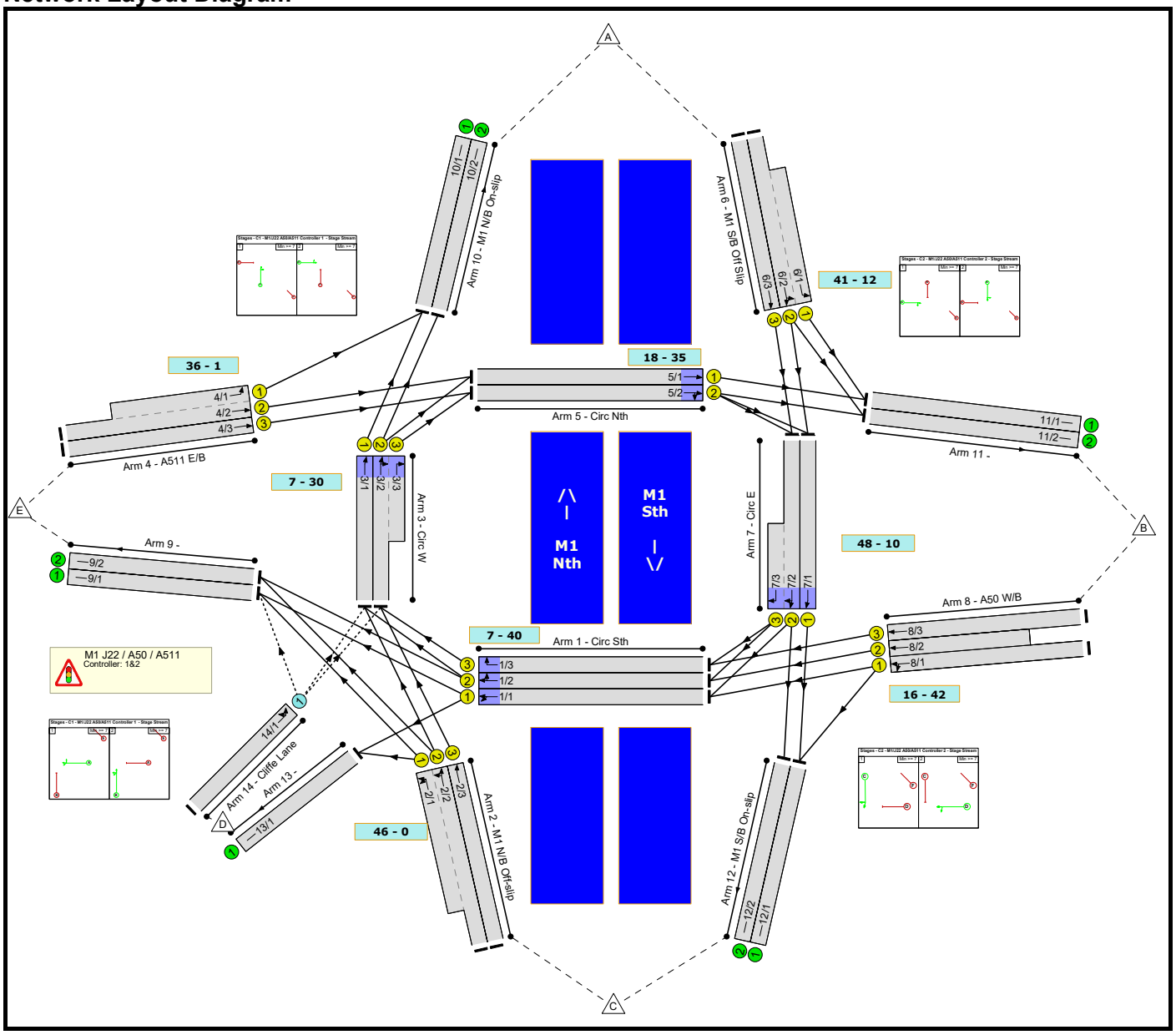
Detailed Input Data And Results

User and Project Details

Project:	**Markfield**
Title:	
Location:	M1 J22 / A50
Additional detail:	
File name:	T22523 M1 J22 Roundabout Base Rev D.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 3, 2, 0

Network Layout Diagram



Scenarios

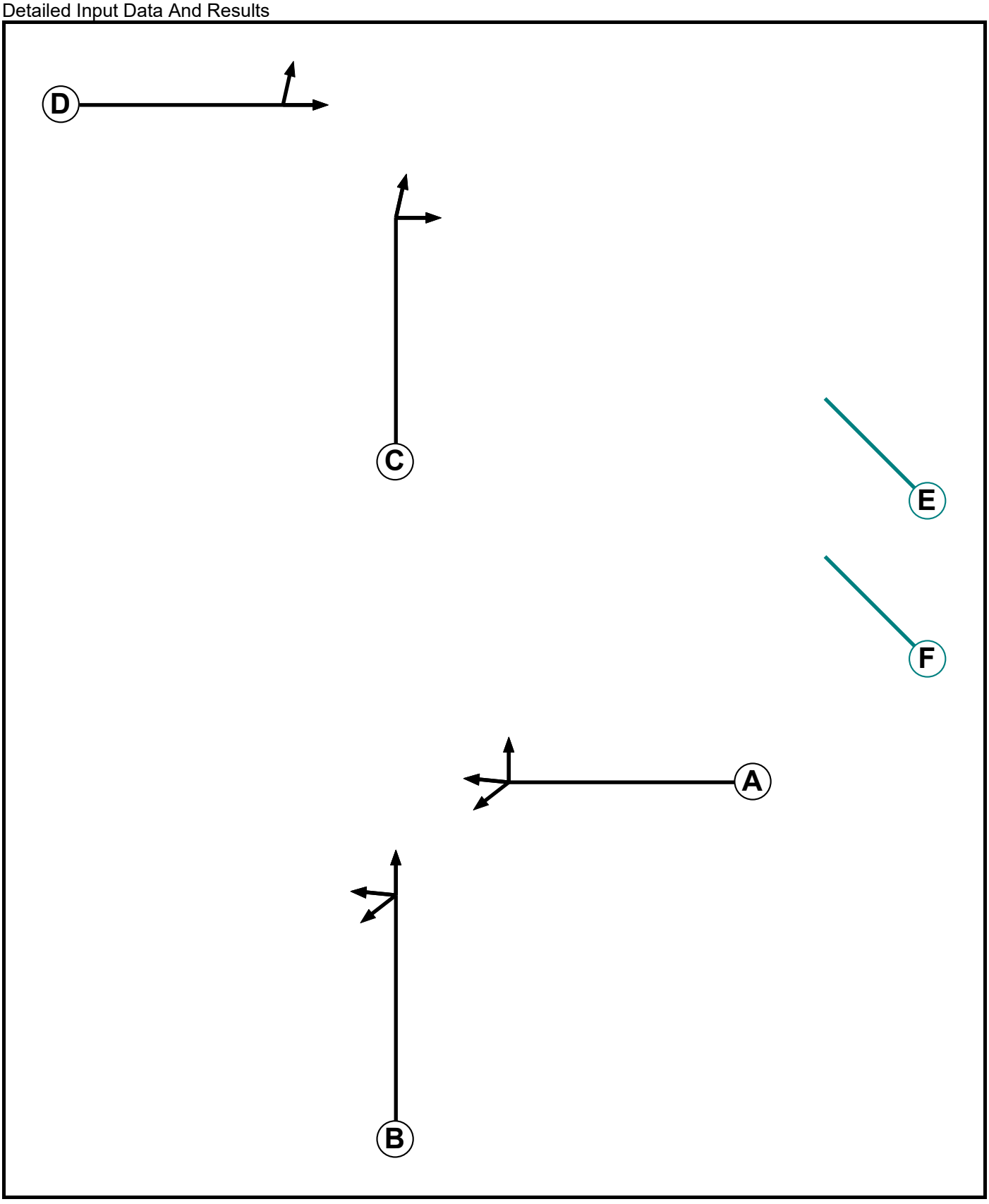
Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2025 Baseline AM Peak	2025 Baseline AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	19.1	47.46
2	2025 Baseline PM Peak	2025 Baseline PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	22.7	40.93
3	2028 Future Base AM Peak	2028 Future Base AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	6.4	58.03
4	2028 Future Base PM Peak	2028 Future Base PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	7.3	48.77
5	2030 Future Base AM Peak	2030 Future Base AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	2.1	59.52
6	2030 Future Base PM Peak	2030 Future Base PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	2.8	49.45
7	2036 Future Base AM Peak	2036 Future Base AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	0.0	68.13
8	2036 Future Base PM Peak	2036 Future Base PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	-0.5	55.19

Controller Summary

Controller	Type	SCN	Stage Stream	Num Phases	Num Stages	Controls Junctions	Controller Notes
C1 - M1/J22 A50/A511 Controller 1	Gen		Stage Stream 1	3	2	M1 J22 / A50 / A511	
			Stage Stream 2	3	2	M1 J22 / A50 / A511	
C2 - M1/J22 A50/A511 Controller 2	Pek		Stage Stream 1	3	2	M1 J22 / A50 / A511	
			Stage Stream 2	3	2	M1 J22 / A50 / A511	

Controller :C1 - M1/J22 A50/A511 Controller 1

Phase Diagram


D
C
E
F
A
B

Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Dummy	1		4	4
F	Dummy	2		4	4

Phase Intergreens Matrix

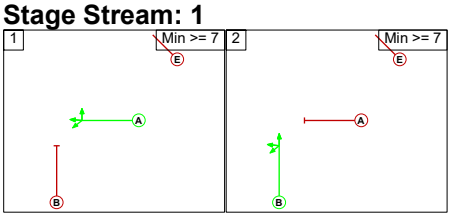
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	3	-
	B	7		-	-	3	-
	C	-	-		6	-	3
	D	-	-	6		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

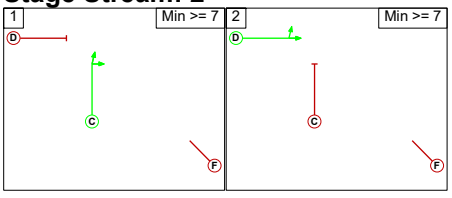
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

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

Prohibited Stage Change

Stage Stream: 1

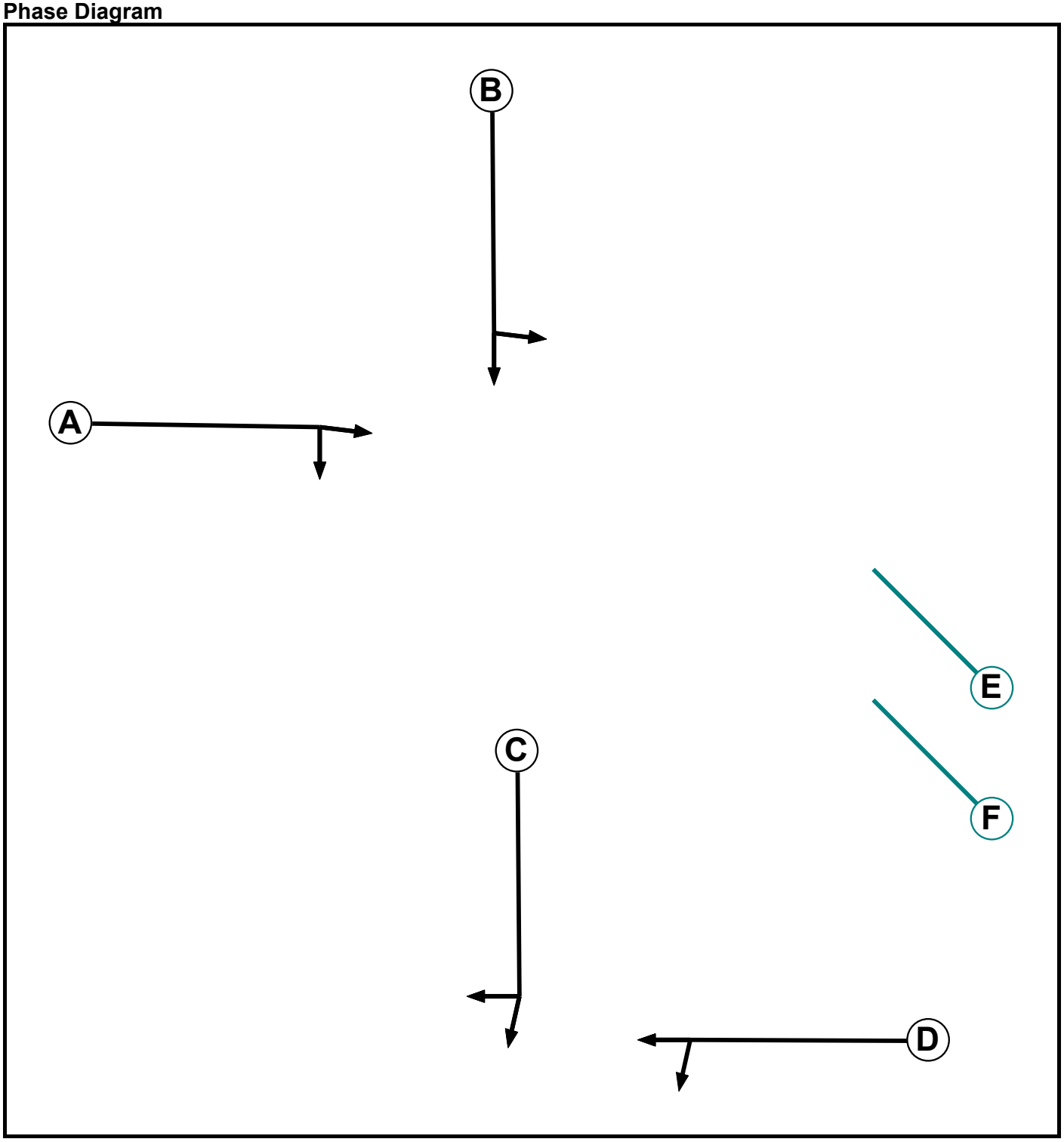
From Stage \ To Stage	1	2
1		6
2	7	

Stage Stream: 2

From Stage \ To Stage	1	2
1		6
2	6	

Controller :C2 - M1/J22 A50/A511 Controller 2

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Dummy	1		4	4
F	Dummy	2		4	4

Phase Intergreens Matrix

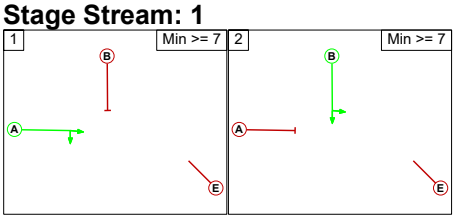
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	3	-
	B	6		-	-	3	-
	C	-	-		6	-	3
	D	-	-	6		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

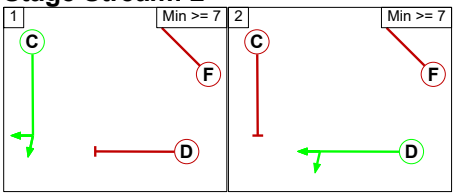
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

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

Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 2

From Stage \ To Stage	1	2
1		6
2	6	

Lane Input Data

Junction: M1 J22 / A50 / A511												
Lane	**Lane Type**	**Phases**	**Start Disp. (s)**	**End Disp. (s)**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	Y	Arm 9 Ahead	Inf
											Arm 13 Ahead	Inf
1/2 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	N	Arm 3 Right	75.00
											Arm 9 Ahead	75.00
1/3 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	Y	Arm 3 Right	75.00
2/1 (M1 N/B Off-slip)	U	B	2	3	16.9	Geom	-	4.00	0.00	Y	Arm 9 Left	80.00
											Arm 13 Left	60.00
2/2 (M1 N/B Off-slip)	U	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 3 Ahead	80.00
											Arm 9 Left	60.00
2/3 (M1 N/B Off-slip)	U	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 3 Ahead	80.00
3/1 (Circ W)	U	C	2	3	5.2	Geom	-	4.20	0.00	Y	Arm 10 Ahead	75.00
3/2 (Circ W)	U	C	2	3	5.2	Geom	-	4.20	0.00	N	Arm 5 Right	75.00
											Arm 10 Ahead	75.00
3/3 (Circ W)	U	C	2	3	8.0	Geom	-	4.20	0.00	Y	Arm 5 Right	75.00
4/1 (A511 E/B)	U	D	2	3	13.0	Geom	-	4.10	0.00	Y	Arm 10 Left	50.00
4/2 (A511 E/B)	U	D	2	3	60.0	Geom	-	4.10	0.00	N	Arm 5 Ahead	70.00
4/3 (A511 E/B)	U	D	2	3	60.0	Geom	-	4.10	0.00	Y	Arm 5 Ahead	70.00
5/1 (Circ Nth)	U	A	2	3	19.7	Geom	-	4.60	0.00	Y	Arm 11 Ahead	75.00
5/2 (Circ Nth)	U	A	2	3	19.7	Geom	-	4.60	0.00	Y	Arm 7 Right	75.00
											Arm 11 Ahead	75.00
6/1 (M1 S/B Off Slip)	U	B	2	3	15.0	Geom	-	4.50	0.00	Y	Arm 11 Left	80.00

6/2 (M1 S/B Off Slip)	U	B	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 7 Ahead	80.00
											Arm 11 Left	80.00
6/3 (M1 S/B Off Slip)	U	B	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 7 Ahead	80.00
7/1 (Circ E)	U	C	2	3	7.8	Geom	-	4.50	0.00	Y	Arm 12 Ahead	Inf
7/2 (Circ E)	U	C	2	3	12.2	Geom	-	4.50	0.00	N	Arm 1 Right	75.00
											Arm 12 Ahead	Inf
7/3 (Circ E)	U	C	2	3	8.0	Geom	-	4.50	0.00	Y	Arm 1 Right	75.00
8/1 (A50 W/B)	U	D	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 1 Ahead	70.00
											Arm 12 Left	70.00
8/2 (A50 W/B)	U	D	2	3	13.2	Geom	-	3.80	0.00	N	Arm 1 Ahead	70.00
8/3 (A50 W/B)	U	D	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 1 Ahead	70.00
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (M1 N/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2 (M1 N/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (M1 S/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (M1 S/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (Cliffe Lane)	O		2	3	60.0	Geom	-	3.90	0.00	Y	Arm 3 Left	Inf
											Arm 9 Left	Inf

Give-Way Lane Input Data

Junction: M1 J22 / A50 / A511

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)
14/1 (Cliffe Lane)	3/1 (Left)	1000	0	1/1	0.33	To 9/1 (Ahead)	-	-	-	-	-
				1/2	0.33	All					
				2/1	0.33	To 9/1 (Left)					
				2/2	0.33	All					
				1/3	0.33	All					
	3/2 (Left)	1000	0	1/1	0.33	To 9/1 (Ahead)					
				1/2	0.33	All					
				1/3	0.33	All					
				2/1	0.33	To 9/1 (Left)					
				2/2	0.33	All					
				2/3	0.33	All					
	9/1 (Left)	1000	0	1/1	0.33	To 9/1 (Ahead)					
				1/2	0.33	To 9/2 (Ahead)					
				2/1	0.33	To 9/1 (Left)					
				2/2	0.33	To 9/2 (Left)					

Lane Connector Input Data

Junction: M1 J22 / A50 / A511				
Org Lane	Dest Lane	Junction	Modelled Mean Cruise Time (s)	Platoon Dispersion
1/1	9/1	Internal	31	35
1/1	13/1	Internal	31	35
1/2	3/1	Internal	3	N/A
1/2	9/2	Internal	31	35
1/3	3/2	Internal	3	N/A
2/1	9/1	Internal	31	35
2/1	13/1	Internal	31	35
2/2	3/1	Internal	3	N/A
2/2	9/2	Internal	31	35
2/3	3/2	Internal	3	N/A
3/1	10/1	Internal	31	35
3/2	5/1	Internal	10	N/A
3/2	10/2	Internal	31	35
3/3	5/2	Internal	10	N/A
4/1	10/1	Internal	31	35
4/2	5/1	Internal	10	N/A
4/3	5/2	Internal	10	N/A
5/1	11/1	Internal	31	35
5/2	7/1	Internal	4	N/A
5/2	7/2	Internal	6	N/A
5/2	11/2	Internal	31	35
6/1	11/1	Internal	31	35
6/2	7/1	Internal	4	N/A
6/2	11/2	Internal	31	35
6/3	7/2	Internal	6	N/A
7/1	12/1	Internal	31	35
7/2	1/1	Internal	9	N/A
7/2	12/2	Internal	31	35
7/3	1/2	Internal	9	N/A
7/3	1/3	Internal	9	N/A
8/1	1/1	Internal	9	N/A
8/1	12/1	Internal	31	35
8/2	1/2	Internal	9	N/A
8/3	1/3	Internal	9	N/A
14/1	3/1	Internal	3	N/A
14/1	3/2	Internal	3	N/A
14/1	9/1	Internal	31	35

Scenario 1: '2025 Baseline AM Peak' (FG1: '2025 Baseline AM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	88.5 %	1995	1995
				Arm 13 Ahead	Inf	11.5 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	48.7 %	2093	2093
				Arm 9 Ahead	75.00	51.3 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	95.3 %	1977	1977
				Arm 13 Left	60.00	4.7 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.7 %	2132	2132
				Arm 10 Ahead	75.00	99.3 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	80.9 %	2034	2034
				Arm 11 Ahead	75.00	19.1 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.4 %	2027	2027
				Arm 11 Left	80.00	99.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	61.0 %	2178	2178
				Arm 12 Ahead	Inf	39.0 %		
7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025

8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	89.7 %	1953	1953
				Arm 12 Left	70.00	10.3 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	77.0 %	2005	2005
				Arm 9 Left	Inf	23.0 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 1

Scenario 2: '2025 Baseline PM Peak ' (FG2: '2025 Baseline PM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	89.6 %	1995	1995
				Arm 13 Ahead	Inf	10.4 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	29.3 %	2093	2093
				Arm 9 Ahead	75.00	70.7 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	91.7 %	1977	1977
				Arm 13 Left	60.00	8.3 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.9 %	2132	2132
				Arm 10 Ahead	75.00	99.1 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	78.0 %	2034	2034
				Arm 11 Ahead	75.00	22.0 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.0 %	2027	2027
				Arm 11 Left	80.00	100.0 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	99.6 %	2162	2162
				Arm 12 Ahead	Inf	0.4 %		

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead Arm 12 Left	70.00 70.00	91.3 % 8.7 %	1953	1953
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left Arm 9 Left	Inf Inf	88.8 % 11.2 %	2005	2005

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Scenario 3: '2028 Future Base AM Peak' (FG3: '2028 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	86.1 %	1995	1995
				Arm 13 Ahead	Inf	13.9 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	31.4 %	2093	2093
				Arm 9 Ahead	75.00	68.6 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	94.6 %	1977	1977
				Arm 13 Left	60.00	5.4 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.9 %	2132	2132
				Arm 10 Ahead	75.00	99.1 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	84.7 %	2034	2034
				Arm 11 Ahead	75.00	15.3 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.4 %	2027	2027
				Arm 11 Left	80.00	99.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	55.5 %	2181	2181
				Arm 12 Ahead	Inf	44.5 %		

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	90.1 %	1953	1953
				Arm 12 Left	70.00	9.9 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	74.3 %	2005	2005
				Arm 9 Left	Inf	25.7 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 3

Scenario 4: '2028 Future Base PM Peak' (FG4: '2028 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	92.3 %	1995	1995
				Arm 13 Ahead	Inf	7.7 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	0.0 %	2093	2093
				Arm 9 Ahead	75.00	100.0 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	95.9 %	1977	1977
				Arm 13 Left	60.00	4.1 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.6 %	2132	2132
				Arm 10 Ahead	75.00	99.4 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	85.2 %	2034	2034
				Arm 11 Ahead	75.00	14.8 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.4 %	2027	2027
				Arm 11 Left	80.00	99.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	47.8 %	2184	2184
				Arm 12 Ahead	Inf	52.2 %		

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	93.3 %	1953	1953
				Arm 12 Left	70.00	6.7 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	85.0 %	2005	2005
				Arm 9 Left	Inf	15.0 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 4

Scenario 5: '2030 Future Base AM Peak' (FG5: '2030 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	85.1 %	1995	1995
				Arm 13 Ahead	Inf	14.9 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	32.2 %	2093	2093
				Arm 9 Ahead	75.00	67.8 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	94.4 %	1977	1977
				Arm 13 Left	60.00	5.6 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.7 %	2132	2132
				Arm 10 Ahead	75.00	99.3 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	85.2 %	2034	2034
				Arm 11 Ahead	75.00	14.8 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.4 %	2027	2027
				Arm 11 Left	80.00	99.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	52.4 %	2182	2182
				Arm 12 Ahead	Inf	47.6 %		

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	89.5 %	1953	1953
				Arm 12 Left	70.00	10.5 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	75.0 %	2005	2005
				Arm 9 Left	Inf	25.0 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 5

