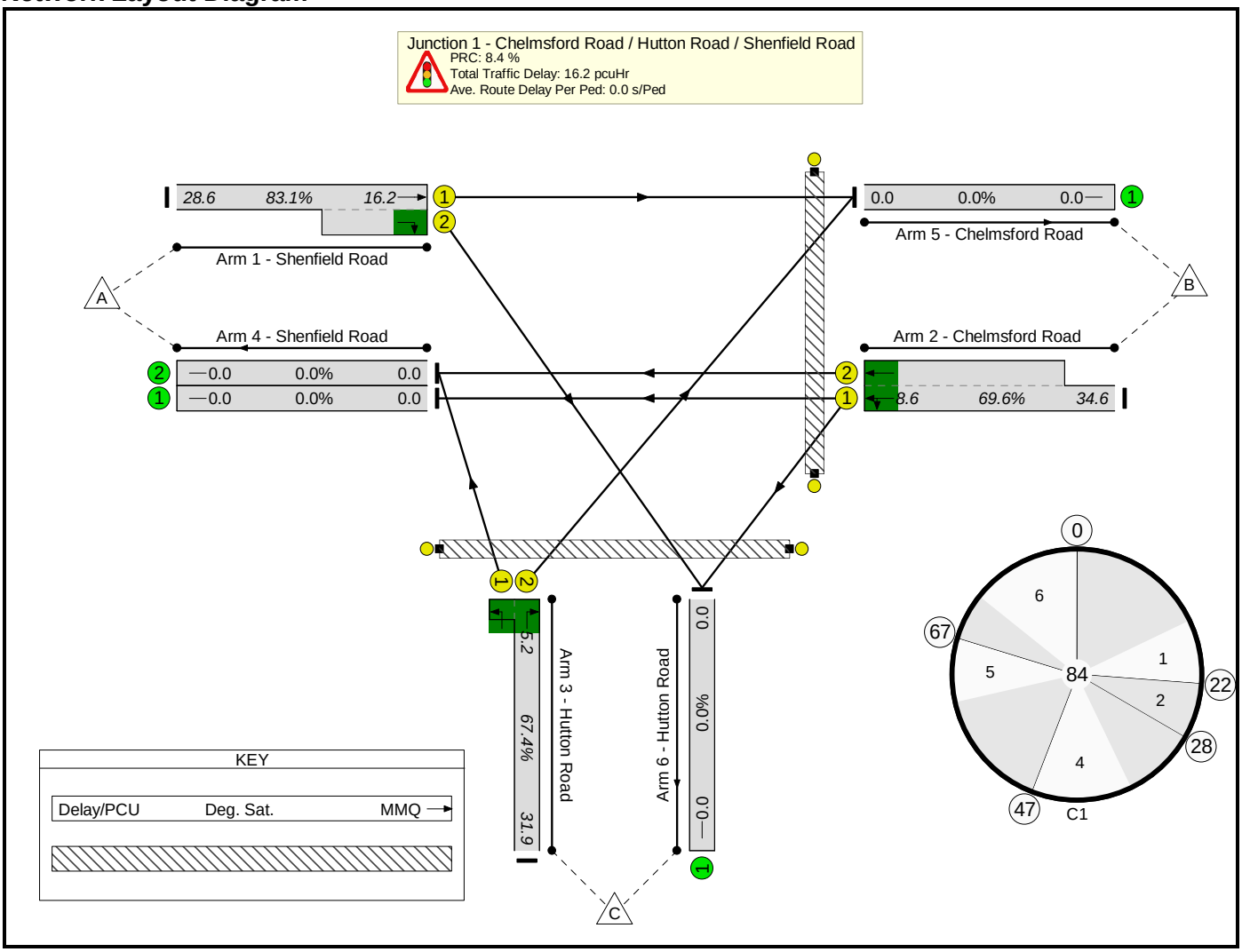
Brentwood PBA Modelling

Project and User Details

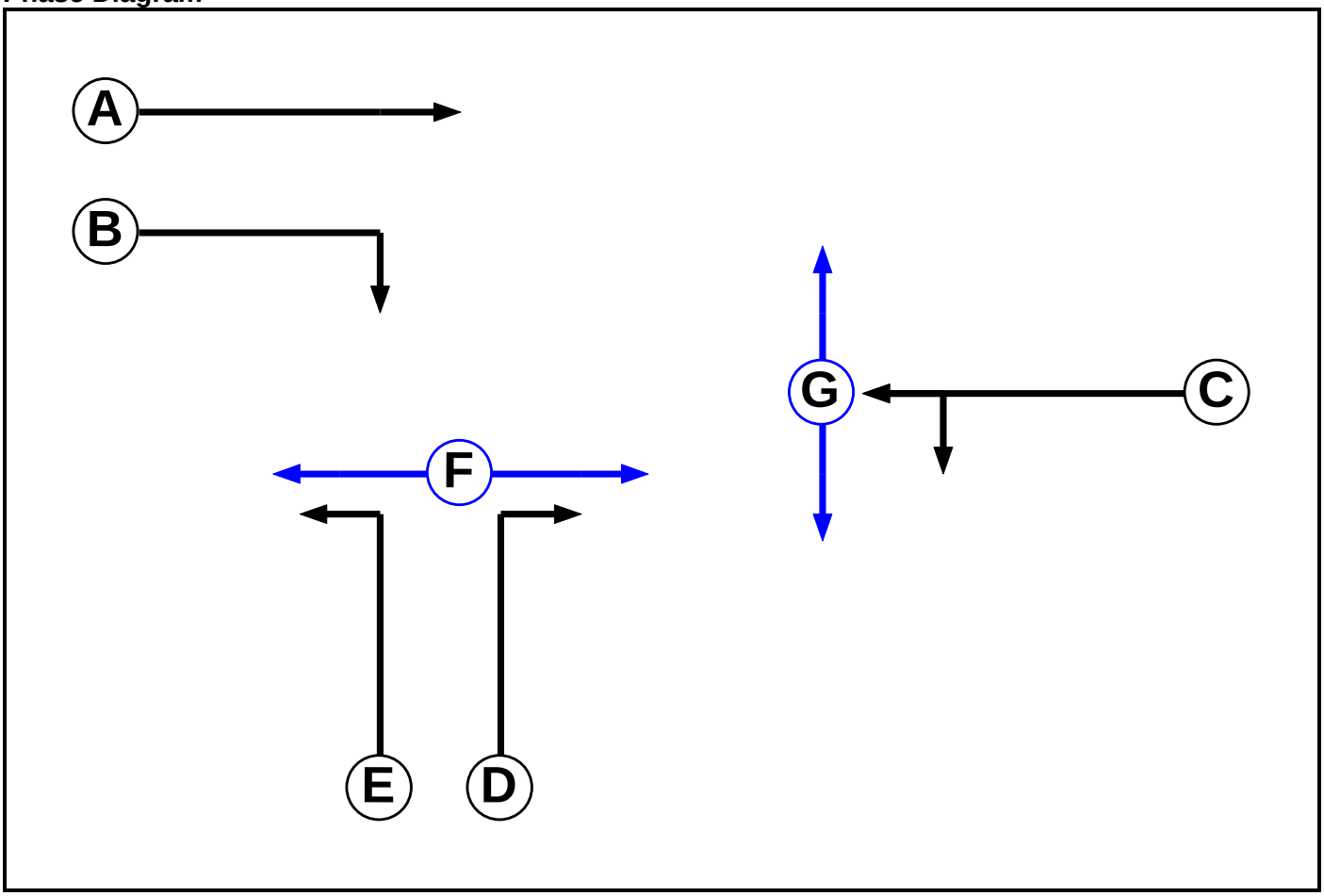
Project:	**28085 Brentwood**
Title:	**J01 - A1023 Chelmsford Road / A129 Hutton Road / A1023 Shenfield Road**
Location:	Brentwood
Additional detail:	
File name:	28085_01_LS_LSM_RevA.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 3: '2018 Baseline (AM)' (FG1: '2018 Baseline (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		-	-	5	-	-	8
	B	-		6	5	-	7	-
	C	-	5		6	6	7	5
	D	5	5	5		-	5	8
	E	-	-	5	-		5	-
	F	-	15	15	15	15		-
	G	13	-	13	13	-	-	

Lane Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Shenfield Road)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Ahead	Inf
1/2 (Shenfield Road)	U	B	2	3	6.3	Geom	-	3.00	0.00	N	Arm 6 Right	13.00
2/1 (Chelmsford Road)	U	C	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	11.00
2/2 (Chelmsford Road)	U	C	2	3	15.9	Geom	-	2.95	0.00	N	Arm 4 Ahead	Inf
3/1 (Hutton Road)	U	E	2	3	1.2	Geom	-	3.30	0.00	Y	Arm 4 Left	13.00
3/2 (Hutton Road)	U	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Right	11.00
4/1 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Chelmsford Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Hutton Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

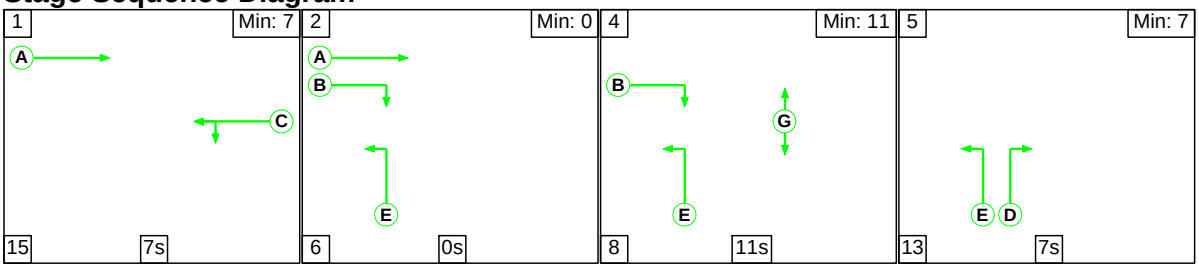
Lane Saturation Flows

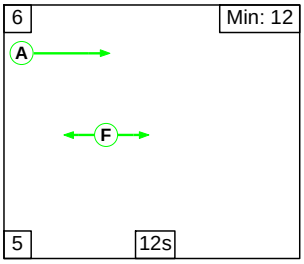
Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Shenfield Road)	2.90	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1905	1905
1/2 (Shenfield Road)	3.00	0.00	N	Arm 6 Right	13.00	100.0 %	1842	1842
2/1 (Chelmsford Road)	2.95	0.00	Y	Arm 4 Ahead	Inf	68.7 %	1832	1832
				Arm 6 Left	11.00	31.3 %		
2/2 (Chelmsford Road)	2.95	0.00	N	Arm 4 Ahead	Inf	100.0 %	2050	2050
3/1 (Hutton Road)	3.30	0.00	Y	Arm 4 Left	13.00	100.0 %	1744	1744
3/2 (Hutton Road)	3.20	0.00	N	Arm 5 Right	11.00	100.0 %	1826	1826
4/1 (Shenfield Road Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Shenfield Road Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Chelmsford Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hutton Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Lane Connector Input Data

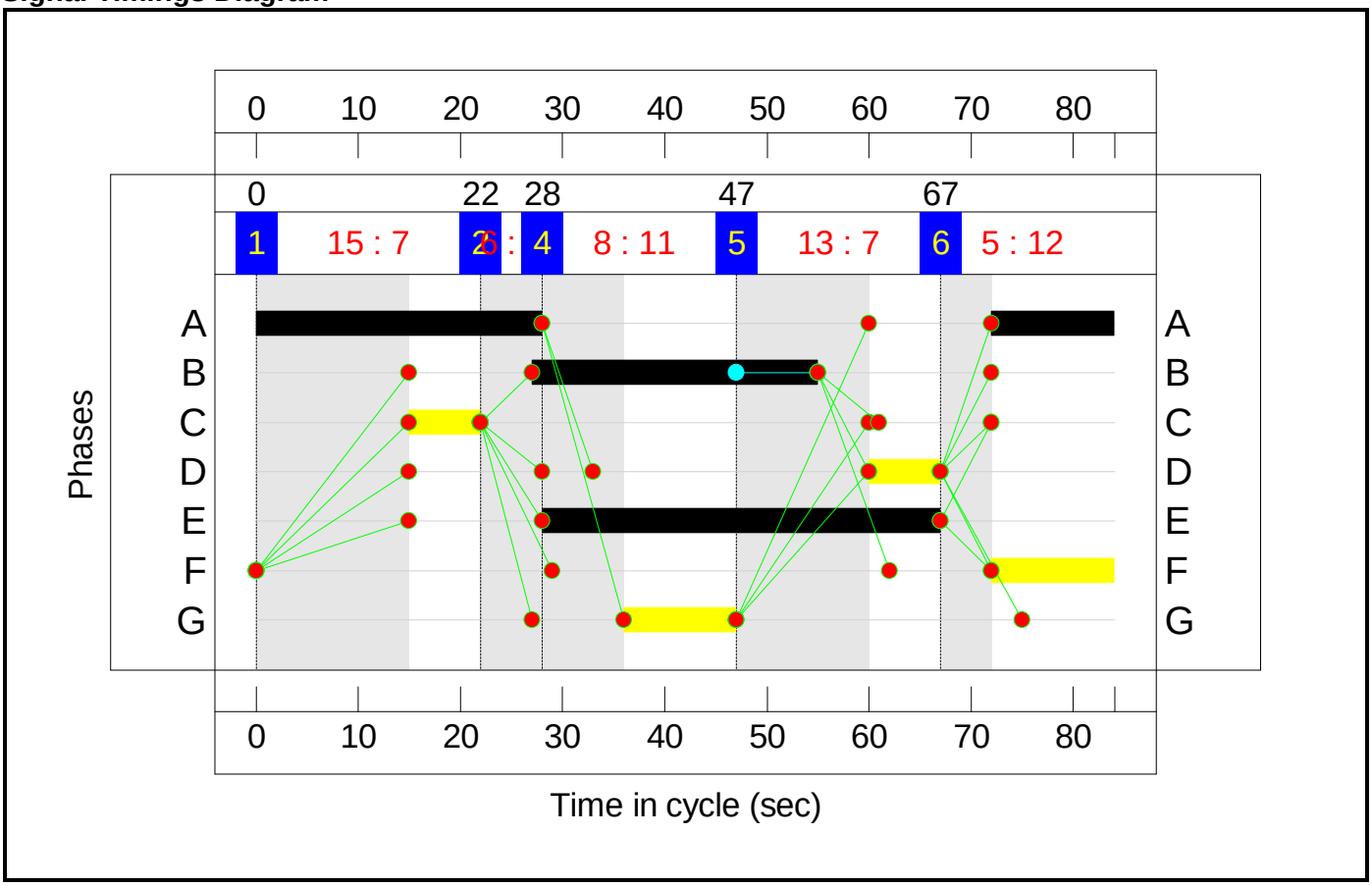
Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	4	35
1/2	6/1	Internal	5	35
2/1	4/1	Internal	5	35
2/1	6/1	Internal	4	35
2/2	4/2	Internal	5	35
3/1	4/2	Internal	4	35
3/2	5/1	Internal	5	35

Stage Sequence Diagram





Signal Timings Diagram



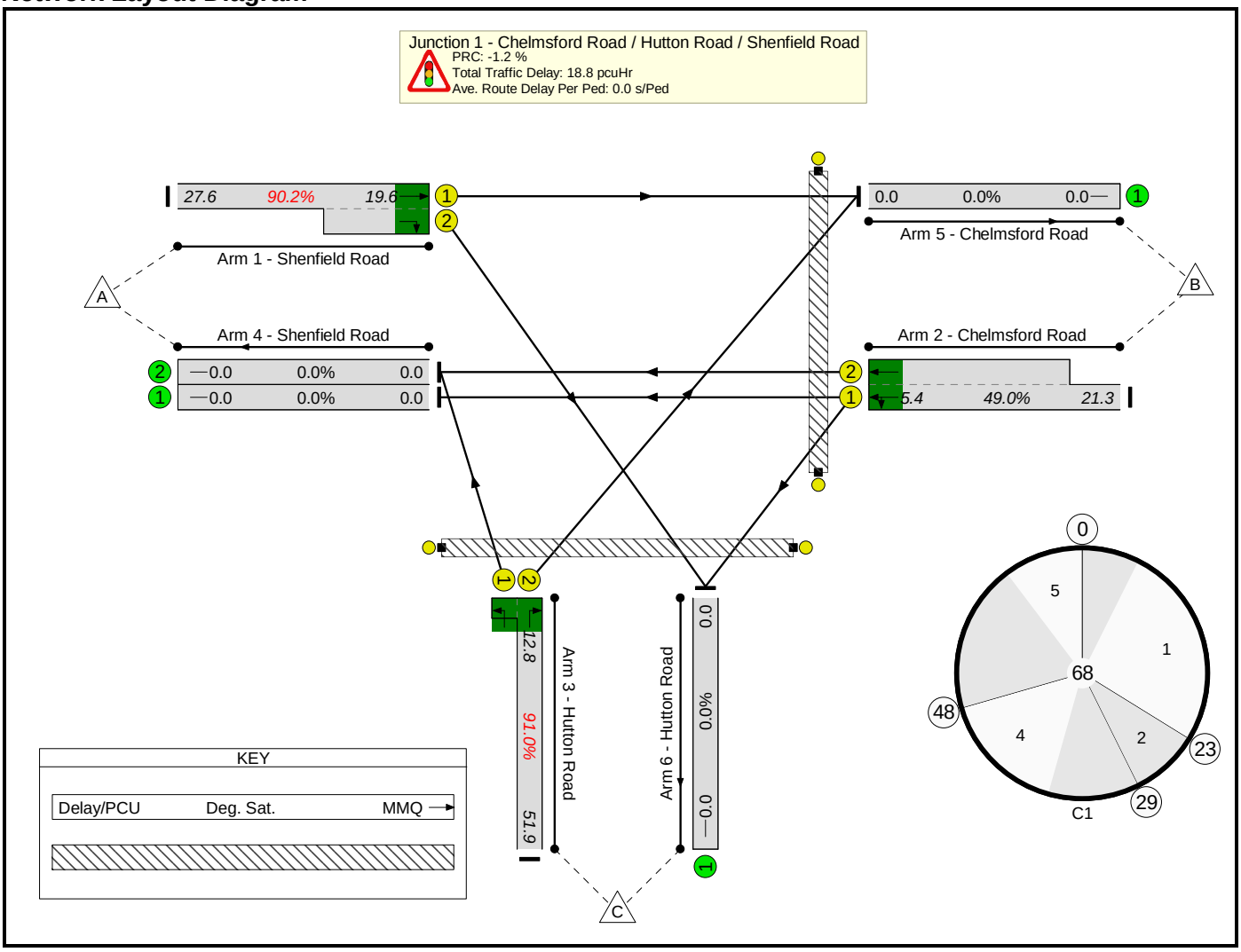
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J01 - A1023 Chelmsford Road / A129 Hutton Road / A1023 Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.1%**	**0**	**0**	**0**	**16.2**	**-**	**-**
Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.1%**	**0**	**0**	**0**	**16.2**	**-**	**-**
1/1+1/2	Shenfield Road Ahead Right	U	A B		1	40:28	-	881	1905:1842	1061	83.1%	-	-	-	7.0	28.6	16.2
2/1+2/2	Chelmsford Road Ahead Left	U	C		1	7	-	675	1832:2050	970	69.6%	-	-	-	6.5	34.6	8.6
3/2+3/1	Hutton Road Left Right	U	D E		1	7:39	-	304	1826:1744	451	67.4%	-	-	-	2.7	31.9	5.2
Ped Link: P1	Unnamed Ped Link	-	F		1	12	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-

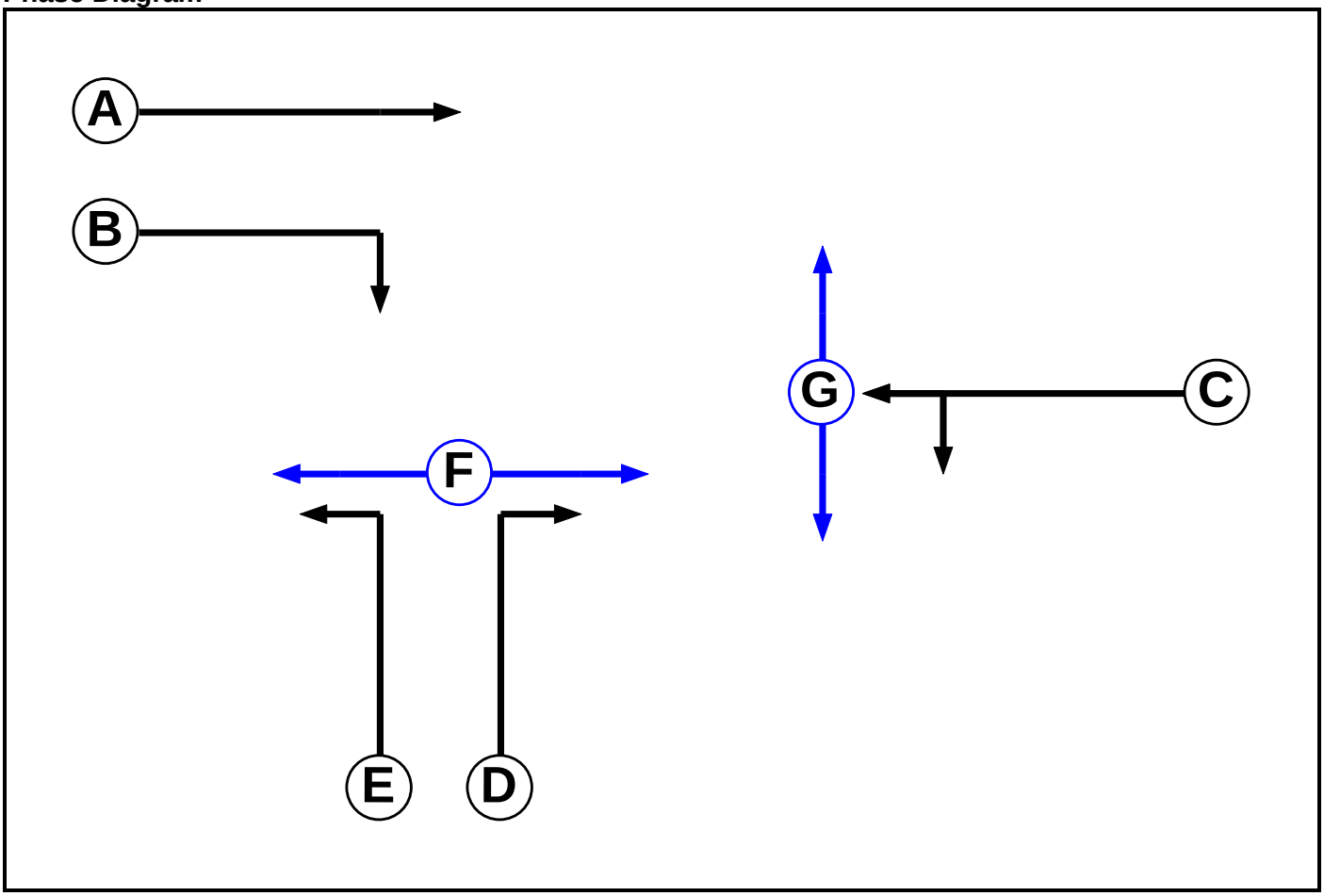
C1 PRC for Signalled Lanes (%): 8.4 Total Delay for Signalled Lanes (pcuHr): 16.18 Cycle Time (s): 84
PRC Over All Lanes (%): 8.4 Total Delay Over All Lanes(pcuHr): 16.18

Scenario 4: '2018 Baseline (PM)' (FG2: '2018 Baseline (PM)', Plan 2: 'Network Control Plan 2')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		-	-	5	-	-	8
	B	-		6	5	-	7	-
	C	-	5		6	6	7	5
	D	5	5	5		-	5	8
	E	-	-	5	-		5	-
	F	-	15	15	15	15		-
	G	13	-	13	13	-	-	

Lane Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Shenfield Road)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Ahead	Inf
1/2 (Shenfield Road)	U	B	2	3	6.3	Geom	-	3.00	0.00	N	Arm 6 Right	13.00
2/1 (Chelmsford Road)	U	C	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	11.00
2/2 (Chelmsford Road)	U	C	2	3	15.9	Geom	-	2.95	0.00	N	Arm 4 Ahead	Inf
3/1 (Hutton Road)	U	E	2	3	1.2	Geom	-	3.30	0.00	Y	Arm 4 Left	13.00
3/2 (Hutton Road)	U	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Right	11.00
4/1 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Chelmsford Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Hutton Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

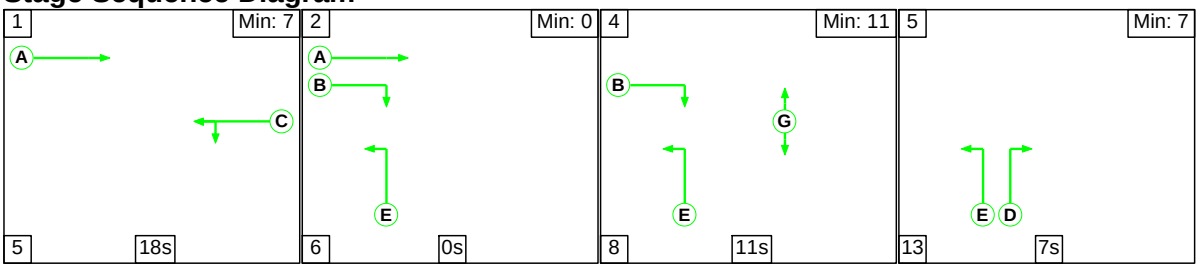
Lane Saturation Flows

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road								
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 (Shenfield Road)	2.90	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1905	1905
1/2 (Shenfield Road)	3.00	0.00	N	Arm 6 Right	13.00	100.0 %	1842	1842
2/1 (Chelmsford Road)	2.95	0.00	Y	Arm 4 Ahead	Inf	78.6 %	1856	1856
				Arm 6 Left	11.00	21.4 %		
2/2 (Chelmsford Road)	2.95	0.00	N	Arm 4 Ahead	Inf	100.0 %	2050	2050
3/1 (Hutton Road)	3.30	0.00	Y	Arm 4 Left	13.00	100.0 %	1744	1744
3/2 (Hutton Road)	3.20	0.00	N	Arm 5 Right	11.00	100.0 %	1826	1826
4/1 (Shenfield Road Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Shenfield Road Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Chelmsford Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hutton Road Lane 1)	Infinite Saturation Flow						Inf	Inf

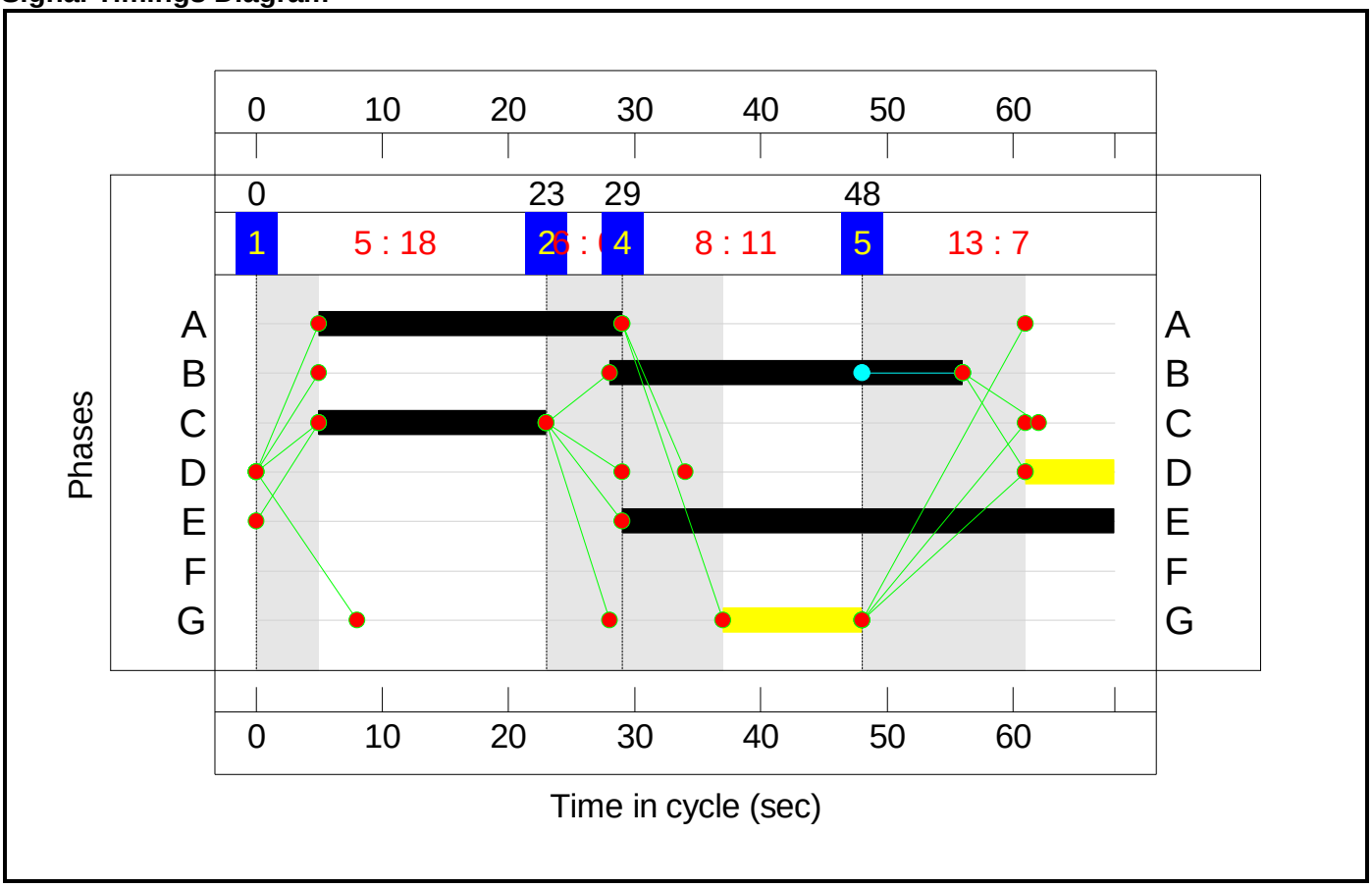
Lane Connector Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	4	35
1/2	6/1	Internal	5	35
2/1	4/1	Internal	5	35
2/1	6/1	Internal	4	35
2/2	4/2	Internal	5	35
3/1	4/2	Internal	4	35
3/2	5/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



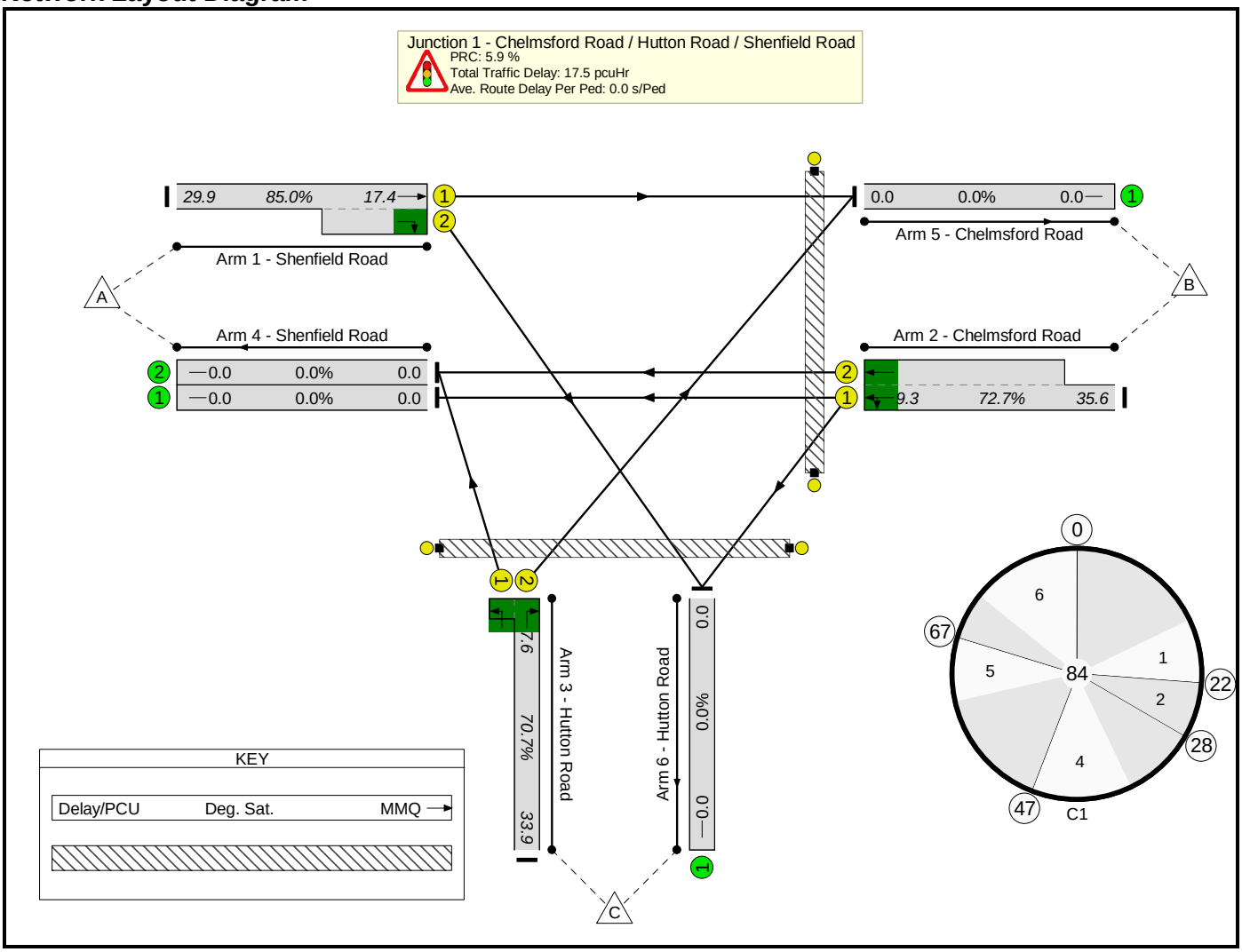
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J01 - A1023 Chelmsford Road / A129 Hutton Road / A1023 Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.0%**	**0**	**0**	**0**	**18.8**	**-**	**-**
Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.0%**	**0**	**0**	**0**	**18.8**	**-**	**-**
1/1+1/2	Shenfield Road Ahead Right	U	A B		1	24:28	-	1096	1905:1842	1215	90.2%	-	-	-	8.4	27.6	19.6
2/1+2/2	Chelmsford Road Ahead Left	U	C		1	18	-	619	1856:2050	1264	49.0%	-	-	-	3.7	21.3	5.4
3/2+3/1	Hutton Road Left Right	U	D E		1	7:39	-	470	1826:1744	516	91.0%	-	-	-	6.8	51.9	12.8
Ped Link: P1	Unnamed Ped Link	-	F		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-

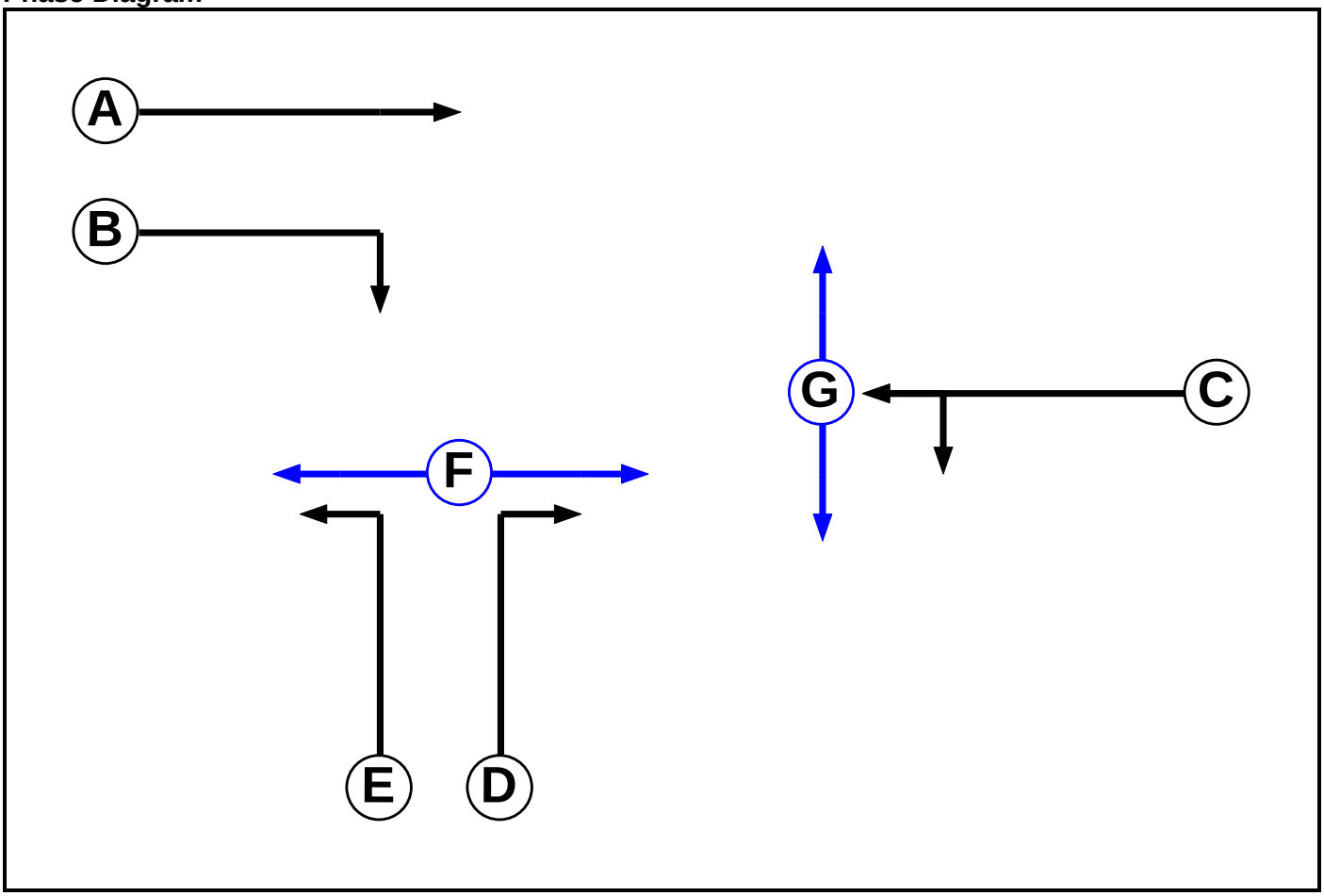
C1 PRC for Signalled Lanes (%): -1.2 Total Delay for Signalled Lanes (pcuHr): 18.84 Cycle Time (s): 68
PRC Over All Lanes (%): -1.2 Total Delay Over All Lanes(pcuHr): 18.84

Scenario 5: '2033 Reference (AM)' (FG3: '2033 Reference Case (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		-	-	5	-	-	8
	B	-		6	5	-	7	-
	C	-	5		6	6	7	5
	D	5	5	5		-	5	8
	E	-	-	5	-		5	-
	F	-	15	15	15	15		-
	G	13	-	13	13	-	-	

Lane Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Shenfield Road)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Ahead	Inf
1/2 (Shenfield Road)	U	B	2	3	6.3	Geom	-	3.00	0.00	N	Arm 6 Right	13.00
2/1 (Chelmsford Road)	U	C	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	11.00
2/2 (Chelmsford Road)	U	C	2	3	15.9	Geom	-	2.95	0.00	N	Arm 4 Ahead	Inf
3/1 (Hutton Road)	U	E	2	3	1.2	Geom	-	3.30	0.00	Y	Arm 4 Left	13.00
3/2 (Hutton Road)	U	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Right	11.00
4/1 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Chelmsford Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Hutton Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

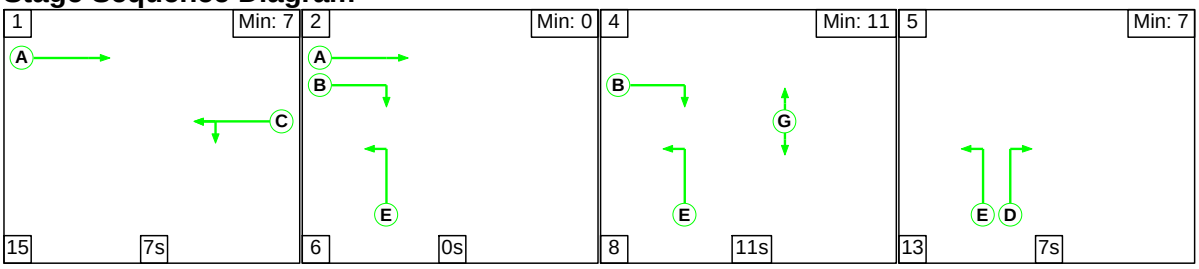
Lane Saturation Flows

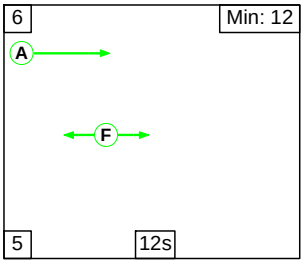
Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Shenfield Road)	2.90	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1905	1905
1/2 (Shenfield Road)	3.00	0.00	N	Arm 6 Right	13.00	100.0 %	1842	1842
2/1 (Chelmsford Road)	2.95	0.00	Y	Arm 4 Ahead	Inf	70.0 %	1835	1835
				Arm 6 Left	11.00	30.0 %		
2/2 (Chelmsford Road)	2.95	0.00	N	Arm 4 Ahead	Inf	100.0 %	2050	2050
3/1 (Hutton Road)	3.30	0.00	Y	Arm 4 Left	13.00	100.0 %	1744	1744
3/2 (Hutton Road)	3.20	0.00	N	Arm 5 Right	11.00	100.0 %	1826	1826
4/1 (Shenfield Road Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Shenfield Road Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Chelmsford Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hutton Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Lane Connector Input Data

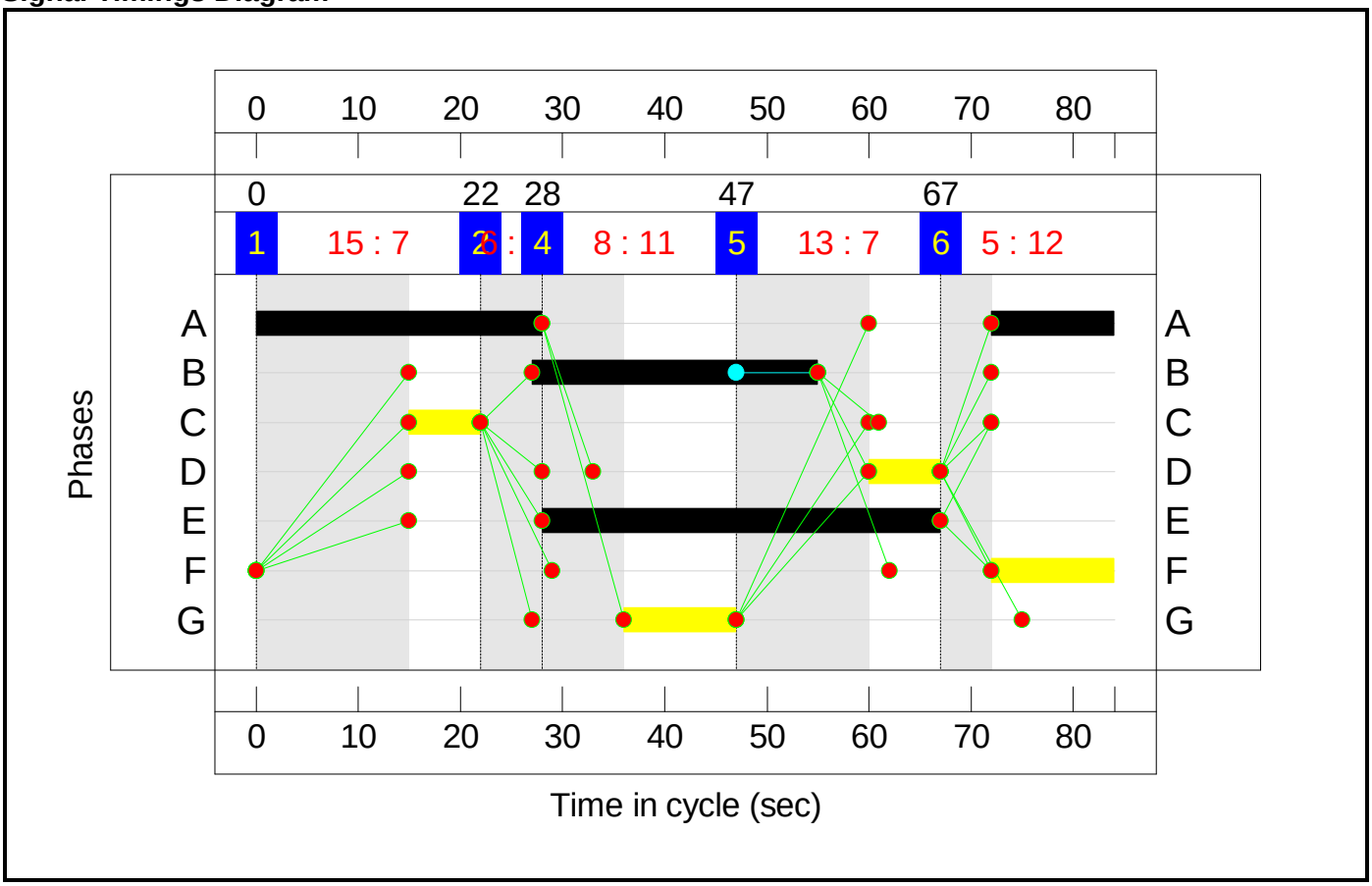
Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	4	35
1/2	6/1	Internal	5	35
2/1	4/1	Internal	5	35
2/1	6/1	Internal	4	35
2/2	4/2	Internal	5	35
3/1	4/2	Internal	4	35
3/2	5/1	Internal	5	35

Stage Sequence Diagram





Signal Timings Diagram



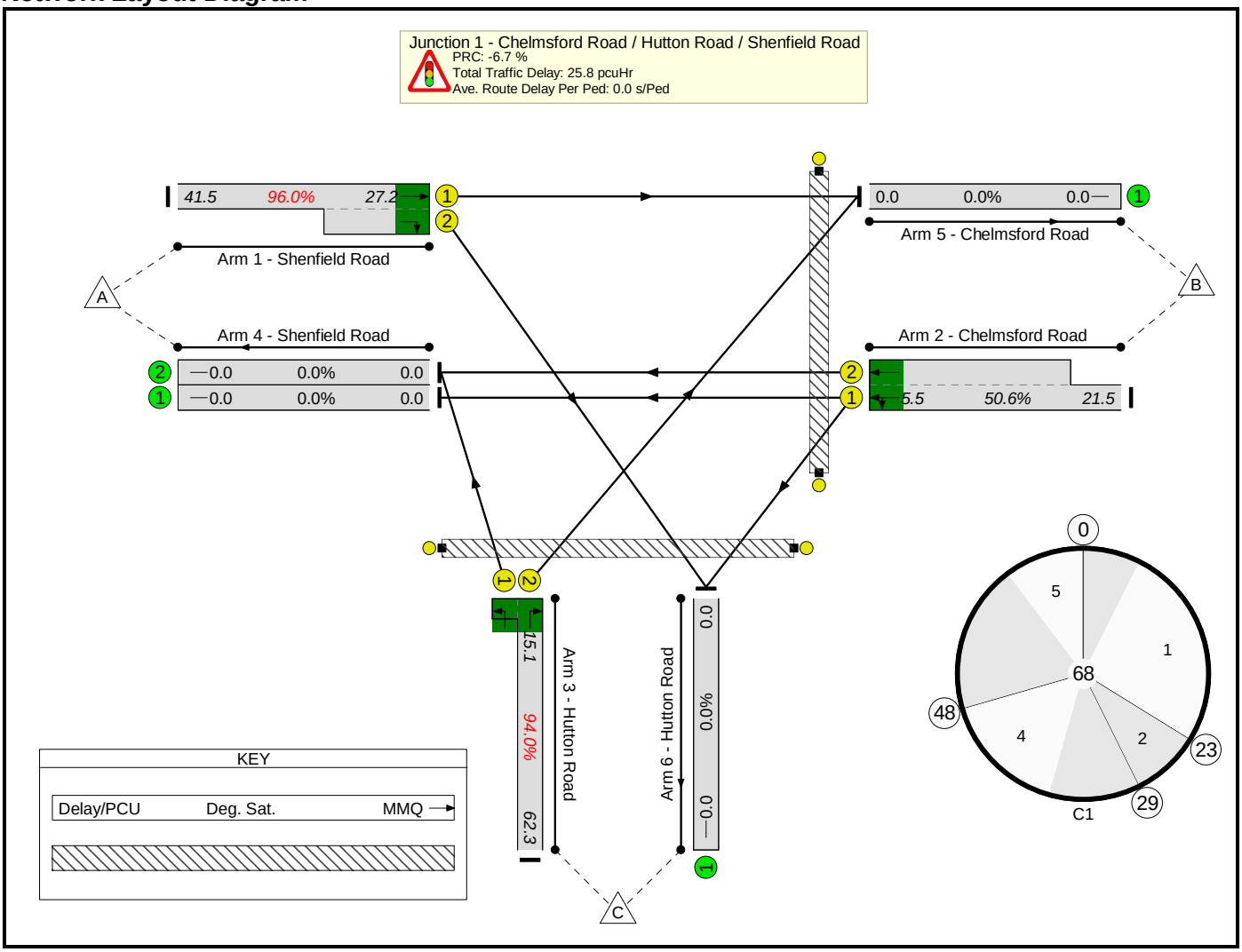
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J01 - A1023 Chelmsford Road / A129 Hutton Road / A1023 Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.0%**	**0**	**0**	**0**	**17.5**	**-**	**-**
Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.0%**	**0**	**0**	**0**	**17.5**	**-**	**-**
1/1+1/2	Shenfield Road Ahead Right	U	A B		1	40:28	-	902	1905:1842	1062	85.0%	-	-	-	7.5	29.9	17.4
2/1+2/2	Chelmsford Road Ahead Left	U	C		1	7	-	706	1835:2050	971	72.7%	-	-	-	7.0	35.6	9.3
3/2+3/1	Hutton Road Left Right	U	D E		1	7:39	-	319	1826:1744	451	70.7%	-	-	-	3.0	33.9	7.6
Ped Link: P1	Unnamed Ped Link	-	F		1	12	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-

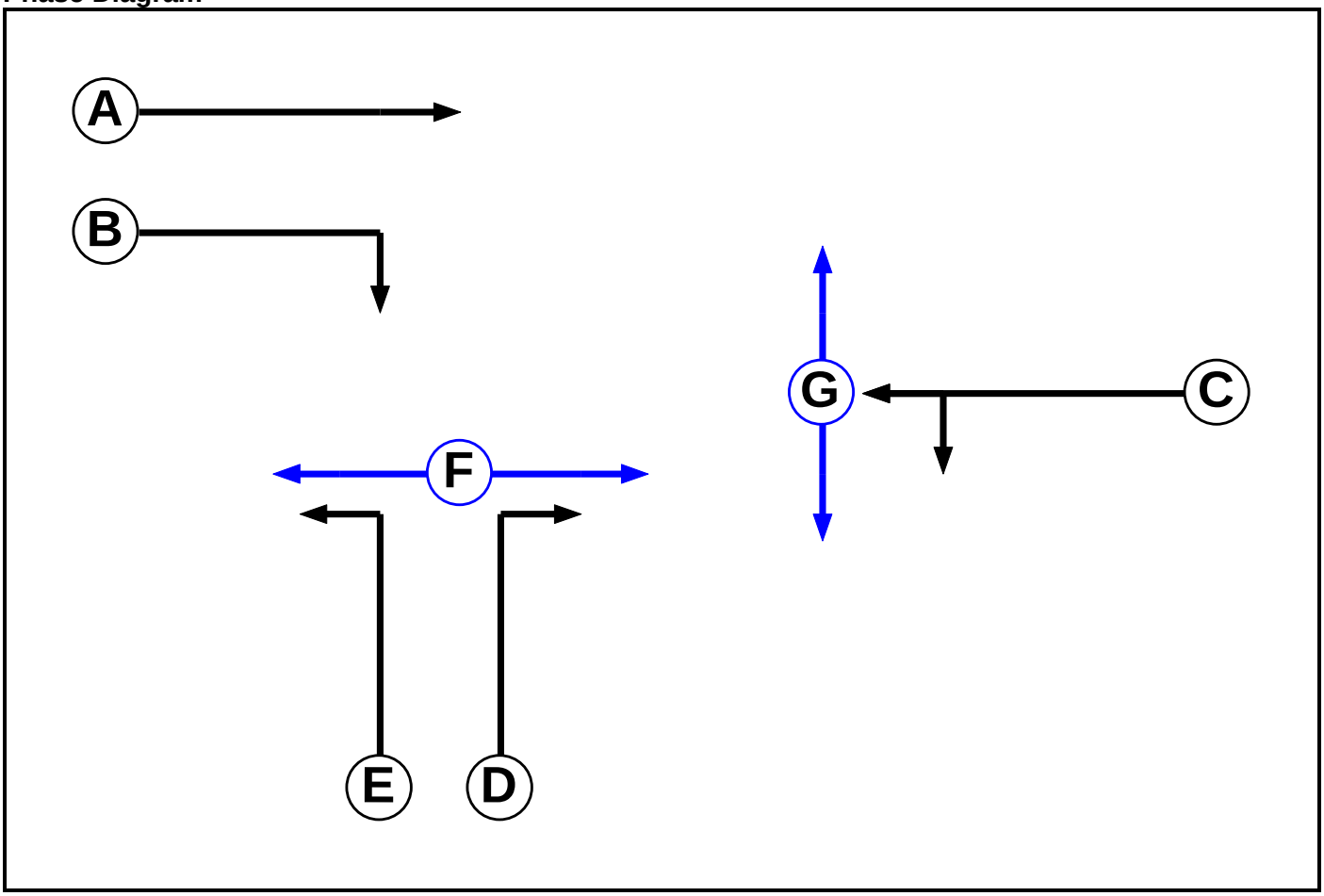
C1 PRC for Signalled Lanes (%): 5.9 Total Delay for Signalled Lanes (pcuHr): 17.49 Cycle Time (s): 84
PRC Over All Lanes (%): 5.9 Total Delay Over All Lanes(pcuHr): 17.49

Scenario 6: '2033 Reference (PM)' (FG4: '2033 Reference Case (PM)', Plan 2: 'Network Control Plan 2')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		-	-	5	-	-	8
	B	-		6	5	-	7	-
	C	-	5		6	6	7	5
	D	5	5	5		-	5	8
	E	-	-	5	-		5	-
	F	-	15	15	15	15		-
	G	13	-	13	13	-	-	

Lane Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Shenfield Road)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Ahead	Inf
1/2 (Shenfield Road)	U	B	2	3	6.3	Geom	-	3.00	0.00	N	Arm 6 Right	13.00
2/1 (Chelmsford Road)	U	C	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	11.00
2/2 (Chelmsford Road)	U	C	2	3	15.9	Geom	-	2.95	0.00	N	Arm 4 Ahead	Inf
3/1 (Hutton Road)	U	E	2	3	1.2	Geom	-	3.30	0.00	Y	Arm 4 Left	13.00
3/2 (Hutton Road)	U	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Right	11.00
4/1 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Chelmsford Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Hutton Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

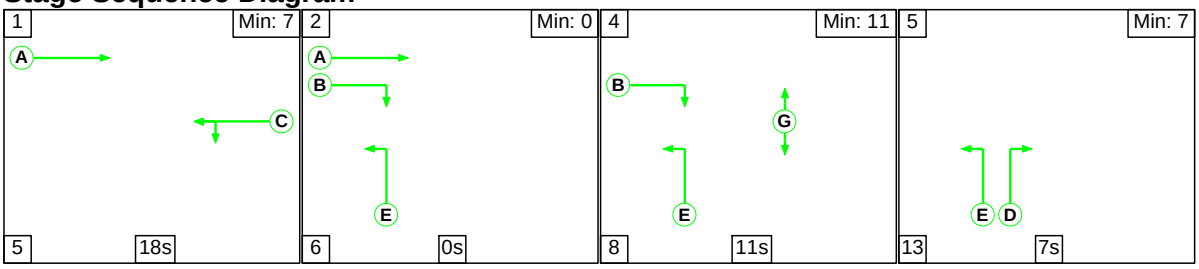
Lane Saturation Flows

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road								
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 (Shenfield Road)	2.90	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1905	1905
1/2 (Shenfield Road)	3.00	0.00	N	Arm 6 Right	13.00	100.0 %	1842	1842
2/1 (Chelmsford Road)	2.95	0.00	Y	Arm 4 Ahead	Inf	78.9 %	1857	1857
				Arm 6 Left	11.00	21.1 %		
2/2 (Chelmsford Road)	2.95	0.00	N	Arm 4 Ahead	Inf	100.0 %	2050	2050
3/1 (Hutton Road)	3.30	0.00	Y	Arm 4 Left	13.00	100.0 %	1744	1744
3/2 (Hutton Road)	3.20	0.00	N	Arm 5 Right	11.00	100.0 %	1826	1826
4/1 (Shenfield Road Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Shenfield Road Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Chelmsford Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hutton Road Lane 1)	Infinite Saturation Flow						Inf	Inf

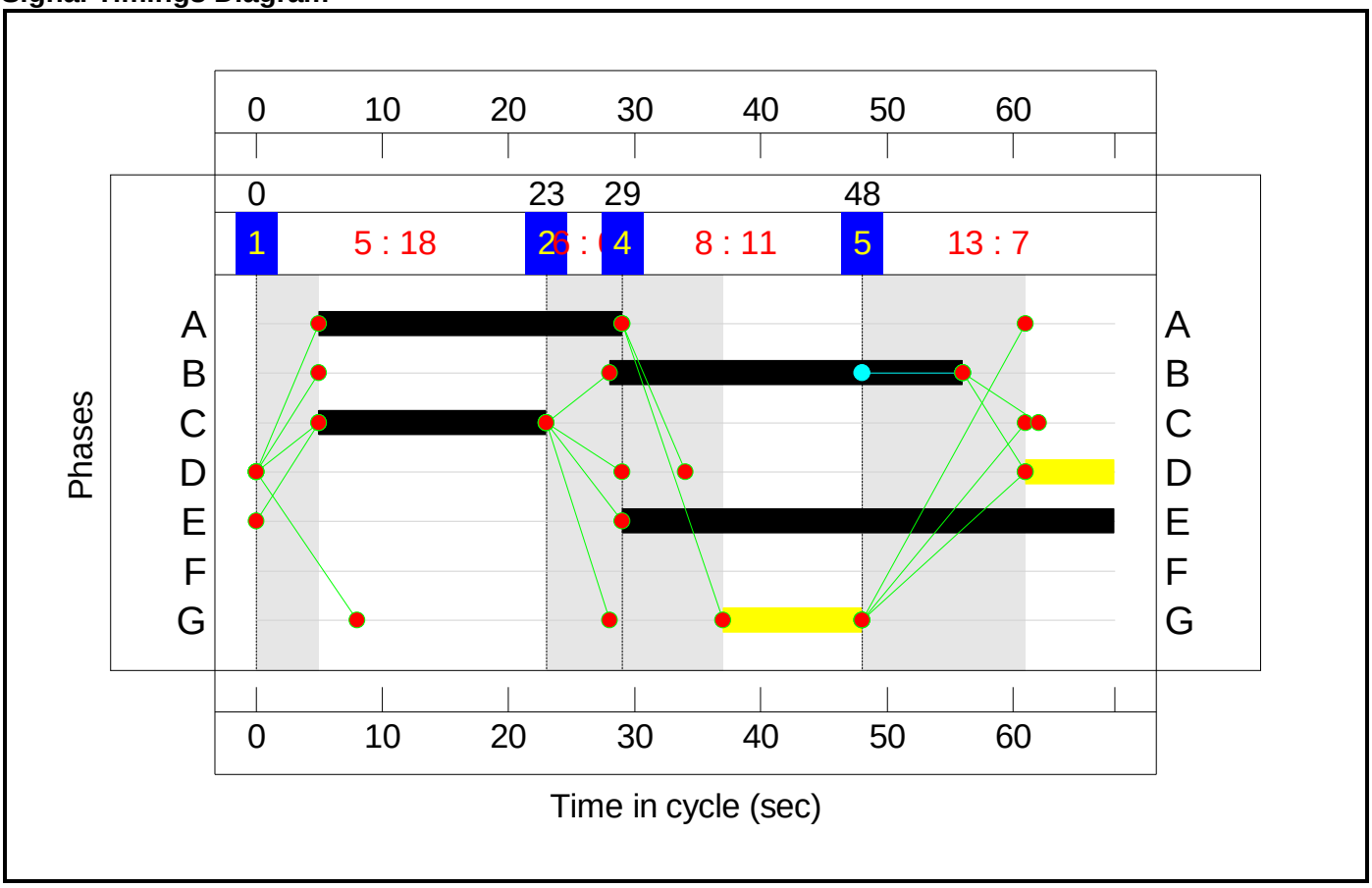
Lane Connector Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	4	35
1/2	6/1	Internal	5	35
2/1	4/1	Internal	5	35
2/1	6/1	Internal	4	35
2/2	4/2	Internal	5	35
3/1	4/2	Internal	4	35
3/2	5/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



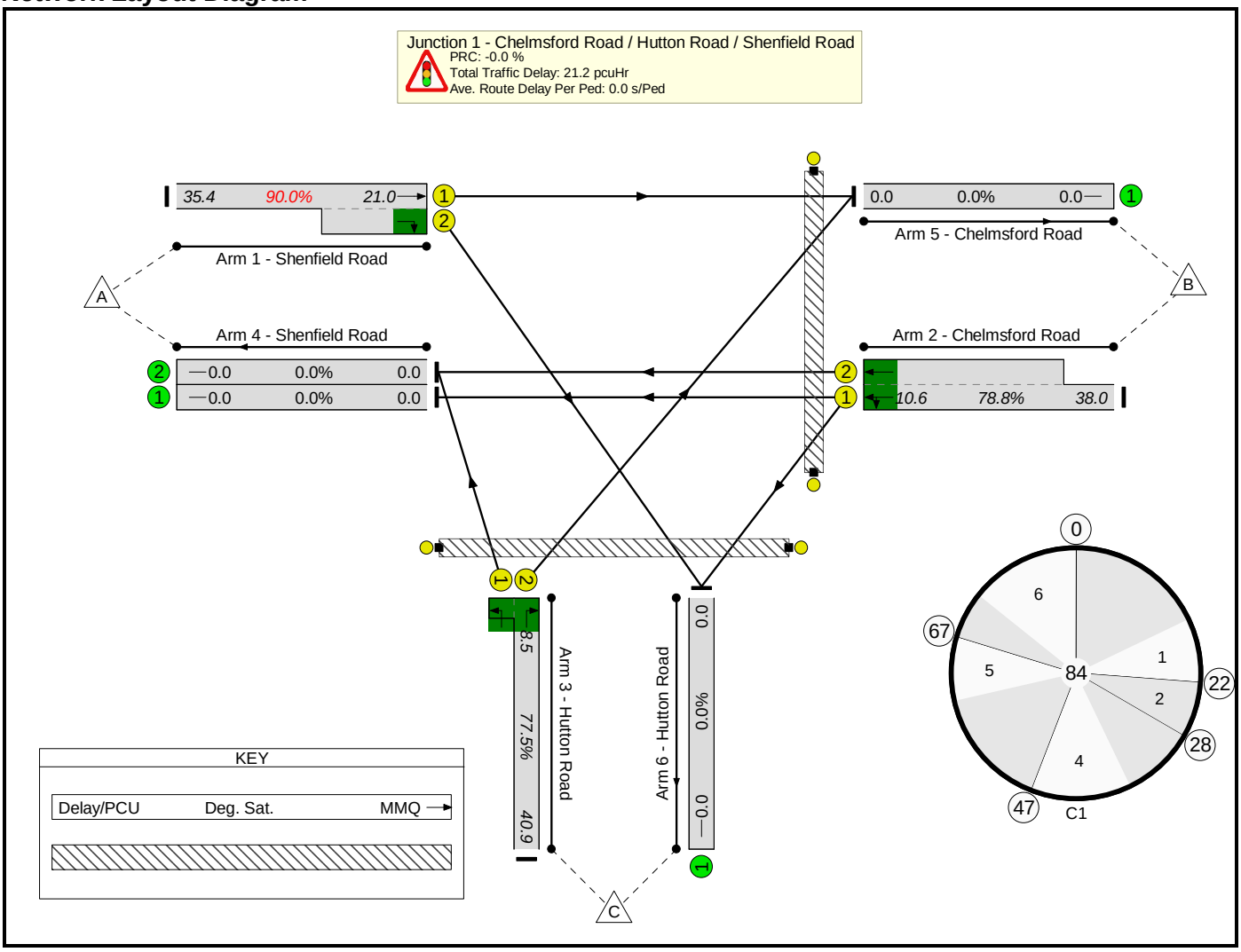
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J01 - A1023 Chelmsford Road / A129 Hutton Road / A1023 Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**96.0%**	**0**	**0**	**0**	**25.8**	**-**	**-**
Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**96.0%**	**0**	**0**	**0**	**25.8**	**-**	**-**
1/1+1/2	Shenfield Road Ahead Right	U	A B		1	24:28	-	1170	1905:1842	1218	96.0%	-	-	-	13.5	41.5	27.2
2/1+2/2	Chelmsford Road Ahead Left	U	C		1	18	-	639	1857:2050	1264	50.6%	-	-	-	3.8	21.5	5.5
3/2+3/1	Hutton Road Left Right	U	D E		1	7:39	-	489	1826:1744	520	94.0%	-	-	-	8.5	62.3	15.1
Ped Link: P1	Unnamed Ped Link	-	F		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-

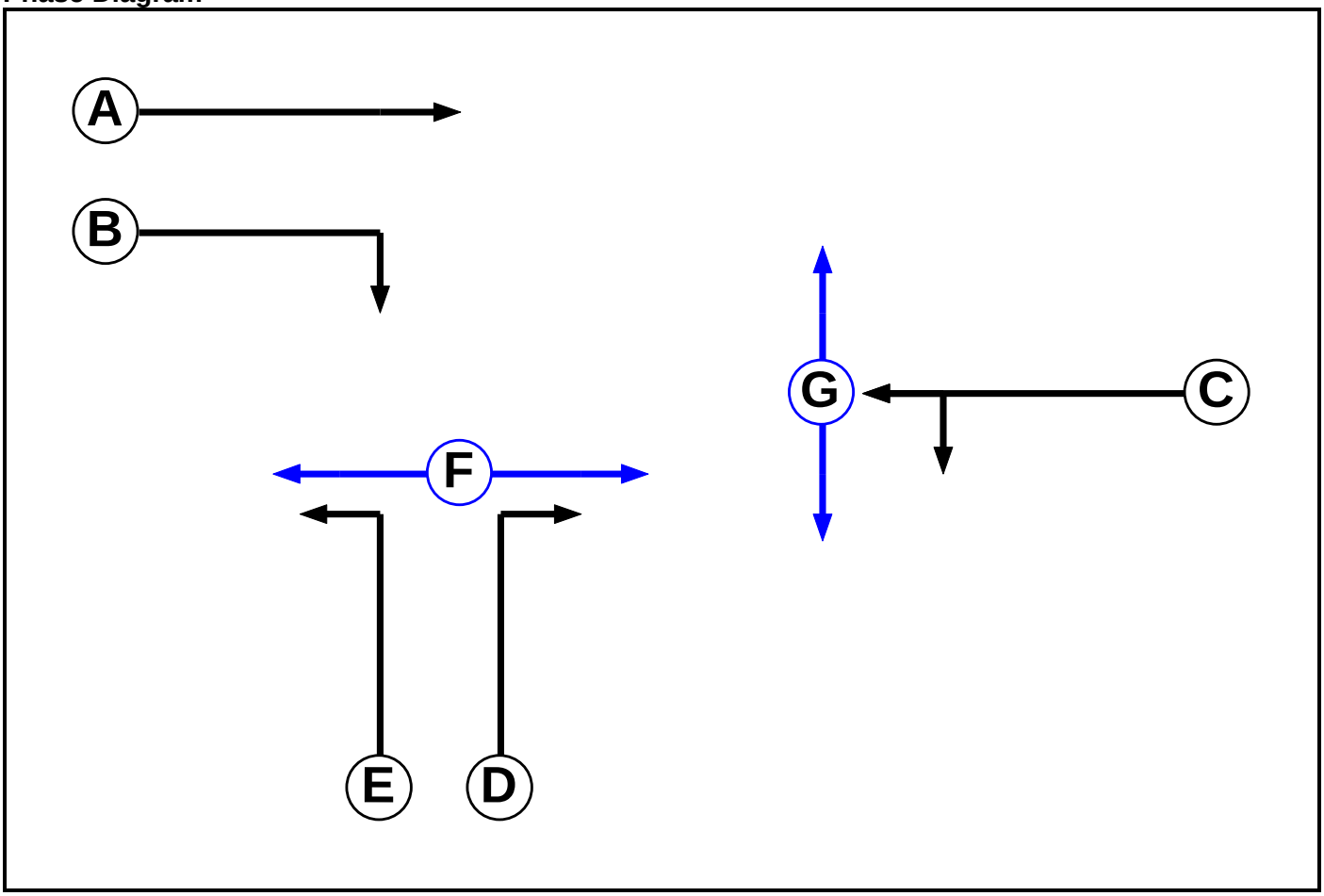
C1 PRC for Signalled Lanes (%): -6.7 Total Delay for Signalled Lanes (pcuHr): 25.78 Cycle Time (s): 68
PRC Over All Lanes (%): -6.7 Total Delay Over All Lanes(pcuHr): 25.78

Scenario 7: '2033 Local Plan Growth (AM)' (FG5: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		-	-	5	-	-	8
	B	-		6	5	-	7	-
	C	-	5		6	6	7	5
	D	5	5	5		-	5	8
	E	-	-	5	-		5	-
	F	-	15	15	15	15		-
	G	13	-	13	13	-	-	

Lane Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Shenfield Road)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Ahead	Inf
1/2 (Shenfield Road)	U	B	2	3	6.3	Geom	-	3.00	0.00	N	Arm 6 Right	13.00
2/1 (Chelmsford Road)	U	C	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	11.00
2/2 (Chelmsford Road)	U	C	2	3	15.9	Geom	-	2.95	0.00	N	Arm 4 Ahead	Inf
3/1 (Hutton Road)	U	E	2	3	1.2	Geom	-	3.30	0.00	Y	Arm 4 Left	13.00
3/2 (Hutton Road)	U	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Right	11.00
4/1 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Chelmsford Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Hutton Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

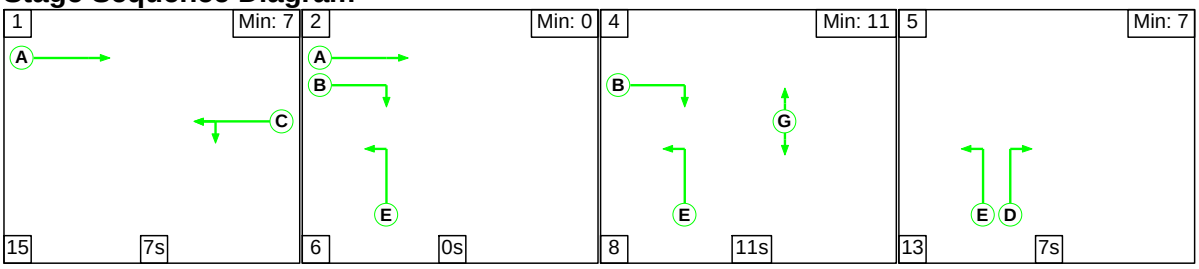
Lane Saturation Flows

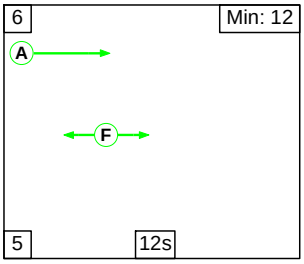
Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Shenfield Road)	2.90	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1905	1905
1/2 (Shenfield Road)	3.00	0.00	N	Arm 6 Right	13.00	100.0 %	1842	1842
2/1 (Chelmsford Road)	2.95	0.00	Y	Arm 4 Ahead	Inf	71.8 %	1839	1839
				Arm 6 Left	11.00	28.2 %		
2/2 (Chelmsford Road)	2.95	0.00	N	Arm 4 Ahead	Inf	100.0 %	2050	2050
3/1 (Hutton Road)	3.30	0.00	Y	Arm 4 Left	13.00	100.0 %	1744	1744
3/2 (Hutton Road)	3.20	0.00	N	Arm 5 Right	11.00	100.0 %	1826	1826
4/1 (Shenfield Road Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Shenfield Road Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Chelmsford Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hutton Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Lane Connector Input Data

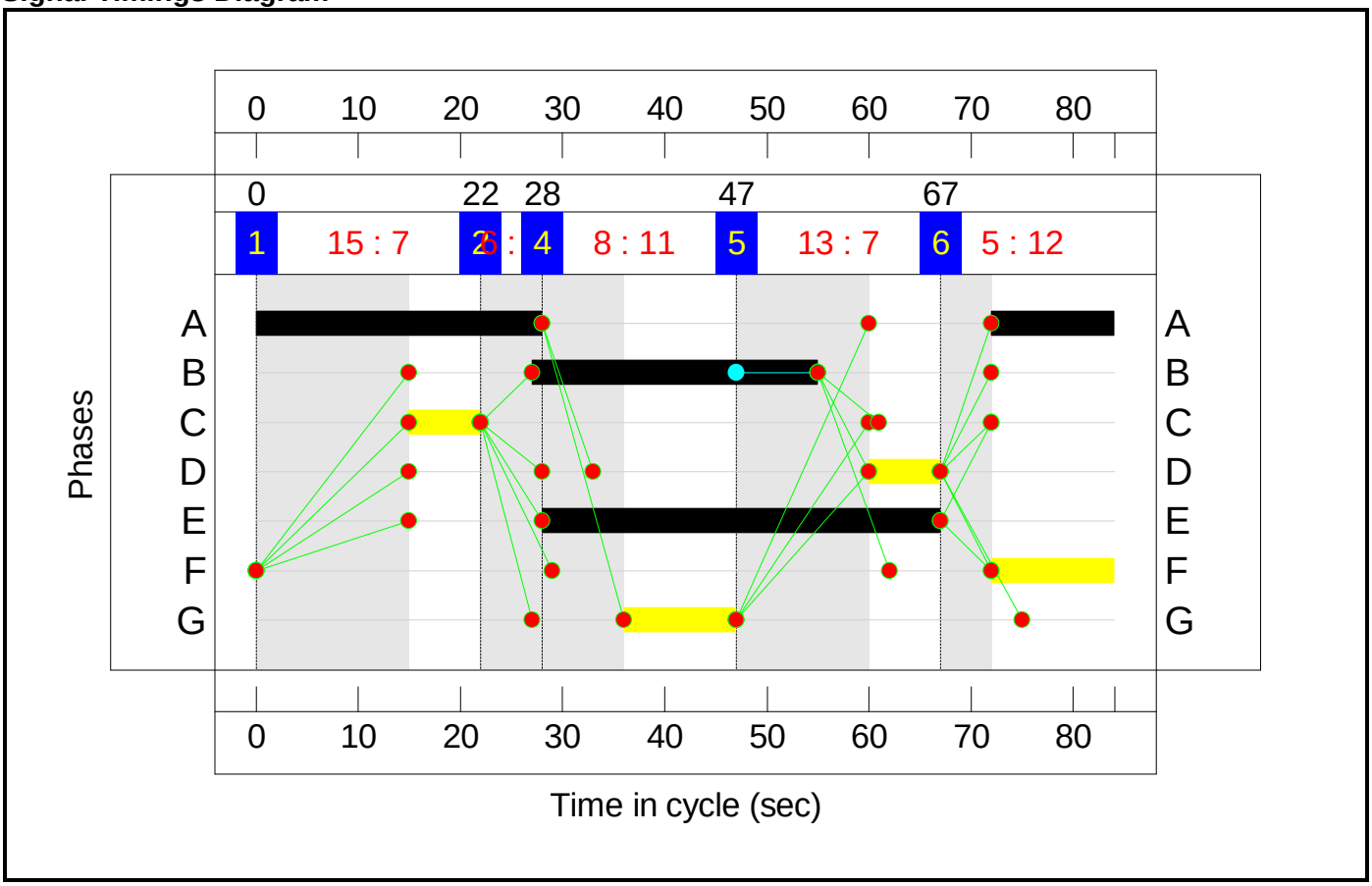
Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	4	35
1/2	6/1	Internal	5	35
2/1	4/1	Internal	5	35
2/1	6/1	Internal	4	35
2/2	4/2	Internal	5	35
3/1	4/2	Internal	4	35
3/2	5/1	Internal	5	35

Stage Sequence Diagram





Signal Timings Diagram



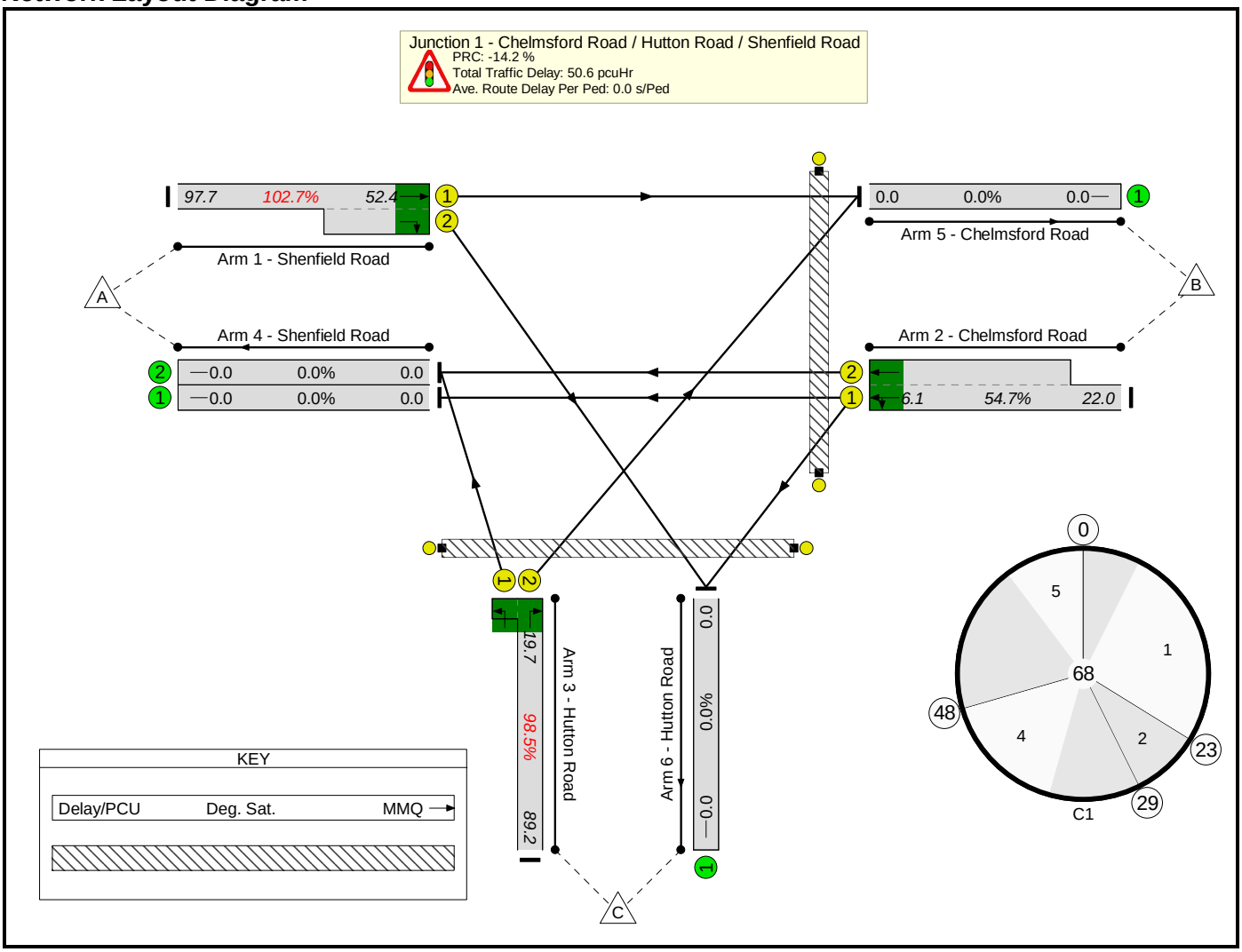
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J01 - A1023 Chelmsford Road / A129 Hutton Road / A1023 Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**90.0%**	**0**	**0**	**0**	**21.2**	**-**	**-**
Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**90.0%**	**0**	**0**	**0**	**21.2**	**-**	**-**
1/1+1/2	Shenfield Road Ahead Right	U	A B		1	40:28	-	952	1905:1842	1058	90.0%	-	-	-	9.4	35.4	21.0
2/1+2/2	Chelmsford Road Ahead Left	U	C		1	7	-	766	1839:2050	972	78.8%	-	-	-	8.1	38.0	10.6
3/2+3/1	Hutton Road Left Right	U	D E		1	7:39	-	333	1826:1744	429	77.5%	-	-	-	3.8	40.9	8.5
Ped Link: P1	Unnamed Ped Link	-	F		1	12	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-

