.1	Geom	-	3.00	0.00	Y	Arm 5 Left	15.00
3/2 (Penny Emma Way)	U	E	2	3	60.0	Geom	-	3.00	0.00	N	Arm 4 Right	15.00
3/3 (Penny Emma Way)	U	E	2	3	7.0	Geom	-	3.00	0.00	Y	Arm 4 Right	15.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 Observed AM'	08:00	09:00	01:00	
2: '2022 Observed PM'	17:00	18:00	01:00	
3: '2032 Bkg AM'	08:00	09:00	01:00	
4: '2032 Bkg PM'	17:00	18:00	01:00	
5: '2032 WD AM'	08:00	09:00	01:00	
6: '2032 WD PM'	17:00	18:00	01:00	

Scenario 1: '2022 Observed AM' (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	319	487	806
	B	276	0	154	430
	C	580	308	0	888
	Tot.	856	627	641	2124

Traffic Lane Flows

Lane	Scenario 1: 2022 Observed AM
Junction: Low Moor Road/Penny Emma Way	
1/1 (with short)	888(In) 580(Out)
1/2 (short)	308
2/1 (short)	319
2/2 (with short)	806(In) 487(Out)
3/1 (short)	154
3/2 (with short)	270(In) 116(Out)
3/3	160
4/1	696
4/2	160
5/1	641
6/1	627

Lane Saturation Flows

Junction: Low Moor Road/Penny Emma Way								
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 (Low Moor Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (Low Moor Rd (N))	3.00	0.00	Y	Arm 6 Right	12.00	100.0 %	1702	1702
2/1 (Low Moor Rd (S))	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
2/2 (Low Moor Rd (S))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Left	15.00	100.0 %	1741	1741
3/2 (Penny Emma Way)	3.00	0.00	N	Arm 4 Right	15.00	100.0 %	1868	1868
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2022 Observed PM' (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	374	553	927
	B	286	0	337	623
	C	631	187	0	818
	Tot.	917	561	890	2368

Traffic Lane Flows

Lane	Scenario 2: 2022 Observed PM
Junction: Low Moor Road/Penny Emma Way	
1/1 (with short)	818(In) 631(Out)
1/2 (short)	187
2/1 (short)	374
2/2 (with short)	927(In) 553(Out)
3/1 (short)	337
3/2 (with short)	463(In) 126(Out)
3/3	160
4/1	757
4/2	160
5/1	890
6/1	561

Lane Saturation Flows

Junction: Low Moor Road/Penny Emma Way								
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 (Low Moor Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (Low Moor Rd (N))	3.00	0.00	Y	Arm 6 Right	12.00	100.0 %	1702	1702
2/1 (Low Moor Rd (S))	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
2/2 (Low Moor Rd (S))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Left	15.00	100.0 %	1741	1741
3/2 (Penny Emma Way)	3.00	0.00	N	Arm 4 Right	15.00	100.0 %	1868	1868
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2032 Bkg AM' (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	347	529	876
	B	300	0	167	467
	C	630	335	0	965
	Tot.	930	682	696	2308

Traffic Lane Flows

Lane	Scenario 3: 2032 Bkg AM
Junction: Low Moor Road/Penny Emma Way	
1/1 (with short)	965(In) 630(Out)
1/2 (short)	335
2/1 (short)	347
2/2 (with short)	876(In) 529(Out)
3/1 (short)	167
3/2 (with short)	307(In) 140(Out)
3/3	160
4/1	770
4/2	160
5/1	696
6/1	682

Lane Saturation Flows

Junction: Low Moor Road/Penny Emma Way								
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 (Low Moor Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (Low Moor Rd (N))	3.00	0.00	Y	Arm 6 Right	12.00	100.0 %	1702	1702
2/1 (Low Moor Rd (S))	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
2/2 (Low Moor Rd (S))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Left	15.00	100.0 %	1741	1741
3/2 (Penny Emma Way)	3.00	0.00	N	Arm 4 Right	15.00	100.0 %	1868	1868
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2032 Bkg PM' (FG4: '2032 Bkg PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	406	601	1007
	B	311	0	366	677
	C	686	203	0	889
	Tot.	997	609	967	2573

Traffic Lane Flows

Lane	Scenario 4: 2032 Bkg PM
Junction: Low Moor Road/Penny Emma Way	
1/1 (with short)	889(In) 686(Out)
1/2 (short)	203
2/1 (short)	406
2/2 (with short)	1007(In) 601(Out)
3/1 (short)	366
3/2 (with short)	517(In) 151(Out)
3/3	160
4/1	837
4/2	160
5/1	967
6/1	609