Scenario 6: '2030 Future Base PM Peak ' (FG6: '2030 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	92.0 %	1995	1995
				Arm 13 Ahead	Inf	8.0 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	11.7 %	2093	2093
				Arm 9 Ahead	75.00	88.3 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	95.1 %	1977	1977
				Arm 13 Left	60.00	4.9 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.9 %	2132	2132
				Arm 10 Ahead	75.00	99.1 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	88.4 %	2034	2034
				Arm 11 Ahead	75.00	11.6 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.4 %	2027	2027
				Arm 11 Left	80.00	99.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	50.5 %	2183	2183
				Arm 12 Ahead	Inf	49.5 %		

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead Arm 12 Left	70.00 70.00	92.8 % 7.2 %	1953	1953
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left Arm 9 Left	Inf Inf	85.7 % 14.3 %	2005	2005

Bonus Green Times

No Bonus Greens are defined For Scenario 6

Scenario 7: '2036 Future Base AM Peak' (FG7: '2036 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	83.5 %	1995	1995
				Arm 13 Ahead	Inf	16.5 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	37.1 %	2093	2093
				Arm 9 Ahead	75.00	62.9 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	93.3 %	1977	1977
				Arm 13 Left	60.00	6.7 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.8 %	2132	2132
				Arm 10 Ahead	75.00	99.2 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	85.7 %	2034	2034
				Arm 11 Ahead	75.00	14.3 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.3 %	2027	2027
				Arm 11 Left	80.00	99.7 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	59.6 %	2179	2179
				Arm 12 Ahead	Inf	40.4 %		

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	89.7 %	1953	1953
				Arm 12 Left	70.00	10.3 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	76.2 %	2005	2005
				Arm 9 Left	Inf	23.8 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 7

Scenario 8: '2036 Future Base PM Peak ' (FG8: '2036 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511

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 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	88.4 %	1995	1995
				Arm 13 Ahead	Inf	11.6 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	11.3 %	2093	2093
				Arm 9 Ahead	75.00	88.7 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	93.1 %	1977	1977
				Arm 13 Left	60.00	6.9 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	1.1 %	2132	2132
				Arm 10 Ahead	75.00	98.9 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	89.6 %	2034	2034
				Arm 11 Ahead	75.00	10.4 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.4 %	2027	2027
				Arm 11 Left	80.00	99.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	58.0 %	2180	2180
				Arm 12 Ahead	Inf	42.0 %		

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	93.1 %	1953	1953
				Arm 12 Left	70.00	6.9 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	86.6 %	2005	2005
				Arm 9 Left	Inf	13.4 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 8

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2025 Baseline AM Peak'	08:00	09:00	01:00	
2: '2025 Baseline PM Peak'	17:00	18:00	01:00	
3: '2028 Future Base AM Peak'	08:00	09:00	01:00	
4: '2028 Future Base PM Peak'	17:00	18:00	01:00	
5: '2030 Future Base AM Peak'	08:00	09:00	01:00	
6: '2030 Future Base PM Peak'	17:00	18:00	01:00	
7: '2036 Future Base AM Peak'	08:00	09:00	01:00	
8: '2036 Future Base PM Peak'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: '2025 Baseline AM Peak'

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	1092	2	86	448	1629
	B	957	4	59	8	724	1752
	C	2	32	0	18	738	790
	D	88	11	7	1	32	139
	E	338	729	501	0	4	1572
	Tot.	1386	1868	569	113	1946	5882

FG2: '2025 Baseline PM Peak'

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	906	0	56	354	1317
	B	731	4	52	23	907	1717
	C	0	37	4	33	759	833
	D	72	15	8	0	12	107
	E	300	749	480	1	7	1537
	Tot.	1104	1711	544	113	2039	5511

FG3: '2028 Future Base AM Peak'

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	1049	2	113	522	1687
	B	985	4	65	11	927	1992
	C	2	28	0	22	793	845
	D	93	11	8	1	39	152
	E	363	787	570	0	6	1726
	Tot.	1444	1879	645	147	2287	6402

FG4: '2028 Future Base PM Peak'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	909	2	47	541	1500
	B	721	3	43	14	1141	1922
	C	0	25	3	18	863	909
	D	87	13	8	0	19	127
	E	363	704	506	1	10	1584
	Tot.	1172	1654	562	80	2574	6042

FG5: '2030 Future Base AM Peak'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	1073	2	117	524	1717
	B	1028	4	69	12	928	2041
	C	2	29	0	23	792	846
	D	98	11	9	2	40	160
	E	368	788	578	0	5	1739
	Tot.	1497	1905	658	154	2289	6503

FG6: '2030 Future Base PM Peak'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	942	2	54	546	1545
	B	771	4	51	17	1160	2003
	C	0	27	4	22	869	922
	D	100	16	10	0	21	147
	E	350	679	530	1	9	1569
	Tot.	1222	1668	597	94	2605	6186

FG7: '2036 Future Base AM Peak'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	1159	2	147	566	1875
	B	1124	4	71	14	937	2150
	C	2	29	0	28	799	858
	D	103	11	9	2	39	164
	E	391	780	578	0	5	1754
	Tot.	1621	1983	660	191	2346	6801

FG8: '2036 Future Base PM Peak'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	2	1017	2	86	604	1711
	B	831	3	49	24	1157	2064
	C	0	25	3	31	860	919
	D	132	18	12	0	25	187
	E	373	647	510	1	9	1540
	Tot.	1338	1710	576	142	2655	6421

Scenario 1: '2025 Baseline AM Peak' (FG1: '2025 Baseline AM Peak', Plan 1: 'Network Control Plan 1')
Traffic Flows, Actual
Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	1092	2	86	448	1629
	B	957	4	59	8	724	1752
	C	2	32	0	18	738	790
	D	88	11	7	1	32	139
	E	338	729	501	0	4	1572
	Tot.	1386	1868	569	113	1946	5882

Traffic Flows, Difference
Difference :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 2: '2025 Baseline PM Peak ' (FG2: '2025 Baseline PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	906	0	56	354	1317
	B	731	4	52	23	907	1717
	C	0	37	4	33	759	833
	D	72	15	8	0	12	107
	E	300	749	480	1	7	1537
	Tot.	1104	1711	544	113	2039	5511

Traffic Flows, Difference

Difference :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 3: '2028 Future Base AM Peak' (FG3: '2028 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	1049	2	113	522	1687
	B	985	4	65	11	927	1992
	C	2	28	0	22	793	845
	D	93	11	8	1	39	152
	E	363	787	570	0	6	1726
	Tot.	1444	1879	645	147	2287	6402

Traffic Flows, Difference

Difference :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 4: '2028 Future Base PM Peak' (FG4: '2028 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	909	2	47	541	1500
	B	721	3	43	14	1141	1922
	C	0	25	3	18	863	909
	D	87	13	8	0	19	127
	E	363	704	506	1	10	1584
	Tot.	1172	1654	562	80	2574	6042

Traffic Flows, Difference

Difference :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 5: '2030 Future Base AM Peak' (FG5: '2030 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
	A	1	1073	2	117	524	1717
	B	1028	4	69	12	928	2041
Origin	C	2	29	0	23	792	846
	D	98	11	9	2	40	160
	E	368	788	578	0	5	1739
	Tot.	1497	1905	658	154	2289	6503

Traffic Flows, Difference

Difference :

		Destination					
		A	B	C	D	E	Tot.
	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
Origin	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 6: '2030 Future Base PM Peak ' (FG6: '2030 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
	A	1	942	2	54	546	1545
	B	771	4	51	17	1160	2003
Origin	C	0	27	4	22	869	922
	D	100	16	10	0	21	147
	E	350	679	530	1	9	1569
	Tot.	1222	1668	597	94	2605	6186

Traffic Flows, Difference

Difference :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 7: '2036 Future Base AM Peak' (FG7: '2036 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	1	1159	2	147	566	1875
	B	1124	4	71	14	937	2150
	C	2	29	0	28	799	858
	D	103	11	9	2	39	164
	E	391	780	578	0	5	1754
	Tot.	1621	1983	660	191	2346	6801

Traffic Flows, Difference

Difference :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 8: '2036 Future Base PM Peak ' (FG8: '2036 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	2	1017	2	86	604	1711
	B	831	3	49	24	1157	2064
	C	0	25	3	31	860	919
	D	132	18	12	0	25	187
	E	373	647	510	1	9	1540
	Tot.	1338	1710	576	142	2655	6421

Traffic Flows, Difference

Difference :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Traffic Lane Flows

Lane	Scenario 1: 2025 Baseline AM Peak	Scenario 2: 2025 Baseline PM Peak	Scenario 3: 2028 Future Base AM Peak	Scenario 4: 2028 Future Base PM Peak	Scenario 5: 2030 Future Base AM Peak	Scenario 6: 2030 Future Base PM Peak
Junction: M1 J22 / A50 / A511						
1/1	825	770	899	805	879	897
1/2	870	818	993	949	1045	1008
1/3	538	496	678	725	697	658
2/1 (short)	379	397	409	442	409	447
2/2 (with short)	756(In) 377(Out)	792(In) 395(Out)	815(In) 406(Out)	881(In) 439(Out)	815(In) 406(Out)	891(In) 444(Out)
2/3	34	41	30	28	31	31
3/1	447	262	382	87	397	202
3/2 (with short)	656(In) 605(Out)	610(In) 547(Out)	751(In) 705(Out)	774(In) 726(Out)	787(In) 737(Out)	731(In) 676(Out)
3/3 (short)	51	63	46	48	50	55
4/1 (short)	338	300	363	363	368	350
4/2 (with short)	989(In) 651(Out)	959(In) 659(Out)	1081(In) 718(Out)	1012(In) 649(Out)	1092(In) 724(Out)	997(In) 647(Out)
4/3	583	578	645	572	647	572
5/1	655	664	724	653	729	653
5/2	634	641	691	620	697	627
6/1 (short)	547	453	525	455	537	472
6/2 (with short)	1094(In) 547(Out)	906(In) 453(Out)	1051(In) 526(Out)	911(In) 456(Out)	1075(In) 538(Out)	944(In) 472(Out)
6/3	535	411	636	589	642	601
7/1	312	491	335	294	326	307
7/2 (with short)	738(In) 508(Out)	420(In) 224(Out)	888(In) 550(Out)	825(In) 431(Out)	912(In) 553(Out)	850(In) 483(Out)
7/3 (short)	230	196	338	394	359	367
8/1 (with short)	1215(In) 574(Out)	1222(In) 599(Out)	1315(In) 659(Out)	1198(In) 642(Out)	1345(In) 658(Out)	1346(In) 704(Out)
8/2 (short)	641	623	656	556	687	642
8/3	537	495	677	724	696	657
9/1	1123	1066	1200	1186	1174	1271
9/2	823	973	1087	1388	1115	1334
10/1	785	562	745	450	765	552
10/2	601	542	699	722	732	670
11/1	1202	1117	1249	1108	1266	1125
11/2	666	594	630	546	639	543
12/1	371	543	400	337	395	358
12/2	198	1	245	225	263	239

13/1	113	113	147	80	154	94
14/1	139	107	152	127	160	147

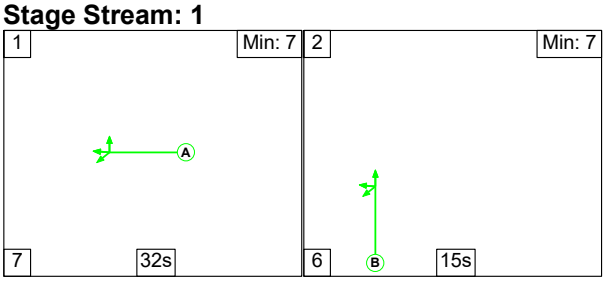
Lane	Scenario 7: 2036 Future Base AM Peak	Scenario 8: 2036 Future Base PM Peak
Junction: M1 J22 / A50 / A511		
1/1	987	955
1/2	1088	1044
1/3	725	718
2/1 (short)	415	447
2/2 (with short)	827(In) 412(Out)	891(In) 444(Out)
2/3	31	28
3/1	469	241
3/2 (with short)	816(In) 767(Out)	785(In) 732(Out)
3/3 (short)	49	53
4/1 (short)	391	373
4/2 (with short)	1110(In) 719(Out)	996(In) 623(Out)
4/3	644	544
5/1	725	631
5/2	693	597
6/1 (short)	580	509
6/2 (with short)	1161(In) 581(Out)	1019(In) 510(Out)
6/3	714	692
7/1	340	315
7/2 (with short)	970(In) 617(Out)	914(In) 505(Out)
7/3 (short)	353	409
8/1 (with short)	1426(In) 690(Out)	1348(In) 711(Out)
8/2 (short)	736	637
8/3	724	716
9/1	1250	1285
9/2	1096	1370
10/1	860	614
10/2	761	724
11/1	1305	1140
11/2	678	570
12/1	411	364
12/2	249	212
13/1	191	142

14/1	164	187

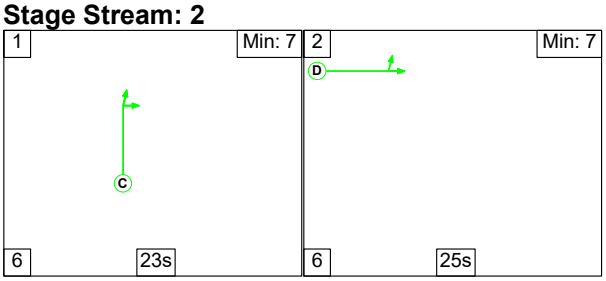
Scenario 1: '2025 Baseline AM Peak' (FG1: '2025 Baseline AM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	15
Change Point	25	4

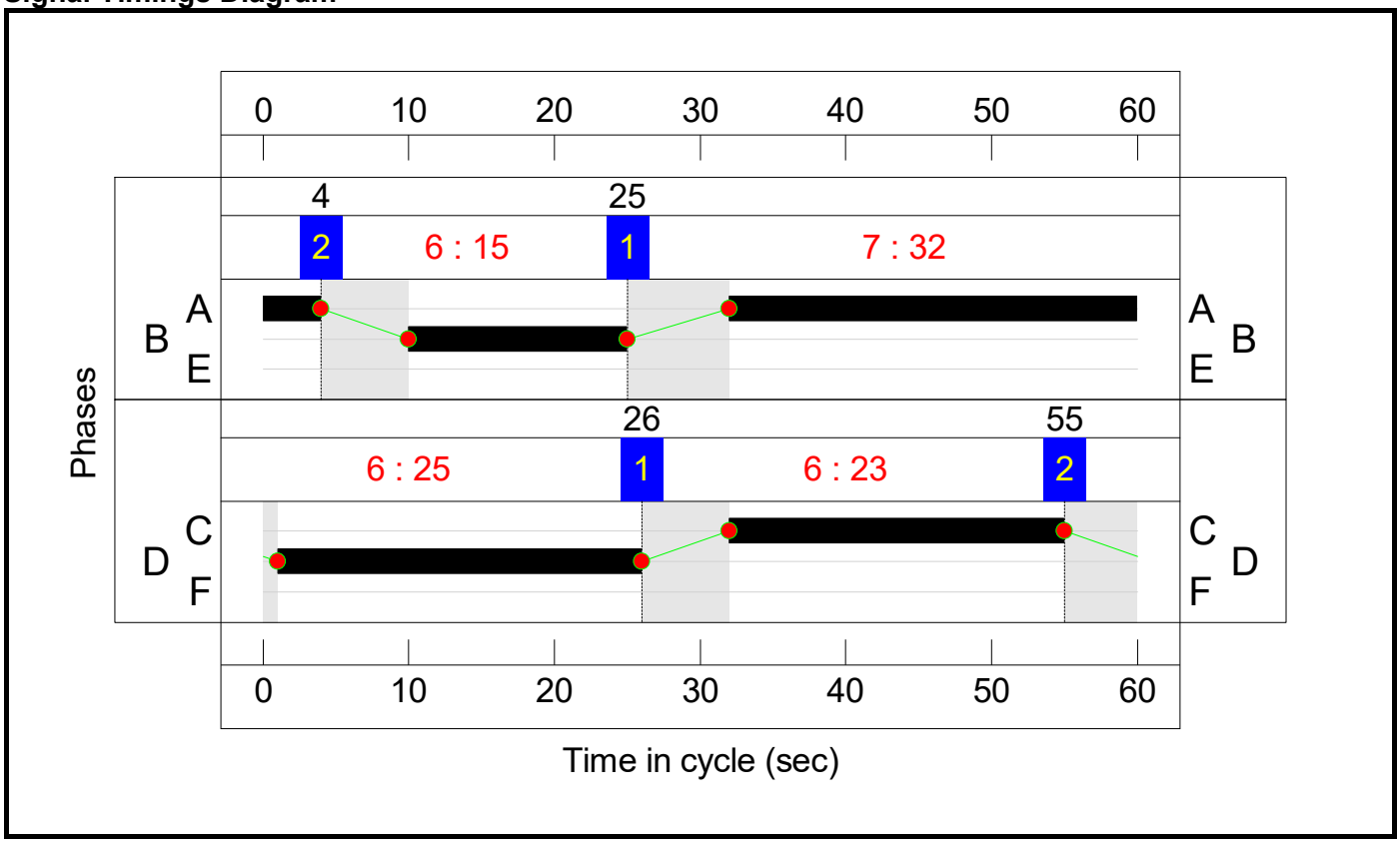
Stage Stream: 2

Stage	1	2
Duration	23	25
Change Point	26	55

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	32	4
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	10	25
C	Circ W Right Ahead	Traffic	2	23	32	55
D	A511 E/B Ahead Left	Traffic	2	25	1	26
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

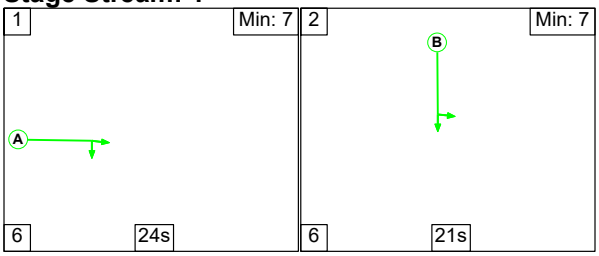
Signal Timings Diagram



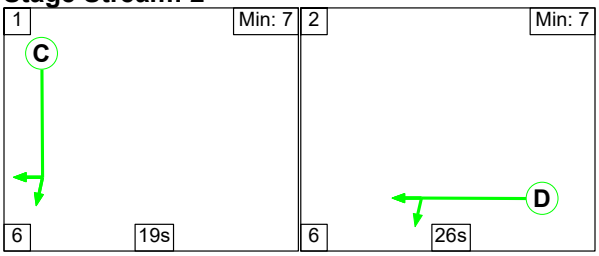
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	21
Change Point	23	53

Detailed Input Data And Results

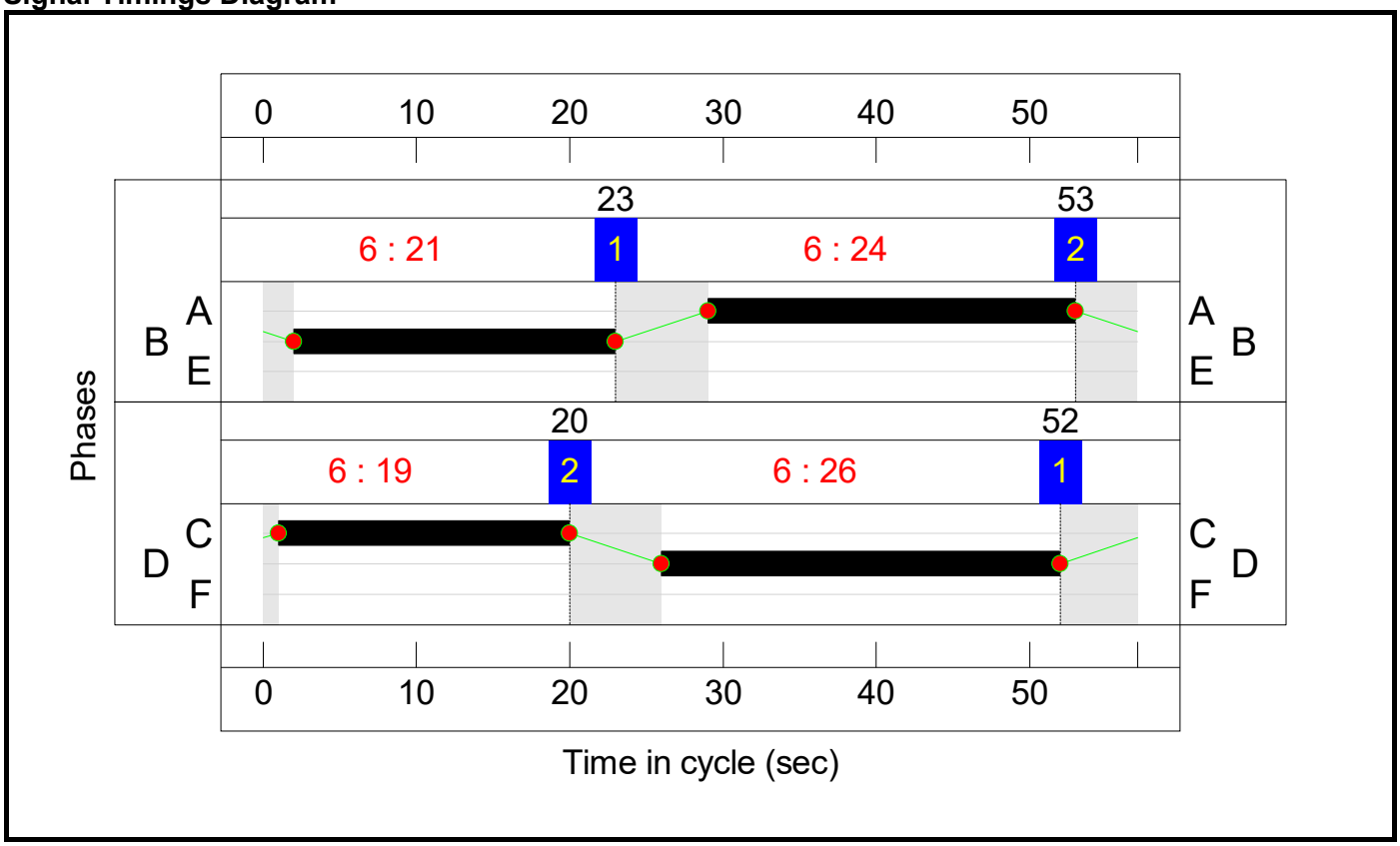
Stage Stream: 2

Stage	1	2
Duration	19	26
Change Point	52	20

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	24	29	53
B	M1 S/B Off Slip Ahead Left	Traffic	1	21	2	23
C	Circ E Right Ahead	Traffic	2	19	1	20
D	A50 W/B Ahead Left	Traffic	2	26	26	52
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