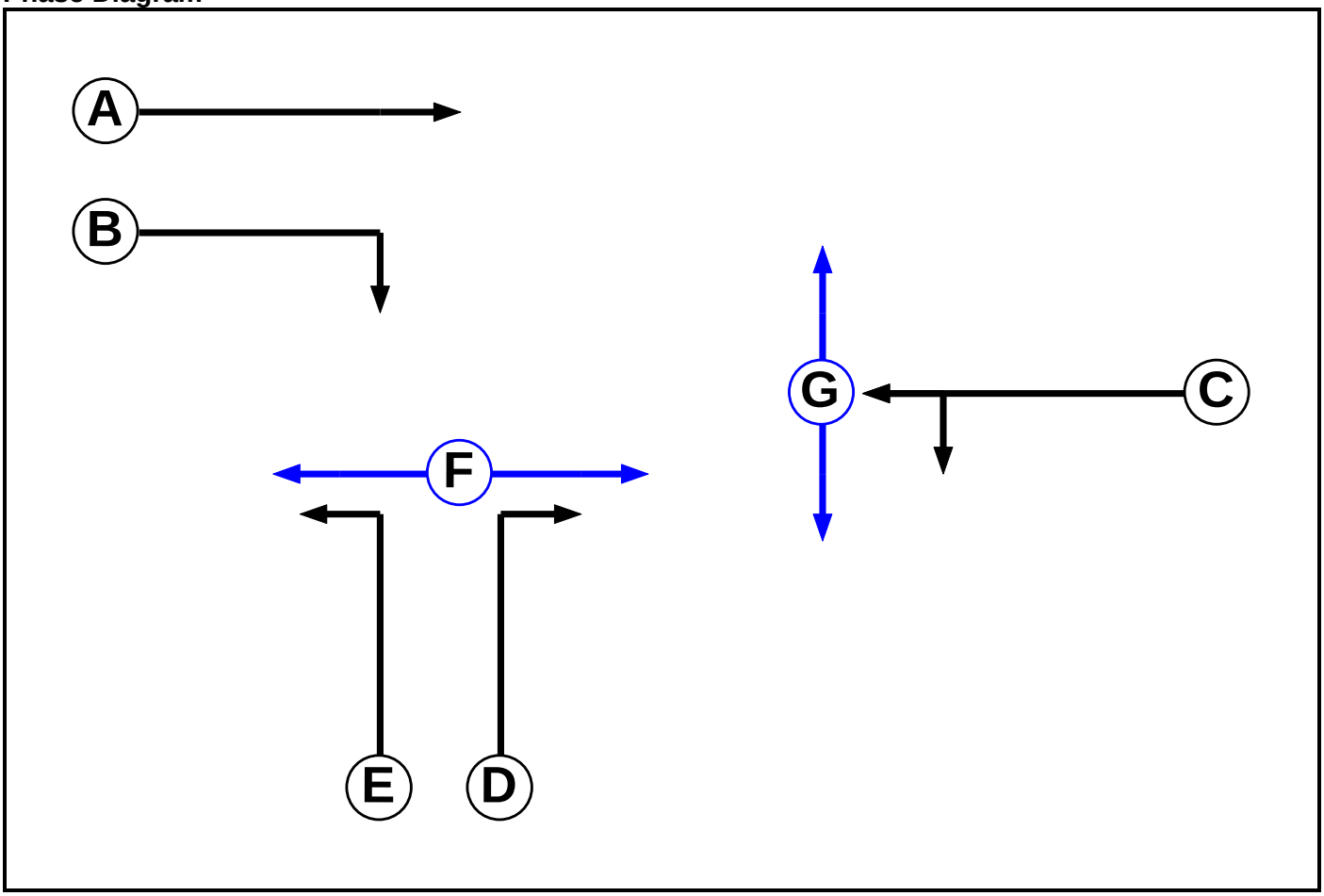
C1 PRC for Signalled Lanes (%): -0.0 Total Delay for Signalled Lanes (pcuHr): 21.23 Cycle Time (s): 84
PRC Over All Lanes (%): -0.0 Total Delay Over All Lanes(pcuHr): 21.23

Scenario 8: '2033 Local Plan Growth (PM)' (FG6: '2033 Local Plan Growth (PM)', Plan 2: 'Network Control Plan 2')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		-	-	5	-	-	8
	B	-		6	5	-	7	-
	C	-	5		6	6	7	5
	D	5	5	5		-	5	8
	E	-	-	5	-		5	-
	F	-	15	15	15	15		-
	G	13	-	13	13	-	-	

Lane Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Shenfield Road)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Ahead	Inf
1/2 (Shenfield Road)	U	B	2	3	6.3	Geom	-	3.00	0.00	N	Arm 6 Right	13.00
2/1 (Chelmsford Road)	U	C	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	11.00
2/2 (Chelmsford Road)	U	C	2	3	15.9	Geom	-	2.95	0.00	N	Arm 4 Ahead	Inf
3/1 (Hutton Road)	U	E	2	3	1.2	Geom	-	3.30	0.00	Y	Arm 4 Left	13.00
3/2 (Hutton Road)	U	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Right	11.00
4/1 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Shenfield Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Chelmsford Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Hutton Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

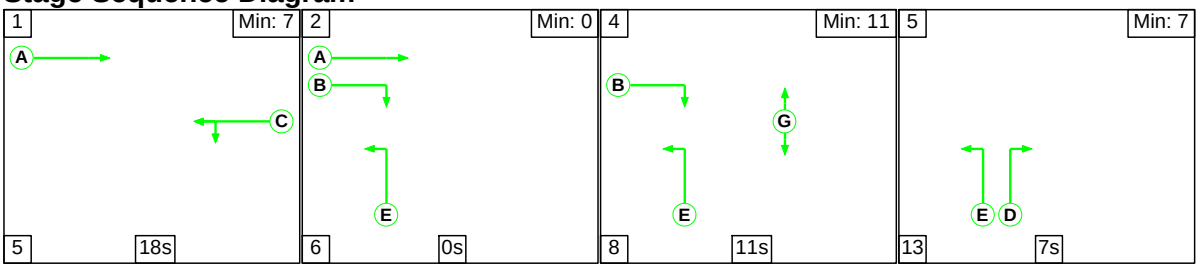
Lane Saturation Flows

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road								
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 (Shenfield Road)	2.90	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1905	1905
1/2 (Shenfield Road)	3.00	0.00	N	Arm 6 Right	13.00	100.0 %	1842	1842
2/1 (Chelmsford Road)	2.95	0.00	Y	Arm 4 Ahead	Inf	79.6 %	1858	1858
				Arm 6 Left	11.00	20.4 %		
2/2 (Chelmsford Road)	2.95	0.00	N	Arm 4 Ahead	Inf	100.0 %	2050	2050
3/1 (Hutton Road)	3.30	0.00	Y	Arm 4 Left	13.00	100.0 %	1744	1744
3/2 (Hutton Road)	3.20	0.00	N	Arm 5 Right	11.00	100.0 %	1826	1826
4/1 (Shenfield Road Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Shenfield Road Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Chelmsford Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hutton Road Lane 1)	Infinite Saturation Flow						Inf	Inf

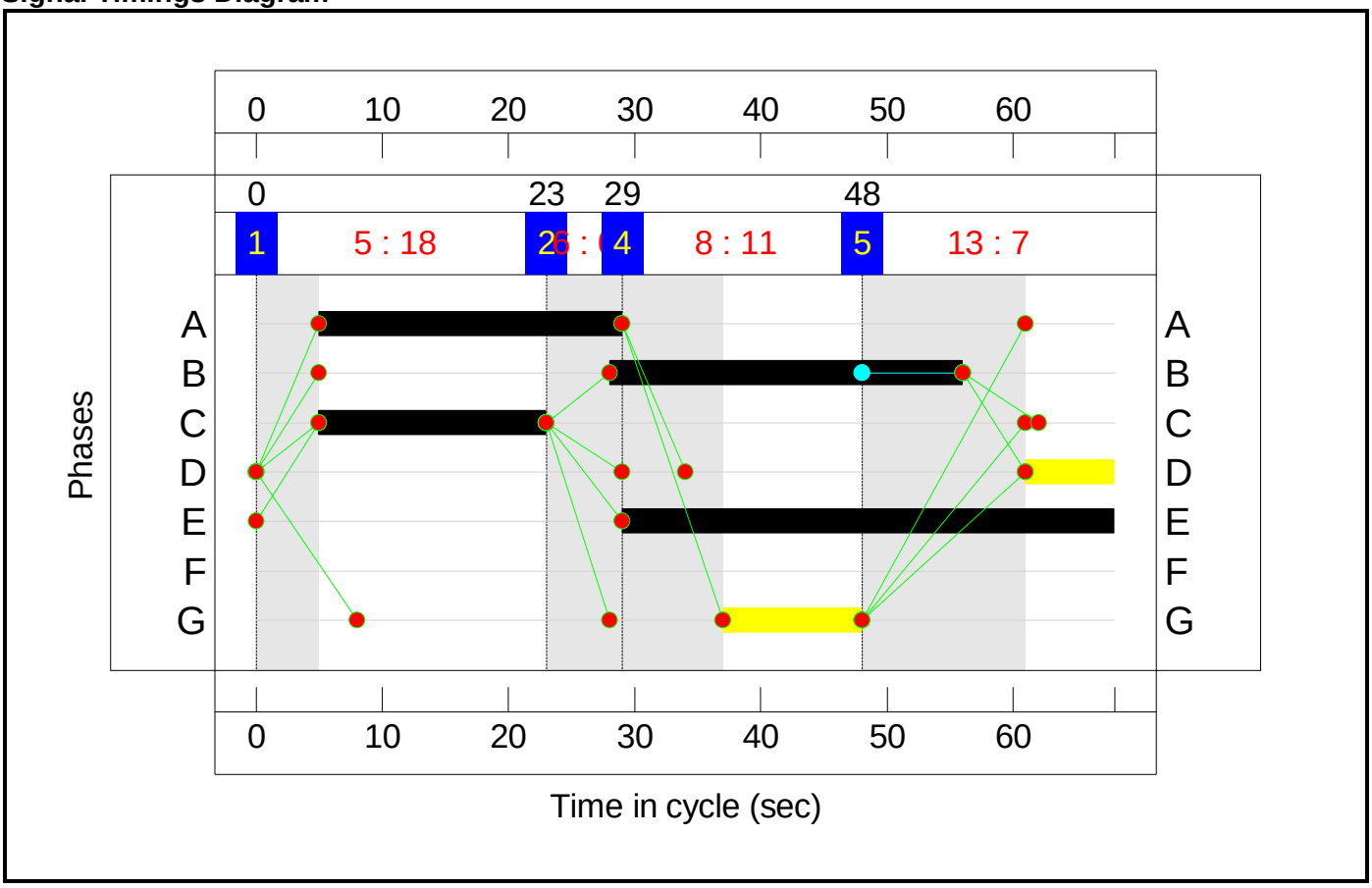
Lane Connector Input Data

Junction: Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	4	35
1/2	6/1	Internal	5	35
2/1	4/1	Internal	5	35
2/1	6/1	Internal	4	35
2/2	4/2	Internal	5	35
3/1	4/2	Internal	4	35
3/2	5/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J01 - A1023 Chelmsford Road / A129 Hutton Road / A1023 Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**102.7%**	**0**	**0**	**0**	**50.6**	**-**	**-**
Junction 1 - Chelmsford Road / Hutton Road / Shenfield Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**102.7%**	**0**	**0**	**0**	**50.6**	**-**	**-**
1/1+1/2	Shenfield Road Ahead Right	U	A B		1	24:28	-	1244	1905:1842	1211	102.7%	-	-	-	33.8	97.7	52.4
2/1+2/2	Chelmsford Road Ahead Left	U	C		1	18	-	691	1858:2050	1264	54.7%	-	-	-	4.2	22.0	6.1
3/2+3/1	Hutton Road Left Right	U	D E		1	7:39	-	508	1826:1744	516	98.5%	-	-	-	12.6	89.2	19.7
Ped Link: P1	Unnamed Ped Link	-	F		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -14.2 Total Delay for Signalled Lanes (pcuHr): 50.59 Cycle Time (s): 68
PRC Over All Lanes (%): -14.2 Total Delay Over All Lanes(pcuHr): 50.59

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: 28085_02_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 24/10/2018 17:28:10

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Arm A	6.1	47.42	0.89	E
Arm B	9.7	33.91	0.95	D
Arm C	10.9	71.98	0.98	F
	A1 - 2033 Reference Case			
Arm A	7.6	57.77	0.91	F
Arm B	13.1	41.46	0.99	E
Arm C	16.5	111.56	1.02	F
	A1 - 2033 Local Plan Growth			
Arm A	10.8	78.66	0.96	F
Arm B	14.0	43.53	1.00	E
Arm C	18.6	123.56	1.04	F

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

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

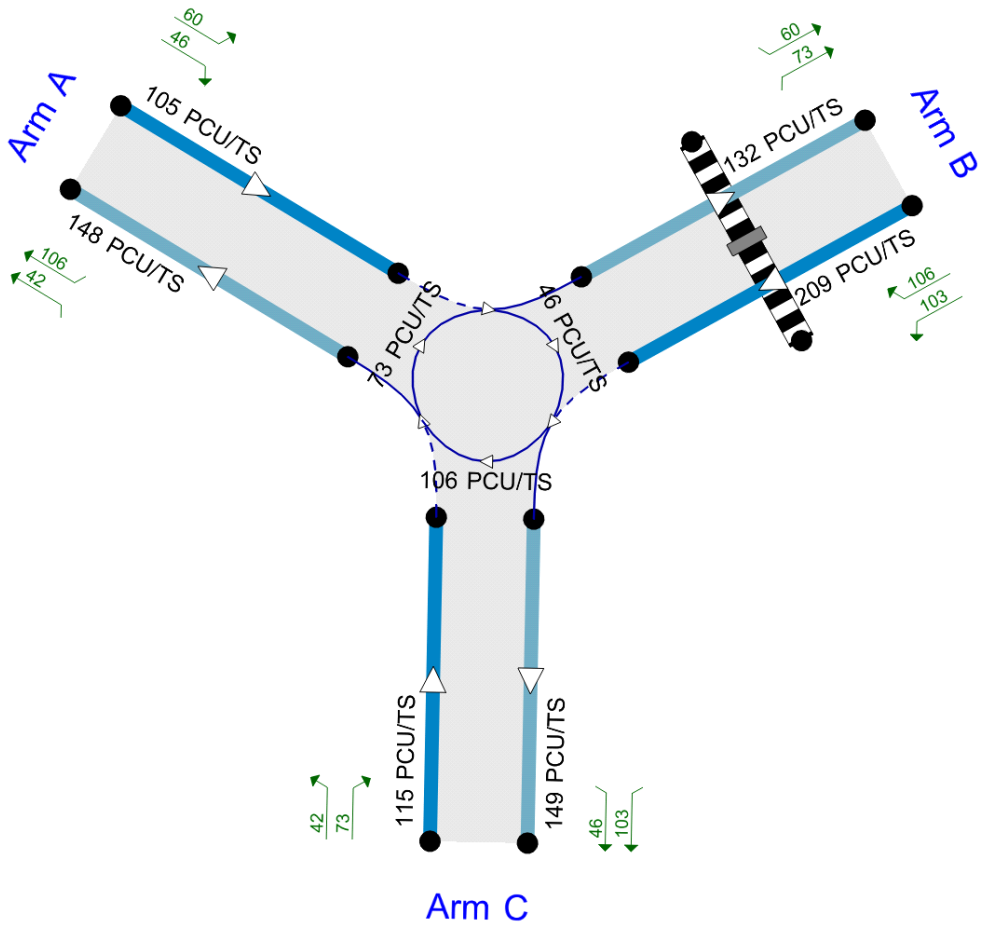
File summary

File Description

Title	A129 Rayleigh Road - Hanging Hill Lane Jct
Location	Brentwood
Site number	02
Date	01/04/2018
Version	
Status	In progress
Identifier	
Client	Brentwood
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Time Segment: 08:00-08:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	49.07	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Rayleigh Road (W)	
B	Rayleigh Road (E)	
C	Hanging Hill Lane	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.50	4.50	5.30	9.3	16.34	16.50	0.0	
B	3.40	3.40	5.60	4.8	10.41	7.70	0.0	
C	3.20	3.20	4.50	1.5	10.78	7.70	0.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
B	3.00	4.20	✓	Distance	4.40	3.14	4.10	2.93

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
A	None		
B	Percentage		90.00
C	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.724	317.370
B	0.640	242.780
C	0.611	205.296

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Calibration to Traffic Master Data	55.00
B	Percentage	Calibration to Traffic Master Data	105.00
C	Percentage	Calibration to Traffic Master Data	105.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	57.00	43.00
	B	109.00	0.00	106.00
	C	40.00	71.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	89.00	26.00
	B	113.00	0.00	52.00
	C	40.00	67.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	79.00	42.00
	B	97.00	0.00	55.00
	C	49.00	101.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	69.00	54.00
	B	108.00	0.00	68.00
	C	51.00	83.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	0	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	2
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	3
	B	1	0	0
	C	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	0
	B	1	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.89	47.42	6.1	E	114.75	459.00
B	0.95	33.91	9.7	D	177.00	708.00
C	0.98	71.98	10.9	F	125.50	502.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	100.00	100.00	69.29		146.98	0.680	98.00	143.12	0.0	2.0	17.728	C
B	215.00	215.00	42.14	0.00	226.61	0.949	205.31	125.15	0.0	9.7	33.909	D
C	111.00	111.00	104.09		148.74	0.746	108.32	143.36	0.0	2.7	21.075	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	115.00	115.00	66.87		147.94	0.777	113.84	156.12	2.0	3.2	25.657	D
B	165.00	165.00	26.15	0.00	237.35	0.695	172.27	154.57	9.7	2.4	15.443	C
C	107.00	107.00	116.26		140.93	0.759	106.74	82.16	2.7	2.9	25.944	D

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	121.00	121.00	95.60		136.50	0.886	118.38	143.91	3.2	5.8	44.405	E
B	152.00	152.00	40.71	0.00	227.57	0.668	152.32	173.27	2.4	2.1	12.100	B
C	150.00	150.00	97.32		153.08	0.980	142.19	95.71	2.9	10.8	59.119	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	123.00	123.00	83.50		141.32	0.870	122.66	157.42	5.8	6.1	47.415	E
B	176.00	176.00	53.32	0.00	219.09	0.803	174.36	152.84	2.1	3.7	19.515	C
C	134.00	134.00	107.05		146.84	0.913	133.86	120.64	10.8	10.9	71.979	F

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	67.02	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	59.00	44.00
	B	114.00	0.00	109.00
	C	42.00	74.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	91.00	27.00
	B	117.00	0.00	54.00
	C	42.00	69.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	81.00	43.00
	B	101.00	0.00	58.00
	C	51.00	103.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	72.00	55.00
	B	113.00	0.00	71.00
	C	54.00	86.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	0	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	2
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	3
	B	1	0	0
	C	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	0
	B	1	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.91	57.77	7.6	F	118.00	472.00
B	0.99	41.46	13.1	E	184.25	737.00
C	1.02	111.56	16.5	F	130.25	521.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	103.00	103.00	71.89		145.94	0.706	100.77	148.10	0.0	2.2	19.095	C
B	223.00	223.00	43.05	0.00	226.00	0.987	209.90	129.61	0.0	13.1	41.464	E
C	116.00	116.00	107.30		146.68	0.791	112.68	145.64	0.0	3.3	24.541	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	118.00	118.00	68.76		147.18	0.802	116.65	163.56	2.2	3.6	28.364	D
B	171.00	171.00	27.13	0.00	236.69	0.722	181.31	158.28	13.1	2.8	19.202	C
C	111.00	111.00	121.79		137.38	0.808	110.53	86.66	3.3	3.8	32.523	D

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	124.00	124.00	95.60		136.50	0.908	120.91	148.96	3.6	6.7	49.746	E
B	159.00	159.00	41.51	0.00	227.03	0.700	159.34	175.00	2.8	2.4	13.470	B
C	154.00	154.00	101.36		150.49	1.023	143.20	99.50	3.8	14.6	75.277	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	127.00	127.00	85.62		140.47	0.904	126.08	164.17	6.7	7.6	57.768	F
B	184.00	184.00	54.03	0.00	218.62	0.842	181.80	157.68	2.4	4.6	23.217	C
C	140.00	140.00	111.70		143.85	0.973	138.09	124.13	14.6	16.5	111.562	F

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	77.50	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	61.00	47.00
	B	113.00	0.00	110.00
	C	43.00	75.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	93.00	29.00
	B	116.00	0.00	55.00
	C	43.00	71.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	84.00	46.00
	B	100.00	0.00	59.00
	C	52.00	105.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	74.00	58.00
	B	112.00	0.00	72.00
	C	54.00	88.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	0	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	2
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	3
	B	1	0	0
	C	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	0
	B	1	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.96	78.66	10.8	F	123.00	492.00
B	1.00	43.53	14.0	E	184.25	737.00
C	1.04	123.56	18.6	F	132.75	531.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	108.00	108.00	72.80		145.58	0.742	105.38	147.67	0.0	2.6	21.207	C
B	223.00	223.00	45.86	0.00	224.11	0.995	209.05	132.32	0.0	14.0	43.529	E
C	118.00	118.00	105.93		147.56	0.800	114.53	148.98	0.0	3.5	25.141	D

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	122.00	122.00	70.60		146.45	0.833	120.38	163.82	2.6	4.2	32.617	D
B	171.00	171.00	29.13	0.00	235.35	0.727	182.10	161.85	14.0	2.9	20.285	C
C	114.00	114.00	121.13		137.80	0.827	113.29	90.10	3.5	4.2	35.130	E

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	130.00	130.00	96.68		136.07	0.955	125.11	148.53	4.2	9.1	62.880	F
B	159.00	159.00	43.78	0.00	225.51	0.705	159.35	178.02	2.9	2.5	13.786	B
C	157.00	157.00	100.36		151.13	1.039	144.85	102.77	4.2	16.3	81.656	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	132.00	132.00	87.38		139.78	0.944	130.33	162.96	9.1	10.8	78.661	F
B	184.00	184.00	56.49	0.00	216.97	0.848	181.67	161.22	2.5	4.8	24.101	C
C	142.00	142.00	110.63		144.54	0.982	139.70	127.53	16.3	18.6	123.558	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_02_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 11:48:54

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Arm A	6.2	44.07	0.89	E
Arm B	5.7	39.42	0.88	E
Arm C	4.4	35.40	0.83	E
	A1 - 2033 Reference Case			
Arm A	13.6	88.48	0.97	F
Arm B	8.2	54.11	0.93	F
Arm C	6.1	47.39	0.88	E
	A1 - 2033 Local Plan Growth			
Arm A	15.8	100.22	0.99	F
Arm B	11.0	68.87	0.97	F
Arm C	7.3	55.93	0.90	F

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

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

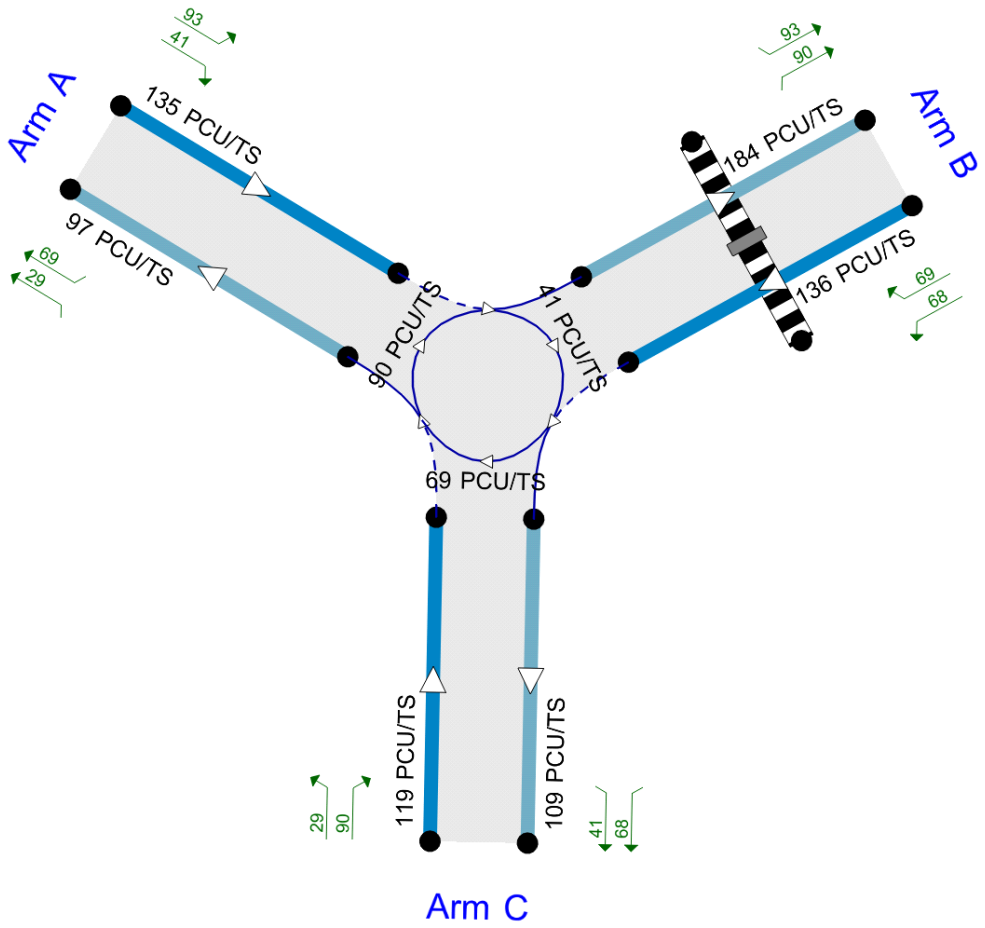
File summary

File Description

Title	A129 Rayleigh Road - Hanging Hill Lane Jct
Location	Brentwood
Site number	02
Date	01/04/2018
Version	
Status	In progress
Identifier	
Client	Brentwood
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Time Segment: 17:00-17:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓
D7	2033 Local Plan Growth with Peak Spreading	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	D2,D4,D6	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	39.79	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Rayleigh Road (W)	
B	Rayleigh Road (E)	
C	Hanging Hill Lane	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.50	4.50	5.30	9.3	16.34	16.50	0.0	
B	3.40	3.40	5.60	4.8	10.41	7.70	0.0	
C	3.20	3.20	4.50	1.5	10.78	7.70	0.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
B	3.00	4.20	✓	Distance	4.40	3.14	4.10	2.93

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
A	None		
B	Percentage		90.00
C	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.724	317.370
B	0.640	242.780
C	0.611	205.296

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Calibration to Traffic Master data	60.00
B	Percentage	Calibration to Traffic Master data	72.00
C	Percentage	Calibration to Traffic Master data	88.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	94.00	36.00
	B	59.00	0.00	81.00
	C	22.00	97.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	81.00	38.00
	B	68.00	0.00	63.00
	C	33.00	83.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	96.00	40.00
	B	69.00	0.00	52.00
	C	33.00	86.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	91.00	43.00
	B	73.00	0.00	63.00
	C	22.00	85.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

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

17:15 - 17:30

Heavy Vehicle Percentages

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

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	7	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	2
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.89	44.07	6.2	E	129.75	519.00
B	0.88	39.42	5.7	E	132.00	528.00
C	0.83	35.40	4.4	E	115.25	461.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	130.00	130.00	94.27		149.49	0.870	124.92	78.06	0.0	5.1	32.003	D
B	140.00	140.00	34.59	0.00	158.86	0.881	134.48	184.59	0.0	5.5	31.975	D
C	119.00	119.00	56.68		150.17	0.792	115.65	112.40	0.0	3.4	24.171	C

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	119.00	119.00	83.06		154.36	0.771	120.39	100.10	5.1	3.7	27.571	D
B	131.00	131.00	38.23	0.00	157.19	0.833	131.16	165.23	5.5	5.4	35.309	E
C	116.00	116.00	67.54		144.32	0.804	115.62	101.84	3.4	3.7	30.585	D

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	136.00	136.00	85.49		153.30	0.887	133.75	102.50	3.7	5.9	41.071	E
B	121.00	121.00	39.43	0.00	156.64	0.773	122.63	179.81	5.4	3.7	27.653	D
C	119.00	119.00	69.65		143.18	0.831	118.33	92.41	3.7	4.4	35.395	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	134.00	134.00	85.52		153.29	0.874	133.74	94.62	5.9	6.2	44.067	E
B	136.00	136.00	42.76	0.00	155.10	0.877	134.07	176.49	3.7	5.7	39.420	E
C	107.00	107.00	72.09		141.87	0.754	108.05	104.74	4.4	3.3	27.435	D

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	64.14	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	102.00	39.00
	B	61.00	0.00	85.00
	C	23.00	102.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	88.00	41.00
	B	71.00	0.00	67.00
	C	34.00	88.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	104.00	43.00
	B	72.00	0.00	56.00
	C	34.00	91.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	100.00	46.00
	B	76.00	0.00	67.00
	C	24.00	90.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

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

17:15 - 17:30

Heavy Vehicle Percentages

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

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	7	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	2
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.97	88.48	13.6	F	140.75	563.00
B	0.93	54.11	8.2	F	138.75	555.00
C	0.88	47.39	6.1	E	121.50	486.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	141.00	141.00	98.56		147.63	0.955	132.34	80.20	0.0	8.7	45.800	E
B	146.00	146.00	36.61	0.00	157.94	0.924	138.76	194.30	0.0	7.2	38.423	E
C	125.00	125.00	57.98		149.47	0.836	120.79	117.39	0.0	4.2	28.255	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	129.00	129.00	87.84		152.28	0.847	131.14	103.65	8.7	6.5	46.047	E
B	138.00	138.00	41.32	0.00	155.76	0.886	137.94	177.66	7.2	7.3	49.162	E
C	122.00	122.00	70.27		142.85	0.854	121.23	108.99	4.2	5.0	39.293	E

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	147.00	147.00	90.13		151.29	0.972	142.21	106.49	6.5	11.3	70.150	F
B	128.00	128.00	41.77	0.00	155.56	0.823	129.99	190.58	7.3	5.3	37.581	E
C	125.00	125.00	72.77		141.51	0.883	123.85	98.99	5.0	6.1	47.390	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	146.00	146.00	90.61		151.08	0.966	143.73	99.27	11.3	13.6	88.477	F
B	143.00	143.00	45.03	0.00	154.06	0.928	140.11	189.31	5.3	8.2	54.114	F
C	114.00	114.00	74.63		140.51	0.811	115.25	110.51	6.1	4.9	37.440	E

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	75.81	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	102.00	40.00
	B	63.00	0.00	87.00
	C	24.00	104.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	88.00	42.00
	B	73.00	0.00	69.00
	C	36.00	90.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	104.00	44.00
	B	74.00	0.00	58.00
	C	35.00	92.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	100.00	48.00
	B	78.00	0.00	70.00
	C	25.00	92.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

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

17:15 - 17:30

Heavy Vehicle Percentages

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

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	7	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	2
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.99	100.22	15.8	F	142.00	568.00
B	0.97	68.87	11.0	F	143.00	572.00
C	0.90	55.93	7.3	F	124.50	498.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	142.00	142.00	100.08		146.97	0.966	132.70	82.45	0.0	9.3	48.151	E
B	150.00	150.00	37.38	0.00	157.58	0.952	141.31	195.40	0.0	8.7	43.351	E
C	128.00	128.00	59.35		148.73	0.861	123.18	119.34	0.0	4.8	31.047	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	130.00	130.00	89.52		151.55	0.858	132.11	107.15	9.3	7.2	50.307	F
B	142.00	142.00	42.30	0.00	155.31	0.914	141.65	179.34	8.7	9.0	60.591	F
C	126.00	126.00	72.00		141.92	0.888	124.67	111.94	4.8	6.2	47.065	E

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	148.00	148.00	91.08		150.87	0.981	142.85	109.61	7.2	12.3	75.746	F
B	132.00	132.00	42.65	0.00	155.15	0.851	134.30	191.28	9.0	6.7	46.834	E
C	127.00	127.00	74.87		140.38	0.905	125.82	102.09	6.2	7.3	55.935	F

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	148.00	148.00	92.62		150.21	0.985	144.49	101.71	12.3	15.8	100.215	F
B	148.00	148.00	46.53	0.00	153.37	0.965	143.72	190.58	6.7	11.0	68.874	F
C	117.00	117.00	75.97		139.79	0.837	118.37	114.28	7.3	6.0	44.720	E

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_03_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 11:51:44

»2017 Baseline, AM
»2033 Reference Case, AM
»2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2017 Baseline			
Arm A	12.6	112.66	0.98	F
Arm B	10.4	38.75	0.95	E
Arm C	16.6	63.51	1.00	F
	2033 Reference Case			
Arm A	19.7	159.37	1.04	F
Arm B	15.1	52.23	0.99	F
Arm C	24.0	87.61	1.04	F
	2033 Local Plan Growth			
Arm A	32.3	237.31	1.12	F
Arm B	15.9	54.74	0.99	F
Arm C	49.1	177.15	1.11	F

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

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

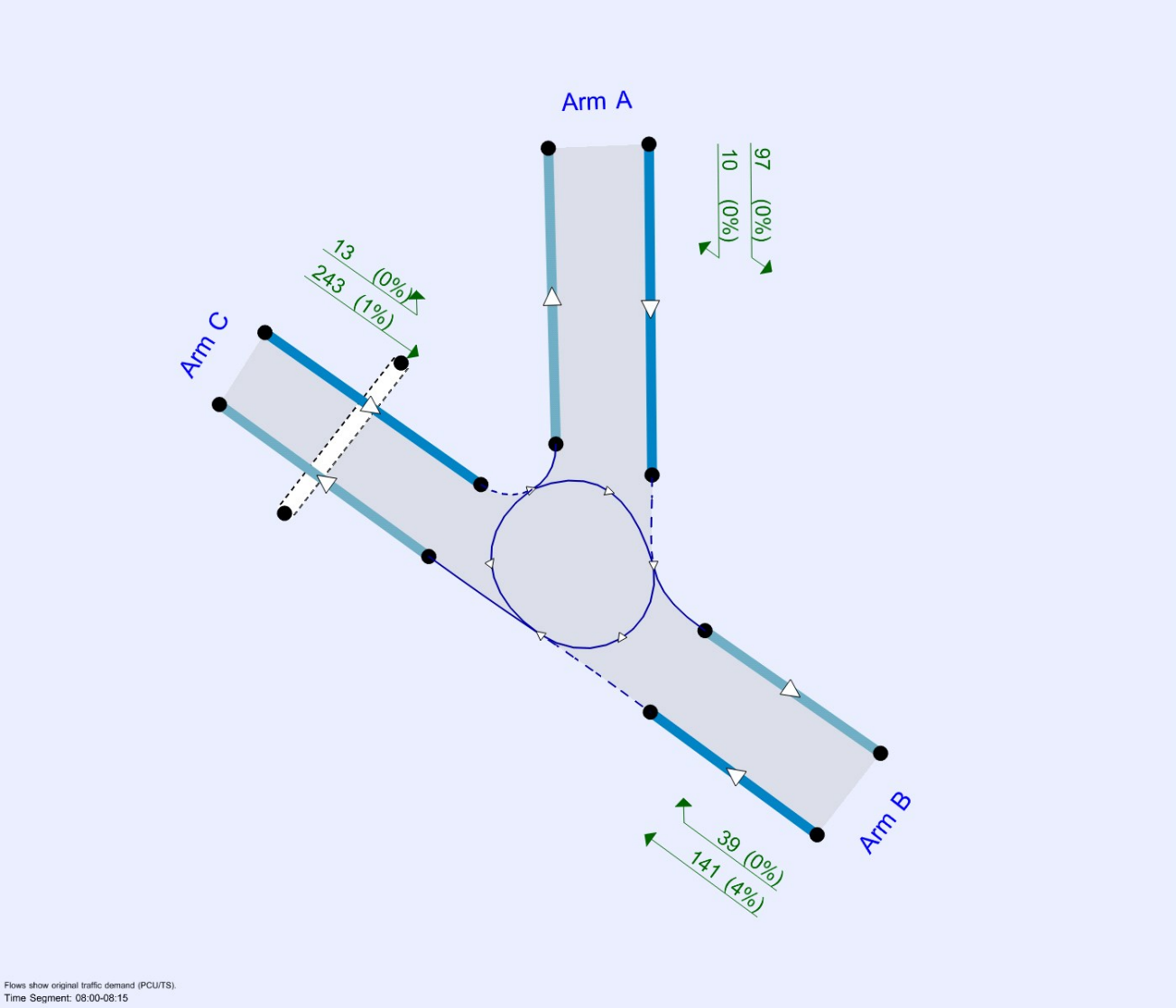
File summary

File Description

Title	Road - Doddinghurst Road
Location	Brentwood
Site number	03
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth with School Drop Off Zones	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D3,D5	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 81% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	A, B, C	63.44	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Doddinghurst Road	
B	Ongar Road (S)	
C	Ognor Road (N)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	3.00	3.00	5.20	4.2	12.17	7.20	0.0	
B	3.80	3.80	5.10	7.8	19.20	17.30	0.0	
C	3.80	3.80	5.20	0.9	10.03	5.00	0.0	

Pelican/Puffin Crossings

Arm	Space between crossing and junction entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C	4.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.622	205.290
B	0.731	318.272
C	0.629	243.044

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Basic Validation to Traffic Master Data	150.00
B	Percentage	Basic Validation to Traffic Master	80.00
C	Percentage	Basic Validation to Traffic Master	107.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	
C	[DIRECT]

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	86.00	6.00
	B	30.00	0.00	140.00
	C	3.00	237.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	95.00	9.00
	B	28.00	0.00	131.00
	C	0.00	208.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	101.00	4.00
	B	54.00	0.00	155.00
	C	0.00	224.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	77.00	9.00
	B	47.00	0.00	189.00
	C	5.00	185.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	4
	C	0	1	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	14
	B	0	0	1
	C	0	2	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	3
	C	0	4	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	3
	C	0	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.98	112.66	12.6	F	96.75	387.00
B	0.95	38.75	10.4	E	193.50	774.00
C	1.00	63.51	16.6	F	215.50	862.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	92.00	92.00	222.16		100.74	0.913	86.11	32.45	0.0	5.9	50.108	F
B	170.00	170.00	5.62		251.33	0.676	167.92	302.66	0.0	2.1	10.891	B
C	240.00	240.00	29.63	0.00	240.10	1.000	224.98	143.90	0.0	15.0	43.122	E

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	104.00	104.00	215.34		107.11	0.971	99.91	28.24	5.9	10.0	88.654	F
B	159.00	159.00	8.52		249.63	0.637	159.26	306.73	2.1	1.8	10.074	B
C	208.00	208.00	28.05	0.00	241.17	0.862	215.53	139.74	15.0	7.5	40.500	E

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	105.00	105.00	214.93		107.49	0.977	102.34	53.18	10.0	12.6	112.664	F
B	209.00	209.00	4.38		252.05	0.829	206.39	312.88	1.8	4.4	19.135	C
C	224.00	224.00	53.18	0.00	224.24	0.999	214.93	157.60	7.5	16.6	63.511	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	86.00	86.00	195.88		125.25	0.687	96.24	50.92	12.6	2.4	39.288	E
B	236.00	236.00	9.23		249.22	0.947	230.05	282.89	4.4	10.4	38.750	E
C	190.00	190.00	46.08	0.00	229.02	0.830	200.73	193.20	16.6	5.8	39.278	E

2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	A, B, C	88.13	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	92.00	8.00
	B	39.00	0.00	140.00
	C	5.00	237.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	100.00	10.00
	B	37.00	0.00	132.00
	C	2.00	208.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	107.00	6.00
	B	64.00	0.00	156.00
	C	2.00	224.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	82.00	11.00
	B	56.00	0.00	189.00
	C	7.00	185.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	4
	C	0	1	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	14
	B	0	0	1
	C	0	2	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	3
	C	0	4	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	3
	C	0	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	1.04	159.37	19.7	F	104.00	416.00
B	0.99	52.23	15.1	F	203.25	813.00
C	1.04	87.61	24.0	F	217.50	870.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	100.00	100.00	217.98		104.64	0.956	92.43	43.06	0.0	7.6	56.783	F
B	179.00	179.00	7.39		250.29	0.715	176.53	303.02	0.0	2.5	12.206	B
C	242.00	242.00	38.46	0.00	234.15	1.034	222.58	145.46	0.0	19.4	52.354	F

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	110.00	110.00	216.43		106.09	1.037	102.23	39.36	7.6	15.3	121.166	F
B	169.00	169.00	9.21		249.23	0.678	169.28	309.45	2.5	2.2	11.394	B
C	210.00	210.00	37.06	0.00	235.10	0.893	218.73	141.43	19.4	10.7	59.853	F

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	113.00	113.00	210.85		111.30	1.015	108.62	64.63	15.3	19.7	159.369	F
B	220.00	220.00	6.35		250.90	0.877	216.22	313.12	2.2	6.0	24.213	C
C	226.00	226.00	62.74	0.00	217.80	1.038	212.74	159.82	10.7	24.0	87.615	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	93.00	93.00	201.00		120.48	0.772	108.51	61.20	19.7	4.2	89.645	F
B	245.00	245.00	11.55		247.86	0.988	235.84	297.96	6.0	15.1	52.229	F
C	192.00	192.00	54.28	0.00	223.50	0.859	207.92	193.11	24.0	8.0	65.782	F

2033 Local Plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	A, B, C	143.99	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	97.00	10.00
	B	39.00	0.00	141.00
	C	13.00	243.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	105.00	13.00
	B	36.00	0.00	132.00
	C	10.00	213.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	113.00	9.00
	B	64.00	0.00	157.00
	C	11.00	230.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	88.00	14.00
	B	55.00	0.00	190.00
	C	16.00	191.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	4
	C	0	1	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	14
	B	0	0	1
	C	0	2	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	3
	C	0	4	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	3
	C	0	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	1.12	237.31	32.3	F	112.25	449.00
B	0.99	54.74	15.9	F	203.50	814.00
C	1.11	177.15	49.1	F	231.75	927.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	107.00	107.00	214.93		107.49	0.995	97.37	49.95	0.0	9.6	64.797	F
B	180.00	180.00	9.10		249.29	0.722	177.45	303.20	0.0	2.5	12.512	B
C	256.00	256.00	38.45	0.00	234.16	1.093	226.43	148.11	0.0	29.6	70.595	F

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	118.00	118.00	217.46		105.13	1.122	103.35	46.48	9.6	24.3	167.393	F
B	168.00	168.00	11.22		248.05	0.677	168.36	309.58	2.5	2.2	11.443	B
C	223.00	223.00	36.08	0.00	235.75	0.946	227.85	143.50	29.6	24.7	109.392	F

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	122.00	122.00	206.80		115.08	1.060	114.02	72.49	24.3	32.3	237.308	F
B	221.00	221.00	9.29		249.18	0.887	216.79	311.52	2.2	6.4	25.591	D
C	241.00	241.00	62.62	0.00	217.88	1.106	216.67	163.47	24.7	49.1	165.739	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	102.00	102.00	204.11		117.58	0.867	114.05	68.70	32.3	20.2	211.268	F
B	245.00	245.00	13.61		246.66	0.993	235.51	304.55	6.4	15.9	54.740	F
C	207.00	207.00	53.28	0.00	224.17	0.923	219.52	195.83	49.1	36.5	177.153	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_03_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 11:53:02

»2017 Baseline, PM
»2033 Reference Case, PM
»2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2017 Baseline			
Arm A	1.4	18.71	0.60	C
Arm B	12.3	33.45	0.95	D
Arm C	6.1	39.67	0.88	E
	2033 Reference Case			
Arm A	2.0	22.56	0.68	C
Arm B	14.7	39.09	0.97	E
Arm C	7.9	50.27	0.91	F
	2033 Local Plan Growth			
Arm A	3.3	34.54	0.79	D
Arm B	24.9	72.16	1.02	F
Arm C	10.9	66.76	0.95	F

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

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

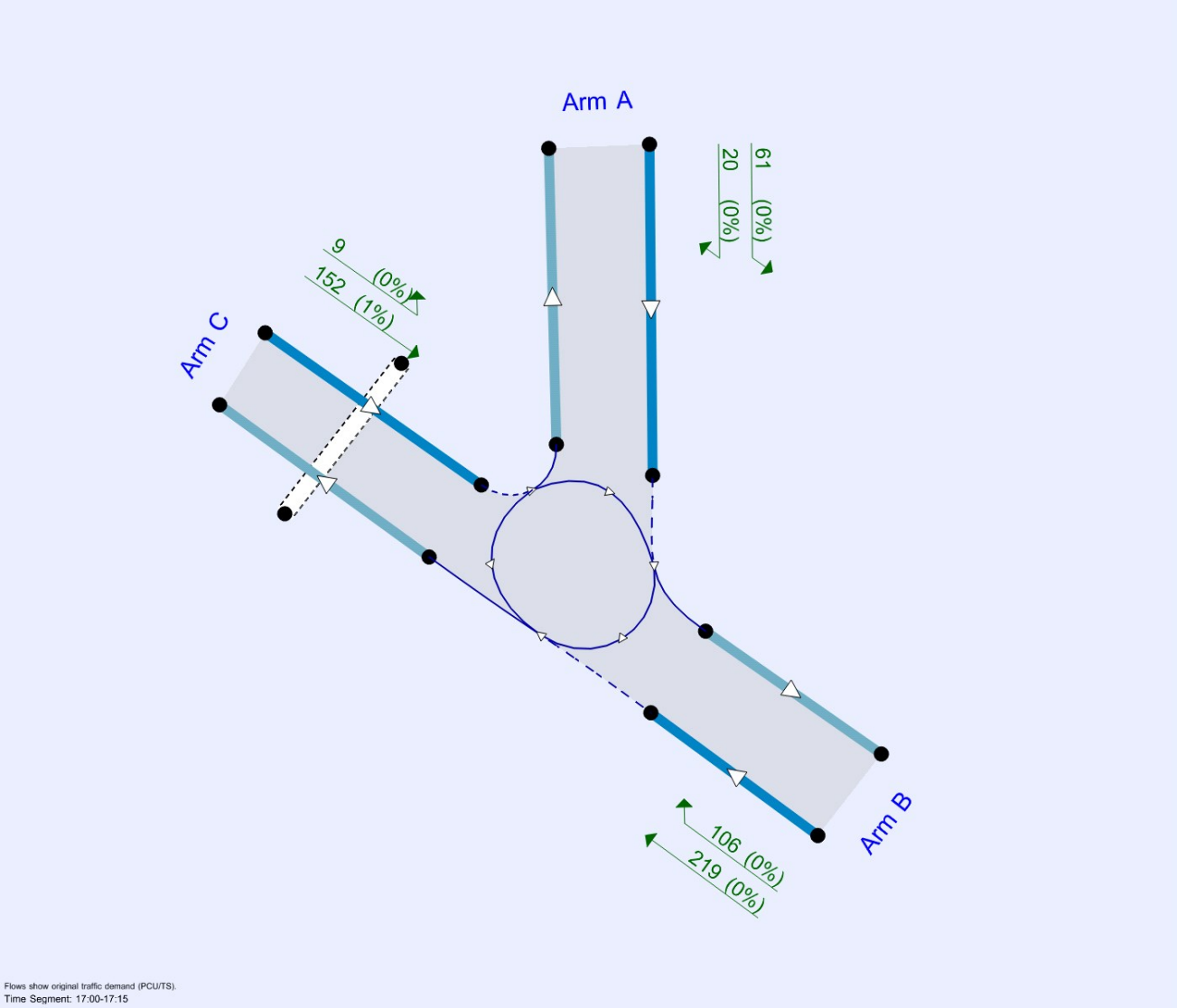
File summary

File Description

Title	Ongar Road - Doddinghurst Road
Location	Brentwood
Site number	03
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓
D7	2033 Local Plan Growth with Peak Spreading	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D2,D4,D6	100.000	100.000

2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 87% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	A, B, C	33.66	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Doddinghurst Road	
B	Ongar Road (S)	
C	Ognor Road (N)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	3.00	3.00	5.20	4.2	12.17	7.20	0.0	
B	3.80	3.80	5.10	7.8	19.20	17.30	0.0	
C	3.80	3.80	5.20	0.9	10.03	5.00	0.0	

Pelican/Puffin Crossings

Arm	Space between crossing and junction entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C	4.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.622	205.290
B	0.731	318.272
C	0.629	243.044

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Basic Validation to Traffic Master	100.00
B	Percentage	Basic Validation to Traffic Master	110.00
C	Percentage	Basic Validation to Traffic Master	100.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	
C	[DIRECT]

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	65.00	3.00
	B	92.00	0.00	212.00
	C	3.00	152.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	55.00	7.00
	B	90.00	0.00	239.00
	C	2.00	148.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	32.00	6.00
	B	84.00	0.00	231.00
	C	8.00	156.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	53.00	9.00
	B	118.00	0.00	194.00
	C	6.00	143.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	1	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	0	0	0

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.60	18.71	1.4	C	57.50	230.00
B	0.95	33.45	12.3	D	315.00	1260.00
C	0.88	39.67	6.1	E	154.50	618.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	68.00	68.00	147.80		113.40	0.600	66.58	93.10	0.0	1.4	18.708	C
B	304.00	304.00	2.94		347.74	0.874	298.01	211.44	0.0	6.0	16.514	C
C	155.00	155.00	90.19	0.00	186.27	0.832	150.72	210.76	0.0	4.3	23.352	C

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	62.00	62.00	148.08		113.22	0.548	62.17	90.47	1.4	1.3	17.705	C
B	329.00	329.00	6.92		344.53	0.955	322.67	203.33	6.0	12.3	33.448	D
C	150.00	150.00	88.44	0.00	187.37	0.801	150.11	241.15	4.3	4.2	24.343	C

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	38.00	38.00	155.02		108.91	0.349	38.70	92.05	1.3	0.5	12.942	B
B	315.00	315.00	6.05		345.23	0.912	315.65	187.67	12.3	11.7	31.956	D
C	164.00	164.00	84.26	0.00	190.01	0.863	162.81	237.44	4.2	5.4	31.213	D

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	62.00	62.00	142.21		116.87	0.531	61.46	122.90	0.5	1.1	16.084	C
B	312.00	312.00	8.93		342.92	0.910	312.49	194.74	11.7	11.2	30.912	D
C	149.00	149.00	116.88	0.00	169.47	0.879	148.23	204.53	5.4	6.1	39.672	E

2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 85% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	A, B, C	40.29	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	73.00	4.00
	B	97.00	0.00	212.00
	C	5.00	153.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	64.00	8.00
	B	95.00	0.00	239.00
	C	3.00	149.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	40.00	7.00
	B	89.00	0.00	231.00
	C	10.00	157.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	61.00	10.00
	B	123.00	0.00	194.00
	C	8.00	144.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	1	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	0	0	0

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.68	22.56	2.0	C	66.75	267.00
B	0.97	39.09	14.7	E	320.00	1280.00
C	0.91	50.27	7.9	F	157.25	629.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	77.00	77.00	148.08		113.22	0.680	75.04	99.72	0.0	2.0	22.558	C
B	309.00	309.00	3.90		346.96	0.891	302.24	219.22	0.0	6.8	18.046	C
C	158.00	158.00	94.88	0.00	183.32	0.862	152.92	211.26	0.0	5.1	26.614	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	72.00	72.00	149.09		112.59	0.639	72.12	96.01	2.0	1.8	22.357	C
B	334.00	334.00	7.90		343.75	0.972	326.07	213.31	6.8	14.7	38.471	E
C	152.00	152.00	92.94	0.00	184.54	0.824	152.15	241.02	5.1	4.9	28.158	D

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	47.00	47.00	155.61		108.54	0.433	48.06	98.88	1.8	0.8	15.126	C
B	320.00	320.00	7.09		344.40	0.929	320.32	196.59	14.7	14.4	39.090	E
C	167.00	167.00	89.18	0.00	186.91	0.894	165.31	238.23	4.9	6.6	37.851	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	71.00	71.00	142.72		116.55	0.609	70.30	129.54	0.8	1.5	19.169	C
B	317.00	317.00	9.91		342.13	0.927	317.36	203.12	14.4	14.0	38.286	E
C	152.00	152.00	121.56	0.00	166.52	0.913	150.70	205.71	6.6	7.9	50.271	F

2033 Local Plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 84% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	A, B, C	65.30	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	74.00	16.00
	B	102.00	0.00	212.00
	C	8.00	154.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	65.00	21.00
	B	100.00	0.00	239.00
	C	6.00	150.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	41.00	19.00
	B	93.00	0.00	231.00
	C	13.00	158.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	62.00	22.00
	B	128.00	0.00	195.00
	C	11.00	145.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	1	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	0	0	0

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.79	34.54	3.3	D	80.00	320.00
B	1.02	72.16	24.9	F	325.00	1300.00
C	0.95	66.76	10.9	F	161.25	645.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	90.00	90.00	148.03		113.26	0.795	86.73	106.68	0.0	3.3	30.977	D
B	314.00	314.00	15.42		337.69	0.930	304.75	219.34	0.0	9.3	23.072	C
C	162.00	162.00	99.00	0.00	180.73	0.896	155.72	221.17	0.0	6.3	31.111	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	86.00	86.00	150.05		112.00	0.768	86.00	102.06	3.3	3.3	34.542	D
B	339.00	339.00	20.78		333.38	1.017	324.48	215.27	9.3	23.8	56.839	F
C	156.00	156.00	95.99	0.00	182.62	0.854	156.12	249.27	6.3	6.2	34.493	D

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	60.00	60.00	155.97		108.32	0.554	61.97	105.65	3.3	1.3	20.168	C
B	324.00	324.00	19.39		334.50	0.969	323.57	198.56	23.8	24.2	69.738	F
C	171.00	171.00	93.06	0.00	184.46	0.927	168.55	249.89	6.2	8.6	47.914	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	84.00	84.00	142.83		116.49	0.721	82.94	135.95	1.3	2.4	25.996	D
B	323.00	323.00	21.79		332.56	0.971	322.26	203.98	24.2	24.9	72.156	F
C	156.00	156.00	125.06	0.00	164.32	0.949	153.72	218.99	8.6	10.9	66.759	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_05_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 12:18:35

»(Default Analysis Set) - Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Baseline			
Arm A	3.1	14.45	0.76	B
Arm B	11.6	48.21	0.96	E
Arm C	2.2	42.10	0.70	E
	A1 - 2033 Reference Case			
Arm A	3.9	16.94	0.80	C
Arm B	35.0	103.24	1.11	F
Arm C	2.2	41.30	0.70	E
	A1 - 2033 Local plan Growth			
Arm A	5.7	22.44	0.87	C
Arm B	63.0	173.76	1.21	F
Arm C	2.1	40.25	0.69	E

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

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

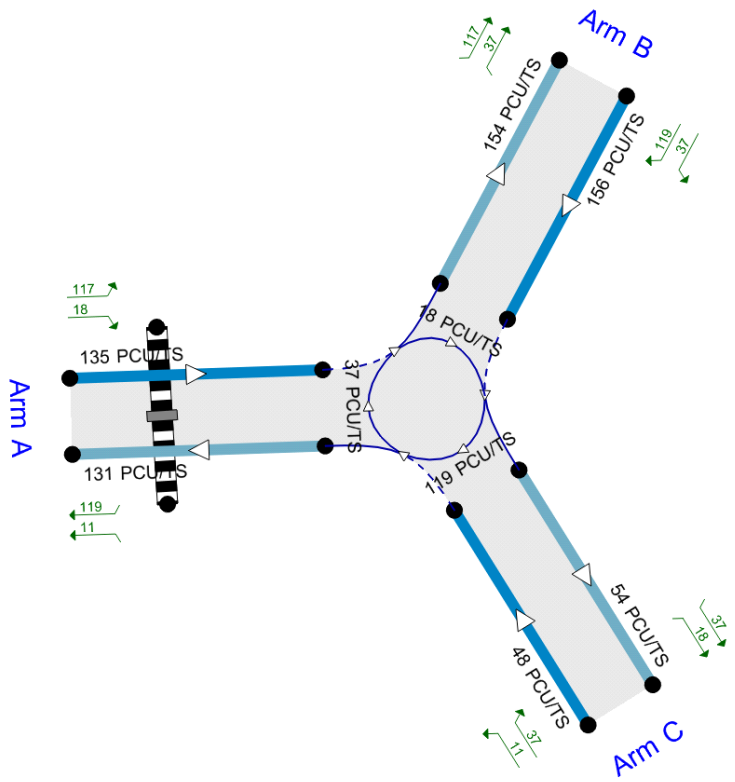
File summary

File Description

Title	05-06 A128 - Ongar Road & William Hunter Way
Location	Brentwood
Site number	05
Date	23/07/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Time Segment: 08:00-08:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D2	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Local plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D4	2033 Local plan Growth with School Drop Off Zones	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	D1,D2,D3	100.000	100.000

(Default Analysis Set) - Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 84% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
5	Junction 5	Mini-roundabout	A, B, C	34.28	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	William Hunter Way	
B	Ongar Road N	
C	Ongar Road S	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	7.50	7.50	8.60	2.5	9.25	5.50	0.0	✓
B	3.60	3.60	5.00	9.9	15.65	19.20	0.0	✓
C	3.20	3.20	7.00	6.5	13.59	7.00	0.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
A	2.90	3.00	✓	Distance	7.50	5.36	7.30	5.21

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.667	355.165
B	0.742	350.508
C	0.649	292.559

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Calibration to Traffic Master	78.00
B	Percentage	Calibration to Traffic Master	70.00
C	Percentage	Calibration to Traffic Master	35.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT		100.000

Demand overview (Pedestrians)

Arm	Profile type
A	[DIRECT]
B	
C	

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	118.00	18.00
	B	121.00	0.00	37.00
	C	12.00	40.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	112.00	2.00
	B	121.00	0.00	57.00
	C	21.00	58.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	146.00	16.00
	B	133.00	0.00	73.00
	C	20.00	45.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	156.00	42.00
	B	141.00	0.00	74.00
	C	21.00	41.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	6
	B	2	0	0
	C	10	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	6	0
	B	0	0	2
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	15
	B	2	0	3
	C	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	3
	B	4	0	3
	C	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.76	14.45	3.1	B	152.50	610.00
B	0.96	48.21	11.6	E	189.25	757.00
C	0.70	42.10	2.2	E	50.00	200.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	136.00	136.00	37.06	0.00	257.73	0.528	134.87	130.60	0.0	1.1	7.505	A
B	158.00	158.00	17.85		236.08	0.669	156.02	154.08	0.0	2.0	11.157	B
C	50.00	50.00	119.48		75.28	0.664	48.18	54.39	0.0	1.8	32.134	D

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	114.00	114.00	36.72	0.00	257.91	0.442	114.29	133.97	1.1	0.8	6.646	A
B	178.00	178.00	2.14		244.25	0.729	177.40	148.87	2.0	2.6	13.404	B
C	50.00	50.00	120.76		74.99	0.667	49.93	58.77	1.8	1.9	35.598	E

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	162.00	162.00	34.58	0.00	259.02	0.625	161.13	146.37	0.8	1.7	9.649	A
B	206.00	206.00	15.85		237.12	0.869	202.94	179.87	2.6	5.6	24.897	C
C	50.00	50.00	131.11		72.64	0.688	49.84	87.67	1.9	2.1	38.900	E

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	198.00	198.00	33.02	0.00	259.84	0.762	196.59	153.84	1.7	3.1	14.446	B
B	215.00	215.00	41.51		223.79	0.961	209.03	188.10	5.6	11.6	48.206	E
C	50.00	50.00	137.03		71.29	0.701	49.83	113.51	2.1	2.2	42.098	E

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
5	Junction 5	Mini-roundabout	A, B, C	62.71	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT		100.000

Demand overview (Pedestrians)

Arm	Profile type
A	[DIRECT]
B	
C	

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	119.00	19.00
	B	123.00	0.00	43.00
	C	26.00	47.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	113.00	4.00
	B	123.00	0.00	64.00
	C	38.00	65.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	147.00	18.00
	B	136.00	0.00	81.00
	C	39.00	53.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	164.00	45.00
	B	151.00	0.00	95.00
	C	21.00	41.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	6
	B	2	0	0
	C	10	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	6	0
	B	0	0	2
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	15
	B	2	0	3
	C	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	3
	B	4	0	3
	C	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.80	16.94	3.9	C	157.25	629.00
B	1.11	103.24	35.0	F	204.00	816.00
C	0.70	41.30	2.2	E	50.00	200.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	138.00	138.00	30.99	0.00	260.89	0.529	136.86	138.43	0.0	1.1	7.438	A
B	166.00	166.00	18.84		235.57	0.705	163.69	149.01	0.0	2.3	12.342	B
C	50.00	50.00	121.29		74.87	0.668	48.14	61.24	0.0	1.9	32.898	D

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	117.00	117.00	31.54	0.00	260.61	0.449	117.27	141.05	1.1	0.9	6.652	A
B	187.00	187.00	4.13		243.21	0.769	186.17	144.68	2.3	3.1	15.613	C
C	50.00	50.00	122.64		74.56	0.671	49.94	67.65	1.9	1.9	36.221	E

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	165.00	165.00	28.81	0.00	262.03	0.630	164.12	154.03	0.9	1.8	9.657	A
B	217.00	217.00	17.84		236.09	0.919	212.08	175.10	3.1	8.1	32.927	D
C	50.00	50.00	133.01		72.21	0.692	49.83	96.90	1.9	2.1	39.612	E

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	209.00	209.00	32.81	0.00	259.95	0.804	206.85	151.64	1.8	3.9	16.938	C
B	246.00	246.00	44.35		222.31	1.107	219.05	195.31	8.1	35.0	103.243	F
C	50.00	50.00	134.56		71.85	0.696	49.89	128.84	2.1	2.2	41.296	E

(Default Analysis Set) - 2033 Local plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
5	Junction 5	Mini-roundabout	A, B, C	100.18	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Local plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT		100.000

Demand overview (Pedestrians)

Arm	Profile type
A	[DIRECT]
B	
C	

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	119.00	27.00
	B	123.00	0.00	53.00
	C	35.00	53.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	113.00	13.00
	B	124.00	0.00	76.00
	C	48.00	73.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	148.00	29.00
	B	137.00	0.00	94.00
	C	51.00	62.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	179.00	46.00
	B	160.00	0.00	108.00
	C	21.00	41.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	6
	B	2	0	0
	C	10	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	6	0
	B	0	0	2
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	15
	B	2	0	3
	C	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	3
	B	4	0	3
	C	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.87	22.44	5.7	C	168.50	674.00
B	1.21	173.76	63.0	F	218.75	875.00
C	0.69	40.25	2.1	E	50.00	200.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	146.00	146.00	28.99	0.00	261.93	0.557	144.72	140.05	0.0	1.3	7.868	A
B	176.00	176.00	26.76		231.45	0.760	173.00	146.95	0.0	3.0	14.933	B
C	50.00	50.00	120.90		74.95	0.667	48.14	78.86	0.0	1.9	32.923	D

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	126.00	126.00	30.12	0.00	261.34	0.482	126.28	143.04	1.3	1.0	7.036	A
B	200.00	200.00	13.13		238.53	0.838	198.37	143.27	3.0	4.6	21.597	C
C	50.00	50.00	123.22		74.43	0.672	49.94	88.28	1.9	1.9	36.385	E

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	177.00	177.00	27.47	0.00	262.73	0.674	175.87	152.79	1.0	2.1	10.897	B
B	231.00	231.00	28.76		230.42	1.003	219.64	174.59	4.6	16.0	55.819	F
C	50.00	50.00	130.39		72.80	0.687	49.88	118.01	1.9	2.1	38.762	E

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	225.00	225.00	32.77	0.00	259.97	0.865	221.47	148.98	2.1	5.7	22.436	C
B	268.00	268.00	45.19		221.88	1.208	220.95	209.05	16.0	63.0	173.756	F
C	50.00	50.00	131.85		72.47	0.690	49.90	134.30	2.1	2.1	40.245	E

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_05_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 12:20:47

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Arm A	11.2	71.96	0.98	F
Arm B	7.5	32.99	0.90	D
Arm C	2.1	39.96	0.69	E
	A1 - 2033 Reference Case			
Arm A	19.7	112.42	1.06	F
Arm B	12.0	50.04	0.95	F
Arm C	2.1	40.24	0.69	E
	A1 - 2033 Local plan Growth			
Arm A	44.7	240.10	1.15	F
Arm B	20.1	80.20	0.99	F
Arm C	2.1	39.67	0.69	E

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

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

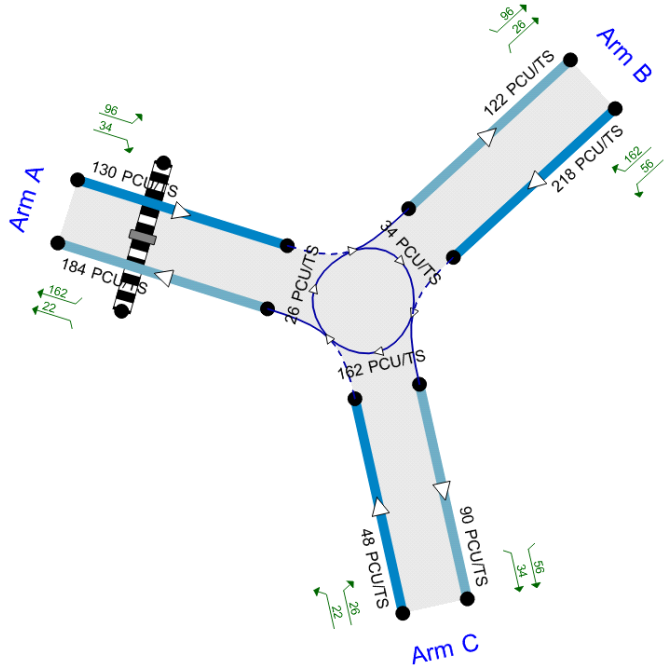
File summary

File Description

Title	05-06 A128 - Ongar Road & William Hunter Way
Location	Brentwood
Site number	05
Date	23/07/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Time Segment: 17:00-17:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D2	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D3	2033 Local plan Growth	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Local plan Growth with Peak Spreading	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	D1,D2,D3	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
5	Junction 5	Mini-roundabout	A, B, C	46.22	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	William Hunter Way	
B	Ongar Road N	
C	Ongar Road S	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	7.50	7.50	8.60	2.5	9.25	5.50	0.0	✓
B	3.60	3.60	5.00	9.9	15.65	19.20	0.0	✓
C	3.20	3.20	7.00	6.5	13.59	7.00	0.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
A	2.90	3.00	✓	Distance	7.50	5.36	7.30	5.21

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.667	355.165
B	0.742	350.508
C	0.649	292.559

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Calibration to Traffic Master	41.00
B	Percentage	Calibration to Traffic Master	73.00
C	Percentage	Calibration to Traffic Master	40.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT		100.000

Demand overview (Pedestrians)

Arm	Profile type
A	[DIRECT]
B	
C	

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	114.00	22.00
	B	163.00	0.00	51.00
	C	62.00	70.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	86.00	19.00
	B	162.00	0.00	53.00
	C	70.00	82.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	104.00	14.00
	B	174.00	0.00	44.00
	C	63.00	72.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	111.00	24.00
	B	173.00	0.00	46.00
	C	45.00	74.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	0
	C	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	0
	C	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	1	0

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.98	71.96	11.2	F	123.50	494.00
B	0.90	32.99	7.5	D	216.50	866.00
C	0.69	39.96	2.1	E	50.00	200.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	136.00	136.00	25.59	0.00	138.61	0.981	125.96	181.29	0.0	10.0	53.317	F
B	214.00	214.00	20.38		244.83	0.874	208.26	131.17	0.0	5.7	22.182	C
C	50.00	50.00	158.63		75.87	0.659	48.25	70.01	0.0	1.7	30.937	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	105.00	105.00	26.89	0.00	138.26	0.759	111.47	184.58	10.0	3.6	39.127	E
B	215.00	215.00	19.98		245.05	0.877	214.40	118.38	5.7	6.3	28.173	D
C	50.00	50.00	161.60		75.10	0.666	49.87	72.78	1.7	1.9	35.437	E

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	118.00	118.00	26.56	0.00	138.35	0.853	116.78	196.72	3.6	4.8	38.848	E
B	218.00	218.00	14.08		248.24	0.878	217.73	129.26	6.3	6.6	28.673	D
C	50.00	50.00	173.50		72.02	0.694	49.78	58.31	1.9	2.1	39.959	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	135.00	135.00	30.88	0.00	137.17	0.984	128.64	191.41	4.8	11.2	71.956	F
B	219.00	219.00	22.59		243.63	0.899	218.09	136.94	6.6	7.5	32.990	D
C	50.00	50.00	172.33		72.32	0.691	49.96	68.34	2.1	2.1	39.929	E

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
5	Junction 5	Mini-roundabout	A, B, C	69.31	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT		100.000

Demand overview (Pedestrians)

Arm	Profile type
A	[DIRECT]
B	
C	

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	116.00	30.00
	B	164.00	0.00	58.00
	C	67.00	76.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	94.00	19.00
	B	162.00	0.00	53.00
	C	70.00	82.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	107.00	22.00
	B	175.00	0.00	51.00
	C	67.00	78.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	113.00	32.00
	B	175.00	0.00	53.00
	C	50.00	80.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	0
	C	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	0
	C	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	1	0

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	1.06	112.42	19.7	F	133.25	533.00
B	0.95	50.04	12.0	F	222.75	891.00
C	0.69	40.24	2.1	E	50.00	200.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	146.00	146.00	25.65	0.00	138.60	1.053	130.26	180.77	0.0	15.7	71.688	F
B	222.00	222.00	26.77		241.37	0.920	214.09	129.14	0.0	7.9	28.003	D
C	50.00	50.00	158.16		76.00	0.658	48.26	82.70	0.0	1.7	30.821	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	113.00	113.00	26.88	0.00	138.26	0.817	123.21	184.97	15.7	5.5	69.394	F
B	215.00	215.00	21.30		244.33	0.880	215.15	128.78	7.9	7.8	31.439	D
C	50.00	50.00	162.00		75.00	0.667	49.86	74.46	1.7	1.9	35.550	E

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	129.00	129.00	26.78	0.00	138.29	0.933	126.27	196.55	5.5	8.3	60.560	F
B	226.00	226.00	21.52		244.21	0.925	224.33	131.53	7.8	9.4	40.039	E
C	50.00	50.00	173.55		72.00	0.694	49.78	72.31	1.9	2.1	39.991	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	145.00	145.00	30.58	0.00	137.25	1.056	133.60	192.49	8.3	19.7	112.420	F
B	228.00	228.00	29.07		240.12	0.950	225.47	135.11	9.4	12.0	50.037	F
C	50.00	50.00	173.12		72.12	0.693	49.95	81.42	2.1	2.1	40.242	E

(Default Analysis Set) - 2033 Local plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
5	Junction 5	Mini-roundabout	A, B, C	130.55	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Local plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT		100.000

Demand overview (Pedestrians)

Arm	Profile type
A	[DIRECT]
B	
C	

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	117.00	43.00
	B	165.00	0.00	63.00
	C	79.00	87.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	94.00	31.00
	B	162.00	0.00	59.00
	C	83.00	93.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	108.00	35.00
	B	176.00	0.00	56.00
	C	80.00	89.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	114.00	44.00
	B	175.00	0.00	58.00
	C	62.00	91.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	0
	C	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	0
	C	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	1	0

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	1.15	240.10	44.7	F	146.50	586.00
B	0.99	80.20	20.1	F	228.50	914.00
C	0.69	39.67	2.1	E	50.00	200.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	160.00	160.00	25.30	0.00	138.69	1.154	133.60	179.90	0.0	26.4	103.993	F
B	228.00	228.00	35.90		236.42	0.964	216.84	122.99	0.0	11.2	35.890	E
C	50.00	50.00	156.93		76.32	0.655	48.28	95.82	0.0	1.7	30.516	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	125.00	125.00	26.33	0.00	138.41	0.903	134.98	185.16	26.4	16.4	153.753	F
B	221.00	221.00	34.02		237.44	0.931	220.66	127.29	11.2	11.5	49.365	E
C	50.00	50.00	161.65		75.09	0.666	49.85	93.04	1.7	1.9	35.428	E

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	143.00	143.00	26.23	0.00	138.44	1.033	135.85	196.07	16.4	23.6	147.756	F
B	232.00	232.00	33.30		237.83	0.976	227.78	128.77	11.5	15.7	63.232	F
C	50.00	50.00	172.51		72.28	0.692	49.79	88.58	1.9	2.1	39.560	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	158.00	158.00	29.57	0.00	137.52	1.149	136.86	192.18	23.6	44.7	240.096	F
B	233.00	233.00	37.32		235.65	0.989	228.57	129.11	15.7	20.1	80.204	F
C	50.00	50.00	171.79		72.46	0.690	49.96	94.09	2.1	2.1	39.666	E

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_06_J9_LSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 24/10/2018 17:39:13

»(Default Analysis Set) - 2018 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Lane Simulation] - 2018 Baseline			
Junction 6a - Arm A	15.2	45.89		E
Junction 6a - Arm B	7.3	26.40		D
Junction 6a - Arm C	1.4	4.66		A
Junction 6b - Arm C	1.5	5.13		A
Junction 6b - Arm D	23.1	68.67		F
Junction 6b - Arm E	3.1	31.66		D
	A1 [Lane Simulation] - 2033 Reference Case			
Junction 6a - Arm A	0.4	6.58		A
Junction 6a - Arm B	2.9	11.31		B
Junction 6a - Arm C	1.5	4.82		A
Junction 6b - Arm C	0.9	4.62		A
Junction 6b - Arm D	44.0	126.23		F
Junction 6b - Arm E	19.8	130.66		F
	A1 [Lane Simulation] - 2033 Local Plan Growth			
Junction 6a - Arm A	0.1	5.64		A
Junction 6a - Arm B	3.0	10.62		B
Junction 6a - Arm C	1.6	4.85		A
Junction 6b - Arm C	0.9	4.59		A
Junction 6b - Arm D	75.6	265.90		F
Junction 6b - Arm E	31.9	195.32		F

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	Ongar Rd - Shenfield Rd - Ingrave Rd - High St
Location	Brentwood
Site number	06a, 06b
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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

Flows show modelled flow through junction (PCU/TS).
Lane simulation visualisation time: 08:00:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	337285351	330	73.55

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2018 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth with Peak Spreading	AM	DIRECT	08:00	09:00	60	15	✓
D7	2033 Local Plan Growth with School Drop Off Zones	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	✓	D1,D3,D5	100.000	100.000

(Default Analysis Set) - 2018 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 6a - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 6b	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and D have 82% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
6a	Junction 6a	Mini-roundabout	A, B, C	23.48	C
6b	Junction 6b	Mini-roundabout	C, D, E	33.82	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Junction	Arm	Name	Description
6a	**A**	Ongar Road N	
	B	Shenfield Road	
	C	A1023 High Street	
6b	**C**	A1023 High Street	
	D	Ingrave Road	
	E	A1023 High Street	

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
6a	**A**	5.20	5.20	6.90	3.3	13.82	7.00	0.0	
	B	6.00	6.00	6.20	3.7	16.94	16.30	0.0	
	C	7.40	7.40	7.40	0.0	13.91	7.40	0.0	✓
6b	**C**	5.80	5.80	5.80	0.0	11.06	10.60	0.0	✓
	D	6.00	6.00	6.00	0.0	14.38	10.00	0.0	✓
	E	5.00	5.00	5.00	0.0	15.97	13.00	0.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Direct intercept adjustment (PCU/TS)
6a	A	Direct		215.00
	B	Direct	Calibration to Traffic Master	120.00
	C	Direct		285.00
6b	C	Direct		270.00
	D	Direct	Calibration to Traffic Master	60.00
	E	None		

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
6a	A	0.699	496.725
	B	0.758	442.583
	C	0.647	625.595
6b	C	0.588	555.921
	D	0.595	343.146
	E	0.675	281.285

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Junction	Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
6a	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00
6b	C	Evenly split	10.00
	D	Evenly split	10.00
	E	Evenly split	10.00

Lanes

Junction	Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/TS)	Maximum capacity (PCU/TS)
6a	A	1 [Give-way line]	1	B		Infinity	0.00	24999.75
			2	C		Infinity	0.00	24999.75
	B	1 [Give-way line]	1	C		Infinity	0.00	24999.75
			2	A, C		Infinity	0.00	24999.75
	C	1 [Give-way line]	1	A	✓	1.00	0.00	24999.75
			2	B	✓	1.00	0.00	24999.75
		2	1	(B, A)	✓	1.00		
6b	C	1 [Give-way line]	1	D	✓	1.00	0.00	24999.75
			2	E	✓	1.00	0.00	24999.75
		2	1	(D, E)	✓	1.00		
	D	1 [Give-way line]	1	C, E		Infinity	0.00	24999.75
			2	C		Infinity	0.00	24999.75
	E	1 [Give-way line]	1	C, D		Infinity	0.00	24999.75

Entry Lane slope and intercept

Junction	Arm	Lane level	Lane	Final slope	Final intercept (PCU/TS)
6a	A	1 [Give-way line]	1	0.349	248.362
			2	0.349	248.362
	B	1 [Give-way line]	1	0.379	221.291
			2	0.379	221.291
	C	1 [Give-way line]	1	0.323	312.798
			2	0.323	312.798
6b	C	1 [Give-way line]	1	0.294	277.960
			2	0.294	277.960
	D	1 [Give-way line]	1	0.298	171.573
			2	0.298	171.573
	E	1 [Give-way line]	1	0.675	281.285

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm		
				B	C	A
6a	B	1 [Give-way line]	1		✓	
			2		✓	✓
	C	1 [Give-way line]	1			✓
			2	✓		
		2	1	✓		✓
	A	1 [Give-way line]	1	✓		
			2		✓	

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm		
				D	E	C
6b	D	1 [Give-way line]	1		✓	✓
			2			✓
	E	1 [Give-way line]	1	✓		✓
	C	1 [Give-way line]	1	✓		
			2		✓	
		2	1	✓	✓	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2018 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
6a	C	6b	C	Queue limited	Normal	0.00	100.00	1.04
6b	C	6a	C	Queue limited	Normal	0.00	100.00	1.04

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
6a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
6b	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 6a 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	65.00	117.00
	B	53.00	0.00	109.00
	C	73.00	151.00	0.00

Junction 6a 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	65.00	108.00
	B	63.00	0.00	130.00
	C	104.00	148.00	0.00

Junction 6a 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	55.00	98.00
	B	89.00	0.00	147.00
	C	127.00	158.00	0.00

Junction 6a 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	72.00	143.00
	B	90.00	0.00	126.00
	C	119.00	115.00	0.00