Lane Saturation Flows

Junction: Low Moor Road/Penny Emma Way								
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 (Low Moor Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (Low Moor Rd (N))	3.00	0.00	Y	Arm 6 Right	12.00	100.0 %	1702	1702
2/1 (Low Moor Rd (S))	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
2/2 (Low Moor Rd (S))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Left	15.00	100.0 %	1741	1741
3/2 (Penny Emma Way)	3.00	0.00	N	Arm 4 Right	15.00	100.0 %	1868	1868
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2032 WD AM' (FG5: '2032 WD AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	347	541	888
	B	300	0	170	470
	C	661	348	0	1009
	Tot.	961	695	711	2367

Traffic Lane Flows

Lane	Scenario 5: 2032 WD AM
Junction: Low Moor Road/Penny Emma Way	
1/1 (with short)	1009(In) 661(Out)
1/2 (short)	348
2/1 (short)	347
2/2 (with short)	888(In) 541(Out)
3/1 (short)	170
3/2 (with short)	310(In) 140(Out)
3/3	160
4/1	801
4/2	160
5/1	711
6/1	695

Lane Saturation Flows

Junction: Low Moor Road/Penny Emma Way								
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 (Low Moor Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (Low Moor Rd (N))	3.00	0.00	Y	Arm 6 Right	12.00	100.0 %	1702	1702
2/1 (Low Moor Rd (S))	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
2/2 (Low Moor Rd (S))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Left	15.00	100.0 %	1741	1741
3/2 (Penny Emma Way)	3.00	0.00	N	Arm 4 Right	15.00	100.0 %	1868	1868
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2032 WD PM' (FG6: '2032 WD PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired**Desired Flow :**

		Destination			
		A	B	C	Tot.
Origin	A	0	406	630	1036
	B	311	0	379	690
	C	696	207	0	903
	Tot.	1007	613	1009	2629

Traffic Lane Flows

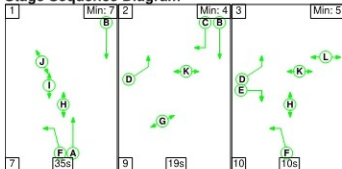
Lane	Scenario 6: 2032 WD PM
Junction: Low Moor Road/Penny Emma Way	
1/1 (with short)	903(In) 696(Out)
1/2 (short)	207
2/1 (short)	406
2/2 (with short)	1036(In) 630(Out)
3/1 (short)	379
3/2 (with short)	530(In) 151(Out)
3/3	160
4/1	847
4/2	160
5/1	1009
6/1	613

Lane Saturation Flows

Junction: Low Moor Road/Penny Emma Way								
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 (Low Moor Rd (N))	3.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1915	1915
1/2 (Low Moor Rd (N))	3.00	0.00	Y	Arm 6 Right	12.00	100.0 %	1702	1702
2/1 (Low Moor Rd (S))	3.00	0.00	Y	Arm 6 Left	15.00	100.0 %	1741	1741
2/2 (Low Moor Rd (S))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
3/1 (Penny Emma Way)	3.00	0.00	Y	Arm 5 Left	15.00	100.0 %	1741	1741
3/2 (Penny Emma Way)	3.00	0.00	N	Arm 4 Right	15.00	100.0 %	1868	1868
3/3 (Penny Emma Way)	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2022 Observed AM' (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

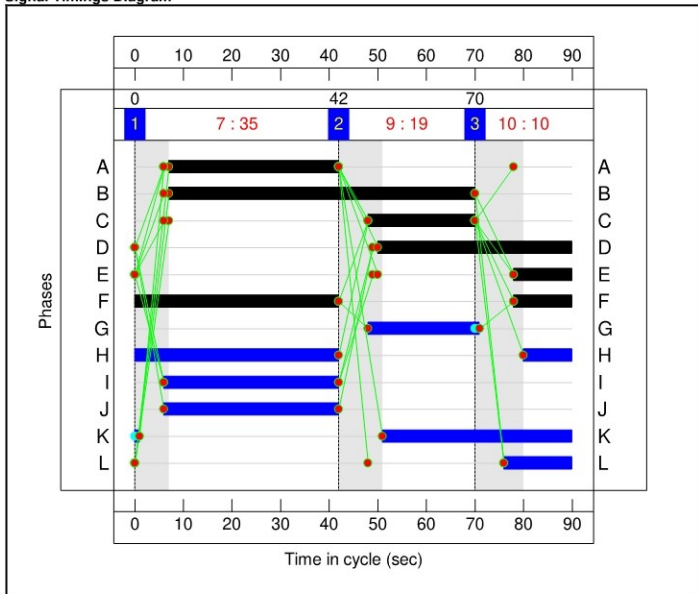
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	35	19	10
Change Point	0	42	70