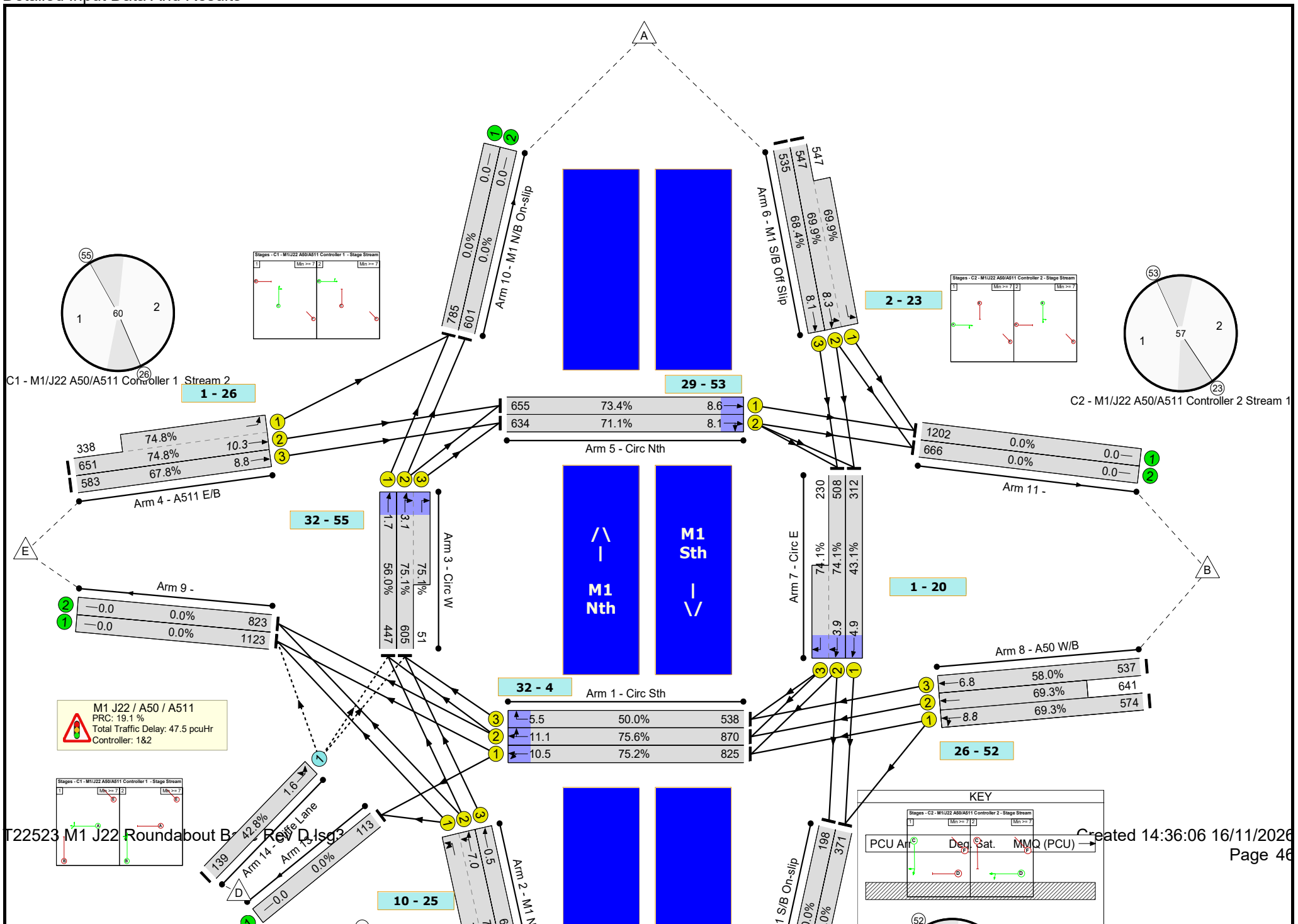
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	32	4
1/2	Circ Sth Right Ahead	U	A	32	4
1/3	Circ Sth Right	U	A	32	4
2/1	M1 N/B Off-slip Left Left2	U	B	10	25
2/2	M1 N/B Off-slip Ahead Left	U	B	10	25
2/3	M1 N/B Off-slip Ahead	U	B	10	25
3/1	Circ W Ahead	U	C	32	55
3/2	Circ W Right Ahead	U	C	32	55
3/3	Circ W Right	U	C	32	55
4/1	A511 E/B Left	U	D	1	26
4/2	A511 E/B Ahead	U	D	1	26
4/3	A511 E/B Ahead	U	D	1	26
5/1	Circ Nth Ahead	U	A	29	53
5/2	Circ Nth Right Ahead	U	A	29	53
6/1	M1 S/B Off Slip Left	U	B	2	23
6/2	M1 S/B Off Slip Ahead Left	U	B	2	23
6/3	M1 S/B Off Slip Ahead	U	B	2	23
7/1	Circ E Ahead	U	C	1	20
7/2	Circ E Right Ahead	U	C	1	20
7/3	Circ E Right	U	C	1	20
8/1	A50 W/B Ahead Left	U	D	26	52
8/2	A50 W/B Ahead	U	D	26	52
8/3	A50 W/B Ahead	U	D	26	52

Network Layout Diagram


A
B
E
D
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
1 - 26
2 - 23
29 - 53
32 - 55
1 - 20
32 - 4
26 - 52
10 - 25
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 5 - Circ Nth
Arm 4 - A511 E/B
Arm 11 -
Arm 3 - Circ W
Arm 7 - Circ E
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Griffe Lane
Arm 13
Arm 2 - M1 N
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: 19.1 %
Total Traffic Delay: 47.5 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**75.6%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**75.6%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	825	1995	1097	75.2%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	870	2093	1151	75.6%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	538	1956	1076	50.0%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	756	1966:1977	524+527	71.9 : 71.9%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	34	1978	527	6.4%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	23	-	-	447	1995	798	56.0%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	23	-	-	656	2132:1995	806+68	75.1 : 75.1%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	25	-	-	989	2120:1966	871+452	74.8 : 74.8%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	25	-	-	583	1983	859	67.8%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	24	-	-	655	2034	892	73.4%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	24	-	-	634	2034	892	71.1%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	21	-	-	1094	2027:2027	782+782	69.9 : 69.9%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	21	-	-	535	2027	782	68.4%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	19	-	-	312	2065	725	43.1%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	19	-	-	738	2178:2025	685+310	74.1 : 74.1%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	26	-	-	1215	1953:2090	828+925	69.3 : 69.3%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	26	-	-	537	1953	925	58.0%
9/1		U	N/A	N/A	-		-	-	-	-	1123	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	823	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	785	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	601	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1202	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	666	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	371	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	198	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	113	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	139	2005	325	42.8%

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	**-**	**-**	**115**	**24**	**0**	**39.2**	**8.2**	**0.0**	**47.5**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**115**	**24**	**0**	**39.2**	**8.2**	**0.0**	**47.5**	**-**	**-**	**-**	**-**	
1/1	825	825	-	-	-	2.4	0.0	-	2.4	10.4	10.5	0.0	10.5	
1/2	870	870	-	-	-	2.5	0.0	-	2.5	10.4	11.1	0.0	11.1	
1/3	538	538	-	-	-	1.3	0.0	-	1.3	8.4	5.5	0.0	5.5	
2/2+2/1	756	756	-	-	-	4.2	1.3	-	5.5	26.0	5.7	1.3	7.0	
2/3	34	34	-	-	-	0.2	0.0	-	0.2	20.1	0.4	0.0	0.5	
3/1	447	447	-	-	-	0.8	0.0	-	0.8	6.7	1.7	0.0	1.7	
3/2+3/3	656	656	-	-	-	1.6	0.0	-	1.6	8.7	3.1	0.0	3.1	
4/2+4/1	989	989	-	-	-	3.6	1.5	-	5.1	18.5	8.9	1.5	10.3	
4/3	583	583	-	-	-	2.2	1.0	-	3.3	20.1	7.8	1.0	8.8	
5/1	655	655	-	-	-	2.4	0.0	-	2.4	13.3	8.6	0.0	8.6	
5/2	634	634	-	-	-	2.3	0.0	-	2.3	13.1	8.1	0.0	8.1	
6/2+6/1	1094	1094	-	-	-	4.5	1.2	-	5.6	18.5	7.1	1.2	8.3	
6/3	535	535	-	-	-	2.2	1.1	-	3.2	21.8	7.0	1.1	8.1	
7/1	312	312	-	-	-	1.7	0.0	-	1.7	19.6	4.9	0.0	4.9	
7/2+7/3	738	738	-	-	-	1.8	0.0	-	1.8	8.6	3.9	0.0	3.9	
8/1+8/2	1215	1215	-	-	-	3.8	1.1	-	4.9	14.6	7.7	1.1	8.8	
8/3	537	537	-	-	-	1.6	0.7	-	2.3	15.5	6.1	0.7	6.8	
9/1	1123	1123	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	823	823	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	785	785	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	601	601	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1202	1202	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

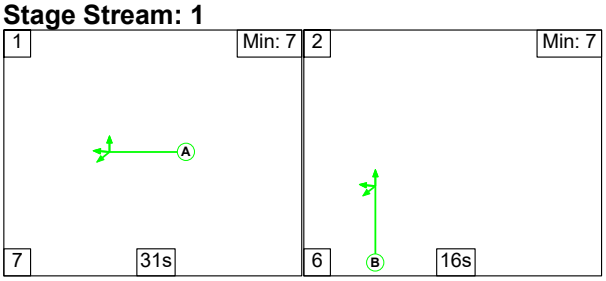
11/2	666	666	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	371	371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	198	198	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	113	113	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	139	139	115	24	0	0.2	0.4	-	0.6	16.1	1.3	0.4	1.6

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	19.1	Total Delay for Signalled Lanes (pcuHr):	11.79	Cycle Time (s): 60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	19.9	Total Delay for Signalled Lanes (pcuHr):	10.76	Cycle Time (s): 60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	22.6	Total Delay for Signalled Lanes (pcuHr):	13.58	Cycle Time (s): 57
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	21.4	Total Delay for Signalled Lanes (pcuHr):	10.71	Cycle Time (s): 57
	PRC Over All Lanes (%):	19.1	Total Delay Over All Lanes(pcuHr):	47.46	

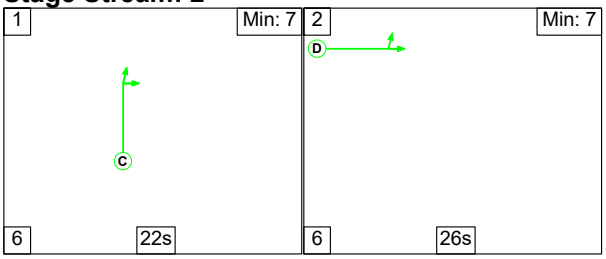
Scenario 2: '2025 Baseline PM Peak ' (FG2: '2025 Baseline PM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	16
Change Point	1	39

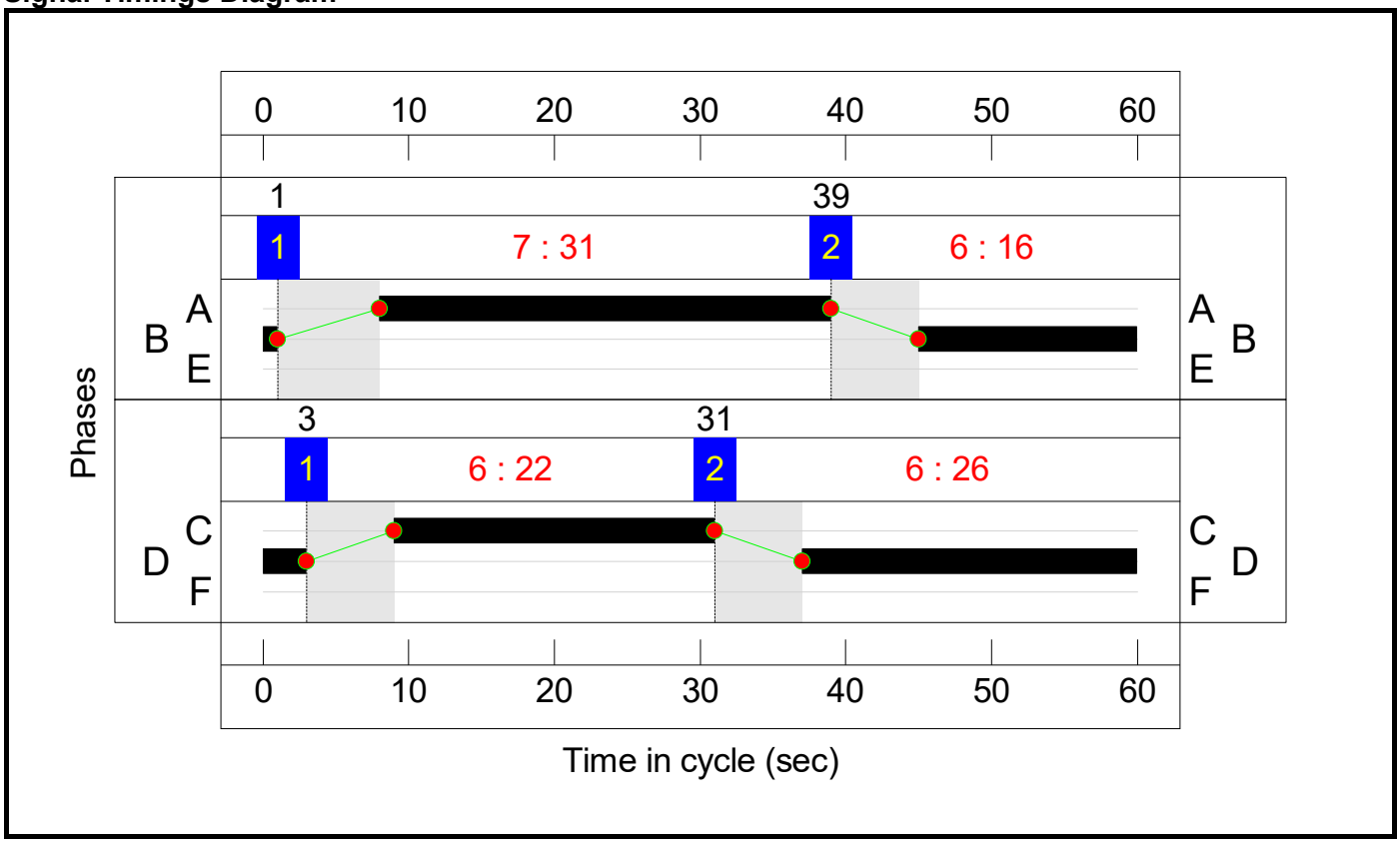
Stage Stream: 2

Stage	1	2
Duration	22	26
Change Point	3	31

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	31	8	39
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	16	45	1
C	Circ W Right Ahead	Traffic	2	22	9	31
D	A511 E/B Ahead Left	Traffic	2	26	37	3
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

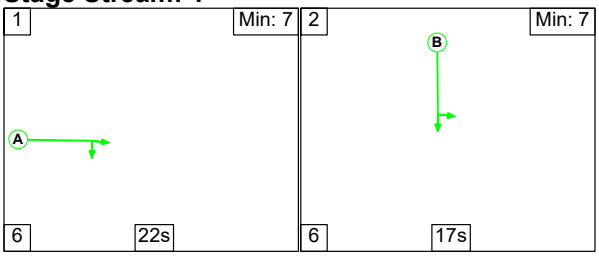
Signal Timings Diagram



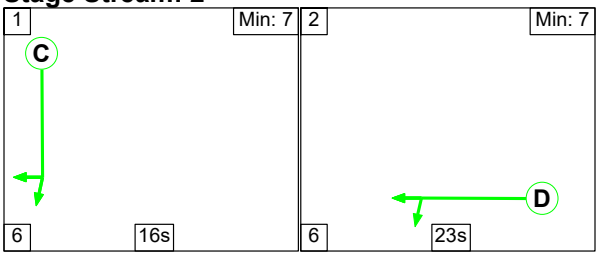
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	17
Change Point	0	28

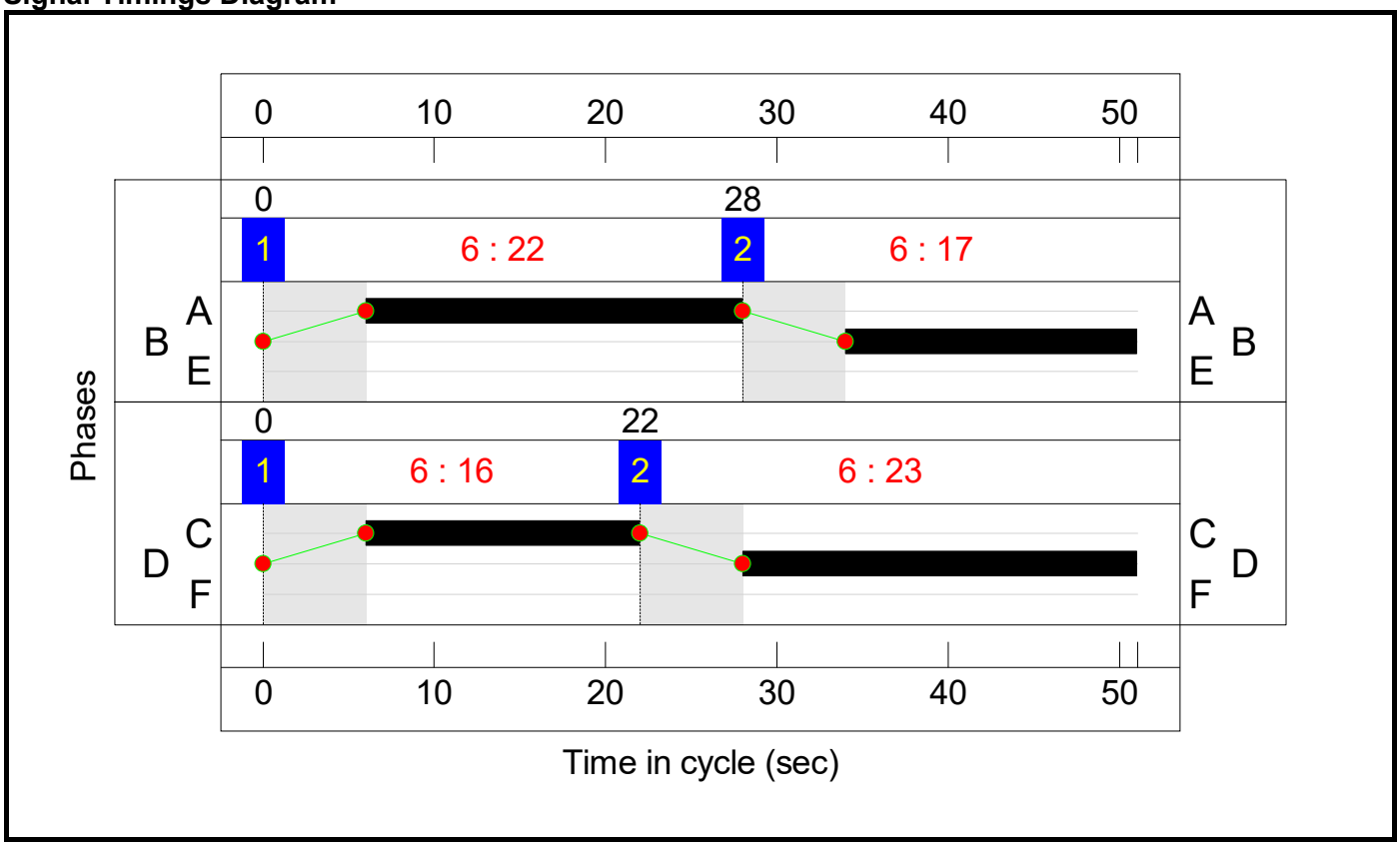
Stage Stream: 2

Stage	1	2
Duration	16	23
Change Point	0	22

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	22	6	28
B	M1 S/B Off Slip Ahead Left	Traffic	1	17	34	0
C	Circ E Right Ahead	Traffic	2	16	6	22
D	A50 W/B Ahead Left	Traffic	2	23	28	0
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

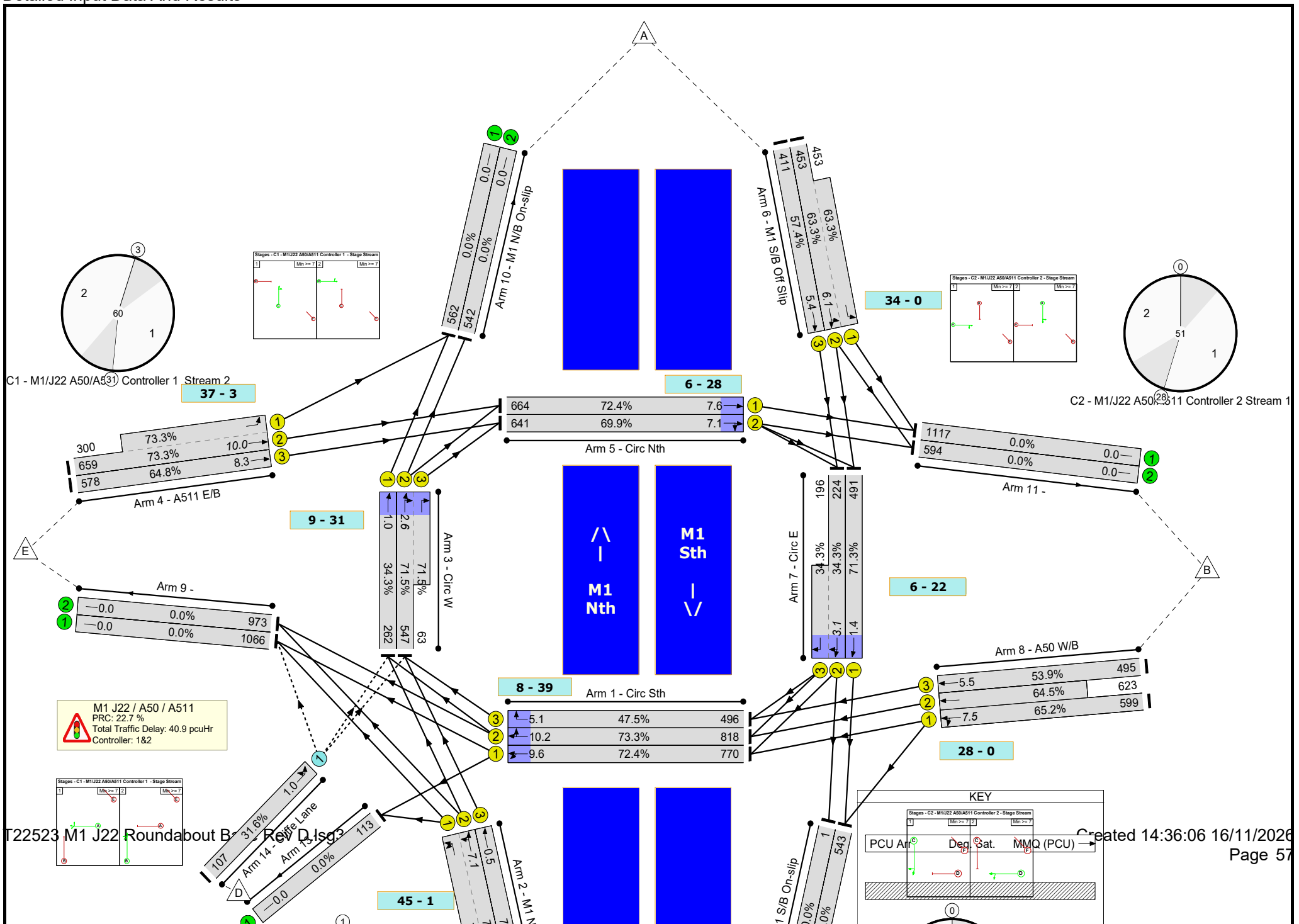
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	8	39
1/2	Circ Sth Right Ahead	U	A	8	39
1/3	Circ Sth Right	U	A	8	39
2/1	M1 N/B Off-slip Left Left2	U	B	45	1
2/2	M1 N/B Off-slip Ahead Left	U	B	45	1
2/3	M1 N/B Off-slip Ahead	U	B	45	1
3/1	Circ W Ahead	U	C	9	31
3/2	Circ W Right Ahead	U	C	9	31
3/3	Circ W Right	U	C	9	31
4/1	A511 E/B Left	U	D	37	3
4/2	A511 E/B Ahead	U	D	37	3
4/3	A511 E/B Ahead	U	D	37	3
5/1	Circ Nth Ahead	U	A	6	28
5/2	Circ Nth Right Ahead	U	A	6	28
6/1	M1 S/B Off Slip Left	U	B	34	0
6/2	M1 S/B Off Slip Ahead Left	U	B	34	0
6/3	M1 S/B Off Slip Ahead	U	B	34	0
7/1	Circ E Ahead	U	C	6	22
7/2	Circ E Right Ahead	U	C	6	22
7/3	Circ E Right	U	C	6	22
8/1	A50 W/B Ahead Left	U	D	28	0
8/2	A50 W/B Ahead	U	D	28	0
8/3	A50 W/B Ahead	U	D	28	0

Network Layout Diagram


A
B
D
E
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
37 - 3
34 - 0
6 - 28
9 - 31
6 - 22
8 - 39
28 - 0
45 - 1
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 5 - Circ Nth
Arm 4 - A511 E/B
Arm 11 -
Arm 3 - Circ W
Arm 7 - Circ E
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Cliffe Lane
Arm 15
Arm 2 - M1 N/B
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: 22.7 %
Total Traffic Delay: 40.9 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**73.3%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**73.3%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	31	-	-	770	1995	1064	72.4%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	31	-	-	818	2093	1116	73.3%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	31	-	-	496	1956	1043	47.5%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	16	-	-	792	1966:1977	557+560	70.9 : 70.9%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	16	-	-	41	1978	560	7.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	22	-	-	262	1995	765	34.3%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	22	-	-	610	2132:1995	765+88	71.5 : 71.5%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	26	-	-	959	2120:1966	898+409	73.3 : 73.3%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	26	-	-	578	1983	892	64.8%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	22	-	-	664	2034	917	72.4%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	22	-	-	641	2034	917	69.9%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	17	-	-	906	2027:2027	715+715	63.3 : 63.3%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	17	-	-	411	2027	715	57.4%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	16	-	-	491	2065	688	71.3%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	16	-	-	420	2162:2025	652+571	34.3 : 34.3%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	23	-	-	1222	1953:2090	919+966	65.2 : 64.5%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	23	-	-	495	1953	919	53.9%
9/1		U	N/A	N/A	-		-	-	-	-	1066	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	973	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	562	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	542	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1117	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	594	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	543	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	1	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	113	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	107	2005	338	31.6%