Junction 6b 08:00 - 08:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	162.00	64.00
	D	165.00	0.00	29.00
	E	59.00	31.00	0.00

Junction 6b 08:15 - 08:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	161.00	76.00
	D	187.00	0.00	20.00
	E	65.00	24.00	0.00

Junction 6b 08:30 - 08:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	174.00	70.00
	D	214.00	0.00	21.00
	E	70.00	12.00	0.00

Junction 6b 08:45 - 09:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	182.00	87.00
	D	158.00	0.00	23.00
	E	76.00	18.00	0.00

Vehicle Mix

Junction 6a 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	1
	B	2	0	1
	C	0	1	0

Junction 6a 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	1
	B	3	0	1
	C	4	3	0

Junction 6a 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	1
	B	2	0	1
	C	6	1	0

Junction 6a 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	8	6
	B	2	0	1
	C	1	2	0

Junction 6b 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	1	0	4
	E	0	3	0

Junction 6b 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	4	0	0
	E	2	0	0

Junction 6b 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	3	0	0
	E	3	0	0

Junction 6b 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	4	3
	D	2	0	5
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
6a	A	45.89	15.2	E	180.73	722.91
	B	26.40	7.3	D	200.94	803.76
	C	4.66	1.4	A	246.45	985.81
6b	C	5.13	1.5	A	241.91	967.65
	D	68.67	23.1	F	204.60	818.39
	E	31.66	3.1	D	89.68	358.72

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	180.55	180.55	149.33	180.87	126.13	0.0	4.5	18.957	C
	B	161.85	161.85	116.60	162.06	213.61	0.0	2.1	11.215	B
	C	222.85	222.85	52.80	222.65	225.97	0.0	1.1	4.173	A
6b	C	225.24	225.24	31.13	224.93	222.99	0.0	1.3	4.893	A
	D	194.05	194.05	62.97	192.05	193.08	0.0	4.8	17.181	C
	E	90.36	90.36	164.42	89.73	90.59	0.0	1.8	13.692	B

08:15 - 08:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	172.74	172.74	147.99	172.14	164.58	4.5	3.6	18.992	C
	B	191.33	191.33	106.27	191.57	213.85	2.1	3.3	15.303	C
	C	250.35	250.35	62.09	250.52	235.75	1.1	1.3	4.502	A
6b	C	234.99	234.99	23.69	235.17	250.99	1.3	1.2	4.873	A
	D	209.18	209.18	76.47	205.45	182.39	4.8	8.3	30.165	D
	E	90.45	90.45	185.11	89.74	96.84	1.8	2.5	23.638	C

08:30 - 08:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	153.55	153.55	150.55	153.53	209.29	3.6	3.1	18.988	C
	B	235.87	235.87	99.35	233.60	204.74	3.3	7.3	24.305	C
	C	271.51	271.51	88.32	271.53	244.59	1.3	1.4	4.662	A
6b	C	244.00	244.00	12.15	244.22	271.13	1.2	1.3	4.942	A
	D	233.91	233.91	70.55	221.58	185.80	8.3	23.1	68.673	F
	E	82.93	82.93	201.65	81.57	90.49	2.5	3.1	29.569	D

08:45 - 09:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	216.08	216.08	118.84	210.12	211.22	3.1	15.2	45.890	E
	B	214.71	214.71	139.04	213.76	189.92	7.3	7.1	26.402	D
	C	241.09	241.09	89.11	240.95	263.50	1.4	1.2	4.520	A
6b	C	263.42	263.42	18.85	263.62	240.45	1.3	1.5	5.135	A
	D	181.25	181.25	85.34	186.68	197.14	23.1	5.8	47.530	E
	E	94.98	94.98	162.65	96.72	109.35	3.1	2.5	31.663	D

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	64.33	196.20	0.328	64.27	0.0	0.5	6.597	A
				2	C	116.22	196.20	0.592	116.60	0.0	4.0	25.701	D
		Exit	1	1		126.13			126.13	0.0	0.0	0.000	A
	B	Entry	1	1	C	66.57	177.08	0.376	66.99	0.0	0.7	10.901	B
				2	A, C	95.28	177.08	0.538	95.06	0.0	1.3	11.432	B
		Exit	1	1		213.61			213.61	0.0	0.0	0.000	A
	C	Entry	1	1	A	73.36	295.72	0.248	73.33	0.0	0.3	2.990	A
				2	B	149.39	295.72	0.505	149.33	0.0	0.5	3.026	A
			2	1	(B, A)	222.85			222.75	0.0	0.3	1.159	A
		Exit	1	1		225.84			225.97	0.0	0.2	0.814	A
6b	C	Entry	1	1	D	162.17	268.81	0.603	161.95	0.0	0.7	3.369	A
				2	E	63.07	268.81	0.235	62.97	0.0	0.3	3.366	A
			2	1	(D, E)	225.24			225.22	0.0	0.4	1.524	A
		Exit	1	1		223.02			222.99	0.0	0.2	0.552	A
	D	Entry	1	1	C, E	100.44	152.84	0.657	99.32	0.0	2.6	17.444	C
				2	C	93.61	152.84	0.612	92.73	0.0	2.2	16.895	C
		Exit	1	1		193.08			193.08	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	90.36	170.27	0.531	89.73	0.0	1.8	13.692	B
		Exit	1	1		90.59			90.59	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	65.77	196.66	0.334	65.85	0.5	0.5	6.952	A
				2	C	106.96	196.66	0.544	106.27	4.0	3.1	26.299	D
		Exit	1	1		164.58			164.58	0.0	0.0	0.000	A
	B	Entry	1	1	C	81.80	181.00	0.452	81.69	0.7	1.4	14.756	B
				2	A, C	109.53	181.00	0.605	109.90	1.3	1.9	15.707	C
		Exit	1	1		213.85			213.85	0.0	0.0	0.000	A
	C	Entry	1	1	A	102.49	292.72	0.350	102.49	0.3	0.4	3.162	A
				2	B	147.85	292.72	0.505	147.99	0.5	0.5	3.196	A
			2	1	(B, A)	250.35			250.31	0.3	0.4	1.319	A
		Exit	1	1		235.75			235.75	0.2	0.2	0.833	A
6b	C	Entry	1	1	D	158.50	270.99	0.585	158.70	0.7	0.6	3.365	A
				2	E	76.44	270.99	0.282	76.47	0.3	0.3	3.327	A
			2	1	(D, E)	234.99			234.94	0.4	0.4	1.521	A
		Exit	1	1		251.14			250.99	0.2	0.2	0.703	A
	D	Entry	1	1	C, E	108.18	148.82	0.727	106.25	2.6	4.3	30.090	D
				2	C	100.96	148.82	0.678	99.21	2.2	4.0	30.245	D
		Exit	1	1		182.39			182.39	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	90.45	156.32	0.579	89.74	1.8	2.5	23.638	C
		Exit	1	1		96.84			96.84	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	54.24	195.78	0.277	54.18	0.5	0.4	6.683	A
				2	C	99.30	195.78	0.507	99.35	3.1	2.7	25.503	D
		Exit	1	1		209.29			209.29	0.0	0.0	0.000	A
	B	Entry	1	1	C	99.70	183.63	0.543	98.52	1.4	3.1	24.052	C
				2	A, C	136.17	183.63	0.742	135.09	1.9	4.2	24.491	C
		Exit	1	1		204.74			204.74	0.0	0.0	0.000	A
	C	Entry	1	1	A	121.05	284.24	0.426	120.97	0.4	0.5	3.328	A
				2	B	150.50	284.24	0.529	150.55	0.5	0.5	3.187	A
			2	1	(B, A)	271.51			271.55	0.4	0.4	1.414	A
		Exit	1	1		244.63			244.59	0.2	0.3	0.919	A
6b	C	Entry	1	1	D	173.38	274.39	0.632	173.65	0.6	0.6	3.325	A
				2	E	70.56	274.39	0.257	70.55	0.3	0.3	3.302	A
			2	1	(D, E)	244.00			243.95	0.4	0.4	1.624	A
		Exit	1	1		271.11			271.13	0.2	0.2	0.790	A
	D	Entry	1	1	C, E	119.86	150.58	0.796	113.63	4.3	11.7	67.710	F
				2	C	114.03	150.58	0.757	107.96	4.0	11.4	69.689	F
		Exit	1	1		185.80			185.80	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	82.93	145.14	0.571	81.57	2.5	3.1	29.569	D
		Exit	1	1		90.49			90.49	0.0	0.0	0.000	A

08:45 - 09:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	71.21	206.85	0.344	71.10	0.4	0.6	7.347	A
				2	C	144.87	206.85	0.700	139.04	2.7	14.6	65.460	F
		Exit	1	1		211.22			211.22	0.0	0.0	0.000	A
	B	Entry	1	1	C	87.15	168.58	0.517	86.85	3.1	2.9	26.361	D
				2	A, C	127.54	168.58	0.757	126.92	4.2	4.2	26.430	D
		Exit	1	1		189.92			189.92	0.0	0.0	0.000	A
	C	Entry	1	1	A	122.15	283.98	0.430	122.11	0.5	0.5	3.184	A
				2	B	118.77	283.98	0.418	118.84	0.5	0.4	3.207	A
			2	1	(B, A)	241.09			240.93	0.4	0.3	1.325	A
		Exit	1	1		263.69			263.50	0.3	0.3	0.997	A
6b	C	Entry	1	1	D	178.23	272.42	0.654	178.28	0.6	0.7	3.445	A
				2	E	85.18	272.42	0.313	85.34	0.3	0.3	3.414	A
			2	1	(D, E)	263.42			263.45	0.4	0.5	1.700	A
		Exit	1	1		240.53			240.45	0.2	0.2	0.712	A
	D	Entry	1	1	C, E	94.93	146.18	0.649	97.76	11.7	2.9	46.903	E
				2	C	86.32	146.18	0.590	88.92	11.4	2.8	48.205	E
		Exit	1	1		197.14			197.14	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	94.98	171.46	0.554	96.72	3.1	2.5	31.663	D
		Exit	1	1		109.35			109.35	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 6b - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 6b - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
6a	Junction 6a	Mini-roundabout	A, B, C	7.55	A
6b	Junction 6b	Mini-roundabout	C, D, E	86.95	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
6a	**C**	6b	C	Queue limited	Normal	0.00	100.00	1.04
6b	**C**	6a	C	Queue limited	Normal	0.00	100.00	1.04

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
6a	**A**		DIRECT		100.000
	B		DIRECT	✓	100.000
	C	✓			
6b	**C**	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 6a 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	67.00	123.00
	B	57.00	0.00	113.00
	C	92.00	159.00	0.00

Junction 6a 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	67.00	114.00
	B	68.00	0.00	134.00
	C	123.00	157.00	0.00

Junction 6a 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	58.00	104.00
	B	95.00	0.00	151.00
	C	148.00	168.00	0.00

Junction 6a 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	75.00	149.00
	B	95.00	0.00	131.00
	C	141.00	124.00	0.00

Junction 6b 08:00 - 08:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	170.00	65.00
	D	184.00	0.00	29.00
	E	68.00	41.00	0.00

Junction 6b 08:15 - 08:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	170.00	77.00
	D	205.00	0.00	21.00
	E	74.00	33.00	0.00

Junction 6b 08:30 - 08:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	184.00	72.00
	D	235.00	0.00	22.00
	E	80.00	22.00	0.00

Junction 6b 08:45 - 09:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	191.00	89.00
	D	179.00	0.00	24.00
	E	86.00	28.00	0.00

Vehicle Mix

Junction 6a 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	1
	B	2	0	1
	C	0	1	0

Junction 6a 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	1
	B	3	0	1
	C	4	3	0

Junction 6a 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	1
	B	2	0	1
	C	6	1	0

Junction 6a 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	8	6
	B	2	0	1
	C	1	2	0

Junction 6b 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	1	0	4
	E	0	3	0

Junction 6b 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	4	0	0
	E	2	0	0

Junction 6b 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	3	0	0
	E	3	0	0

Junction 6b 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	4	3
	D	2	0	5
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
6a	A	6.58	0.4	A	49.79	199.17
	B	11.31	2.9	B	210.33	841.34
	C	4.82	1.5	A	271.60	1086.39
6b	C	4.62	0.9	A	164.78	659.12
	D	126.23	44.0	F	224.82	899.27
	E	130.66	19.8	F	108.35	433.38

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	50.12	50.12	159.51	49.93	148.33	0.0	0.3	5.912	A
	B	171.23	171.23	32.25	171.24	177.19	0.0	1.4	7.047	A
	C	250.84	250.84	57.11	250.74	146.39	0.0	1.3	4.308	A
6b	C	145.86	145.86	42.32	145.62	251.15	0.0	0.8	4.438	A
	D	213.92	213.92	39.88	214.79	148.06	0.0	5.6	22.139	C
	E	109.41	109.41	185.50	107.91	69.17	0.0	4.8	26.575	D

08:15 - 08:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	49.18	49.18	152.66	49.37	187.31	0.3	0.3	6.225	A
	B	201.03	201.03	30.88	201.64	171.14	1.4	1.9	8.393	A
	C	273.00	273.00	67.14	272.83	165.32	1.3	1.5	4.594	A
6b	C	164.72	164.72	31.86	164.58	273.29	0.8	0.9	4.471	A
	D	226.34	226.34	51.19	221.07	145.26	5.6	13.8	44.255	E
	E	106.56	106.56	200.97	104.12	71.29	4.8	8.4	59.510	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	49.44	49.44	151.34	49.39	229.13	0.3	0.4	6.563	A
	B	243.26	243.26	31.67	244.07	169.07	1.9	2.9	11.311	B
	C	286.29	286.29	93.93	286.54	181.88	1.5	1.5	4.815	A
6b	C	181.33	181.33	21.09	181.52	285.51	0.9	0.9	4.546	A
	D	256.37	256.37	50.04	228.62	152.57	13.8	44.0	117.419	F
	E	103.20	103.20	209.23	97.18	69.43	8.4	12.6	95.319	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	50.44	50.44	129.45	50.26	241.75	0.4	0.4	6.582	A
	B	225.82	225.82	33.76	225.96	145.96	2.9	2.5	10.073	B
	C	276.25	276.25	94.92	276.28	164.83	1.5	1.5	4.734	A
6b	C	167.22	167.22	26.68	167.50	275.99	0.9	0.8	4.619	A
	D	202.63	202.63	53.19	217.70	140.96	44.0	23.4	126.225	F
	E	114.21	114.21	192.44	110.19	78.45	12.6	19.8	130.657	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	17.65	192.65	0.092	17.67	0.0	0.1	4.945	A
				2	C	32.46	192.65	0.169	32.25	0.0	0.3	6.419	A
		Exit	1	1		148.33			148.33	0.0	0.0	0.000	A
	B	Entry	1	1	C	68.47	209.06	0.328	68.45	0.0	0.6	6.432	A
				2	A, C	102.75	209.06	0.491	102.78	0.0	0.9	7.455	A
		Exit	1	1		177.19			177.19	0.0	0.0	0.000	A
	C	Entry	1	1	A	91.29	294.33	0.310	91.22	0.0	0.4	3.035	A
				2	B	159.57	294.33	0.542	159.51	0.0	0.6	3.068	A
			2	1	(B, A)	250.84			250.87	0.0	0.4	1.251	A
		Exit	1	1		146.37			146.39	0.0	0.1	0.414	A
6b	C	Entry	1	1	D	105.82	265.51	0.399	105.73	0.0	0.4	3.388	A
				2	E	40.01	265.51	0.151	39.88	0.0	0.2	3.379	A
			2	1	(D, E)	145.86			145.83	0.0	0.2	1.053	A
		Exit	1	1		251.08			251.15	0.0	0.2	0.638	A
	D	Entry	1	1	C, E	110.94	159.71	0.695	111.43	0.0	2.9	22.146	C
				2	C	102.99	159.71	0.645	103.37	0.0	2.7	22.130	C
		Exit	1	1		148.06			148.06	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	109.41	156.04	0.701	107.91	0.0	4.8	26.575	D
		Exit	1	1		69.17			69.17	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	18.32	195.04	0.094	18.48	0.1	0.1	5.176	A
				2	C	30.84	195.04	0.158	30.88	0.3	0.2	6.837	A
		Exit	1	1		187.31			187.31	0.0	0.0	0.000	A
	B	Entry	1	1	C	82.82	209.58	0.395	83.12	0.6	0.7	7.523	A
				2	A, C	118.22	209.58	0.564	118.51	0.9	1.2	9.010	A
		Exit	1	1		171.14			171.14	0.0	0.0	0.000	A
	C	Entry	1	1	A	120.36	291.09	0.414	120.18	0.4	0.5	3.214	A
				2	B	152.69	291.09	0.525	152.66	0.6	0.6	3.169	A
			2	1	(B, A)	273.00			273.06	0.4	0.4	1.406	A
		Exit	1	1		165.37			165.32	0.1	0.1	0.471	A
6b	C	Entry	1	1	D	113.43	268.59	0.422	113.39	0.4	0.5	3.351	A
				2	E	51.24	268.59	0.191	51.19	0.2	0.2	3.373	A
			2	1	(D, E)	164.72			164.68	0.2	0.2	1.113	A
		Exit	1	1		273.23			273.29	0.2	0.2	0.787	A
	D	Entry	1	1	C, E	116.50	156.34	0.745	113.90	2.9	7.0	43.856	E
				2	C	109.84	156.34	0.703	107.16	2.7	6.8	44.679	E
		Exit	1	1		145.26			145.26	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	106.56	145.60	0.732	104.12	4.8	8.4	59.510	F
		Exit	1	1		71.29			71.29	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	17.68	195.50	0.090	17.73	0.1	0.1	5.201	A
				2	C	31.75	195.50	0.162	31.67	0.2	0.3	7.311	A
		Exit	1	1		229.13			229.13	0.0	0.0	0.000	A
	B	Entry	1	1	C	100.30	209.29	0.479	100.58	0.7	1.0	9.966	A
				2	A, C	142.96	209.29	0.683	143.49	1.2	1.8	12.257	B
		Exit	1	1		169.07			169.07	0.0	0.0	0.000	A
	C	Entry	1	1	A	135.18	282.42	0.479	135.20	0.5	0.5	3.384	A
				2	B	151.31	282.42	0.536	151.34	0.6	0.5	3.190	A
			2	1	(B, A)	286.29			286.49	0.4	0.5	1.536	A
		Exit	1	1		181.81			181.88	0.1	0.1	0.558	A
6b	C	Entry	1	1	D	131.43	271.76	0.484	131.47	0.5	0.5	3.323	A
				2	E	49.98	271.76	0.184	50.04	0.2	0.2	3.304	A
			2	1	(D, E)	181.33			181.41	0.2	0.2	1.228	A
		Exit	1	1		285.32			285.51	0.2	0.3	0.904	A
	D	Entry	1	1	C, E	129.74	156.68	0.828	115.84	7.0	22.0	115.829	F
				2	C	126.63	156.68	0.808	112.78	6.8	21.9	119.069	F
		Exit	1	1		152.57			152.57	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	103.20	140.01	0.737	97.18	8.4	12.6	95.319	F
		Exit	1	1		69.43			69.43	0.0	0.0	0.000	A

08:45 - 09:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	16.48	203.15	0.081	16.51	0.1	0.1	5.348	A
				2	C	33.96	203.15	0.167	33.76	0.3	0.3	7.197	A
		Exit	1	1		241.75			241.75	0.0	0.0	0.000	A
	B	Entry	1	1	C	88.63	208.50	0.425	88.60	1.0	0.8	8.532	A
				2	A, C	137.17	208.50	0.658	137.35	1.8	1.7	11.079	B
		Exit	1	1		145.96			145.96	0.0	0.0	0.000	A
	C	Entry	1	1	A	146.76	282.10	0.520	146.83	0.5	0.5	3.206	A
				2	B	129.49	282.10	0.459	129.45	0.5	0.5	3.268	A
			2	1	(B, A)	276.25			276.24	0.5	0.5	1.500	A
		Exit	1	1		164.79			164.83	0.1	0.1	0.523	A
6b	C	Entry	1	1	D	114.20	270.12	0.423	114.32	0.5	0.4	3.469	A
				2	E	53.02	270.12	0.196	53.19	0.2	0.2	3.407	A
			2	1	(D, E)	167.22			167.24	0.2	0.2	1.171	A
		Exit	1	1		275.95			275.99	0.3	0.2	0.874	A
	D	Entry	1	1	C, E	104.25	155.75	0.669	111.60	22.0	11.8	124.150	F
				2	C	98.38	155.75	0.632	106.10	21.9	11.6	128.412	F
		Exit	1	1		140.96			140.96	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	114.21	151.35	0.755	110.19	12.6	19.8	130.657	F
		Exit	1	1		78.45			78.45	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 6b - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 6b - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 6b	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and D have 81% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
6a	Junction 6a	Mini-roundabout	A, B, C	7.40	A
6b	Junction 6b	Mini-roundabout	C, D, E	174.16	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
6a	**C**	6b	C	Queue limited	Normal	0.00	100.00	1.04
6b	**C**	6a	C	Queue limited	Normal	0.00	100.00	1.04

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
6a	**A**		DIRECT		100.000
	B		DIRECT	✓	100.000
	C	✓			
6b	**C**	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 6a 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	75.00	135.00
	B	62.00	0.00	120.00
	C	105.00	165.00	0.00

Junction 6a 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	76.00	127.00
	B	73.00	0.00	142.00
	C	137.00	163.00	0.00

Junction 6a 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	67.00	118.00
	B	100.00	0.00	160.00
	C	162.00	174.00	0.00

Junction 6a 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	84.00	163.00
	B	100.00	0.00	139.00
	C	155.00	131.00	0.00

Junction 6b 08:00 - 08:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	186.00	69.00
	D	199.00	0.00	34.00
	E	71.00	42.00	0.00

Junction 6b 08:15 - 08:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	186.00	81.00
	D	221.00	0.00	26.00
	E	77.00	35.00	0.00

Junction 6b 08:30 - 08:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	202.00	76.00
	D	253.00	0.00	27.00
	E	84.00	24.00	0.00

Junction 6b 08:45 - 09:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	209.00	93.00
	D	197.00	0.00	29.00
	E	89.00	30.00	0.00

Vehicle Mix

Junction 6a 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	1
	B	2	0	1
	C	0	1	0

Junction 6a 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	3
	B	3	0	1
	C	4	3	0

Junction 6a 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	1
	B	2	0	1
	C	6	1	0

Junction 6a 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	8	6
	B	2	0	1
	C	1	2	0

Junction 6b 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	1	0	4
	E	0	3	0

Junction 6b 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	4	0	0
	E	2	0	0

Junction 6b 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	3	0	0
	E	3	0	0

Junction 6b 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	4	3
	D	2	0	5
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
6a	A	5.64	0.1	A	8.35	33.42
	B	10.62	3.0	B	225.08	900.31
	C	4.85	1.6	A	278.42	1113.67
6b	C	4.59	0.9	A	147.51	590.06
	D	265.90	75.6	F	246.66	986.62
	E	195.32	31.9	F	112.68	450.70

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	7.38	7.38	158.40	7.40	165.38	0.0	0.0	5.017	A
	B	182.62	182.62	4.76	183.10	161.05	0.0	1.3	6.503	A
	C	261.21	261.21	62.64	261.15	125.22	0.0	1.3	4.352	A
6b	C	124.95	124.95	40.97	124.74	261.39	0.0	0.6	4.305	A
	D	231.92	231.92	33.95	227.85	131.78	0.0	10.3	29.614	D
	E	111.41	111.41	194.55	107.89	67.24	0.0	6.6	34.887	D

08:15 - 08:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	11.64	11.64	151.43	11.70	201.70	0.0	0.1	5.494	A
	B	216.02	216.02	7.54	215.81	155.55	1.3	2.0	7.795	A
	C	280.11	280.11	72.85	280.29	150.46	1.3	1.4	4.657	A
6b	C	149.99	149.99	33.67	149.61	280.81	0.6	0.8	4.440	A
	D	248.02	248.02	44.33	232.17	138.94	10.3	25.8	73.467	F
	E	112.45	112.45	208.05	106.41	68.45	6.6	13.4	89.959	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	9.65	9.65	150.68	9.70	236.73	0.1	0.1	5.638	A
	B	261.49	261.49	6.09	261.13	154.28	2.0	3.0	10.624	B
	C	287.63	287.63	99.86	287.54	167.42	1.4	1.6	4.850	A
6b	C	167.09	167.09	22.43	166.89	286.52	0.8	0.9	4.589	A
	D	280.26	280.26	45.67	228.26	143.64	25.8	75.6	201.337	F
	E	107.83	107.83	206.38	102.49	67.53	13.4	19.5	149.774	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	4.74	4.74	130.11	4.74	252.82	0.1	0.0	5.310	A
	B	240.18	240.18	3.20	239.66	131.65	3.0	2.5	8.940	A
	C	284.72	284.72	98.37	284.51	144.48	1.6	1.6	4.764	A
6b	C	148.03	148.03	28.11	147.78	284.38	0.9	0.8	4.452	A
	D	226.42	226.42	45.00	233.80	130.91	75.6	69.2	265.904	F
	E	119.01	119.01	203.73	108.83	75.07	19.5	31.9	195.323	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	2.65	193.03	0.014	2.63	0.0	0.0	4.411	A
				2	C	4.73	193.03	0.025	4.76	0.0	0.0	5.343	A
		Exit	1	1		165.38			165.38	0.0	0.0	0.000	A
	B	Entry	1	1	C	72.99	219.49	0.333	73.24	0.0	0.5	5.896	A
				2	A, C	109.64	219.49	0.500	109.86	0.0	0.8	6.904	A
		Exit	1	1		161.05			161.05	0.0	0.0	0.000	A
	C	Entry	1	1	A	102.77	292.54	0.351	102.73	0.0	0.3	3.031	A
				2	B	158.40	292.54	0.541	158.40	0.0	0.6	3.089	A
			2	1	(B, A)	261.21			261.16	0.0	0.4	1.286	A
		Exit	1	1		125.22			125.22	0.0	0.1	0.331	A
6b	C	Entry	1	1	D	90.97	265.91	0.342	90.79	0.0	0.4	3.394	A
				2	E	33.91	265.91	0.128	33.95	0.0	0.1	3.344	A
			2	1	(D, E)	124.95			124.88	0.0	0.2	0.924	A
		Exit	1	1		261.47			261.39	0.0	0.2	0.686	A
	D	Entry	1	1	C, E	119.94	161.47	0.743	117.87	0.0	5.3	29.493	D
				2	C	111.98	161.47	0.693	109.98	0.0	5.0	29.744	D
		Exit	1	1		131.78			131.78	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	111.41	149.93	0.743	107.89	0.0	6.6	34.887	D
		Exit	1	1		67.24			67.24	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	4.14	195.47	0.021	4.15	0.0	0.0	5.043	A
				2	C	7.50	195.47	0.038	7.54	0.0	0.0	5.741	A
		Exit	1	1		201.70			201.70	0.0	0.0	0.000	A
	B	Entry	1	1	C	88.75	218.43	0.406	88.67	0.5	0.8	7.084	A
				2	A, C	127.27	218.43	0.583	127.14	0.8	1.2	8.298	A
		Exit	1	1		155.55			155.55	0.0	0.0	0.000	A
	C	Entry	1	1	A	128.83	289.24	0.445	128.85	0.3	0.4	3.219	A
				2	B	151.37	289.24	0.523	151.43	0.6	0.5	3.208	A
			2	1	(B, A)	280.11			280.19	0.4	0.5	1.444	A
		Exit	1	1		150.50			150.46	0.1	0.1	0.412	A
6b	C	Entry	1	1	D	105.47	268.06	0.393	105.27	0.4	0.4	3.422	A
				2	E	44.39	268.06	0.166	44.33	0.1	0.2	3.353	A
			2	1	(D, E)	149.99			149.86	0.2	0.2	1.038	A
		Exit	1	1		280.76			280.81	0.2	0.3	0.820	A
	D	Entry	1	1	C, E	124.55	158.38	0.786	116.76	5.3	13.0	72.690	F
				2	C	123.45	158.38	0.779	115.42	5.0	12.8	74.277	F
		Exit	1	1		138.94			138.94	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	112.45	140.81	0.799	106.41	6.6	13.4	89.959	F
		Exit	1	1		68.45			68.45	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	3.58	195.73	0.018	3.61	0.0	0.0	5.066	A
				2	C	6.08	195.73	0.031	6.09	0.0	0.0	5.962	A
		Exit	1	1		236.73			236.73	0.0	0.0	0.000	A
	B	Entry	1	1	C	107.96	218.98	0.493	108.05	0.8	1.1	9.295	A
				2	A, C	153.53	218.98	0.701	153.08	1.2	1.9	11.565	B
		Exit	1	1		154.28			154.28	0.0	0.0	0.000	A
	C	Entry	1	1	A	137.01	280.50	0.488	136.87	0.4	0.6	3.360	A
				2	B	150.79	280.50	0.538	150.68	0.5	0.5	3.244	A
			2	1	(B, A)	287.63			287.79	0.5	0.4	1.550	A
		Exit	1	1		167.36			167.42	0.1	0.1	0.518	A
6b	C	Entry	1	1	D	121.22	271.37	0.447	121.22	0.4	0.4	3.391	A
				2	E	45.80	271.37	0.169	45.67	0.2	0.2	3.379	A
			2	1	(D, E)	167.09			167.01	0.2	0.2	1.201	A
		Exit	1	1		286.45			286.52	0.3	0.3	0.912	A
	D	Entry	1	1	C, E	143.29	157.98	0.907	117.21	13.0	37.9	198.413	F
				2	C	136.97	157.98	0.867	111.03	12.8	37.7	204.382	F
		Exit	1	1		143.64			143.64	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	107.83	141.94	0.760	102.49	13.4	19.5	149.774	F
		Exit	1	1		67.53			67.53	0.0	0.0	0.000	A

08:45 - 09:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	1.56	202.92	0.008	1.55	0.0	0.0	5.096	A
				2	C	3.18	202.92	0.016	3.20	0.0	0.0	5.419	A
		Exit	1	1		252.82			252.82	0.0	0.0	0.000	A
	B	Entry	1	1	C	95.69	220.08	0.435	95.64	1.1	0.8	7.318	A
				2	A, C	144.49	220.08	0.657	144.02	1.9	1.8	10.011	B
		Exit	1	1		131.65			131.65	0.0	0.0	0.000	A
	C	Entry	1	1	A	154.40	280.99	0.549	154.45	0.6	0.6	3.239	A
				2	B	130.30	280.99	0.464	130.11	0.5	0.6	3.248	A
			2	1	(B, A)	284.72			284.73	0.4	0.5	1.523	A
		Exit	1	1		144.48			144.48	0.1	0.1	0.411	A
6b	C	Entry	1	1	D	102.79	269.69	0.381	102.80	0.4	0.4	3.403	A
				2	E	45.06	269.69	0.167	45.00	0.2	0.2	3.456	A
			2	1	(D, E)	148.03			147.83	0.2	0.2	1.034	A
		Exit	1	1		284.47			284.38	0.3	0.3	0.895	A
	D	Entry	1	1	C, E	117.09	158.18	0.740	120.59	37.9	34.8	258.505	F
				2	C	109.32	158.18	0.691	113.21	37.7	34.4	273.790	F
		Exit	1	1		130.91			130.91	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	119.01	143.73	0.828	108.83	19.5	31.9	195.323	F
		Exit	1	1		75.07			75.07	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_06_J9_LSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 24/10/2018 17:40:10

»(Default Analysis Set) - 2018 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM
»(Default Analysis Set) - 2033 Local Plan Growth with Peak Spreading, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Lane Simulation] - 2018 Baseline			
Junction 6a - Arm A	14.3	60.50		F
Junction 6a - Arm B	4.2	17.76		C
Junction 6a - Arm C	1.4	4.77		A
Junction 6b - Arm C	1.3	5.42		A
Junction 6b - Arm D	19.4	74.93		F
Junction 6b - Arm E	3.3	32.38		D
	A1 [Lane Simulation] - 2033 Reference Case			
Junction 6a - Arm A	0.5	8.81		A
Junction 6a - Arm B	3.0	11.10		B
Junction 6a - Arm C	1.5	4.86		A
Junction 6b - Arm C	0.8	4.94		A
Junction 6b - Arm D	53.5	170.35		F
Junction 6b - Arm E	5.6	47.25		E
	A1 [Lane Simulation] - 2033 Local Plan Growth			
Junction 6a - Arm A	0.1	7.26		A
Junction 6a - Arm B	2.6	10.30		B
Junction 6a - Arm C	1.5	4.97		A
Junction 6b - Arm C	0.7	4.82		A
Junction 6b - Arm D	135.2	406.41		F
Junction 6b - Arm E	12.9	90.18		F
	A1 [Lane Simulation] - 2033 Local Plan Growth with Peak Spreading			
Junction 6a - Arm A	0.1	7.16		A
Junction 6a - Arm B	2.5	9.99		A
Junction 6a - Arm C	1.6	4.93		A
Junction 6b - Arm C	0.7	4.80		A
Junction 6b - Arm D	131.8	390.68		F
Junction 6b - Arm E	10.9	90.94		F

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

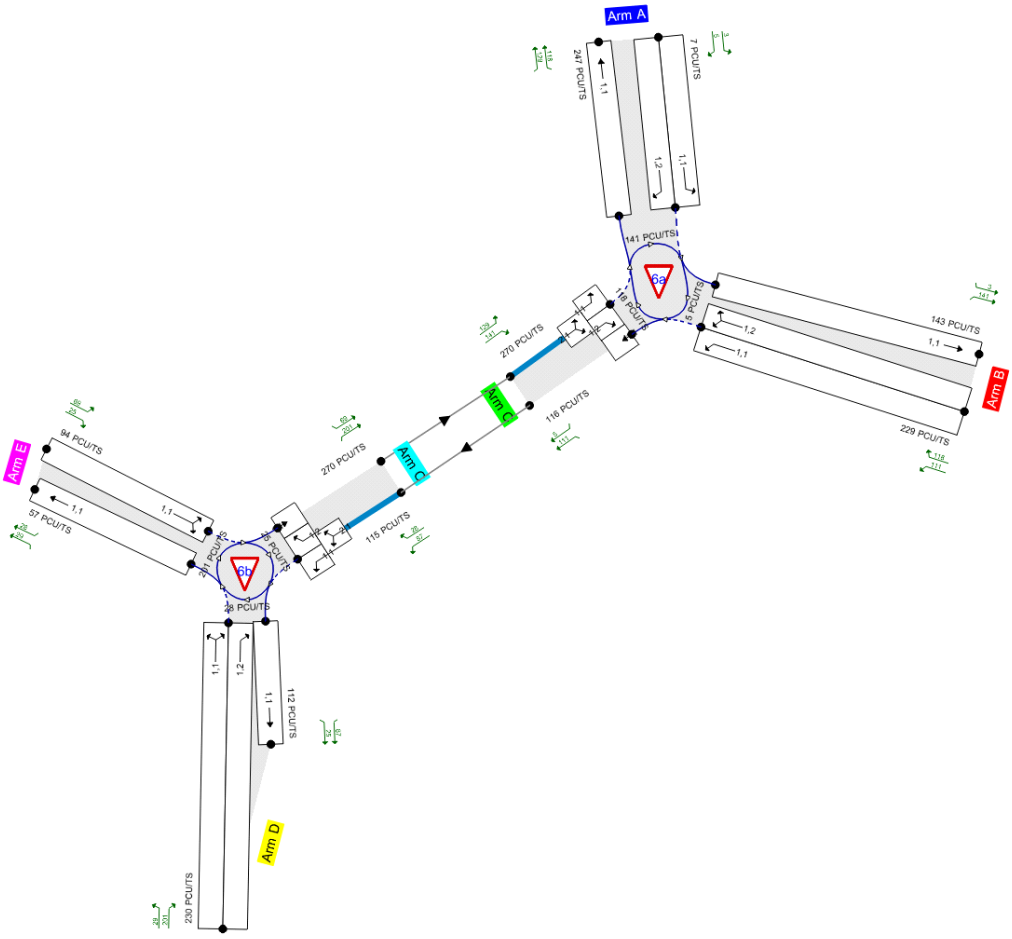
File summary

File Description

Title	Ongar Rd - Shenfield Rd - Ingrave Rd - High St
Location	Brentwood
Site number	06a, 06b
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Lane simulation visualisation time: 17:00:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	881996138	540	101.70

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2018 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D3	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D5	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth with Peak Spreading	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	100.000	100.000

(Default Analysis Set) - 2018 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 6a - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 6b - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 6b	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and D have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
6a	Junction 6a	Mini-roundabout	A, B, C	24.19	C
6b	Junction 6b	Mini-roundabout	C, D, E	40.12	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Junction	Arm	Name	Description
6a	**A**	Ongar Road N	
	B	Shenfield Road	
	C	A1023 High Street	
6b	**C**	A1023 High Street	
	D	Ingrave Road	
	E	A1023 High Street	

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
6a	**A**	5.20	5.20	6.90	3.3	13.82	7.00	0.0	
	B	6.00	6.00	6.20	3.7	16.94	16.30	0.0	
	C	7.40	7.40	7.40	0.0	13.91	7.40	0.0	✓
6b	**C**	5.80	5.80	5.80	0.0	11.06	10.60	0.0	✓
	D	6.00	6.00	6.00	0.0	14.38	10.00	0.0	✓
	E	5.00	5.00	5.00	0.0	15.97	13.00	0.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Direct intercept adjustment (PCU/TS)
6a	A	Direct		100.00
	B	Direct	Calibration to Traffic Master	90.00
	C	Direct		270.00
6b	C	Direct		210.00
	D	Direct	Calibration to Traffic Master	50.00
	E	None		

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
6a	A	0.699	381.725
	B	0.758	412.583
	C	0.647	610.595
6b	C	0.588	495.921
	D	0.595	333.146
	E	0.675	281.285

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Junction	Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
6a	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00
6b	C	Evenly split	10.00
	D	Evenly split	10.00
	E	Evenly split	10.00

Lanes

Junction	Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/TS)	Maximum capacity (PCU/TS)
6a	A	1 [Give-way line]	1	B		Infinity	0.00	24999.75
			2	C		Infinity	0.00	24999.75
	B	1 [Give-way line]	1	C		Infinity	0.00	24999.75
			2	A, C		Infinity	0.00	24999.75
	C	1 [Give-way line]	1	A	✓	1.00	0.00	24999.75
			2	B	✓	1.00	0.00	24999.75
		2	1	(B, A)	✓	1.00		
6b	C	1 [Give-way line]	1	D	✓	1.00	0.00	24999.75
			2	E	✓	1.00	0.00	24999.75
		2	1	(D, E)	✓	1.00		
	D	1 [Give-way line]	1	C, E		Infinity	0.00	24999.75
			2	C		Infinity	0.00	24999.75
	E	1 [Give-way line]	1	C, D		Infinity	0.00	24999.75

Entry Lane slope and intercept

Junction	Arm	Lane level	Lane	Final slope	Final intercept (PCU/TS)
6a	A	1 [Give-way line]	1	0.349	190.862
			2	0.349	190.862
	B	1 [Give-way line]	1	0.379	206.291
			2	0.379	206.291
	C	1 [Give-way line]	1	0.323	305.298
			2	0.323	305.298
6b	C	1 [Give-way line]	1	0.294	247.960
			2	0.294	247.960
	D	1 [Give-way line]	1	0.298	166.573
			2	0.298	166.573
	E	1 [Give-way line]	1	0.675	281.285

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm		
				B	C	A
6a	B	1 [Give-way line]	1		✓	
			2		✓	✓
	C	1 [Give-way line]	1			✓
			2	✓		
		2	1	✓		✓
	A	1 [Give-way line]	1	✓		
			2		✓	

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm		
				D	E	C
6b	D	1 [Give-way line]	1		✓	✓
			2			✓
	E	1 [Give-way line]	1	✓		✓
	C	1 [Give-way line]	1	✓		
			2		✓	
		2	1	✓	✓	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2018 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
6a	C	6b	C	Queue limited	Normal	0.00	100.00	1.04
6b	C	6a	C	Queue limited	Normal	0.00	100.00	1.04

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
6a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
6b	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 6a 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	70.00	107.00
	B	105.00	0.00	97.00
	C	126.00	140.00	0.00

Junction 6a 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	63.00	102.00
	B	100.00	0.00	94.00
	C	123.00	144.00	0.00

Junction 6a 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	54.00	111.00
	B	94.00	0.00	100.00
	C	133.00	120.00	0.00

Junction 6a 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	72.00	110.00
	B	95.00	0.00	86.00
	C	114.00	147.00	0.00

Junction 6b 17:00 - 17:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	152.00	52.00
	D	207.00	0.00	19.00
	E	59.00	18.00	0.00

Junction 6b 17:15 - 17:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	132.00	64.00
	D	193.00	0.00	23.00
	E	73.00	15.00	0.00

Junction 6b 17:30 - 17:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	146.00	66.00
	D	190.00	0.00	17.00
	E	62.00	10.00	0.00

Junction 6b 17:45 - 18:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	138.00	58.00
	D	193.00	0.00	23.00
	E	68.00	18.00	0.00

Vehicle Mix

Junction 6a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	1
	C	1	1	0

Junction 6a 17:15 - 17:30

Heavy Vehicle Percentages

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

Junction 6a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	2
	C	1	0	0

Junction 6a 17:45 - 18:00

Heavy Vehicle Percentages

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

Junction 6b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	4	0	0

Junction 6b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Junction 6b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	2	0	0

Junction 6b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
6a	A	60.50	14.3	F	172.13	688.52
	B	17.76	4.2	C	192.01	768.04
	C	4.77	1.4	A	258.31	1033.23
6b	C	5.42	1.3	A	199.38	797.53
	D	74.93	19.4	F	216.73	866.91
	E	32.38	3.3	D	80.56	322.23

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	176.47	176.47	134.89	172.67	227.77	0.0	9.3	34.336	D
	B	201.14	201.14	103.00	200.83	204.56	0.0	4.2	16.424	C
	C	257.58	257.58	105.12	257.53	198.61	0.0	1.4	4.655	A
6b	C	199.14	199.14	17.92	199.22	257.52	0.0	1.2	5.416	A
	D	227.94	227.94	51.09	216.27	166.04	0.0	15.2	39.497	E
	E	76.94	76.94	198.72	76.68	68.63	0.0	2.2	19.342	C

17:15 - 17:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	165.46	165.46	141.08	166.20	221.21	9.3	8.4	47.451	E
	B	193.39	193.39	103.13	193.68	204.15	4.2	3.6	16.600	C
	C	262.75	262.75	99.32	262.97	197.49	1.4	1.4	4.770	A
6b	C	197.49	197.49	14.82	197.67	262.75	1.2	1.1	5.263	A
	D	215.71	215.71	66.01	212.38	146.47	15.2	19.4	74.929	F
	E	88.51	88.51	189.82	87.71	88.57	2.2	3.3	32.381	D

17:30 - 17:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	165.28	165.28	119.34	163.96	227.94	8.4	11.4	58.747	F
	B	192.42	192.42	109.01	192.52	174.29	3.6	4.0	17.765	C
	C	254.01	254.01	93.22	254.07	208.27	1.4	1.4	4.748	A
6b	C	207.81	207.81	10.25	207.71	253.92	1.1	1.3	5.342	A
	D	206.76	206.76	64.79	209.09	153.17	19.4	15.3	72.154	F
	E	72.10	72.10	192.35	71.81	81.54	3.3	2.0	25.788	D

17:45 - 18:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	181.31	181.31	144.86	178.74	209.29	11.4	14.3	60.504	F
	B	181.09	181.09	107.06	181.31	216.53	4.0	3.1	15.526	C
	C	258.89	258.89	95.27	258.87	193.08	1.4	1.3	4.702	A
6b	C	193.08	193.08	17.59	193.21	258.89	1.3	1.1	5.272	A
	D	216.51	216.51	56.54	214.28	154.26	15.3	16.9	63.822	F
	E	84.68	84.68	191.56	84.95	79.26	2.0	2.9	28.863	D

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	69.27	143.75	0.482	69.66	0.0	0.9	11.395	B
				2	C	107.20	143.75	0.746	103.00	0.0	8.3	49.123	E
		Exit	1	1		227.77			227.77	0.0	0.0	0.000	A
	B	Entry	1	1	C	72.54	167.24	0.434	72.43	0.0	1.3	13.624	B
				2	A, C	128.59	167.24	0.769	128.39	0.0	2.9	17.960	C
		Exit	1	1		204.56			204.56	0.0	0.0	0.000	A
	C	Entry	1	1	A	122.60	271.30	0.452	122.64	0.0	0.5	3.267	A
				2	B	134.99	271.30	0.498	134.89	0.0	0.5	3.284	A
			2	1	(B, A)	257.58			257.59	0.0	0.4	1.379	A
		Exit	1	1		198.70			198.61	0.0	0.2	0.871	A
6b	C	Entry	1	1	D	148.09	242.69	0.610	148.13	0.0	0.6	3.732	A
				2	E	51.03	242.69	0.210	51.09	0.0	0.2	3.699	A
			2	1	(D, E)	199.14			199.12	0.0	0.4	1.693	A
		Exit	1	1		257.49			257.52	0.0	0.2	0.752	A
	D	Entry	1	1	C, E	116.81	151.37	0.772	110.77	0.0	7.7	39.150	E
				2	C	111.13	151.37	0.734	105.49	0.0	7.5	39.861	E
		Exit	1	1		166.04			166.04	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	76.94	147.11	0.523	76.68	0.0	2.2	19.342	C
		Exit	1	1		68.63			68.63	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	63.27	141.58	0.447	63.07	0.9	0.8	11.552	B
				2	C	102.19	141.58	0.722	103.13	8.3	7.5	69.464	F
		Exit	1	1		221.21			221.21	0.0	0.0	0.000	A
	B	Entry	1	1	C	70.06	167.19	0.419	70.08	1.3	1.1	13.230	B
				2	A, C	123.33	167.19	0.738	123.59	2.9	2.5	18.519	C
		Exit	1	1		204.15			204.15	0.0	0.0	0.000	A
	C	Entry	1	1	A	121.79	273.18	0.446	121.89	0.5	0.4	3.309	A
				2	B	141.01	273.18	0.516	141.08	0.5	0.5	3.284	A
			2	1	(B, A)	262.75			262.80	0.4	0.4	1.474	A
		Exit	1	1		197.49			197.49	0.2	0.2	0.797	A
6b	C	Entry	1	1	D	131.63	243.60	0.540	131.66	0.6	0.5	3.709	A
				2	E	65.98	243.60	0.271	66.01	0.2	0.3	3.695	A
			2	1	(D, E)	197.49			197.61	0.4	0.3	1.558	A
		Exit	1	1		262.71			262.75	0.2	0.2	0.832	A
	D	Entry	1	1	C, E	110.14	146.93	0.750	108.72	7.7	9.8	73.996	F
				2	C	105.56	146.93	0.718	103.66	7.5	9.6	75.906	F
		Exit	1	1		146.47			146.47	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	88.51	153.12	0.578	87.71	2.2	3.3	32.381	D
		Exit	1	1		88.57			88.57	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	54.37	149.18	0.364	54.95	0.8	0.5	9.816	A
				2	C	110.92	149.18	0.744	109.01	7.5	10.9	82.654	F
		Exit	1	1		227.94			227.94	0.0	0.0	0.000	A
	B	Entry	1	1	C	72.06	164.96	0.437	72.20	1.1	1.3	15.242	C
				2	A, C	120.35	164.96	0.730	120.32	2.5	2.7	19.258	C
		Exit	1	1		174.29			174.29	0.0	0.0	0.000	A
	C	Entry	1	1	A	134.76	275.15	0.490	134.72	0.4	0.5	3.338	A
				2	B	119.23	275.15	0.433	119.34	0.5	0.4	3.280	A
			2	1	(B, A)	254.01			253.98	0.4	0.4	1.439	A
		Exit	1	1		208.31			208.27	0.2	0.2	0.865	A
6b	C	Entry	1	1	D	142.89	244.95	0.583	142.92	0.5	0.6	3.703	A
				2	E	64.82	244.95	0.265	64.79	0.3	0.3	3.686	A
			2	1	(D, E)	207.81			207.72	0.3	0.4	1.643	A
		Exit	1	1		253.91			253.92	0.2	0.2	0.802	A
	D	Entry	1	1	C, E	105.25	147.30	0.715	106.15	9.8	7.7	71.437	F
				2	C	101.51	147.30	0.689	102.94	9.6	7.5	72.899	F
		Exit	1	1		153.17			153.17	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	72.10	151.41	0.476	71.81	3.3	2.0	25.788	D
		Exit	1	1		81.54			81.54	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	71.95	140.27	0.513	71.68	0.5	1.2	12.833	B
				2	C	109.36	140.27	0.780	107.06	10.9	13.1	93.468	F
		Exit	1	1		209.29			209.29	0.0	0.0	0.000	A
	B	Entry	1	1	C	63.61	165.70	0.384	63.93	1.3	0.8	12.248	B
				2	A, C	117.48	165.70	0.709	117.38	2.7	2.3	17.309	C
		Exit	1	1		216.53			216.53	0.0	0.0	0.000	A
	C	Entry	1	1	A	113.86	274.49	0.415	114.02	0.5	0.4	3.254	A
				2	B	144.98	274.49	0.528	144.86	0.4	0.5	3.274	A
			2	1	(B, A)	258.89			258.84	0.4	0.4	1.437	A
		Exit	1	1		193.10			193.08	0.2	0.2	0.799	A
6b	C	Entry	1	1	D	136.64	242.79	0.563	136.67	0.6	0.6	3.685	A
				2	E	56.42	242.79	0.232	56.54	0.3	0.2	3.719	A
			2	1	(D, E)	193.08			193.06	0.4	0.3	1.579	A
		Exit	1	1		258.92			258.89	0.2	0.2	0.799	A
	D	Entry	1	1	C, E	111.19	149.75	0.742	110.02	7.7	8.6	63.404	F
				2	C	105.32	149.75	0.703	104.26	7.5	8.4	64.259	F
		Exit	1	1		154.26			154.26	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	84.68	151.95	0.557	84.95	2.0	2.9	28.863	D
		Exit	1	1		79.26			79.26	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 6b - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 6b	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and D have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
6a	Junction 6a	Mini-roundabout	A, B, C	7.69	A
6b	Junction 6b	Mini-roundabout	C, D, E	99.87	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
6a	**C**	6b	C	Queue limited	Normal	0.00	100.00	1.04
6b	**C**	6a	C	Queue limited	Normal	0.00	100.00	1.04

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
6a	**A**		DIRECT		100.000
	B		DIRECT	✓	100.000
	C	✓			
6b	**C**	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 6a 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	77.00	115.00
	B	109.00	0.00	105.00
	C	133.00	150.00	0.00

Junction 6a 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	69.00	110.00
	B	104.00	0.00	102.00
	C	129.00	154.00	0.00

Junction 6a 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	62.00	124.00
	B	99.00	0.00	108.00
	C	146.00	126.00	0.00

Junction 6a 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	77.00	123.00
	B	103.00	0.00	91.00
	C	129.00	159.00	0.00

Junction 6b 17:00 - 17:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	163.00	58.00
	D	220.00	0.00	33.00
	E	63.00	21.00	0.00

Junction 6b 17:15 - 17:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	143.00	69.00
	D	206.00	0.00	36.00
	E	77.00	18.00	0.00

Junction 6b 17:30 - 17:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	157.00	71.00
	D	202.00	0.00	30.00
	E	66.00	12.00	0.00

Junction 6b 17:45 - 18:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	149.00	63.00
	D	205.00	0.00	36.00
	E	72.00	21.00	0.00

Vehicle Mix

Junction 6a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	1
	C	1	1	0

Junction 6a 17:15 - 17:30

Heavy Vehicle Percentages

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

Junction 6a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	2
	C	1	0	0

Junction 6a 17:45 - 18:00

Heavy Vehicle Percentages

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

Junction 6b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	4	0	0

Junction 6b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Junction 6b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	2	0	0

Junction 6b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
6a	A	8.81	0.5	A	50.03	200.12
	B	11.10	3.0	B	205.09	820.35
	C	4.86	1.5	A	266.73	1066.94
6b	C	4.94	0.8	A	132.39	529.58
	D	170.35	53.5	F	243.35	973.39
	E	47.25	5.6	E	87.08	348.34

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	51.07	51.07	143.09	51.13	230.16	0.0	0.5	8.244	A
	B	215.07	215.07	30.65	214.11	163.58	0.0	3.0	11.102	B
	C	265.43	265.43	107.96	265.29	136.75	0.0	1.5	4.766	A
6b	C	136.77	136.77	21.42	136.74	265.01	0.0	0.7	4.935	A
	D	256.04	256.04	35.98	234.18	122.17	0.0	26.5	59.916	F
	E	84.11	84.11	203.24	83.16	66.93	0.0	3.4	25.859	D

17:15 - 17:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	49.92	49.92	147.22	49.85	225.54	0.5	0.5	8.807	A
	B	205.46	205.46	30.89	204.86	166.17	3.0	2.4	10.335	B
	C	268.81	268.81	103.55	269.20	132.29	1.5	1.4	4.860	A
6b	C	132.29	132.29	17.58	132.30	268.81	0.7	0.7	4.836	A
	D	239.16	239.16	42.84	227.32	107.05	26.5	39.8	134.456	F
	E	94.15	94.15	193.96	92.32	76.19	3.4	5.6	47.251	E

17:30 - 17:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	50.83	50.83	123.49	50.59	241.01	0.5	0.5	8.611	A
	B	205.98	205.98	33.52	206.18	140.56	2.4	2.5	10.645	B
	C	265.03	265.03	99.43	265.08	140.18	1.4	1.4	4.832	A
6b	C	139.16	139.16	12.07	138.97	264.98	0.7	0.8	4.844	A
	D	233.77	233.77	44.05	227.40	106.99	39.8	44.3	167.578	F
	E	77.22	77.22	197.90	79.19	73.55	5.6	2.4	35.132	E

17:45 - 18:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	48.30	48.30	148.52	48.42	221.80	0.5	0.4	8.455	A
	B	193.84	193.84	30.41	193.47	166.53	2.5	2.0	9.491	A
	C	267.67	267.67	102.45	267.86	121.35	1.4	1.3	4.805	A
6b	C	121.35	121.35	21.24	120.99	267.67	0.8	0.7	4.713	A
	D	244.42	244.42	35.95	231.05	106.27	44.3	53.5	170.348	F
	E	92.86	92.86	196.44	92.45	70.57	2.4	4.8	40.501	E

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	20.62	140.88	0.146	20.48	0.0	0.2	7.013	A
				2	C	30.45	140.88	0.216	30.65	0.0	0.3	9.065	A
		Exit	1	1		230.16			230.16	0.0	0.0	0.000	A
	B	Entry	1	1	C	77.85	194.67	0.400	77.79	0.0	0.8	8.391	A
				2	A, C	137.23	194.67	0.705	136.32	0.0	2.2	12.609	B
		Exit	1	1		163.58			163.58	0.0	0.0	0.000	A
	C	Entry	1	1	A	122.29	270.38	0.452	122.20	0.0	0.5	3.297	A
				2	B	143.04	270.38	0.529	143.09	0.0	0.5	3.326	A
			2	1	(B, A)	265.43			265.31	0.0	0.5	1.453	A
		Exit	1	1		136.79			136.75	0.0	0.1	0.490	A
6b	C	Entry	1	1	D	100.71	241.66	0.417	100.76	0.0	0.4	3.747	A
				2	E	36.04	241.66	0.149	35.98	0.0	0.2	3.710	A
			2	1	(D, E)	136.77			136.75	0.0	0.2	1.199	A
		Exit	1	1		264.97			265.01	0.0	0.3	0.817	A
	D	Entry	1	1	C, E	131.70	155.87	0.845	120.66	0.0	13.4	59.093	F
				2	C	124.34	155.87	0.798	113.52	0.0	13.0	60.788	F
		Exit	1	1		122.17			122.17	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	84.11	144.06	0.584	83.16	0.0	3.4	25.859	D
		Exit	1	1		66.93			66.93	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	18.88	139.44	0.135	18.95	0.2	0.2	7.622	A
				2	C	31.04	139.44	0.223	30.89	0.3	0.4	9.529	A
		Exit	1	1		225.54			225.54	0.0	0.0	0.000	A
	B	Entry	1	1	C	72.79	194.58	0.374	72.77	0.8	0.6	7.801	A
				2	A, C	132.67	194.58	0.682	132.09	2.2	1.8	11.739	B
		Exit	1	1		166.17			166.17	0.0	0.0	0.000	A
	C	Entry	1	1	A	121.99	271.81	0.449	121.98	0.5	0.5	3.326	A
				2	B	147.04	271.81	0.541	147.22	0.5	0.5	3.324	A
			2	1	(B, A)	268.81			269.03	0.5	0.4	1.536	A
		Exit	1	1		132.20			132.29	0.1	0.1	0.441	A
6b	C	Entry	1	1	D	89.43	242.79	0.368	89.46	0.4	0.4	3.730	A
				2	E	42.92	242.79	0.177	42.84	0.2	0.2	3.707	A
			2	1	(D, E)	132.29			132.35	0.2	0.2	1.114	A
		Exit	1	1		268.70			268.81	0.3	0.2	0.891	A
	D	Entry	1	1	C, E	123.03	153.83	0.800	116.95	13.4	20.1	131.624	F
				2	C	116.14	153.83	0.755	110.36	13.0	19.7	137.458	F
		Exit	1	1		107.05			107.05	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	94.15	150.32	0.626	92.32	3.4	5.6	47.251	E
		Exit	1	1		76.19			76.19	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	17.22	147.73	0.117	17.07	0.2	0.2	6.989	A
				2	C	33.61	147.73	0.228	33.52	0.4	0.4	9.426	A
		Exit	1	1		241.01			241.01	0.0	0.0	0.000	A
	B	Entry	1	1	C	75.42	193.58	0.390	75.37	0.6	0.8	8.349	A
				2	A, C	130.56	193.58	0.674	130.81	1.8	1.7	11.967	B
		Exit	1	1		140.56			140.56	0.0	0.0	0.000	A
	C	Entry	1	1	A	141.55	273.14	0.518	141.59	0.5	0.5	3.324	A
				2	B	123.35	273.14	0.452	123.49	0.5	0.4	3.313	A
			2	1	(B, A)	265.03			264.90	0.4	0.5	1.513	A
		Exit	1	1		140.28			140.18	0.1	0.1	0.473	A
6b	C	Entry	1	1	D	95.06	244.41	0.389	94.92	0.4	0.4	3.694	A
				2	E	43.97	244.41	0.180	44.05	0.2	0.2	3.689	A
			2	1	(D, E)	139.16			139.04	0.2	0.2	1.151	A
		Exit	1	1		265.02			264.98	0.2	0.3	0.873	A
	D	Entry	1	1	C, E	118.90	153.47	0.775	115.65	20.1	22.3	164.983	F
				2	C	114.87	153.47	0.749	111.75	19.7	22.0	170.280	F
		Exit	1	1		106.99			106.99	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	77.22	147.67	0.523	79.19	5.6	2.4	35.132	E
		Exit	1	1		73.55			73.55	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	18.00	138.99	0.130	18.01	0.2	0.1	7.389	A
				2	C	30.30	138.99	0.218	30.41	0.4	0.3	9.111	A
		Exit	1	1		221.80			221.80	0.0	0.0	0.000	A
	B	Entry	1	1	C	65.23	194.76	0.335	65.25	0.8	0.5	6.920	A
				2	A, C	128.61	194.76	0.660	128.22	1.7	1.6	10.800	B
		Exit	1	1		166.53			166.53	0.0	0.0	0.000	A
	C	Entry	1	1	A	119.29	272.17	0.438	119.35	0.5	0.4	3.297	A
				2	B	148.52	272.17	0.546	148.52	0.4	0.5	3.296	A
			2	1	(B, A)	267.67			267.81	0.5	0.4	1.508	A
		Exit	1	1		121.43			121.35	0.1	0.0	0.373	A
6b	C	Entry	1	1	D	85.26	241.72	0.353	85.04	0.4	0.4	3.696	A
				2	E	36.04	241.72	0.149	35.95	0.2	0.2	3.703	A
			2	1	(D, E)	121.35			121.30	0.2	0.1	1.015	A
		Exit	1	1		267.65			267.67	0.3	0.2	0.864	A
	D	Entry	1	1	C, E	126.61	155.88	0.812	119.83	22.3	26.9	167.021	F
				2	C	117.81	155.88	0.756	111.23	22.0	26.5	173.895	F
		Exit	1	1		106.27			106.27	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	92.86	148.66	0.625	92.45	2.4	4.8	40.501	E
		Exit	1	1		70.57			70.57	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 6b - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 6b - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 6b	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and D have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
6a	Junction 6a	Mini-roundabout	A, B, C	7.33	A
6b	Junction 6b	Mini-roundabout	C, D, E	245.63	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
6a	**C**	6b	C	Queue limited	Normal	0.00	100.00	1.04
6b	**C**	6a	C	Queue limited	Normal	0.00	100.00	1.04

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
6a	**A**		DIRECT		100.000
	B		DIRECT	✓	100.000
	C	✓			
6b	**C**	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 6a 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	81.00	129.00
	B	117.00	0.00	111.00
	C	150.00	162.00	0.00

Junction 6a 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	74.00	124.00
	B	112.00	0.00	107.00
	C	145.00	165.00	0.00

Junction 6a 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	67.00	137.00
	B	106.00	0.00	113.00
	C	161.00	137.00	0.00

Junction 6a 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	81.00	137.00
	B	110.00	0.00	96.00
	C	145.00	171.00	0.00

Junction 6b 17:00 - 17:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	180.00	60.00
	D	240.00	0.00	35.00
	E	71.00	26.00	0.00

Junction 6b 17:15 - 17:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	159.00	72.00
	D	226.00	0.00	39.00
	E	85.00	22.00	0.00

Junction 6b 17:30 - 17:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	172.00	73.00
	D	221.00	0.00	32.00
	E	73.00	16.00	0.00

Junction 6b 17:45 - 18:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	164.00	66.00
	D	225.00	0.00	39.00
	E	79.00	25.00	0.00

Vehicle Mix

Junction 6a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	1	0	1
	C	1	1	0

Junction 6a 17:15 - 17:30

Heavy Vehicle Percentages

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

Junction 6a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	2
	C	1	0	0

Junction 6a 17:45 - 18:00

Heavy Vehicle Percentages

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

Junction 6b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	4	0	0

Junction 6b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Junction 6b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	2	0	0

Junction 6b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
6a	A	7.26	0.1	A	8.67	34.70
	B	10.30	2.6	B	217.94	871.76
	C	4.97	1.5	A	274.54	1098.17
6b	C	4.82	0.7	A	111.73	446.92
	D	406.41	135.2	F	263.86	1055.43
	E	90.18	12.9	F	99.81	399.25

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	7.46	7.46	140.85	7.39	247.02	0.0	0.1	6.632	A
	B	229.05	229.05	4.75	228.60	143.49	0.0	2.6	10.304	B
	C	270.03	270.03	117.73	270.14	115.61	0.0	1.5	4.859	A
6b	C	115.13	115.13	25.05	115.16	269.96	0.0	0.6	4.817	A
	D	273.91	273.91	28.17	230.10	112.05	0.0	44.1	92.052	F
	E	96.76	96.76	201.29	93.70	56.98	0.0	6.2	38.584	E

17:15 - 17:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	11.93	11.93	145.88	11.95	242.14	0.1	0.1	7.255	A
	B	219.32	219.32	7.60	219.17	150.24	2.6	2.4	9.810	A
	C	275.49	275.49	112.46	275.56	114.40	1.5	1.5	4.965	A
6b	C	114.40	114.40	20.92	114.43	275.49	0.6	0.6	4.693	A
	D	264.60	264.60	35.68	228.28	99.66	44.1	80.4	249.226	F
	E	108.51	108.51	193.57	102.67	70.39	6.2	12.9	90.184	F

17:30 - 17:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	10.09	10.09	126.18	10.07	255.43	0.1	0.1	6.877	A
	B	218.28	218.28	6.57	218.44	129.67	2.4	2.4	10.018	B
	C	276.41	276.41	105.28	276.33	119.72	1.5	1.5	4.918	A
6b	C	118.36	118.36	16.48	118.22	276.52	0.6	0.7	4.745	A
	D	251.74	251.74	35.24	232.24	99.46	80.4	103.5	364.801	F
	E	89.40	89.40	202.07	90.95	65.41	12.9	7.3	84.424	F

17:45 - 18:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	5.22	5.22	149.65	5.16	235.99	0.1	0.1	6.666	A
	B	205.11	205.11	3.16	205.20	151.65	2.4	2.1	9.110	A
	C	276.25	276.25	109.26	276.38	99.04	1.5	1.5	4.922	A
6b	C	99.04	99.04	24.49	98.83	276.25	0.7	0.5	4.619	A
	D	265.18	265.18	28.19	232.59	95.14	103.5	135.2	406.407	F
	E	104.57	104.57	198.83	101.76	61.94	7.3	11.6	83.740	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	2.65	141.67	0.019	2.64	0.0	0.0	6.397	A
				2	C	4.81	141.67	0.034	4.75	0.0	0.1	6.777	A
		Exit	1	1		247.02			247.02	0.0	0.0	0.000	A
	B	Entry	1	1	C	82.37	204.49	0.403	82.21	0.0	0.7	7.359	A
				2	A, C	146.68	204.49	0.717	146.39	0.0	1.9	11.943	B
		Exit	1	1		143.49			143.49	0.0	0.0	0.000	A
	C	Entry	1	1	A	129.30	267.23	0.484	129.30	0.0	0.5	3.325	A
				2	B	140.77	267.23	0.527	140.85	0.0	0.5	3.352	A
			2	1	(B, A)	270.03			270.07	0.0	0.5	1.520	A
		Exit	1	1		115.63			115.61	0.0	0.0	0.367	A
6b	C	Entry	1	1	D	86.85	240.59	0.361	86.99	0.0	0.3	3.760	A
				2	E	28.27	240.59	0.118	28.17	0.0	0.1	3.764	A
			2	1	(D, E)	115.13			115.14	0.0	0.1	1.057	A
		Exit	1	1		269.94			269.96	0.0	0.3	0.876	A
	D	Entry	1	1	C, E	139.27	158.19	0.880	117.48	0.0	22.2	90.849	F
				2	C	134.63	158.19	0.851	112.62	0.0	21.9	93.308	F
		Exit	1	1		112.05			112.05	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	96.76	145.38	0.666	93.70	0.0	6.2	38.584	E
		Exit	1	1		56.98			56.98	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	4.30	139.91	0.031	4.36	0.0	0.0	6.479	A
				2	C	7.63	139.91	0.055	7.60	0.1	0.1	7.706	A
		Exit	1	1		242.14			242.14	0.0	0.0	0.000	A
	B	Entry	1	1	C	77.79	203.41	0.382	77.78	0.7	0.6	6.995	A
				2	A, C	141.53	203.41	0.696	141.40	1.9	1.8	11.374	B
		Exit	1	1		150.24			150.24	0.0	0.0	0.000	A
	C	Entry	1	1	A	129.73	268.93	0.482	129.67	0.5	0.5	3.358	A
				2	B	145.86	268.93	0.542	145.88	0.5	0.5	3.370	A
			2	1	(B, A)	275.49			275.60	0.5	0.5	1.601	A
		Exit	1	1		114.31			114.40	0.0	0.0	0.338	A
6b	C	Entry	1	1	D	78.69	241.81	0.325	78.75	0.3	0.3	3.705	A
				2	E	35.72	241.81	0.148	35.68	0.1	0.2	3.756	A
			2	1	(D, E)	114.40			114.41	0.1	0.1	0.971	A
		Exit	1	1		275.33			275.49	0.3	0.2	0.953	A
	D	Entry	1	1	C, E	136.32	155.96	0.874	118.38	22.2	40.3	242.457	F
				2	C	128.28	155.96	0.823	109.90	21.9	40.1	256.417	F
		Exit	1	1		99.66			99.66	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	108.51	150.59	0.721	102.67	6.2	12.9	90.184	F
		Exit	1	1		70.39			70.39	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	3.50	146.79	0.024	3.50	0.0	0.0	6.225	A
				2	C	6.59	146.79	0.045	6.57	0.1	0.1	7.203	A
		Exit	1	1		255.43			255.43	0.0	0.0	0.000	A
	B	Entry	1	1	C	80.05	203.80	0.393	79.93	0.6	0.7	7.509	A
				2	A, C	138.23	203.80	0.678	138.52	1.8	1.7	11.475	B
		Exit	1	1		129.67			129.67	0.0	0.0	0.000	A
	C	Entry	1	1	A	150.19	271.25	0.554	150.15	0.5	0.6	3.344	A
				2	B	126.14	271.25	0.465	126.18	0.5	0.5	3.337	A
			2	1	(B, A)	276.41			276.33	0.5	0.5	1.577	A
		Exit	1	1		119.73			119.72	0.0	0.1	0.373	A
6b	C	Entry	1	1	D	83.08	243.11	0.342	82.98	0.3	0.4	3.742	A
				2	E	35.20	243.11	0.145	35.24	0.2	0.1	3.698	A
			2	1	(D, E)	118.36			118.28	0.1	0.2	1.017	A
		Exit	1	1		276.53			276.52	0.2	0.3	0.931	A
	D	Entry	1	1	C, E	129.70	156.09	0.831	119.70	40.3	51.9	352.998	F
				2	C	122.04	156.09	0.782	112.54	40.1	51.6	377.330	F
		Exit	1	1		99.46			99.46	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	89.40	144.85	0.617	90.95	12.9	7.3	84.424	F
		Exit	1	1		65.41			65.41	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	2.02	138.59	0.015	2.00	0.0	0.0	6.470	A
				2	C	3.20	138.59	0.023	3.16	0.1	0.0	6.783	A
		Exit	1	1		235.99			235.99	0.0	0.0	0.000	A
	B	Entry	1	1	C	69.31	205.09	0.338	69.21	0.7	0.5	6.482	A
				2	A, C	135.80	205.09	0.662	135.99	1.7	1.6	10.450	B
		Exit	1	1		151.65			151.65	0.0	0.0	0.000	A
	C	Entry	1	1	A	126.67	269.97	0.469	126.73	0.6	0.5	3.346	A
				2	B	149.70	269.97	0.555	149.65	0.5	0.5	3.330	A
			2	1	(B, A)	276.25			276.38	0.5	0.5	1.585	A
		Exit	1	1		99.10			99.04	0.1	0.0	0.290	A
6b	C	Entry	1	1	D	70.74	240.76	0.294	70.64	0.4	0.3	3.730	A
				2	E	28.20	240.76	0.117	28.19	0.1	0.1	3.735	A
			2	1	(D, E)	99.04			98.94	0.2	0.1	0.889	A
		Exit	1	1		276.11			276.25	0.3	0.3	0.939	A
	D	Entry	1	1	C, E	136.46	158.19	0.863	119.89	51.9	67.9	397.216	F
				2	C	128.72	158.19	0.814	112.70	51.6	67.4	416.307	F
		Exit	1	1		95.14			95.14	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	104.57	147.04	0.711	101.76	7.3	11.6	83.740	F
		Exit	1	1		61.94			61.94	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Local Plan Growth with Peak Spreading, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 6b - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 6b - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 6b	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and D have 83% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
6a	Junction 6a	Mini-roundabout	A, B, C	7.16	A
6b	Junction 6b	Mini-roundabout	C, D, E	237.37	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth with Peak Spreading	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
6a	**C**	6b	C	Queue limited	Normal	0.00	100.00	1.04
6b	**C**	6a	C	Queue limited	Normal	0.00	100.00	1.04

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
6a	**A**		DIRECT		100.000
	B		DIRECT	✓	100.000
	C	✓			
6b	**C**	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 6a 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	76.00	132.00
	B	111.00	0.00	107.00
	C	150.00	159.00	0.00

Junction 6a 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	76.00	132.00
	B	111.00	0.00	107.00
	C	150.00	159.00	0.00

Junction 6a 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	76.00	132.00
	B	111.00	0.00	107.00
	C	150.00	159.00	0.00

Junction 6a 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	76.00	132.00
	B	111.00	0.00	107.00
	C	150.00	159.00	0.00

Junction 6b 17:00 - 17:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	169.00	68.00
	D	228.00	0.00	36.00
	E	77.00	22.00	0.00

Junction 6b 17:15 - 17:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	169.00	68.00
	D	228.00	0.00	36.00
	E	77.00	22.00	0.00

Junction 6b 17:30 - 17:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	169.00	68.00
	D	228.00	0.00	36.00
	E	77.00	22.00	0.00

Junction 6b 17:45 - 18:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	169.00	68.00
	D	228.00	0.00	36.00
	E	77.00	22.00	0.00

Vehicle Mix

Junction 6a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	1
	C	0	0	0

Junction 6a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	1
	C	0	0	0

Junction 6a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	1
	C	0	0	0

Junction 6a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	1	0	1
	C	0	0	0

Junction 6b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	1	0	0

Junction 6b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	1	0	0

Junction 6b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	1	0	0

Junction 6b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	1	0
	D	0	0	0
	E	1	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
6a	A	7.16	0.1	A	8.55	34.19
	B	9.99	2.5	A	216.62	866.47
	C	4.93	1.6	A	275.41	1101.63
6b	C	4.80	0.7	A	111.30	445.19
	D	390.68	131.8	F	264.69	1058.76
	E	90.94	10.9	F	100.35	401.39

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	7.86	7.86	142.38	7.84	243.74	0.0	0.1	6.405	A
	B	218.31	218.31	4.72	217.43	145.51	0.0	2.5	9.490	A
	C	275.79	275.79	110.71	275.41	111.47	0.0	1.5	4.663	A
6b	C	111.36	111.36	22.06	111.59	276.47	0.0	0.6	4.785	A
	D	266.02	266.02	32.21	234.98	101.44	0.0	33.9	74.595	F
	E	102.47	102.47	202.81	96.08	64.38	0.0	7.0	36.926	E

17:15 - 17:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	12.08	12.08	140.78	12.18	244.57	0.1	0.1	7.162	A
	B	216.53	216.53	7.80	216.39	145.16	2.5	2.5	9.991	A
	C	274.72	274.72	110.47	274.91	113.82	1.5	1.4	4.918	A
6b	C	113.60	113.60	21.47	113.41	275.51	0.6	0.7	4.804	A
	D	266.86	266.86	32.58	231.69	102.29	33.9	68.4	204.900	F
	E	99.22	99.22	200.44	96.53	63.83	7.0	7.7	65.928	F

17:30 - 17:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	9.51	9.51	140.74	9.64	244.48	0.1	0.1	6.909	A
	B	215.24	215.24	6.05	215.50	144.34	2.5	2.3	9.836	A
	C	276.34	276.34	108.48	276.74	113.05	1.4	1.5	4.934	A
6b	C	112.64	112.64	21.96	112.38	277.03	0.7	0.6	4.729	A
	D	262.51	262.51	32.68	231.55	101.66	68.4	99.5	330.415	F
	E	100.11	100.11	199.78	99.06	64.44	7.7	9.6	81.988	F

17:45 - 18:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	4.73	4.73	140.41	4.75	245.94	0.1	0.0	6.784	A
	B	216.39	216.39	2.89	217.36	142.27	2.3	2.2	9.544	A
	C	274.78	274.78	112.21	274.16	108.03	1.5	1.6	4.930	A
6b	C	107.60	107.60	23.39	107.49	275.53	0.6	0.7	4.753	A
	D	263.37	263.37	30.71	228.83	100.17	99.5	131.8	390.678	F
	E	99.59	99.59	198.19	100.84	61.35	9.6	10.9	90.940	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	3.11	141.13	0.022	3.13	0.0	0.0	5.869	A
				2	C	4.75	141.13	0.034	4.72	0.0	0.0	6.757	A
		Exit	1	1		243.74			243.74	0.0	0.0	0.000	A
	B	Entry	1	1	C	77.82	204.50	0.381	77.60	0.0	0.6	7.041	A
				2	A, C	140.49	204.50	0.687	139.83	0.0	1.8	10.817	B
		Exit	1	1		145.51			145.51	0.0	0.0	0.000	A
	C	Entry	1	1	A	133.36	269.50	0.495	133.03	0.0	0.5	3.209	A
				2	B	142.20	269.50	0.528	142.38	0.0	0.5	3.245	A
			2	1	(B, A)	275.79			275.57	0.0	0.5	1.434	A
		Exit	1	1		111.41			111.47	0.0	0.0	0.329	A
6b	C	Entry	1	1	D	79.19	241.47	0.328	79.38	0.0	0.3	3.816	A
				2	E	32.31	241.47	0.134	32.21	0.0	0.2	3.781	A
			2	1	(D, E)	111.36			111.50	0.0	0.1	0.978	A
		Exit	1	1		276.84			276.47	0.0	0.3	0.819	A
	D	Entry	1	1	C, E	136.88	156.99	0.872	121.11	0.0	17.2	73.185	F
				2	C	129.14	156.99	0.823	113.87	0.0	16.7	76.107	F
		Exit	1	1		101.44			101.44	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	102.47	144.35	0.710	96.08	0.0	7.0	36.926	E
		Exit	1	1		64.38			64.38	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	4.33	141.69	0.031	4.38	0.0	0.0	6.520	A
				2	C	7.75	141.69	0.055	7.80	0.0	0.0	7.522	A
		Exit	1	1		244.57			244.57	0.0	0.0	0.000	A
	B	Entry	1	1	C	77.33	203.34	0.380	77.34	0.6	0.6	7.470	A
				2	A, C	139.20	203.34	0.685	139.06	1.8	1.9	11.378	B
		Exit	1	1		145.16			145.16	0.0	0.0	0.000	A
	C	Entry	1	1	A	134.09	269.58	0.497	134.13	0.5	0.5	3.362	A
				2	B	140.70	269.58	0.522	140.78	0.5	0.5	3.327	A
			2	1	(B, A)	274.72			274.78	0.5	0.5	1.575	A
		Exit	1	1		113.76			113.82	0.0	0.0	0.365	A
6b	C	Entry	1	1	D	80.94	241.65	0.335	80.81	0.3	0.4	3.792	A
				2	E	32.71	241.65	0.135	32.58	0.2	0.1	3.731	A
			2	1	(D, E)	113.60			113.65	0.1	0.1	1.030	A
		Exit	1	1		275.50			275.51	0.3	0.3	0.921	A
	D	Entry	1	1	C, E	136.06	156.88	0.867	118.65	17.2	34.3	200.402	F
				2	C	130.80	156.88	0.834	113.04	16.7	34.1	209.581	F
		Exit	1	1		102.29			102.29	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	99.22	145.95	0.680	96.53	7.0	7.7	65.928	F
		Exit	1	1		63.83			63.83	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	3.55	141.70	0.025	3.59	0.0	0.0	6.492	A
				2	C	5.97	141.70	0.042	6.05	0.0	0.0	7.161	A
		Exit	1	1		244.48			244.48	0.0	0.0	0.000	A
	B	Entry	1	1	C	76.44	204.00	0.375	76.24	0.6	0.6	6.968	A
				2	A, C	138.79	204.00	0.680	139.27	1.9	1.7	11.416	B
		Exit	1	1		144.34			144.34	0.0	0.0	0.000	A
	C	Entry	1	1	A	135.64	270.22	0.502	135.99	0.5	0.5	3.359	A
				2	B	140.79	270.22	0.521	140.74	0.5	0.6	3.345	A
			2	1	(B, A)	276.34			276.43	0.5	0.5	1.582	A
		Exit	1	1		113.08			113.05	0.0	0.0	0.329	A
6b	C	Entry	1	1	D	79.73	241.50	0.330	79.70	0.4	0.3	3.746	A
				2	E	32.82	241.50	0.136	32.68	0.1	0.2	3.801	A
			2	1	(D, E)	112.64			112.57	0.1	0.1	0.968	A
		Exit	1	1		276.86			277.03	0.3	0.2	0.938	A
	D	Entry	1	1	C, E	134.17	156.85	0.855	119.12	34.3	49.8	320.386	F
				2	C	128.34	156.85	0.818	112.43	34.1	49.8	341.037	F
		Exit	1	1		101.66			101.66	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	100.11	146.40	0.684	99.06	7.7	9.6	81.988	F
		Exit	1	1		64.44			64.44	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
6a	A	Entry	1	1	B	1.84	141.82	0.013	1.86	0.0	0.0	6.525	A
				2	C	2.89	141.82	0.020	2.89	0.0	0.0	6.923	A
		Exit	1	1		245.94			245.94	0.0	0.0	0.000	A
	B	Entry	1	1	C	75.82	205.20	0.370	75.71	0.6	0.7	6.939	A
				2	A, C	140.56	205.20	0.685	141.66	1.7	1.5	10.976	B
		Exit	1	1		142.27			142.27	0.0	0.0	0.000	A
	C	Entry	1	1	A	134.13	269.01	0.499	133.75	0.5	0.6	3.355	A
				2	B	140.53	269.01	0.522	140.41	0.6	0.6	3.328	A
			2	1	(B, A)	274.78			274.67	0.5	0.5	1.588	A
		Exit	1	1		108.05			108.03	0.0	0.1	0.337	A
6b	C	Entry	1	1	D	76.88	241.08	0.319	76.78	0.3	0.4	3.746	A
				2	E	30.66	241.08	0.127	30.71	0.2	0.1	3.784	A
			2	1	(D, E)	107.60			107.53	0.1	0.1	0.997	A
		Exit	1	1		275.65			275.53	0.2	0.3	0.934	A
	D	Entry	1	1	C, E	135.37	157.44	0.860	117.83	49.8	66.0	381.416	F
				2	C	128.01	157.44	0.813	111.00	49.8	65.7	400.840	F
		Exit	1	1		100.17			100.17	0.0	0.0	0.000	A
	E	Entry	1	1	C, D	99.59	147.47	0.675	100.84	9.6	10.9	90.940	F
		Exit	1	1		61.35			61.35	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_07_J9_LSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 12:26:04