Signal Timings 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: Low Moor Road/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	72.2%
Low Moor Road/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	72.2%
1/1+1/2	Low Moor Rd (N) Ahead Right	U	N/A	N/A	B C		1	63:22	-	888	1915:1702	819+435	70.8 : 70.8%
2/2+2/1	Low Moor Rd (S) Ahead Left	U	N/A	N/A	A F		1	35:54	-	806	2055:1741	680+445	71.7 : 71.7%
3/2+3/1	Penny Emma Way Right Left	U	N/A	N/A	E D		1	12:40	-	270	1868:1741	161+213	72.2 : 72.2%
3/3	Penny Emma Way Right	U	N/A	N/A	E		1	12	-	160	1741	251	63.6%
4/1		U	N/A	N/A	-		-	-	-	696	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	160	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	641	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	627	Inf	Inf	0.0%

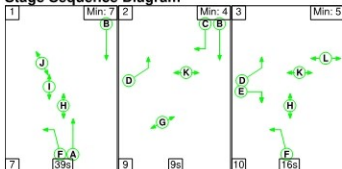
Full Input Data And Results

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: Low Moor Road/Penny Emma Way T-Junction	-	-	0	0	0	10.5	4.6	0.0	15.1	-	-	-	-
Low Moor Road/Penny Emma Way	-	-	0	0	0	10.5	4.6	0.0	15.1	-	-	-	-
1/1+1/2	888	888	-	-	-	3.5	1.2	-	4.7	19.0	6.9	1.2	8.1
2/2+2/1	806	806	-	-	-	3.6	1.3	-	4.9	21.7	9.5	1.3	10.7
3/2+3/1	270	270	-	-	-	1.8	1.3	-	3.1	41.4	3.5	1.3	4.7
3/3	160	160	-	-	-	1.6	0.9	-	2.5	55.6	3.7	0.9	4.6
4/1	696	696	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	160	160	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	641	641	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	627	627	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		24.7	Total Delay for Signalled Lanes (pcuHr):		15.12	Cycle Time (s):		90		
			PRC Over All Lanes (%):		24.7	Total Delay Over All Lanes(pcuHr):		15.12					

Full Input Data And Results

Scenario 2: '2022 Observed PM' (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')

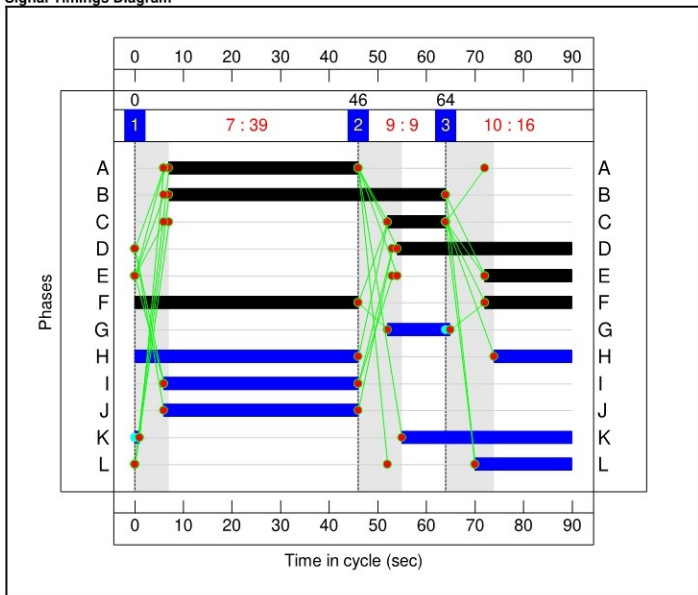
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	39	9	16
Change Point	0	46	64