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	**-**	**-**	**89**	**18**	**0**	**34.1**	**6.8**	**0.0**	**40.9**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**89**	**18**	**0**	**34.1**	**6.8**	**0.0**	**40.9**	**-**	**-**	**-**	**-**	
1/1	770	770	-	-	-	2.3	0.0	-	2.3	10.6	9.6	0.0	9.6	
1/2	818	818	-	-	-	2.4	0.0	-	2.4	10.7	10.2	0.0	10.2	
1/3	496	496	-	-	-	1.2	0.0	-	1.2	8.8	5.1	0.0	5.1	
2/2+2/1	792	792	-	-	-	4.2	1.2	-	5.5	24.8	5.8	1.2	7.1	
2/3	41	41	-	-	-	0.2	0.0	-	0.2	19.2	0.5	0.0	0.5	
3/1	262	262	-	-	-	0.5	0.0	-	0.5	6.8	1.0	0.0	1.0	
3/2+3/3	610	610	-	-	-	1.5	0.0	-	1.5	8.9	2.6	0.0	2.6	
4/2+4/1	959	959	-	-	-	3.3	1.4	-	4.7	17.5	8.6	1.4	10.0	
4/3	578	578	-	-	-	2.1	0.9	-	3.0	18.5	7.4	0.9	8.3	
5/1	664	664	-	-	-	2.1	0.0	-	2.1	11.4	7.6	0.0	7.6	
5/2	641	641	-	-	-	2.0	0.0	-	2.0	11.2	7.1	0.0	7.1	
6/2+6/1	906	906	-	-	-	3.5	0.9	-	4.3	17.2	5.3	0.9	6.1	
6/3	411	411	-	-	-	1.5	0.7	-	2.2	19.3	4.7	0.7	5.4	
7/1	491	491	-	-	-	0.8	0.0	-	0.8	5.9	1.4	0.0	1.4	
7/2+7/3	420	420	-	-	-	1.6	0.0	-	1.6	13.6	3.1	0.0	3.1	
8/1+8/2	1222	1222	-	-	-	3.5	0.9	-	4.4	13.0	6.6	0.9	7.5	
8/3	495	495	-	-	-	1.3	0.6	-	1.9	13.8	5.0	0.6	5.5	
9/1	1066	1066	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	973	973	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	562	562	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	542	542	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1117	1117	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

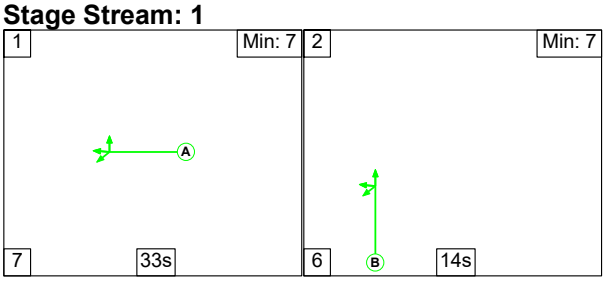
11/2	594	594	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1	1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	113	113	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	107	107	89	18	0	0.2	0.2	-	0.4	12.8	0.7	0.2	1.0

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	22.8	Total Delay for Signalled Lanes (pcuHr):	11.59	Cycle Time (s): 60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	22.7	Total Delay for Signalled Lanes (pcuHr):	9.64	Cycle Time (s): 60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	24.3	Total Delay for Signalled Lanes (pcuHr):	10.63	Cycle Time (s): 51
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	26.2	Total Delay for Signalled Lanes (pcuHr):	8.69	Cycle Time (s): 51
	PRC Over All Lanes (%):	22.7	Total Delay Over All Lanes(pcuHr):	40.93	

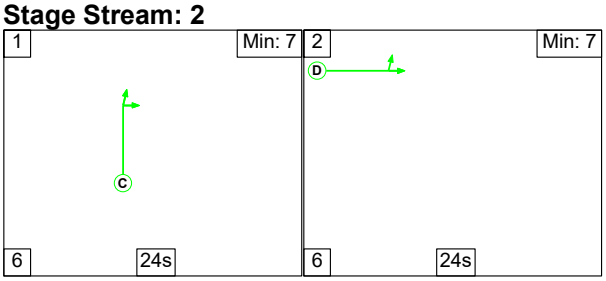
Scenario 3: '2028 Future Base AM Peak' (FG3: '2028 Future Base AM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	14
Change Point	12	52

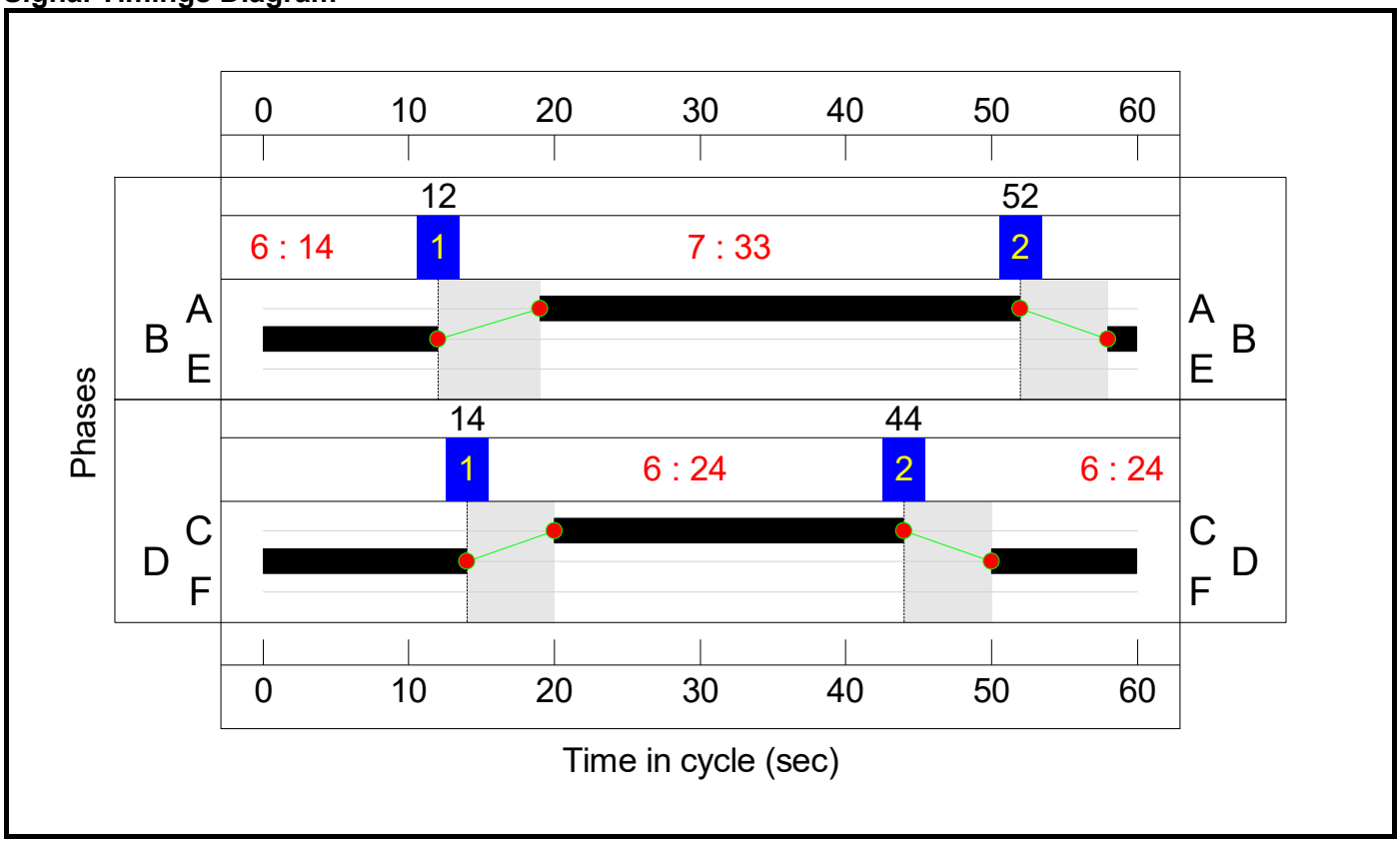
Stage Stream: 2

Stage	1	2
Duration	24	24
Change Point	14	44

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	33	19	52
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	14	58	12
C	Circ W Right Ahead	Traffic	2	24	20	44
D	A511 E/B Ahead Left	Traffic	2	24	50	14
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

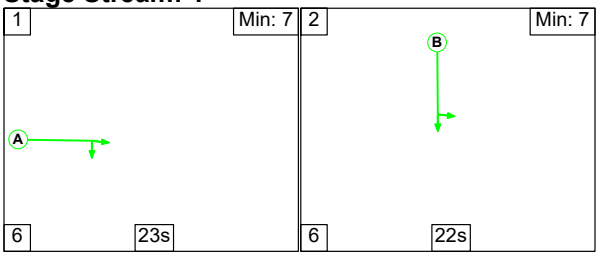
Signal Timings Diagram



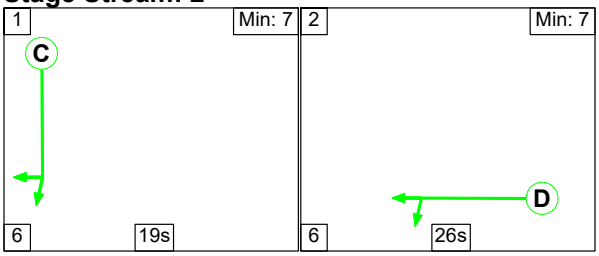
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	23	22
Change Point	7	36

Detailed Input Data And Results

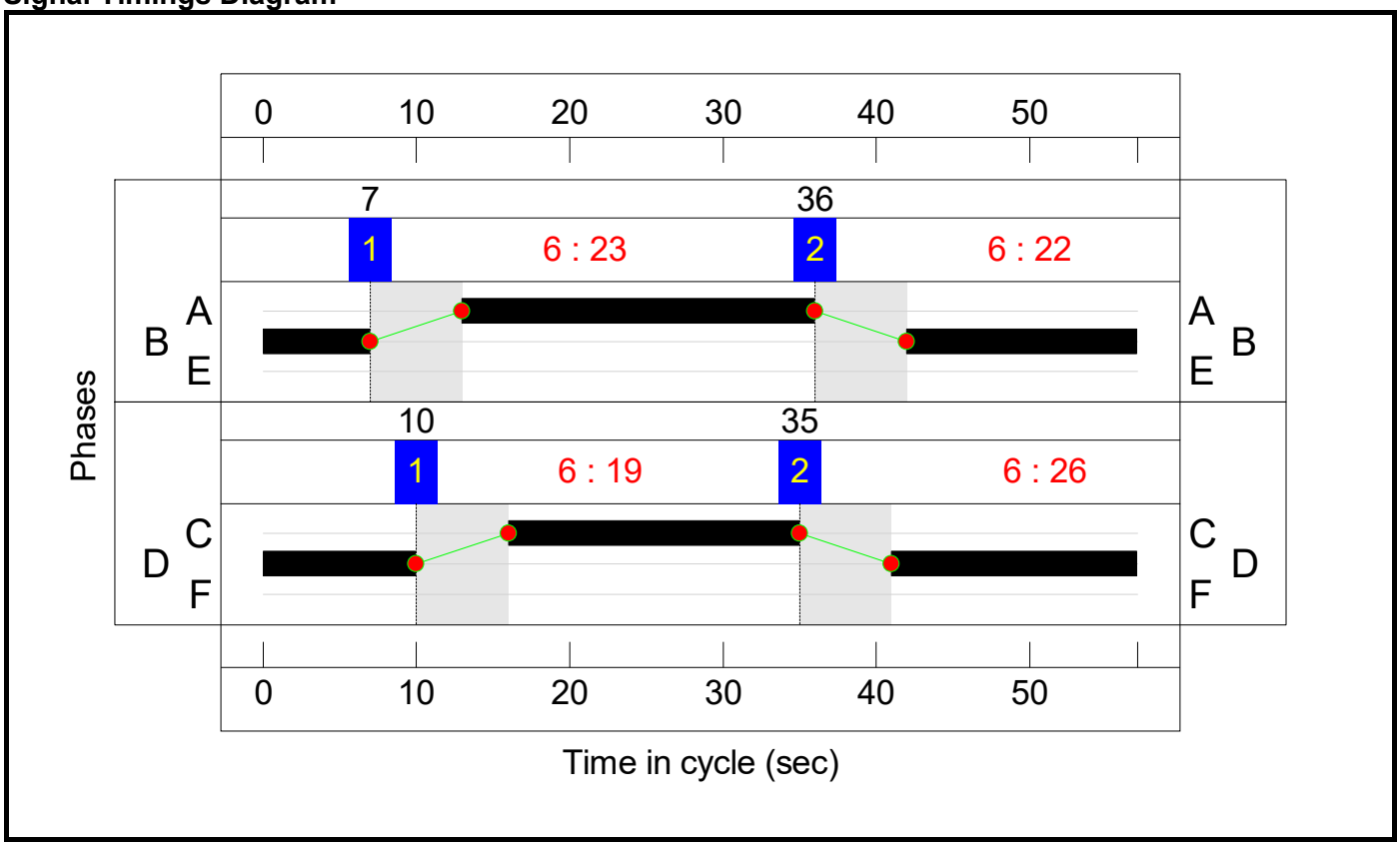
Stage Stream: 2

Stage	1	2
Duration	19	26
Change Point	10	35

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	23	13	36
B	M1 S/B Off Slip Ahead Left	Traffic	1	22	42	7
C	Circ E Right Ahead	Traffic	2	19	16	35
D	A50 W/B Ahead Left	Traffic	2	26	41	10
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

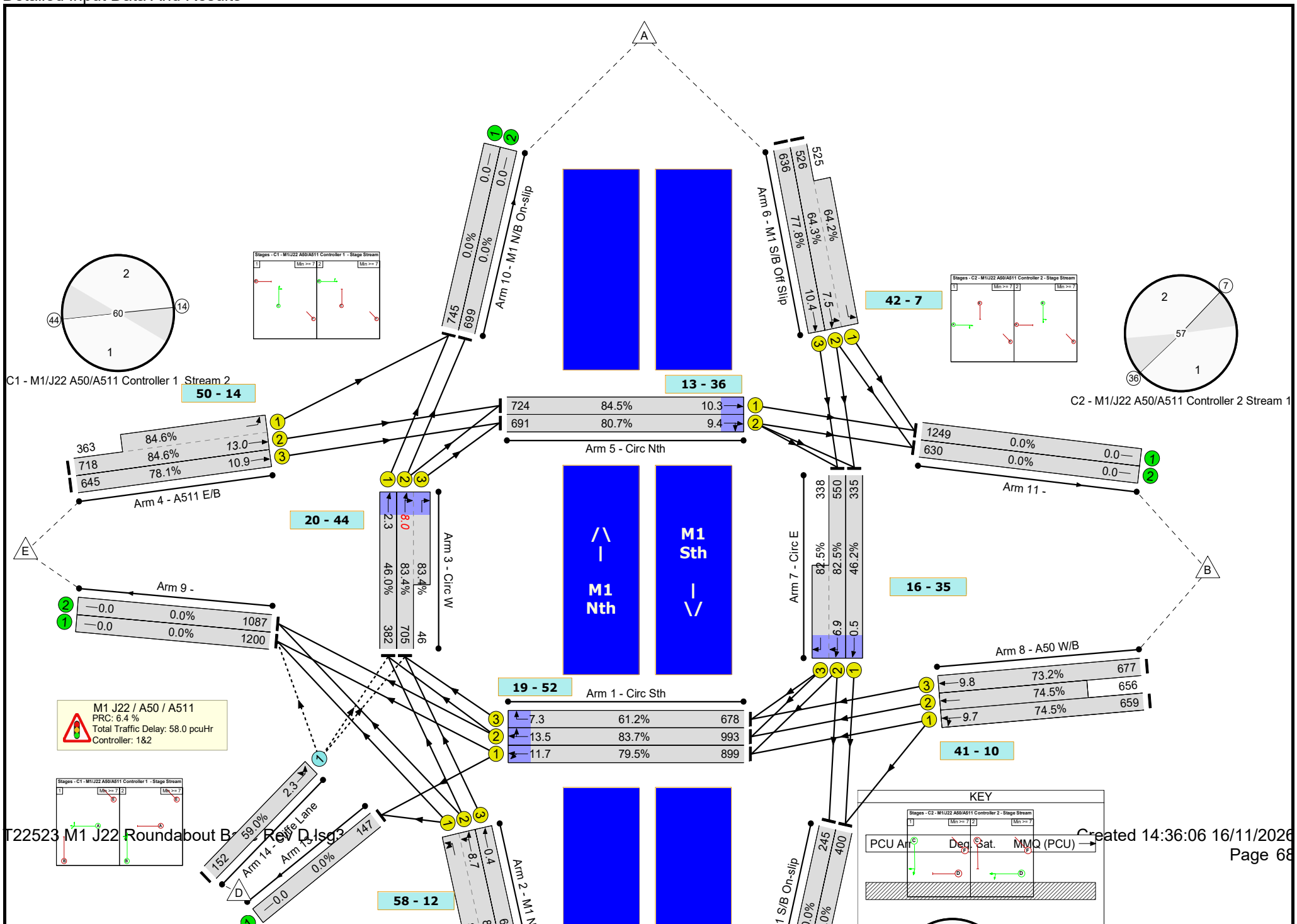
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	19	52
1/2	Circ Sth Right Ahead	U	A	19	52
1/3	Circ Sth Right	U	A	19	52
2/1	M1 N/B Off-slip Left Left2	U	B	58	12
2/2	M1 N/B Off-slip Ahead Left	U	B	58	12
2/3	M1 N/B Off-slip Ahead	U	B	58	12
3/1	Circ W Ahead	U	C	20	44
3/2	Circ W Right Ahead	U	C	20	44
3/3	Circ W Right	U	C	20	44
4/1	A511 E/B Left	U	D	50	14
4/2	A511 E/B Ahead	U	D	50	14
4/3	A511 E/B Ahead	U	D	50	14
5/1	Circ Nth Ahead	U	A	13	36
5/2	Circ Nth Right Ahead	U	A	13	36
6/1	M1 S/B Off Slip Left	U	B	42	7
6/2	M1 S/B Off Slip Ahead Left	U	B	42	7
6/3	M1 S/B Off Slip Ahead	U	B	42	7
7/1	Circ E Ahead	U	C	16	35
7/2	Circ E Right Ahead	U	C	16	35
7/3	Circ E Right	U	C	16	35
8/1	A50 W/B Ahead Left	U	D	41	10
8/2	A50 W/B Ahead	U	D	41	10
8/3	A50 W/B Ahead	U	D	41	10

Network Layout Diagram


A
B
D
E
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
50 - 14
13 - 36
42 - 7
20 - 44
16 - 35
19 - 52
41 - 10
58 - 12
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 4 - A511 E/B
Arm 5 - Circ Nth
Arm 11 -
Arm 3 - Circ W
Arm 7 - Circ E
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Cliffe Lane
Arm 15 -
Arm 2 - M1 N/B
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: 6.4 %
Total Traffic Delay: 58.0 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**84.6%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**84.6%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	33	-	-	899	1995	1131	79.5%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	33	-	-	993	2093	1186	83.7%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	33	-	-	678	1956	1108	61.2%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	14	-	-	815	1966:1977	492+494	82.6 : 82.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	14	-	-	30	1978	494	6.1%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	24	-	-	382	1995	831	46.0%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	24	-	-	751	2132:1995	845+55	83.4 : 83.4%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	24	-	-	1081	2120:1966	849+429	84.6 : 84.6%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	24	-	-	645	1983	826	78.1%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	23	-	-	724	2034	856	84.5%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	23	-	-	691	2034	856	80.7%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	22	-	-	1051	2027:2027	818+818	64.3 : 64.2%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	22	-	-	636	2027	818	77.8%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	19	-	-	335	2065	725	46.2%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	19	-	-	888	2181:2025	666+410	82.5 : 82.5%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	26	-	-	1315	1953:2090	885+881	74.5 : 74.5%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	26	-	-	677	1953	925	73.2%
9/1		U	N/A	N/A	-		-	-	-	-	1200	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1087	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	745	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	699	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1249	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	630	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	400	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	245	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	147	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	152	2005	258	59.0%

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	**-**	**-**	**80**	**72**	**0**	**45.1**	**12.9**	**0.0**	**58.0**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**80**	**72**	**0**	**45.1**	**12.9**	**0.0**	**58.0**	**-**	**-**	**-**	**-**	
1/1	899	899	-	-	-	2.6	0.0	-	2.6	10.3	11.7	0.0	11.7	
1/2	993	993	-	-	-	3.0	0.0	-	3.0	10.7	13.5	0.0	13.5	
1/3	678	678	-	-	-	1.6	0.0	-	1.6	8.6	7.3	0.0	7.3	
2/2+2/1	815	815	-	-	-	4.8	2.3	-	7.1	31.5	6.4	2.3	8.7	
2/3	30	30	-	-	-	0.1	0.0	-	0.2	21.1	0.4	0.0	0.4	
3/1	382	382	-	-	-	0.7	0.0	-	0.7	7.0	2.3	0.0	2.3	
3/2+3/3	751	751	-	-	-	1.6	0.0	-	1.6	7.6	8.0	0.0	8.0	
4/2+4/1	1081	1081	-	-	-	4.3	2.7	-	7.0	23.4	10.4	2.7	13.0	
4/3	645	645	-	-	-	2.7	1.7	-	4.5	24.9	9.1	1.7	10.9	
5/1	724	724	-	-	-	3.0	0.0	-	3.0	14.8	10.3	0.0	10.3	
5/2	691	691	-	-	-	2.8	0.0	-	2.8	14.5	9.4	0.0	9.4	
6/2+6/1	1051	1051	-	-	-	4.0	0.9	-	4.9	16.8	6.6	0.9	7.5	
6/3	636	636	-	-	-	2.6	1.7	-	4.3	24.5	8.7	1.7	10.4	
7/1	335	335	-	-	-	0.3	0.0	-	0.3	3.2	0.5	0.0	0.5	
7/2+7/3	888	888	-	-	-	4.0	0.0	-	4.0	16.2	6.9	0.0	6.9	
8/1+8/2	1315	1315	-	-	-	4.3	1.4	-	5.7	15.7	8.2	1.4	9.7	
8/3	677	677	-	-	-	2.3	1.3	-	3.6	19.3	8.5	1.3	9.8	
9/1	1200	1200	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1087	1087	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	745	745	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	699	699	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1249	1249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

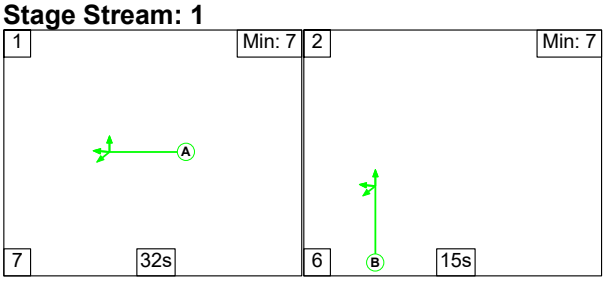
11/2	630	630	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	152	152	80	72	0	0.4	0.7	-	1.1	27.2	1.6	0.7	2.3

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	7.5	Total Delay for Signalled Lanes (pcuHr):	14.46	Cycle Time (s): 60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	6.4	Total Delay for Signalled Lanes (pcuHr):	13.80	Cycle Time (s): 60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	6.5	Total Delay for Signalled Lanes (pcuHr):	14.98	Cycle Time (s): 57
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	9.1	Total Delay for Signalled Lanes (pcuHr):	13.64	Cycle Time (s): 57
	PRC Over All Lanes (%):	6.4	Total Delay Over All Lanes(pcuHr):	58.03	

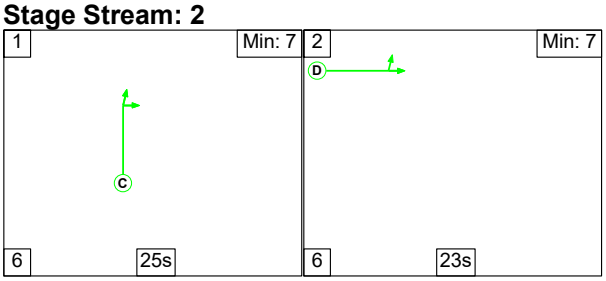
Scenario 4: '2028 Future Base PM Peak' (FG4: '2028 Future Base PM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	15
Change Point	59	38