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Lane Simulation] - 2017 Baseline			
Arm A	1.6	7.46		A
Arm B	39.9	124.10		F
Arm C	3.5	22.76		C
	A1 [Lane Simulation] - 2033 Reference Case			
Arm A	1.7	7.69		A
Arm B	120.3	336.33		F
Arm C	4.8	28.86		D
	A1 [Lane Simulation] - 2033 Local Plan Growth			
Arm A	2.1	8.70		A
Arm B	205.3	542.92		F
Arm C	5.2	28.11		D

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

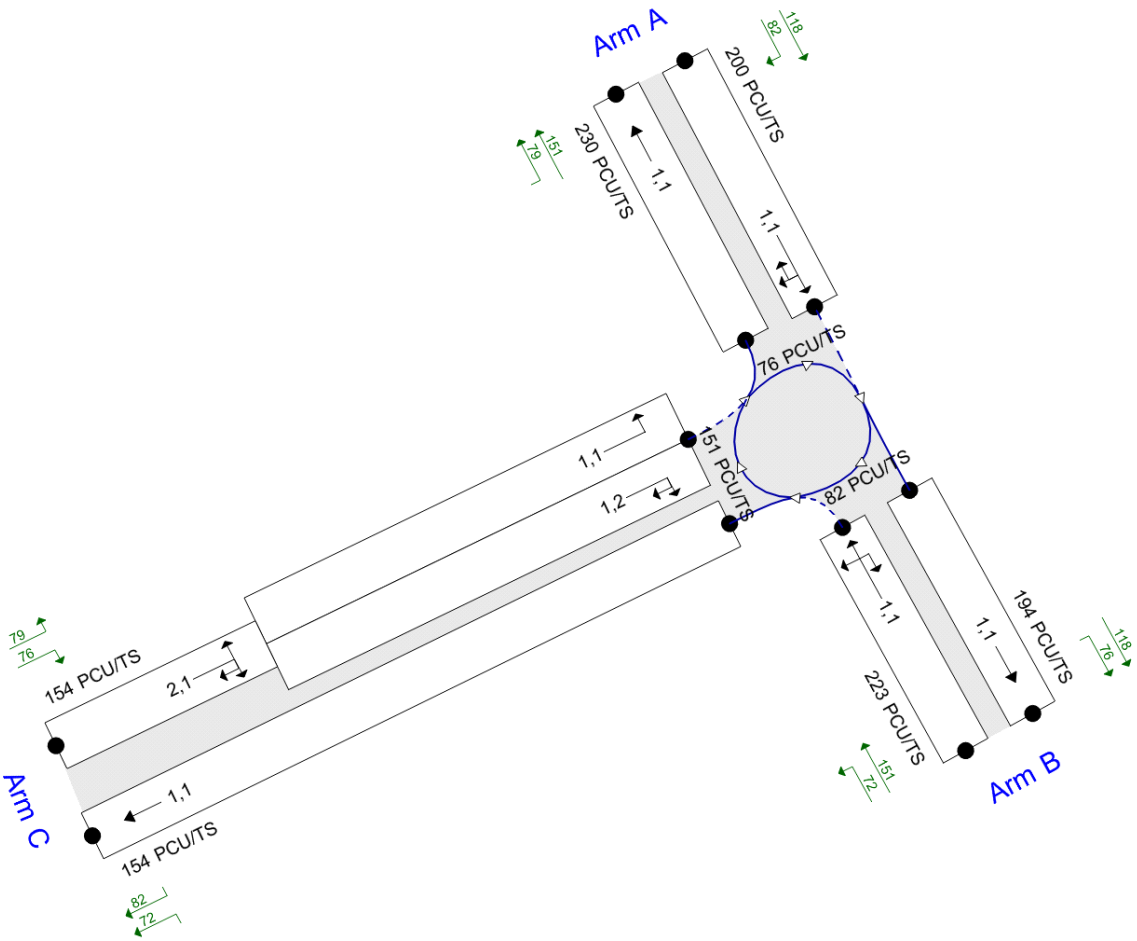
File summary

File Description

Title	A128 Ingrave Road / B186 Queens Road
Location	Brentwood
Site number	07
Date	14/07/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Lane simulation visualisation time: 08:00:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1299767111	199	10.57

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth with School Drop Off Zones	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	✓	D1,D3,D5	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	60.51	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Ingrave Road N	
B	Ingrave Road S	
C	Queens Road	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	3.00	3.00	5.00	10.0	18.82	19.60	0.0	
B	3.50	3.50	4.20	9.2	13.53	6.90	0.0	
C	2.70	2.70	7.00	45.0	10.73	6.70	0.0	✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.885	362.787
B	0.631	257.300
C	0.593	316.174

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
B	Percentage		110.00

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/TS)	Maximum capacity (PCU/TS)
A	1 [Give-way line]	1	A, B, C		Infinity	0.00	24999.75
B	1 [Give-way line]	1	A, B, C		Infinity	0.00	24999.75
C	1 [Give-way line]	1	A	✓	8.00	0.00	24999.75
		2	B, C	✓	8.00	0.00	24999.75
	2	1	(A, B, C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/TS)
A	1 [Give-way line]	1	0.885	362.787
B	1 [Give-way line]	1	0.631	257.300
C	1 [Give-way line]	1	0.297	158.087
		2	0.297	158.087

Lane Movements

Arm	Lane Level	Lane	Destination arm		
			A	B	C
A	1 [Give-way line]	1	✓	✓	✓
B	1 [Give-way line]	1	✓	✓	✓
C	1 [Give-way line]	1	✓		
		2		✓	✓
	2	1	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	103.00	81.00
	B	123.00	0.00	69.00
	C	75.00	74.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.56	0.44
	B	0.64	0.00	0.36
	C	0.50	0.50	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	98.00	62.00
	B	128.00	0.00	78.00
	C	84.00	59.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.61	0.39
	B	0.62	0.00	0.38
	C	0.59	0.41	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	108.00	78.00
	B	174.00	0.00	71.00
	C	76.00	49.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.58	0.42
	B	0.71	0.00	0.29
	C	0.61	0.39	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	100.00	75.00
	B	159.00	0.00	81.00
	C	47.00	46.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.57	0.43
	B	0.66	0.00	0.34
	C	0.51	0.49	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	0
	B	3	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.030	1.000
	B	1.030	1.000	1.000
	C	1.010	1.000	1.000

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	4
	B	1	0	1
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.020	1.040
	B	1.010	1.000	1.010
	C	1.000	1.000	1.000

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	1
	B	2	0	3
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.030	1.010
	B	1.020	1.000	1.030
	C	1.000	1.000	1.000

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	8	1
	B	4	0	0
	C	2	2	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.080	1.010
	B	1.040	1.000	1.000
	C	1.020	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A	184.00	184.00
	B	192.00	192.00
	C	149.00	149.00
08:15-08:30	A	160.00	160.00
	B	206.00	206.00
	C	143.00	143.00
08:30-08:45	A	186.00	186.00
	B	245.00	245.00
	C	125.00	125.00
08:45-09:00	A	175.00	175.00
	B	240.00	240.00
	C	93.00	93.00

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	7.46	1.6	A	176.05	704.20
B	124.10	39.9	F	222.80	891.20
C	22.76	3.5	C	127.90	511.61

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	182.40	182.40	74.34	183.27	198.78	0.0	1.6	7.464	A
B	194.68	194.68	80.04	192.99	177.57	0.0	5.6	19.836	C
C	150.00	150.00	123.89	149.31	149.14	0.0	3.5	17.982	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	162.56	162.56	58.60	163.52	210.80	1.6	1.0	6.460	A
B	204.06	204.06	63.74	203.34	158.38	5.6	6.6	27.782	D
C	143.41	143.41	126.08	143.31	141.03	3.5	3.5	20.657	C

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	185.64	185.64	49.06	185.04	239.61	1.0	1.3	7.046	A
B	248.86	248.86	77.74	229.88	156.33	6.6	27.0	73.500	F
C	125.28	125.28	164.31	124.36	143.32	3.5	3.4	22.765	C

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	173.61	173.61	45.45	172.73	198.57	1.3	1.4	6.509	A
B	243.59	243.59	73.10	228.12	145.09	27.0	39.9	124.103	F
C	92.92	92.92	151.28	92.74	149.95	3.4	1.5	14.390	B

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	182.40	296.98	0.614	183.27	0.0	1.6	7.464	A
	Exit	1	1		198.78			198.78	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	194.68	227.49	0.856	192.99	0.0	5.6	19.836	C
	Exit	1	1		177.57			177.57	0.0	0.0	0.000	A
C	Entry	1	1	A	75.09	121.35	0.619	74.97	0.0	1.6	17.286	C
			2	B, C	74.76	121.35	0.616	74.34	0.0	1.7	17.408	C
		2	1	(A, B, C)	150.00			149.83	0.0	0.1	0.614	A
	Exit	1	1		149.14			149.14	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	162.56	310.91	0.523	163.52	1.6	1.0	6.460	A
	Exit	1	1		210.80			210.80	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	204.06	238.80	0.855	203.34	5.6	6.6	27.782	D
	Exit	1	1		158.38			158.38	0.0	0.0	0.000	A
C	Entry	1	1	A	85.19	120.70	0.706	84.71	1.6	2.4	22.847	C
			2	B, C	58.27	120.70	0.483	58.60	1.7	0.9	15.303	C
		2	1	(A, B, C)	143.41			143.46	0.1	0.2	0.871	A
	Exit	1	1		141.03			141.03	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	185.64	319.36	0.581	185.04	1.0	1.3	7.046	A
	Exit	1	1		239.61			239.61	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	248.86	229.08	1.086	229.88	6.6	27.0	73.500	F
	Exit	1	1		156.33			156.33	0.0	0.0	0.000	A
C	Entry	1	1	A	75.96	109.36	0.695	75.30	2.4	2.3	25.135	D
			2	B, C	48.95	109.36	0.448	49.06	0.9	0.8	14.980	B
		2	1	(A, B, C)	125.28			124.91	0.2	0.3	1.550	A
	Exit	1	1		143.32			143.32	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	173.61	322.55	0.538	172.73	1.3	1.4	6.509	A
	Exit	1	1		198.57			198.57	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	243.59	232.30	1.049	228.12	27.0	39.9	124.103	F
	Exit	1	1		145.09			145.09	0.0	0.0	0.000	A
C	Entry	1	1	A	47.40	113.22	0.419	47.29	2.3	0.8	14.957	B
			2	B, C	45.53	113.22	0.402	45.45	0.8	0.8	13.759	B
		2	1	(A, B, C)	92.92			92.92	0.3	0.0	0.158	A
	Exit	1	1		149.95			149.95	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	159.70	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	108.00	82.00
	B	150.00	0.00	75.00
	C	77.00	76.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.57	0.43
	B	0.67	0.00	0.33
	C	0.50	0.50	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	103.00	62.00
	B	154.00	0.00	84.00
	C	86.00	60.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.62	0.38
	B	0.65	0.00	0.35
	C	0.59	0.41	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	113.00	78.00
	B	203.00	0.00	78.00
	C	79.00	51.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.59	0.41
	B	0.72	0.00	0.28
	C	0.61	0.39	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	105.00	75.00
	B	186.00	0.00	87.00
	C	49.00	48.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.58	0.42
	B	0.68	0.00	0.32
	C	0.51	0.49	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	0
	B	3	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.030	1.000
	B	1.030	1.000	1.000
	C	1.010	1.000	1.000

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	4
	B	1	0	1
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.020	1.040
	B	1.010	1.000	1.010
	C	1.000	1.000	1.000

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	1
	B	2	0	3
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.030	1.010
	B	1.020	1.000	1.030
	C	1.000	1.000	1.000

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	8	1
	B	4	0	0
	C	2	2	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.080	1.010
	B	1.040	1.000	1.000
	C	1.020	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A	190.00	190.00
	B	225.00	225.00
	C	153.00	153.00
08:15-08:30	A	165.00	165.00
	B	238.00	238.00
	C	146.00	146.00
08:30-08:45	A	191.00	191.00
	B	281.00	281.00
	C	130.00	130.00
08:45-09:00	A	180.00	180.00
	B	273.00	273.00
	C	97.00	97.00

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	7.69	1.7	A	182.80	731.20
B	336.33	120.3	F	254.42	1017.68
C	28.86	4.8	D	131.10	524.38

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	190.28	190.28	75.88	190.76	219.47	0.0	1.7	7.693	A
B	222.05	222.05	82.15	213.95	184.49	0.0	15.3	41.268	E
C	152.41	152.41	143.09	152.23	153.00	0.0	4.2	20.494	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	167.43	167.43	60.72	167.23	235.96	1.7	1.2	6.736	A
B	237.55	237.55	62.45	231.97	165.49	15.3	23.3	80.887	F
C	146.69	146.69	149.47	147.21	144.92	4.2	4.8	28.859	D

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	194.33	194.33	50.33	194.08	245.71	1.2	1.6	7.431	A
B	282.19	282.19	78.72	230.19	165.69	23.3	76.2	197.981	F
C	128.79	128.79	167.52	128.51	141.39	4.8	3.7	25.938	D

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	179.16	179.16	48.04	179.27	204.64	1.6	1.4	6.731	A
B	275.89	275.89	76.13	230.95	151.13	76.2	120.3	336.327	F
C	96.49	96.49	156.21	96.47	150.87	3.7	1.7	15.818	C

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	190.28	295.61	0.644	190.76	0.0	1.7	7.693	A
	Exit	1	1		219.47			219.47	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	222.05	226.03	0.982	213.95	0.0	15.3	41.268	E
	Exit	1	1		184.49			184.49	0.0	0.0	0.000	A
C	Entry	1	1	A	76.23	115.65	0.659	76.36	0.0	2.1	19.959	C
			2	B, C	76.08	115.65	0.658	75.88	0.0	1.9	18.732	C
		2	1	(A, B, C)	152.41			152.29	0.0	0.3	1.095	A
	Exit	1	1		153.00			153.00	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	167.43	309.03	0.542	167.23	1.7	1.2	6.736	A
	Exit	1	1		235.96			235.96	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	237.55	239.69	0.991	231.97	15.3	23.3	80.887	F
	Exit	1	1		165.49			165.49	0.0	0.0	0.000	A
C	Entry	1	1	A	85.88	113.76	0.755	86.49	2.1	2.8	29.572	D
			2	B, C	60.44	113.76	0.531	60.72	1.9	1.3	17.572	C
		2	1	(A, B, C)	146.69			146.32	0.3	0.7	4.159	A
	Exit	1	1		144.92			144.92	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	194.33	318.23	0.611	194.08	1.2	1.6	7.431	A
	Exit	1	1		245.71			245.71	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	282.19	228.40	1.235	230.19	23.3	76.2	197.981	F
	Exit	1	1		165.69			165.69	0.0	0.0	0.000	A
C	Entry	1	1	A	78.51	108.41	0.724	78.17	2.8	2.6	28.945	D
			2	B, C	50.51	108.41	0.466	50.33	1.3	0.8	15.959	C
		2	1	(A, B, C)	128.79			129.01	0.7	0.3	2.114	A
	Exit	1	1		141.39			141.39	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	179.16	320.26	0.559	179.27	1.6	1.4	6.731	A
	Exit	1	1		204.64			204.64	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	275.89	230.20	1.199	230.95	76.2	120.3	336.327	F
	Exit	1	1		151.13			151.13	0.0	0.0	0.000	A
C	Entry	1	1	A	48.59	111.76	0.435	48.43	2.6	0.9	16.550	C
			2	B, C	47.91	111.76	0.429	48.04	0.8	0.8	14.866	B
		2	1	(A, B, C)	96.49			96.49	0.3	0.0	0.185	A
	Exit	1	1		150.87			150.87	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	258.77	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	118.00	83.00
	B	172.00	0.00	79.00
	C	79.00	77.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.59	0.41
	B	0.69	0.00	0.31
	C	0.51	0.49	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	112.00	63.00
	B	175.00	0.00	88.00
	C	88.00	62.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.64	0.36
	B	0.67	0.00	0.33
	C	0.59	0.41	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	124.00	79.00
	B	227.00	0.00	82.00
	C	81.00	53.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.61	0.39
	B	0.73	0.00	0.27
	C	0.60	0.40	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	115.00	76.00
	B	208.00	0.00	91.00
	C	51.00	49.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.60	0.40
	B	0.70	0.00	0.30
	C	0.51	0.49	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	0
	B	3	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.030	1.000
	B	1.030	1.000	1.000
	C	1.010	1.000	1.000

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	4
	B	1	0	1
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.020	1.040
	B	1.010	1.000	1.010
	C	1.000	1.000	1.000

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	1
	B	2	0	3
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.030	1.010
	B	1.020	1.000	1.030
	C	1.000	1.000	1.000

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	8	1
	B	4	0	0
	C	2	2	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.080	1.010
	B	1.040	1.000	1.000
	C	1.020	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A	201.00	201.00
	B	251.00	251.00
	C	156.00	156.00
08:15-08:30	A	175.00	175.00
	B	263.00	263.00
	C	150.00	150.00
08:30-08:45	A	203.00	203.00
	B	309.00	309.00
	C	134.00	134.00
08:45-09:00	A	191.00	191.00
	B	299.00	299.00
	C	100.00	100.00

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	8.70	2.1	A	192.72	770.86
B	542.92	205.3	F	279.08	1116.32
C	28.11	5.2	D	134.85	539.42

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	200.37	200.37	75.78	200.39	229.84	0.0	2.1	8.701	A
B	249.32	249.32	82.00	222.94	194.19	0.0	31.1	68.735	F
C	156.22	156.22	151.33	154.29	153.61	0.0	4.8	21.998	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	175.06	175.06	61.65	174.96	243.99	2.1	1.3	7.384	A
B	263.41	263.41	62.16	239.30	174.49	31.1	57.8	175.699	F
C	149.65	149.65	157.81	147.82	143.63	4.8	5.2	28.114	D

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	202.66	202.66	52.70	203.06	248.77	1.3	1.8	8.257	A
B	304.20	304.20	78.68	230.04	177.09	57.8	134.2	378.627	F
C	134.89	134.89	168.18	133.29	140.53	5.2	4.4	27.481	D

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	192.77	192.77	48.24	192.52	207.87	1.8	1.7	7.612	A
B	299.39	299.39	76.90	226.14	163.85	134.2	205.3	542.916	F
C	98.67	98.67	157.29	98.83	145.76	4.4	1.8	16.672	C

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	200.37	295.70	0.678	200.39	0.0	2.1	8.701	A
	Exit	1	1		229.84			229.84	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	249.32	226.13	1.103	222.94	0.0	31.1	68.735	F
	Exit	1	1		194.19			194.19	0.0	0.0	0.000	A
C	Entry	1	1	A	79.23	113.21	0.700	78.50	0.0	2.3	20.957	C
			2	B, C	76.63	113.21	0.677	75.78	0.0	2.1	20.351	C
		2	1	(A, B, C)	156.22			155.86	0.0	0.4	1.289	A
	Exit	1	1		153.61			153.61	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	175.06	308.21	0.568	174.96	2.1	1.3	7.384	A
	Exit	1	1		243.99			243.99	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	263.41	239.89	1.098	239.30	31.1	57.8	175.699	F
	Exit	1	1		174.49			174.49	0.0	0.0	0.000	A
C	Entry	1	1	A	87.25	111.29	0.784	86.18	2.3	3.2	29.077	D
			2	B, C	60.87	111.29	0.547	61.65	2.1	1.1	18.940	C
		2	1	(A, B, C)	149.65			148.13	0.4	0.9	3.175	A
	Exit	1	1		143.63			143.63	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	202.66	316.14	0.641	203.06	1.3	1.8	8.257	A
	Exit	1	1		248.77			248.77	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	304.20	228.44	1.332	230.04	57.8	134.2	378.627	F
	Exit	1	1		177.09			177.09	0.0	0.0	0.000	A
C	Entry	1	1	A	81.34	108.21	0.752	80.59	3.2	2.8	29.575	D
			2	B, C	52.92	108.21	0.489	52.70	1.1	1.0	16.005	C
		2	1	(A, B, C)	134.89			134.27	0.9	0.6	3.260	A
	Exit	1	1		140.53			140.53	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	192.77	320.08	0.602	192.52	1.8	1.7	7.612	A
	Exit	1	1		207.87			207.87	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	299.39	229.66	1.304	226.14	134.2	205.3	542.916	F
	Exit	1	1		163.85			163.85	0.0	0.0	0.000	A
C	Entry	1	1	A	50.61	111.44	0.454	50.58	2.8	0.9	17.169	C
			2	B, C	48.10	111.44	0.432	48.24	1.0	0.9	15.553	C
		2	1	(A, B, C)	98.67			98.71	0.6	0.0	0.496	A
	Exit	1	1		145.76			145.76	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_07_J9_LSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 24/10/2018 17:42:38

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Lane Simulation] - 2017 Baseline			
Arm A	1.5	8.50		A
Arm B	6.2	21.76		C
Arm C	13.7	48.94		E
	A1 [Lane Simulation] - 2033 Reference Case			
Arm A	1.8	9.46		A
Arm B	9.8	30.62		D
Arm C	18.7	66.50		F
	A1 [Lane Simulation] - 2033 Local Plan Growth			
Arm A	2.8	11.77		B
Arm B	18.4	56.12		F
Arm C	33.0	100.88		F

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

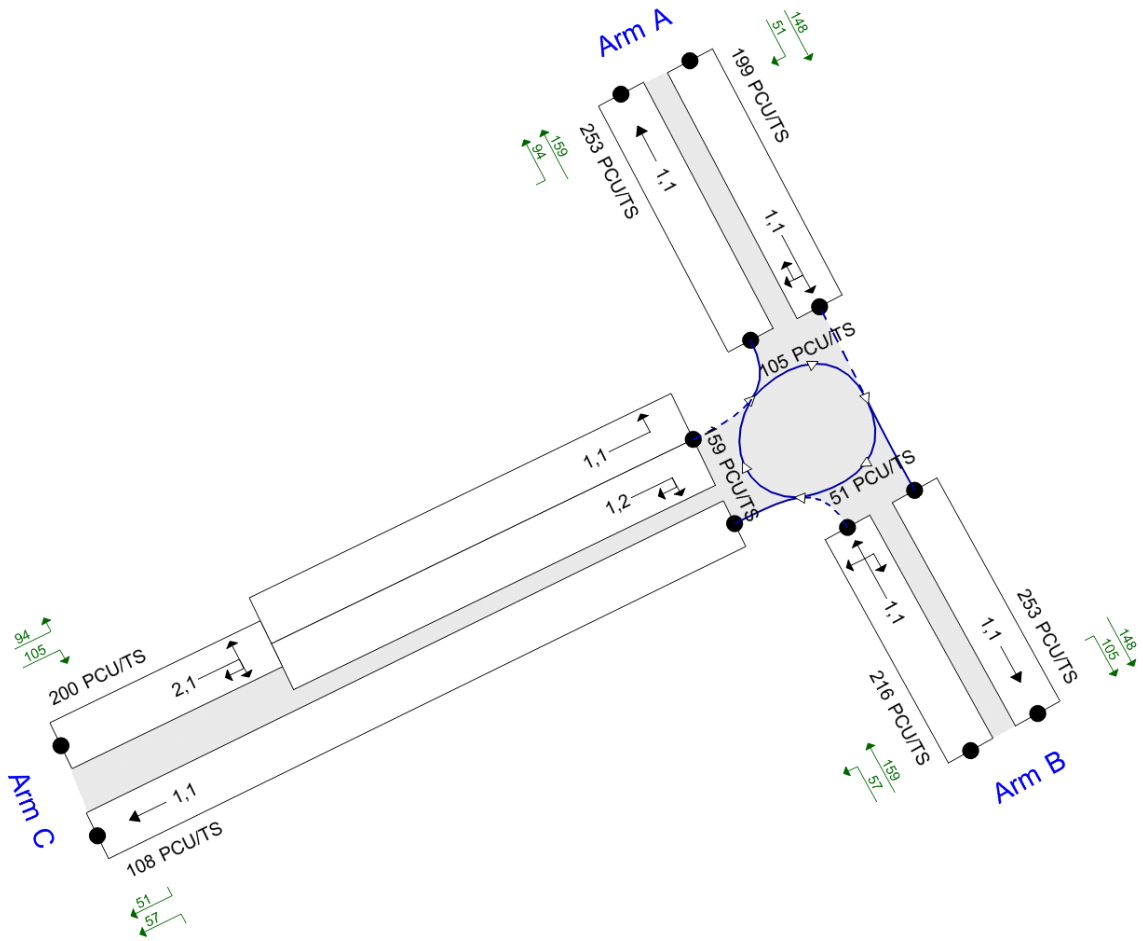
File summary

File Description

Title	A128 Ingrave Road / B186 Queens Road
Location	Brentwood
Site number	07
Date	14/07/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Lane simulation visualisation time: 17:00:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	209281395	310	26.21

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓
D7	2033 Local Plan Growth with Peak Spreading	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	✓	D2,D4,D6	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	28.68	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Ingrave Road N	
B	Ingrave Road S	
C	Queens Road	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	3.00	3.00	5.00	10.0	18.82	19.60	0.0	
B	3.50	3.50	4.20	9.2	13.53	6.90	0.0	
C	2.70	2.70	7.00	45.0	10.73	6.70	0.0	✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.885	362.787
B	0.631	257.300
C	0.593	316.174

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
C	Percentage		115.00

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/TS)	Maximum capacity (PCU/TS)
A	1 [Give-way line]	1	A, B, C		Infinity	0.00	24999.75
B	1 [Give-way line]	1	A, B, C		Infinity	0.00	24999.75
C	1 [Give-way line]	1	A	✓	8.00	0.00	24999.75
		2	B, C	✓	8.00	0.00	24999.75
	2	1	(A, B, C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/TS)
A	1 [Give-way line]	1	0.885	362.787
B	1 [Give-way line]	1	0.631	257.300
C	1 [Give-way line]	1	0.297	158.087
		2	0.297	158.087

Lane Movements

Arm	Lane Level	Lane	Destination arm		
			A	B	C
A	1 [Give-way line]	1	✓	✓	✓
B	1 [Give-way line]	1	✓	✓	✓
C	1 [Give-way line]	1	✓		
		2		✓	✓
	2	1	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	118.00	45.00
	B	142.00	0.00	56.00
	C	92.00	105.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.72	0.28
	B	0.72	0.00	0.28
	C	0.47	0.53	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	92.00	31.00
	B	118.00	0.00	57.00
	C	83.00	128.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.75	0.25
	B	0.67	0.00	0.33
	C	0.39	0.61	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	114.00	28.00
	B	132.00	0.00	62.00
	C	63.00	119.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.80	0.20
	B	0.68	0.00	0.32
	C	0.35	0.65	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	108.00	42.00
	B	110.00	0.00	50.00
	C	119.00	116.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.72	0.28
	B	0.69	0.00	0.31
	C	0.51	0.49	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	2	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.030
	B	1.020	1.000	1.000
	C	1.000	1.000	1.000

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.010	1.000	1.000

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

17:45 - 18:00

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A	163.00	163.00
	B	198.00	198.00
	C	197.00	197.00
17:15-17:30	A	123.00	123.00
	B	175.00	175.00
	C	211.00	211.00
17:30-17:45	A	142.00	142.00
	B	194.00	194.00
	C	182.00	182.00
17:45-18:00	A	150.00	150.00
	B	160.00	160.00
	C	235.00	235.00

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	8.50	1.5	A	144.42	577.68
B	21.76	6.2	C	181.79	727.15
C	48.94	13.7	E	205.86	823.44

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	164.12	164.12	103.64	164.29	230.59	0.0	1.5	7.532	A
B	197.96	197.96	45.90	195.53	222.04	0.0	6.2	21.761	C
C	195.26	195.26	138.82	195.41	102.60	0.0	5.8	22.369	C

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	122.77	122.77	127.80	122.37	200.83	1.5	1.1	6.899	A
B	175.76	175.76	29.81	175.25	220.36	6.2	3.1	17.387	C
C	211.60	211.60	117.27	211.35	87.78	5.8	11.9	45.984	E

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	141.04	141.04	118.93	141.61	196.92	1.1	1.2	8.498	A
B	193.71	193.71	26.84	195.03	233.70	3.1	4.1	19.742	C
C	183.06	183.06	133.24	182.60	88.63	11.9	9.1	46.568	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	149.76	149.76	115.42	150.04	227.59	1.2	1.4	8.217	A
B	159.72	159.72	42.09	159.26	223.37	4.1	2.5	13.108	B
C	233.52	233.52	109.85	233.17	91.50	9.1	13.7	48.939	E

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	164.12	271.04	0.606	164.29	0.0	1.5	7.532	A
	Exit	1	1		230.59			230.59	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	197.96	228.35	0.867	195.53	0.0	6.2	21.761	C
	Exit	1	1		222.04			222.04	0.0	0.0	0.000	A
C	Entry	1	1	A	92.43	134.46	0.687	91.77	0.0	2.1	17.137	C
			2	B, C	103.70	134.46	0.771	103.64	0.0	2.9	21.744	C
		2	1	(A, B, C)	195.26			196.13	0.0	0.8	2.696	A
	Exit	1	1		102.60			102.60	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	122.77	249.65	0.492	122.37	1.5	1.1	6.899	A
	Exit	1	1		200.83			200.83	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	175.76	238.50	0.737	175.25	6.2	3.1	17.387	C
	Exit	1	1		220.36			220.36	0.0	0.0	0.000	A
C	Entry	1	1	A	83.83	141.81	0.591	83.55	2.1	1.6	17.519	C
			2	B, C	127.39	141.81	0.898	127.80	2.9	5.0	34.806	D
		2	1	(A, B, C)	211.60			211.22	0.8	5.3	17.715	C
	Exit	1	1		87.78			87.78	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	141.04	257.51	0.548	141.61	1.1	1.2	8.498	A
	Exit	1	1		196.92			196.92	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	193.71	240.37	0.806	195.03	3.1	4.1	19.742	C
	Exit	1	1		233.70			233.70	0.0	0.0	0.000	A
C	Entry	1	1	A	63.75	136.36	0.467	63.68	1.6	1.0	13.866	B
			2	B, C	120.15	136.36	0.881	118.93	5.0	4.7	34.500	D
		2	1	(A, B, C)	183.06			183.90	5.3	3.3	19.393	C
	Exit	1	1		88.63			88.63	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	149.76	260.61	0.575	150.04	1.2	1.4	8.217	A
	Exit	1	1		227.59			227.59	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	159.72	230.75	0.692	159.26	4.1	2.5	13.108	B
	Exit	1	1		223.37			223.37	0.0	0.0	0.000	A
C	Entry	1	1	A	117.99	144.34	0.817	117.75	1.0	3.9	27.612	D
			2	B, C	114.90	144.34	0.796	115.42	4.7	3.4	29.399	D
		2	1	(A, B, C)	233.52			232.89	3.3	6.3	20.828	C
	Exit	1	1		91.50			91.50	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	38.22	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	128.00	47.00
	B	151.00	0.00	58.00
	C	94.00	107.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.73	0.27
	B	0.72	0.00	0.28
	C	0.47	0.53	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	102.00	33.00
	B	126.00	0.00	59.00
	C	85.00	129.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.76	0.24
	B	0.68	0.00	0.32
	C	0.40	0.60	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	124.00	29.00
	B	140.00	0.00	63.00
	C	64.00	120.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.81	0.19
	B	0.69	0.00	0.31
	C	0.35	0.65	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	117.00	44.00
	B	118.00	0.00	51.00
	C	121.00	117.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.73	0.27
	B	0.70	0.00	0.30
	C	0.51	0.49	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	2	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.030
	B	1.020	1.000	1.000
	C	1.000	1.000	1.000

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.010	1.000	1.000

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

17:45 - 18:00

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A	175.00	175.00
	B	209.00	209.00
	C	201.00	201.00
17:15-17:30	A	135.00	135.00
	B	185.00	185.00
	C	214.00	214.00
17:30-17:45	A	153.00	153.00
	B	203.00	203.00
	C	184.00	184.00
17:45-18:00	A	161.00	161.00
	B	169.00	169.00
	C	238.00	238.00

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	9.46	1.8	A	155.11	620.43
B	30.62	9.8	D	192.22	768.88
C	66.50	18.7	F	209.46	837.84

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	175.71	175.71	106.26	176.11	243.06	0.0	1.8	8.316	A
B	213.15	213.15	47.45	208.56	234.92	0.0	9.8	30.619	D
C	200.75	200.75	150.65	198.68	105.38	0.0	7.8	25.581	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	132.67	132.67	126.32	132.02	210.95	1.8	1.1	7.390	A
B	186.27	186.27	32.14	186.99	226.20	9.8	3.9	24.656	C
C	216.06	216.06	127.12	210.16	92.02	7.8	16.5	57.539	F

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	151.25	151.25	121.65	151.94	204.20	1.1	1.4	9.417	A
B	201.36	201.36	29.01	200.37	244.59	3.9	5.3	23.585	C
C	184.36	184.36	139.76	186.09	89.62	16.5	12.7	66.501	F

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	160.80	160.80	115.92	160.97	237.10	1.4	1.6	9.457	A
B	168.10	168.10	43.52	167.94	233.37	5.3	2.9	16.368	C
C	236.67	236.67	117.64	235.38	93.82	12.7	18.7	64.364	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	175.71	268.72	0.654	176.11	0.0	1.8	8.316	A
	Exit	1	1		243.06			243.06	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	213.15	227.36	0.937	208.56	0.0	9.8	30.619	D
	Exit	1	1		234.92			234.92	0.0	0.0	0.000	A
C	Entry	1	1	A	92.13	130.42	0.706	92.42	0.0	2.4	19.217	C
			2	B, C	107.06	130.42	0.821	106.26	0.0	3.4	22.857	C
		2	1	(A, B, C)	200.75			199.19	0.0	2.0	4.237	A
	Exit	1	1		105.38			105.38	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	132.67	250.96	0.529	132.02	1.8	1.1	7.390	A
	Exit	1	1		210.95			210.95	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	186.27	237.02	0.786	186.99	9.8	3.9	24.656	C
	Exit	1	1		226.20			226.20	0.0	0.0	0.000	A
C	Entry	1	1	A	83.71	138.45	0.605	83.84	2.4	1.7	19.922	C
			2	B, C	126.35	138.45	0.913	126.32	3.4	5.5	37.801	E
		2	1	(A, B, C)	216.06			210.06	2.0	9.2	26.469	D
	Exit	1	1		92.02			92.02	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	151.25	255.10	0.593	151.94	1.1	1.4	9.417	A
	Exit	1	1		204.20			204.20	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	201.36	239.00	0.843	200.37	3.9	5.3	23.585	C
	Exit	1	1		244.59			244.59	0.0	0.0	0.000	A
C	Entry	1	1	A	64.19	134.14	0.479	64.44	1.7	1.0	15.746	C
			2	B, C	120.97	134.14	0.902	121.65	5.5	4.9	38.058	E
		2	1	(A, B, C)	184.36			185.16	9.2	6.8	36.331	E
	Exit	1	1		89.62			89.62	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	160.80	260.17	0.618	160.97	1.4	1.6	9.457	A
	Exit	1	1		237.10			237.10	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	168.10	229.84	0.731	167.94	5.3	2.9	16.368	C
	Exit	1	1		233.37			233.37	0.0	0.0	0.000	A
C	Entry	1	1	A	119.89	141.68	0.846	119.45	1.0	4.2	29.880	D
			2	B, C	117.09	141.68	0.826	115.92	4.9	4.1	30.749	D
		2	1	(A, B, C)	236.67			236.98	6.8	10.3	34.682	D
	Exit	1	1		93.82			93.82	0.0	0.0	0.000	A

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	58.82	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	148.00	50.00
	B	170.00	0.00	60.00
	C	95.00	107.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.75	0.25
	B	0.74	0.00	0.26
	C	0.47	0.53	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	120.00	34.00
	B	143.00	0.00	60.00
	C	85.00	129.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.78	0.22
	B	0.70	0.00	0.30
	C	0.40	0.60	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	142.00	31.00
	B	158.00	0.00	65.00
	C	65.00	120.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.82	0.18
	B	0.71	0.00	0.29
	C	0.35	0.65	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	135.00	46.00
	B	136.00	0.00	53.00
	C	122.00	118.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.75	0.25
	B	0.72	0.00	0.28
	C	0.51	0.49	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	2	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.030
	B	1.020	1.000	1.000
	C	1.000	1.000	1.000

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.010	1.000	1.000

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

17:45 - 18:00

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A	198.00	198.00
	B	230.00	230.00
	C	202.00	202.00
17:15-17:30	A	154.00	154.00
	B	203.00	203.00
	C	214.00	214.00
17:30-17:45	A	173.00	173.00
	B	223.00	223.00
	C	185.00	185.00
17:45-18:00	A	181.00	181.00
	B	189.00	189.00
	C	240.00	240.00

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	11.77	2.8	B	176.65	706.58
B	56.12	18.4	F	211.83	847.34
C	100.88	33.0	F	211.23	844.93

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	199.20	199.20	105.25	198.67	253.05	0.0	2.8	10.488	B
B	231.38	231.38	50.75	215.73	253.16	0.0	18.4	45.968	E
C	202.76	202.76	158.73	199.56	107.75	0.0	8.7	28.264	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	152.47	152.47	123.76	152.21	229.28	2.8	1.5	8.794	A
B	202.78	202.78	33.16	209.26	242.80	18.4	9.4	56.122	F
C	215.02	215.02	146.59	206.46	95.84	8.7	21.3	72.269	F

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	169.44	169.44	119.45	171.10	220.81	1.5	1.8	11.196	B
B	224.48	224.48	30.32	222.34	260.23	9.4	13.9	51.278	F
C	186.67	186.67	156.08	184.17	96.58	21.3	18.6	88.906	F

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	185.48	185.48	111.16	183.07	255.14	1.8	2.8	11.768	B
B	188.70	188.70	45.71	191.15	248.53	13.9	5.4	33.016	D
C	240.48	240.48	136.76	229.55	100.10	18.6	33.0	100.884	F

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	199.20	269.62	0.739	198.67	0.0	2.8	10.488	B
	Exit	1	1		253.05			253.05	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	231.38	225.28	1.027	215.73	0.0	18.4	45.968	E
	Exit	1	1		253.16			253.16	0.0	0.0	0.000	A
C	Entry	1	1	A	94.70	127.67	0.742	94.32	0.0	2.6	20.334	C
			2	B, C	105.69	127.67	0.828	105.25	0.0	3.9	25.463	D
		2	1	(A, B, C)	202.76			200.38	0.0	2.2	4.997	A
	Exit	1	1		107.75			107.75	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	152.47	253.23	0.602	152.21	2.8	1.5	8.794	A
	Exit	1	1		229.28			229.28	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	202.78	236.38	0.858	209.26	18.4	9.4	56.122	F
	Exit	1	1		242.80			242.80	0.0	0.0	0.000	A
C	Entry	1	1	A	83.59	131.81	0.634	82.68	2.6	2.4	22.294	C
			2	B, C	124.59	131.81	0.945	123.76	3.9	6.3	42.000	E
		2	1	(A, B, C)	215.02			208.18	2.2	12.7	37.719	E
	Exit	1	1		95.84			95.84	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	169.44	257.05	0.659	171.10	1.5	1.8	11.196	B
	Exit	1	1		220.81			220.81	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	224.48	238.17	0.942	222.34	9.4	13.9	51.278	F
	Exit	1	1		260.23			260.23	0.0	0.0	0.000	A
C	Entry	1	1	A	65.47	128.57	0.509	64.73	2.4	1.5	18.277	C
			2	B, C	118.96	128.57	0.925	119.45	6.3	6.0	44.793	E
		2	1	(A, B, C)	186.67			184.43	12.7	11.1	53.637	F
	Exit	1	1		96.58			96.58	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	A, B, C	185.48	264.38	0.702	183.07	1.8	2.8	11.768	B
	Exit	1	1		255.14			255.14	0.0	0.0	0.000	A
B	Entry	1	1	A, B, C	188.70	228.46	0.826	191.15	13.9	5.4	33.016	D
	Exit	1	1		248.53			248.53	0.0	0.0	0.000	A
C	Entry	1	1	A	118.14	135.16	0.874	118.39	1.5	5.1	34.883	D
			2	B, C	112.27	135.16	0.831	111.16	6.0	4.9	38.755	E
		2	1	(A, B, C)	240.48			230.41	11.1	23.1	65.395	F
	Exit	1	1		100.10			100.10	0.0	0.0	0.000	A

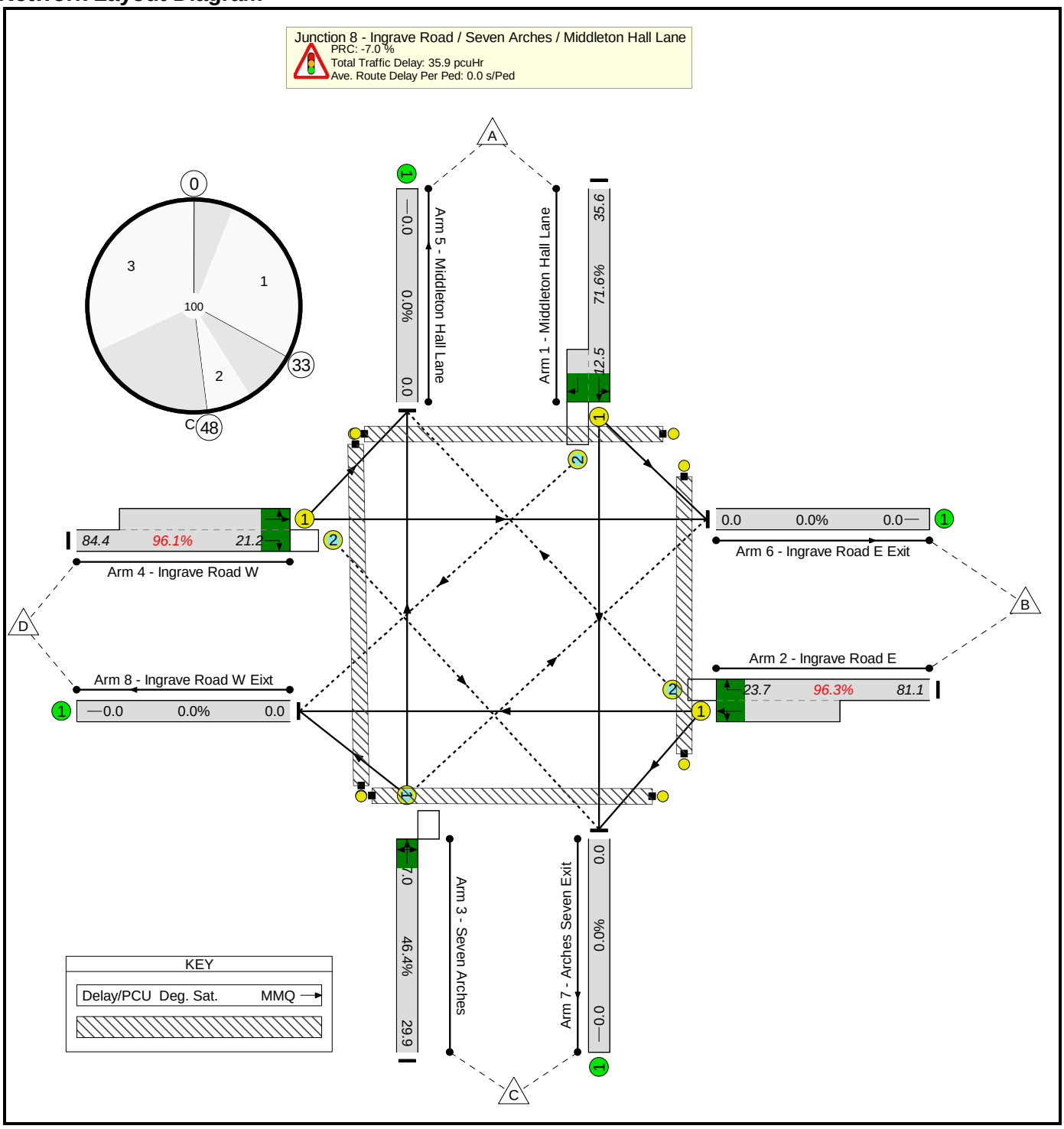
Brentwood PBA Modelling

Project and User Details

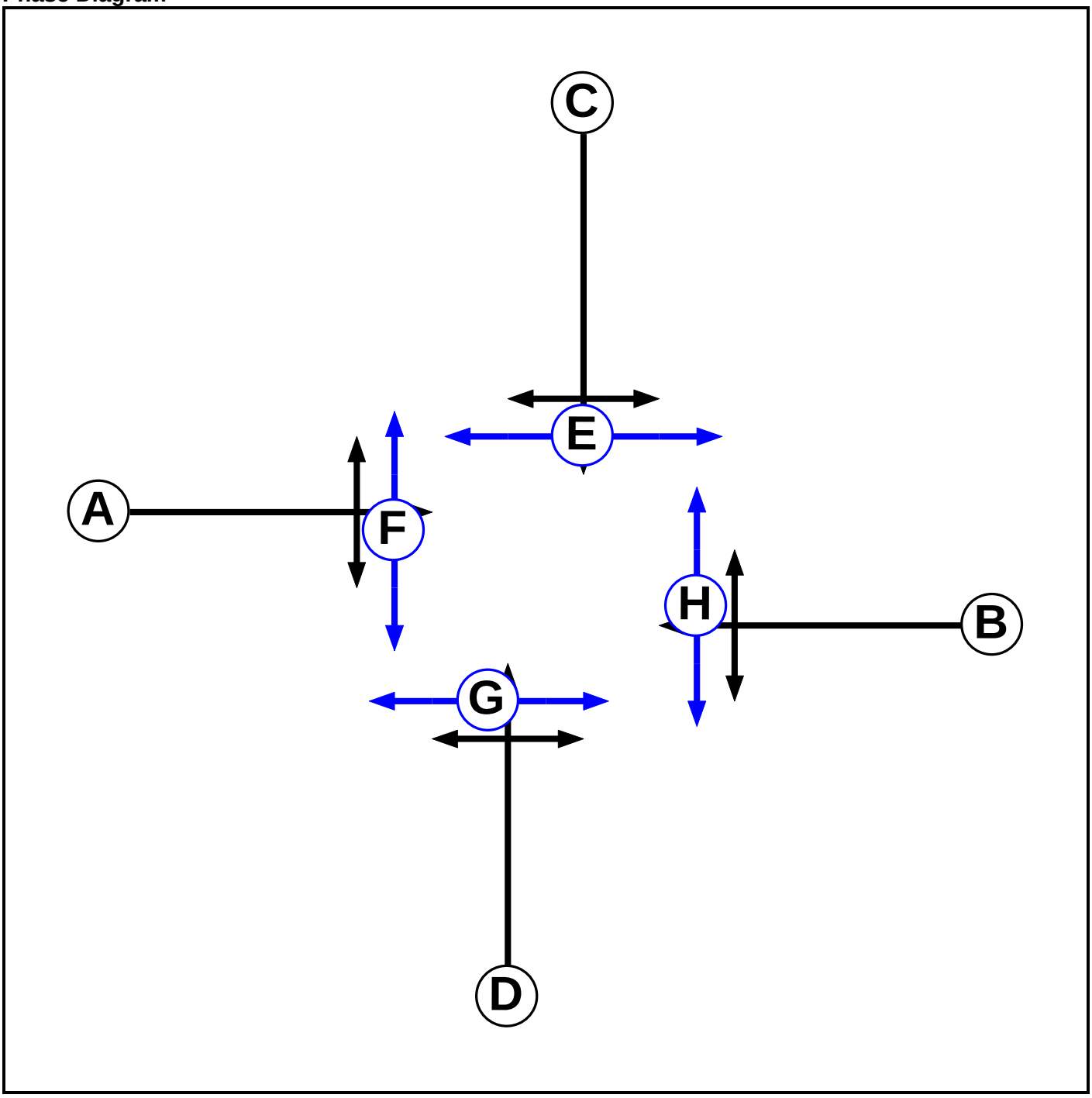
Project:	**28085 Brentwood**
Title:	**J08 - Middleton Hall Lane / Ingrave Road / Arches Seven**
Location:	Brentwood
Additional detail:	
File name:	28085_08_LS_LSM_RevA.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 3: '2017 Baseline (AM)' (FG3: '2017 Baseline (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	6	5	7	8	8	5
	B	-		6	6	8	5	8	8
	C	6	5		-	6	8	8	9
	D	5	5	-		7	9	5	7
	E	20	20	20	20		-	-	-
	F	20	20	20	20	-		-	-
	G	20	20	20	20	-	-		-
	H	20	20	20	20	-	-	-	

Lane Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Middleton Hall Lane)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf
1/2 (Middleton Hall Lane)	O	C	2	3	3.7	Geom	-	2.90	0.00	N	Arm 8 Right	25.00
2/1 (Ingrave Road E)	U	B	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 7 Left Arm 8 Ahead	14.00 Inf
2/2 (Ingrave Road E)	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Right	15.00
3/1 (Seven Arches)	O	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 16.00 11.00
4/1 (Ingrave Road W)	U	A	2	3	14.2	Geom	-	2.70	0.00	Y	Arm 5 Left Arm 6 Ahead	14.00 Inf
4/2 (Ingrave Road W)	O	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 7 Right	15.00
5/1 (Middleton Hall Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Ingrave Road E Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Arches Seven Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Ingrave Road W Eixt)	U		2	3	60.0	Inf	-	-	-	-	-	-

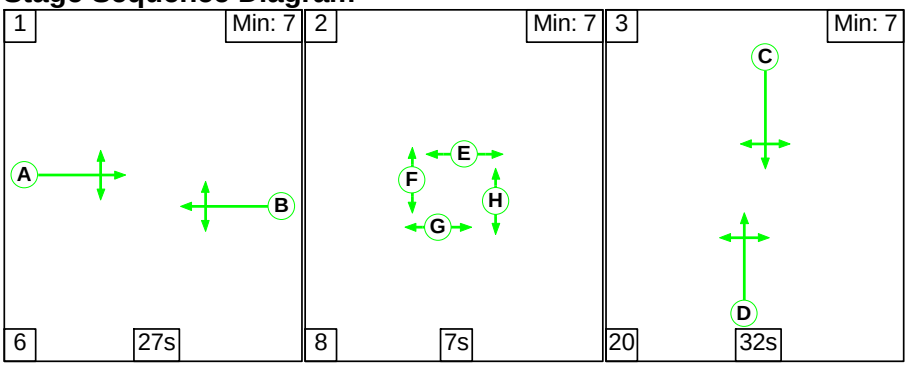
Lane Saturation Flows

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Middleton Hall Lane)	3.40	0.00	Y	Arm 6 Left	11.00	35.6 %	1864	1864
				Arm 7 Ahead	Inf	64.4 %		
1/2 (Middleton Hall Lane)	2.90	0.00	N	Arm 8 Right	25.00	100.0 %	1929	1929
2/1 (Ingrave Road E)	3.00	0.00	Y	Arm 7 Left	14.00	5.7 %	1903	1903
				Arm 8 Ahead	Inf	94.3 %		
2/2 (Ingrave Road E)	3.00	0.00	N	Arm 5 Right	15.00	100.0 %	1868	1868
3/1 (Seven Arches)	3.00	0.00	Y	Arm 5 Ahead	Inf	84.7 %	1886	1886
				Arm 6 Right	16.00	13.4 %		
				Arm 8 Left	11.00	1.9 %		
4/1 (Ingrave Road W)	2.70	0.00	Y	Arm 5 Left	14.00	34.8 %	1817	1817
				Arm 6 Ahead	Inf	65.2 %		
4/2 (Ingrave Road W)	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
5/1 (Middleton Hall Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Ingrave Road E Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Arches Seven Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Ingrave Road W Eixt Lane 1)	Infinite Saturation Flow						Inf	Inf

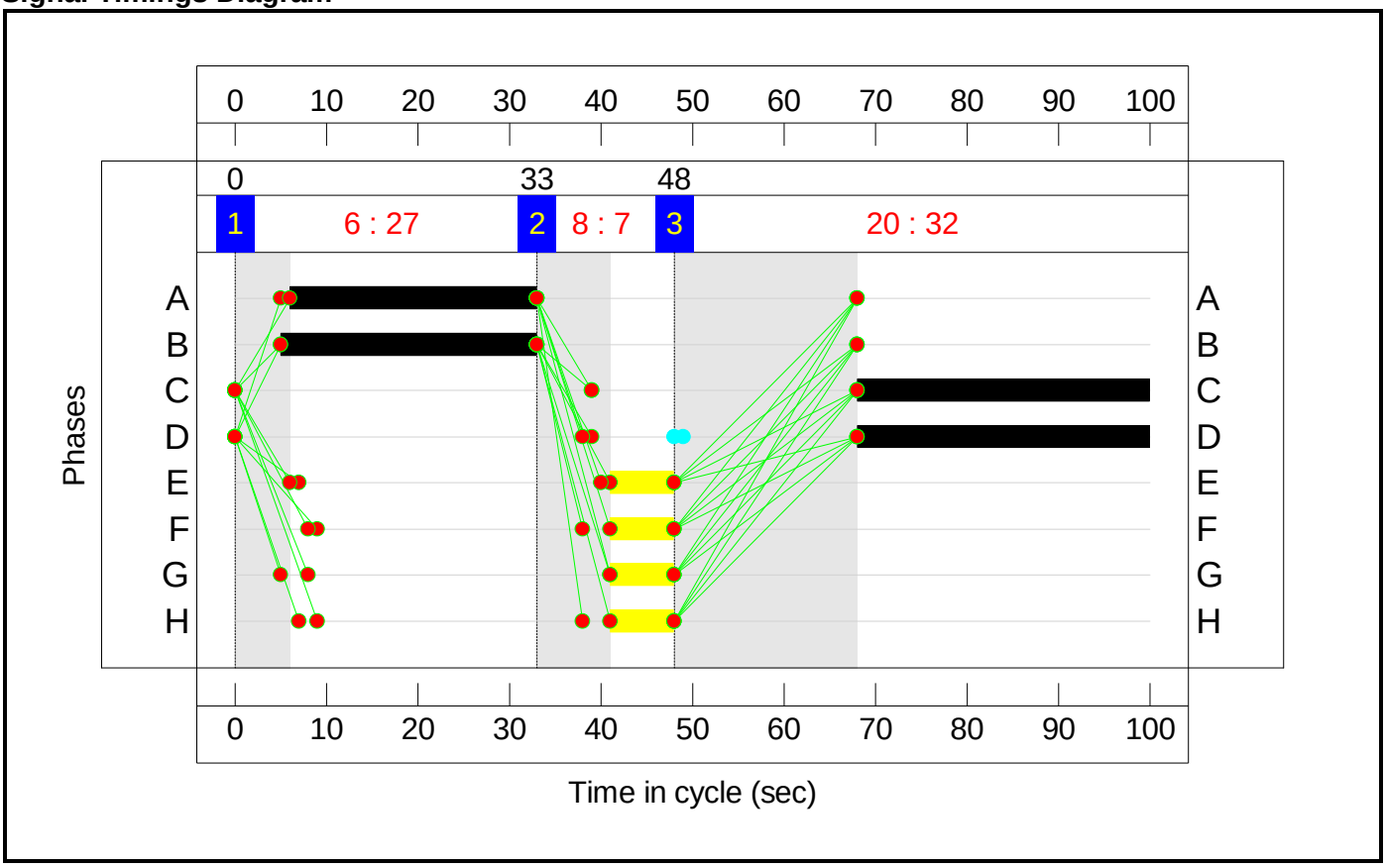
Lane Connector Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	2	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	4	35
2/1	7/1	Internal	2	35
2/1	8/1	Internal	4	35
2/2	5/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	6/1	Internal	4	35
3/1	8/1	Internal	2	35
4/1	5/1	Internal	2	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	4	35

Stage Sequence Diagram



Signal Timings Diagram



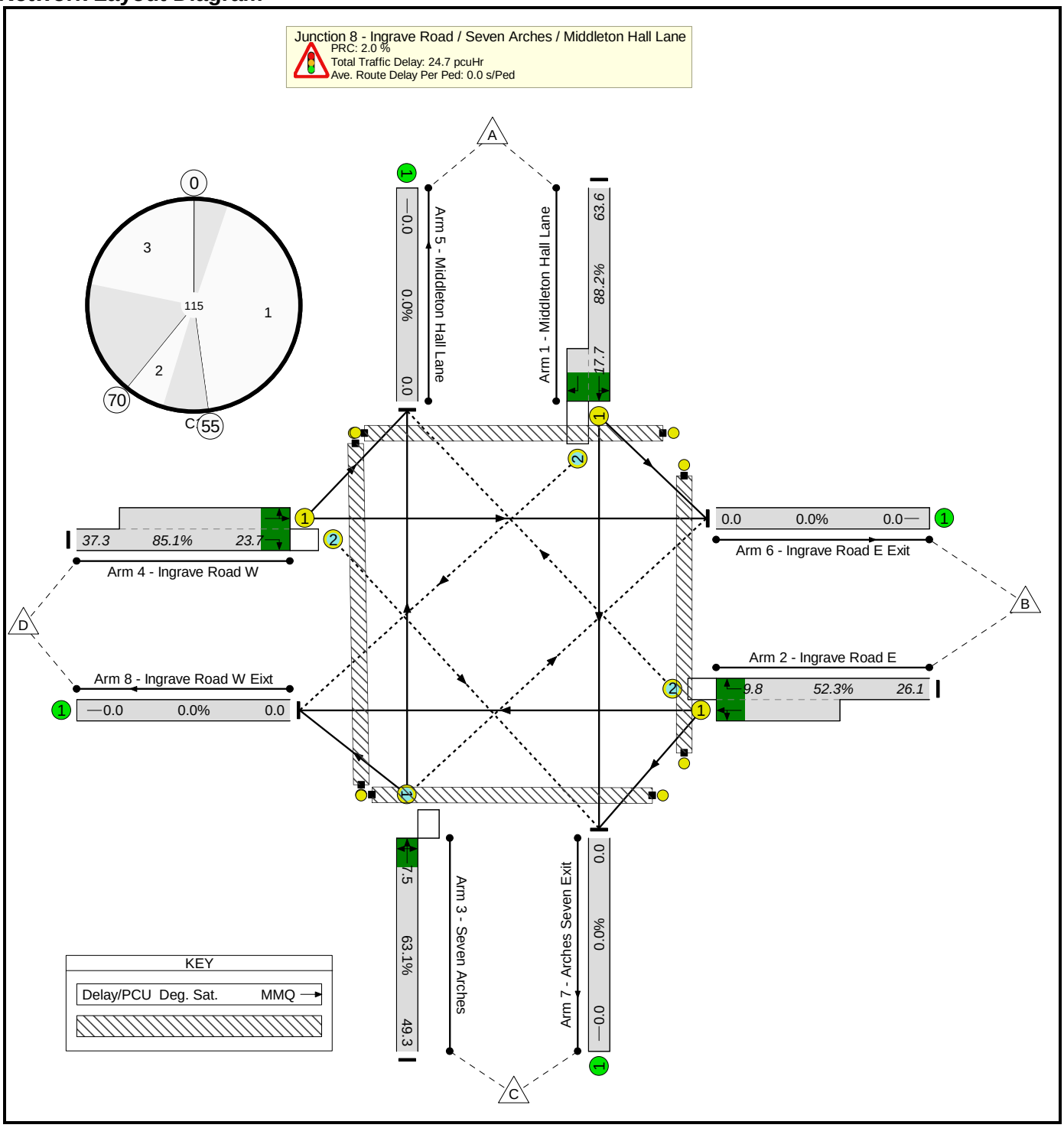
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J08 - Middleton Hall Lane / Ingrave Road / Arches Seven	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**96.3%**	**256**	**0**	**84**	**35.9**	**-**	**-**
Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**96.3%**	**256**	**0**	**84**	**35.9**	**-**	**-**
1/1+1/2	Middleton Hall Lane Left Ahead Right	U+O	C		1	32	-	540	1864:1929	754	71.6%	146	0	1	5.3	35.6	12.5
2/2+2/1	Ingrave Road E Right Left Ahead	O+U	B		1	28	-	625	1868:1903	649	96.3%	38	0	40	14.1	81.1	23.7
3/1	Seven Arches Ahead Right Left	O	D		1	32	-	320	1886	689	46.4%	43	0	0	2.7	29.9	7.0
4/2+4/1	Ingrave Road W Left Ahead Right	O+U	A		1	27	-	588	1868:1817	612	96.1%	30	0	42	13.8	84.4	21.2
Ped Link: P1	Unnamed Ped Link	-	E		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

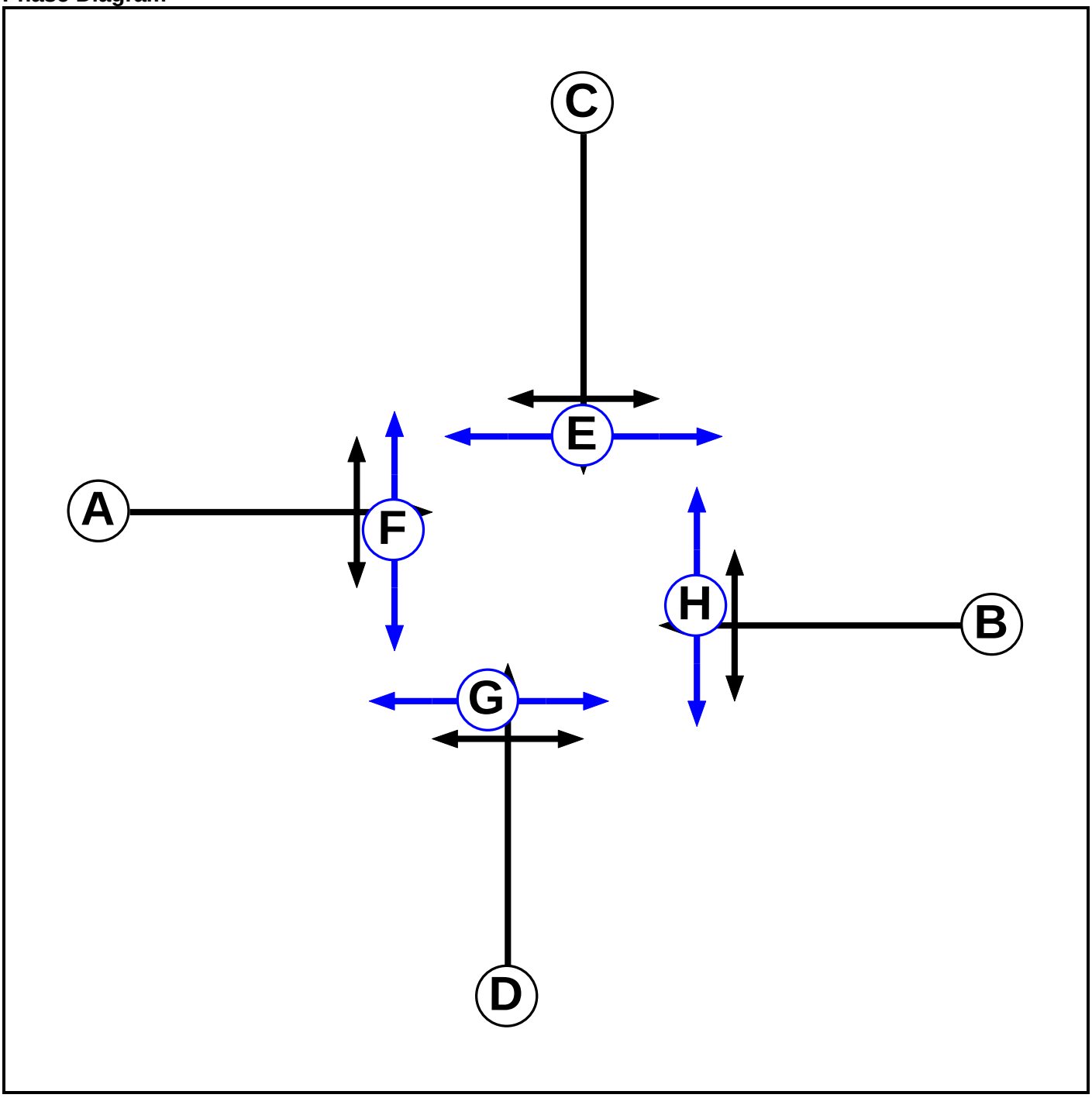
C1 PRC for Signalled Lanes (%): -7.0 Total Delay for Signalled Lanes (pcuHr): 35.85 Cycle Time (s): 100
PRC Over All Lanes (%): -7.0 Total Delay Over All Lanes(pcuHr): 35.85

Scenario 4: '2017 Baseline (PM)' (FG4: '2017 Baseline (PM)', Plan 2: 'Network Control Plan 2')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	6	5	7	8	8	5
	B	-		6	6	8	5	8	8
	C	6	5		-	6	8	8	9
	D	5	5	-		7	9	5	7
	E	20	20	20	20		-	-	-
	F	20	20	20	20	-		-	-
	G	20	20	20	20	-	-		-
	H	20	20	20	20	-	-	-	

Lane Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Middleton Hall Lane)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf
1/2 (Middleton Hall Lane)	O	C	2	3	3.7	Geom	-	2.90	0.00	N	Arm 8 Right	25.00
2/1 (Ingrave Road E)	U	B	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 7 Left Arm 8 Ahead	14.00 Inf
2/2 (Ingrave Road E)	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Right	15.00
3/1 (Seven Arches)	O	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 16.00 11.00
4/1 (Ingrave Road W)	U	A	2	3	14.2	Geom	-	2.70	0.00	Y	Arm 5 Left Arm 6 Ahead	14.00 Inf
4/2 (Ingrave Road W)	O	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 7 Right	15.00
5/1 (Middleton Hall Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Ingrave Road E Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Arches Seven Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Ingrave Road W Eixt)	U		2	3	60.0	Inf	-	-	-	-	-	-

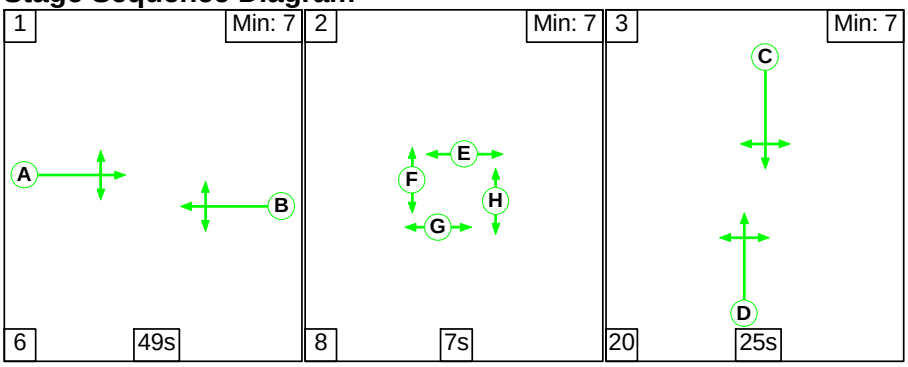
Lane Saturation Flows

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Middleton Hall Lane)	3.40	0.00	Y	Arm 6 Left	11.00	49.8 %	1831	1831
				Arm 7 Ahead	Inf	50.2 %		
1/2 (Middleton Hall Lane)	2.90	0.00	N	Arm 8 Right	25.00	100.0 %	1929	1929
2/1 (Ingrave Road E)	3.00	0.00	Y	Arm 7 Left	14.00	5.8 %	1903	1903
				Arm 8 Ahead	Inf	94.2 %		
2/2 (Ingrave Road E)	3.00	0.00	N	Arm 5 Right	15.00	100.0 %	1868	1868
3/1 (Seven Arches)	3.00	0.00	Y	Arm 5 Ahead	Inf	82.3 %	1883	1883
				Arm 6 Right	16.00	16.9 %		
				Arm 8 Left	11.00	0.8 %		
4/1 (Ingrave Road W)	2.70	0.00	Y	Arm 5 Left	14.00	17.5 %	1850	1850
				Arm 6 Ahead	Inf	82.5 %		
4/2 (Ingrave Road W)	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
5/1 (Middleton Hall Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Ingrave Road E Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Arches Seven Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Ingrave Road W Eixt Lane 1)	Infinite Saturation Flow						Inf	Inf

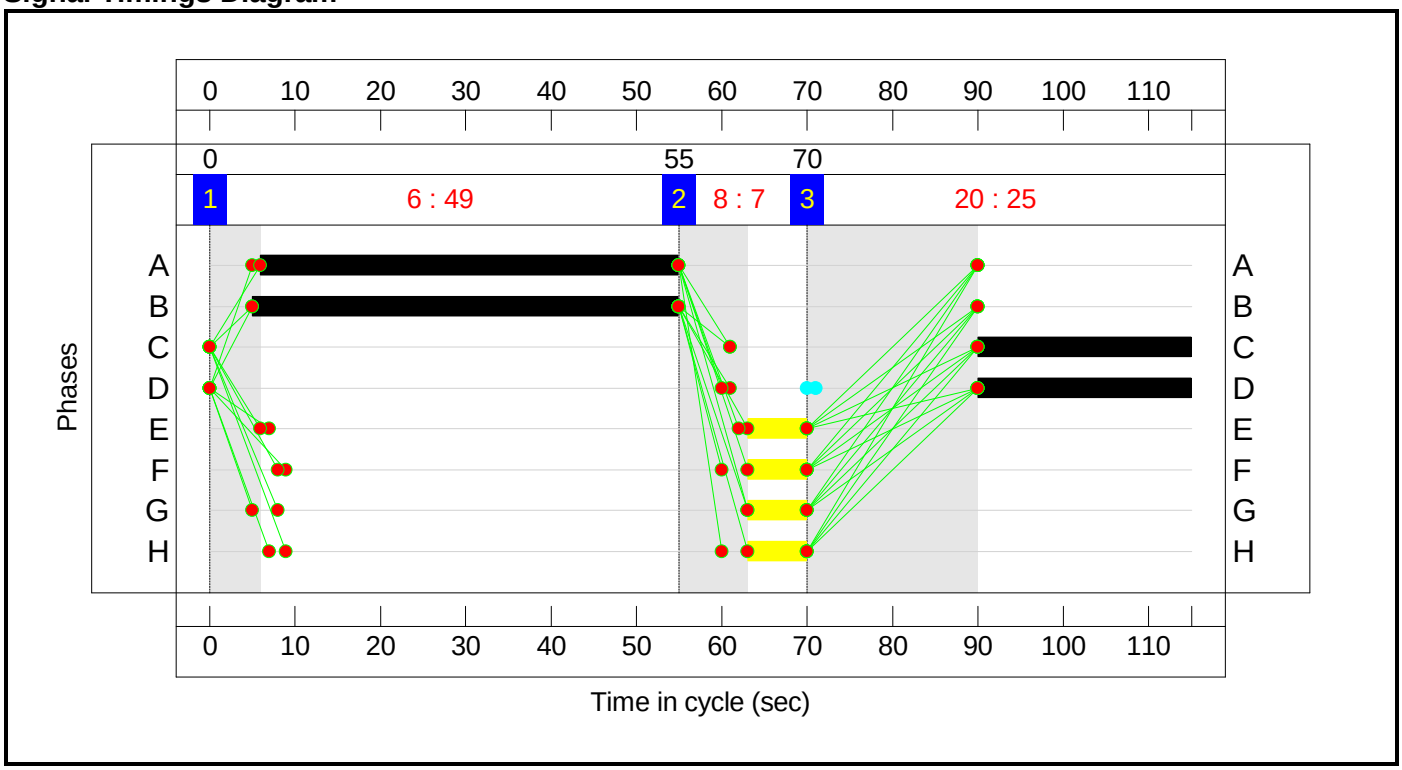
Lane Connector Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	2	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	4	35
2/1	7/1	Internal	2	35
2/1	8/1	Internal	4	35
2/2	5/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	6/1	Internal	4	35
3/1	8/1	Internal	2	35
4/1	5/1	Internal	2	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	4	35

Stage Sequence Diagram



Signal Timings Diagram



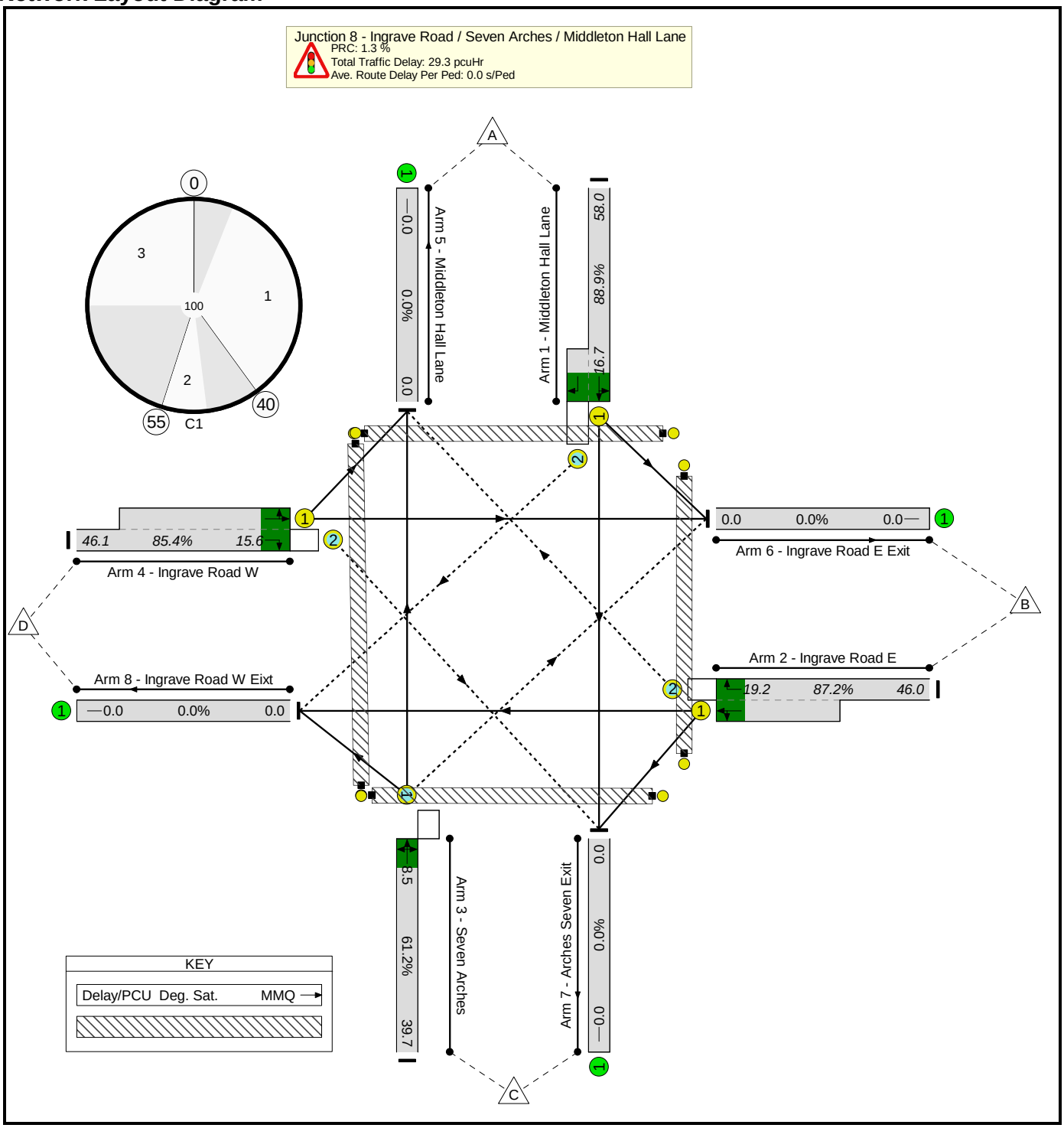
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J08 - Middleton Hall Lane / Ingrave Road / Arches Seven	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.2%**	**305**	**0**	**1**	**24.7**	**-**	**-**
Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.2%**	**305**	**0**	**1**	**24.7**	**-**	**-**
1/1+1/2	Middleton Hall Lane Left Ahead Right	U+O	C		1	25	-	498	1831:1929	565	88.2%	89	0	1	8.8	63.6	17.7
2/2+2/1	Ingrave Road E Right Left Ahead	O+U	B		1	50	-	530	1868:1903	1014	52.3%	82	0	0	3.8	26.1	9.8
3/1	Seven Arches Ahead Right Left	O	D		1	25	-	254	1883	403	63.1%	43	0	0	3.5	49.3	7.5
4/2+4/1	Ingrave Road W Left Ahead Right	O+U	A		1	49	-	833	1868:1850	979	85.1%	91	0	0	8.6	37.3	23.7
Ped Link: P1	Unnamed Ped Link	-	E		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