Signal Timings 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: Low Moor Road/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	76.7%
Low Moor Road/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	76.7%
1/1+1/2	Low Moor Rd (N) Ahead Right	U	N/A	N/A	B C		1	57:12	-	818	1915:1702	1048+246	60.2 : 76.1%
2/2+2/1	Low Moor Rd (S) Ahead Left	U	N/A	N/A	A F		1	39:64	-	927	2055:1741	728+492	76.0 : 76.0%
3/2+3/1	Penny Emma Way Right Left	U	N/A	N/A	E D		1	18:36	-	463	1868:1741	164+439	76.7 : 76.7%
3/3	Penny Emma Way Right	U	N/A	N/A	E		1	18	-	160	1741	368	43.5%
4/1		U	N/A	N/A	-		-	-	-	757	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	160	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	890	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	561	Inf	Inf	0.0%

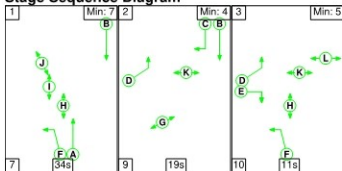
Full Input Data And Results

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: Low Moor Road/Penny Emma Way T-Junction	-	-	0	0	0	11.2	4.4	0.0	15.6	-	-	-	-
Low Moor Road/Penny Emma Way	-	-	0	0	0	11.2	4.4	0.0	15.6	-	-	-	-
1/1+1/2	818	818	-	-	-	3.4	0.9	-	4.3	18.8	8.2	0.9	9.1
2/2+2/1	927	927	-	-	-	3.4	1.6	-	4.9	19.2	10.4	1.6	12.0
3/2+3/1	463	463	-	-	-	3.1	1.6	-	4.7	36.3	9.5	1.6	11.1
3/3	160	160	-	-	-	1.4	0.4	-	1.8	39.5	3.5	0.4	3.9
4/1	757	757	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	160	160	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	890	890	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1		PRC for Signalled Lanes (%):		17.4	Total Delay for Signalled Lanes (pcuHr):		15.64	Cycle Time (s):		90			
		PRC Over All Lanes (%):		17.4	Total Delay Over All Lanes(pcuHr):		15.64						

Full Input Data And Results

Scenario 3: '2032 Bkg AM' (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')

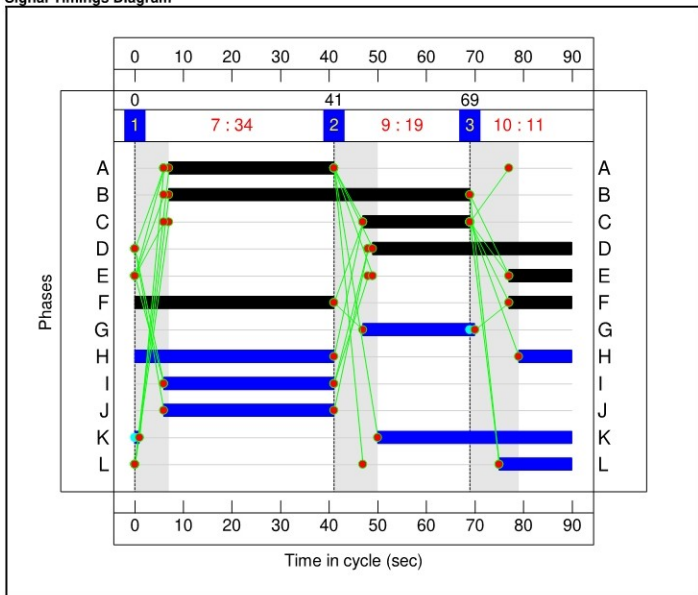
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	34	19	11
Change Point	0	41	69

Signal Timings 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: Low Moor Road/Penny Emma Way T-Junction	-	-	N/A	-	-		-	-	-	-	-	-	80.2%
Low Moor Road/Penny Emma Way	-	-	N/A	-	-		-	-	-	-	-	-	80.2%
1/1+1/2	Low Moor Rd (N) Ahead Right	U	N/A	N/A	B C		1	62:22	-	965	1915:1702	818+435	77.0 : 77.0%
2/2+2/1	Low Moor Rd (S) Ahead Left	U	N/A	N/A	A F		1	34:54	-	876	2055:1741	667+437	79.4 : 79.4%
3/2+3/1	Penny Emma Way Right Left	U	N/A	N/A	E D		1	13:41	-	307	1868:1741	175+208	80.2 : 80.2%
3/3	Penny Emma Way Right	U	N/A	N/A	E		1	13	-	160	1741	271	59.1%
4/1		U	N/A	N/A	-		-	-	-	770	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	160	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	696	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	682	Inf	Inf	0.0%