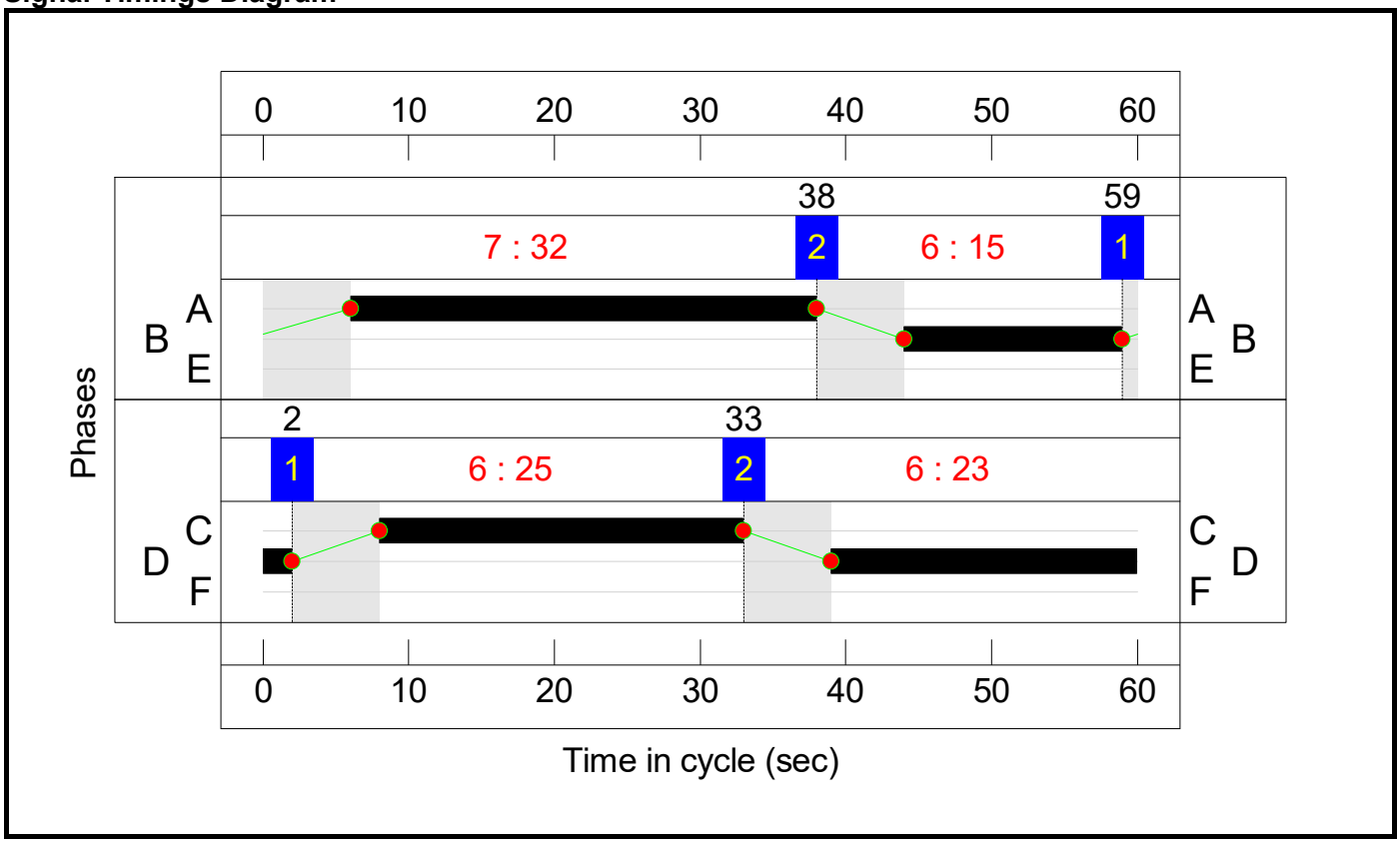
Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	2	33

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	6	38
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	44	59
C	Circ W Right Ahead	Traffic	2	25	8	33
D	A511 E/B Ahead Left	Traffic	2	23	39	2
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

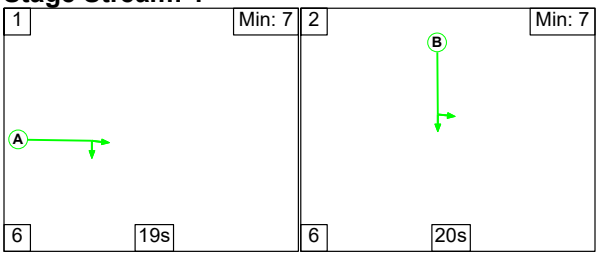
Signal Timings Diagram



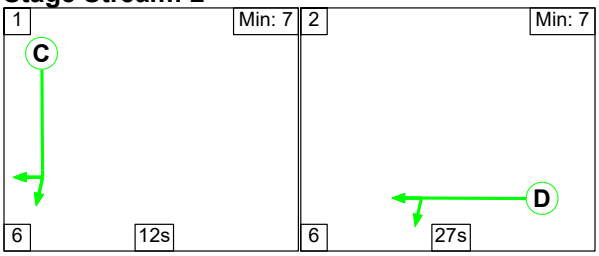
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	20
Change Point	23	48

Detailed Input Data And Results

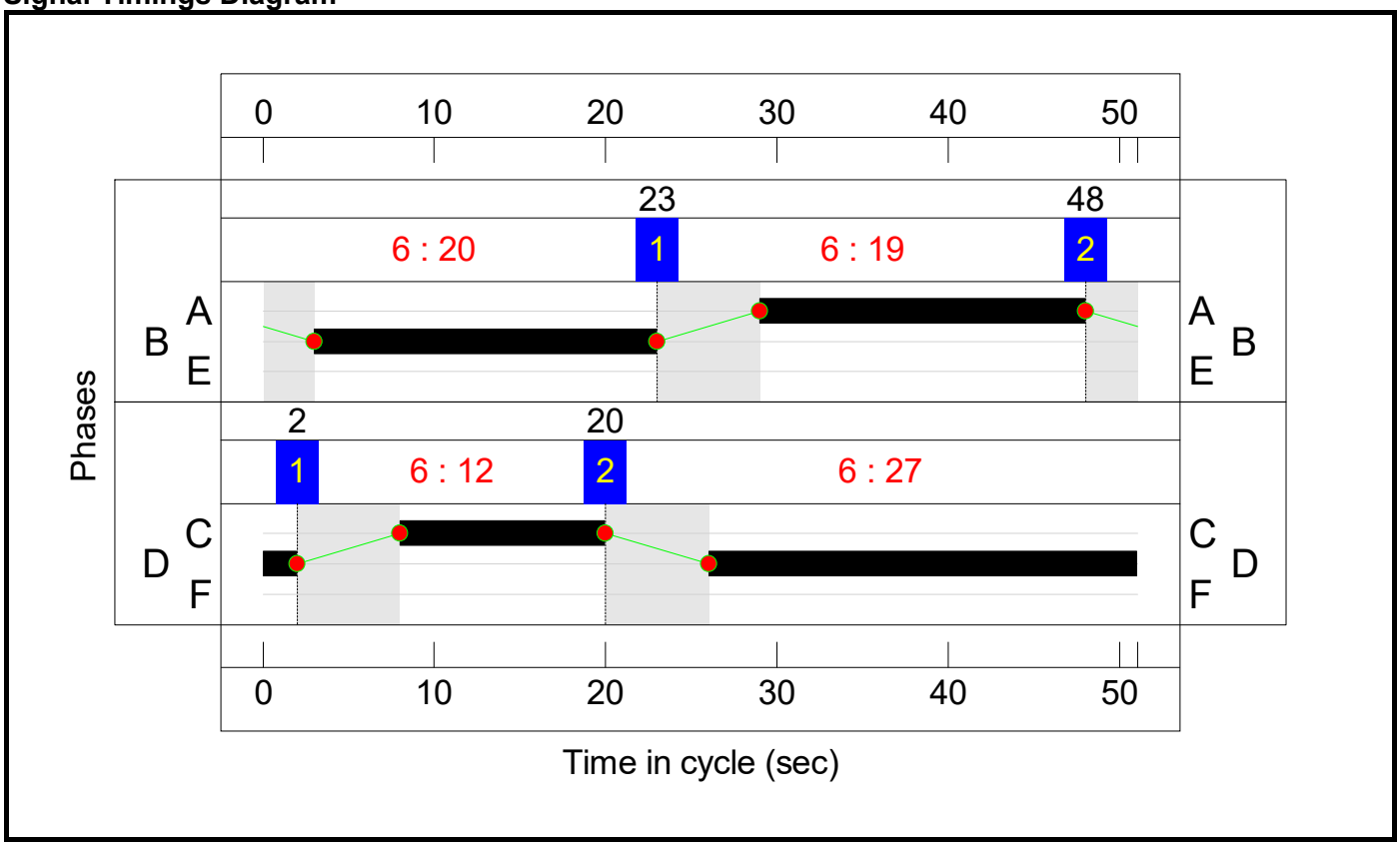
Stage Stream: 2

Stage	1	2
Duration	12	27
Change Point	2	20

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	19	29	48
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	3	23
C	Circ E Right Ahead	Traffic	2	12	8	20
D	A50 W/B Ahead Left	Traffic	2	27	26	2
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

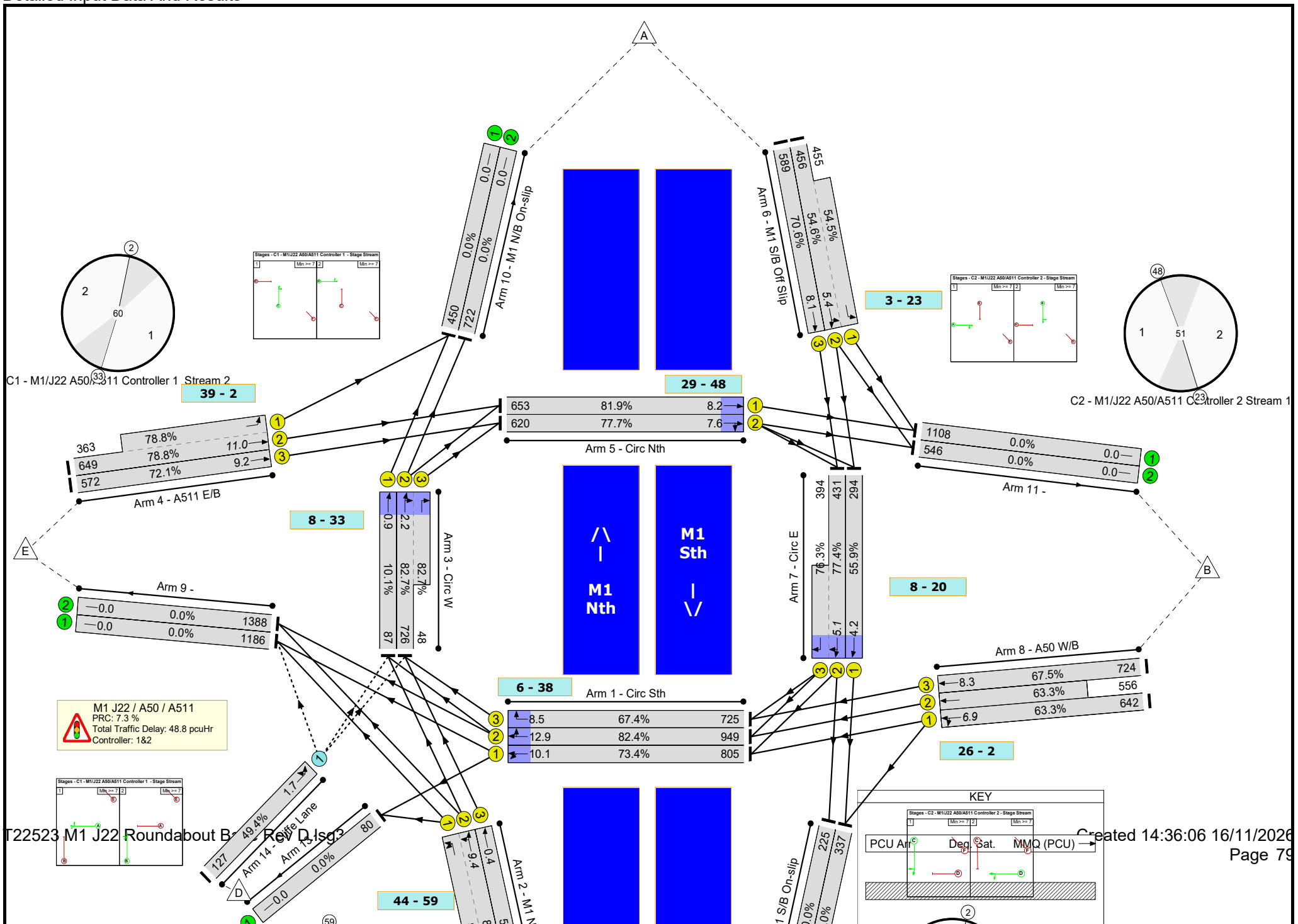
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	6	38
1/2	Circ Sth Right Ahead	U	A	6	38
1/3	Circ Sth Right	U	A	6	38
2/1	M1 N/B Off-slip Left Left2	U	B	44	59
2/2	M1 N/B Off-slip Ahead Left	U	B	44	59
2/3	M1 N/B Off-slip Ahead	U	B	44	59
3/1	Circ W Ahead	U	C	8	33
3/2	Circ W Right Ahead	U	C	8	33
3/3	Circ W Right	U	C	8	33
4/1	A511 E/B Left	U	D	39	2
4/2	A511 E/B Ahead	U	D	39	2
4/3	A511 E/B Ahead	U	D	39	2
5/1	Circ Nth Ahead	U	A	29	48
5/2	Circ Nth Right Ahead	U	A	29	48
6/1	M1 S/B Off Slip Left	U	B	3	23
6/2	M1 S/B Off Slip Ahead Left	U	B	3	23
6/3	M1 S/B Off Slip Ahead	U	B	3	23
7/1	Circ E Ahead	U	C	8	20
7/2	Circ E Right Ahead	U	C	8	20
7/3	Circ E Right	U	C	8	20
8/1	A50 W/B Ahead Left	U	D	26	2
8/2	A50 W/B Ahead	U	D	26	2
8/3	A50 W/B Ahead	U	D	26	2

Network Layout Diagram



A
B
E
D
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
39 - 2
29 - 48
3 - 23
8 - 33
8 - 20
6 - 38
26 - 2
44 - 59
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 5 - Circ Nth
Arm 4 - A511 E/B
Arm 11 -
Arm 3 - Circ W
Arm 7 - Circ E
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Giffe Lane
Arm 13
Arm 2 - M1 N
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: 7.3 %
Total Traffic Delay: 48.8 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**83.8%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**83.8%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	805	1995	1097	73.4%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	949	2093	1151	82.4%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	725	1956	1076	67.4%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	881	1966:1977	524+527	83.7 : 83.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	28	1978	527	5.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	25	-	-	87	1995	865	10.1%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	25	-	-	774	2132:1995	878+58	82.7 : 82.7%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	23	-	-	1012	2120:1966	824+461	78.8 : 78.8%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	23	-	-	572	1983	793	72.1%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	19	-	-	653	2034	798	81.9%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	19	-	-	620	2034	798	77.7%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	911	2027:2027	835+835	54.6 : 54.5%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	589	2027	835	70.6%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	12	-	-	294	2065	526	55.9%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	12	-	-	825	2184:2025	557+516	77.4 : 76.3%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	27	-	-	1198	1953:2090	1014+878	63.3 : 63.3%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	27	-	-	724	1953	1072	67.5%
9/1		U	N/A	N/A	-		-	-	-	-	1186	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1388	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	450	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	722	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1108	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	546	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	337	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	225	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	80	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	127	2005	257	49.4%

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	**-**	**-**	**74**	**53**	**0**	**39.0**	**9.8**	**0.0**	**48.8**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**74**	**53**	**0**	**39.0**	**9.8**	**0.0**	**48.8**	**-**	**-**	**-**	**-**	
1/1	805	805	-	-	-	2.3	0.0	-	2.3	10.2	10.1	0.0	10.1	
1/2	949	949	-	-	-	2.9	0.0	-	2.9	11.1	12.9	0.0	12.9	
1/3	725	725	-	-	-	1.9	0.0	-	1.9	9.7	8.5	0.0	8.5	
2/2+2/1	881	881	-	-	-	5.1	2.5	-	7.6	31.0	6.9	2.5	9.4	
2/3	28	28	-	-	-	0.1	0.0	-	0.2	20.1	0.3	0.0	0.4	
3/1	87	87	-	-	-	0.3	0.0	-	0.3	12.4	0.9	0.0	0.9	
3/2+3/3	774	774	-	-	-	1.3	0.0	-	1.3	6.1	2.2	0.0	2.2	
4/2+4/1	1012	1012	-	-	-	4.1	1.8	-	6.0	21.2	9.2	1.8	11.0	
4/3	572	572	-	-	-	2.4	1.3	-	3.7	23.2	7.9	1.3	9.2	
5/1	653	653	-	-	-	2.5	0.0	-	2.5	13.9	8.2	0.0	8.2	
5/2	620	620	-	-	-	2.3	0.0	-	2.3	13.6	7.6	0.0	7.6	
6/2+6/1	911	911	-	-	-	2.9	0.6	-	3.5	13.8	4.8	0.6	5.4	
6/3	589	589	-	-	-	2.0	1.2	-	3.2	19.7	6.9	1.2	8.1	
7/1	294	294	-	-	-	1.8	0.0	-	1.8	21.5	4.2	0.0	4.2	
7/2+7/3	825	825	-	-	-	2.4	0.0	-	2.4	10.6	5.1	0.0	5.1	
8/1+8/2	1198	1198	-	-	-	2.5	0.9	-	3.3	10.0	6.1	0.9	6.9	
8/3	724	724	-	-	-	1.7	1.0	-	2.7	13.4	7.2	1.0	8.3	
9/1	1186	1186	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1388	1388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	450	450	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	722	722	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1108	1108	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

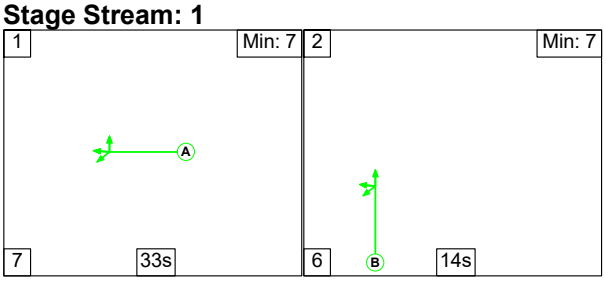
11/2	546	546	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	337	337	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	225	225	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	127	127	74	53	0	0.3	0.5	-	0.8	23.3	1.2	0.5	1.7

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	7.3	Total Delay for Signalled Lanes (pcuHr):	14.90	Cycle Time (s): 60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	8.9	Total Delay for Signalled Lanes (pcuHr):	11.27	Cycle Time (s): 60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	9.9	Total Delay for Signalled Lanes (pcuHr):	11.56	Cycle Time (s): 51
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	16.2	Total Delay for Signalled Lanes (pcuHr):	10.22	Cycle Time (s): 51
	PRC Over All Lanes (%):	7.3	Total Delay Over All Lanes(pcuHr):	48.77	

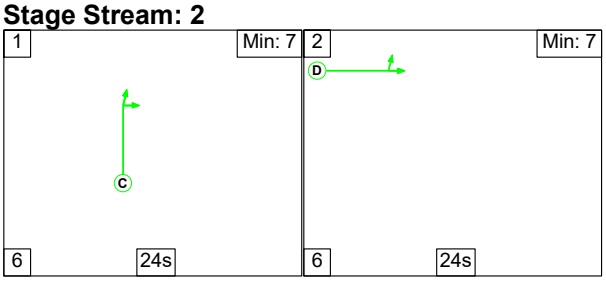
Scenario 5: '2030 Future Base AM Peak' (FG5: '2030 Future Base AM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	14
Change Point	0	40

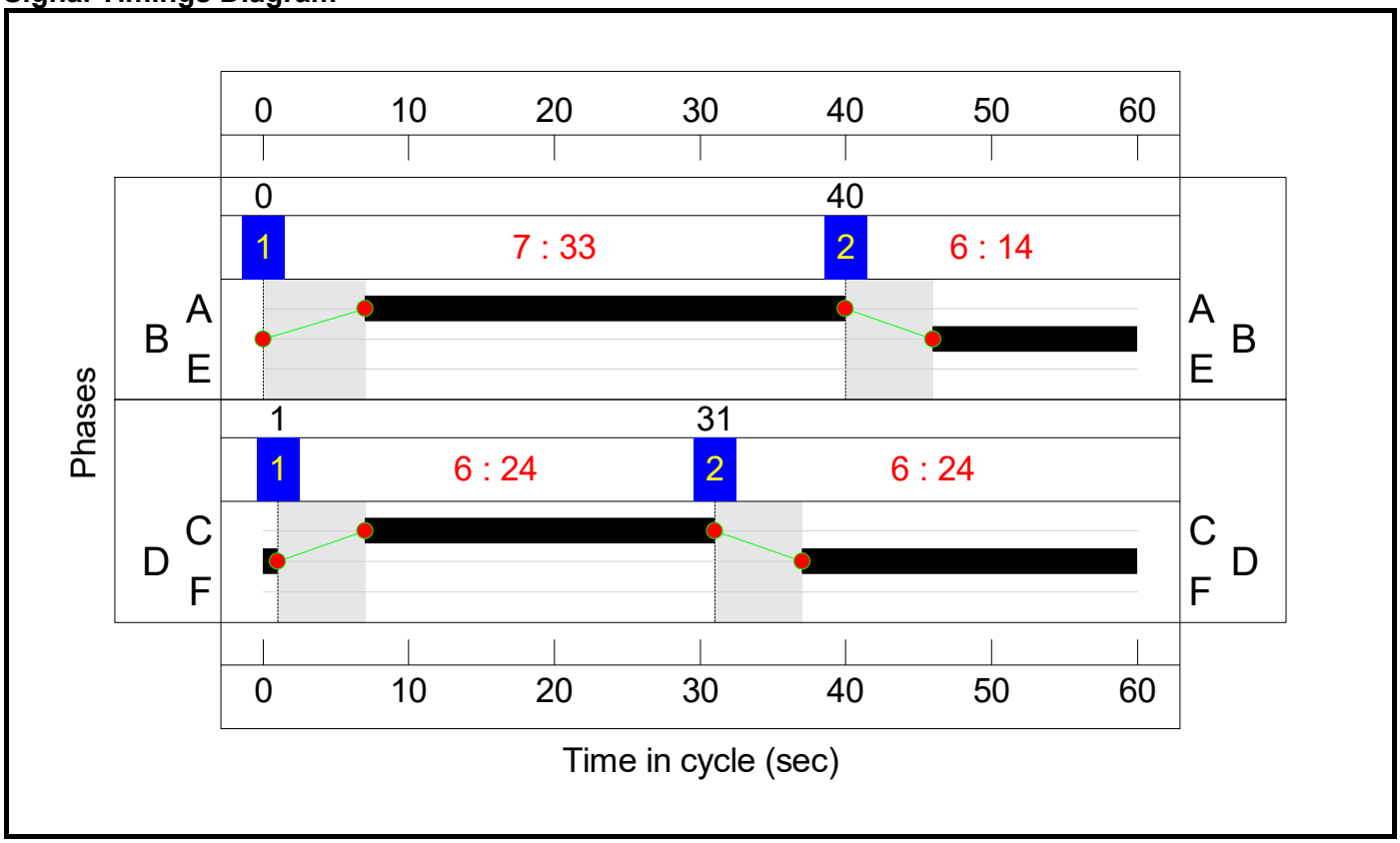
Stage Stream: 2

Stage	1	2
Duration	24	24
Change Point	1	31

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	33	7	40
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	14	46	0
C	Circ W Right Ahead	Traffic	2	24	7	31
D	A511 E/B Ahead Left	Traffic	2	24	37	1
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

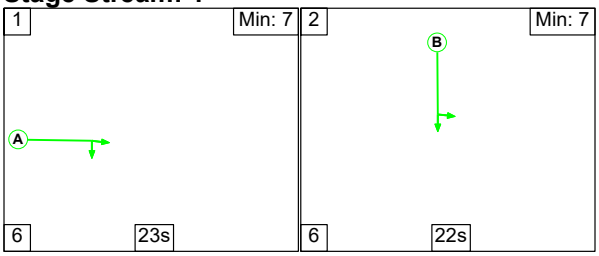
Signal Timings Diagram



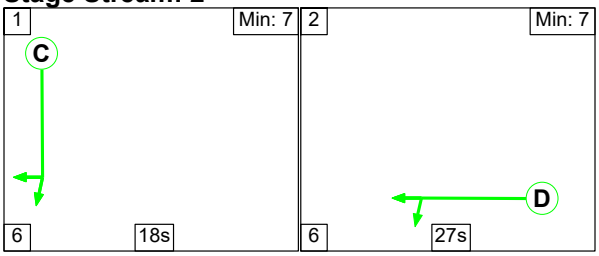
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	23	22
Change Point	0	29