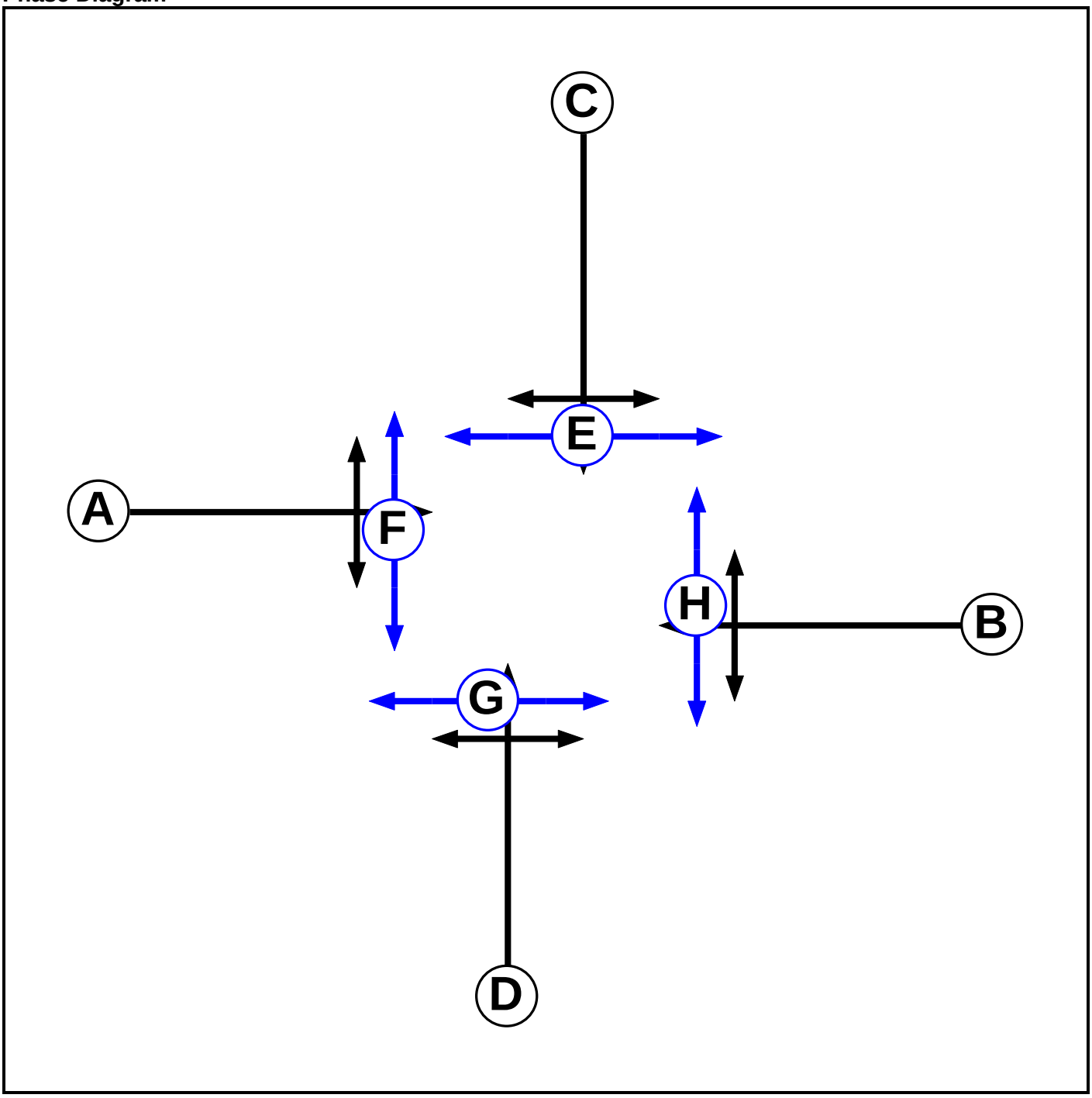
C1 PRC for Signalled Lanes (%): 2.0 Total Delay for Signalled Lanes (pcuHr): 24.74 Cycle Time (s): 115
PRC Over All Lanes (%): 2.0 Total Delay Over All Lanes(pcuHr): 24.74

Scenario 5: '2033 Reference (AM)' (FG5: '2033 Reference (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	6	5	7	8	8	5
	B	-		6	6	8	5	8	8
	C	6	5		-	6	8	8	9
	D	5	5	-		7	9	5	7
	E	20	20	20	20		-	-	-
	F	20	20	20	20	-		-	-
	G	20	20	20	20	-	-		-
	H	20	20	20	20	-	-	-	

Lane Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Middleton Hall Lane)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf
1/2 (Middleton Hall Lane)	O	C	2	3	3.7	Geom	-	2.90	0.00	N	Arm 8 Right	25.00
2/1 (Ingrave Road E)	U	B	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 7 Left Arm 8 Ahead	14.00 Inf
2/2 (Ingrave Road E)	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Right	15.00
3/1 (Seven Arches)	O	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 16.00 11.00
4/1 (Ingrave Road W)	U	A	2	3	14.2	Geom	-	2.70	0.00	Y	Arm 5 Left Arm 6 Ahead	14.00 Inf
4/2 (Ingrave Road W)	O	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 7 Right	15.00
5/1 (Middleton Hall Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Ingrave Road E Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Arches Seven Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Ingrave Road W Eixt)	U		2	3	60.0	Inf	-	-	-	-	-	-

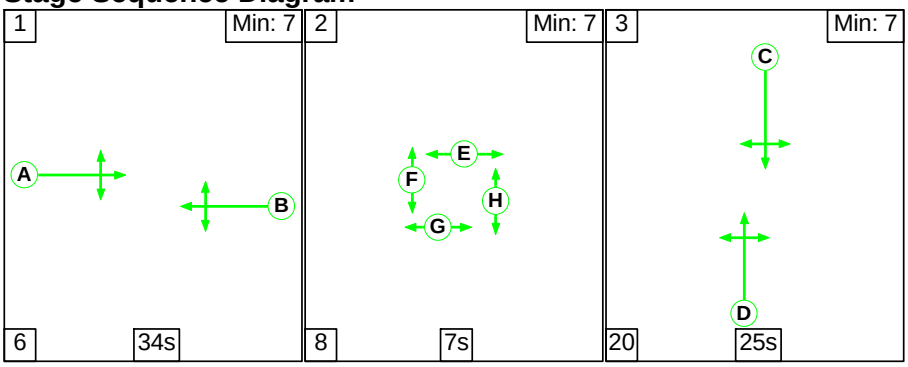
Lane Saturation Flows

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Middleton Hall Lane)	3.40	0.00	Y	Arm 6 Left	11.00	35.2 %	1866	1866
				Arm 7 Ahead	Inf	64.8 %		
1/2 (Middleton Hall Lane)	2.90	0.00	N	Arm 8 Right	25.00	100.0 %	1929	1929
2/1 (Ingrave Road E)	3.00	0.00	Y	Arm 7 Left	14.00	5.4 %	1904	1904
				Arm 8 Ahead	Inf	94.6 %		
2/2 (Ingrave Road E)	3.00	0.00	N	Arm 5 Right	15.00	100.0 %	1868	1868
3/1 (Seven Arches)	3.00	0.00	Y	Arm 5 Ahead	Inf	85.0 %	1887	1887
				Arm 6 Right	16.00	13.2 %		
				Arm 8 Left	11.00	1.8 %		
4/1 (Ingrave Road W)	2.70	0.00	Y	Arm 5 Left	14.00	33.9 %	1819	1819
				Arm 6 Ahead	Inf	66.1 %		
4/2 (Ingrave Road W)	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
5/1 (Middleton Hall Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Ingrave Road E Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Arches Seven Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Ingrave Road W Eixt Lane 1)	Infinite Saturation Flow						Inf	Inf

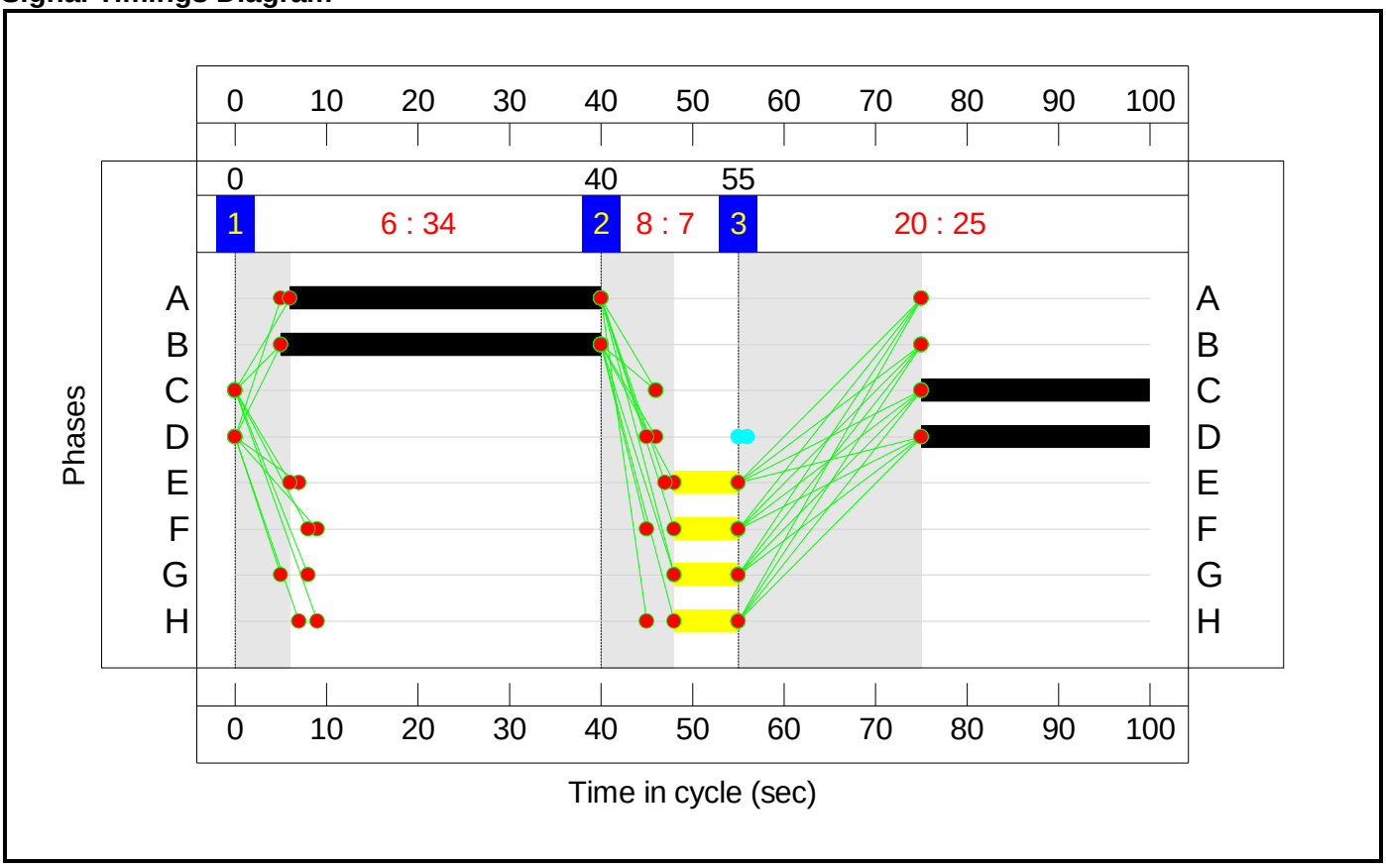
Lane Connector Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	2	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	4	35
2/1	7/1	Internal	2	35
2/1	8/1	Internal	4	35
2/2	5/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	6/1	Internal	4	35
3/1	8/1	Internal	2	35
4/1	5/1	Internal	2	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	4	35

Stage Sequence Diagram



Signal Timings Diagram



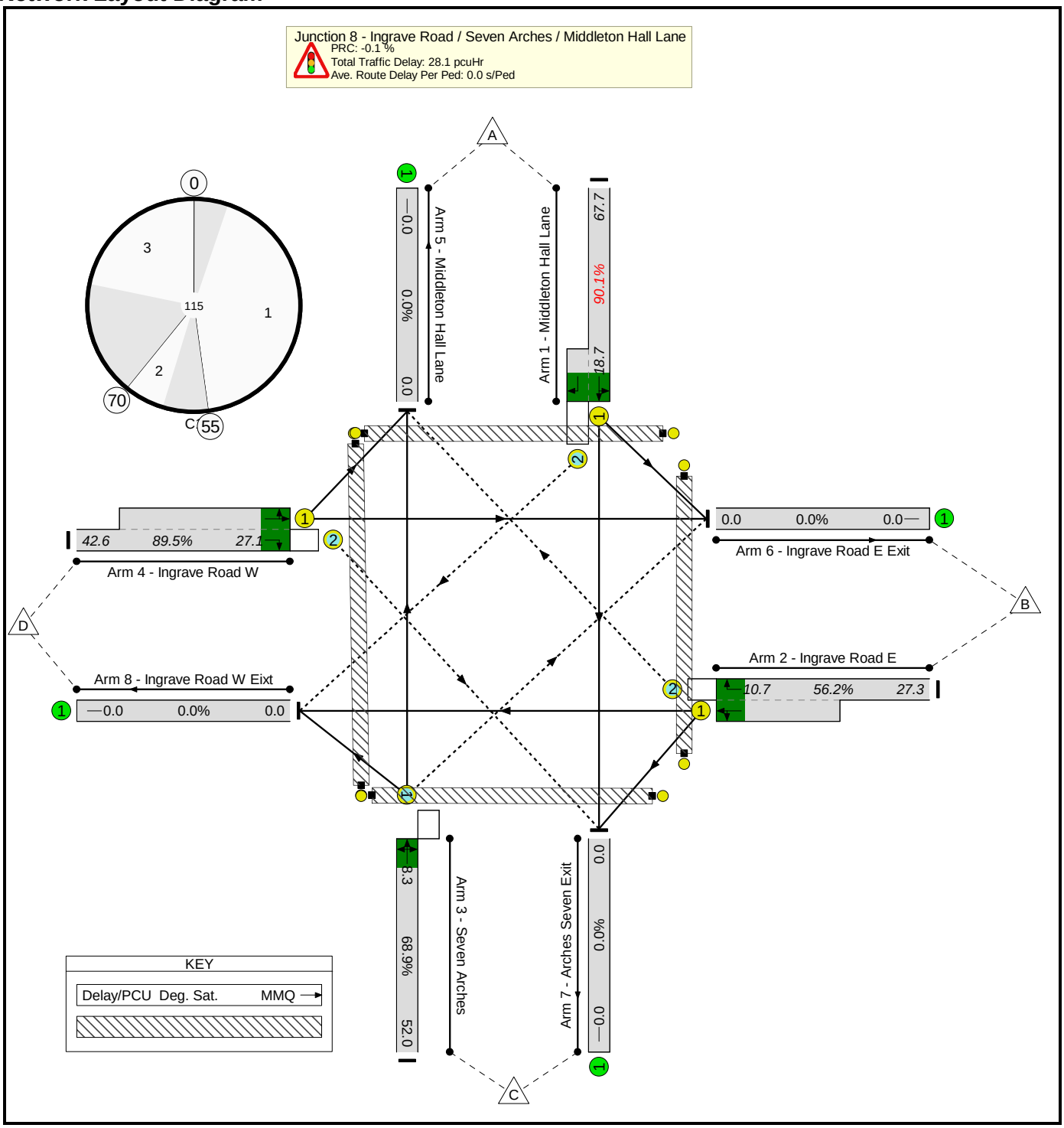
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J08 - Middleton Hall Lane / Ingrave Road / Arches Seven	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.9%**	**343**	**0**	**24**	**29.3**	**-**	**-**
Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.9%**	**343**	**0**	**24**	**29.3**	**-**	**-**
1/1+1/2	Middleton Hall Lane Left Ahead Right	U+O	C		1	25	-	557	1866:1929	627	88.9%	144	0	15	9.0	58.0	16.7
2/2+2/1	Ingrave Road E Right Left Ahead	O+U	B		1	35	-	687	1868:1904	788	87.2%	79	0	0	8.8	46.0	19.2
3/1	Seven Arches Ahead Right Left	O	D		1	25	-	334	1887	546	61.2%	44	0	0	3.7	39.7	8.5
4/2+4/1	Ingrave Road W Left Ahead Right	O+U	A		1	34	-	616	1868:1819	721	85.4%	76	0	9	7.9	46.1	15.6
Ped Link: P1	Unnamed Ped Link	-	E		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

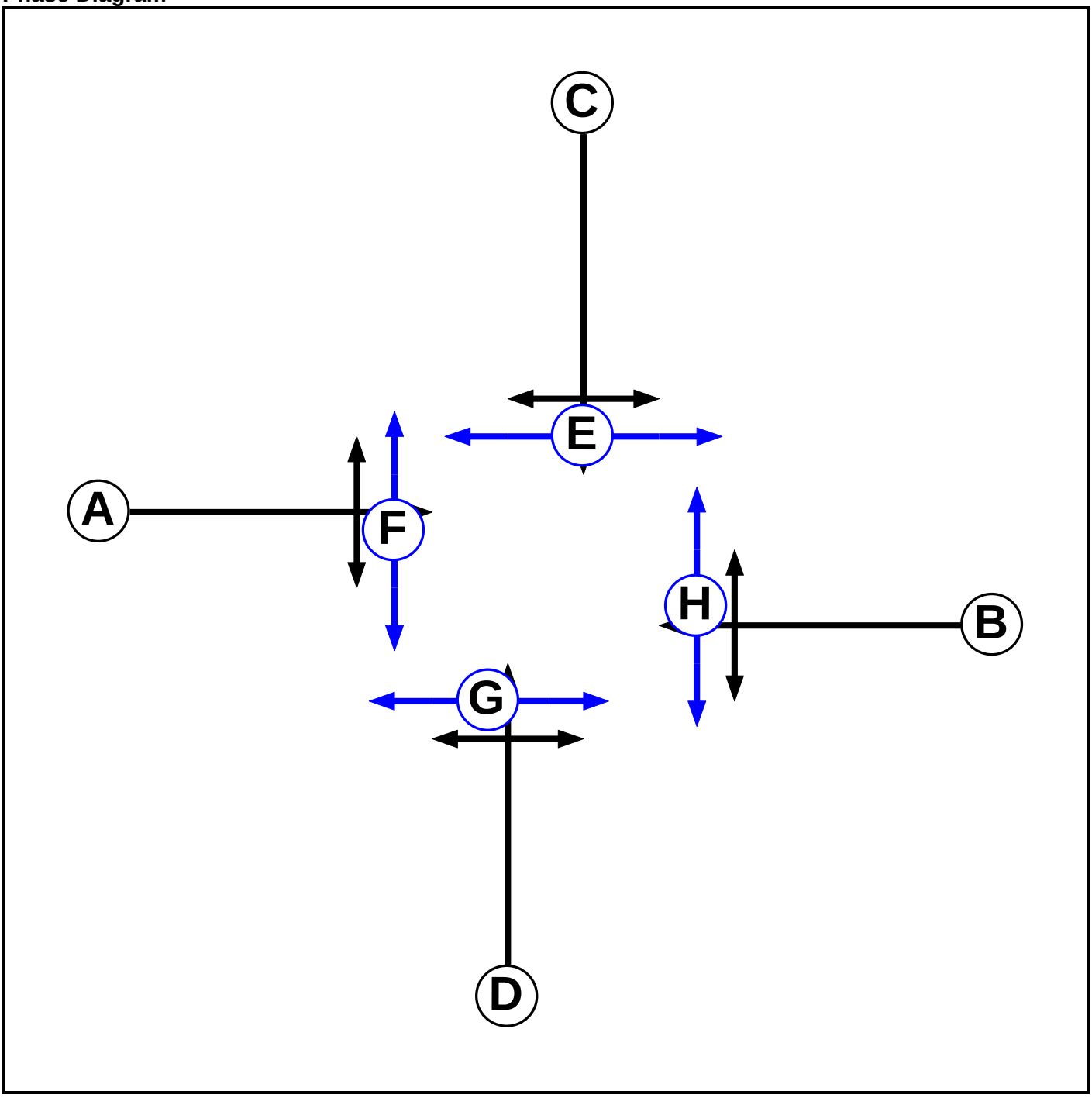
C1 PRC for Signalled Lanes (%): 1.3 Total Delay for Signalled Lanes (pcuHr): 29.32 Cycle Time (s): 100
PRC Over All Lanes (%): 1.3 Total Delay Over All Lanes(pcuHr): 29.32

Scenario 6: '2033 Reference (PM)' (FG6: '2033 Reference (PM)', Plan 2: 'Network Control Plan 2')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	6	5	7	8	8	5
	B	-		6	6	8	5	8	8
	C	6	5		-	6	8	8	9
	D	5	5	-		7	9	5	7
	E	20	20	20	20		-	-	-
	F	20	20	20	20	-		-	-
	G	20	20	20	20	-	-		-
	H	20	20	20	20	-	-	-	

Lane Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Middleton Hall Lane)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf
1/2 (Middleton Hall Lane)	O	C	2	3	3.7	Geom	-	2.90	0.00	N	Arm 8 Right	25.00
2/1 (Ingrave Road E)	U	B	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 7 Left Arm 8 Ahead	14.00 Inf
2/2 (Ingrave Road E)	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Right	15.00
3/1 (Seven Arches)	O	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 16.00 11.00
4/1 (Ingrave Road W)	U	A	2	3	14.2	Geom	-	2.70	0.00	Y	Arm 5 Left Arm 6 Ahead	14.00 Inf
4/2 (Ingrave Road W)	O	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 7 Right	15.00
5/1 (Middleton Hall Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Ingrave Road E Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Arches Seven Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Ingrave Road W Eixt)	U		2	3	60.0	Inf	-	-	-	-	-	-

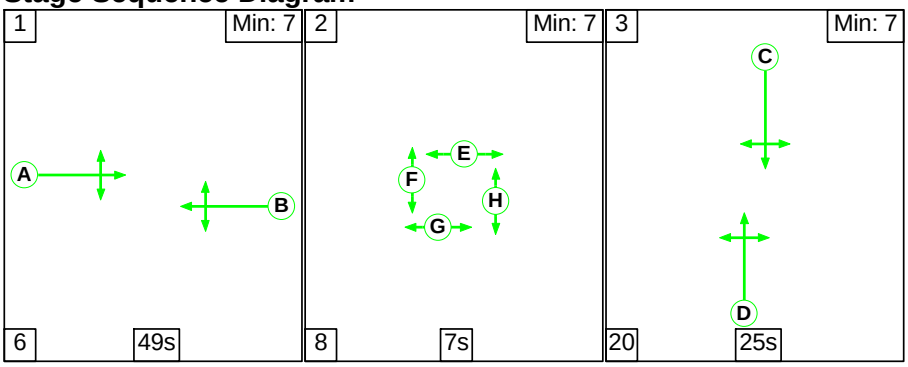
Lane Saturation Flows

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Middleton Hall Lane)	3.40	0.00	Y	Arm 6 Left	11.00	49.2 %	1832	1832
				Arm 7 Ahead	Inf	50.8 %		
1/2 (Middleton Hall Lane)	2.90	0.00	N	Arm 8 Right	25.00	100.0 %	1929	1929
2/1 (Ingrave Road E)	3.00	0.00	Y	Arm 7 Left	14.00	5.7 %	1903	1903
				Arm 8 Ahead	Inf	94.3 %		
2/2 (Ingrave Road E)	3.00	0.00	N	Arm 5 Right	15.00	100.0 %	1868	1868
3/1 (Seven Arches)	3.00	0.00	Y	Arm 5 Ahead	Inf	82.8 %	1884	1884
				Arm 6 Right	16.00	16.5 %		
				Arm 8 Left	11.00	0.7 %		
4/1 (Ingrave Road W)	2.70	0.00	Y	Arm 5 Left	14.00	16.9 %	1851	1851
				Arm 6 Ahead	Inf	83.1 %		
4/2 (Ingrave Road W)	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
5/1 (Middleton Hall Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Ingrave Road E Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Arches Seven Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Ingrave Road W Eixt Lane 1)	Infinite Saturation Flow						Inf	Inf

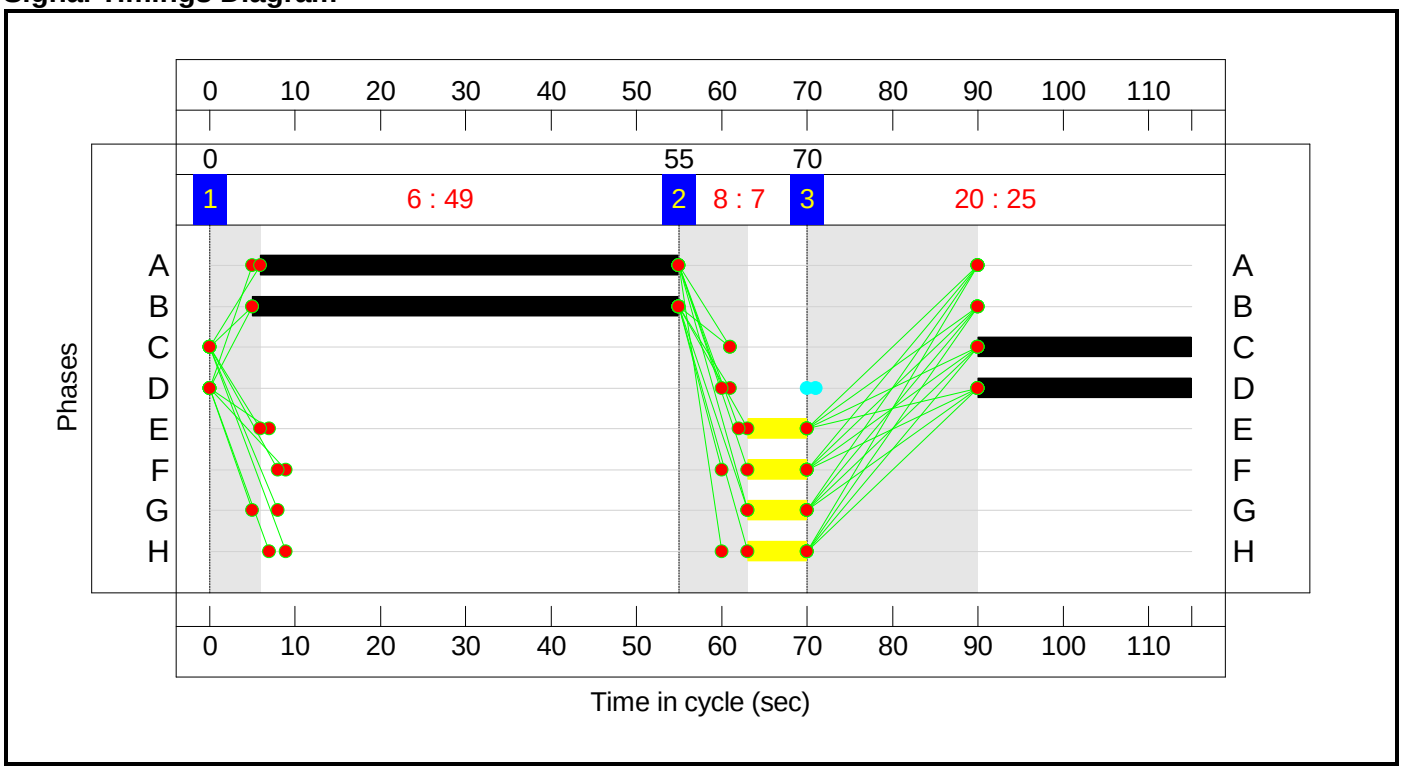
Lane Connector Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	2	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	4	35
2/1	7/1	Internal	2	35
2/1	8/1	Internal	4	35
2/2	5/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	6/1	Internal	4	35
3/1	8/1	Internal	2	35
4/1	5/1	Internal	2	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	4	35

Stage Sequence Diagram



Signal Timings Diagram



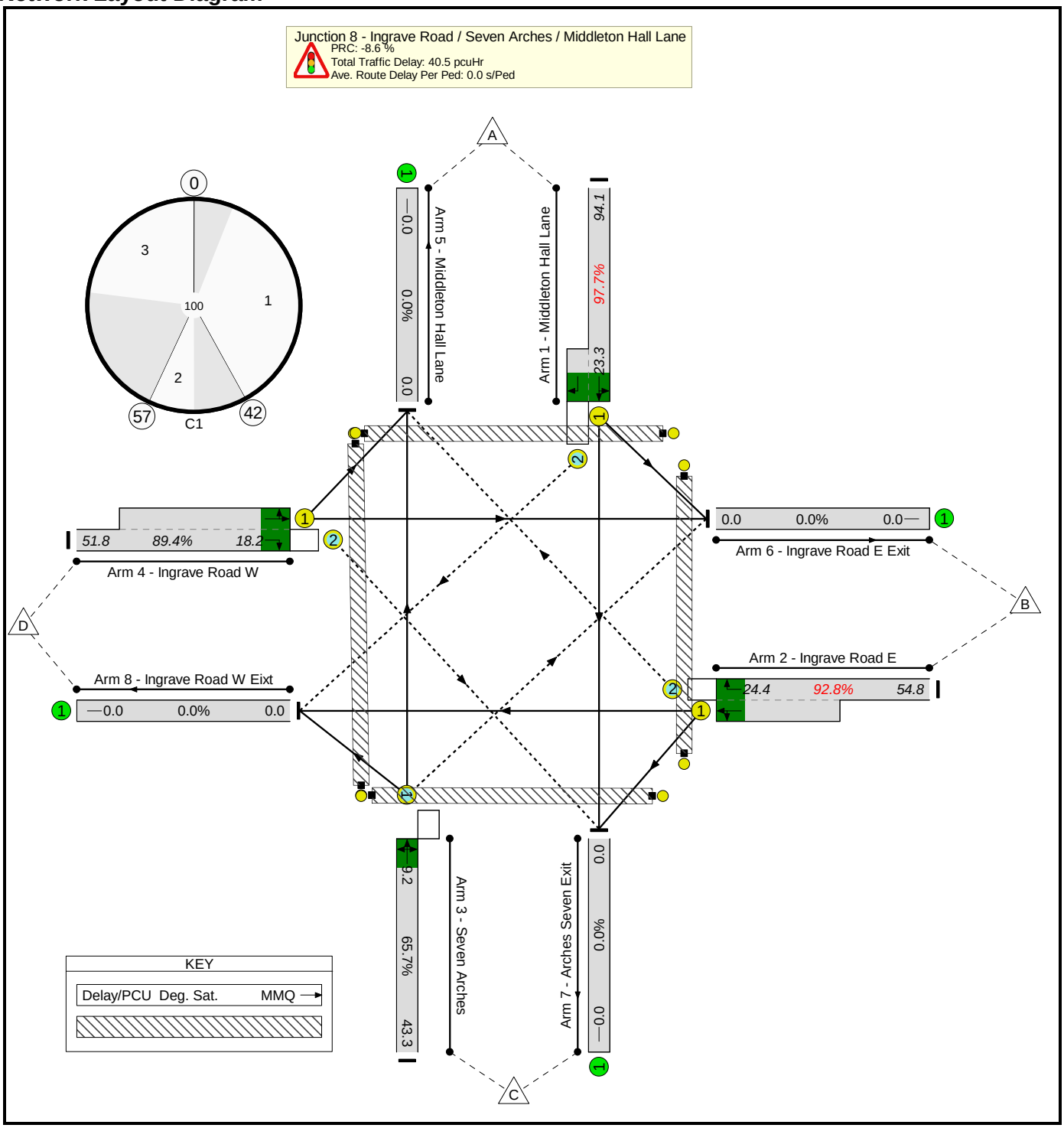
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J08 - Middleton Hall Lane / Ingrave Road / Arches Seven	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**90.1%**	**302**	**0**	**14**	**28.1**	**-**	**-**
Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**90.1%**	**302**	**0**	**14**	**28.1**	**-**	**-**
1/1+1/2	Middleton Hall Lane Left Ahead Right	U+O	C		1	25	-	509	1832:1929	565	90.1%	91	0	1	9.6	67.7	18.7
2/2+2/1	Ingrave Road E Right Left Ahead	O+U	B		1	50	-	553	1868:1903	984	56.2%	74	0	9	4.2	27.3	10.7
3/1	Seven Arches Ahead Right Left	O	D		1	25	-	273	1884	396	68.9%	41	0	4	3.9	52.0	8.3
4/2+4/1	Ingrave Road W Left Ahead Right	O+U	A		1	49	-	877	1868:1851	980	89.5%	96	0	0	10.4	42.6	27.1
Ped Link: P1	Unnamed Ped Link	-	E		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

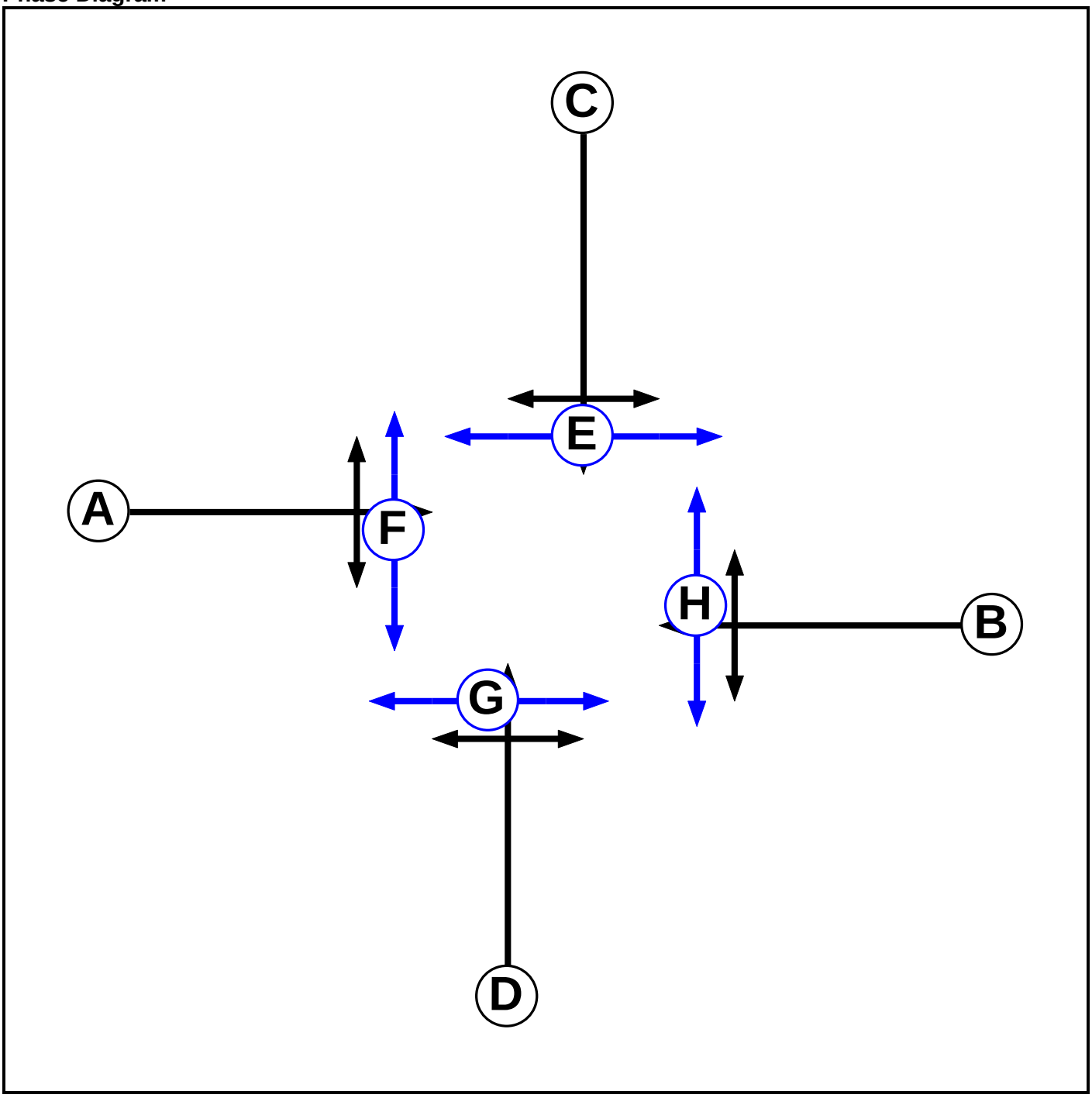
C1 PRC for Signalled Lanes (%): -0.1 Total Delay for Signalled Lanes (pcuHr): 28.10 Cycle Time (s): 115
PRC Over All Lanes (%): -0.1 Total Delay Over All Lanes(pcuHr): 28.10

Scenario 7: '2033 Local Plan Growth (AM)' (FG7: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	6	5	7	8	8	5
	B	-		6	6	8	5	8	8
	C	6	5		-	6	8	8	9
	D	5	5	-		7	9	5	7
	E	20	20	20	20		-	-	-
	F	20	20	20	20	-		-	-
	G	20	20	20	20	-	-		-
	H	20	20	20	20	-	-	-	

Lane Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Middleton Hall Lane)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf
1/2 (Middleton Hall Lane)	O	C	2	3	3.7	Geom	-	2.90	0.00	N	Arm 8 Right	25.00
2/1 (Ingrave Road E)	U	B	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 7 Left Arm 8 Ahead	14.00 Inf
2/2 (Ingrave Road E)	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Right	15.00
3/1 (Seven Arches)	O	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 16.00 11.00
4/1 (Ingrave Road W)	U	A	2	3	14.2	Geom	-	2.70	0.00	Y	Arm 5 Left Arm 6 Ahead	14.00 Inf
4/2 (Ingrave Road W)	O	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 7 Right	15.00
5/1 (Middleton Hall Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Ingrave Road E Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Arches Seven Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Ingrave Road W Eixt)	U		2	3	60.0	Inf	-	-	-	-	-	-

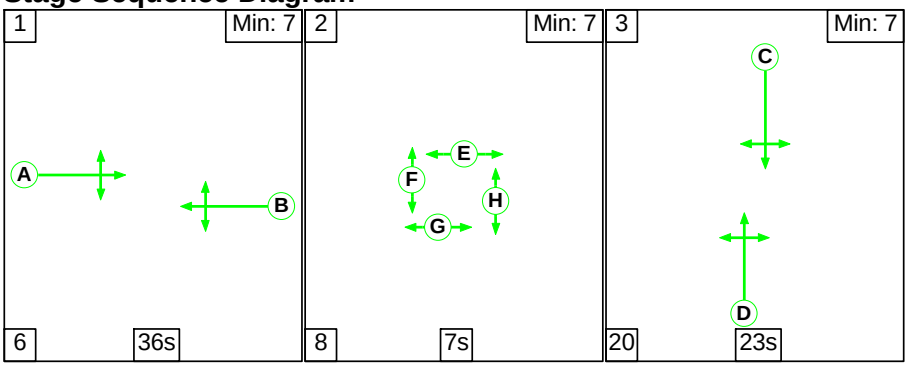
Lane Saturation Flows

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Middleton Hall Lane)	3.40	0.00	Y	Arm 6 Left	11.00	34.4 %	1867	1867
				Arm 7 Ahead	Inf	65.6 %		
1/2 (Middleton Hall Lane)	2.90	0.00	N	Arm 8 Right	25.00	100.0 %	1929	1929
2/1 (Ingrave Road E)	3.00	0.00	Y	Arm 7 Left	14.00	6.0 %	1903	1903
				Arm 8 Ahead	Inf	94.0 %		
2/2 (Ingrave Road E)	3.00	0.00	N	Arm 5 Right	15.00	100.0 %	1868	1868
3/1 (Seven Arches)	3.00	0.00	Y	Arm 5 Ahead	Inf	85.0 %	1887	1887
				Arm 6 Right	16.00	13.3 %		
				Arm 8 Left	11.00	1.7 %		
4/1 (Ingrave Road W)	2.70	0.00	Y	Arm 5 Left	14.00	32.5 %	1822	1822
				Arm 6 Ahead	Inf	67.5 %		
4/2 (Ingrave Road W)	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
5/1 (Middleton Hall Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Ingrave Road E Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Arches Seven Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Ingrave Road W Eixt Lane 1)	Infinite Saturation Flow						Inf	Inf

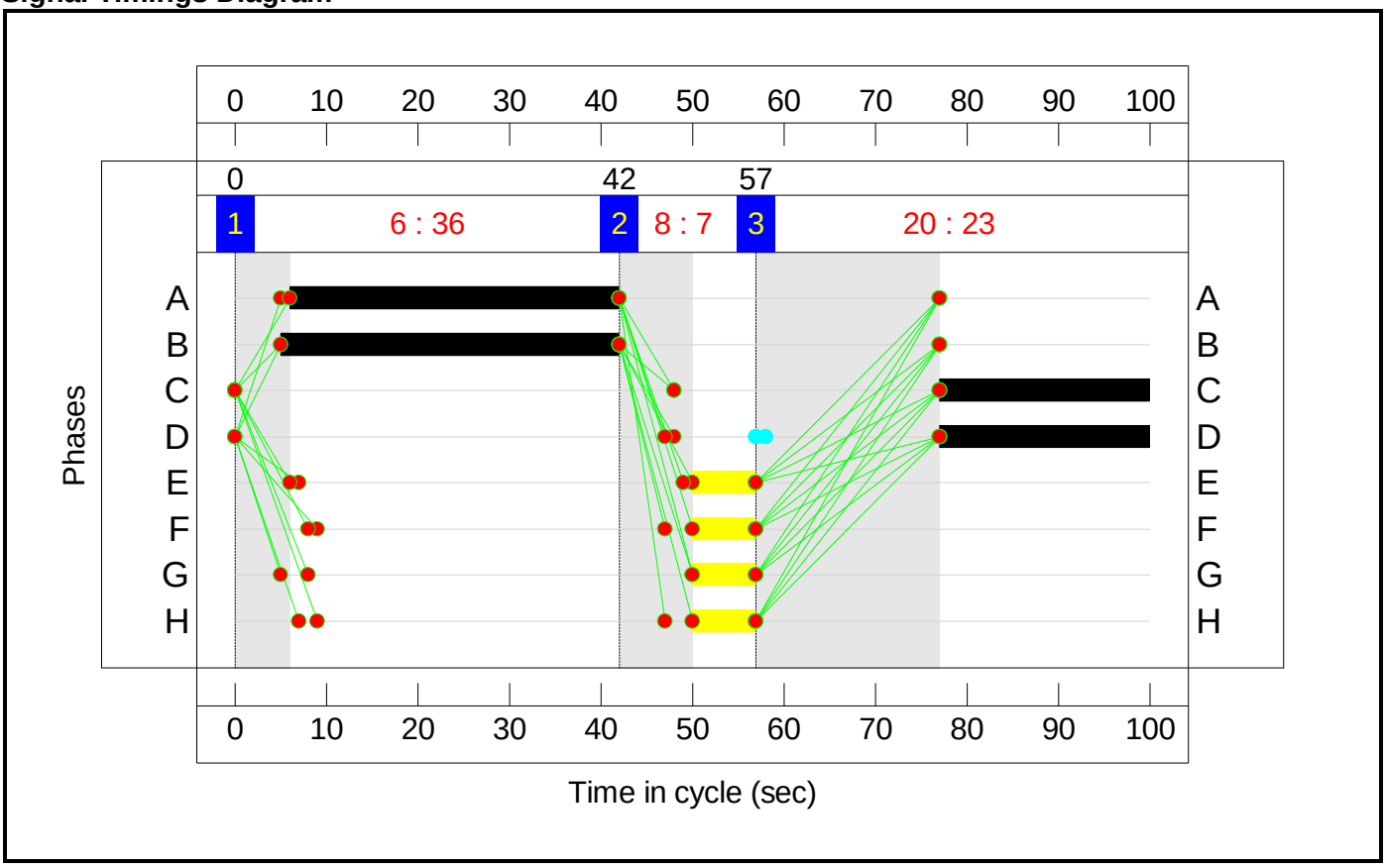
Lane Connector Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	2	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	4	35
2/1	7/1	Internal	2	35
2/1	8/1	Internal	4	35
2/2	5/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	6/1	Internal	4	35
3/1	8/1	Internal	2	35
4/1	5/1	Internal	2	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	4	35

Stage Sequence Diagram



Signal Timings Diagram



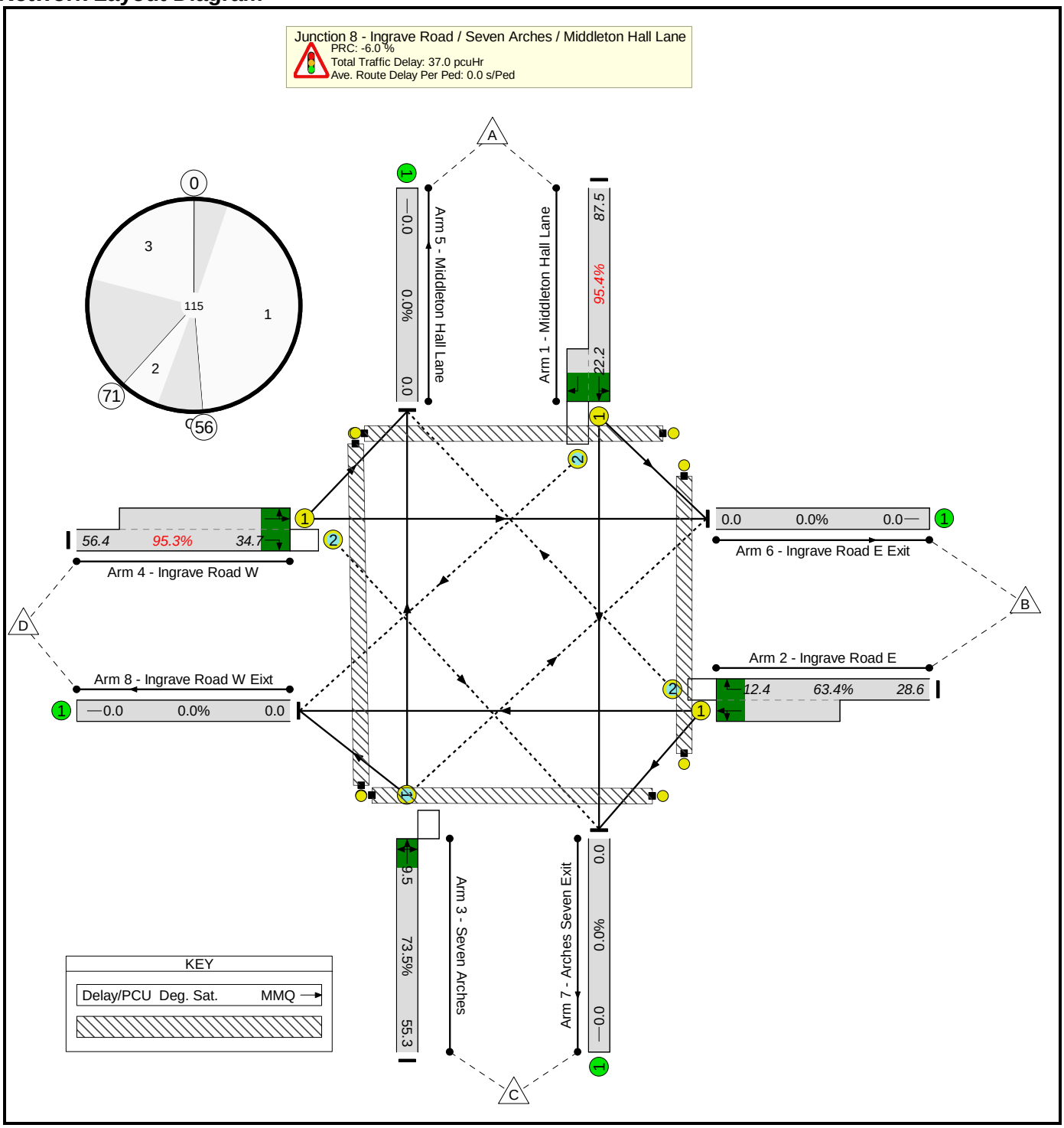
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J08 - Middleton Hall Lane / Ingrave Road / Arches Seven	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**97.7%**	**282**	**0**	**110**	**40.5**	**-**	**-**
Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**97.7%**	**282**	**0**	**110**	**40.5**	**-**	**-**
1/1+1/2	Middleton Hall Lane Left Ahead Right	U+O	C		1	23	-	579	1867:1929	592	97.7%	144	0	28	15.1	94.1	23.3
2/2+2/1	Ingrave Road E Right Left Ahead	O+U	B		1	37	-	763	1868:1903	822	92.8%	79	0	0	11.6	54.8	24.4
3/1	Seven Arches Ahead Right Left	O	D		1	23	-	347	1887	528	65.7%	10	0	36	4.2	43.3	9.2
4/2+4/1	Ingrave Road W Left Ahead Right	O+U	A		1	36	-	667	1868:1822	746	89.4%	48	0	47	9.6	51.8	18.2
Ped Link: P1	Unnamed Ped Link	-	E		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

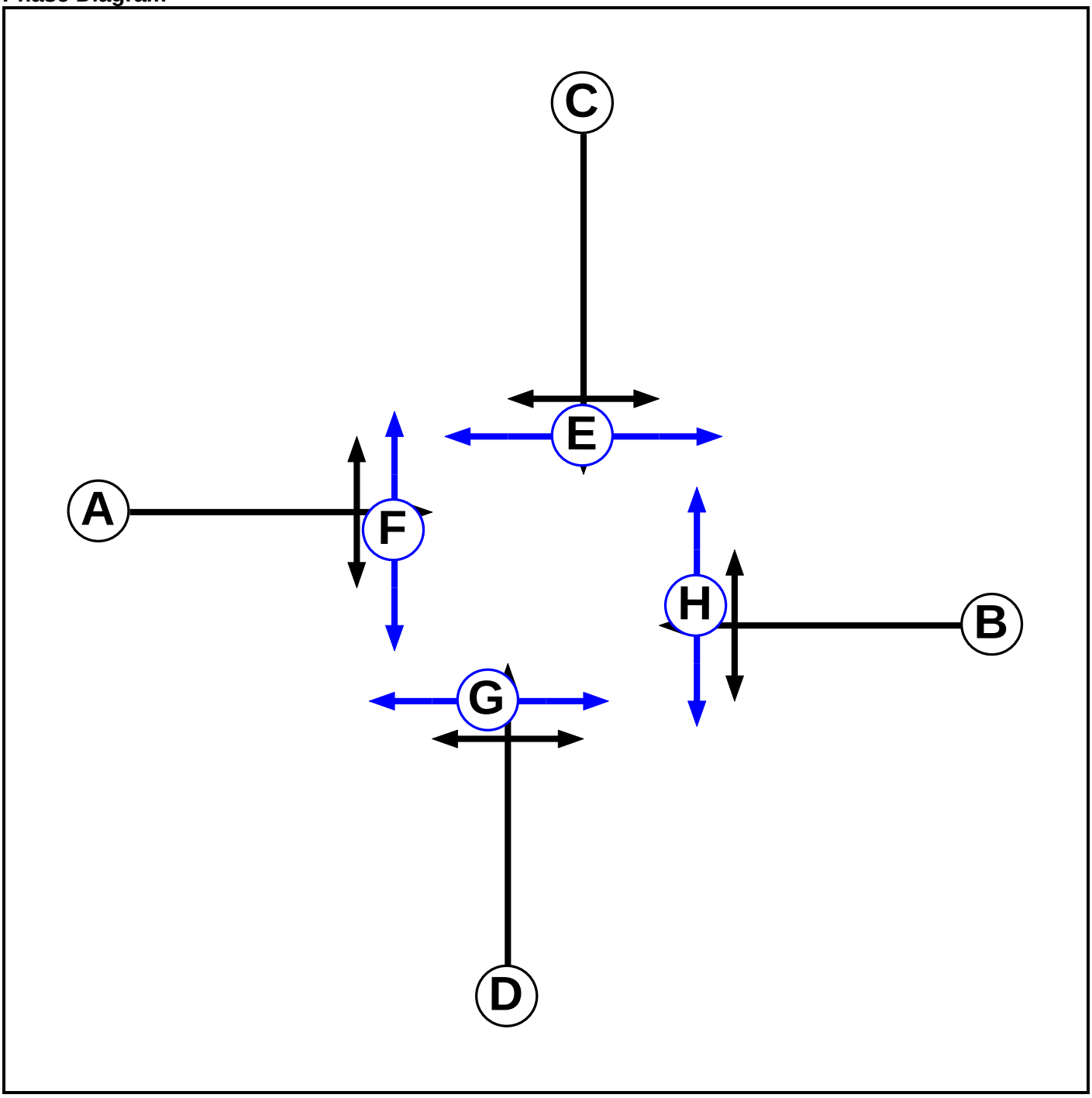
C1 PRC for Signalled Lanes (%): -8.6 Total Delay for Signalled Lanes (pcuHr): 40.52 Cycle Time (s): 100
PRC Over All Lanes (%): -8.6 Total Delay Over All Lanes(pcuHr): 40.52

Scenario 8: '2033 Local Plan Growth (PM)' (FG8: '2033 Local Plan Growth (PM)', Plan 2: 'Network Control Plan 2')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	6	5	7	8	8	5
	B	-		6	6	8	5	8	8
	C	6	5		-	6	8	8	9
	D	5	5	-		7	9	5	7
	E	20	20	20	20		-	-	-
	F	20	20	20	20	-		-	-
	G	20	20	20	20	-	-		-
	H	20	20	20	20	-	-	-	

Lane Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Middleton Hall Lane)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf
1/2 (Middleton Hall Lane)	O	C	2	3	3.7	Geom	-	2.90	0.00	N	Arm 8 Right	25.00
2/1 (Ingrave Road E)	U	B	2	3	8.7	Geom	-	3.00	0.00	Y	Arm 7 Left Arm 8 Ahead	14.00 Inf
2/2 (Ingrave Road E)	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Right	15.00
3/1 (Seven Arches)	O	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 16.00 11.00
4/1 (Ingrave Road W)	U	A	2	3	14.2	Geom	-	2.70	0.00	Y	Arm 5 Left Arm 6 Ahead	14.00 Inf
4/2 (Ingrave Road W)	O	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 7 Right	15.00
5/1 (Middleton Hall Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Ingrave Road E Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Arches Seven Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Ingrave Road W Eixt)	U		2	3	60.0	Inf	-	-	-	-	-	-

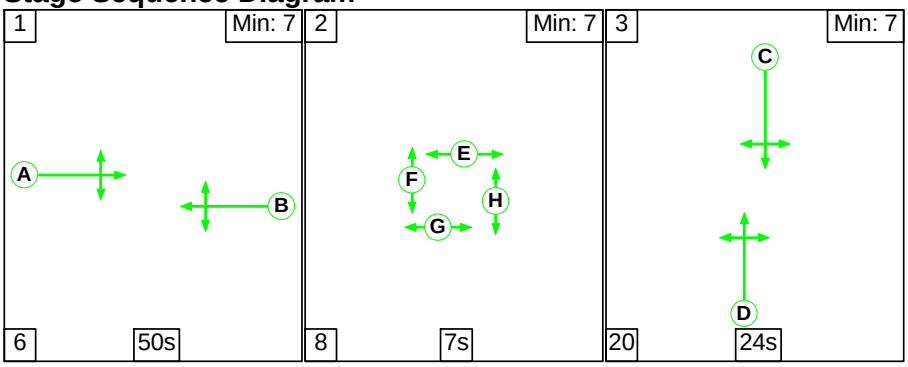
Lane Saturation Flows

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Middleton Hall Lane)	3.40	0.00	Y	Arm 6 Left	11.00	49.1 %	1832	1832
				Arm 7 Ahead	Inf	50.9 %		
1/2 (Middleton Hall Lane)	2.90	0.00	N	Arm 8 Right	25.00	100.0 %	1929	1929
2/1 (Ingrave Road E)	3.00	0.00	Y	Arm 7 Left	14.00	5.2 %	1904	1904
				Arm 8 Ahead	Inf	94.8 %		
2/2 (Ingrave Road E)	3.00	0.00	N	Arm 5 Right	15.00	100.0 %	1868	1868
3/1 (Seven Arches)	3.00	0.00	Y	Arm 5 Ahead	Inf	83.9 %	1886	1886
				Arm 6 Right	16.00	15.4 %		
				Arm 8 Left	11.00	0.7 %		
4/1 (Ingrave Road W)	2.70	0.00	Y	Arm 5 Left	14.00	16.2 %	1853	1853
				Arm 6 Ahead	Inf	83.8 %		
4/2 (Ingrave Road W)	3.00	0.00	N	Arm 7 Right	15.00	100.0 %	1868	1868
5/1 (Middleton Hall Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Ingrave Road E Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Arches Seven Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Ingrave Road W Eixt Lane 1)	Infinite Saturation Flow						Inf	Inf

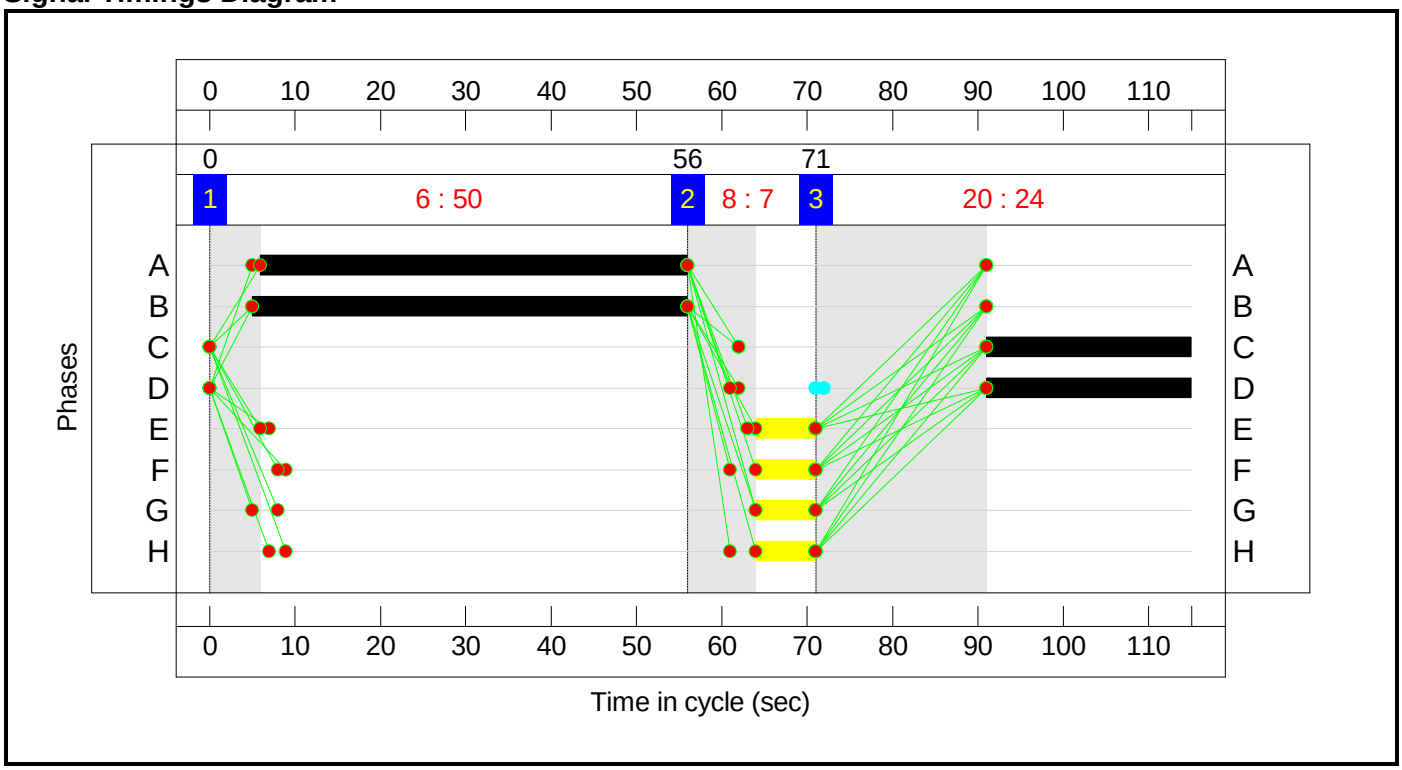
Lane Connector Input Data

Junction: Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	2	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	4	35
2/1	7/1	Internal	2	35
2/1	8/1	Internal	4	35
2/2	5/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	6/1	Internal	4	35
3/1	8/1	Internal	2	35
4/1	5/1	Internal	2	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	4	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J08 - Middleton Hall Lane / Ingrave Road / Arches Seven	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**95.4%**	**250**	**0**	**75**	**37.0**	**-**	**-**
Junction 8 - Ingrave Road / Seven Arches / Middleton Hall Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**95.4%**	**250**	**0**	**75**	**37.0**	**-**	**-**
1/1+1/2	Middleton Hall Lane Left Ahead Right	U+O	C		1	24	-	524	1832:1929	549	95.4%	95	0	1	12.7	87.5	22.2
2/2+2/1	Ingrave Road E Right Left Ahead	O+U	B		1	51	-	607	1868:1904	957	63.4%	38	0	46	4.8	28.6	12.4
3/1	Seven Arches Ahead Right Left	O	D		1	24	-	299	1886	407	73.5%	17	0	29	4.6	55.3	9.5
4/2+4/1	Ingrave Road W Left Ahead Right	O+U	A		1	50	-	947	1868:1853	993	95.3%	99	0	0	14.8	56.4	34.7
Ped Link: P1	Unnamed Ped Link	-	E		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -6.0 Total Delay for Signalled Lanes (pcuHr): 36.99 Cycle Time (s): 115
PRC Over All Lanes (%): -6.0 Total Delay Over All Lanes(pcuHr): 36.99

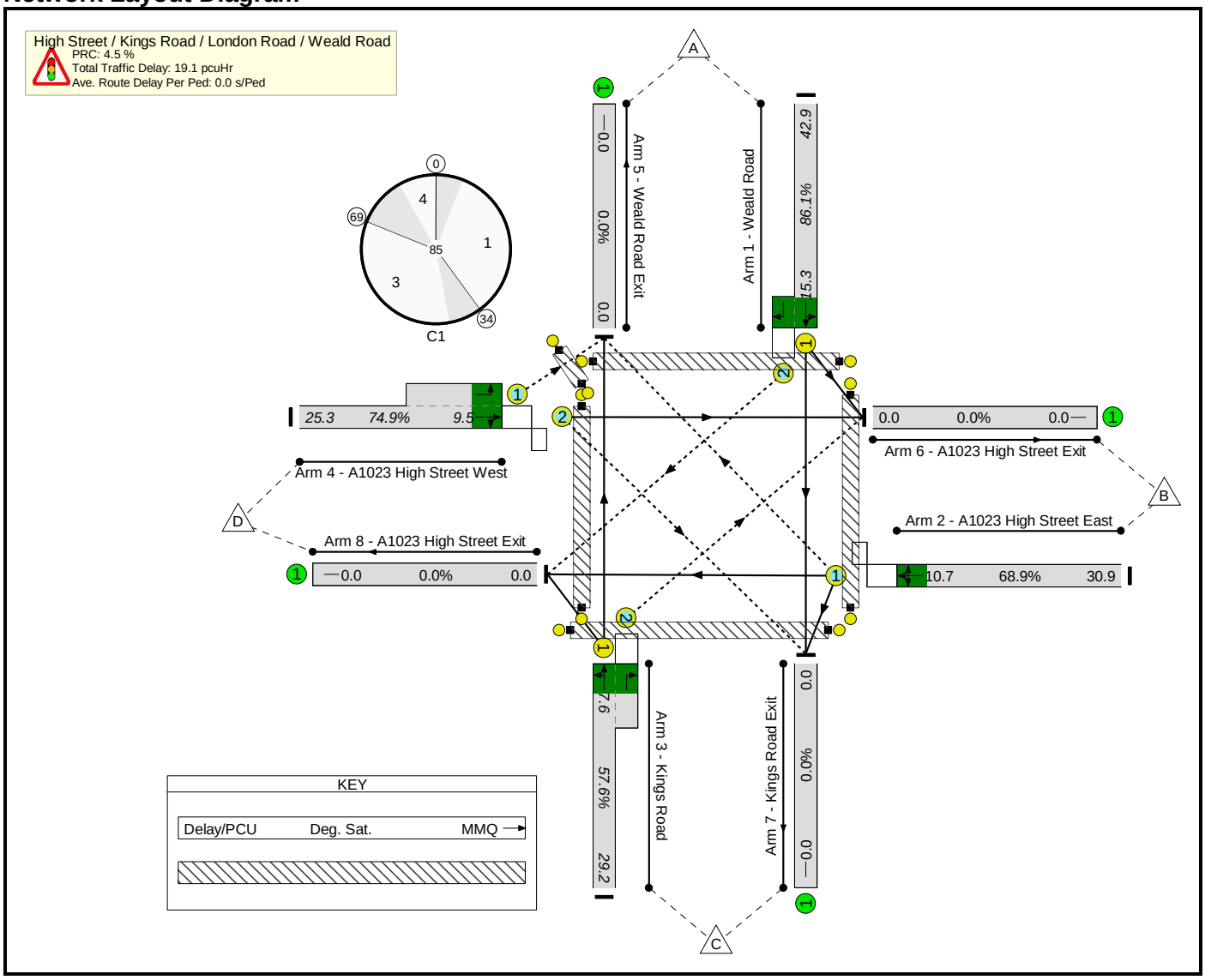
Brentwood PBA Modelling

Project and User Details

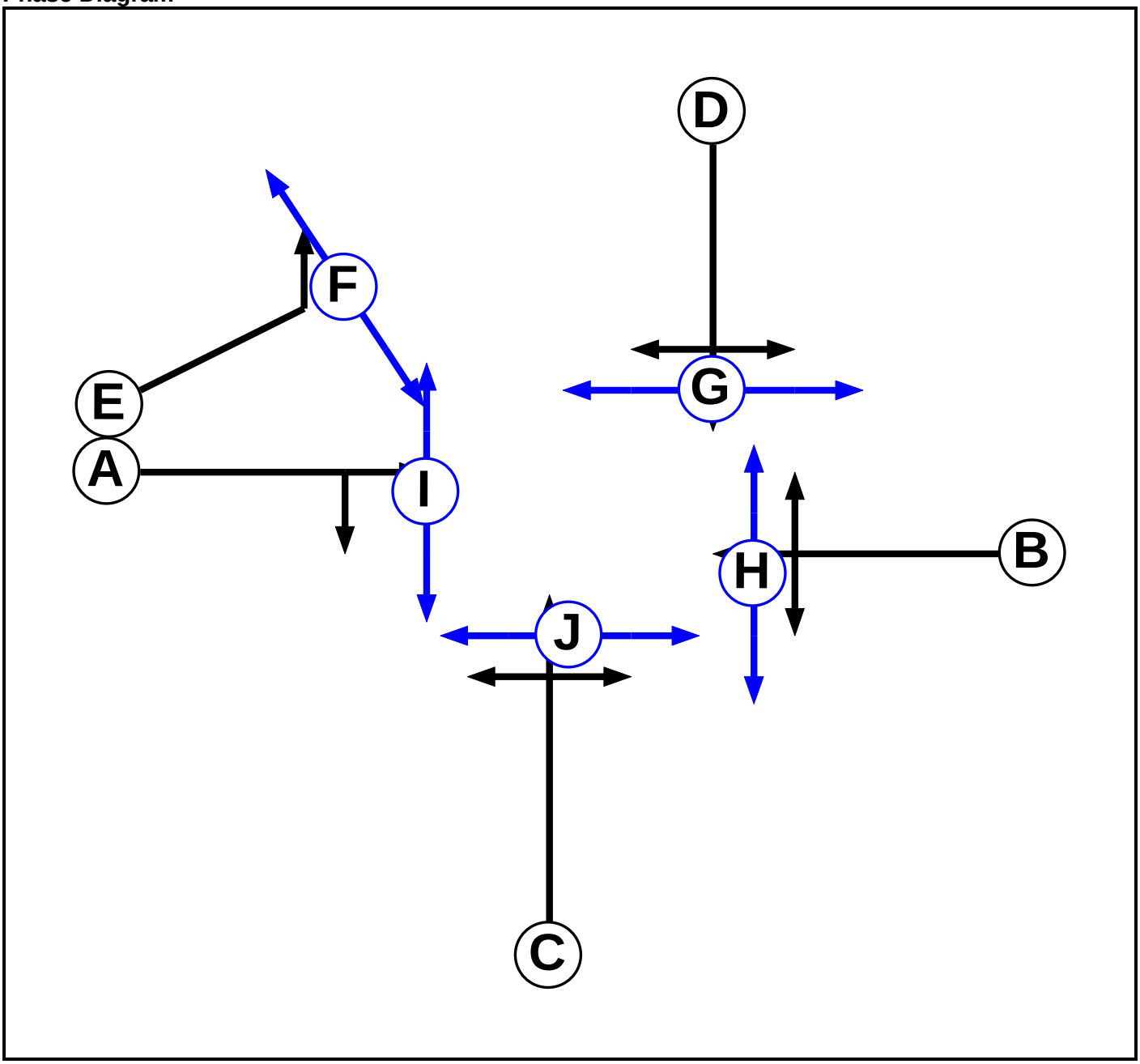
Project:	**28085 Brentwood**
Title:	**J10 - Weald Road / A1023 High Street / Kings Road**
Location:	Brentwood
Additional detail:	
File name:	28085_10_LS_LSM_RevA.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 3: '2017 Baseline (AM)' (FG1: '2017 Baseline (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		-	5	6	-	-	-	9	9	9
	B	-		6	6	-	-	9	9	9	9
	C	5	5		-	-	-	9	9	9	9
	D	5	5	-		-	-	9	9	9	9
	E	-	-	-	-		5	-	-	-	-
	F	-	-	-	-	5		-	-	-	-
	G	-	5	5	5	-	-		-	-	-
	H	5	5	5	5	-	-	-		-	-
	I	5	5	5	5	-	-	-	-		-
	J	5	5	5	5	-	-	-	-	-	

Lane Input Data

Junction: High Street / Kings Road / London Road / Weald Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Weald Road)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
1/2 (Weald Road)	O	D	2	3	2.1	Geom	-	3.00	0.00	N	Arm 8 Right	8.00
2/1 (A1023 High Street East)	O	B	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	12.00
											Arm 8 Ahead	Inf
3/1 (Kings Road)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
3/2 (Kings Road)	O	C	2	3	4.3	Geom	-	3.00	0.00	N	Arm 6 Right	17.00
4/1 (A1023 High Street West)	O	E	2	3	6.4	Geom	-	4.70	0.00	Y	Arm 5 Left	30.00
4/2 (A1023 High Street West)	O	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	12.00
5/1 (Weald Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

6/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Kings Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

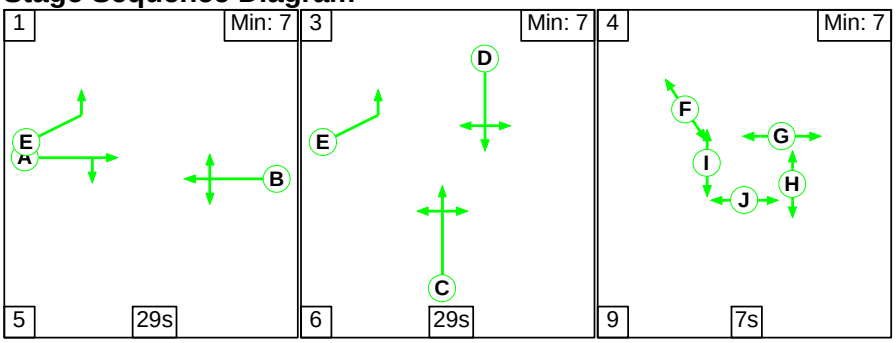
Junction: High Street / Kings Road / London Road / Weald Road

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 (Weald Road)	2.60	0.00	Y	Arm 6 Left	6.00	9.6 %	1831	1831
				Arm 7 Ahead	Inf	90.4 %		
1/2 (Weald Road)	3.00	0.00	N	Arm 8 Right	8.00	100.0 %	1731	1731
2/1 (A1023 High Street East)	3.10	0.00	Y	Arm 5 Right	15.00	9.4 %	1858	1858
				Arm 7 Left	12.00	21.5 %		
				Arm 8 Ahead	Inf	69.2 %		
3/1 (Kings Road)	3.50	0.00	Y	Arm 5 Ahead	Inf	73.2 %	1896	1896
				Arm 8 Left	11.00	26.8 %		
3/2 (Kings Road)	3.00	0.00	N	Arm 6 Right	17.00	100.0 %	1888	1888
4/1 (A1023 High Street West)	4.70	0.00	Y	Arm 5 Left	30.00	100.0 %	1986	1986
4/2 (A1023 High Street West)	3.50	0.00	N	Arm 6 Ahead	Inf	77.9 %	2048	2048
				Arm 7 Right	12.00	22.1 %		
5/1 (Weald Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Kings Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

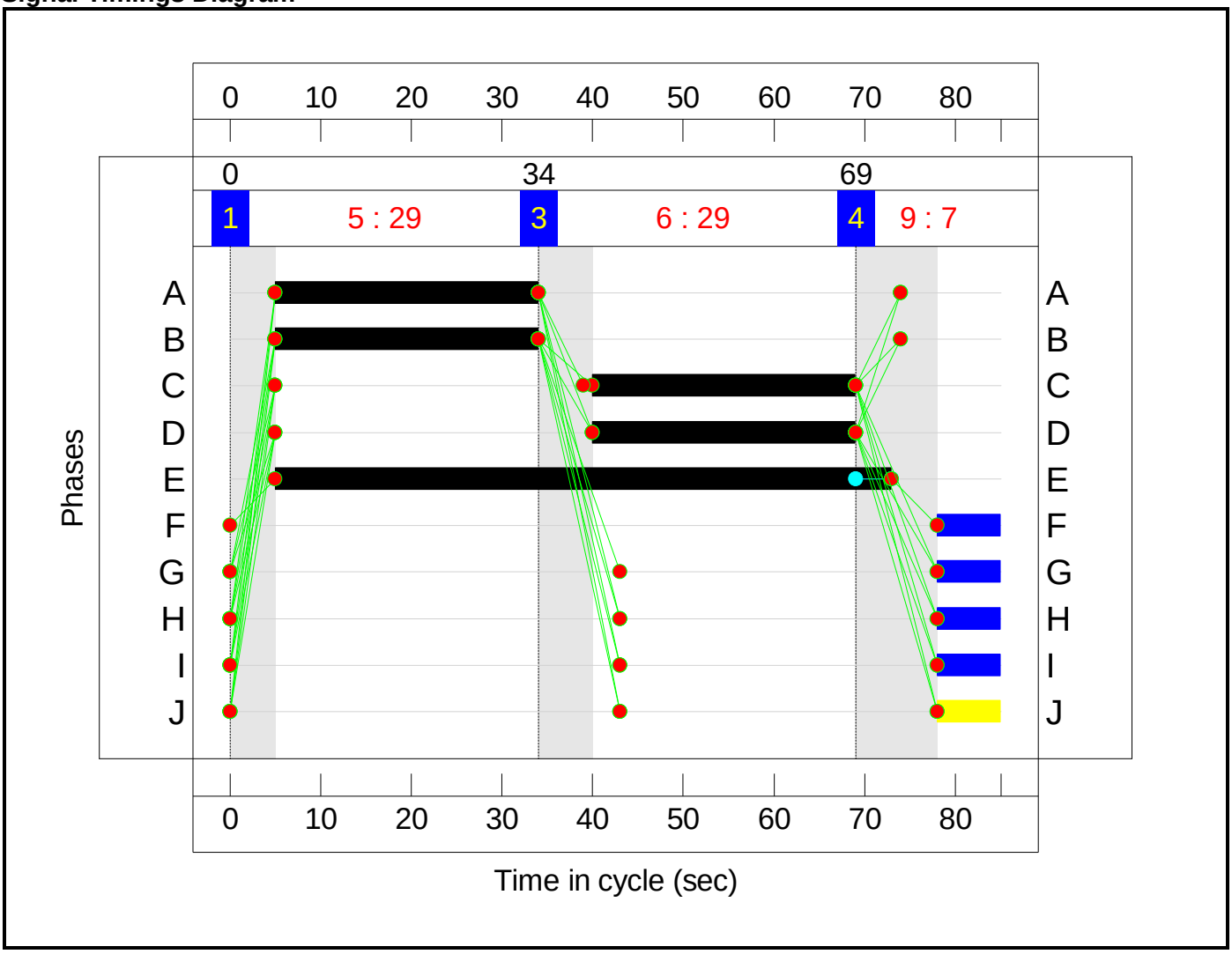
Lane Connector Input Data

Junction: High Street / Kings Road / London Road / Weald Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	8/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	2	35
4/2	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



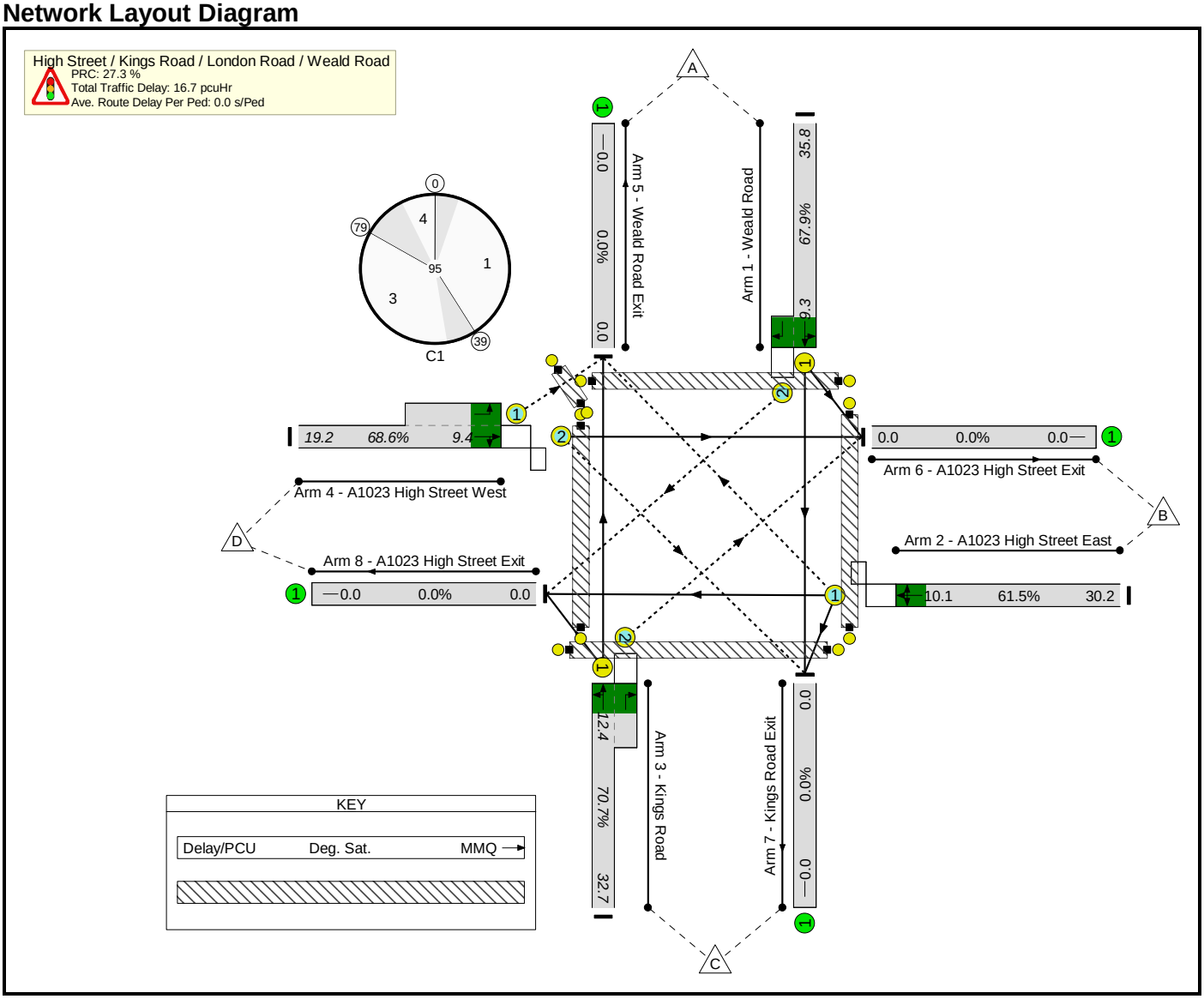
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J10 - Weald Road / A1023 High Street / Kings Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.1%**	**788**	**50**	**18**	**19.1**	**-**	**-**
High Street / Kings Road / London Road / Weald Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.1%**	**788**	**50**	**18**	**19.1**	**-**	**-**
1/1+1/2	Weald Road Left Ahead Right	U+O	D		1	29	-	617	1831:1731	717	86.1%	178	0	0	7.3	42.9	15.3
2/1	A1023 High Street East Right Left Ahead	O	B		1	29	-	480	1858	696	68.9%	44	0	1	4.1	30.9	10.7
3/1+3/2	Kings Road Ahead Right Left	U+O	C		1	29	-	435	1896:1888	755	57.6%	84	0	0	3.5	29.2	7.6
4/2+4/1	A1023 High Street West Left Ahead Right	O	A E		1	29:68	-	589	2048:1986	786	74.9%	482	50	17	4.1	25.3	9.5
Ped Link: P1	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	J		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	I		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

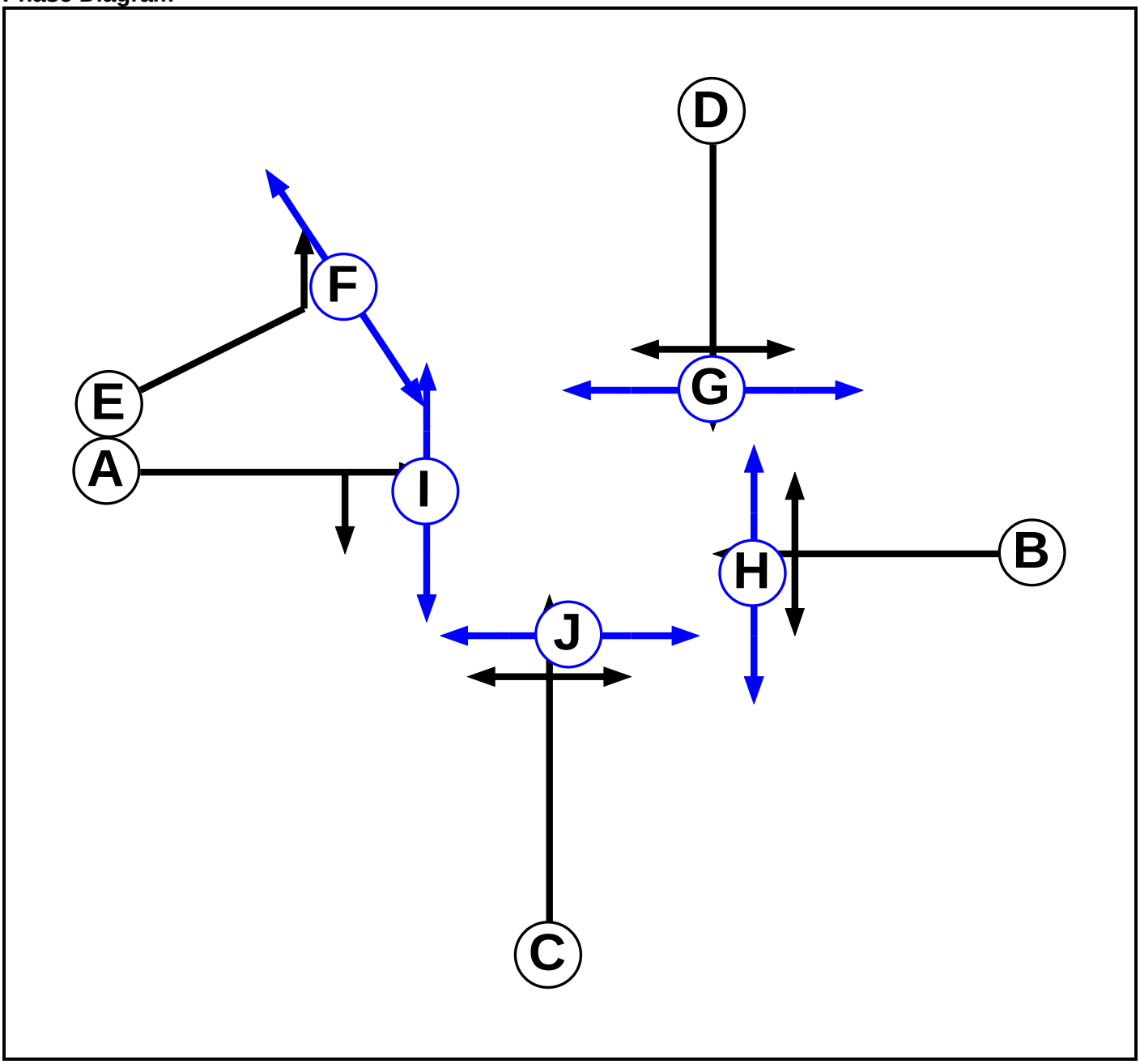
C1 PRC for Signalled Lanes (%): 4.5 Total Delay for Signalled Lanes (pcuHr): 19.14 Cycle Time (s): 85
PRC Over All Lanes (%): 4.5 Total Delay Over All Lanes(pcuHr): 19.14

Scenario 4: '2017 Baseline (PM)' (FG2: '2017 Baseline (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		-	5	6	-	-	-	9	9	9
	B	-		6	6	-	-	9	9	9	9
	C	5	5		-	-	-	9	9	9	9
	D	5	5	-		-	-	9	9	9	9
	E	-	-	-	-		5	-	-	-	-
	F	-	-	-	-	5		-	-	-	-
	G	-	5	5	5	-	-		-	-	-
	H	5	5	5	5	-	-	-		-	-
	I	5	5	5	5	-	-	-	-		-
	J	5	5	5	5	-	-	-	-	-	

Lane Input Data

Junction: High Street / Kings Road / London Road / Weald Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Weald Road)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
1/2 (Weald Road)	O	D	2	3	2.1	Geom	-	3.00	0.00	N	Arm 8 Right	8.00
2/1 (A1023 High Street East)	O	B	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	12.00
											Arm 8 Ahead	Inf
3/1 (Kings Road)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
3/2 (Kings Road)	O	C	2	3	4.3	Geom	-	3.00	0.00	N	Arm 6 Right	17.00
4/1 (A1023 High Street West)	O	E	2	3	6.4	Geom	-	4.70	0.00	Y	Arm 5 Left	30.00
4/2 (A1023 High Street West)	O	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	12.00
5/1 (Weald Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

6/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Kings Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

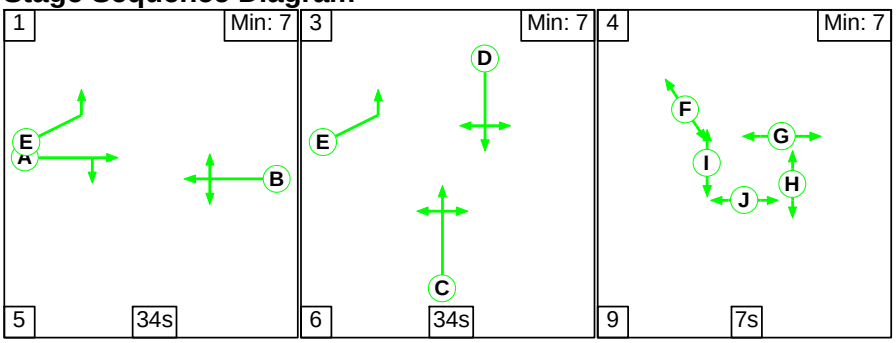
Junction: High Street / Kings Road / London Road / Weald Road

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 (Weald Road)	2.60	0.00	Y	Arm 6 Left	6.00	9.4 %	1832	1832
				Arm 7 Ahead	Inf	90.6 %		
1/2 (Weald Road)	3.00	0.00	N	Arm 8 Right	8.00	100.0 %	1731	1731
2/1 (A1023 High Street East)	3.10	0.00	Y	Arm 5 Right	15.00	10.2 %	1851	1851
				Arm 7 Left	12.00	23.8 %		
				Arm 8 Ahead	Inf	66.0 %		
3/1 (Kings Road)	3.50	0.00	Y	Arm 5 Ahead	Inf	80.2 %	1913	1913
				Arm 8 Left	11.00	19.8 %		
3/2 (Kings Road)	3.00	0.00	N	Arm 6 Right	17.00	100.0 %	1888	1888
4/1 (A1023 High Street West)	4.70	0.00	Y	Arm 5 Left	30.00	100.0 %	1986	1986
4/2 (A1023 High Street West)	3.50	0.00	N	Arm 6 Ahead	Inf	79.9 %	2053	2053
				Arm 7 Right	12.00	20.1 %		
5/1 (Weald Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Kings Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

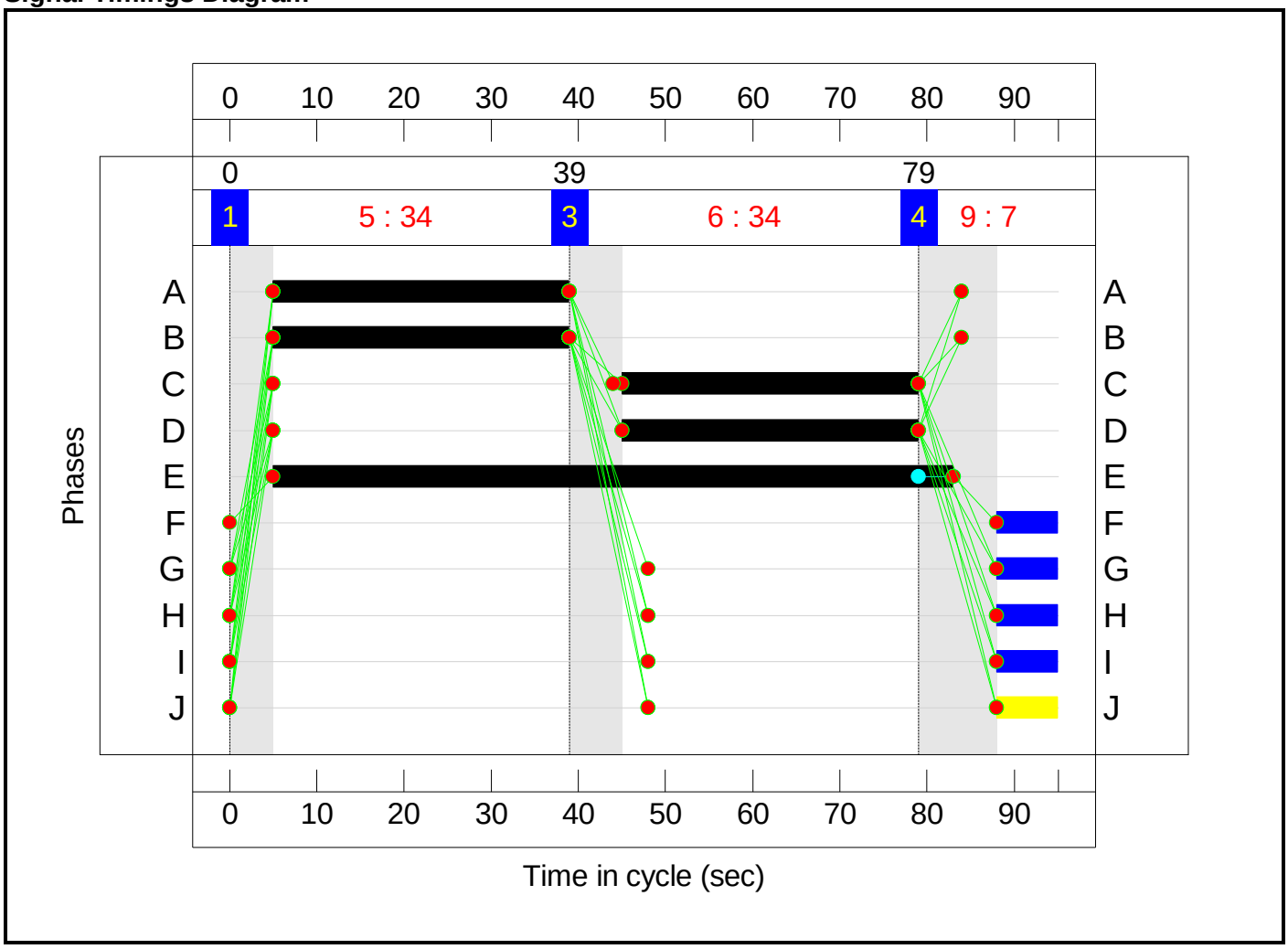
Lane Connector Input Data

Junction: High Street / Kings Road / London Road / Weald Road				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	8/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	2	35
4/2	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



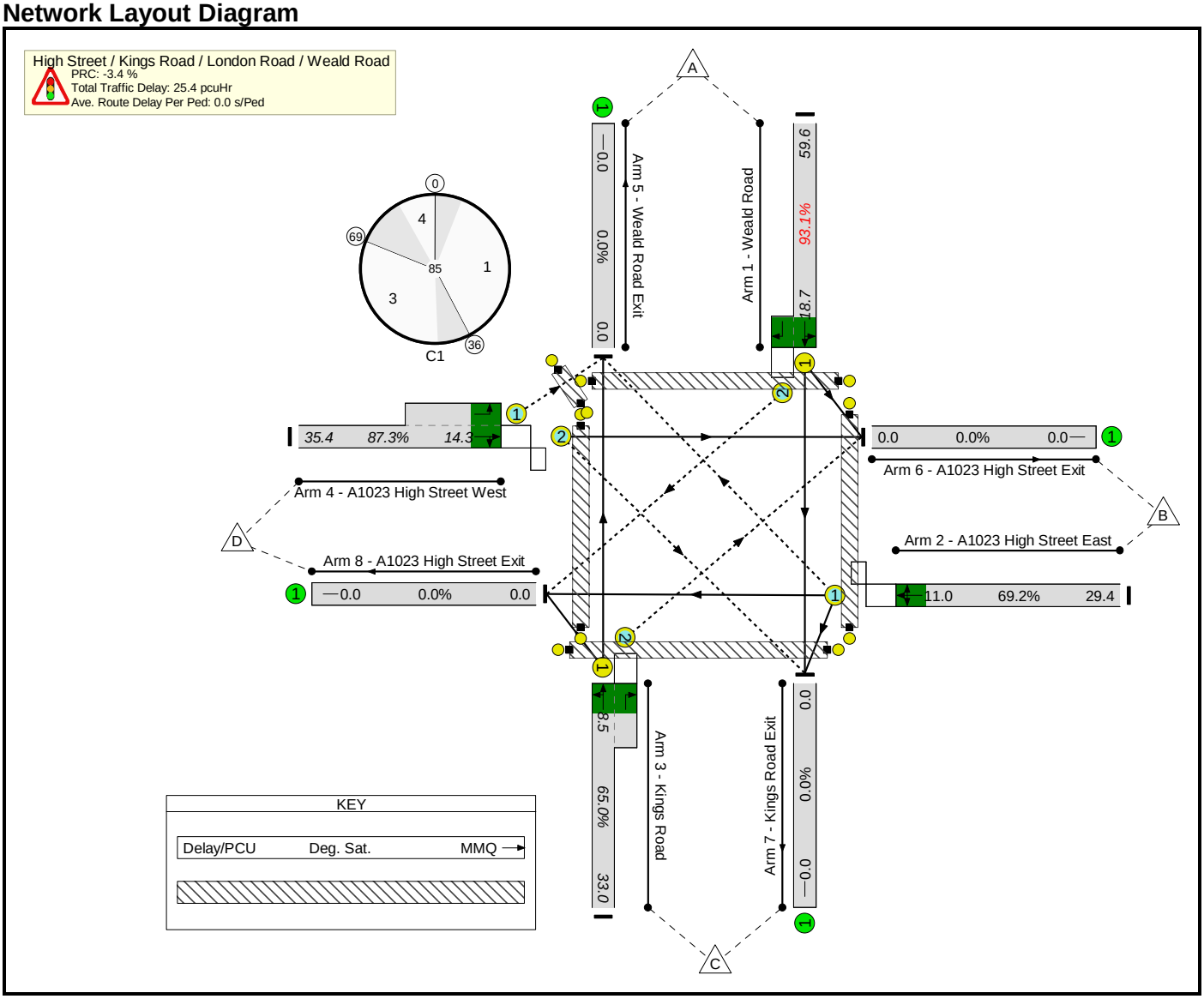
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J10 - Weald Road / A1023 High Street / Kings Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.7%**	**975**	**45**	**24**	**16.7**	**-**	**-**
High Street / Kings Road / London Road / Weald Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.7%**	**975**	**45**	**24**	**16.7**	**-**	**-**
1/1+1/2	Weald Road Left Ahead Right	U+O	D		1	34	-	447	1832:1731	658	67.9%	137	0	0	4.4	35.8	9.3
2/1	A1023 High Street East Right Left Ahead	O	B		1	34	-	441	1851	718	61.5%	44	0	1	3.7	30.2	10.1
3/1+3/2	Kings Road Ahead Right Left	U+O	C		1	34	-	543	1913:1888	768	70.7%	78	0	0	4.9	32.7	12.4
4/2+4/1	A1023 High Street West Left Ahead Right	O	A E		1	34:78	-	686	2053:1986	1000	68.6%	716	45	23	3.7	19.2	9.4
Ped Link: P1	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	J		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	I		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

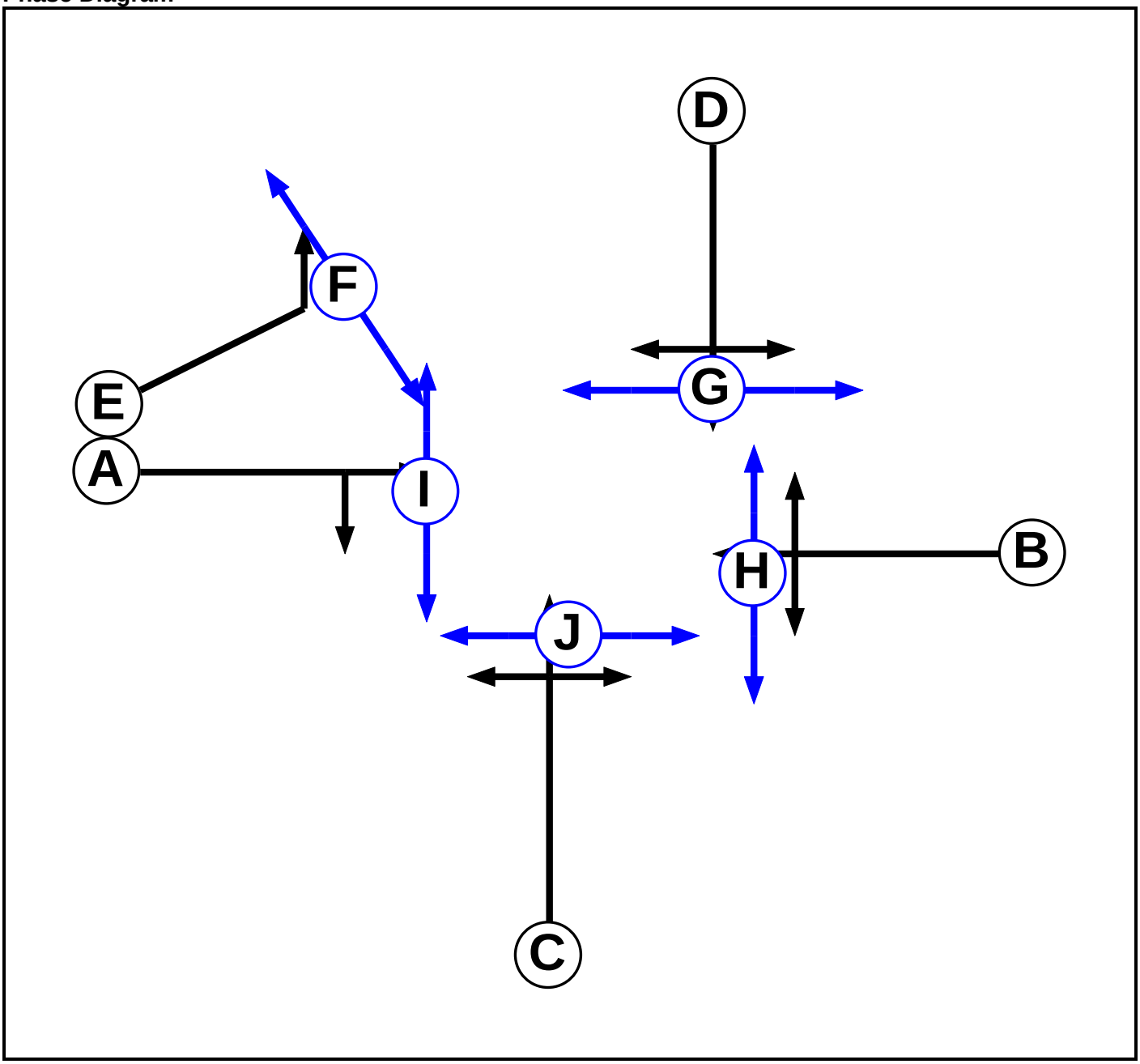
C1 PRC for Signalled Lanes (%): 27.3 Total Delay for Signalled Lanes (pcuHr): 16.75 Cycle Time (s): 95
PRC Over All Lanes (%): 27.3 Total Delay Over All Lanes(pcuHr): 16.75

Scenario 5: '2033 Reference (AM)' (FG3: '2033 Reference Case (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		-	5	6	-	-	-	9	9	9
	B	-		6	6	-	-	9	9	9	9
	C	5	5		-	-	-	9	9	9	9
	D	5	5	-		-	-	9	9	9	9
	E	-	-	-	-		5	-	-	-	-
	F	-	-	-	-	5		-	-	-	-
	G	-	5	5	5	-	-		-	-	-
	H	5	5	5	5	-	-	-		-	-
	I	5	5	5	5	-	-	-	-		-
	J	5	5	5	5	-	-	-	-	-	

Lane Input Data

Junction: High Street / Kings Road / London Road / Weald Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Weald Road)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
1/2 (Weald Road)	O	D	2	3	2.1	Geom	-	3.00	0.00	N	Arm 8 Right	8.00
2/1 (A1023 High Street East)	O	B	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	12.00
											Arm 8 Ahead	Inf
3/1 (Kings Road)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
3/2 (Kings Road)	O	C	2	3	4.3	Geom	-	3.00	0.00	N	Arm 6 Right	17.00
4/1 (A1023 High Street West)	O	E	2	3	6.4	Geom	-	4.70	0.00	Y	Arm 5 Left	30.00
4/2 (A1023 High Street West)	O	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	12.00
5/1 (Weald Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

6/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Kings Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

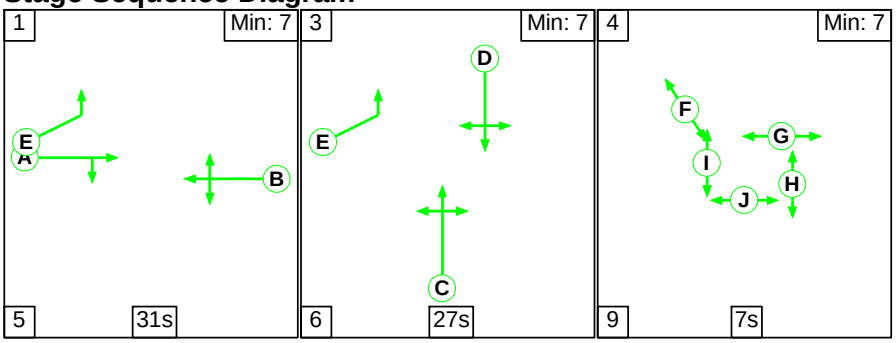
Junction: High Street / Kings Road / London Road / Weald Road

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 (Weald Road)	2.60	0.00	Y	Arm 6 Left	6.00	9.6 %	1831	1831
				Arm 7 Ahead	Inf	90.4 %		
1/2 (Weald Road)	3.00	0.00	N	Arm 8 Right	8.00	100.0 %	1731	1731
2/1 (A1023 High Street East)	3.10	0.00	Y	Arm 5 Right	15.00	9.6 %	1859	1859
				Arm 7 Left	12.00	20.6 %		
				Arm 8 Ahead	Inf	69.7 %		
3/1 (Kings Road)	3.50	0.00	Y	Arm 5 Ahead	Inf	71.8 %	1892	1892
				Arm 8 Left	11.00	28.2 %		
3/2 (Kings Road)	3.00	0.00	N	Arm 6 Right	17.00	100.0 %	1888	1888
4/1 (A1023 High Street West)	4.70	0.00	Y	Arm 5 Left	30.00	100.0 %	1986	1986
4/2 (A1023 High Street West)	3.50	0.00	N	Arm 6 Ahead	Inf	77.3 %	2047	2047
				Arm 7 Right	12.00	22.7 %		
5/1 (Weald Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Kings Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

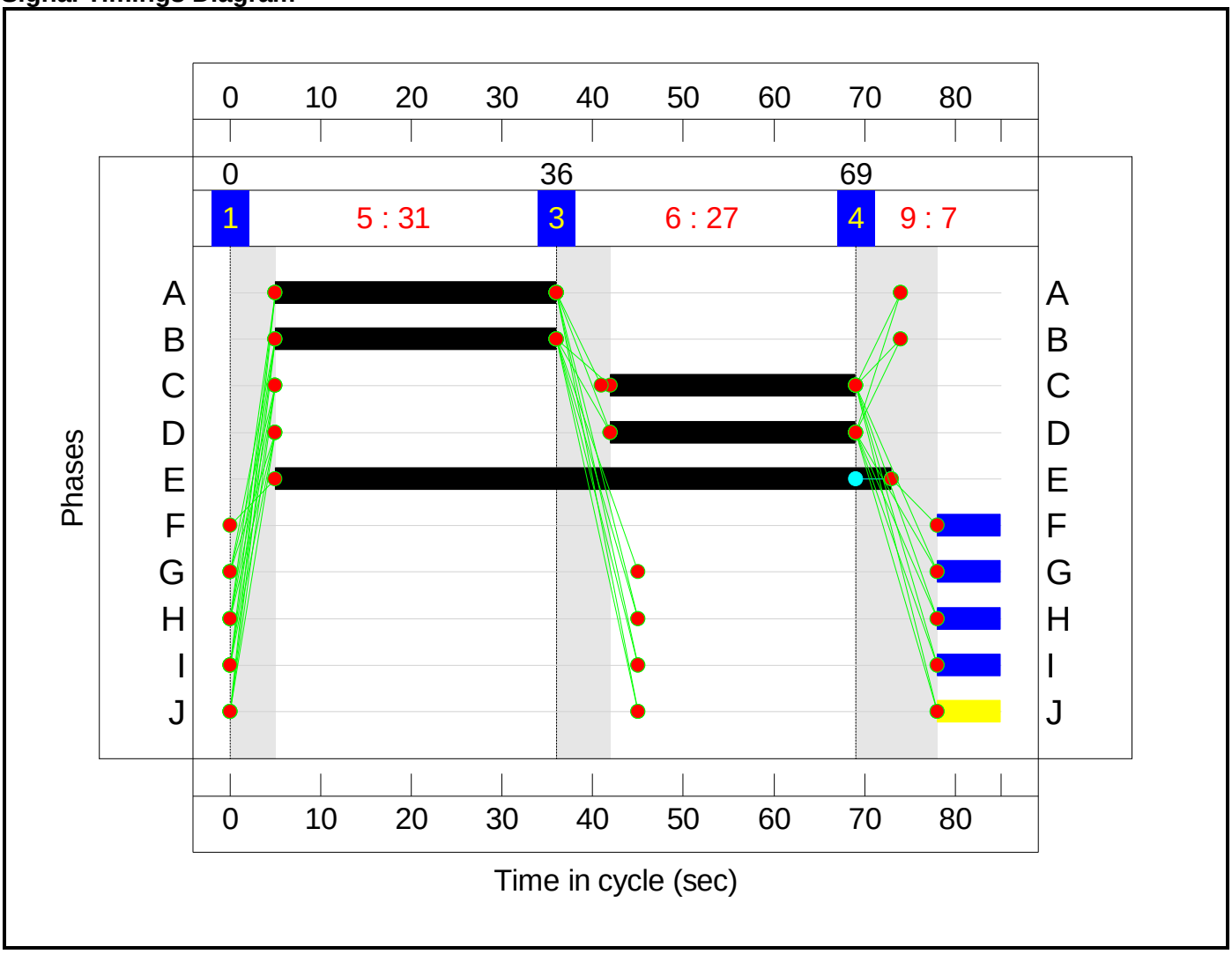
Lane Connector Input Data

Junction: High Street / Kings Road / London Road / Weald Road				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	8/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	2	35
4/2	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



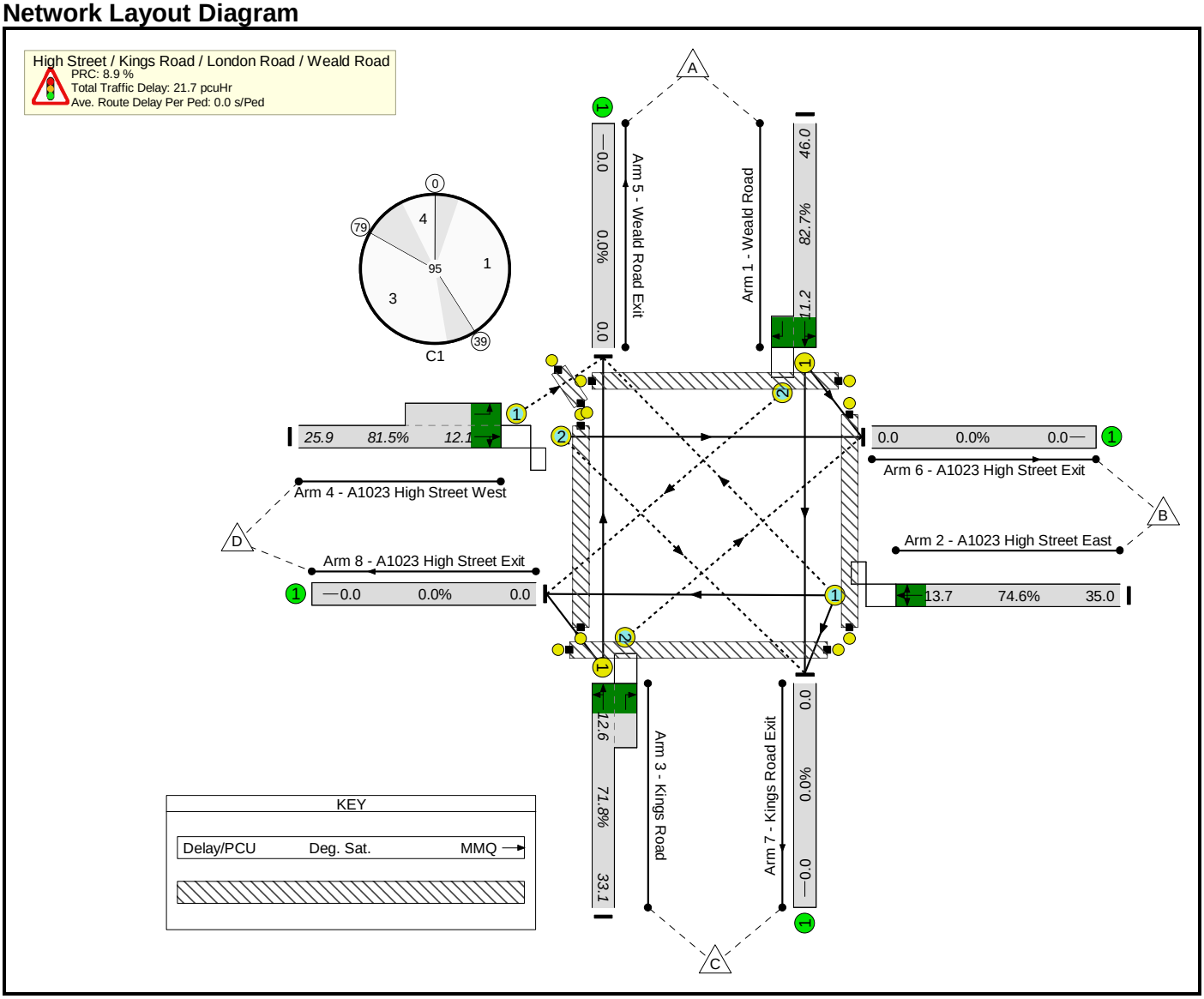
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J10 - Weald Road / A1023 High Street / Kings Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.1%**	**814**	**39**	**69**	**25.4**	**-**	**-**
High Street / Kings Road / London Road / Weald Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.1%**	**814**	**39**	**69**	**25.4**	**-**	**-**
1/1+1/2	Weald Road Left Ahead Right	U+O	D		1	27	-	628	1831:1731	675	93.1%	182	0	0	10.4	59.6	18.7
2/1	A1023 High Street East Right Left Ahead	O	B		1	31	-	499	1859	722	69.2%	42	0	6	4.1	29.4	11.0
3/1+3/2	Kings Road Ahead Right Left	U+O	C		1	27	-	446	1892:1888	686	65.0%	49	0	35	4.1	33.0	8.5
4/2+4/1	A1023 High Street West Left Ahead Right	O	A E		1	31:68	-	693	2047:1986	794	87.3%	540	39	29	6.8	35.4	14.3
Ped Link: P1	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	J		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	I		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

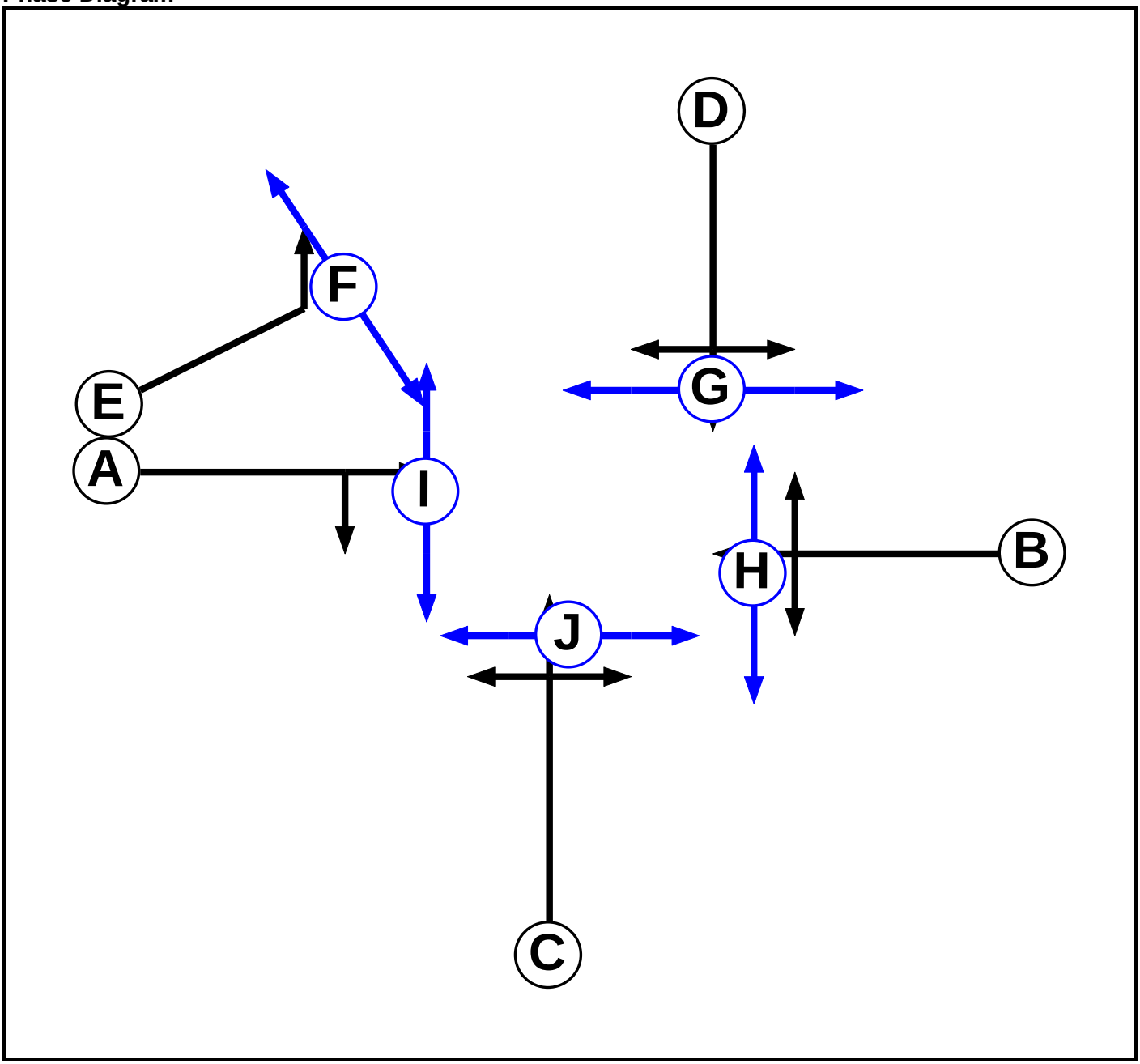
C1 PRC for Signalled Lanes (%): -3.4 Total Delay for Signalled Lanes (pcuHr): 25.39 Cycle Time (s): 85
PRC Over All Lanes (%): -3.4 Total Delay Over All Lanes(pcuHr): 25.39

Scenario 6: '2033 Reference (PM)' (FG4: '2033 Reference Case (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		-	5	6	-	-	-	9	9	9
	B	-		6	6	-	-	9	9	9	9
	C	5	5		-	-	-	9	9	9	9
	D	5	5	-		-	-	9	9	9	9
	E	-	-	-	-		5	-	-	-	-
	F	-	-	-	-	5		-	-	-	-
	G	-	5	5	5	-	-		-	-	-
	H	5	5	5	5	-	-	-		-	-
	I	5	5	5	5	-	-	-	-		-
	J	5	5	5	5	-	-	-	-	-	

Lane Input Data

Junction: High Street / Kings Road / London Road / Weald Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Weald Road)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
1/2 (Weald Road)	O	D	2	3	2.1	Geom	-	3.00	0.00	N	Arm 8 Right	8.00
2/1 (A1023 High Street East)	O	B	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	12.00
											Arm 8 Ahead	Inf
3/1 (Kings Road)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
3/2 (Kings Road)	O	C	2	3	4.3	Geom	-	3.00	0.00	N	Arm 6 Right	17.00
4/1 (A1023 High Street West)	O	E	2	3	6.4	Geom	-	4.70	0.00	Y	Arm 5 Left	30.00
4/2 (A1023 High Street West)	O	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	12.00
5/1 (Weald Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

6/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Kings Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

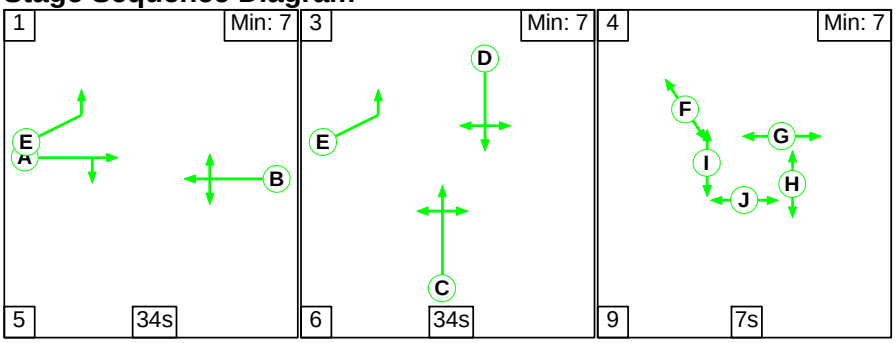
Junction: High Street / Kings Road / London Road / Weald Road

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 (Weald Road)	2.60	0.00	Y	Arm 6 Left	6.00	9.5 %	1831	1831
				Arm 7 Ahead	Inf	90.5 %		
1/2 (Weald Road)	3.00	0.00	N	Arm 8 Right	8.00	100.0 %	1731	1731
2/1 (A1023 High Street East)	3.10	0.00	Y	Arm 5 Right	15.00	8.6 %	1863	1863
				Arm 7 Left	12.00	19.7 %		
				Arm 8 Ahead	Inf	71.7 %		
3/1 (Kings Road)	3.50	0.00	Y	Arm 5 Ahead	Inf	79.9 %	1913	1913
				Arm 8 Left	11.00	20.1 %		
3/2 (Kings Road)	3.00	0.00	N	Arm 6 Right	17.00	100.0 %	1888	1888
4/1 (A1023 High Street West)	4.70	0.00	Y	Arm 5 Left	30.00	100.0 %	1986	1986
4/2 (A1023 High Street West)	3.50	0.00	N	Arm 6 Ahead	Inf	78.8 %	2051	2051
				Arm 7 Right	12.00	21.2 %		
5/1 (Weald Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Kings Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

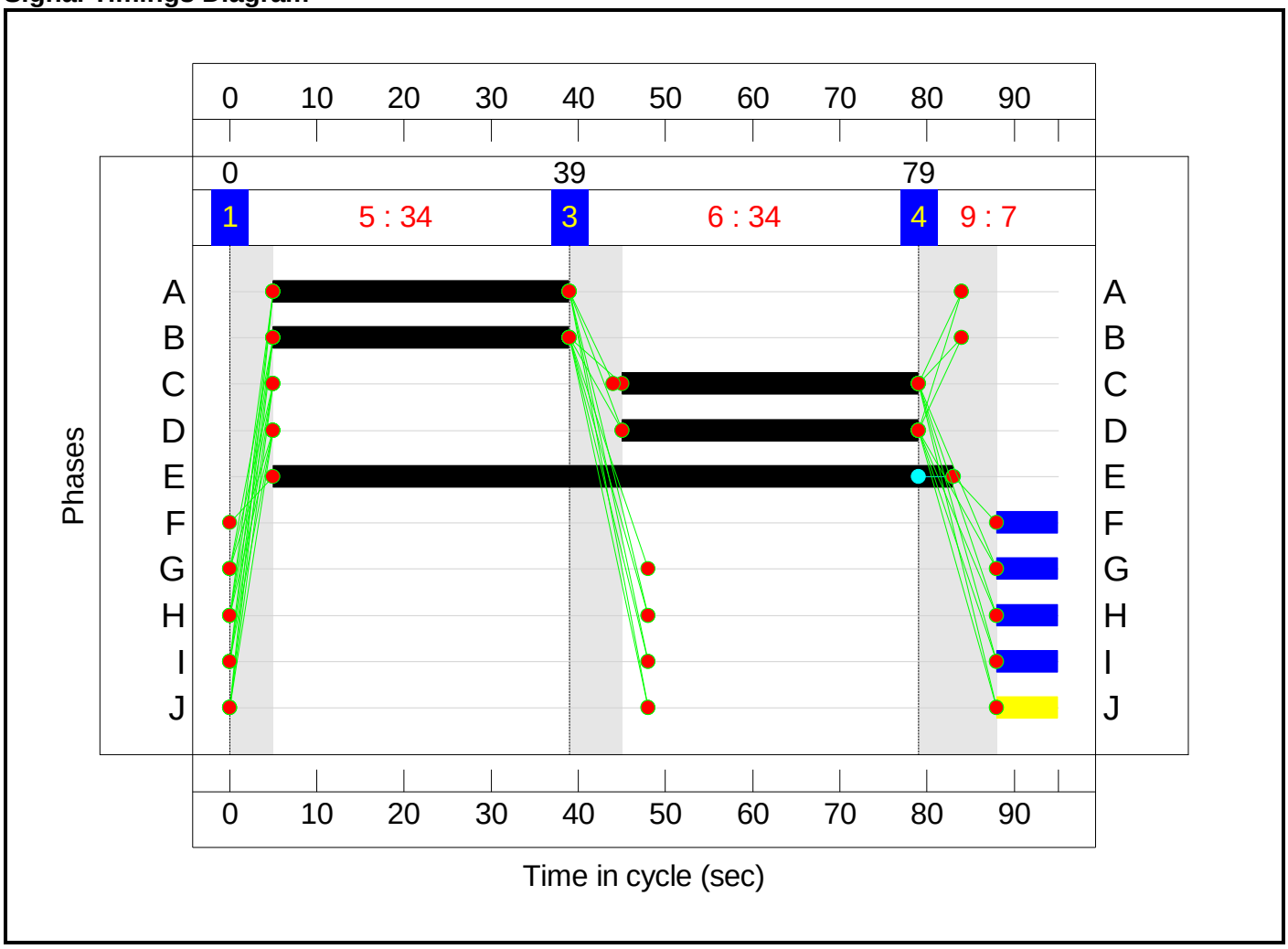
Lane Connector Input Data

Junction: High Street / Kings Road / London Road / Weald Road				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	8/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	2	35
4/2	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



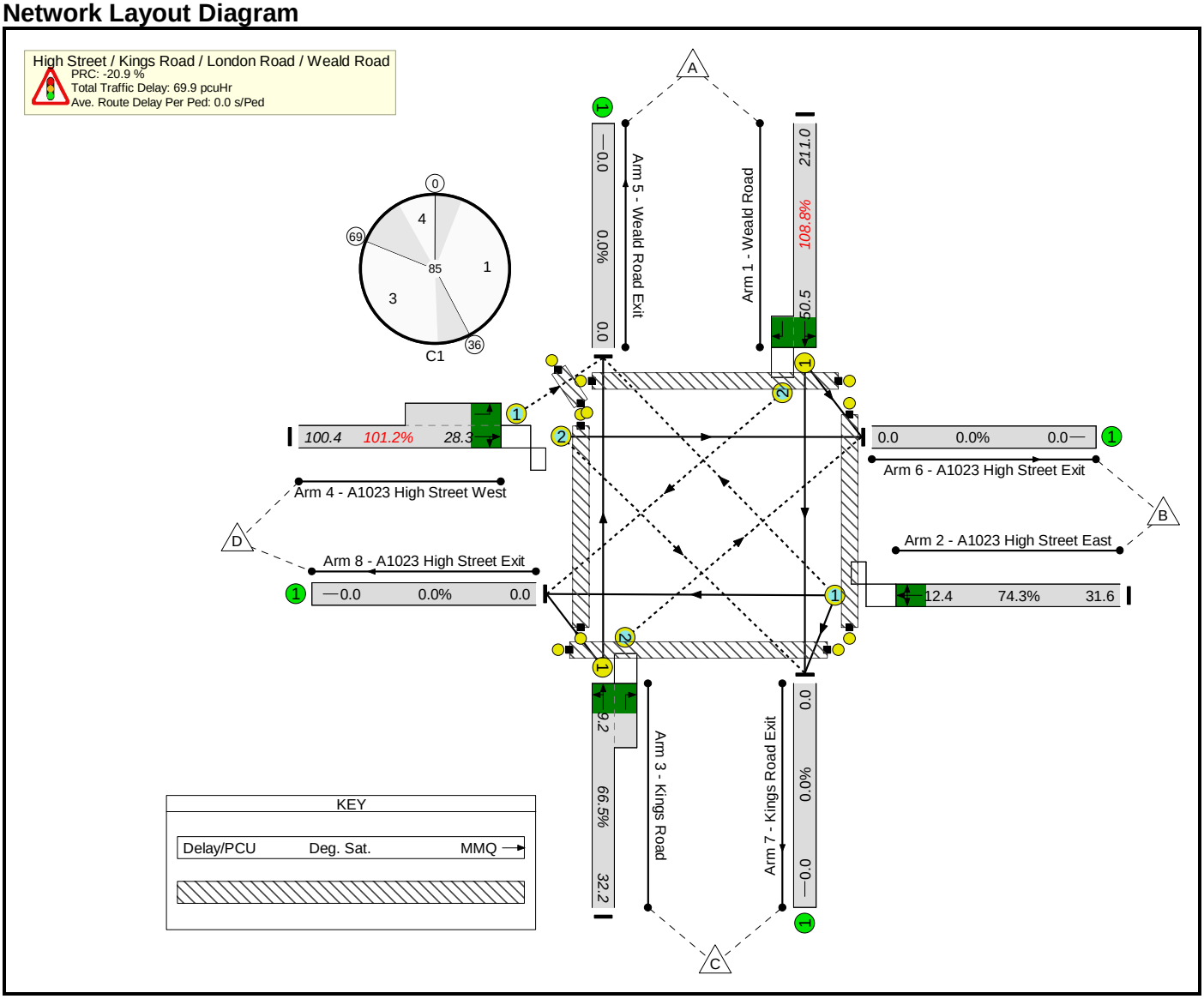
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J10 - Weald Road / A1023 High Street / Kings Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.7%**	**1025**	**45**	**45**	**21.7**	**-**	**-**
High Street / Kings Road / London Road / Weald Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.7%**	**1025**	**45**	**45**	**21.7**	**-**	**-**
1/1+1/2	Weald Road Left Ahead Right	U+O	D		1	34	-	481	1831:1731	582	82.7%	146	0	20	6.1	46.0	11.2
2/1	A1023 High Street East Right Left Ahead	O	B		1	34	-	538	1863	721	74.6%	45	0	1	5.2	35.0	13.7
3/1+3/2	Kings Road Ahead Right Left	U+O	C		1	34	-	551	1913:1888	767	71.8%	78	0	0	5.1	33.1	12.6
4/2+4/1	A1023 High Street West Left Ahead Right	O	A E		1	34:78	-	729	2051:1986	895	81.5%	757	45	24	5.3	25.9	12.1
Ped Link: P1	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	J		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	I		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

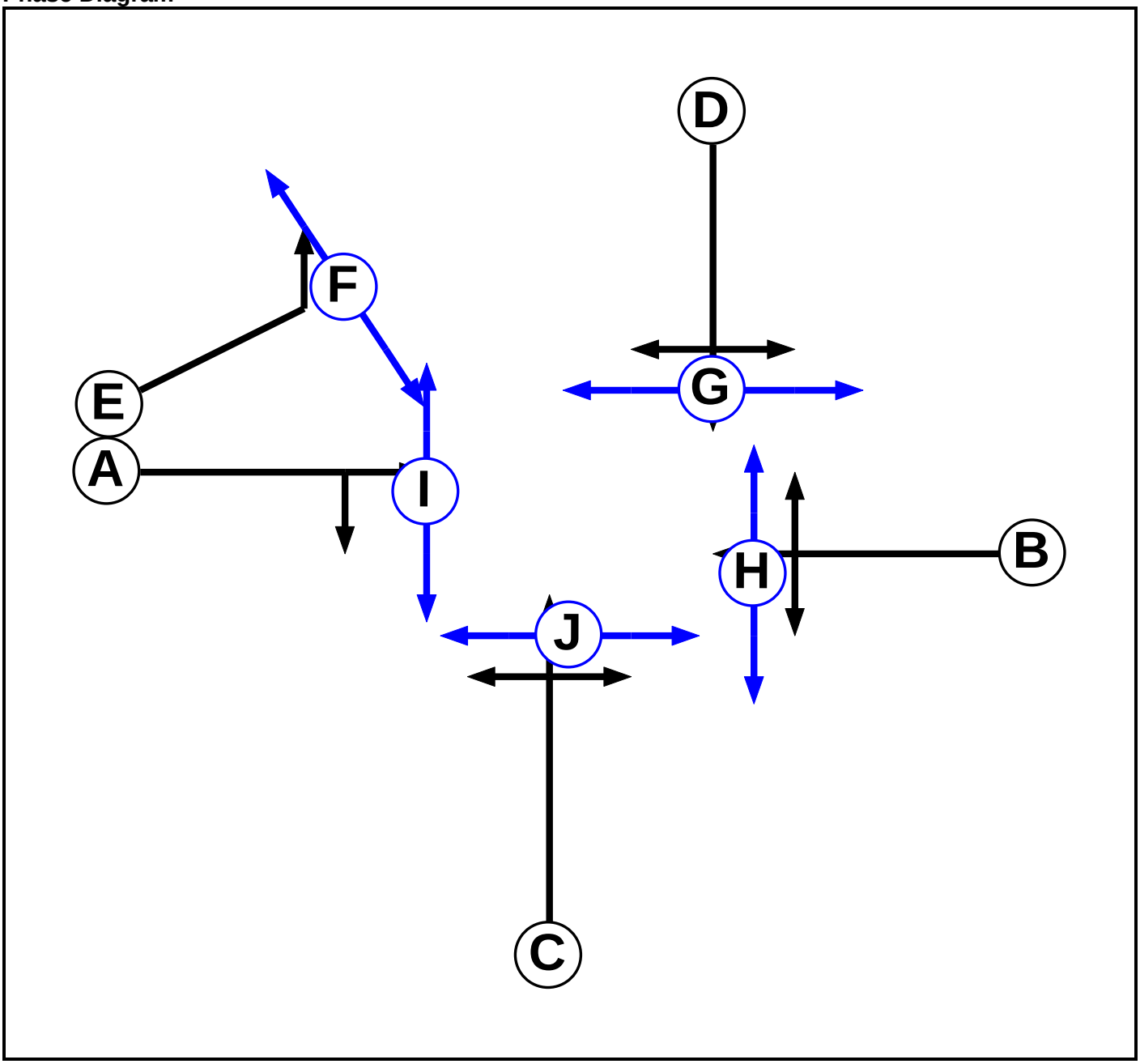
C1 PRC for Signalled Lanes (%): 8.9 Total Delay for Signalled Lanes (pcuHr): 21.70 Cycle Time (s): 95
PRC Over All Lanes (%): 8.9 Total Delay Over All Lanes(pcuHr): 21.70

Scenario 7: '2033 Local Plan Growth (AM)' (FG5: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		-	5	6	-	-	-	9	9	9
	B	-		6	6	-	-	9	9	9	9
	C	5	5		-	-	-	9	9	9	9
	D	5	5	-		-	-	9	9	9	9
	E	-	-	-	-		5	-	-	-	-
	F	-	-	-	-	5		-	-	-	-
	G	-	5	5	5	-	-		-	-	-
	H	5	5	5	5	-	-	-		-	-
	I	5	5	5	5	-	-	-	-		-
	J	5	5	5	5	-	-	-	-	-	

Lane Input Data

Junction: High Street / Kings Road / London Road / Weald Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Weald Road)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
1/2 (Weald Road)	O	D	2	3	2.1	Geom	-	3.00	0.00	N	Arm 8 Right	8.00
2/1 (A1023 High Street East)	O	B	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	12.00
											Arm 8 Ahead	Inf
3/1 (Kings Road)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
3/2 (Kings Road)	O	C	2	3	4.3	Geom	-	3.00	0.00	N	Arm 6 Right	17.00
4/1 (A1023 High Street West)	O	E	2	3	6.4	Geom	-	4.70	0.00	Y	Arm 5 Left	30.00
4/2 (A1023 High Street West)	O	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	12.00
5/1 (Weald Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

6/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Kings Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

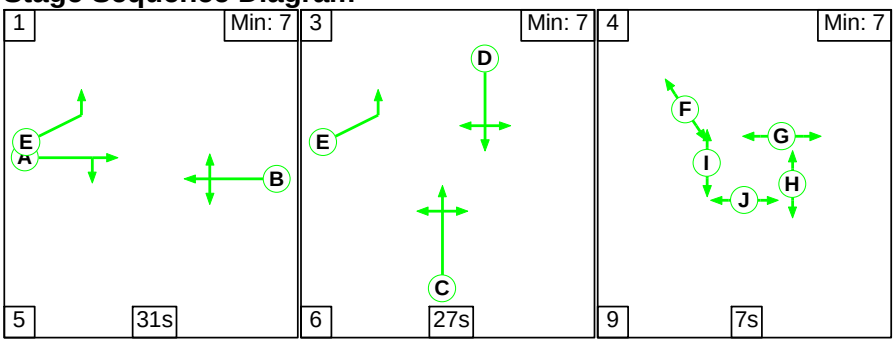
Junction: High Street / Kings Road / London Road / Weald Road

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 (Weald Road)	2.60	0.00	Y	Arm 6 Left	6.00	10.2 %	1828	1828
				Arm 7 Ahead	Inf	89.8 %		
1/2 (Weald Road)	3.00	0.00	N	Arm 8 Right	8.00	100.0 %	1731	1731
2/1 (A1023 High Street East)	3.10	0.00	Y	Arm 5 Right	15.00	9.2 %	1862	1862
				Arm 7 Left	12.00	19.6 %		
				Arm 8 Ahead	Inf	71.2 %		
3/1 (Kings Road)	3.50	0.00	Y	Arm 5 Ahead	Inf	69.5 %	1887	1887
				Arm 8 Left	11.00	30.5 %		
3/2 (Kings Road)	3.00	0.00	N	Arm 6 Right	17.00	100.0 %	1888	1888
4/1 (A1023 High Street West)	4.70	0.00	Y	Arm 5 Left	30.00	100.0 %	1986	1986
4/2 (A1023 High Street West)	3.50	0.00	N	Arm 6 Ahead	Inf	76.8 %	2046	2046
				Arm 7 Right	12.00	23.2 %		
5/1 (Weald Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Kings Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

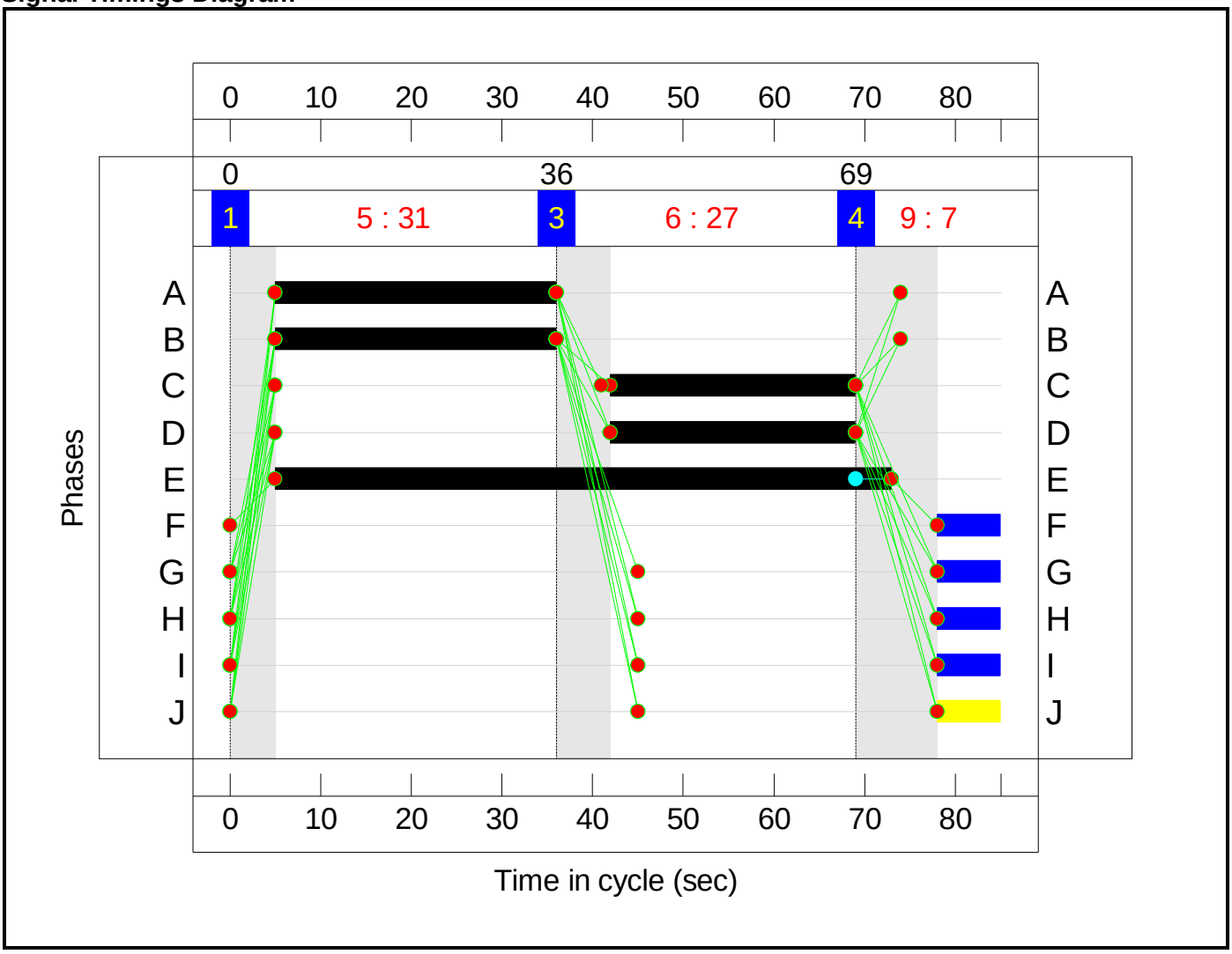
Lane Connector Input Data

Junction: High Street / Kings Road / London Road / Weald Road				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	8/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	2	35
4/2	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



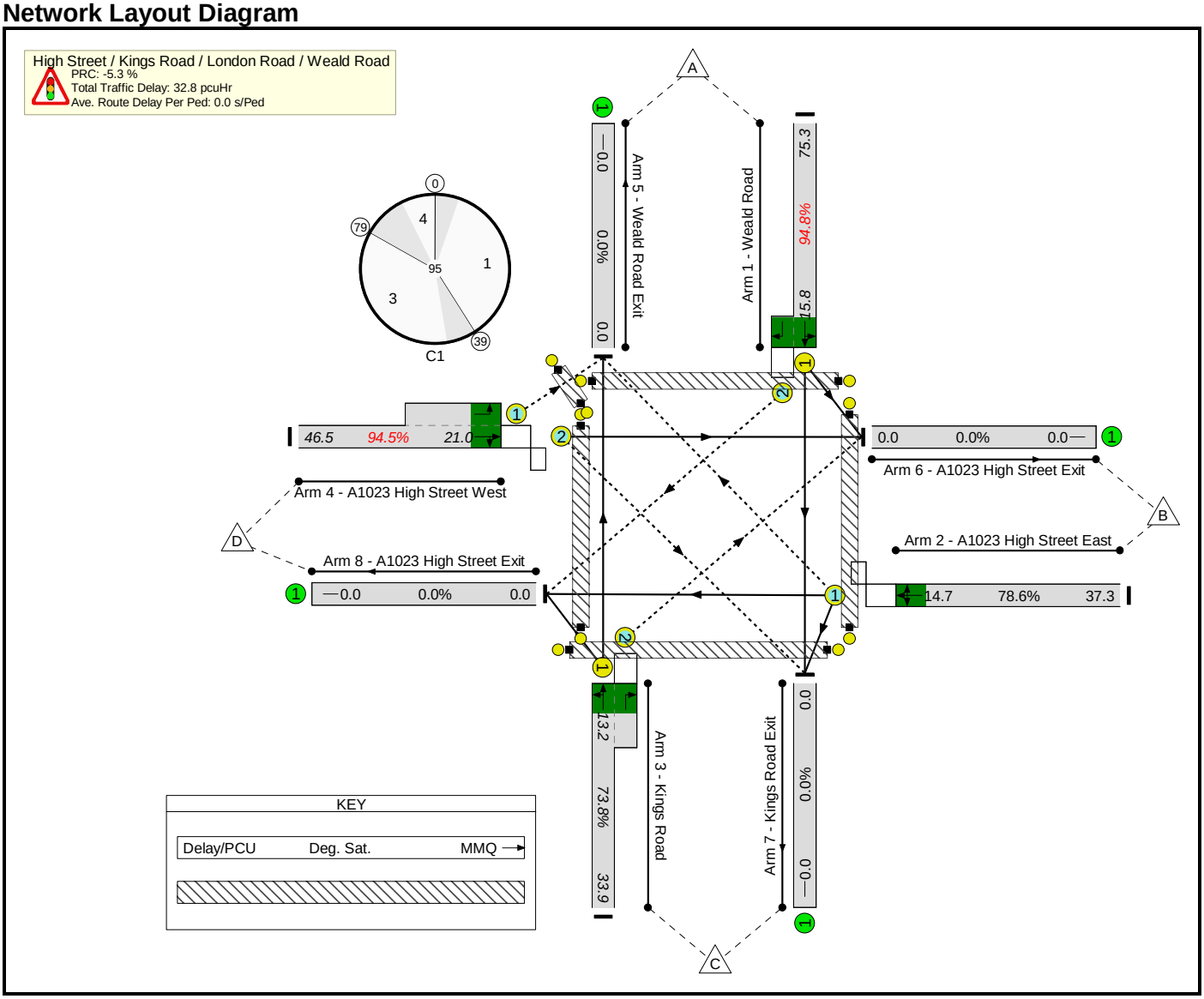
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J10 - Weald Road / A1023 High Street / Kings Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**812**	**27**	**147**	**69.9**	**-**	**-**
High Street / Kings Road / London Road / Weald Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**812**	**27**	**147**	**69.9**	**-**	**-**
1/1+1/2	Weald Road Left Ahead Right	U+O	D		1	27	-	697	1828:1731	641	108.8%	168	0	48	40.9	211.0	50.5
2/1	A1023 High Street East Right Left Ahead	O	B		1	31	-	541	1862	728	74.3%	46	0	4	4.7	31.6	12.4
3/1+3/2	Kings Road Ahead Right Left	U+O	C		1	27	-	469	1887:1888	705	66.5%	71	0	14	4.2	32.2	9.2
4/2+4/1	A1023 High Street West Left Ahead Right	O	A E		1	31:68	-	722	2046:1986	713	101.2%	527	27	81	20.1	100.4	28.3
Ped Link: P1	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	J		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	I		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

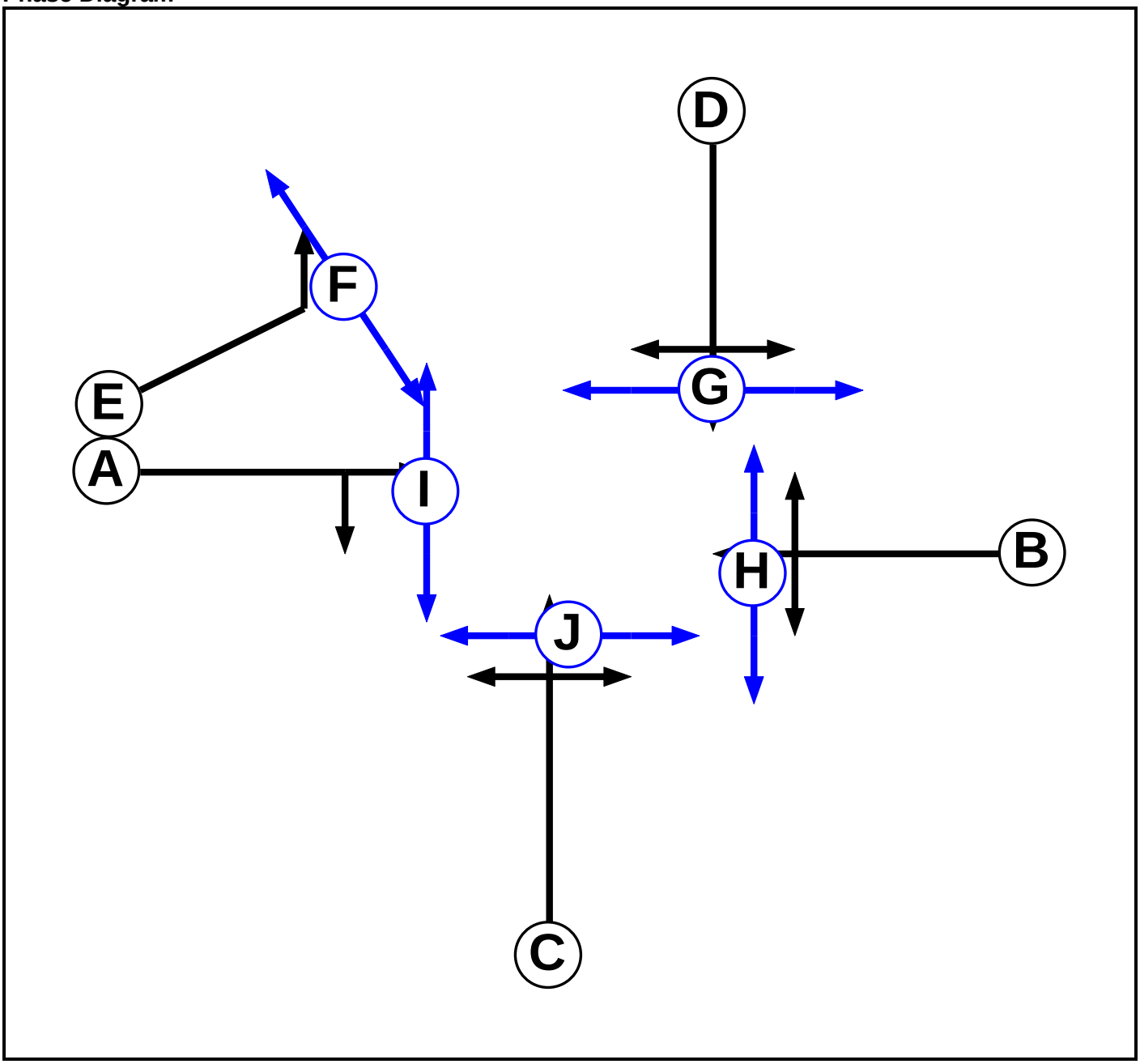
C1 PRC for Signalled Lanes (%): -20.9 Total Delay for Signalled Lanes (pcuHr): 69.92 Cycle Time (s): 85
PRC Over All Lanes (%): -20.9 Total Delay Over All Lanes(pcuHr): 69.92

Scenario 8: '2033 Local Plan Growth (PM)' (FG6: '2033 Local Plan Growth (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		-	5	6	-	-	-	9	9	9
	B	-		6	6	-	-	9	9	9	9
	C	5	5		-	-	-	9	9	9	9
	D	5	5	-		-	-	9	9	9	9
	E	-	-	-	-		5	-	-	-	-
	F	-	-	-	-	5		-	-	-	-
	G	-	5	5	5	-	-		-	-	-
	H	5	5	5	5	-	-	-		-	-
	I	5	5	5	5	-	-	-	-		-
	J	5	5	5	5	-	-	-	-	-	

Lane Input Data

Junction: High Street / Kings Road / London Road / Weald Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Weald Road)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
1/2 (Weald Road)	O	D	2	3	2.1	Geom	-	3.00	0.00	N	Arm 8 Right	8.00
2/1 (A1023 High Street East)	O	B	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	12.00
											Arm 8 Ahead	Inf
3/1 (Kings Road)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
3/2 (Kings Road)	O	C	2	3	4.3	Geom	-	3.00	0.00	N	Arm 6 Right	17.00
4/1 (A1023 High Street West)	O	E	2	3	6.4	Geom	-	4.70	0.00	Y	Arm 5 Left	30.00
4/2 (A1023 High Street West)	O	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	Inf
											Arm 7 Right	12.00
5/1 (Weald Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

6/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Kings Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 High Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

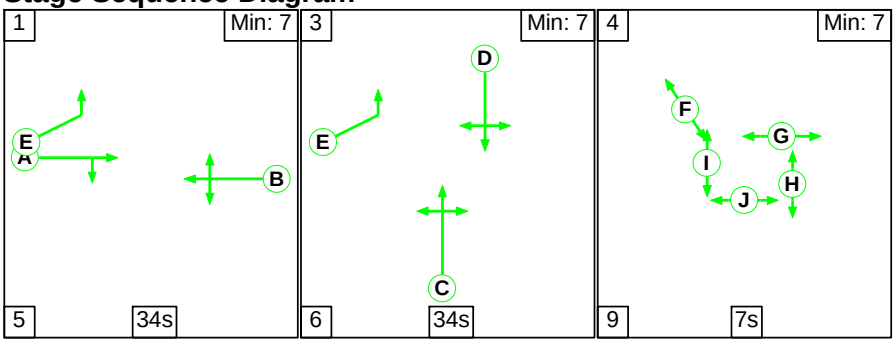
Junction: High Street / Kings Road / London Road / Weald Road

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 (Weald Road)	2.60	0.00	Y	Arm 6 Left	6.00	9.7 %	1831	1831
				Arm 7 Ahead	Inf	90.3 %		
1/2 (Weald Road)	3.00	0.00	N	Arm 8 Right	8.00	100.0 %	1731	1731
2/1 (A1023 High Street East)	3.10	0.00	Y	Arm 5 Right	15.00	9.1 %	1863	1863
				Arm 7 Left	12.00	19.1 %		
				Arm 8 Ahead	Inf	71.7 %		
3/1 (Kings Road)	3.50	0.00	Y	Arm 5 Ahead	Inf	78.9 %	1910	1910
				Arm 8 Left	11.00	21.1 %		
3/2 (Kings Road)	3.00	0.00	N	Arm 6 Right	17.00	100.0 %	1888	1888
4/1 (A1023 High Street West)	4.70	0.00	Y	Arm 5 Left	30.00	100.0 %	1986	1986
4/2 (A1023 High Street West)	3.50	0.00	N	Arm 6 Ahead	Inf	78.5 %	2050	2050
				Arm 7 Right	12.00	21.5 %		
5/1 (Weald Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Kings Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 High Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

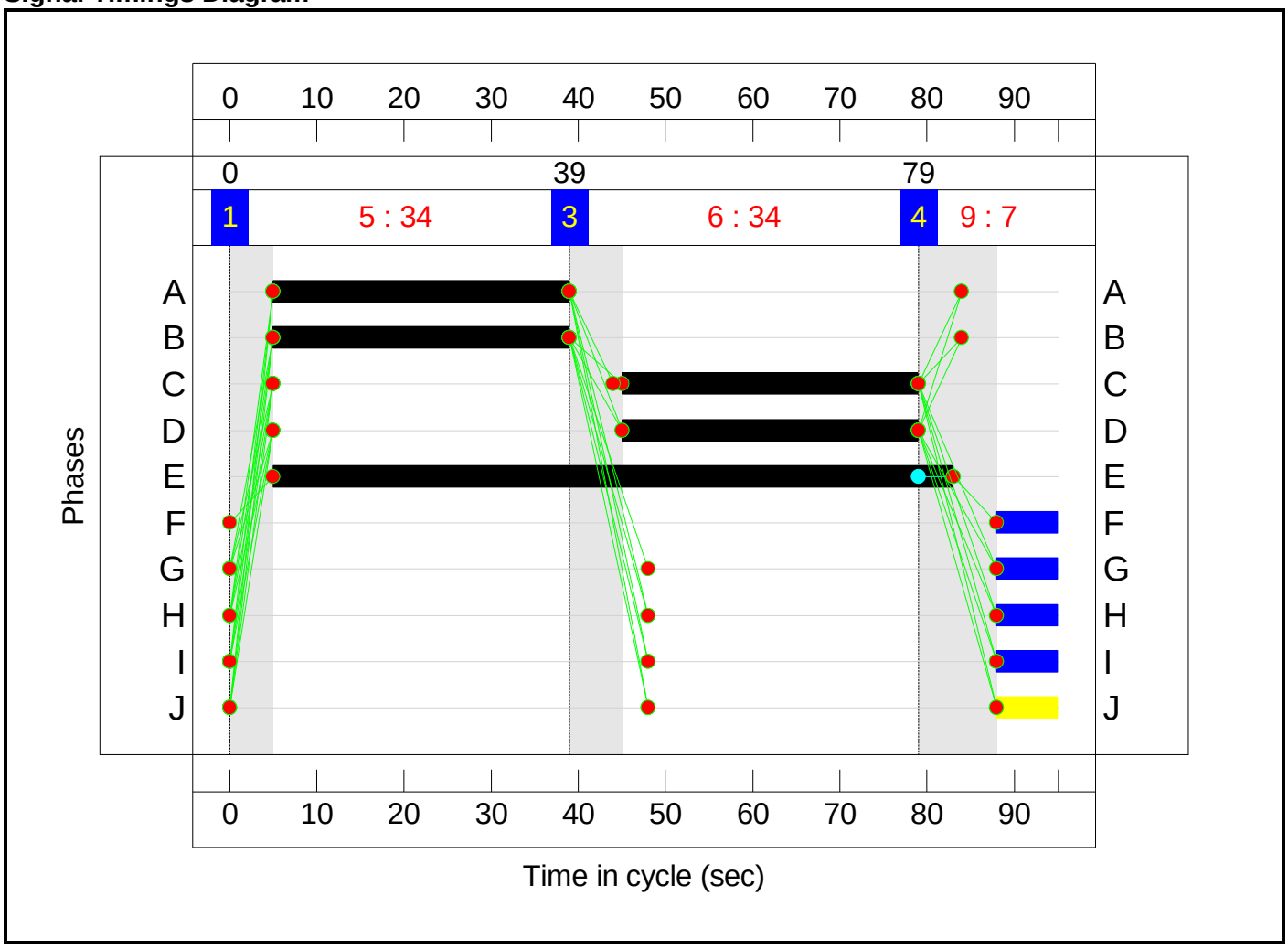
Lane Connector Input Data

Junction: High Street / Kings Road / London Road / Weald Road				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/2	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	5/1	Internal	3	35
3/1	8/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	2	35
4/2	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J10 - Weald Road / A1023 High Street / Kings Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**94.8%**	**1127**	**45**	**157**	**32.8**	**-**	**-**
High Street / Kings Road / London Road / Weald Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**94.8%**	**1127**	**45**	**157**	**32.8**	**-**	**-**
1/1+1/2	Weald Road Left Ahead Right	U+O	D		1	34	-	501	1831:1731	528	94.8%	134	0	47	10.5	75.3	15.8
2/1	A1023 High Street East Right Left Ahead	O	B		1	34	-	559	1863	711	78.6%	47	0	4	5.8	37.3	14.7
3/1+3/2	Kings Road Ahead Right Left	U+O	C		1	34	-	566	1910:1888	767	73.8%	82	0	0	5.3	33.9	13.2
4/2+4/1	A1023 High Street West Left Ahead Right	O	A E		1	34:78	-	866	2050:1986	917	94.5%	864	45	107	11.2	46.5	21.0
Ped Link: P1	Unnamed Ped Link	-	G		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	J		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	I		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	F		1	7	-	0	-	0	0.0%	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -5.3 Total Delay for Signalled Lanes (pcuHr): 32.78 Cycle Time (s): 95
PRC Over All Lanes (%): -5.3 Total Delay Over All Lanes(pcuHr): 32.78

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: 28085_12_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 24/10/2018 17:43:27

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Arm A	4.4	30.21	0.84	D
Arm B	1.0	28.88	0.49	D
Arm C	3.9	31.35	0.81	D
	A1 - 2033 Reference Case			
Arm A	3.9	26.52	0.81	D
Arm B	1.0	29.05	0.49	D
Arm C	4.0	32.37	0.82	D
	A1 - 2033 Local Plan Growth			
Arm A	4.3	28.71	0.83	D
Arm B	2.7	52.96	0.75	F
Arm C	4.8	37.64	0.84	E

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

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

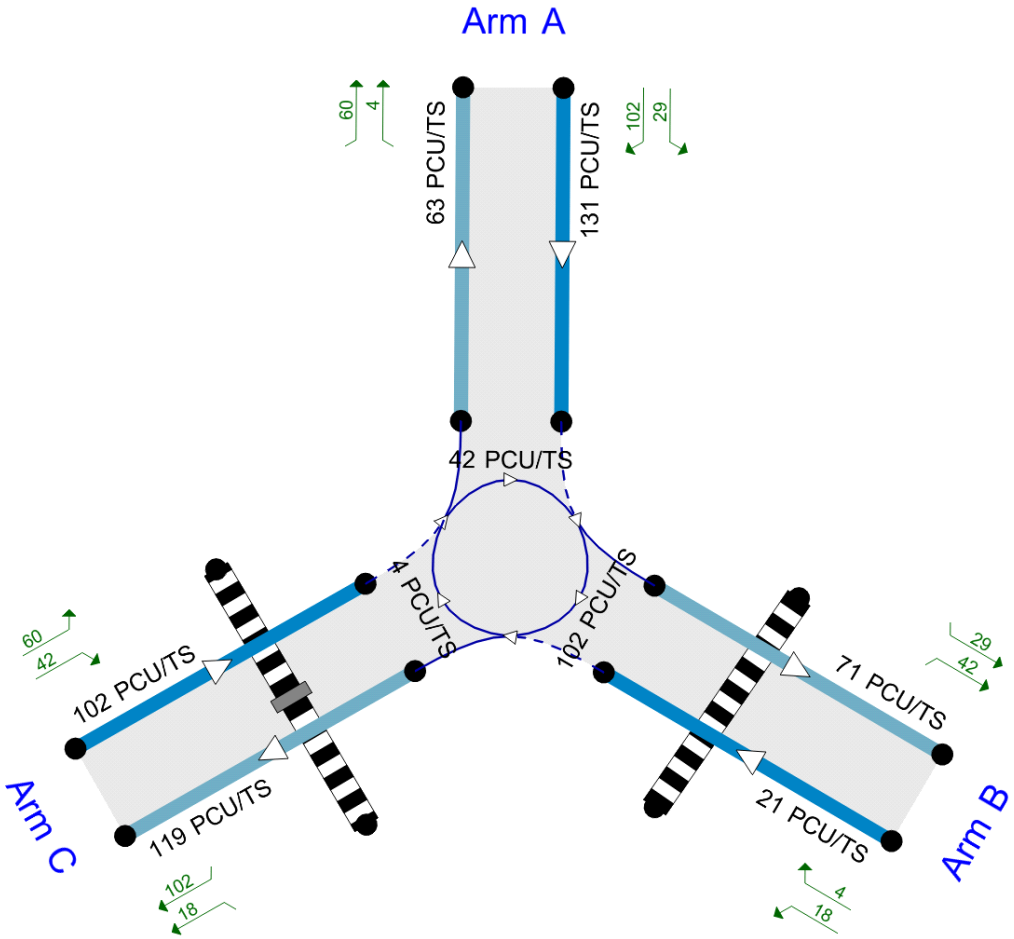
File summary

File Description

Title	Western Road - William Hunter Way
Location	
Site number	12
Date	02/10/2015
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 91% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	30.57	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Western Road N	
B	William Hunter Way	
C	Western Road S	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	3.70	3.70	3.70	0.0	10.07	7.70	0.0	
B	3.40	3.40	3.80	6.8	9.76	7.40	0.0	
C	3.60	3.60	4.30	2.4	15.26	15.20	0.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
B	1.00	1.00		Distance	7.80	5.57				
C	4.60	5.00	✓	Distance			3.00	2.14	2.80	2.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.617	242.407
B	0.619	217.482
C	0.654	266.265