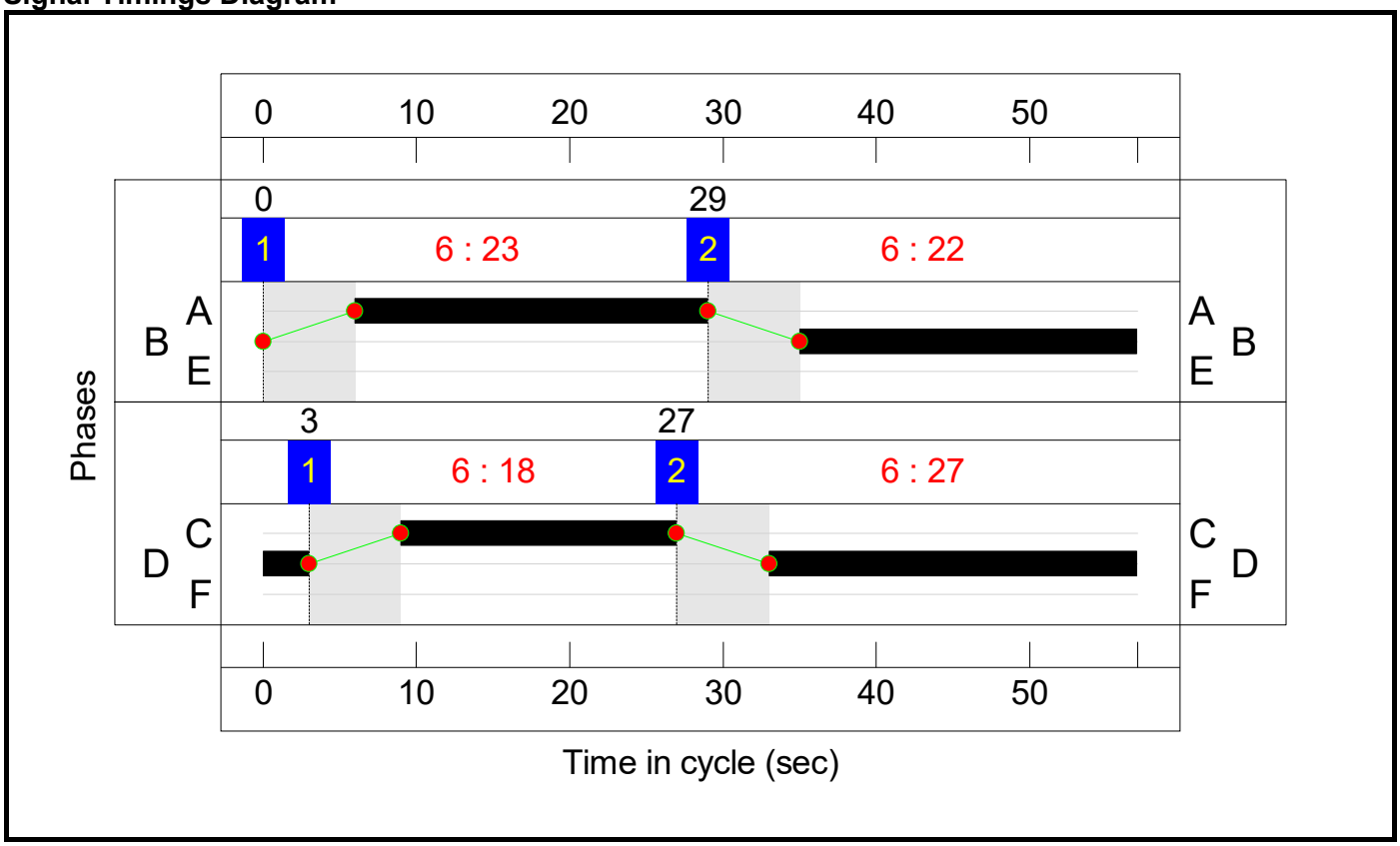
Stage Stream: 2

Stage	1	2
Duration	18	27
Change Point	3	27

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	23	6	29
B	M1 S/B Off Slip Ahead Left	Traffic	1	22	35	0
C	Circ E Right Ahead	Traffic	2	18	9	27
D	A50 W/B Ahead Left	Traffic	2	27	33	3
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

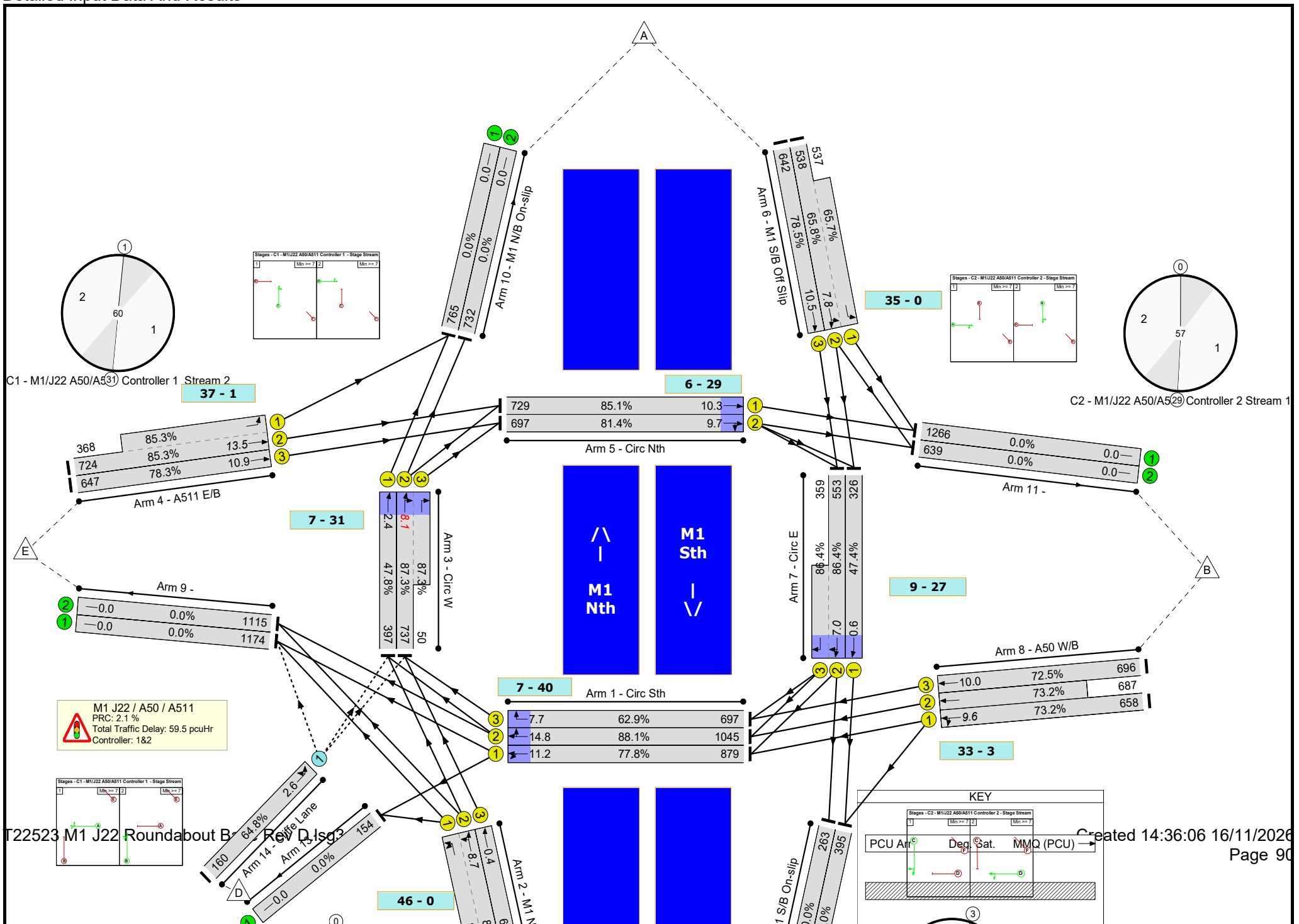
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	7	40
1/2	Circ Sth Right Ahead	U	A	7	40
1/3	Circ Sth Right	U	A	7	40
2/1	M1 N/B Off-slip Left Left2	U	B	46	0
2/2	M1 N/B Off-slip Ahead Left	U	B	46	0
2/3	M1 N/B Off-slip Ahead	U	B	46	0
3/1	Circ W Ahead	U	C	7	31
3/2	Circ W Right Ahead	U	C	7	31
3/3	Circ W Right	U	C	7	31
4/1	A511 E/B Left	U	D	37	1
4/2	A511 E/B Ahead	U	D	37	1
4/3	A511 E/B Ahead	U	D	37	1
5/1	Circ Nth Ahead	U	A	6	29
5/2	Circ Nth Right Ahead	U	A	6	29
6/1	M1 S/B Off Slip Left	U	B	35	0
6/2	M1 S/B Off Slip Ahead Left	U	B	35	0
6/3	M1 S/B Off Slip Ahead	U	B	35	0
7/1	Circ E Ahead	U	C	9	27
7/2	Circ E Right Ahead	U	C	9	27
7/3	Circ E Right	U	C	9	27
8/1	A50 W/B Ahead Left	U	D	33	3
8/2	A50 W/B Ahead	U	D	33	3
8/3	A50 W/B Ahead	U	D	33	3

Network Layout Diagram


A
B
E
D
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
37 - 1
6 - 29
35 - 0
7 - 31
9 - 27
7 - 40
33 - 3
46 - 0
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 5 - Circ Nth
Arm 4 - A511 E/B
Arm 11 -
Arm 3 - Circ W
Arm 7 - Circ E
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Cliffe Lane
Arm 13
Arm 2 - M1 N
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: 2.1 %
Total Traffic Delay: 59.5 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**88.1%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**88.1%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	33	-	-	879	1995	1131	77.8%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	33	-	-	1045	2093	1186	88.1%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	33	-	-	697	1956	1108	62.9%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	14	-	-	815	1966:1977	492+494	82.6 : 82.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	14	-	-	31	1978	494	6.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	24	-	-	397	1995	831	47.8%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	24	-	-	787	2132:1995	844+57	87.3 : 87.3%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	24	-	-	1092	2120:1966	848+431	85.3 : 85.3%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	24	-	-	647	1983	826	78.3%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	23	-	-	729	2034	856	85.1%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	23	-	-	697	2034	856	81.4%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	22	-	-	1075	2027:2027	818+818	65.8 : 65.7%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	22	-	-	642	2027	818	78.5%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	18	-	-	326	2065	688	47.4%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	18	-	-	912	2182:2025	640+416	86.4 : 86.4%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	27	-	-	1345	1953:2090	899+939	73.2 : 73.2%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	27	-	-	696	1953	959	72.5%
9/1		U	N/A	N/A	-		-	-	-	-	1174	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1115	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	765	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	732	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1266	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	639	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	395	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	263	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	154	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	160	2005	247	64.8%

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	**-**	**-**	**71**	**89**	**0**	**46.3**	**13.3**	**0.0**	**59.5**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**71**	**89**	**0**	**46.3**	**13.3**	**0.0**	**59.5**	**-**	**-**	**-**	**-**	
1/1	879	879	-	-	-	2.5	0.0	-	2.5	10.1	11.2	0.0	11.2	
1/2	1045	1045	-	-	-	3.3	0.0	-	3.3	11.3	14.8	0.0	14.8	
1/3	697	697	-	-	-	1.7	0.0	-	1.7	8.8	7.7	0.0	7.7	
2/2+2/1	815	815	-	-	-	4.8	2.3	-	7.1	31.5	6.4	2.3	8.7	
2/3	31	31	-	-	-	0.1	0.0	-	0.2	21.1	0.4	0.0	0.4	
3/1	397	397	-	-	-	1.0	0.0	-	1.0	8.7	2.4	0.0	2.4	
3/2+3/3	787	787	-	-	-	1.7	0.0	-	1.7	7.9	8.1	0.0	8.1	
4/2+4/1	1092	1092	-	-	-	4.4	2.8	-	7.2	23.8	10.7	2.8	13.5	
4/3	647	647	-	-	-	2.7	1.8	-	4.5	25.0	9.2	1.8	10.9	
5/1	729	729	-	-	-	3.0	0.0	-	3.0	14.9	10.3	0.0	10.3	
5/2	697	697	-	-	-	2.8	0.0	-	2.8	14.5	9.7	0.0	9.7	
6/2+6/1	1075	1075	-	-	-	4.1	1.0	-	5.1	17.0	6.9	1.0	7.8	
6/3	642	642	-	-	-	2.6	1.8	-	4.4	24.9	8.7	1.8	10.5	
7/1	326	326	-	-	-	0.3	0.0	-	0.3	3.8	0.6	0.0	0.6	
7/2+7/3	912	912	-	-	-	4.3	0.0	-	4.3	16.8	7.0	0.0	7.0	
8/1+8/2	1345	1345	-	-	-	4.1	1.4	-	5.5	14.7	8.2	1.4	9.6	
8/3	696	696	-	-	-	2.2	1.3	-	3.5	18.2	8.7	1.3	10.0	
9/1	1174	1174	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1115	1115	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	765	765	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	732	732	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1266	1266	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

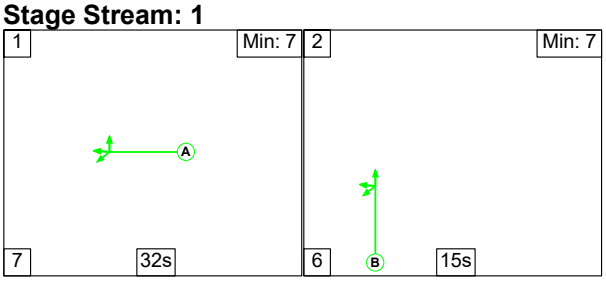
11/2	639	639	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	395	395	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	154	154	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	160	160	71	89	0	0.5	0.9	-	1.4	31.7	1.7	0.9	2.6

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	2.1	Total Delay for Signalled Lanes (pcuHr):	14.74	Cycle Time (s):	60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	3.1	Total Delay for Signalled Lanes (pcuHr):	14.41	Cycle Time (s):	60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	5.7	Total Delay for Signalled Lanes (pcuHr):	15.34	Cycle Time (s):	57
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	4.2	Total Delay for Signalled Lanes (pcuHr):	13.62	Cycle Time (s):	57
	PRC Over All Lanes (%):	2.1	Total Delay Over All Lanes(pcuHr):	59.52		

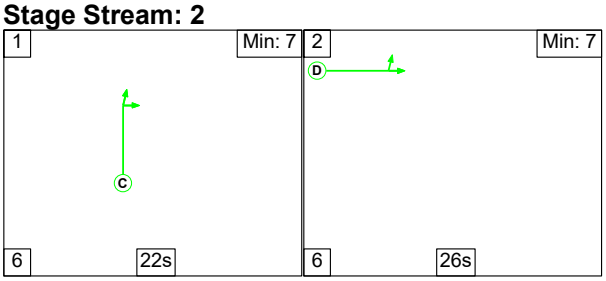
Scenario 6: '2030 Future Base PM Peak ' (FG6: '2030 Future Base PM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	15
Change Point	59	38

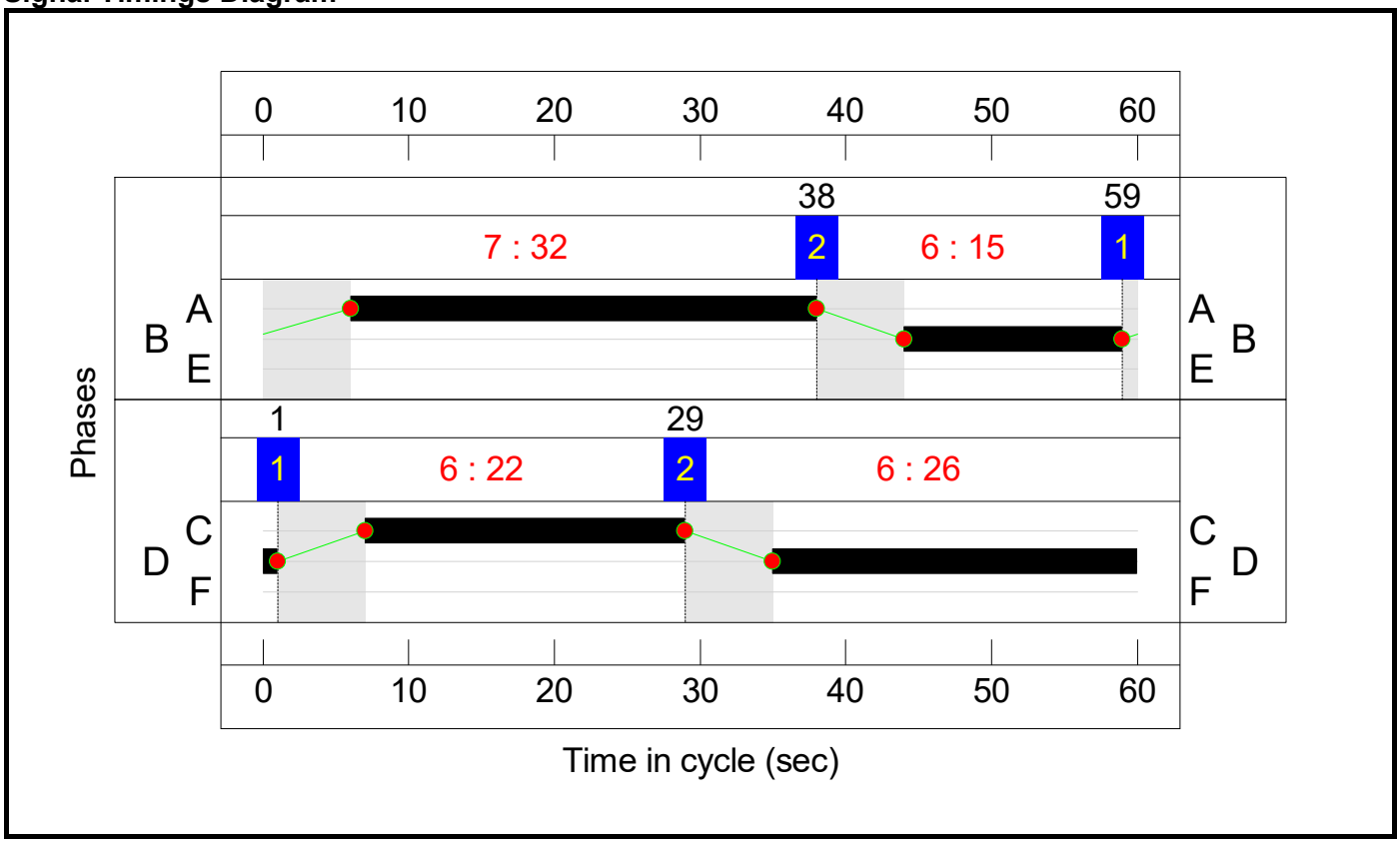
Stage Stream: 2

Stage	1	2
Duration	22	26
Change Point	1	29

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	6	38
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	44	59
C	Circ W Right Ahead	Traffic	2	22	7	29
D	A511 E/B Ahead Left	Traffic	2	26	35	1
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

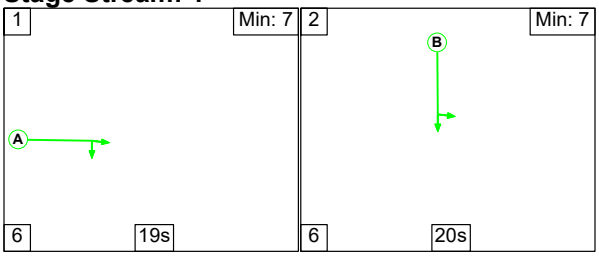
Signal Timings Diagram



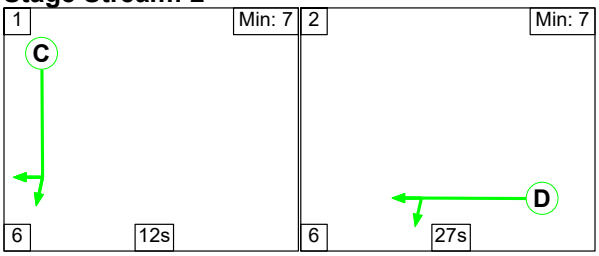
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	20
Change Point	21	46

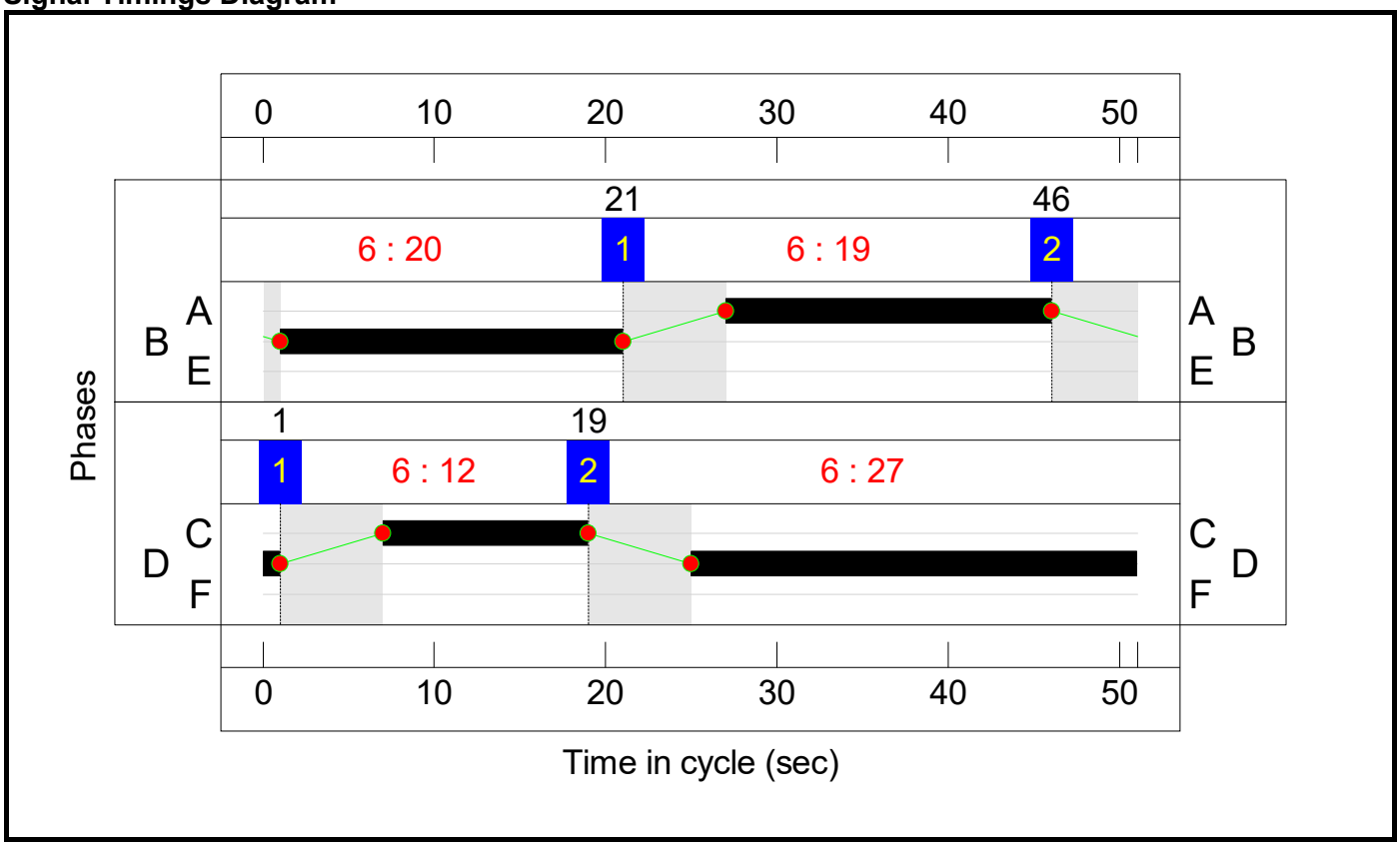
Stage Stream: 2

Stage	1	2
Duration	12	27
Change Point	1	19

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	19	27	46
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	1	21
C	Circ E Right Ahead	Traffic	2	12	7	19
D	A50 W/B Ahead Left	Traffic	2	27	25	1
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