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Calibration to Traffic Master	80.00
B	Percentage	Calibration to Traffic Master	40.00
C	Percentage	Calibration to Traffic Master	55.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	[DIRECT]

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	30.00	103.00
	B	4.00	0.00	17.00
	C	60.00	43.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	53.00	86.00
	B	3.00	0.00	17.00
	C	62.00	44.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	44.00	85.00
	B	6.00	0.00	26.00
	C	72.00	42.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	31.00	92.00
	B	2.00	0.00	19.00
	C	64.00	54.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	2	5	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	15
	C	1	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	20
	C	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.84	30.21	4.4	D	131.00	524.00
B	0.49	28.88	1.0	D	23.50	94.00
C	0.81	31.35	3.9	D	110.25	441.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	133.00	133.00	42.02		170.19	0.781	129.77	62.54	0.0	3.2	21.028	C
B	21.00	21.00	100.50	7.47	62.10	0.338	20.51	71.29	0.0	0.5	21.392	C
C	103.00	103.00	3.91	7.47	145.04	0.710	100.66	117.10	0.0	2.3	20.012	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	139.00	139.00	43.92		166.29	0.836	137.81	64.90	3.2	4.4	30.214	D
B	20.00	20.00	85.76	11.80	65.70	0.304	20.04	95.96	0.5	0.4	19.738	C
C	106.00	106.00	3.03	11.80	145.36	0.729	105.80	102.78	2.3	2.5	22.511	C

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	129.00	129.00	41.81		168.57	0.765	129.90	77.23	4.4	3.5	23.888	C
B	32.00	32.00	85.42	9.94	65.78	0.486	31.45	86.29	0.4	1.0	28.881	D
C	114.00	114.00	5.88	9.94	144.33	0.790	113.15	110.99	2.5	3.4	28.095	D

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	123.00	123.00	53.47		163.27	0.753	123.24	66.17	3.5	3.3	23.097	C
B	21.00	21.00	91.87	5.00	64.24	0.327	21.41	84.85	1.0	0.6	24.930	C
C	118.00	118.00	2.13	5.00	145.68	0.810	117.51	111.14	3.4	3.9	31.347	D

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 91% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	29.18	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	30.00	104.00
	B	4.00	0.00	18.00
	C	61.00	43.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	53.00	87.00
	B	3.00	0.00	18.00
	C	63.00	44.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	44.00	86.00
	B	6.00	0.00	26.00
	C	73.00	42.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	31.00	93.00
	B	2.00	0.00	20.00
	C	65.00	54.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	2	5	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	15
	C	1	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	20
	C	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.81	26.52	3.9	D	132.00	528.00
B	0.49	29.05	1.0	D	24.25	97.00
C	0.82	32.37	4.0	D	111.25	445.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	134.00	134.00	42.00		173.18	0.774	130.88	63.49	0.0	3.1	20.184	C
B	22.00	22.00	101.58	0.00	61.86	0.356	21.47	71.30	0.0	0.5	22.014	C
C	104.00	104.00	3.90	0.00	145.04	0.717	101.59	119.15	0.0	2.4	20.395	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	140.00	140.00	43.92		172.24	0.813	139.20	65.90	3.1	3.9	26.521	D
B	21.00	21.00	86.99	0.00	65.47	0.321	21.05	96.13	0.5	0.5	20.290	C
C	107.00	107.00	3.03	0.00	145.36	0.736	106.79	105.01	2.4	2.6	23.066	C

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	130.00	130.00	41.80		173.29	0.750	130.70	78.20	3.9	3.2	21.548	C
B	32.00	32.00	86.31	0.00	65.64	0.488	31.48	86.19	0.5	1.0	29.046	D
C	115.00	115.00	5.88	0.00	144.33	0.797	114.11	111.91	2.6	3.5	28.909	D

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	124.00	124.00	53.45		167.53	0.740	124.18	67.16	3.2	3.0	21.259	C
B	22.00	22.00	92.85	0.00	64.02	0.344	22.36	84.78	1.0	0.6	25.640	D
C	119.00	119.00	2.13	0.00	145.68	0.817	118.48	113.08	3.5	4.0	32.374	D

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 86% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	35.63	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	31.00	105.00
	B	7.00	0.00	30.00
	C	63.00	44.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	54.00	88.00
	B	6.00	0.00	31.00
	C	65.00	46.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	44.00	87.00
	B	9.00	0.00	40.00
	C	75.00	44.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	32.00	95.00
	B	5.00	0.00	33.00
	C	67.00	55.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	2	5	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	15
	C	1	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	20
	C	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.83	28.71	4.3	D	134.00	536.00
B	0.75	52.96	2.7	F	40.25	161.00
C	0.84	37.64	4.8	E	114.75	459.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	136.00	136.00	42.89		172.75	0.787	132.66	68.15	0.0	3.3	21.162	C
B	37.00	37.00	102.43	0.00	61.65	0.600	35.63	73.13	0.0	1.4	33.103	D
C	107.00	107.00	6.74	0.00	144.02	0.743	104.29	131.31	0.0	2.7	22.101	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	142.00	142.00	45.84		171.29	0.829	141.04	70.83	3.3	4.3	28.712	D
B	37.00	37.00	87.92	0.00	65.24	0.567	37.02	98.97	1.4	1.3	31.985	D
C	111.00	111.00	6.04	0.00	144.27	0.769	110.63	118.90	2.7	3.1	26.229	D

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	131.00	131.00	43.72		172.34	0.760	131.87	82.86	4.3	3.4	22.785	C
B	49.00	49.00	87.39	0.00	65.37	0.750	47.60	88.20	1.3	2.7	52.964	F
C	119.00	119.00	8.71	0.00	143.31	0.830	117.86	126.28	3.1	4.2	33.710	D

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	127.00	127.00	54.40		167.06	0.760	127.06	72.29	3.4	3.4	22.999	C
B	38.00	38.00	94.76	0.00	63.55	0.598	38.86	86.70	2.7	1.9	44.012	E
C	122.00	122.00	5.26	0.00	144.55	0.844	121.43	128.36	4.2	4.8	37.638	E

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_12_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 24/10/2018 17:44:34

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Arm A	3.9	42.99	0.83	E
Arm B	2.9	40.06	0.77	E
Arm C	4.6	23.55	0.84	C
	A1 - 2033 Reference Case			
Arm A	4.2	45.76	0.84	E
Arm B	4.7	57.51	0.86	F
Arm C	5.3	26.70	0.86	D
	A1 - 2033 Local Plan Growth			
Arm A	5.6	58.87	0.90	F
Arm B	6.5	73.69	0.92	F
Arm C	11.6	52.02	0.95	F

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

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

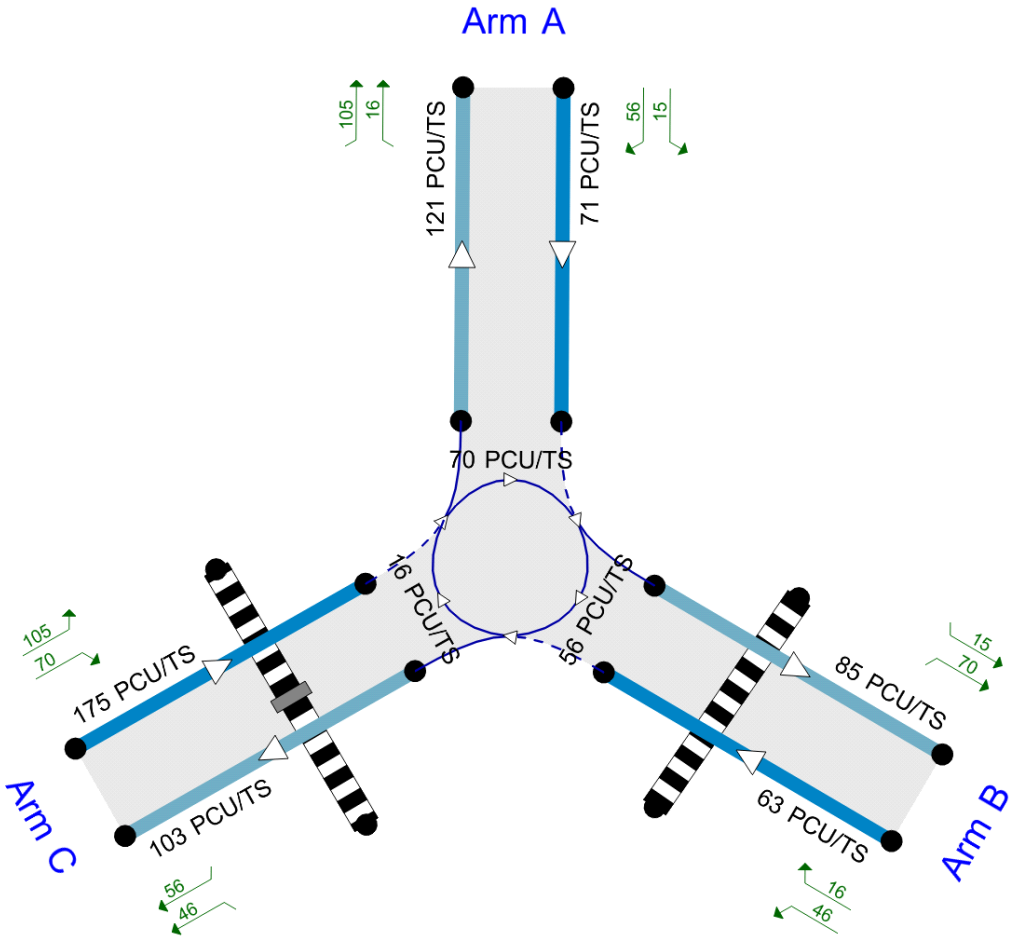
File summary

File Description

Title	Western Road - William Hunter Way
Location	
Site number	12
Date	02/10/2015
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	31.62	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Western Road N	
B	William Hunter Way	
C	Western Road S	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	3.70	3.70	3.70	0.0	10.07	7.70	0.0	
B	3.40	3.40	3.80	6.8	9.76	7.40	0.0	
C	3.60	3.60	4.30	2.4	15.26	15.20	0.0	

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
B	1.00	1.00		Distance	7.80	5.57				
C	4.60	5.00	✓	Distance			3.00	2.14	2.80	2.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	0.617	242.407
B	0.619	217.482
C	0.654	266.265

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Calibration to Traffic Master	52.00
B	Percentage	Calibration to Traffic Master	50.00
C	Percentage	Calibration to Traffic Master	85.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	[DIRECT]

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	14.00	57.00
	B	16.00	0.00	37.00
	C	98.00	59.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	27.00	47.00
	B	33.00	0.00	33.00
	C	104.00	52.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	24.00	60.00
	B	24.00	0.00	46.00
	C	90.00	78.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	17.00	50.00
	B	9.00	0.00	40.00
	C	123.00	62.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	2	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	2	0	0

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.83	42.99	3.9	E	74.00	296.00
B	0.77	40.06	2.9	E	59.50	238.00
C	0.84	23.55	4.6	C	166.50	666.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	71.00	71.00	58.07		107.41	0.661	69.19	112.06	0.0	1.8	22.608	C
B	53.00	53.00	55.55	0.00	91.56	0.579	51.70	71.71	0.0	1.3	21.939	C
C	157.00	157.00	15.61	0.00	217.65	0.721	154.52	91.64	0.0	2.5	13.940	B

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	74.00	74.00	51.98		109.37	0.677	73.83	135.97	1.8	2.0	25.105	D
B	66.00	66.00	47.19	0.00	94.14	0.701	65.17	78.61	1.3	2.1	30.144	D
C	156.00	156.00	32.33	0.00	208.35	0.749	155.62	80.04	2.5	2.9	17.113	C

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	84.00	84.00	77.34		101.23	0.830	82.09	114.10	2.0	3.9	42.990	E
B	70.00	70.00	58.48	0.00	90.65	0.772	69.19	100.95	2.1	2.9	40.063	E
C	168.00	168.00	24.06	0.00	212.95	0.789	167.39	103.61	2.9	3.5	19.379	C

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	67.00	67.00	62.06		106.13	0.631	69.07	131.58	3.9	1.8	25.454	D
B	49.00	49.00	51.42	0.00	92.84	0.528	50.77	79.71	2.9	1.2	22.202	C
C	185.00	185.00	9.79	0.00	220.88	0.838	183.85	92.40	3.5	4.6	23.553	C

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	38.02	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	14.00	57.00
	B	16.00	0.00	45.00
	C	99.00	61.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	27.00	48.00
	B	33.00	0.00	41.00
	C	106.00	54.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	24.00	61.00
	B	24.00	0.00	54.00
	C	92.00	80.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	18.00	51.00
	B	11.00	0.00	52.00
	C	125.00	64.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	2	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	2	0	0

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.84	45.76	4.2	E	75.00	300.00
B	0.86	57.51	4.7	F	69.00	276.00
C	0.86	26.70	5.3	D	170.25	681.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	71.00	71.00	59.99		106.80	0.665	69.16	112.89	0.0	1.8	22.937	C
B	61.00	61.00	55.52	0.00	91.57	0.666	59.17	73.63	0.0	1.8	26.502	D
C	160.00	160.00	15.52	0.00	217.70	0.735	157.36	99.18	0.0	2.6	14.530	B

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	75.00	75.00	53.95		108.74	0.690	74.75	137.63	1.8	2.1	26.174	D
B	74.00	74.00	48.14	0.00	93.85	0.788	72.68	80.56	1.8	3.1	39.946	E
C	160.00	160.00	32.07	0.00	208.49	0.767	159.51	88.74	2.6	3.1	18.352	C

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	85.00	85.00	79.27		100.61	0.845	82.89	115.98	2.1	4.2	45.765	E
B	78.00	78.00	59.32	0.00	90.39	0.863	76.46	102.84	3.1	4.7	57.511	F
C	172.00	172.00	23.96	0.00	213.00	0.808	171.29	111.82	3.1	3.8	21.058	C

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	69.00	69.00	63.98		105.52	0.654	71.17	135.56	4.2	2.0	27.614	D
B	63.00	63.00	52.52	0.00	92.50	0.681	65.35	82.64	4.7	2.3	35.418	E
C	189.00	189.00	12.03	0.00	219.63	0.861	187.51	105.83	3.8	5.3	26.701	D

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A, B, C	58.23	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Demand overview (Pedestrians)

Arm	Profile type
A	
B	[DIRECT]
C	[DIRECT]

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	15.00	58.00
	B	17.00	0.00	48.00
	C	107.00	72.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	28.00	49.00
	B	34.00	0.00	44.00
	C	114.00	67.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	25.00	62.00
	B	25.00	0.00	58.00
	C	101.00	93.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	18.00	52.00
	B	12.00	0.00	56.00
	C	133.00	76.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	2	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	2	0	0

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.90	58.87	5.6	F	76.75	307.00
B	0.92	73.69	6.5	F	73.50	294.00
C	0.95	52.02	11.6	F	190.75	763.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	73.00	73.00	70.32		103.48	0.705	70.83	120.93	0.0	2.2	26.100	D
B	65.00	65.00	56.28	0.00	91.34	0.712	62.80	84.87	0.0	2.2	29.649	D
C	179.00	179.00	16.42	0.00	217.19	0.824	174.82	102.65	0.0	4.2	19.896	C

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	77.00	77.00	66.57		104.68	0.736	76.62	145.77	2.2	2.5	31.410	D
B	78.00	78.00	49.10	0.00	93.55	0.834	76.26	94.09	2.2	3.9	47.365	E
C	181.00	181.00	32.86	0.00	208.06	0.870	179.48	92.51	4.2	5.7	29.883	D

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	87.00	87.00	91.35		96.73	0.899	83.94	125.27	2.5	5.6	58.871	F
B	83.00	83.00	59.62	0.00	90.30	0.919	80.46	115.66	3.9	6.5	73.691	F
C	194.00	194.00	24.76	0.00	212.56	0.913	191.85	115.32	5.7	7.8	38.459	E

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Pedestrian demand (Ped/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	70.00	70.00	75.54		101.81	0.688	73.21	143.09	5.6	2.4	34.196	D
B	68.00	68.00	54.21	0.00	91.97	0.739	71.26	94.54	6.5	3.2	47.878	E
C	209.00	209.00	13.38	0.00	218.88	0.955	205.24	112.09	7.8	11.6	52.023	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_13_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 14:19:03

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Arm A	1.0	3.73	0.49	A
Arm B	5.4	19.78	0.85	C
Arm C	0.5	2.25	0.34	A
Arm D	3.1	30.91	0.76	D
	A1 - 2033 Reference Case			
Arm A	1.1	4.03	0.52	A
Arm B	9.8	34.47	0.94	D
Arm C	0.7	2.53	0.40	A
Arm D	6.8	61.79	0.89	F
	A1 - 2033 Local Plan Growth			
Arm A	1.3	4.56	0.56	A
Arm B	20.2	80.82	1.03	F
Arm C	1.8	4.17	0.63	A
Arm D	86.9	663.37	1.27	F

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

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

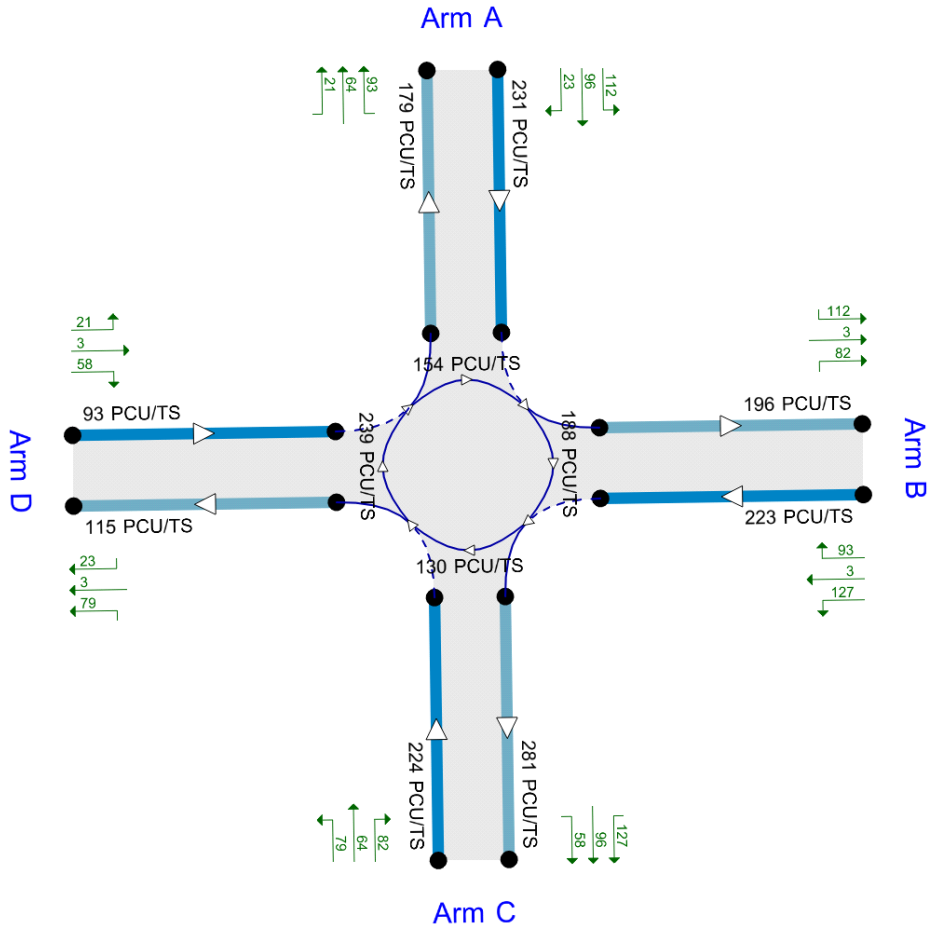
File summary

File Description

Title	A127 - A128 Brentwood Road - A128 Tilbury Road
Location	Brentwood
Site number	13
Date	05/09/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Time Segment: 08:00-08:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth with Peak Spreading	AM	DIRECT	08:00	09:00	60	15	✓
D7	2033 Local Plan Growth with Mitigation	AM	DIRECT	08:00	09:00	60	15	✓
D8	2033 Local Plan Growth with Mitigation [D8]	AM	DIRECT	08:00	09:00	60	15	✓
D9	2033 Local Plan Growth with Mitigation (Sensitivity)	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	D1,D3,D5	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Large Roundabout	A, B, C, D	11.14	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Brentwood Road	
B	A127 East	
C	Tilbury Road	
D	A127 West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.88	6.70	35.4	999.0	124.0	8.0	
B	5.19	5.19	0.0	999.0	124.0	8.0	
C	4.03	8.85	45.3	48.6	124.0	8.0	
D	5.77	6.36	2.9	999.0	124.0	9.0	

Large Roundabout Data

Arm	Circulating flow (PCU/TS)	Entry-to-exit separation (m)
A	71.00	55.31
B	85.00	138.64
C	111.25	46.99
D	155.50	140.50

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	1.068	692.760
B	0.968	564.427
C	1.155	804.958
D	0.997	625.471

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage	Calibration to Traffic Master	92.00
B	Percentage	Validation to Traffic Master data	70.00
D	Percentage	Validation to Traffic Master data	33.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	112.00	96.00	23.00
	B	95.00	0.00	130.00	3.00
	C	64.00	82.00	0.00	79.00
	D	22.00	3.00	60.00	11.00

08:15 - 08:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	2.00	124.00	82.00	30.00
	B	110.00	0.00	103.00	0.00
	C	54.00	77.00	0.00	68.00
	D	13.00	0.00	68.00	12.00

08:30 - 08:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	106.00	76.00	20.00
	B	83.00	3.00	75.00	1.00
	C	71.00	81.00	1.00	57.00
	D	13.00	1.00	70.00	12.00

08:45 - 09:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	112.00	86.00	24.00
	B	94.00	2.00	67.00	3.00
	C	54.00	64.00	0.00	70.00
	D	22.00	0.00	57.00	5.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	3	0	12	0
	C	3	4	0	8
	D	1	50	7	25

08:15 - 08:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	7
	B	3	0	5	0
	C	4	7	0	10
	D	0	0	12	22

08:30 - 08:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	3	6
	B	2	0	0	0
	C	3	11	0	15
	D	8	0	6	25

08:45 - 09:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	4	0	0
	B	6	0	0	0
	C	0	7	0	27
	D	5	0	13	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.49	3.73	1.0	A	224.00	896.00
B	0.85	19.78	5.4	C	192.25	769.00
C	0.34	2.25	0.5	A	205.50	822.00
D	0.76	30.91	3.1	D	92.25	369.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	232.00	232.00	153.55	486.46	0.477	231.09	178.94	0.0	0.9	3.525	A
B	228.00	228.00	188.37	267.49	0.852	222.64	196.27	0.0	5.4	19.784	C
C	225.00	225.00	130.27	654.49	0.344	224.45	280.75	0.0	0.5	2.196	A
D	96.00	96.00	239.41	127.66	0.752	93.08	115.31	0.0	2.9	26.360	D

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	238.00	238.00	156.67	483.40	0.492	237.93	179.09	0.9	1.0	3.734	A
B	213.00	213.00	193.57	263.97	0.807	213.70	201.03	5.4	4.7	18.926	C
C	199.00	199.00	153.81	627.30	0.317	199.05	253.46	0.5	0.5	2.253	A
D	93.00	93.00	242.85	126.53	0.735	92.91	110.00	2.9	3.0	29.624	D

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	203.00	203.00	167.84	472.42	0.430	203.21	169.60	1.0	0.8	3.421	A
B	162.00	162.00	180.00	273.16	0.593	165.15	191.04	4.7	1.5	8.650	A
C	210.00	210.00	121.64	664.46	0.316	209.99	223.51	0.5	0.5	2.160	A
D	96.00	96.00	241.57	126.95	0.756	95.87	90.07	3.0	3.1	30.913	D

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	223.00	223.00	129.38	510.21	0.437	222.99	170.88	0.8	0.8	3.194	A
B	166.00	166.00	174.28	277.03	0.599	165.97	178.09	1.5	1.5	8.369	A
C	188.00	188.00	129.16	655.77	0.287	188.06	211.08	0.5	0.4	2.141	A
D	84.00	84.00	215.00	135.69	0.619	85.27	102.22	3.1	1.9	20.090	C

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Large Roundabout	A, B, C, D	19.34	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/TS)	Entry-to-exit separation (m)
A	71.00	55.31
B	85.00	138.64
C	111.25	46.99
D	155.50	140.50

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	114.00	97.00	24.00
	B	105.00	0.00	137.00	3.00
	C	71.00	88.00	0.00	102.00
	D	24.00	3.00	70.00	11.00

08:15 - 08:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	2.00	126.00	83.00	31.00
	B	119.00	0.00	109.00	0.00
	C	60.00	83.00	0.00	91.00
	D	15.00	0.00	77.00	12.00

08:30 - 08:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	108.00	77.00	21.00
	B	91.00	3.00	80.00	1.00
	C	77.00	86.00	1.00	77.00
	D	15.00	1.00	78.00	12.00

08:45 - 09:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	114.00	87.00	25.00
	B	103.00	2.00	72.00	3.00
	C	60.00	69.00	0.00	90.00
	D	24.00	0.00	65.00	5.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	3	0	12	0
	C	3	4	0	8
	D	1	50	7	25

08:15 - 08:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	7
	B	3	0	5	0
	C	4	7	0	10
	D	0	0	12	22

08:30 - 08:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	3	6
	B	2	0	0	0
	C	3	11	0	15
	D	8	0	6	25

08:45 - 09:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	4	0	0
	B	6	0	0	0
	C	0	7	0	27
	D	5	0	13	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.52	4.03	1.1	A	228.00	912.00
B	0.94	34.47	9.8	D	207.00	828.00
C	0.40	2.53	0.7	A	238.75	955.00
D	0.89	61.79	6.8	F	103.00	412.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	236.00	236.00	167.17	473.08	0.499	235.01	195.27	0.0	1.0	3.780	A
B	245.00	245.00	198.06	260.92	0.939	235.16	204.12	0.0	9.8	30.721	D
C	261.00	261.00	138.96	644.46	0.405	260.29	294.26	0.0	0.7	2.462	A
D	108.00	108.00	260.34	120.77	0.894	102.10	138.90	0.0	5.9	43.580	E

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	242.00	242.00	171.17	469.15	0.516	241.91	195.87	1.0	1.1	4.033	A
B	228.00	228.00	204.00	256.90	0.888	228.71	209.09	9.8	9.1	34.472	D
C	234.00	234.00	163.40	616.22	0.380	234.05	269.31	0.7	0.7	2.529	A
D	104.00	104.00	263.48	119.74	0.869	103.56	133.97	5.9	6.3	58.220	F

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	207.00	207.00	180.58	459.91	0.450	207.23	187.65	1.1	0.8	3.643	A
B	175.00	175.00	189.79	266.53	0.657	182.12	198.03	9.1	2.0	11.619	B
C	241.00	241.00	132.70	651.69	0.370	241.02	239.21	0.7	0.6	2.400	A
D	106.00	106.00	262.66	120.01	0.883	105.57	111.06	6.3	6.8	61.795	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	227.00	227.00	144.47	495.38	0.458	226.98	188.04	0.8	0.9	3.418	A
B	180.00	180.00	186.33	268.87	0.669	179.94	185.13	2.0	2.1	10.448	B
C	219.00	219.00	139.44	643.90	0.340	219.06	226.83	0.6	0.6	2.376	A
D	94.00	94.00	234.97	129.12	0.728	97.55	123.53	6.8	3.2	34.072	D

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Large Roundabout	A, B, C, D	113.56	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/TS)	Entry-to-exit separation (m)
A	71.00	55.31
B	85.00	138.64
C	111.25	46.99
D	155.50	140.50

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	114.00	107.00	29.00
	B	104.00	0.00	128.00	20.00
	C	104.00	94.00	0.00	192.00
	D	24.00	3.00	90.00	22.00

08:15 - 08:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	2.00	126.00	92.00	36.00
	B	118.00	0.00	101.00	16.00
	C	91.00	89.00	0.00	175.00
	D	15.00	0.00	96.00	23.00

08:30 - 08:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	107.00	85.00	26.00
	B	91.00	3.00	73.00	16.00
	C	105.00	92.00	1.00	154.00
	D	15.00	1.00	95.00	22.00

08:45 - 09:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	114.00	95.00	29.00
	B	102.00	2.00	65.00	17.00
	C	88.00	75.00	0.00	166.00
	D	24.00	0.00	82.00	14.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	3	0	12	0
	C	3	4	0	8
	D	1	50	7	25

08:15 - 08:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	7
	B	3	0	5	0
	C	4	7	0	10
	D	0	0	12	22

08:30 - 08:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	3	6
	B	2	0	0	0
	C	3	11	0	15
	D	8	0	6	25

08:45 - 09:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	4	0	0
	B	6	0	0	0
	C	0	7	0	27
	D	5	0	13	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.56	4.56	1.3	A	241.25	965.00
B	1.03	80.82	20.2	F	214.00	856.00
C	0.63	4.17	1.8	A	356.50	1426.00
D	1.27	663.37	86.9	F	131.50	526.00

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	251.00	251.00	181.43	459.07	0.547	249.80	218.69	0.0	1.2	4.296	A
B	252.00	252.00	221.91	244.76	1.030	232.20	209.32	0.0	19.8	51.518	F
C	390.00	390.00	160.92	619.08	0.630	388.22	293.19	0.0	1.8	4.088	A
D	139.00	139.00	293.92	109.73	1.267	106.20	255.22	0.0	32.8	155.943	F

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	256.00	256.00	183.17	457.36	0.560	255.91	223.18	1.2	1.3	4.556	A
B	235.00	235.00	223.45	243.72	0.964	234.59	215.63	19.8	20.2	80.823	F
C	355.00	355.00	188.32	587.44	0.604	355.12	269.73	1.8	1.7	4.174	A
D	134.00	134.00	298.08	108.36	1.237	108.27	245.35	32.8	58.5	398.618	F

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	219.00	219.00	190.93	449.73	0.487	219.30	217.77	1.3	1.0	4.003	A
B	183.00	183.00	207.74	254.37	0.719	200.43	202.50	20.2	2.8	21.828	C
C	352.00	352.00	164.98	614.39	0.573	352.17	243.19	1.7	1.5	3.780	A
D	133.00	133.00	301.73	107.16	1.241	106.97	215.42	58.5	84.6	593.911	F

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	239.00	239.00	178.62	461.83	0.518	238.90	206.85	1.0	1.1	4.111	A
B	186.00	186.00	225.83	242.11	0.768	185.54	191.69	2.8	3.2	16.237	C
C	329.00	329.00	168.40	610.45	0.539	329.15	242.97	1.5	1.3	3.645	A
D	120.00	120.00	267.79	118.32	1.014	117.69	229.76	84.6	86.9	663.371	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_13_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 14:14:13

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Arm A	0.9	3.95	0.48	A
Arm B	3.8	16.64	0.81	C
Arm C	0.8	2.64	0.44	A
Arm D	5.0	32.38	0.85	D
	A1 - 2033 Reference Case			
Arm A	1.2	4.72	0.54	A
Arm B	6.8	26.57	0.90	D
Arm C	0.9	2.82	0.47	A
Arm D	17.0	93.95	1.00	F
	A1 - 2033 Local Plan Growth			
Arm A	1.7	6.11	0.64	A
Arm B	20.4	71.91	1.05	F
Arm C	1.6	3.70	0.60	A
Arm D	330.3	1843.81	1.72	F

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

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

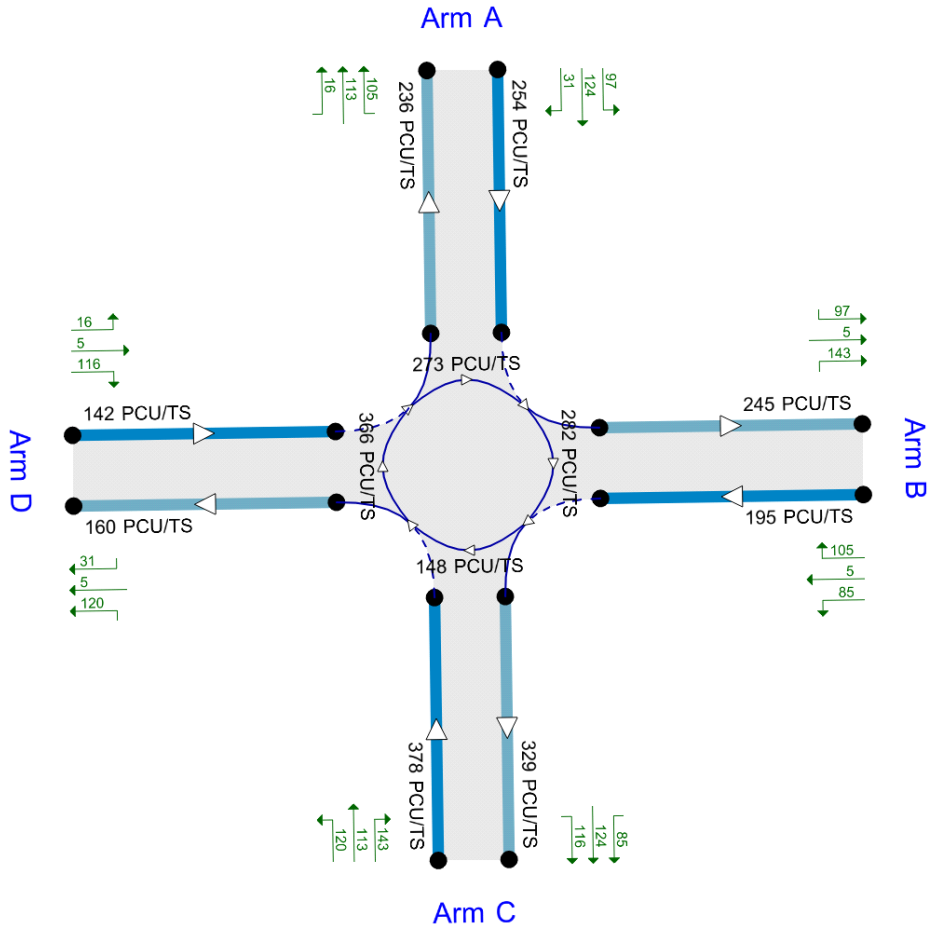
File summary

File Description

Title	A127 - A128 Brentwood Road - A128 Tilbury Road
Location	Brentwood
Site number	13
Date	05/09/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Time Segment: 17:00-17:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓
D7	2033 Local Plan Growth with Mitigation	PM	DIRECT	17:00	18:00	60	15	✓
D8	2033 Local Plan Growth with Mitigation [D8]	PM	DIRECT	17:00	18:00	60	15	✓
D9	2033 Local Plan Growth with Mitigation (Sensitivity)	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	D2,D4,D6	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Large Roundabout	A, B, C, D	11.15	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Brentwood Road	
B	A127 East	
C	Tilbury Road	
D	A127 West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.88	6.70	35.4	999.0	124.0	8.0	
B	5.19	5.19	0.0	999.0	124.0	8.0	
C	4.03	8.85	45.3	48.6	124.0	8.0	
D	5.77	6.36	2.9	999.0	124.0	9.0	

Large Roundabout Data

Arm	Circulating flow (PCU/TS)	Entry-to-exit separation (m)
A	102.50	55.31
B	90.75	138.64
C	104.75	46.99
D	167.50	140.50

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
A	1.043	685.452
B	0.964	563.093
C	1.161	806.466
D	0.987	622.687

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
B	Percentage	Validation to Traffic Master data	70.00
D	Percentage	Validation to Traffic Master data	55.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	2.00	89.00	92.00	27.00
	B	110.00	0.00	86.00	2.00
	C	89.00	130.00	3.00	59.00
	D	26.00	8.00	94.00	6.00

17:15 - 17:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	101.00	84.00	15.00
	B	126.00	0.00	69.00	1.00
	C	109.00	116.00	0.00	46.00
	D	24.00	9.00	77.00	2.00

17:30 - 17:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	84.00	74.00	11.00
	B	100.00	0.00	72.00	3.00
	C	96.00	117.00	1.00	46.00
	D	23.00	14.00	105.00	4.00

17:45 - 18:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	67.00	79.00	17.00
	B	99.00	1.00	67.00	1.00
	C	103.00	107.00	1.00	40.00
	D	16.00	9.00	60.00	11.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	1	0
	B	1	0	1	0
	C	1	5	0	14
	D	0	0	8	20

17:15 - 17:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	1	0
	B	1	0	3	0
	C	1	2	0	13
	D	0	0	3	0

17:30 - 17:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	4	0
	C	0	2	0	13
	D	0	0	6	0

17:45 - 18:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	0	0
	C	2	5	0	3
	D	0	0	2	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.48	3.95	0.9	A	186.00	744.00
B	0.81	16.64	3.8	C	184.25	737.00
C	0.44	2.64	0.8	A	265.75	1063.00
D	0.85	32.38	5.0	D	122.00	488.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	210.00	210.00	237.23	438.12	0.479	209.08	223.80	0.0	0.9	3.947	A
B	198.00	198.00	220.33	245.56	0.806	194.18	225.98	0.0	3.8	16.640	C
C	281.00	281.00	144.53	638.69	0.440	280.18	269.98	0.0	0.8	2.640	A
D	134.00	134.00	331.22	162.66	0.824	129.80	93.48	0.0	4.2	26.498	D

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	201.00	201.00	204.96	471.76	0.426	201.17	260.47	0.9	0.8	3.360	A
B	196.00	196.00	180.07	272.72	0.719	197.11	226.06	3.8	2.7	12.288	B
C	271.00	271.00	145.60	637.44	0.425	271.06	231.57	0.8	0.8	2.539	A
D	112.00	112.00	352.40	151.16	0.741	113.04	64.26	4.2	3.2	24.727	C

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	170.00	170.00	239.28	435.97	0.390	170.11	220.50	0.8	0.6	3.403	A
B	175.00	175.00	194.52	262.96	0.665	175.62	214.86	2.7	2.1	10.548	B
C	260.00	260.00	119.46	667.79	0.389	260.11	250.69	0.8	0.7	2.274	A
D	146.00	146.00	315.64	171.12	0.853	144.14	63.92	3.2	5.0	32.385	D

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	163.00	163.00	192.16	485.10	0.336	163.13	218.84	0.6	0.5	2.809	A
B	168.00	168.00	170.81	278.96	0.602	168.54	184.48	2.1	1.5	8.192	A
C	251.00	251.00	129.28	656.39	0.382	251.02	210.07	0.7	0.6	2.295	A
D	96.00	96.00	311.28	173.49	0.553	99.72	69.02	5.0	1.3	13.057	B

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Large Roundabout	A, B, C, D	24.67	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/TS)	Entry-to-exit separation (m)
A	102.50	55.31
B	90.75	138.64
C	104.75	46.99
D	167.50	140.50

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	2.00	97.00	98.00	29.00
	B	113.00	0.00	92.00	2.00
	C	91.00	136.00	3.00	69.00
	D	27.00	8.00	115.00	7.00

17:15 - 17:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	108.00	90.00	17.00
	B	129.00	0.00	75.00	1.00
	C	112.00	121.00	0.00	56.00
	D	24.00	9.00	96.00	2.00

17:30 - 17:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	91.00	80.00	13.00
	B	103.00	0.00	78.00	3.00
	C	98.00	122.00	1.00	55.00
	D	23.00	14.00	124.00	4.00

17:45 - 18:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	74.00	84.00	19.00
	B	102.00	1.00	72.00	1.00
	C	105.00	112.00	1.00	49.00
	D	16.00	9.00	77.00	12.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	1	0
	B	1	0	1	0
	C	1	5	0	14
	D	0	0	8	20

17:15 - 17:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	1	0
	B	1	0	3	0
	C	1	2	0	13
	D	0	0	3	0

17:30 - 17:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	4	0
	C	0	2	0	13
	D	0	0	6	0

17:45 - 18:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	0	0
	C	2	5	0	3
	D	0	0	2	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.54	4.72	1.2	A	201.00	804.00
B	0.90	26.57	6.8	D	193.00	772.00
C	0.47	2.82	0.9	A	282.75	1131.00
D	1.00	93.95	17.0	F	141.75	567.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	226.00	226.00	258.52	415.91	0.543	224.81	226.88	0.0	1.2	4.721	A
B	207.00	207.00	243.89	229.67	0.901	200.15	239.45	0.0	6.8	26.570	D
C	299.00	299.00	148.49	634.08	0.472	298.06	295.55	0.0	0.9	2.820	A
D	157.00	157.00	340.53	157.60	0.996	144.87	106.02	0.0	12.1	54.685	F

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	216.00	216.00	228.84	446.86	0.483	216.23	266.81	1.2	1.0	3.943	A
B	205.00	205.00	207.15	254.45	0.806	207.27	237.93	6.8	4.6	20.280	C
C	289.00	289.00	151.35	630.76	0.458	289.06	263.06	0.9	0.9	2.729	A
D	131.00	131.00	363.87	144.93	0.904	131.78	76.53	12.1	11.3	75.156	F

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	185.00	185.00	259.71	414.68	0.446	185.14	225.92	1.0	0.8	3.941	A
B	184.00	184.00	218.39	246.87	0.745	185.44	226.46	4.6	3.1	15.236	C
C	276.00	276.00	124.87	661.50	0.417	276.14	278.95	0.9	0.7	2.412	A
D	165.00	165.00	326.24	165.36	0.998	159.38	74.77	11.3	17.0	93.945	F

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	177.00	177.00	224.60	451.28	0.392	177.16	225.46	0.8	0.7	3.302	A
B	176.00	176.00	204.37	256.32	0.687	176.87	197.39	3.1	2.3	11.453	B
C	267.00	267.00	135.62	649.02	0.411	267.02	245.62	0.7	0.7	2.436	A
D	114.00	114.00	321.44	167.97	0.679	128.63	81.21	17.0	2.3	30.815	D

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Large Roundabout	A, B, C, D	428.61	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/TS)	Entry-to-exit separation (m)
A	102.50	55.31
B	90.75	138.64
C	104.75	46.99
D	167.50	140.50

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	2.00	98.00	125.00	31.00
	B	116.00	0.00	94.00	5.00
	C	113.00	144.00	3.00	120.00
	D	28.00	8.00	202.00	9.00

17:15 - 17:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	109.00	114.00	19.00
	B	131.00	0.00	76.00	4.00
	C	132.00	129.00	0.00	103.00
	D	25.00	9.00	178.00	5.00

17:30 - 17:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	1.00	92.00	104.00	15.00
	B	105.00	0.00	79.00	6.00
	C	118.00	130.00	1.00	101.00
	D	24.00	14.00	204.00	7.00

17:45 - 18:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	74.00	105.00	20.00
	B	104.00	1.00	73.00	3.00
	C	123.00	118.00	1.00	91.00
	D	17.00	9.00	148.00	14.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	1	0
	B	1	0	1	0
	C	1	5	0	14
	D	0	0	8	20

17:15 - 17:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	1	0
	B	1	0	3	0
	C	1	2	0	13
	D	0	0	3	0

17:30 - 17:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	4	0
	C	0	2	0	13
	D	0	0	6	0

17:45 - 18:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	0	0
	C	2	5	0	3
	D	0	0	2	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
A	0.64	6.11	1.7	A	227.50	910.00
B	1.05	71.91	20.4	F	199.25	797.00
C	0.60	3.70	1.6	A	356.75	1427.00
D	1.72	1843.81	330.3	F	225.25	901.00

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	256.00	256.00	272.61	401.22	0.638	254.25	235.67	0.0	1.7	6.106	A
B	215.00	215.00	281.52	204.29	1.052	194.64	245.35	0.0	20.4	60.443	F
C	380.00	380.00	147.50	635.23	0.598	378.43	328.66	0.0	1.6	3.705	A
D	247.00	247.00	365.93	143.82	1.717	142.36	160.01	0.0	104.6	354.312	F

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	243.00	243.00	242.61	432.50	0.562	243.44	280.32	1.7	1.3	4.816	A
B	211.00	211.00	243.54	229.90	0.918	216.60	242.50	20.4	14.8	71.907	F
C	364.00	364.00	161.49	619.00	0.588	364.06	298.66	1.6	1.5	3.689	A
D	217.00	217.00	394.82	128.13	1.694	128.10	130.73	104.6	193.5	979.613	F

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	212.00	212.00	260.53	413.82	0.512	212.24	247.05	1.3	1.1	4.493	A
B	190.00	190.00	244.51	229.25	0.829	199.14	228.27	14.8	5.6	35.466	E
C	350.00	350.00	136.56	647.93	0.540	350.27	307.09	1.5	1.2	3.155	A
D	249.00	249.00	361.26	146.35	1.701	146.32	125.57	193.5	296.2	1476.479	F

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	199.00	199.00	258.22	416.23	0.478	199.14	243.04	1.1	0.9	4.171	A
B	181.00	181.00	256.23	221.34	0.818	181.74	201.12	5.6	4.9	23.300	C
C	333.00	333.00	132.45	652.71	0.510	333.15	305.53	1.2	1.1	2.912	A
D	188.00	188.00	347.37	153.89	1.222	153.89	118.23	296.2	330.3	1843.807	F

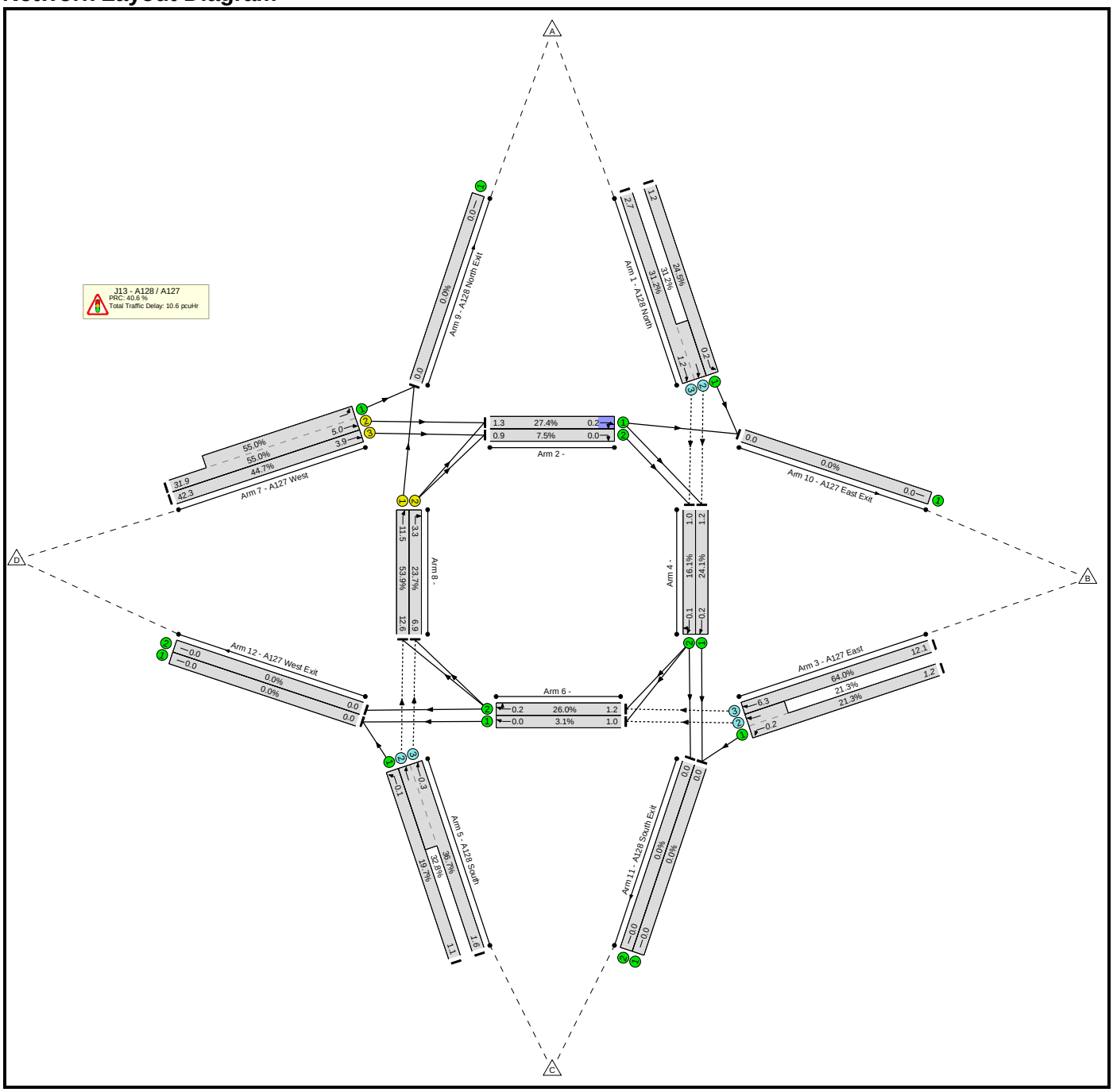
Brentwood PBA Modelling

Project and User Details

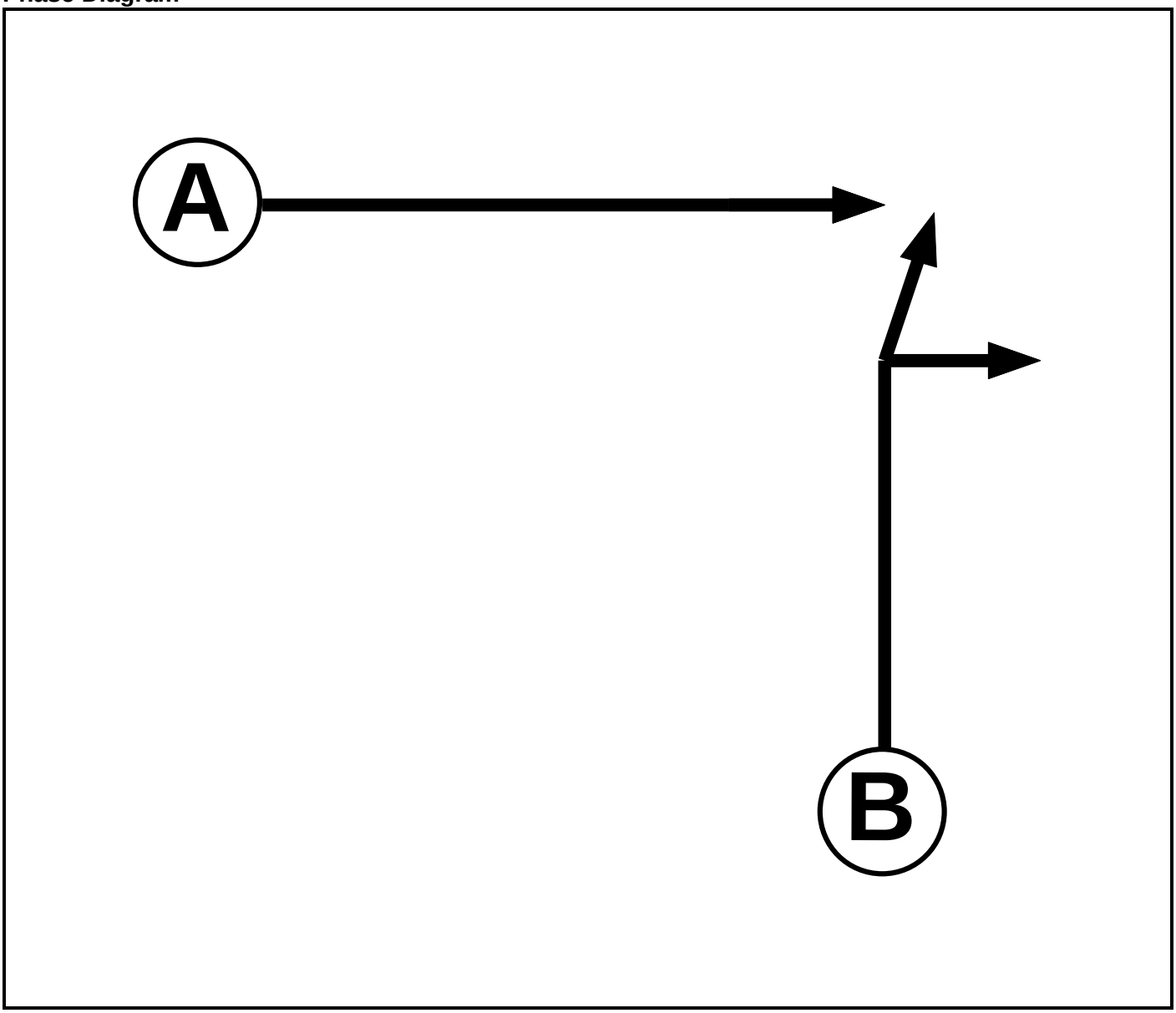
Project:	**28085 Brentwood**
Title:	**Junction 13 - A128 / A127**
Location:	Brentwood
Additional detail:	
File name:	28085_13_LS_LSM_Mit_Bypass.lsg3x
Author:	Rcox
Company:	Peter Brett Assoicates
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 1: '2033 Reference Case (AM)' (FG1: '2033 Reference Case (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 4 Right	Inf
											Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	5.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
3/3 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
5/1 (A128 South)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
5/3 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf

											Arm 12 Ahead	Inf
7/1 (A127 West)	U		2	3	25.7	Geom	-	3.50	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
7/3 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

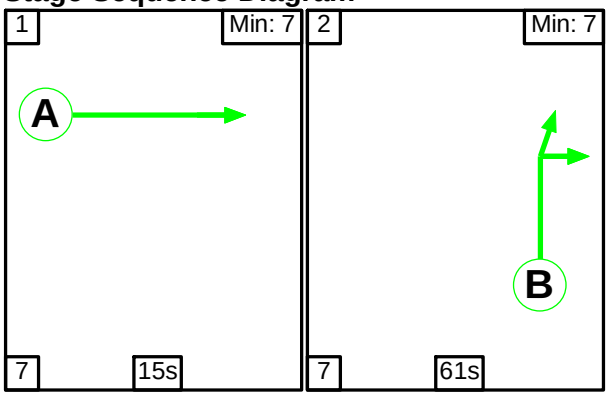
Junction: J13 - A128 / A127								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A128 North)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 4 Right	Inf	35.2 %	1940	1940
				Arm 10 Ahead	Inf	64.8 %		
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
3/3 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1940	1940
4/2	3.25	0.00	N	Arm 6 Right	Inf	44.9 %	2080	2080
				Arm 11 Ahead	Inf	55.1 %		
5/1 (A128 South)	3.50	0.00	Y	Arm 12 Left	Inf	100.0 %	1965	1965
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
5/3 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	82.8 %	2080	2080
				Arm 12 Ahead	Inf	17.2 %		
7/1 (A127 West)	3.50	0.00	Y	Arm 9 Left	Inf	100.0 %	1965	1965
7/2 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
7/3 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A128 South Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow	Inf	Inf

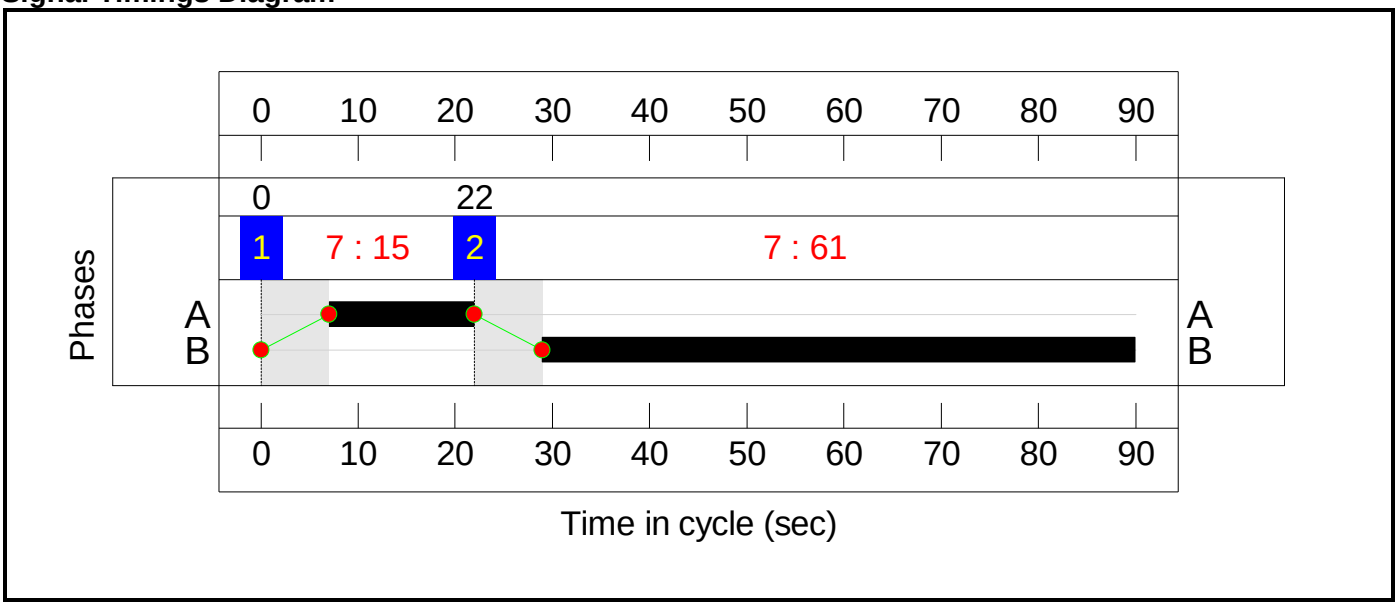
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/3	4/2	Internal	18	35
2/1	4/1	Internal	19	35
2/1	10/1	Internal	5	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/3	6/2	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/1	Internal	8	35
4/2	6/2	Internal	8	35
4/2	11/2	Internal	5	35
5/1	12/1	Internal	5	35
5/2	8/1	Internal	19	35
5/3	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/3	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



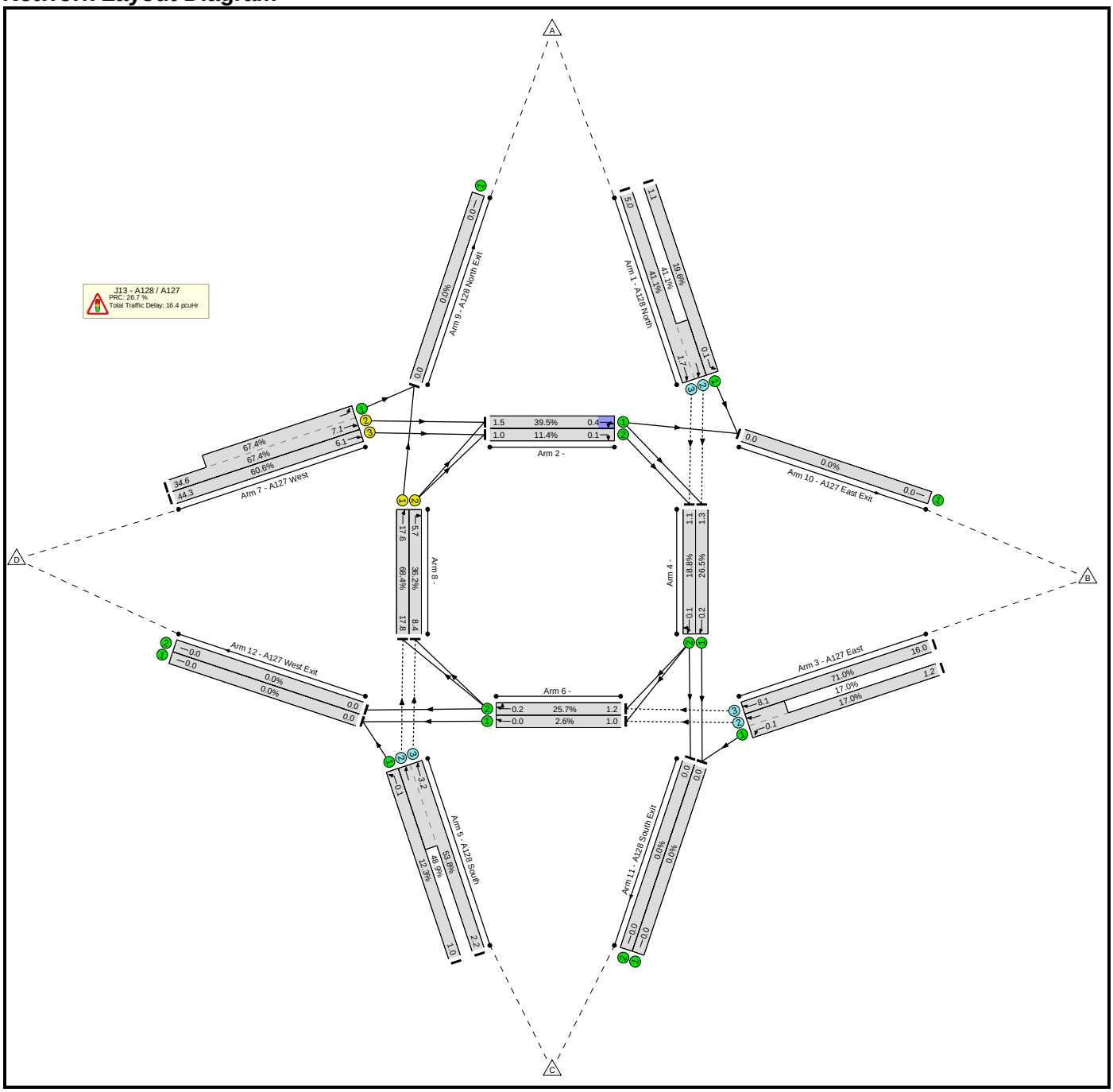
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**64.0%**	**2593**	**0**	**0**	**10.6**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**64.0%**	**2593**	**0**	**0**	**10.6**	**-**	**-**
1/1	A128 North Left	U	-		-	-	-	482	1965	1965	24.5%	-	-	-	0.2	1.2	0.2
1/3+1/2	A128 North Ahead	O	-		-	-	-	459	1940:1940	571+901	31.2 : 31.2%	918	0	0	0.3	2.7	1.2
2/1	Right Ahead	U	-		-	-	-	531	1940	1940	27.4%	-	-	-	0.2	1.3	0.2
2/2	Right	U	-		-	-	-	156	2080	2080	7.5%	-	-	-	0.0	0.9	0.0
3/1+3/2	A127 East Ahead Left	U+O	-		-	-	-	418	1965:1940	1922+42	21.3 : 21.3%	9	0	0	0.1	1.2	0.2
3/3	A127 East Ahead	O	-		-	-	-	442	1940	691	64.0%	442	0	0	1.5	12.1	6.3
4/1	Ahead	U	-		-	-	-	468	1940	1940	24.1%	-	-	-	0.2	1.2	0.2
4/2	Right Ahead	U	-		-	-	-	334	2080	2080	16.1%	-	-	-	0.1	1.0	0.1
5/1	A128 South Left	U	-		-	-	-	388	1965	1965	19.7%	-	-	-	0.1	1.1	0.1
5/3+5/2	A128 South Ahead	O	-		-	-	-	612	1940:1940	913+845	36.7 : 32.8%	1224	0	0	0.3	1.6	0.3
6/1	Ahead	U	-		-	-	-	61	1940	1940	3.1%	-	-	-	0.0	1.0	0.0
6/2	Right Ahead	U	-		-	-	-	540	2080	2080	26.0%	-	-	-	0.2	1.2	0.2
7/2+7/1	A127 West Ahead Left	U	A -		1	15	-	271	1965:1965	349+144	55.0 : 55.0%	-	-	-	2.4	31.9	5.0
7/3	A127 West Ahead	U	A		1	15	-	156	1965	349	44.7%	-	-	-	1.8	42.3	3.9
8/1	Ahead	U	B		1	61	-	720	1940	1336	53.9%	-	-	-	2.5	12.6	11.5
8/2	Right	U	B		1	61	-	339	2080	1433	23.7%	-	-	-	0.6	6.9	3.3

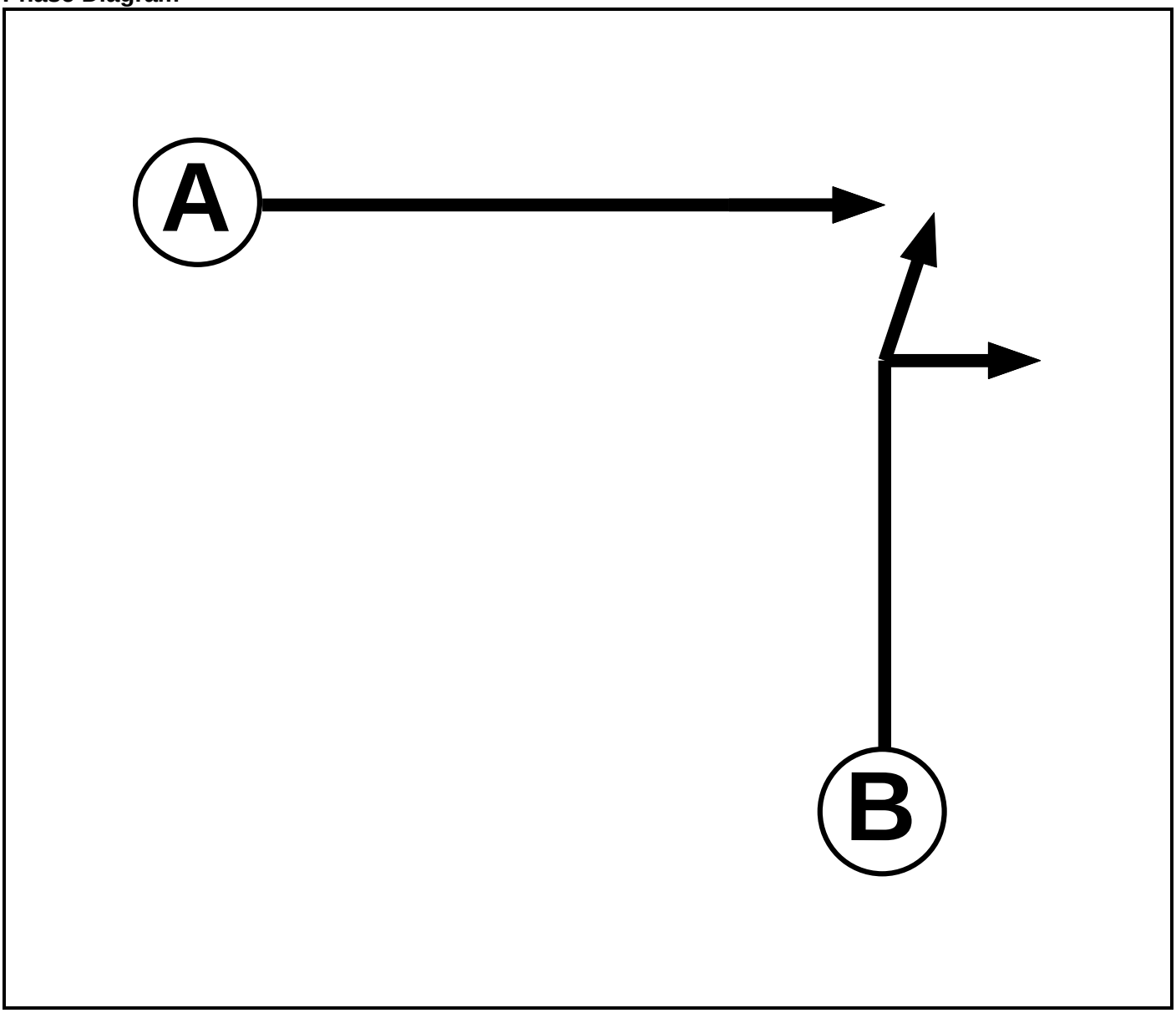
C1 PRC for Signalled Lanes (%): 63.8 Total Delay for Signalled Lanes (pcuHr): 7.41 Cycle Time (s): 90
PRC Over All Lanes (%): 40.6 Total Delay Over All Lanes(pcuHr): 10.60

Scenario 2: '2033 Reference Case (PM)' (FG2: '2033 Reference Case (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 4 Right	Inf
											Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	5.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
3/3 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
5/1 (A128 South)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
5/3 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf

											Arm 12 Ahead	Inf
7/1 (A127 West)	U		2	3	25.7	Geom	-	3.50	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
7/3 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

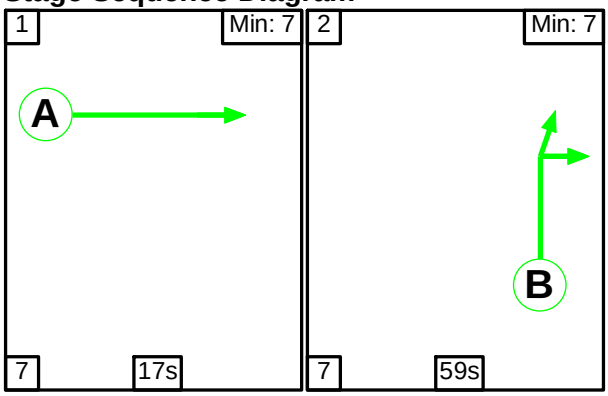
Junction: J13 - A128 / A127								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A128 North)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 4 Right	Inf	29.3 %	1940	1940
				Arm 10 Ahead	Inf	70.7 %		
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
3/3 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1940	1940
4/2	3.25	0.00	N	Arm 6 Right	Inf	27.8 %	2080	2080
				Arm 11 Ahead	Inf	72.2 %		
5/1 (A128 South)	3.50	0.00	Y	Arm 12 Left	Inf	100.0 %	1965	1965
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
5/3 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	88.2 %	2080	2080
				Arm 12 Ahead	Inf	11.8 %		
7/1 (A127 West)	3.50	0.00	Y	Arm 9 Left	Inf	100.0 %	1965	1965
7/2 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
7/3 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A128 South Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow	Inf	Inf

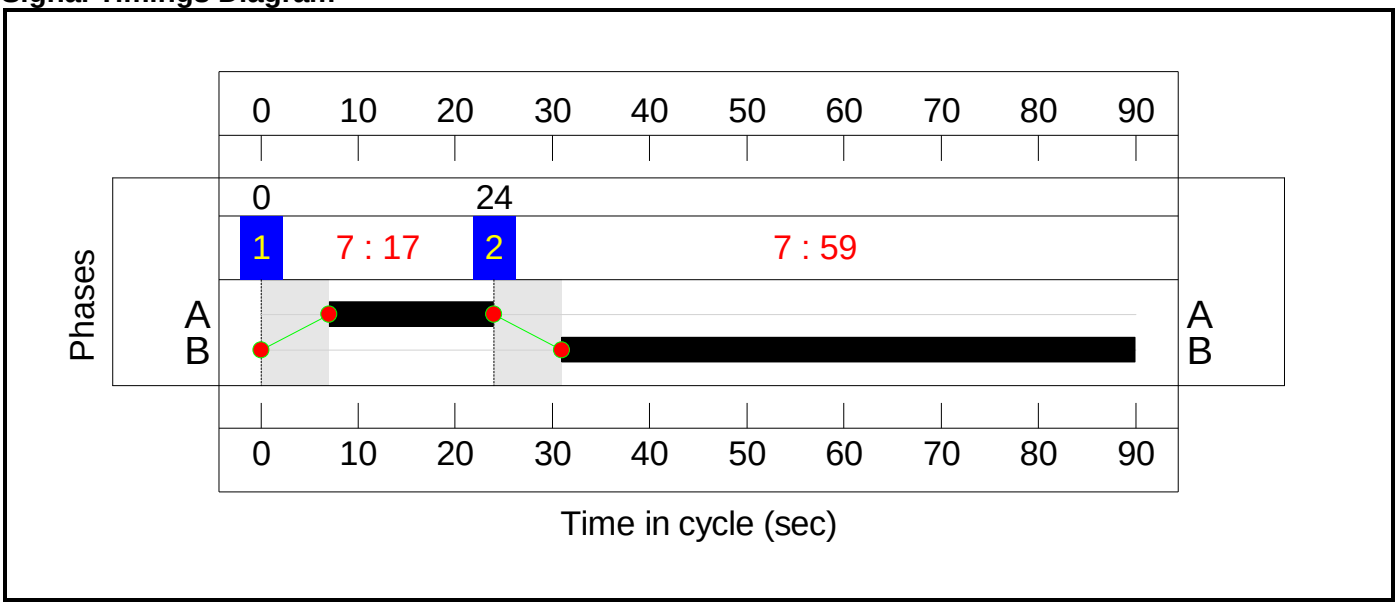
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/3	4/2	Internal	18	35
2/1	4/1	Internal	19	35
2/1	10/1	Internal	5	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/3	6/2	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/1	Internal	8	35
4/2	6/2	Internal	8	35
4/2	11/2	Internal	5	35
5/1	12/1	Internal	5	35
5/2	8/1	Internal	19	35
5/3	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/3	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



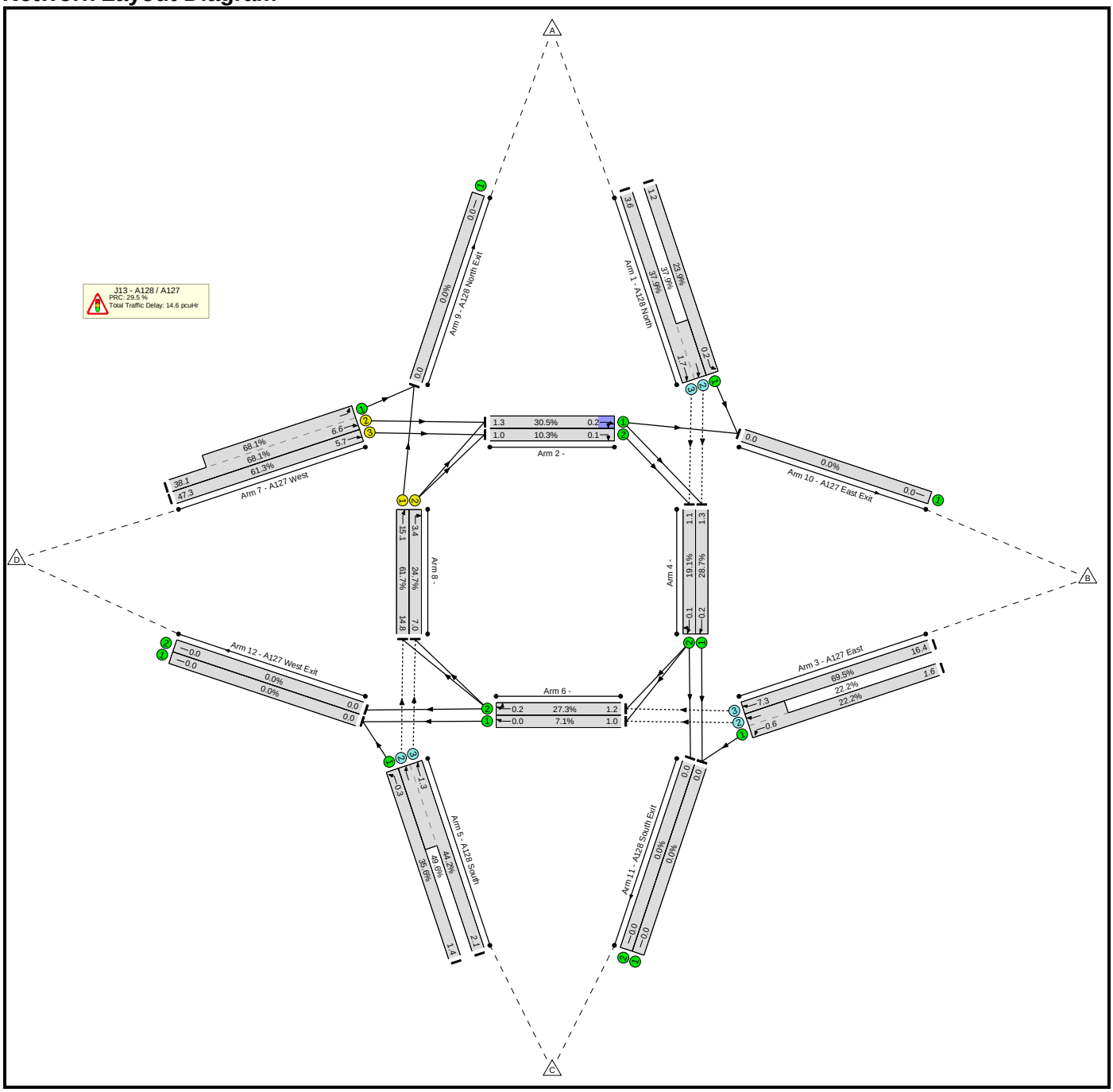
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.0%**	**3192**	**0**	**0**	**16.4**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.0%**	**3192**	**0**	**0**	**16.4**	**-**	**-**
1/1	A128 North Left	U	-		-	-	-	386	1965	1965	19.6%	-	-	-	0.1	1.1	0.1
1/3+1/2	A128 North Ahead	O	-		-	-	-	443	1940:1940	374+703	41.1 : 41.1%	886	0	0	0.6	5.0	1.7
2/1	Right Ahead	U	-		-	-	-	767	1940	1940	39.5%	-	-	-	0.3	1.5	0.4
2/2	Right	U	-		-	-	-	238	2080	2080	11.4%	-	-	-	0.1	1.0	0.1
3/1+3/2	A127 East Ahead Left	U+O	-		-	-	-	333	1965:1940	1917+47	17.0 : 17.0%	8	0	0	0.1	1.2	0.1
3/3	A127 East Ahead	O	-		-	-	-	468	1940	659	71.0%	468	0	0	2.1	16.0	8.1
4/1	Ahead	U	-		-	-	-	514	1940	1940	26.5%	-	-	-	0.2	1.3	0.2
4/2	Right Ahead	U	-		-	-	-	392	2080	2080	18.8%	-	-	-	0.1	1.1	0.1
5/1	A128 South Left	U	-		-	-	-	241	1965	1965	12.3%	-	-	-	0.1	1.0	0.1
5/3+5/2	A128 South Ahead	O	-		-	-	-	915	1940:1940	931+847	53.8 : 48.9%	1830	0	0	0.6	2.2	3.2
6/1	Ahead	U	-		-	-	-	50	1940	1940	2.6%	-	-	-	0.0	1.0	0.0
6/2	Right Ahead	U	-		-	-	-	535	2080	2080	25.7%	-	-	-	0.2	1.2	0.2
7/2+7/1	A127 West Ahead Left	U	A -		1	17	-	361	1965:1965	393+142	67.4 : 67.4%	-	-	-	3.5	34.6	7.1
7/3	A127 West Ahead	U	A		1	17	-	238	1965	393	60.6%	-	-	-	2.9	44.3	6.1
8/1	Ahead	U	B		1	59	-	885	1940	1293	68.4%	-	-	-	4.4	17.8	17.6
8/2	Right	U	B		1	59	-	502	2080	1387	36.2%	-	-	-	1.2	8.4	5.7