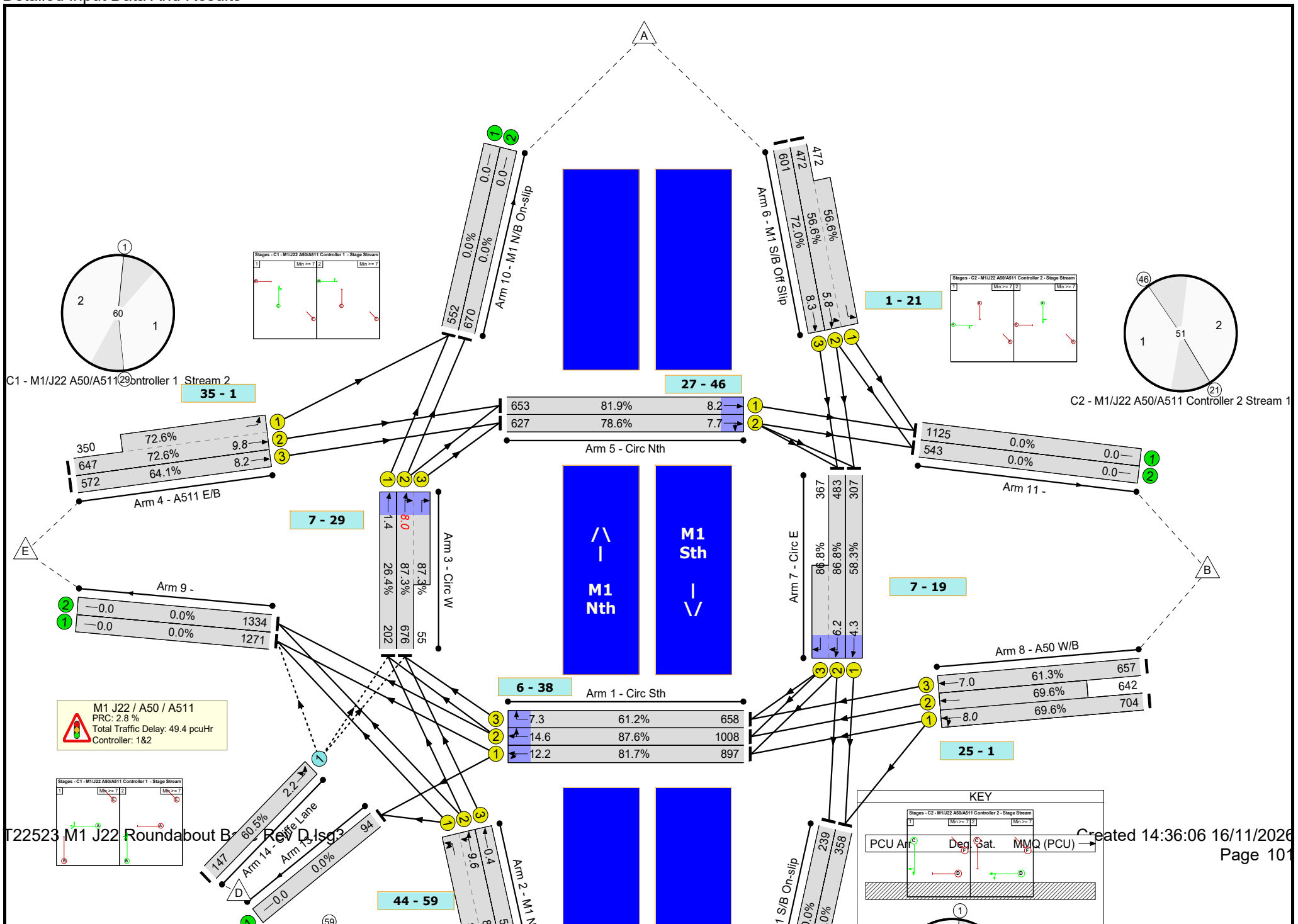
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	6	38
1/2	Circ Sth Right Ahead	U	A	6	38
1/3	Circ Sth Right	U	A	6	38
2/1	M1 N/B Off-slip Left Left2	U	B	44	59
2/2	M1 N/B Off-slip Ahead Left	U	B	44	59
2/3	M1 N/B Off-slip Ahead	U	B	44	59
3/1	Circ W Ahead	U	C	7	29
3/2	Circ W Right Ahead	U	C	7	29
3/3	Circ W Right	U	C	7	29
4/1	A511 E/B Left	U	D	35	1
4/2	A511 E/B Ahead	U	D	35	1
4/3	A511 E/B Ahead	U	D	35	1
5/1	Circ Nth Ahead	U	A	27	46
5/2	Circ Nth Right Ahead	U	A	27	46
6/1	M1 S/B Off Slip Left	U	B	1	21
6/2	M1 S/B Off Slip Ahead Left	U	B	1	21
6/3	M1 S/B Off Slip Ahead	U	B	1	21
7/1	Circ E Ahead	U	C	7	19
7/2	Circ E Right Ahead	U	C	7	19
7/3	Circ E Right	U	C	7	19
8/1	A50 W/B Ahead Left	U	D	25	1
8/2	A50 W/B Ahead	U	D	25	1
8/3	A50 W/B Ahead	U	D	25	1

Network Layout Diagram



A
B
E
D
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 5 - Circ Nth
Arm 4 - A511 E/B
Arm 3 - Circ W
Arm 7 - Circ E
Arm 11 -
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Cliffe Lane
Arm 13
Arm 2 - M1 N
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
35 - 1
27 - 46
1 - 21
7 - 29
7 - 19
6 - 38
25 - 1
44 - 59
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: 2.8 %
Total Traffic Delay: 49.4 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**87.6%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**87.6%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	897	1995	1097	81.7%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	1008	2093	1151	87.6%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	658	1956	1076	61.2%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	891	1966:1977	524+527	84.7 : 84.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	31	1978	527	5.9%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	22	-	-	202	1995	765	26.4%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	22	-	-	731	2132:1995	774+63	87.3 : 87.3%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	26	-	-	997	2120:1966	892+482	72.6 : 72.6%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	26	-	-	572	1983	892	64.1%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	19	-	-	653	2034	798	81.9%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	19	-	-	627	2034	798	78.6%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	944	2027:2027	835+835	56.6 : 56.6%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	601	2027	835	72.0%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	12	-	-	307	2065	526	58.3%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	12	-	-	850	2183:2025	556+423	86.8 : 86.8%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	27	-	-	1346	1953:2090	1012+923	69.6 : 69.6%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	27	-	-	657	1953	1072	61.3%
9/1		U	N/A	N/A	-		-	-	-	-	1271	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1334	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	552	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	670	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1125	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	543	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	358	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	239	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	94	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	147	2005	243	60.5%

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	**-**	**-**	**65**	**82**	**0**	**39.9**	**9.5**	**0.0**	**49.4**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**65**	**82**	**0**	**39.9**	**9.5**	**0.0**	**49.4**	**-**	**-**	**-**	**-**	
1/1	897	897	-	-	-	2.8	0.0	-	2.8	11.0	12.2	0.0	12.2	
1/2	1008	1008	-	-	-	3.3	0.0	-	3.3	11.7	14.6	0.0	14.6	
1/3	658	658	-	-	-	1.7	0.0	-	1.7	9.2	7.3	0.0	7.3	
2/2+2/1	891	891	-	-	-	5.2	2.7	-	7.8	31.7	7.0	2.7	9.6	
2/3	31	31	-	-	-	0.1	0.0	-	0.2	20.1	0.4	0.0	0.4	
3/1	202	202	-	-	-	0.5	0.0	-	0.5	9.8	1.4	0.0	1.4	
3/2+3/3	731	731	-	-	-	1.7	0.0	-	1.7	8.4	8.0	0.0	8.0	
4/2+4/1	997	997	-	-	-	3.4	1.3	-	4.7	17.1	8.4	1.3	9.8	
4/3	572	572	-	-	-	2.0	0.9	-	2.9	18.3	7.3	0.9	8.2	
5/1	653	653	-	-	-	2.5	0.0	-	2.5	13.9	8.2	0.0	8.2	
5/2	627	627	-	-	-	2.4	0.0	-	2.4	13.6	7.7	0.0	7.7	
6/2+6/1	944	944	-	-	-	3.0	0.6	-	3.7	14.0	5.1	0.6	5.8	
6/3	601	601	-	-	-	2.1	1.3	-	3.4	20.2	7.0	1.3	8.3	
7/1	307	307	-	-	-	1.9	0.0	-	1.9	22.6	4.3	0.0	4.3	
7/2+7/3	850	850	-	-	-	2.5	0.0	-	2.5	10.6	6.2	0.0	6.2	
8/1+8/2	1346	1346	-	-	-	2.9	1.1	-	4.1	10.9	6.8	1.1	8.0	
8/3	657	657	-	-	-	1.4	0.8	-	2.2	12.1	6.2	0.8	7.0	
9/1	1271	1271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1334	1334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	552	552	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	670	670	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1125	1125	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

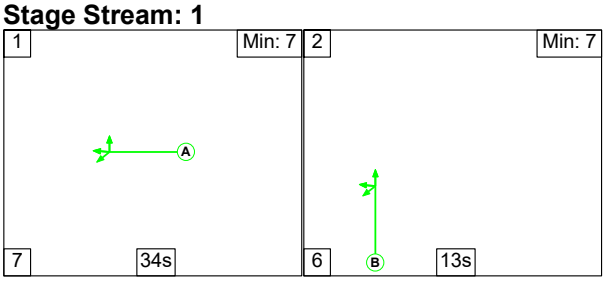
11/2	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	358	358	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	239	239	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	94	94	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	147	147	65	82	0	0.4	0.8	-	1.2	29.4	1.5	0.8	2.2

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	2.8	Total Delay for Signalled Lanes (pcuHr):	15.73	Cycle Time (s): 60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	3.1	Total Delay for Signalled Lanes (pcuHr):	9.90	Cycle Time (s): 60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	9.9	Total Delay for Signalled Lanes (pcuHr):	11.92	Cycle Time (s): 51
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	3.7	Total Delay for Signalled Lanes (pcuHr):	10.70	Cycle Time (s): 51
	PRC Over All Lanes (%):	2.8	Total Delay Over All Lanes(pcuHr):	49.45	

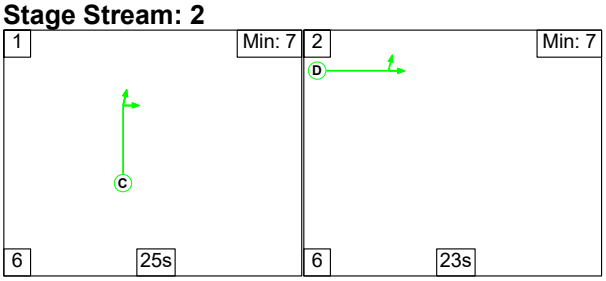
Scenario 7: '2036 Future Base AM Peak' (FG7: '2036 Future Base AM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	34	13
Change Point	20	1

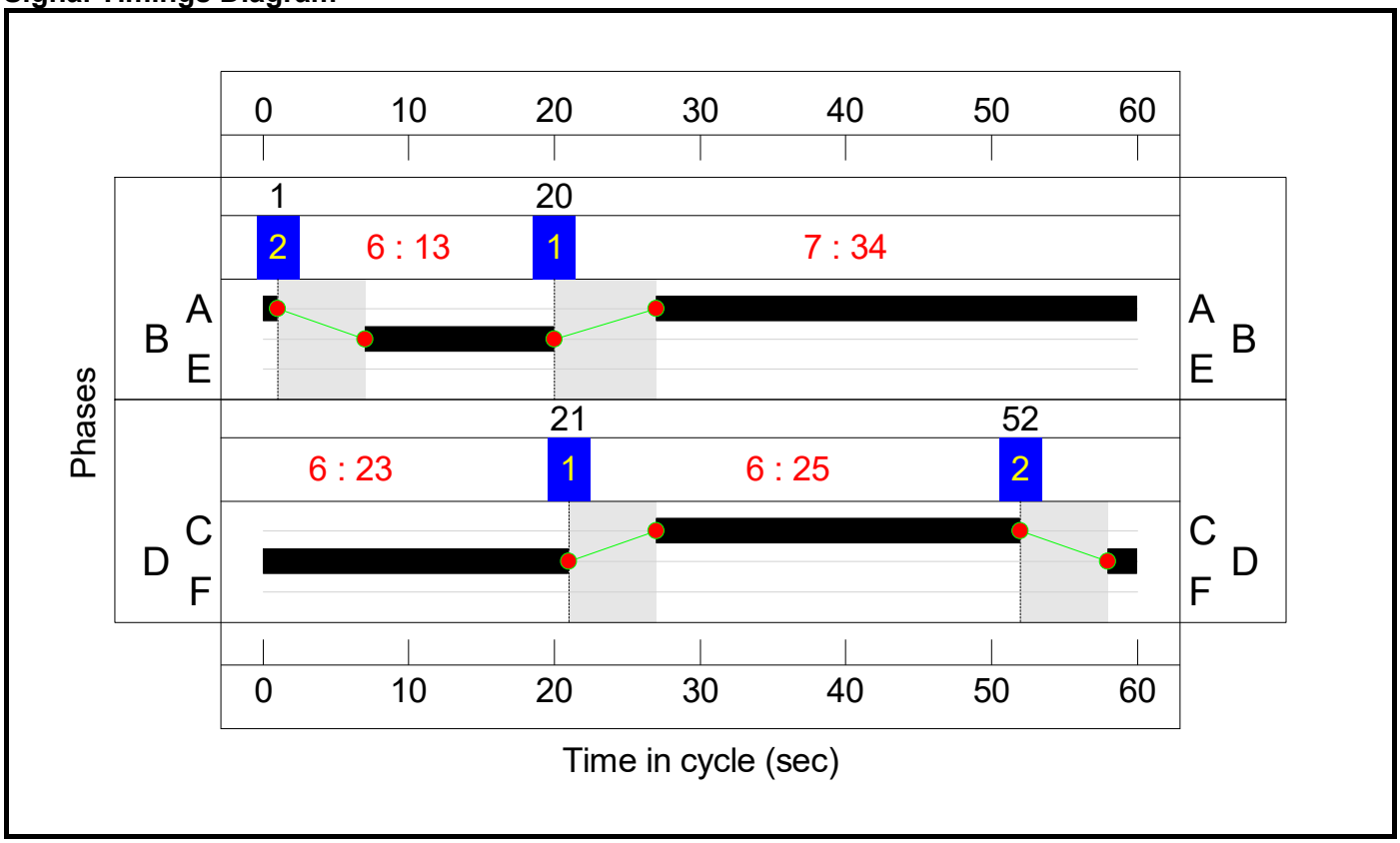
Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	21	52

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	34	27	1
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	13	7	20
C	Circ W Right Ahead	Traffic	2	25	27	52
D	A511 E/B Ahead Left	Traffic	2	23	58	21
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

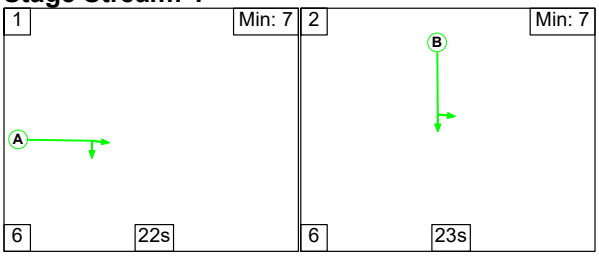
Signal Timings Diagram



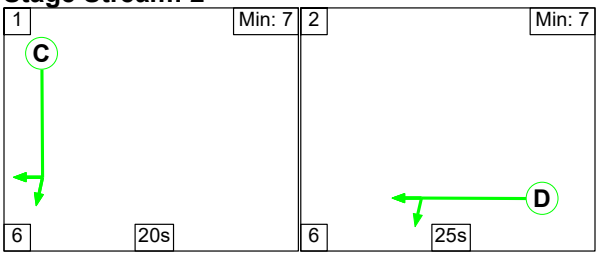
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	23
Change Point	18	46

Detailed Input Data And Results

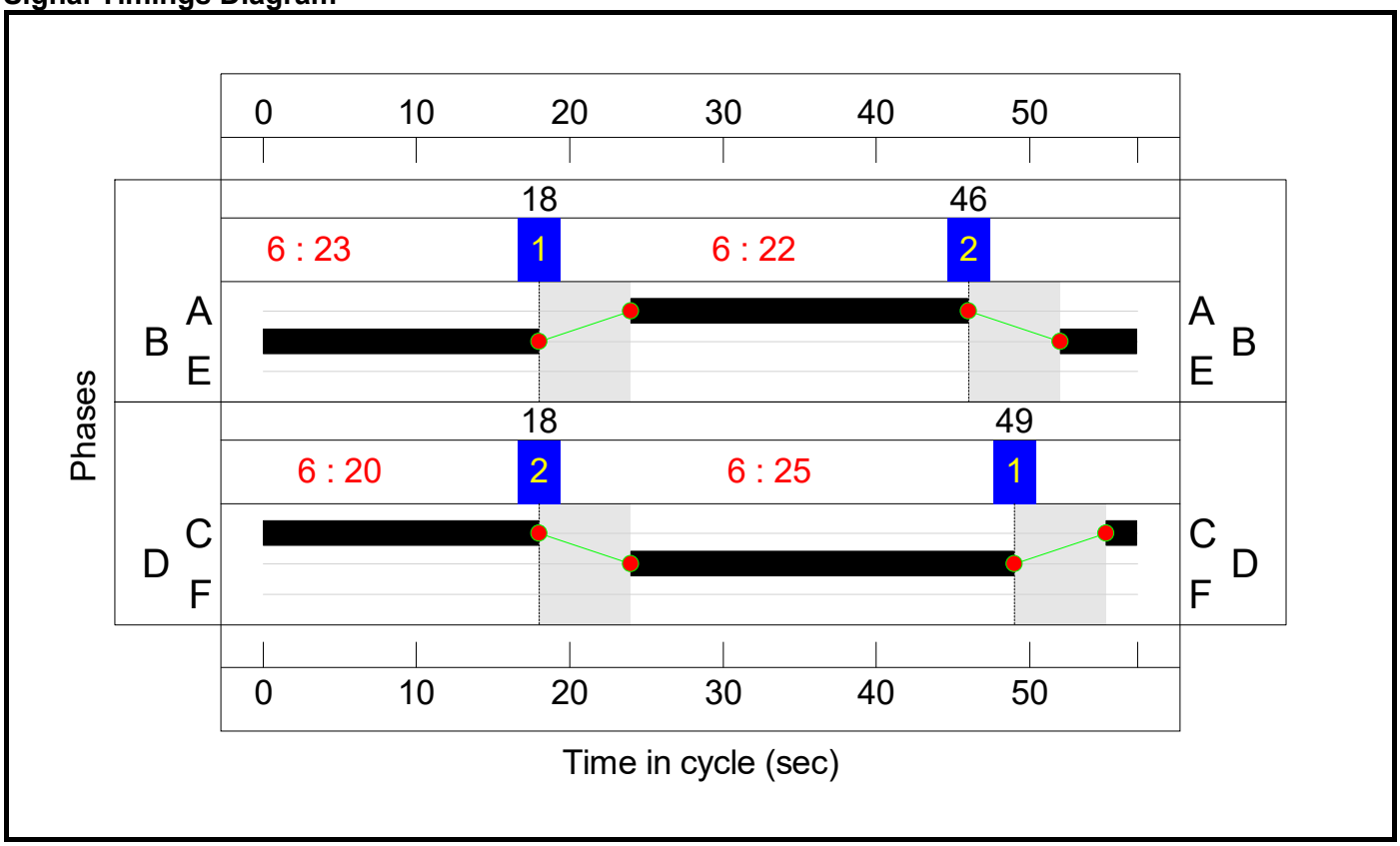
Stage Stream: 2

Stage	1	2
Duration	20	25
Change Point	49	18

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	22	24	46
B	M1 S/B Off Slip Ahead Left	Traffic	1	23	52	18
C	Circ E Right Ahead	Traffic	2	20	55	18
D	A50 W/B Ahead Left	Traffic	2	25	24	49
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

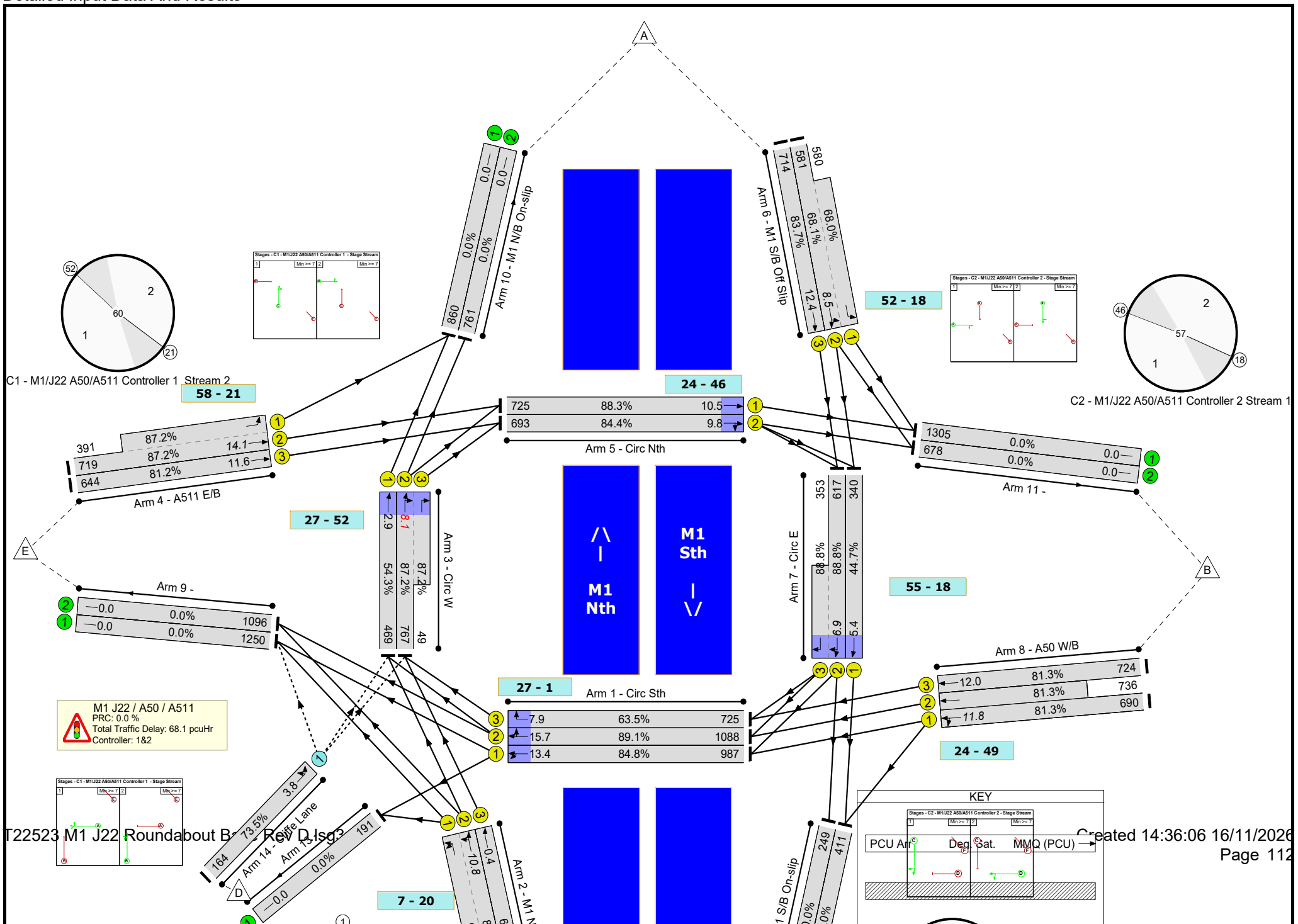
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	27	1
1/2	Circ Sth Right Ahead	U	A	27	1
1/3	Circ Sth Right	U	A	27	1
2/1	M1 N/B Off-slip Left Left2	U	B	7	20
2/2	M1 N/B Off-slip Ahead Left	U	B	7	20
2/3	M1 N/B Off-slip Ahead	U	B	7	20
3/1	Circ W Ahead	U	C	27	52
3/2	Circ W Right Ahead	U	C	27	52
3/3	Circ W Right	U	C	27	52
4/1	A511 E/B Left	U	D	58	21
4/2	A511 E/B Ahead	U	D	58	21
4/3	A511 E/B Ahead	U	D	58	21
5/1	Circ Nth Ahead	U	A	24	46
5/2	Circ Nth Right Ahead	U	A	24	46
6/1	M1 S/B Off Slip Left	U	B	52	18
6/2	M1 S/B Off Slip Ahead Left	U	B	52	18
6/3	M1 S/B Off Slip Ahead	U	B	52	18
7/1	Circ E Ahead	U	C	55	18
7/2	Circ E Right Ahead	U	C	55	18
7/3	Circ E Right	U	C	55	18
8/1	A50 W/B Ahead Left	U	D	24	49
8/2	A50 W/B Ahead	U	D	24	49
8/3	A50 W/B Ahead	U	D	24	49

Network Layout Diagram


A
B
E
D
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
58 - 21
52 - 18
24 - 46
27 - 52
55 - 18
27 - 1
24 - 49
7 - 20
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 5 - Circ Nth
Arm 4 - A511 E/B
Arm 11 -
Arm 3 - Circ W
Arm 7 - Circ E
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Cliffe Lane
Arm 13
Arm 2 - M1 N
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: 0.0 %
Total Traffic Delay: 68.1 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**90.0%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**90.0%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	34	-	-	987	1995	1164	84.8%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	34	-	-	1088	2093	1221	89.1%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	34	-	-	725	1956	1141	63.5%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	13	-	-	827	1966:1977	459+461	89.8 : 90.0%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	13	-	-	31	1978	462	6.7%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	25	-	-	469	1995	865	54.3%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	25	-	-	816	2132:1995	879+56	87.2 : 87.2%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	23	-	-	1110	2120:1966	825+448	87.2 : 87.2%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	23	-	-	644	1983	793	81.2%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	22	-	-	725	2034	821	88.3%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	22	-	-	693	2034	821	84.4%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	23	-	-	1161	2027:2027	853+853	68.1 : 68.0%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	23	-	-	714	2027	853	83.7%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	20	-	-	340	2065	761	44.7%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	20	-	-	970	2179:2025	695+397	88.8 : 88.8%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	25	-	-	1426	1953:2090	848+905	81.3 : 81.3%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	25	-	-	724	1953	891	81.3%
9/1		U	N/A	N/A	-		-	-	-	-	1250	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1096	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	860	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	761	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1305	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	678	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	411	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	249	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	191	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	164	2005	223	73.5%

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	**-**	**-**	**47**	**117**	**0**	**49.5**	**18.6**	**0.0**	**68.1**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**47**	**117**	**0**	**49.5**	**18.6**	**0.0**	**68.1**	**-**	**-**	**-**	**-**	
1/1	987	987	-	-	-	2.8	0.0	-	2.8	10.3	13.4	0.0	13.4	
1/2	1088	1088	-	-	-	3.3	0.0	-	3.3	10.8	15.7	0.0	15.7	
1/3	725	725	-	-	-	1.7	0.0	-	1.7	8.3	7.9	0.0	7.9	
2/2+2/1	827	827	-	-	-	5.1	4.1	-	9.2	40.1	6.7	4.1	10.8	
2/3	31	31	-	-	-	0.2	0.0	-	0.2	22.2	0.4	0.0	0.4	
3/1	469	469	-	-	-	1.1	0.0	-	1.1	8.3	2.9	0.0	2.9	
3/2+3/3	816	816	-	-	-	1.7	0.0	-	1.7	7.6	8.1	0.0	8.1	
4/2+4/1	1110	1110	-	-	-	4.7	3.3	-	8.0	26.0	10.8	3.3	14.1	
4/3	644	644	-	-	-	2.9	2.1	-	5.0	27.7	9.5	2.1	11.6	
5/1	725	725	-	-	-	3.2	0.0	-	3.2	15.8	10.5	0.0	10.5	
5/2	693	693	-	-	-	3.0	0.0	-	3.0	15.4	9.8	0.0	9.8	
6/2+6/1	1161	1161	-	-	-	4.3	1.1	-	5.4	16.7	7.4	1.1	8.5	
6/3	714	714	-	-	-	2.9	2.5	-	5.4	27.2	9.9	2.5	12.4	
7/1	340	340	-	-	-	2.0	0.0	-	2.0	21.7	5.4	0.0	5.4	
7/2+7/3	970	970	-	-	-	2.2	0.0	-	2.2	8.1	6.9	0.0	6.9	
8/1+8/2	1426	1426	-	-	-	5.2	2.2	-	7.3	18.5	9.6	2.2	11.8	
8/3	724	724	-	-	-	2.7	2.1	-	4.8	23.9	9.9	2.1	12.0	
9/1	1250	1250	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1096	1096	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	860	860	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	761	761	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1305	1305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

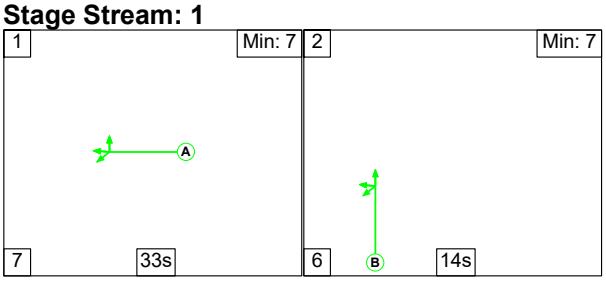
11/2	678	678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	411	411	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	249	249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	191	191	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	164	164	47	117	0	0.6	1.3	-	1.9	42.4	2.5	1.3	3.8

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	17.18	Cycle Time (s):	60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	3.2	Total Delay for Signalled Lanes (pcuHr):	15.76	Cycle Time (s):	60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	1.9	Total Delay for Signalled Lanes (pcuHr):	16.91	Cycle Time (s):	57
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	1.3	Total Delay for Signalled Lanes (pcuHr):	16.35	Cycle Time (s):	57
	PRC Over All Lanes (%):	0.0	Total Delay Over All Lanes(pcuHr):	68.13		

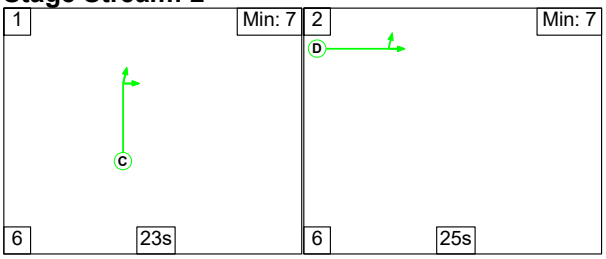
Scenario 8: '2036 Future Base PM Peak ' (FG8: '2036 Future Base PM Peak', Plan 1: 'Network Control Plan 1')
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	14
Change Point	0	40

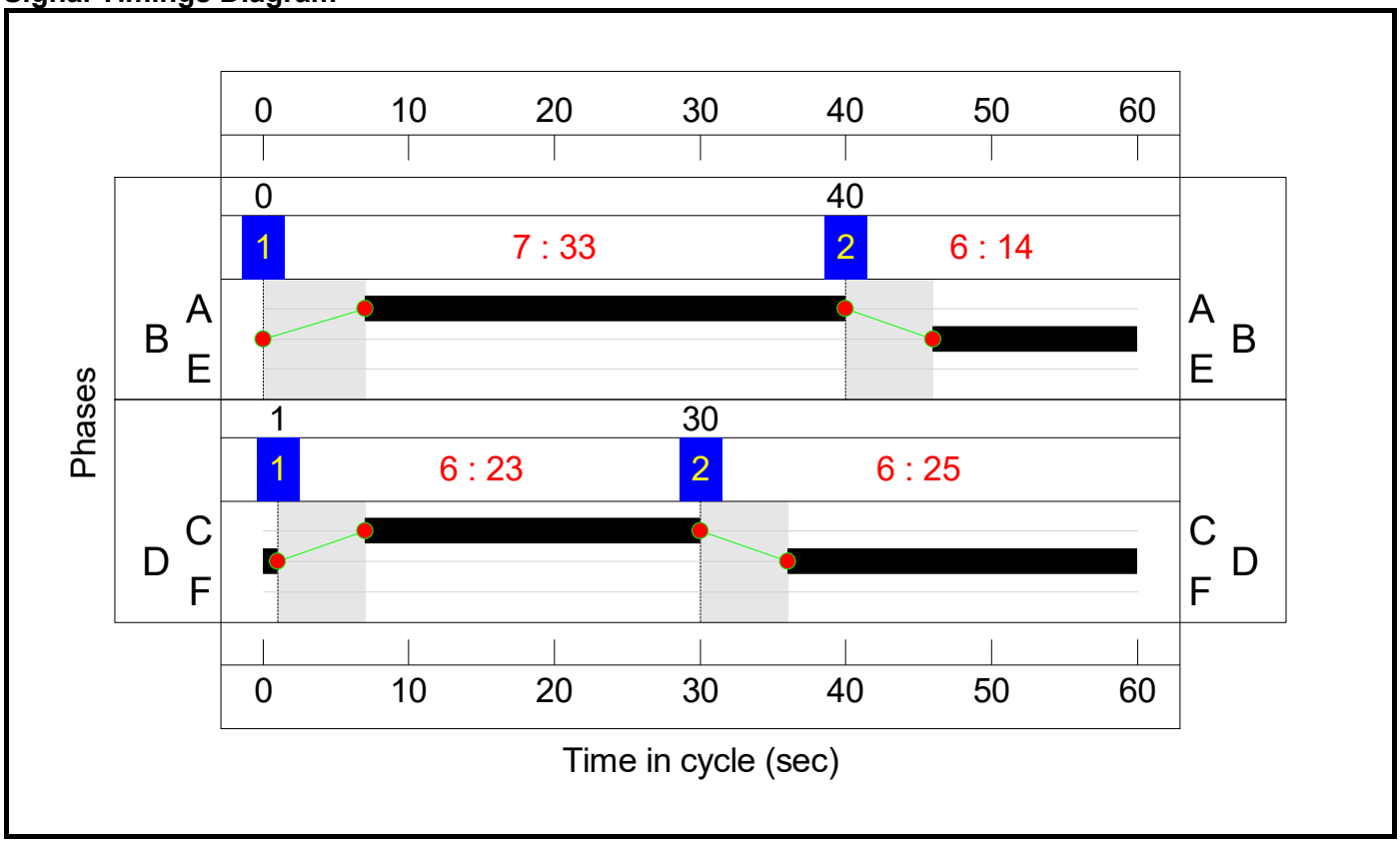
Stage Stream: 2

Stage	1	2
Duration	23	25
Change Point	1	30

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	33	7	40
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	14	46	0
C	Circ W Right Ahead	Traffic	2	23	7	30
D	A511 E/B Ahead Left	Traffic	2	25	36	1
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

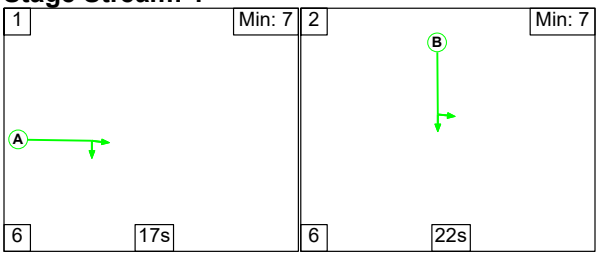
Signal Timings Diagram



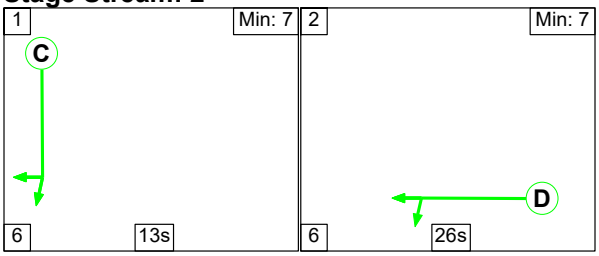
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	17	22
Change Point	12	35

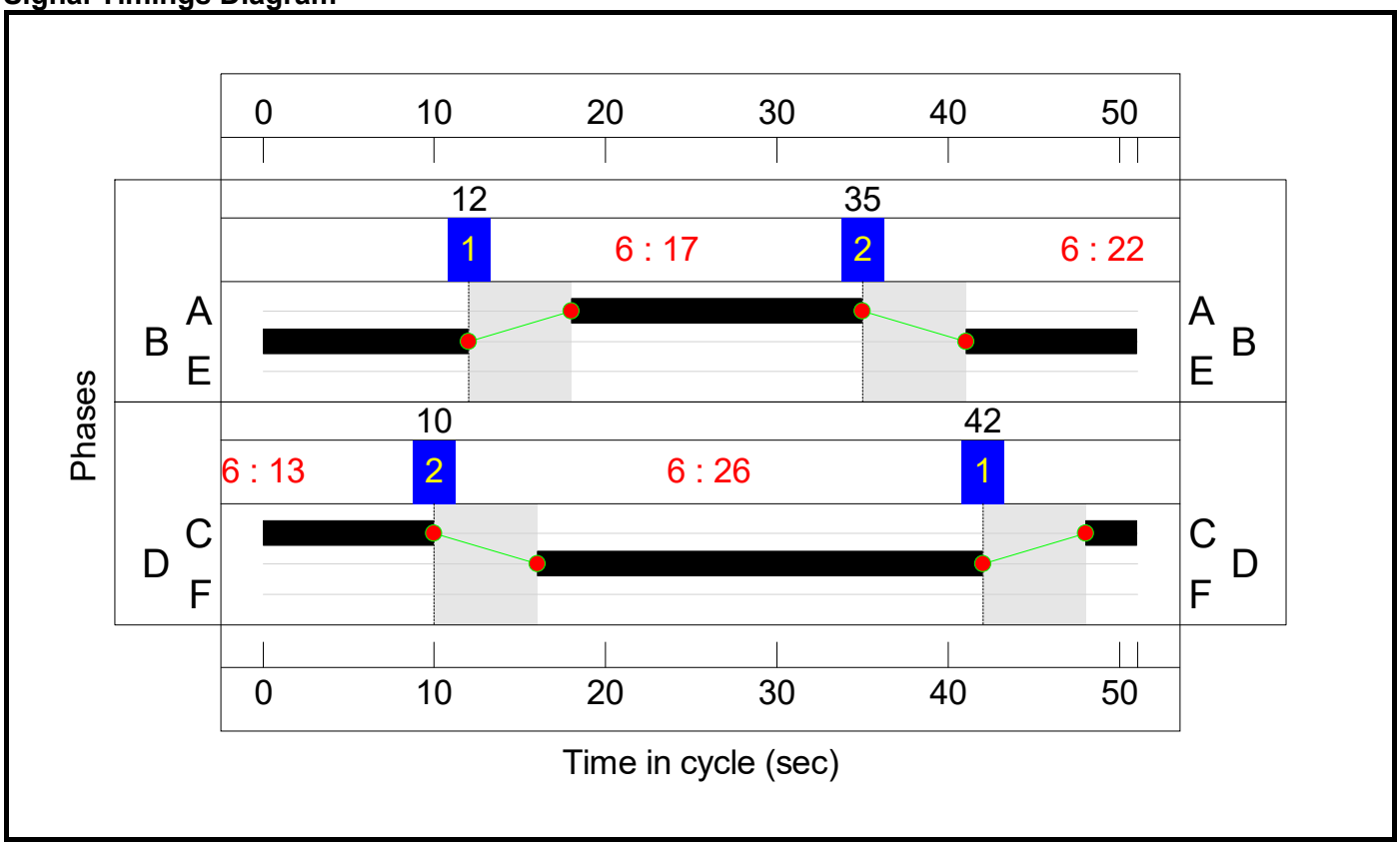
Stage Stream: 2

Stage	1	2
Duration	13	26
Change Point	42	10

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	17	18	35
B	M1 S/B Off Slip Ahead Left	Traffic	1	22	41	12
C	Circ E Right Ahead	Traffic	2	13	48	10
D	A50 W/B Ahead Left	Traffic	2	26	16	42
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

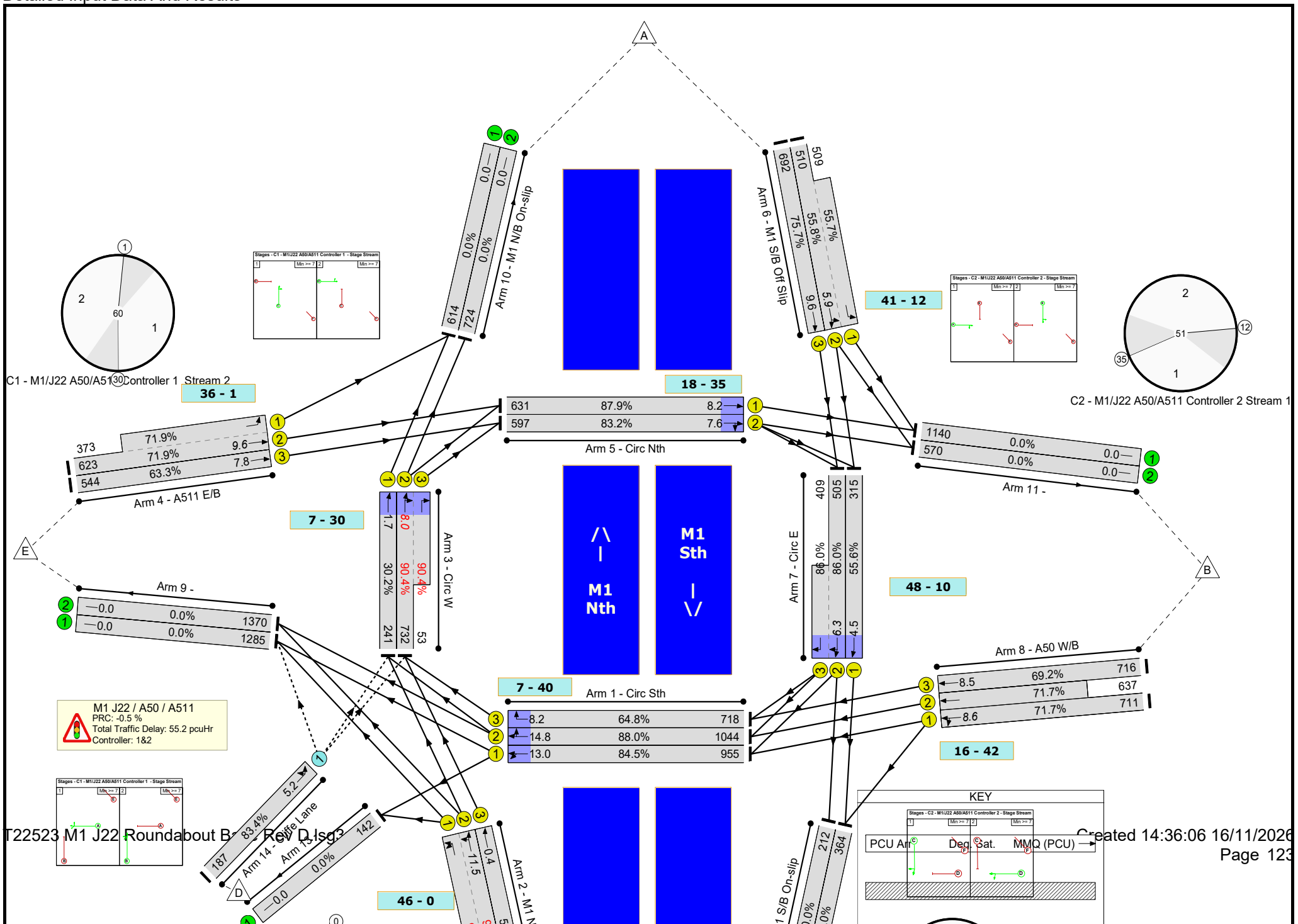
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	Circ Sth Ahead Ahead2	U	A	7	40
1/2	Circ Sth Right Ahead	U	A	7	40
1/3	Circ Sth Right	U	A	7	40
2/1	M1 N/B Off-slip Left Left2	U	B	46	0
2/2	M1 N/B Off-slip Ahead Left	U	B	46	0
2/3	M1 N/B Off-slip Ahead	U	B	46	0
3/1	Circ W Ahead	U	C	7	30
3/2	Circ W Right Ahead	U	C	7	30
3/3	Circ W Right	U	C	7	30
4/1	A511 E/B Left	U	D	36	1
4/2	A511 E/B Ahead	U	D	36	1
4/3	A511 E/B Ahead	U	D	36	1
5/1	Circ Nth Ahead	U	A	18	35
5/2	Circ Nth Right Ahead	U	A	18	35
6/1	M1 S/B Off Slip Left	U	B	41	12
6/2	M1 S/B Off Slip Ahead Left	U	B	41	12
6/3	M1 S/B Off Slip Ahead	U	B	41	12
7/1	Circ E Ahead	U	C	48	10
7/2	Circ E Right Ahead	U	C	48	10
7/3	Circ E Right	U	C	48	10
8/1	A50 W/B Ahead Left	U	D	16	42
8/2	A50 W/B Ahead	U	D	16	42
8/3	A50 W/B Ahead	U	D	16	42

Network Layout Diagram



A
B
E
D
C1 - M1/J22 A50/A511 Controller 1 Stream 2
C2 - M1/J22 A50/A511 Controller 2 Stream 1
36 - 1
18 - 35
41 - 12
7 - 30
48 - 10
7 - 40
16 - 42
46 - 0
Arm 10 - M1 N/B On-slip
Arm 6 - M1 S/B Off Slip
Arm 5 - Circ Nth
Arm 4 - A511 E/B
Arm 11 -
Arm 3 - Circ W
Arm 7 - Circ E
Arm 9 -
Arm 8 - A50 W/B
Arm 1 - Circ Sth
Arm 14 - Giffe Lane
Arm 13
Arm 2 - M1 N
M1 Nth
M1 Sth
M1 J22 / A50 / A511
PRC: -0.5 %
Total Traffic Delay: 55.2 pcuHr
Controller: 1&2
KEY
PCU Arr
Deg. Sat.
MMQ (PCU)

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)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**90.4%**
M1 J22 / A50 / A511	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**90.4%**
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	33	-	-	955	1995	1131	84.5%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	33	-	-	1044	2093	1186	88.0%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	33	-	-	718	1956	1108	64.8%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	14	-	-	891	1966:1977	492+494	90.3 : 90.4%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	14	-	-	28	1978	494	5.7%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	23	-	-	241	1995	798	30.2%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	23	-	-	785	2132:1995	810+59	90.4 : 90.4%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	25	-	-	996	2120:1966	866+518	71.9 : 71.9%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	25	-	-	544	1983	859	63.3%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	17	-	-	631	2034	718	87.9%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	17	-	-	597	2034	718	83.2%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	22	-	-	1019	2027:2027	914+914	55.8 : 55.7%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	22	-	-	692	2027	914	75.7%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	13	-	-	315	2065	567	55.6%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	13	-	-	914	2180:2025	588+476	86.0 : 86.0%

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	26	-	-	1348	1953:2090	992+889	71.7 : 71.7%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	26	-	-	716	1953	1034	69.2%
9/1		U	N/A	N/A	-		-	-	-	-	1285	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1370	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	614	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	724	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1140	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	570	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	364	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	212	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	142	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	187	2005	224	83.4%

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	**-**	**-**	**45**	**142**	**0**	**41.9**	**13.3**	**0.0**	**55.2**	**-**	**-**	**-**	**-**	
M1 J22 / A50 / A511	**-**	**-**	**45**	**142**	**0**	**41.9**	**13.3**	**0.0**	**55.2**	**-**	**-**	**-**	**-**	
1/1	955	955	-	-	-	2.9	0.0	-	2.9	10.8	13.0	0.0	13.0	
1/2	1044	1044	-	-	-	3.3	0.0	-	3.3	11.2	14.8	0.0	14.8	
1/3	718	718	-	-	-	1.8	0.0	-	1.8	8.9	8.2	0.0	8.2	
2/2+2/1	891	891	-	-	-	5.4	4.3	-	9.7	39.2	7.2	4.3	11.5	
2/3	28	28	-	-	-	0.1	0.0	-	0.2	21.1	0.4	0.0	0.4	
3/1	241	241	-	-	-	0.6	0.0	-	0.6	8.7	1.7	0.0	1.7	
3/2+3/3	785	785	-	-	-	1.8	0.0	-	1.8	8.3	8.0	0.0	8.0	
4/2+4/1	996	996	-	-	-	3.6	1.3	-	4.9	17.6	8.3	1.3	9.6	
4/3	544	544	-	-	-	2.0	0.9	-	2.9	19.0	7.0	0.9	7.8	
5/1	631	631	-	-	-	2.7	0.0	-	2.7	15.5	8.2	0.0	8.2	
5/2	597	597	-	-	-	2.5	0.0	-	2.5	15.1	7.6	0.0	7.6	
6/2+6/1	1019	1019	-	-	-	2.9	0.6	-	3.5	12.5	5.2	0.6	5.9	
6/3	692	692	-	-	-	2.2	1.5	-	3.8	19.7	8.1	1.5	9.6	
7/1	315	315	-	-	-	1.9	0.0	-	1.9	22.2	4.5	0.0	4.5	
7/2+7/3	914	914	-	-	-	2.5	0.0	-	2.5	9.8	6.3	0.0	6.3	
8/1+8/2	1348	1348	-	-	-	3.2	1.3	-	4.5	11.9	7.3	1.3	8.6	
8/3	716	716	-	-	-	1.8	1.1	-	2.9	14.5	7.4	1.1	8.5	
9/1	1285	1285	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1370	1370	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	614	614	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	724	724	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1140	1140	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

11/2	570	570	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	364	364	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	187	187	45	142	0	0.7	2.2	-	3.0	57.3	3.0	2.2	5.2

C1 - M1/J22 A50/A511 Controller 1	Stream: 1 PRC for Signalled Lanes (%):	-0.5	Total Delay for Signalled Lanes (pcuHr):	17.77	Cycle Time (s):	60
C1 - M1/J22 A50/A511 Controller 1	Stream: 2 PRC for Signalled Lanes (%):	-0.4	Total Delay for Signalled Lanes (pcuHr):	10.13	Cycle Time (s):	60
C2 - M1/J22 A50/A511 Controller 2	Stream: 1 PRC for Signalled Lanes (%):	2.4	Total Delay for Signalled Lanes (pcuHr):	12.54	Cycle Time (s):	51
C2 - M1/J22 A50/A511 Controller 2	Stream: 2 PRC for Signalled Lanes (%):	4.7	Total Delay for Signalled Lanes (pcuHr):	11.78	Cycle Time (s):	51
	PRC Over All Lanes (%):	-0.5	Total Delay Over All Lanes(pcuHr):	55.19		