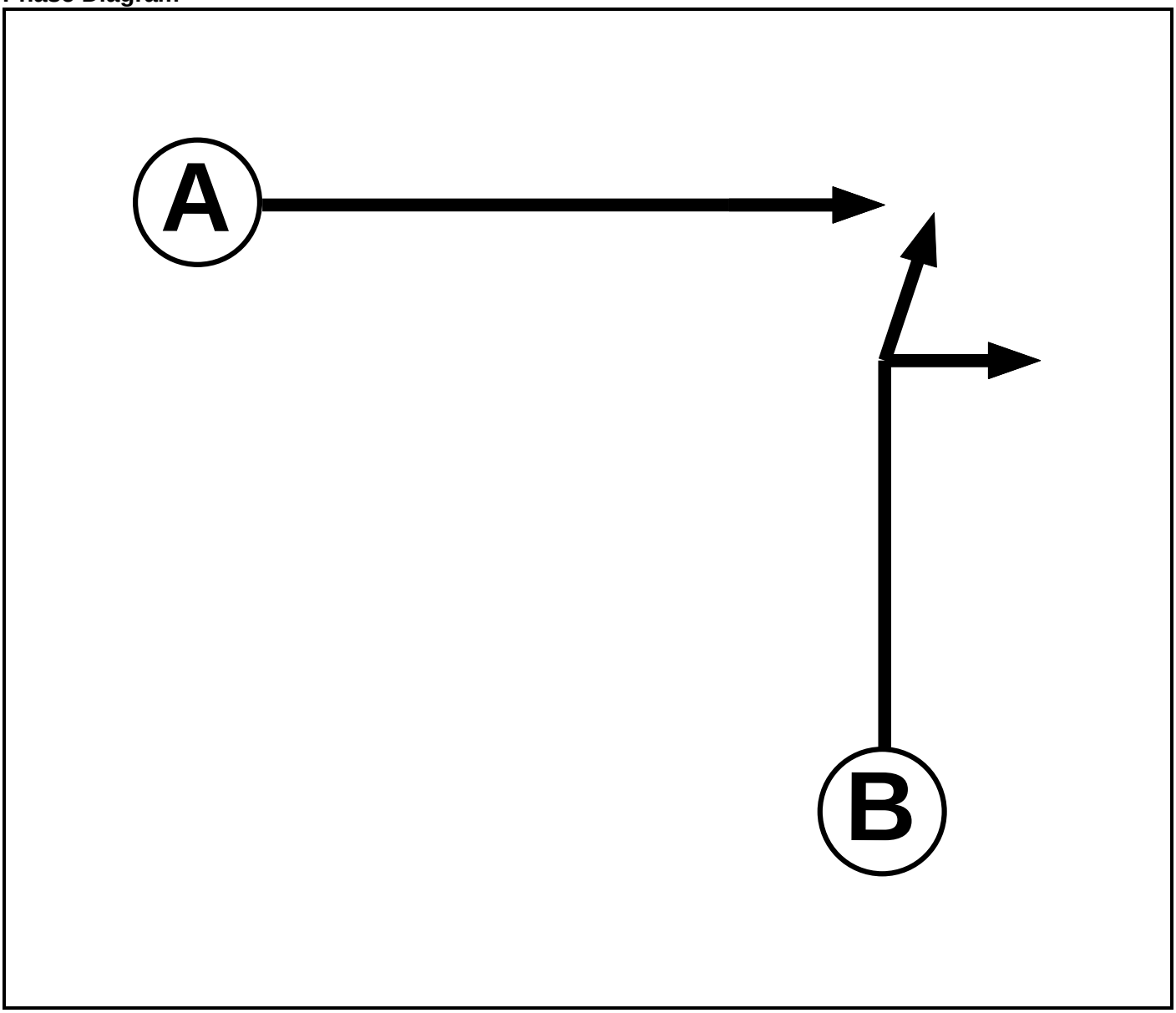
C1 PRC for Signalled Lanes (%): 31.5 Total Delay for Signalled Lanes (pcuHr): 11.96 Cycle Time (s): 90
PRC Over All Lanes (%): 26.7 Total Delay Over All Lanes(pcuHr): 16.39

Scenario 3: '2033 Local Plan Growth (AM)' (FG3: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 4 Right	Inf
											Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	5.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
3/3 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
5/1 (A128 South)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
5/3 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf

											Arm 12 Ahead	Inf
7/1 (A127 West)	U		2	3	25.7	Geom	-	3.50	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
7/3 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

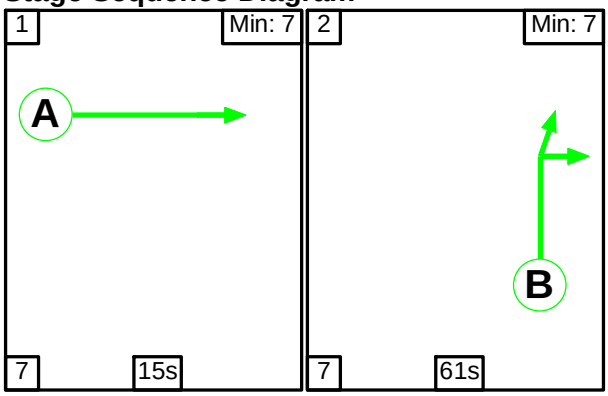
Junction: J13 - A128 / A127								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A128 North)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 4 Right	Inf	39.4 %	1940	1940
				Arm 10 Ahead	Inf	60.6 %		
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
3/3 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1940	1940
4/2	3.25	0.00	N	Arm 6 Right	Inf	52.1 %	2080	2080
				Arm 11 Ahead	Inf	47.9 %		
5/1 (A128 South)	3.50	0.00	Y	Arm 12 Left	Inf	100.0 %	1965	1965
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
5/3 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	76.2 %	2080	2080
				Arm 12 Ahead	Inf	23.8 %		
7/1 (A127 West)	3.50	0.00	Y	Arm 9 Left	Inf	100.0 %	1965	1965
7/2 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
7/3 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A128 South Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow	Inf	Inf

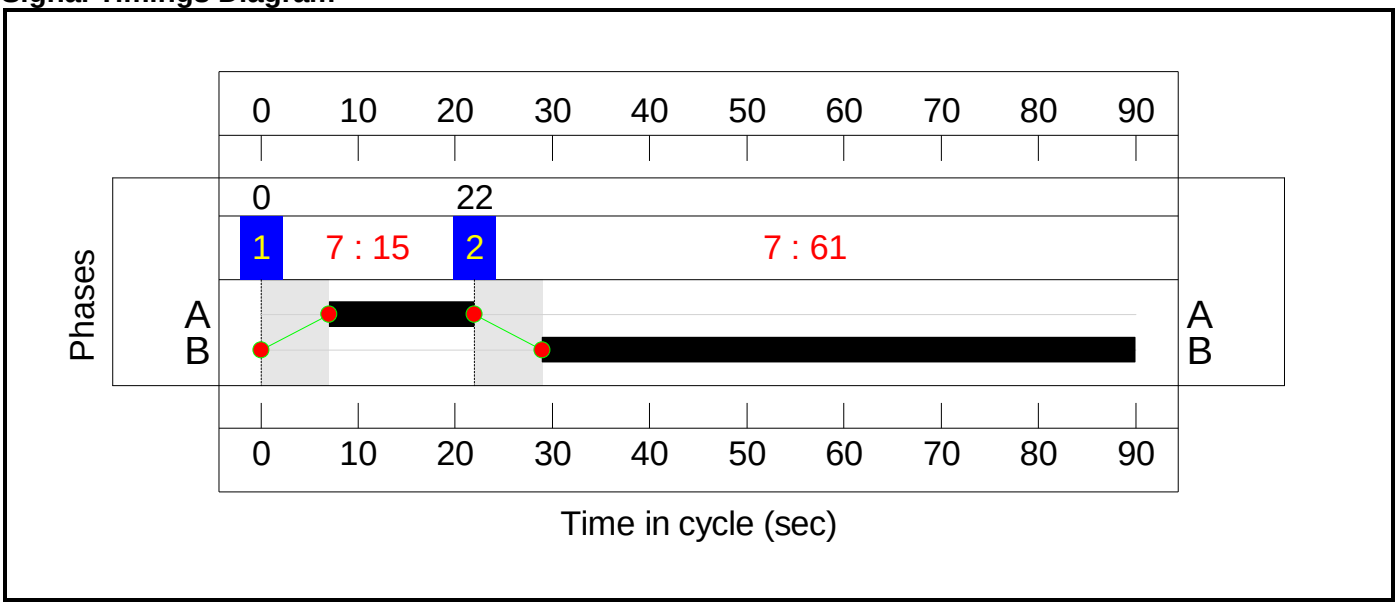
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/3	4/2	Internal	18	35
2/1	4/1	Internal	19	35
2/1	10/1	Internal	5	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/3	6/2	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/1	Internal	8	35
4/2	6/2	Internal	8	35
4/2	11/2	Internal	5	35
5/1	12/1	Internal	5	35
5/2	8/1	Internal	19	35
5/3	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/3	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



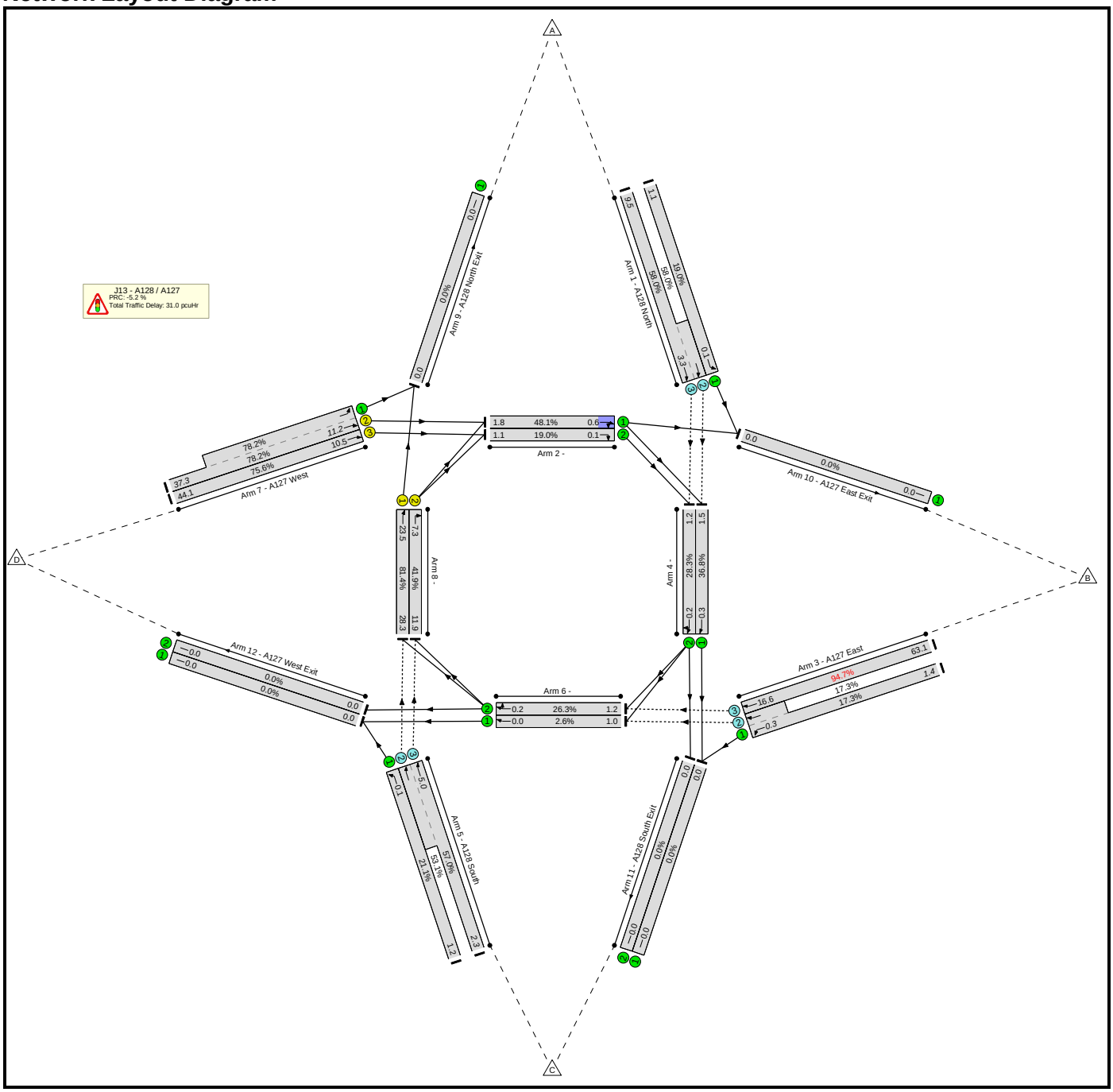
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**69.5%**	**3000**	**0**	**0**	**14.6**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**69.5%**	**3000**	**0**	**0**	**14.6**	**-**	**-**
1/1	A128 North Left	U	-		-	-	-	470	1965	1965	23.9%	-	-	-	0.2	1.2	0.2
1/3+1/2	A128 North Ahead	O	-		-	-	-	506	1940:1940	483+853	37.9 : 37.9%	1012	0	0	0.5	3.6	1.7
2/1	Right Ahead	U	-		-	-	-	592	1940	1940	30.5%	-	-	-	0.2	1.3	0.2
2/2	Right	U	-		-	-	-	214	2080	2080	10.3%	-	-	-	0.1	1.0	0.1
3/1+3/2	A127 East Ahead Left	U+O	-		-	-	-	436	1965:1940	1646+315	22.2 : 22.2%	70	0	0	0.2	1.6	0.6
3/3	A127 East Ahead	O	-		-	-	-	428	1940	616	69.5%	428	0	0	2.0	16.4	7.3
4/1	Ahead	U	-		-	-	-	556	1940	1940	28.7%	-	-	-	0.2	1.3	0.2
4/2	Right Ahead	U	-		-	-	-	397	2080	2080	19.1%	-	-	-	0.1	1.1	0.1
5/1	A128 South Left	U	-		-	-	-	699	1965	1965	35.6%	-	-	-	0.3	1.4	0.3
5/3+5/2	A128 South Ahead	O	-		-	-	-	745	1940:1940	792+797	44.2 : 49.6%	1490	0	0	0.4	2.1	1.3
6/1	Ahead	U	-		-	-	-	137	1940	1940	7.1%	-	-	-	0.0	1.0	0.0
6/2	Right Ahead	U	-		-	-	-	568	2080	2080	27.3%	-	-	-	0.2	1.2	0.2
7/2+7/1	A127 West Ahead Left	U	A -		1	15	-	316	1965:1965	349+114	68.1 : 68.1%	-	-	-	3.3	38.1	6.6
7/3	A127 West Ahead	U	A		1	15	-	214	1965	349	61.3%	-	-	-	2.8	47.3	5.7
8/1	Ahead	U	B		1	61	-	824	1940	1336	61.7%	-	-	-	3.4	14.8	15.1
8/2	Right	U	B		1	61	-	354	2080	1433	24.7%	-	-	-	0.7	7.0	3.4

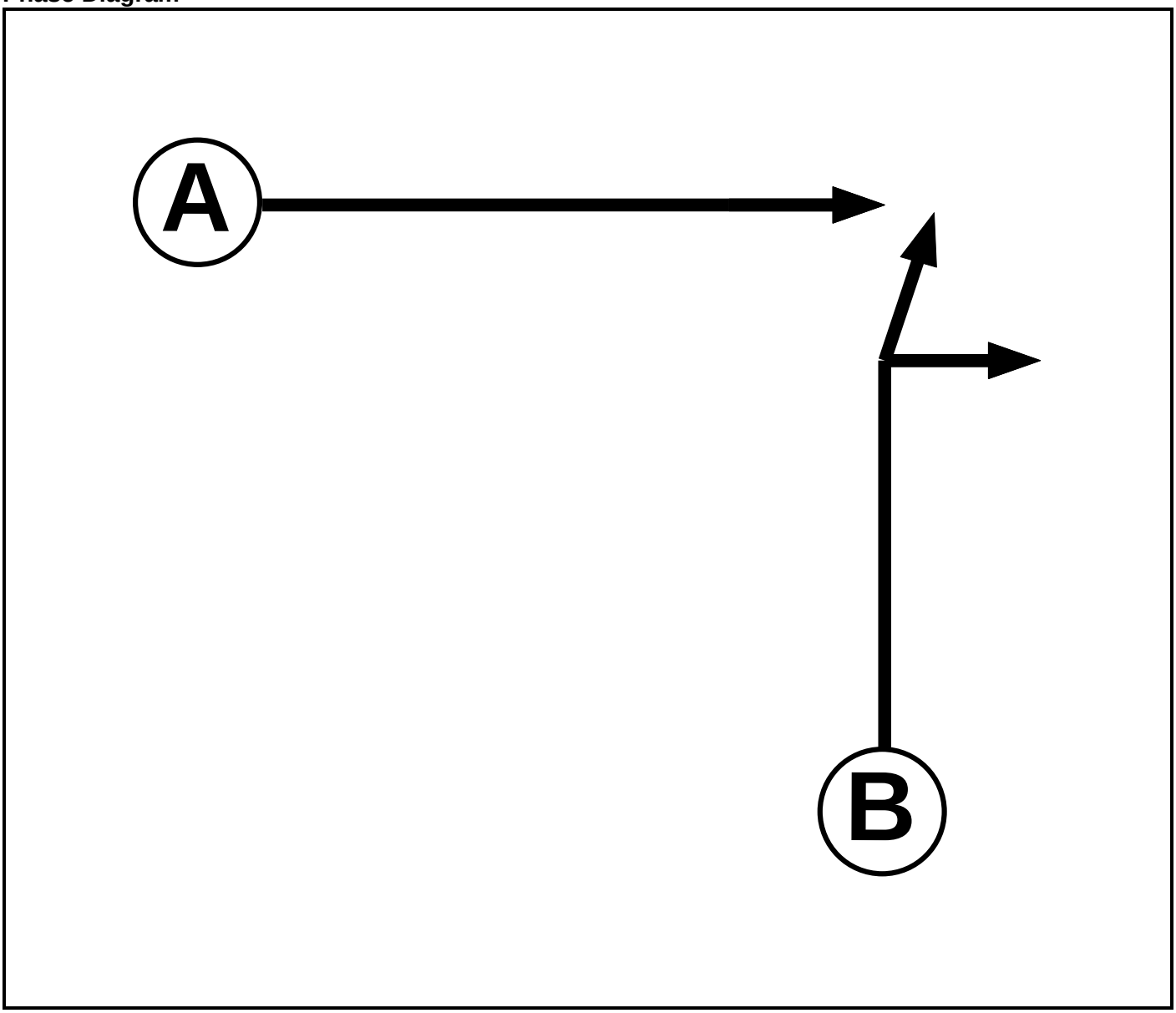
C1 PRC for Signalled Lanes (%): 32.1 Total Delay for Signalled Lanes (pcuHr): 10.23 Cycle Time (s): 90
PRC Over All Lanes (%): 29.5 Total Delay Over All Lanes(pcuHr): 14.57

Scenario 4: '2033 Local Plan Growth (PM)' (FG4: '2033 Local Plan Growth (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 4 Right	Inf
											Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	5.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
3/3 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
5/1 (A128 South)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
5/3 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf

											Arm 12 Ahead	Inf
7/1 (A127 West)	U		2	3	25.7	Geom	-	3.50	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
7/3 (A127 West)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

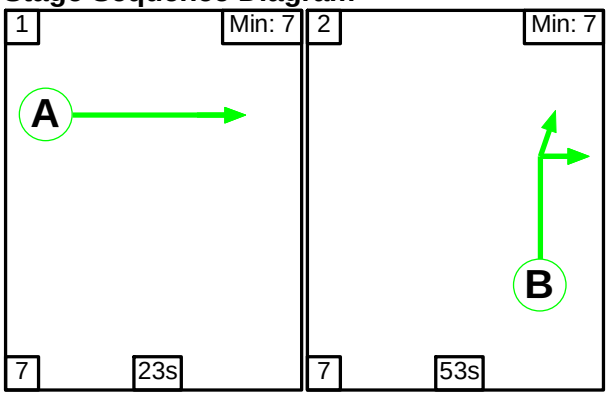
Junction: J13 - A128 / A127								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A128 North)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 4 Right	Inf	39.7 %	1940	1940
				Arm 10 Ahead	Inf	60.3 %		
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
3/3 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1940	1940
4/2	3.25	0.00	N	Arm 6 Right	Inf	20.9 %	2080	2080
				Arm 11 Ahead	Inf	79.1 %		
5/1 (A128 South)	3.50	0.00	Y	Arm 12 Left	Inf	100.0 %	1965	1965
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
5/3 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	84.1 %	2080	2080
				Arm 12 Ahead	Inf	15.9 %		
7/1 (A127 West)	3.50	0.00	Y	Arm 9 Left	Inf	100.0 %	1965	1965
7/2 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
7/3 (A127 West)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (A128 South Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow	Inf	Inf

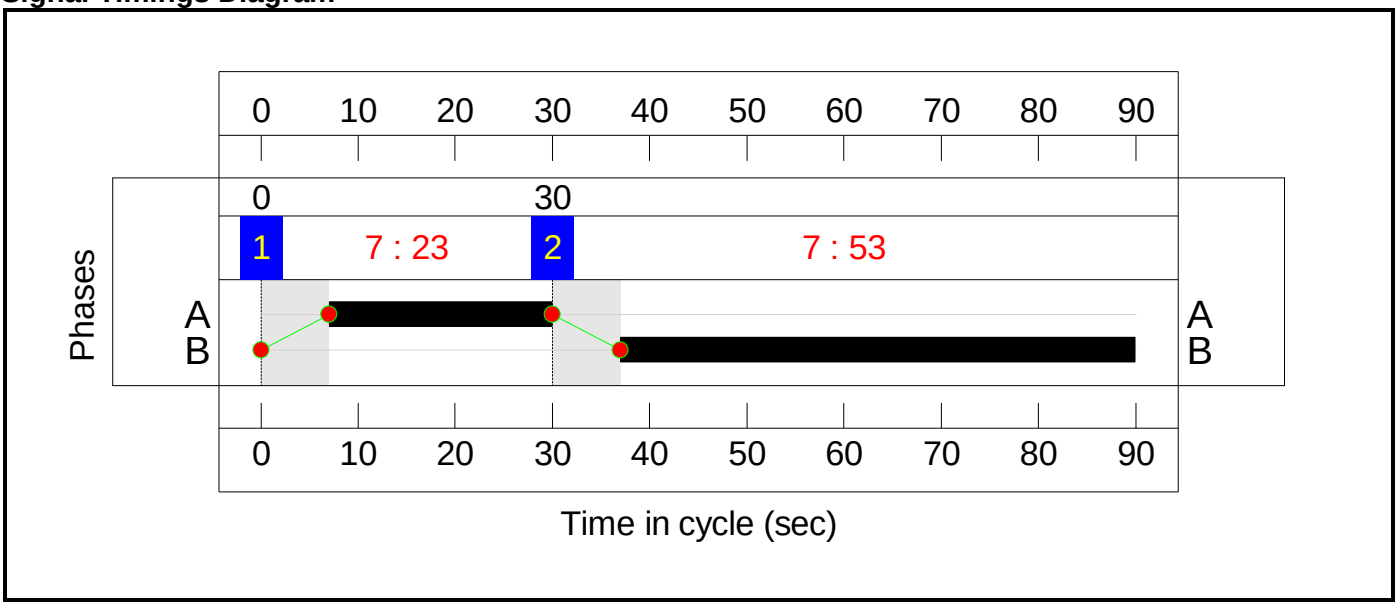
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/3	4/2	Internal	18	35
2/1	4/1	Internal	19	35
2/1	10/1	Internal	5	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/3	6/2	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/1	Internal	8	35
4/2	6/2	Internal	8	35
4/2	11/2	Internal	5	35
5/1	12/1	Internal	5	35
5/2	8/1	Internal	19	35
5/3	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/3	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**94.7%**	**3567**	**0**	**0**	**31.0**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**94.7%**	**3567**	**0**	**0**	**31.0**	**-**	**-**
1/1	A128 North Left	U	-		-	-	-	373	1965	1965	19.0%	-	-	-	0.1	1.1	0.1
1/3+1/2	A128 North Ahead	O	-		-	-	-	537	1940:1940	332+593	58.0 : 58.0%	1074	0	0	1.4	9.5	3.3
2/1	Right Ahead	U	-		-	-	-	933	1940	1940	48.1%	-	-	-	0.5	1.8	0.6
2/2	Right	U	-		-	-	-	396	2080	2080	19.0%	-	-	-	0.1	1.1	0.1
3/1+3/2	A127 East Ahead Left	U+O	-		-	-	-	340	1965:1940	1860+104	17.3 : 17.3%	18	0	0	0.1	1.4	0.3
3/3	A127 East Ahead	O	-		-	-	-	457	1940	483	94.7%	457	0	0	8.0	63.1	16.6
4/1	Ahead	U	-		-	-	-	714	1940	1940	36.8%	-	-	-	0.3	1.5	0.3
4/2	Right Ahead	U	-		-	-	-	589	2080	2080	28.3%	-	-	-	0.2	1.2	0.2
5/1	A128 South Left	U	-		-	-	-	415	1965	1965	21.1%	-	-	-	0.1	1.2	0.1
5/3+5/2	A128 South Ahead	O	-		-	-	-	1009	1940:1940	916+917	57.0 : 53.1%	2018	0	0	0.6	2.3	5.0
6/1	Ahead	U	-		-	-	-	50	1940	1940	2.6%	-	-	-	0.0	1.0	0.0
6/2	Right Ahead	U	-		-	-	-	548	2080	2080	26.3%	-	-	-	0.2	1.2	0.2
7/2+7/1	A127 West Ahead Left	U	A -		1	23	-	505	1965:1965	524+121	78.2 : 78.2%	-	-	-	5.2	37.3	11.2
7/3	A127 West Ahead	U	A		1	23	-	396	1965	524	75.6%	-	-	-	4.8	44.1	10.5
8/1	Ahead	U	B		1	53	-	947	1940	1164	81.4%	-	-	-	7.4	28.3	23.5
8/2	Right	U	B		1	53	-	523	2080	1248	41.9%	-	-	-	1.7	11.9	7.3

C1 PRC for Signalled Lanes (%): 10.6 Total Delay for Signalled Lanes (pcuHr): 19.26 Cycle Time (s): 90
PRC Over All Lanes (%): -5.2 Total Delay Over All Lanes(pcuHr): 30.97

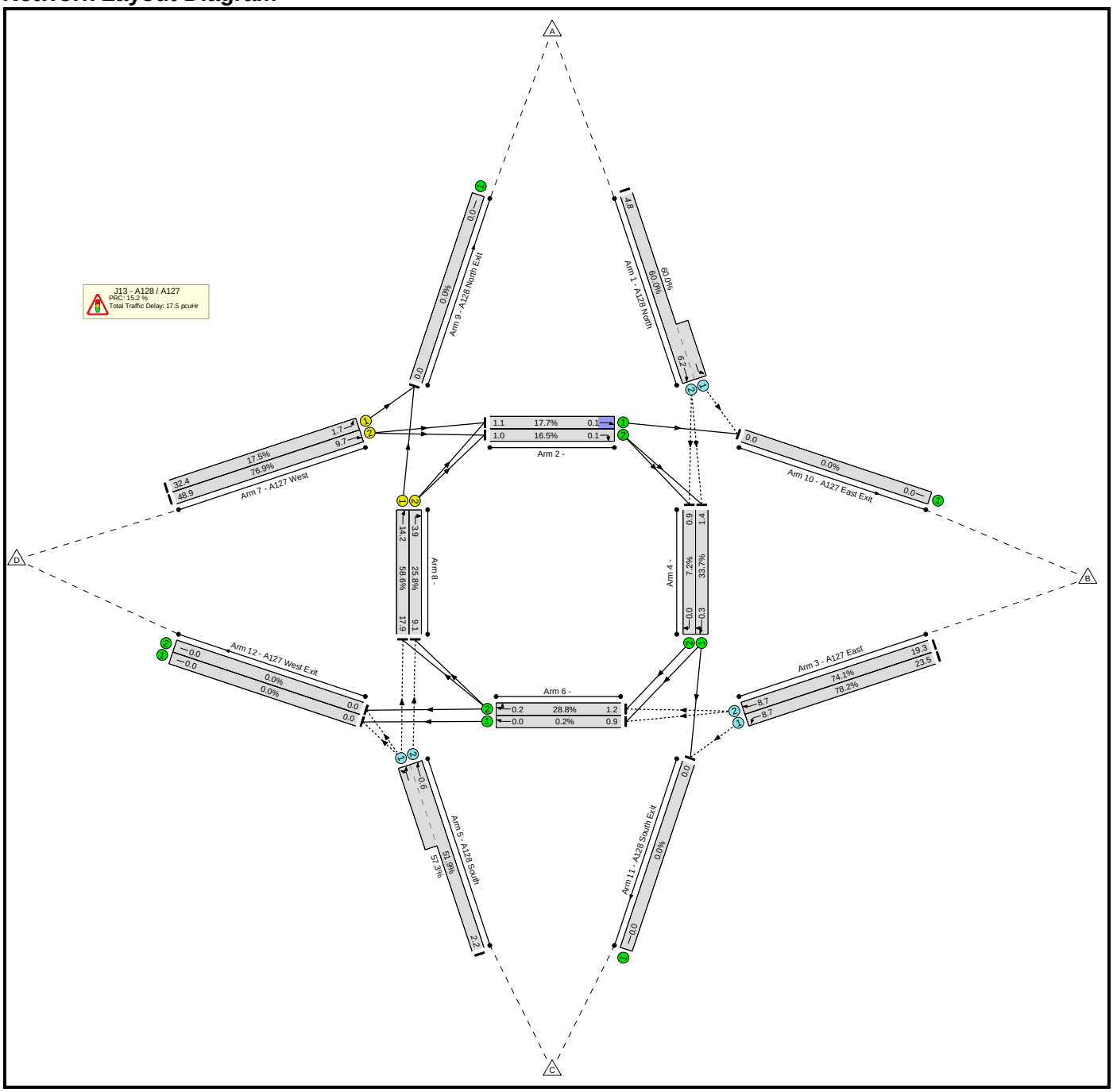
Brentwood PBA Modelling

Project and User Details

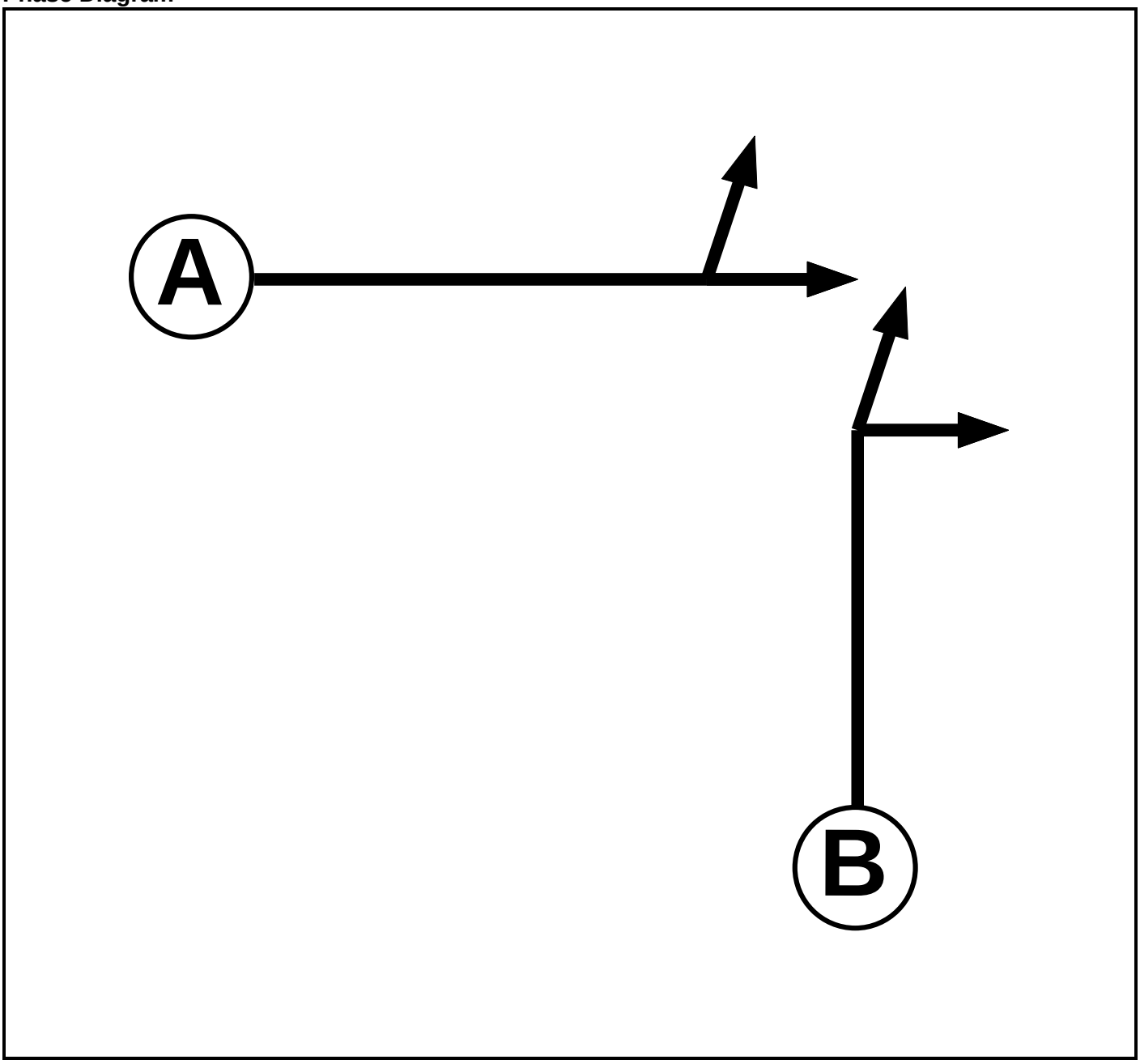
Project:	**28085 Brentwood**
Title:	**Junction 13 - A128 / A127**
Location:	Brentwood
Additional detail:	
File name:	28085_13_LS_LSM_Mit.lsg3x
Author:	Rcox
Company:	Peter Brett Assoicates
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 1: '2033 Reference Case (AM)' (FG1: '2033 Reference Case (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
5/1 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
											Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf
											Arm 12 Ahead	Inf
7/1 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf

8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

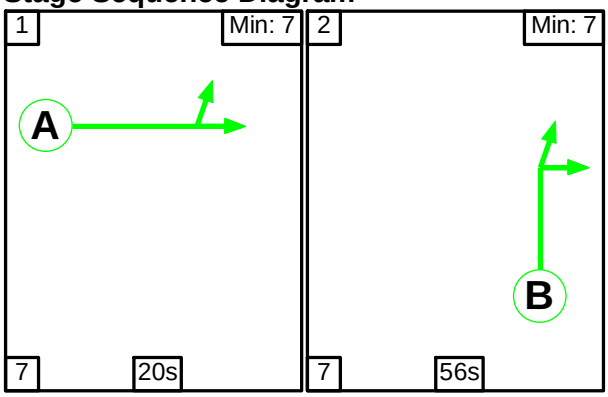
Lane Saturation Flows

Junction: J13 - A128 / A127								
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 (A128 North)	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1940	1940
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.25	0.00	Y	Arm 11 Left	Inf	100.0 %	1940	1940
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 6 Right	Inf	0.0 %	1940	1940
				Arm 11 Ahead	Inf	100.0 %		
4/2	3.25	0.00	N	Arm 6 Right	Inf	100.0 %	2080	2080
5/1 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	41.7 %	1940	1940
				Arm 12 Left	Inf	58.3 %		
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	74.7 %	2080	2080
				Arm 12 Ahead	Inf	25.3 %		
7/1 (A127 West)	3.25	0.00	Y	Arm 9 Left	Inf	100.0 %	1940	1940
7/2 (A127 West)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

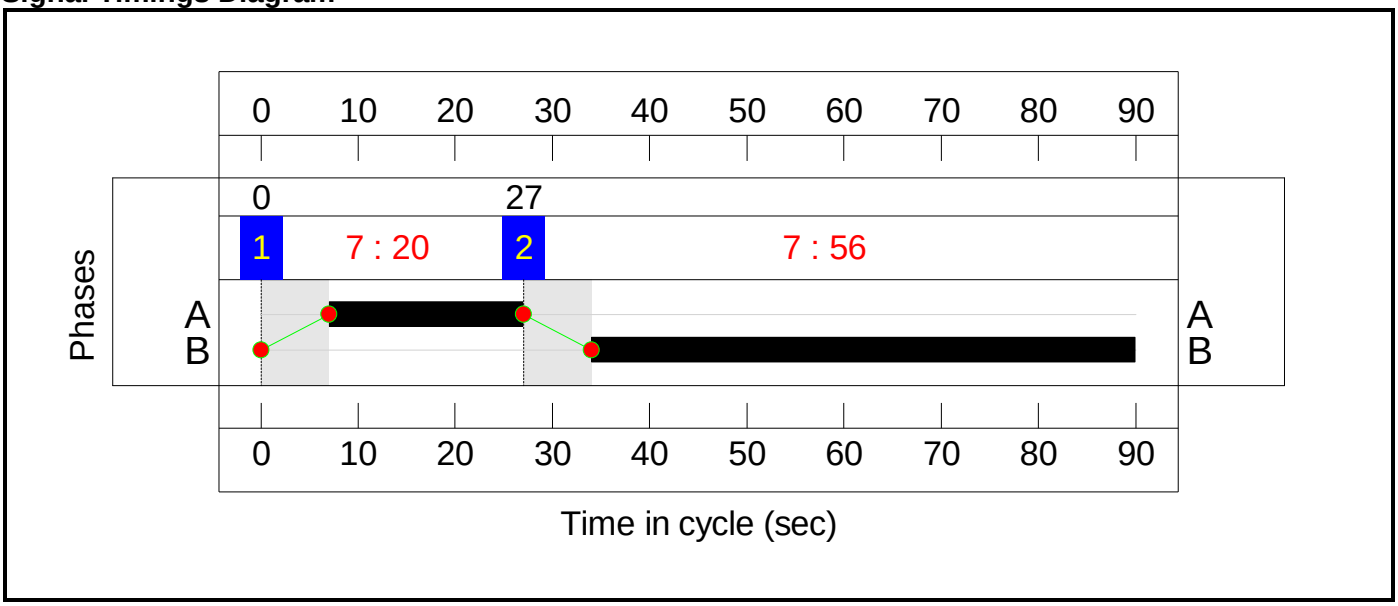
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/2	4/2	Internal	18	35
2/1	10/1	Internal	5	35
2/2	4/1	Internal	19	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/2	6/2	Internal	8	35
4/1	6/1	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/2	Internal	8	35
5/1	8/1	Internal	19	35
5/1	12/1	Internal	5	35
5/1	12/2	Internal	5	35
5/2	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/2	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



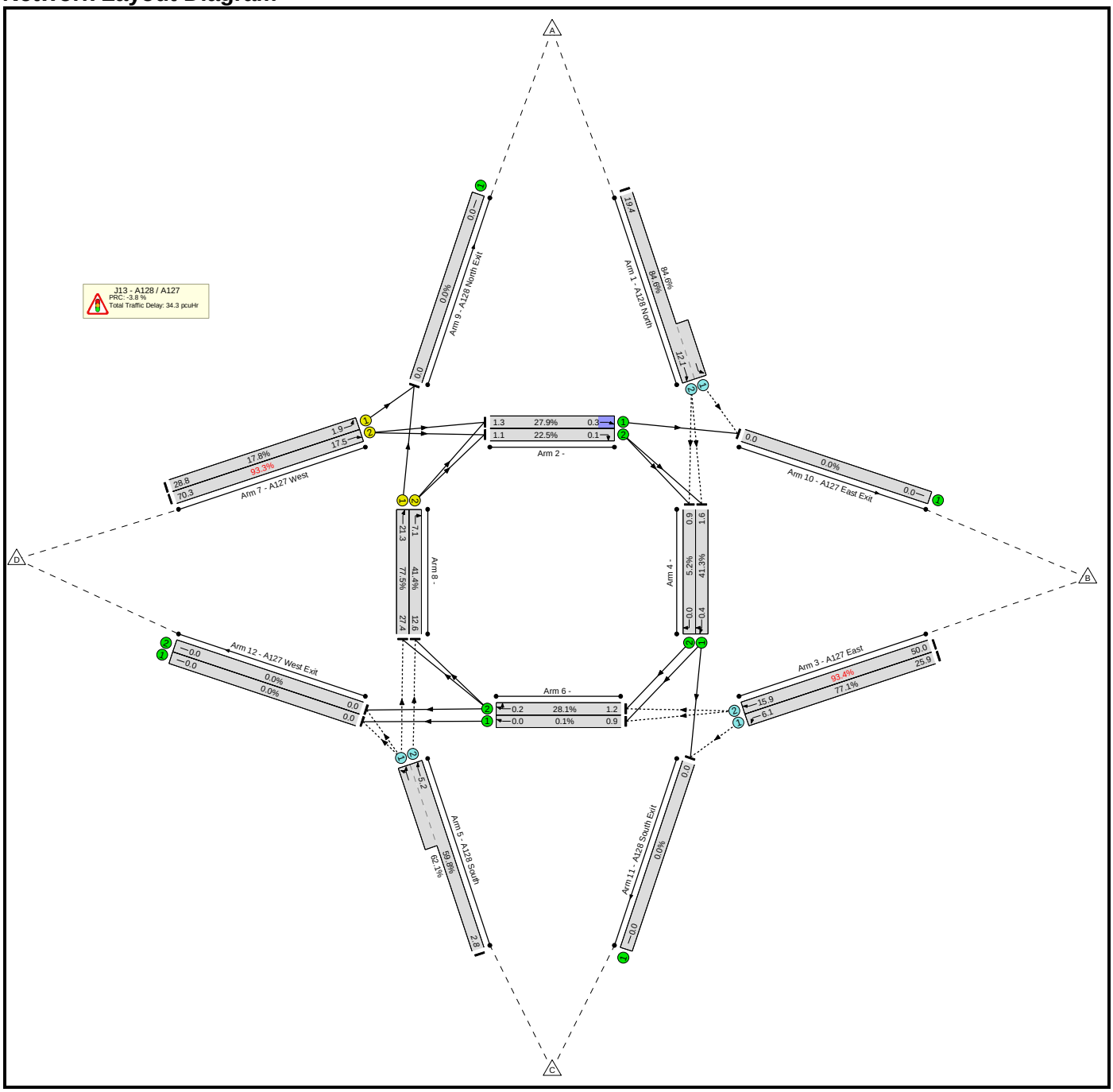
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.2%**	**4744**	**0**	**0**	**17.5**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.2%**	**4744**	**0**	**0**	**17.5**	**-**	**-**
1/2+1/1	A128 North Ahead Left	O	-		-	-	-	941	1940:1940	765+803	60.0 : 60.0%	1882	0	0	1.3	4.8	6.2
2/1	Ahead	U	-		-	-	-	344	1940	1940	17.7%	-	-	-	0.1	1.1	0.1
2/2	Right	U	-		-	-	-	344	2080	2080	16.5%	-	-	-	0.1	1.0	0.1
3/1	A127 East Left	O	-		-	-	-	409	1940	523	78.2%	409	0	0	2.7	23.5	8.7
3/2	A127 East Ahead	O	-		-	-	-	451	1940	609	74.1%	451	0	0	2.4	19.3	8.7
4/1	Right Ahead	U	-		-	-	-	653	1940	1940	33.7%	-	-	-	0.3	1.4	0.3
4/2	Right	U	-		-	-	-	150	2080	2080	7.2%	-	-	-	0.0	0.9	0.0
5/2+5/1	A128 South Ahead Left	O	-		-	-	-	1001	1940:1940	647+1160	51.9 : 57.3%	2002	0	0	0.6	2.2	0.6
6/1	Ahead	U	-		-	-	-	3	1940	1940	0.2%	-	-	-	0.0	0.9	0.0
6/2	Right Ahead	U	-		-	-	-	598	2080	2080	28.8%	-	-	-	0.2	1.2	0.2
7/1	A127 West Left	U	A		1	20	-	79	1940	453	17.5%	-	-	-	0.7	32.4	1.7
7/2	A127 West Ahead	U	A		1	20	-	348	1940	453	76.9%	-	-	-	4.7	48.9	9.7
8/1	Ahead	U	B		1	56	-	720	1940	1229	58.6%	-	-	-	3.6	17.9	14.2
8/2	Right	U	B		1	56	-	340	2080	1317	25.8%	-	-	-	0.9	9.1	3.9

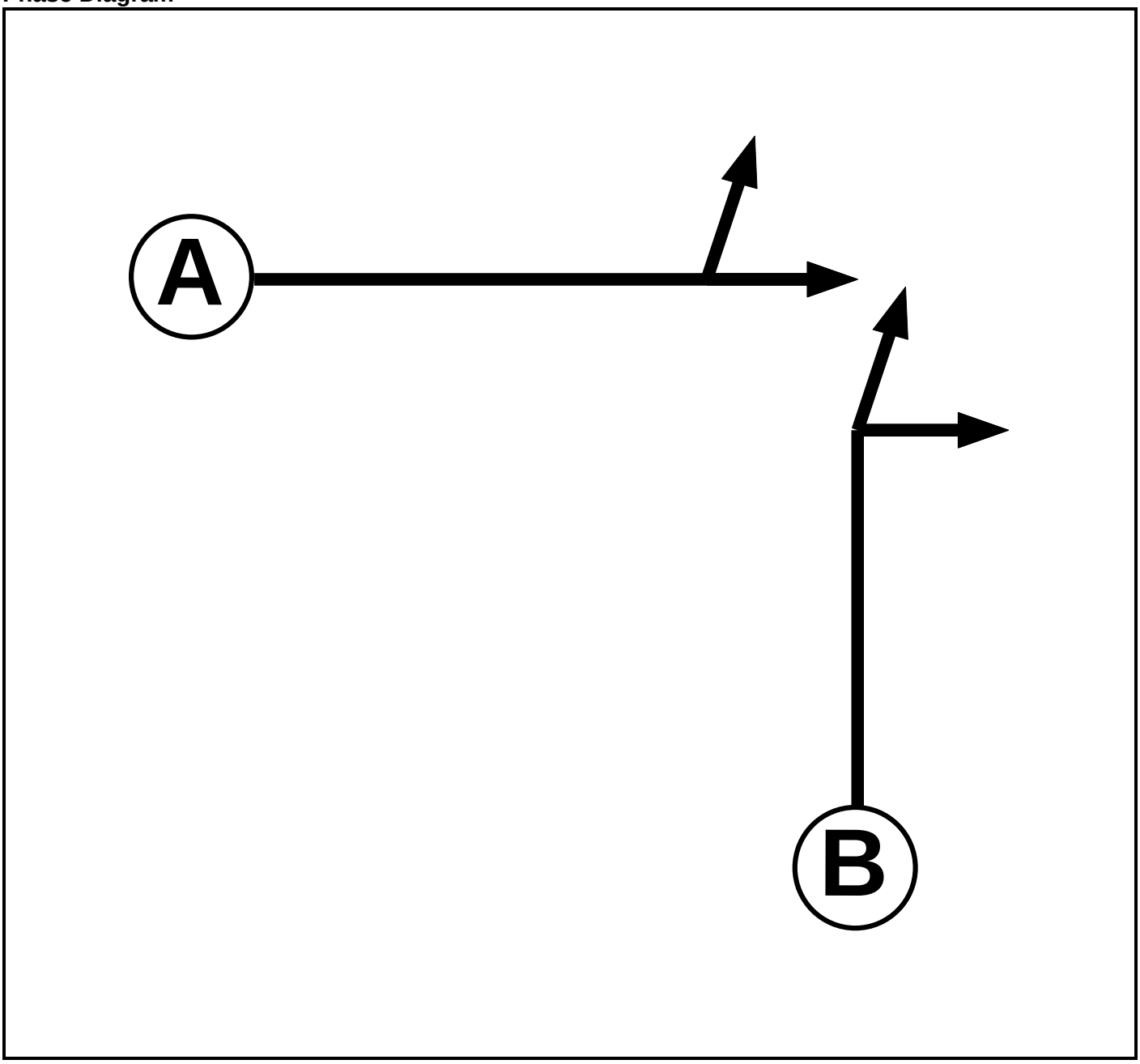
C1 PRC for Signalled Lanes (%): 17.1 Total Delay for Signalled Lanes (pcuHr): 9.88 Cycle Time (s): 90
PRC Over All Lanes (%): 15.2 Total Delay Over All Lanes(pcuHr): 17.54

Scenario 2: '2033 Reference Case (PM)' (FG2: '2033 Reference Case (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
5/1 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
											Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf
											Arm 12 Ahead	Inf
7/1 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf

8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

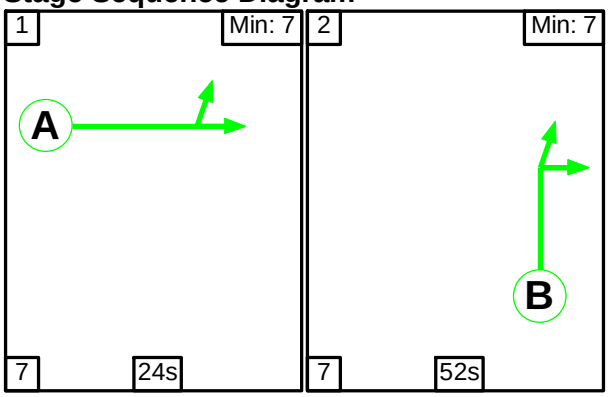
Lane Saturation Flows

Junction: J13 - A128 / A127								
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 (A128 North)	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1940	1940
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.25	0.00	Y	Arm 11 Left	Inf	100.0 %	1940	1940
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 6 Right	Inf	0.0 %	1940	1940
				Arm 11 Ahead	Inf	100.0 %		
4/2	3.25	0.00	N	Arm 6 Right	Inf	100.0 %	2080	2080
5/1 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	63.2 %	1940	1940
				Arm 12 Left	Inf	36.8 %		
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	80.8 %	2080	2080
				Arm 12 Ahead	Inf	19.2 %		
7/1 (A127 West)	3.25	0.00	Y	Arm 9 Left	Inf	100.0 %	1940	1940
7/2 (A127 West)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

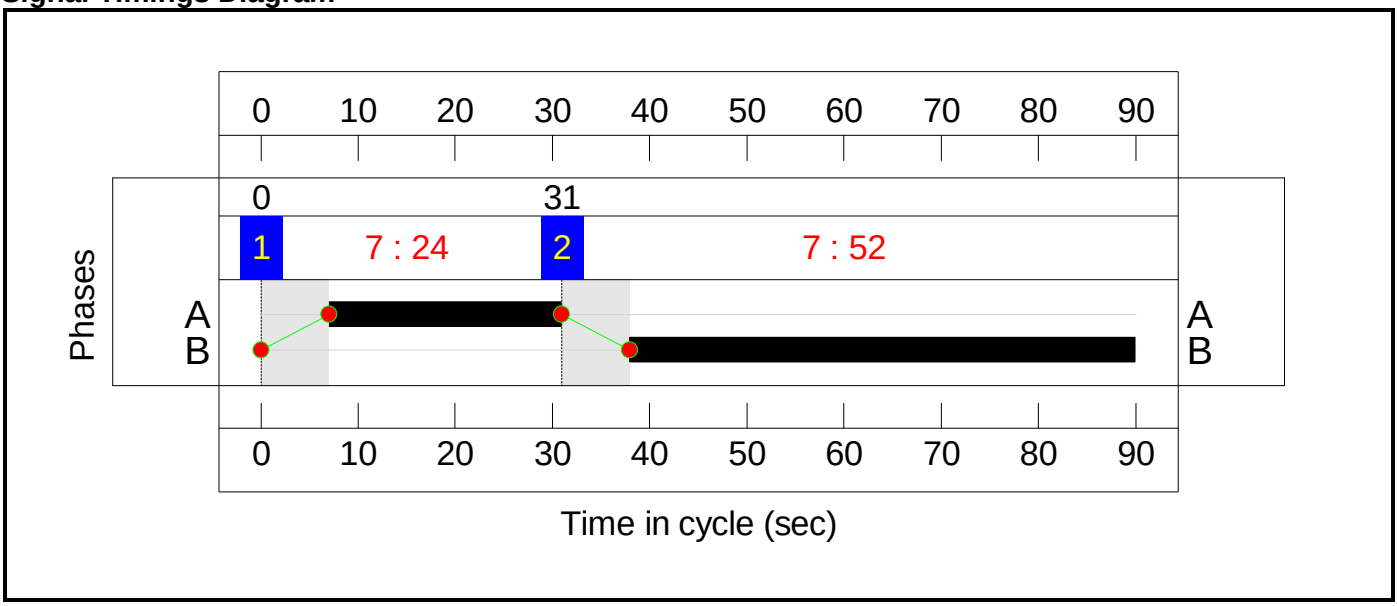
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/2	4/2	Internal	18	35
2/1	10/1	Internal	5	35
2/2	4/1	Internal	19	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/2	6/2	Internal	8	35
4/1	6/1	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/2	Internal	8	35
5/1	8/1	Internal	19	35
5/1	12/1	Internal	5	35
5/1	12/2	Internal	5	35
5/2	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/2	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



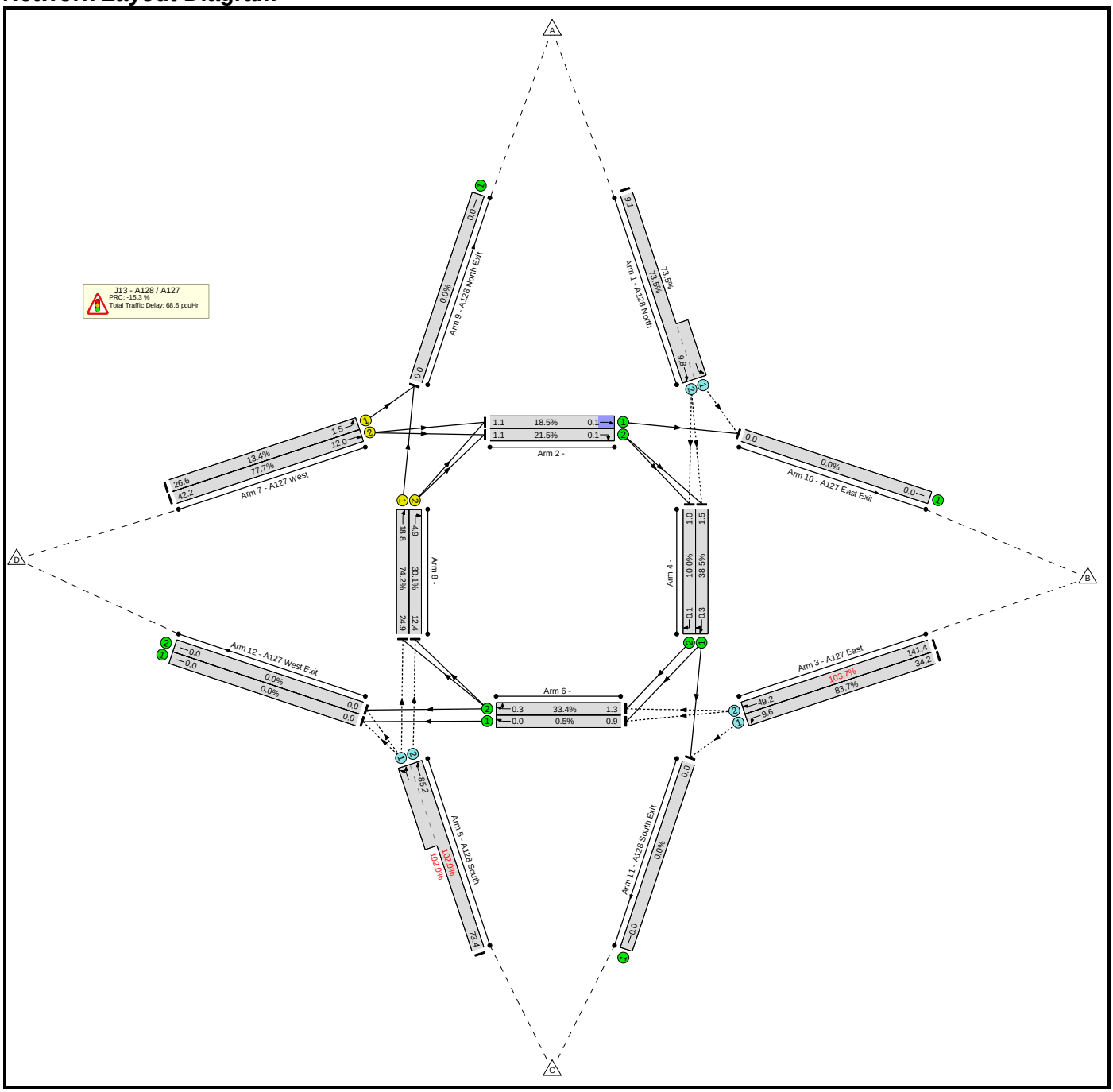
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.4%**	**4781**	**0**	**0**	**34.3**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.4%**	**4781**	**0**	**0**	**34.3**	**-**	**-**
1/2+1/1	A128 North Ahead Left	O	-		-	-	-	829	1940:1940	524+456	84.6 : 84.6%	1658	0	0	4.5	19.4	12.1
2/1	Ahead	U	-		-	-	-	542	1940	1940	27.9%	-	-	-	0.2	1.3	0.3
2/2	Right	U	-		-	-	-	468	2080	2080	22.5%	-	-	-	0.1	1.1	0.1
3/1	A127 East Left	O	-		-	-	-	325	1940	421	77.1%	325	0	0	2.3	25.9	6.1
3/2	A127 East Ahead	O	-		-	-	-	476	1940	510	93.4%	476	0	0	6.6	50.0	15.9
4/1	Right Ahead	U	-		-	-	-	802	1940	1940	41.3%	-	-	-	0.4	1.6	0.4
4/2	Right	U	-		-	-	-	109	2080	2080	5.2%	-	-	-	0.0	0.9	0.0
5/2+5/1	A128 South Ahead Left	O	-		-	-	-	1161	1940:1940	846+1054	59.8 : 62.1%	2322	0	0	0.9	2.8	5.2
6/1	Ahead	U	-		-	-	-	1	1940	1940	0.1%	-	-	-	0.0	0.9	0.0
6/2	Right Ahead	U	-		-	-	-	584	2080	2080	28.1%	-	-	-	0.2	1.2	0.2
7/1	A127 West Left	U	A		1	24	-	96	1940	539	17.8%	-	-	-	0.8	28.8	1.9
7/2	A127 West Ahead	U	A		1	24	-	503	1940	539	93.3%	-	-	-	9.8	70.3	17.5
8/1	Ahead	U	B		1	52	-	885	1940	1142	77.5%	-	-	-	6.7	27.4	21.3
8/2	Right	U	B		1	52	-	507	2080	1225	41.4%	-	-	-	1.8	12.6	7.1

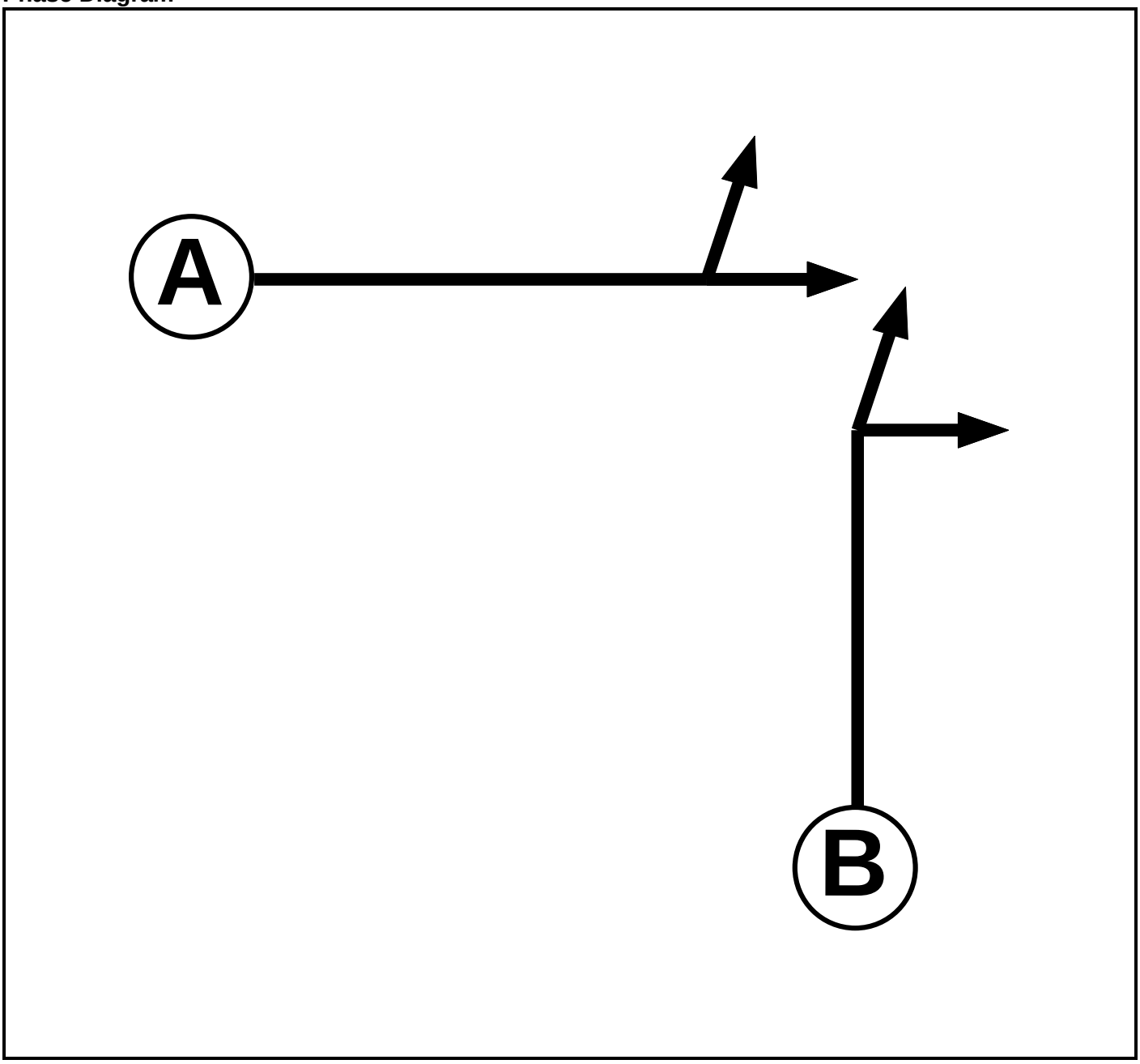
C1 PRC for Signalled Lanes (%): -3.7 Total Delay for Signalled Lanes (pcuHr): 19.09 Cycle Time (s): 90
PRC Over All Lanes (%): -3.8 Total Delay Over All Lanes(pcuHr): 34.33

Scenario 3: '2033 Local Plan Growth (AM)' (FG3: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
5/1 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
											Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf
											Arm 12 Ahead	Inf
7/1 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf

8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

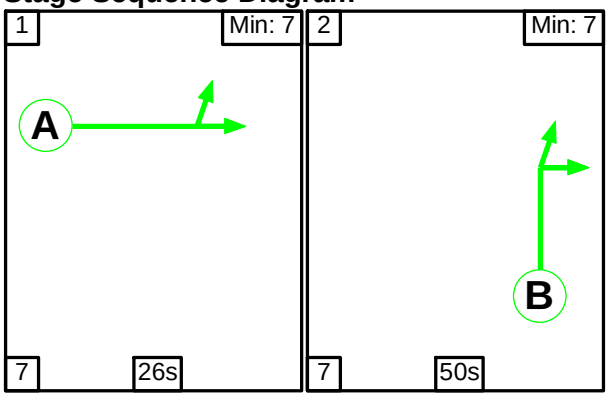
Lane Saturation Flows

Junction: J13 - A128 / A127								
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 (A128 North)	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1940	1940
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.25	0.00	Y	Arm 11 Left	Inf	100.0 %	1940	1940
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 6 Right	Inf	0.0 %	1940	1940
				Arm 11 Ahead	Inf	100.0 %		
4/2	3.25	0.00	N	Arm 6 Right	Inf	100.0 %	2080	2080
5/1 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	36.1 %	1940	1940
				Arm 12 Left	Inf	63.9 %		
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	62.4 %	2080	2080
				Arm 12 Ahead	Inf	37.6 %		
7/1 (A127 West)	3.25	0.00	Y	Arm 9 Left	Inf	100.0 %	1940	1940
7/2 (A127 West)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

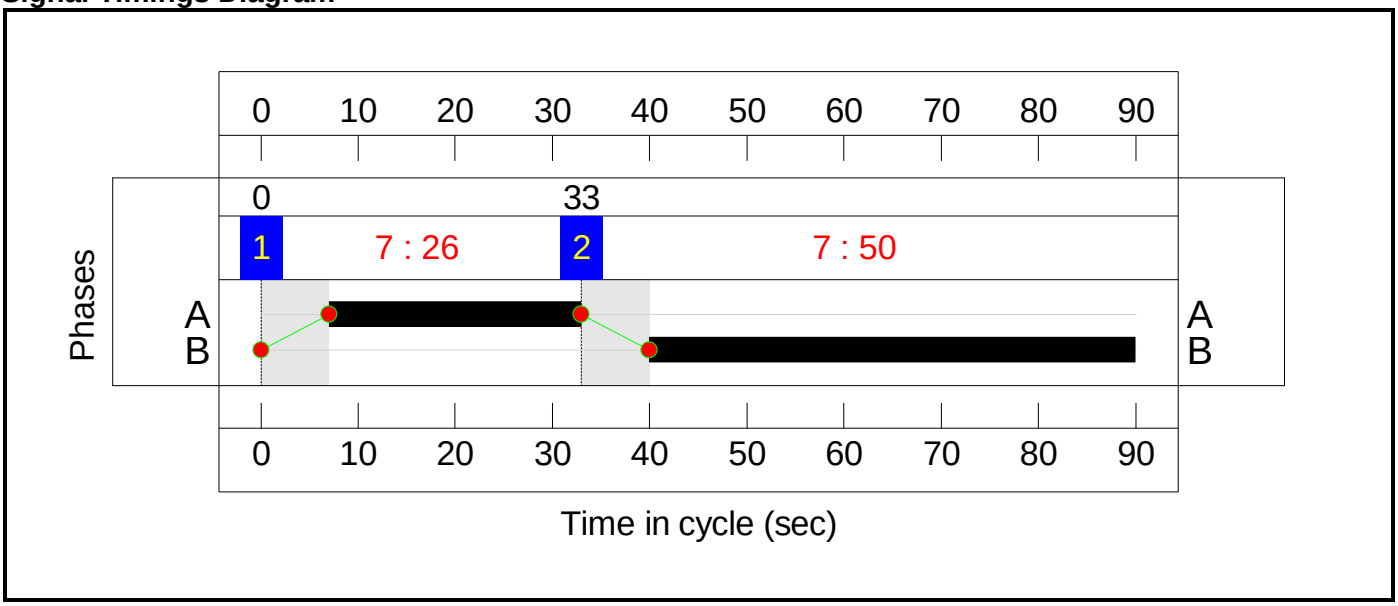
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/2	4/2	Internal	18	35
2/1	10/1	Internal	5	35
2/2	4/1	Internal	19	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/2	6/2	Internal	8	35
4/1	6/1	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/2	Internal	8	35
5/1	8/1	Internal	19	35
5/1	12/1	Internal	5	35
5/1	12/2	Internal	5	35
5/2	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/2	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



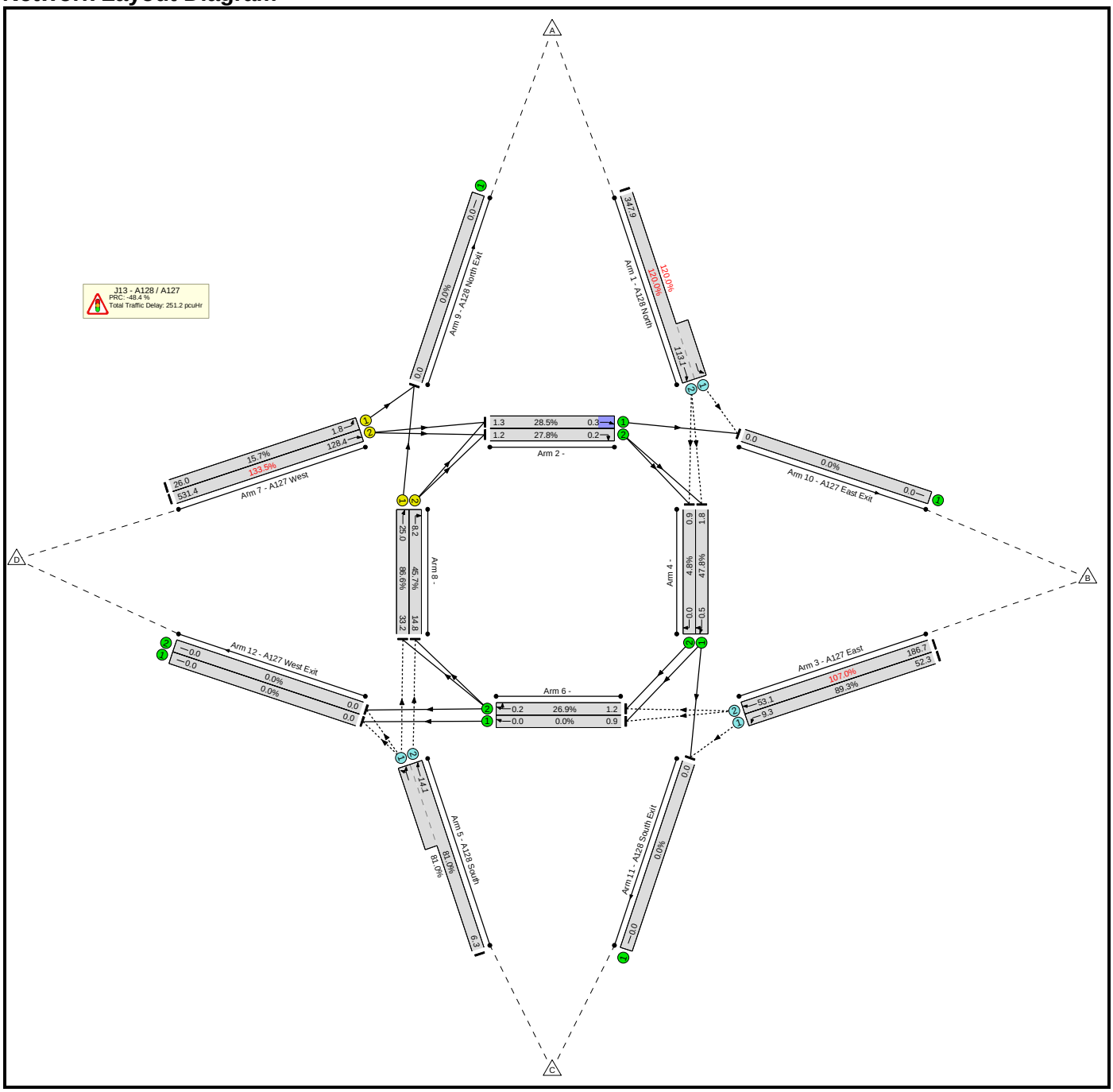
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**103.7%**	**5645**	**0**	**0**	**68.6**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**103.7%**	**5645**	**0**	**0**	**68.6**	**-**	**-**
1/2+1/1	A128 North Ahead Left	O	-		-	-	-	976	1940:1940	688+639	73.5 : 73.5%	1952	0	0	2.5	9.1	9.8
2/1	Ahead	U	-		-	-	-	359	1940	1940	18.5%	-	-	-	0.1	1.1	0.1
2/2	Right	U	-		-	-	-	448	2080	2080	21.5%	-	-	-	0.1	1.1	0.1
3/1	A127 East Left	O	-		-	-	-	366	1940	437	83.7%	366	0	0	3.5	34.2	9.6
3/2	A127 East Ahead	O	-		-	-	-	498	1940	480	103.7%	480	0	0	19.6	141.4	49.2
4/1	Right Ahead	U	-		-	-	-	747	1940	1940	38.5%	-	-	-	0.3	1.5	0.3
4/2	Right	U	-		-	-	-	207	2080	2080	10.0%	-	-	-	0.1	1.0	0.1
5/2+5/1	A128 South Ahead Left	O	-		-	-	-	1445	1940:1940	344+1072	102.0 : 102.0%	2847	0	0	29.4	73.4	85.2
6/1	Ahead	U	-		-	-	-	11	1940	1940	0.5%	-	-	-	0.0	0.9	0.0
6/2	Right Ahead	U	-		-	-	-	694	2080	2080	33.4%	-	-	-	0.3	1.3	0.3
7/1	A127 West Left	U	A		1	26	-	78	1940	582	13.4%	-	-	-	0.6	26.6	1.5
7/2	A127 West Ahead	U	A		1	26	-	452	1940	582	77.7%	-	-	-	5.3	42.2	12.0
8/1	Ahead	U	B		1	50	-	824	1940	1099	74.2%	-	-	-	5.6	24.9	18.8
8/2	Right	U	B		1	50	-	355	2080	1179	30.1%	-	-	-	1.2	12.4	4.9

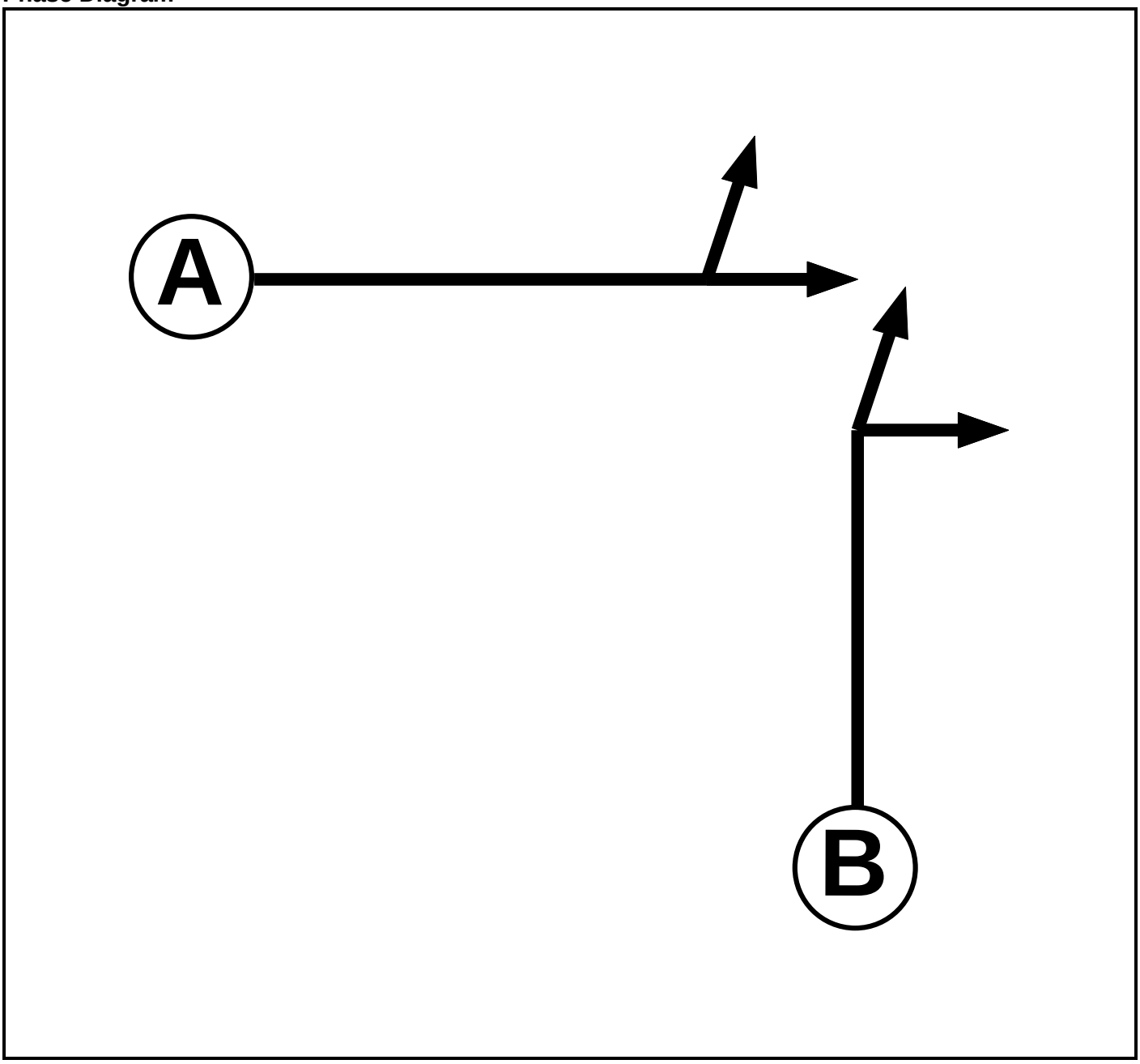
C1 PRC for Signalled Lanes (%): 15.9 Total Delay for Signalled Lanes (pcuHr): 12.75 Cycle Time (s): 90
PRC Over All Lanes (%): -15.3 Total Delay Over All Lanes(pcuHr): 68.58

Scenario 4: '2033 Local Plan Growth (PM)' (FG4: '2033 Local Plan Growth (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase		
Terminating Phase		A	B
	A		7
	B	7	

Lane Input Data

Junction: J13 - A128 / A127

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A128 North)	O		2	3	7.0	Geom	-	3.25	0.00	Y	Arm 10 Left	Inf
1/2 (A128 North)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
2/1	U		2	3	7.8	Geom	-	3.25	0.00	Y	Arm 10 Ahead	Inf
2/2	U		2	3	7.8	Geom	-	3.25	0.00	N	Arm 4 Right	Inf
3/1 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 11 Left	Inf
3/2 (A127 East)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
4/1	U		2	3	24.0	Geom	-	3.25	0.00	Y	Arm 6 Right	Inf
											Arm 11 Ahead	Inf
4/2	U		2	3	24.0	Geom	-	3.25	0.00	N	Arm 6 Right	Inf
5/1 (A128 South)	O		2	3	10.3	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
											Arm 12 Left	Inf
5/2 (A128 South)	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 8 Ahead	Inf
6/1	U		2	3	8.2	Geom	-	3.25	0.00	Y	Arm 12 Ahead	Inf
6/2	U		2	3	8.2	Geom	-	3.25	0.00	N	Arm 8 Right	Inf
											Arm 12 Ahead	Inf
7/1 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 9 Left	Inf
7/2 (A127 West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf

8/1	U	B	2	3	24.4	Geom	-	3.25	0.00	Y	Arm 9 Ahead	Inf
8/2	U	B	2	3	24.4	Geom	-	3.25	0.00	N	Arm 2 Right	Inf
9/1 (A128 North Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (A127 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A128 South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (A127 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

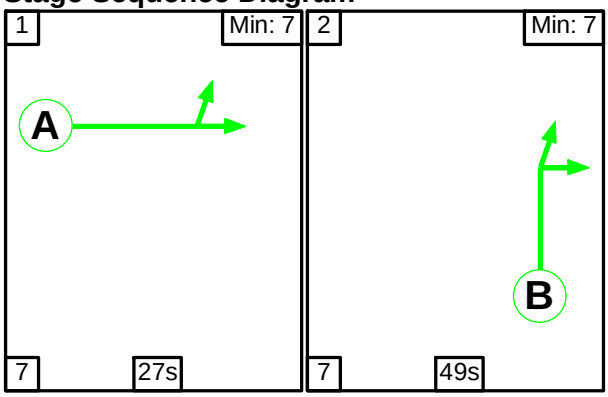
Lane Saturation Flows

Junction: J13 - A128 / A127								
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 (A128 North)	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
1/2 (A128 North)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
2/1	3.25	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1940	1940
2/2	3.25	0.00	N	Arm 4 Right	Inf	100.0 %	2080	2080
3/1 (A127 East)	3.25	0.00	Y	Arm 11 Left	Inf	100.0 %	1940	1940
3/2 (A127 East)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
4/1	3.25	0.00	Y	Arm 6 Right	Inf	0.0 %	1940	1940
				Arm 11 Ahead	Inf	100.0 %		
4/2	3.25	0.00	N	Arm 6 Right	Inf	100.0 %	2080	2080
5/1 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	54.0 %	1940	1940
				Arm 12 Left	Inf	46.0 %		
5/2 (A128 South)	3.25	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1940	1940
6/1	3.25	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1940	1940
6/2	3.25	0.00	N	Arm 8 Right	Inf	77.2 %	2080	2080
				Arm 12 Ahead	Inf	22.8 %		
7/1 (A127 West)	3.25	0.00	Y	Arm 9 Left	Inf	100.0 %	1940	1940
7/2 (A127 West)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
8/1	3.25	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1940	1940
8/2	3.25	0.00	N	Arm 2 Right	Inf	100.0 %	2080	2080
9/1 (A128 North Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (A127 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A128 South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A127 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (A127 West Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

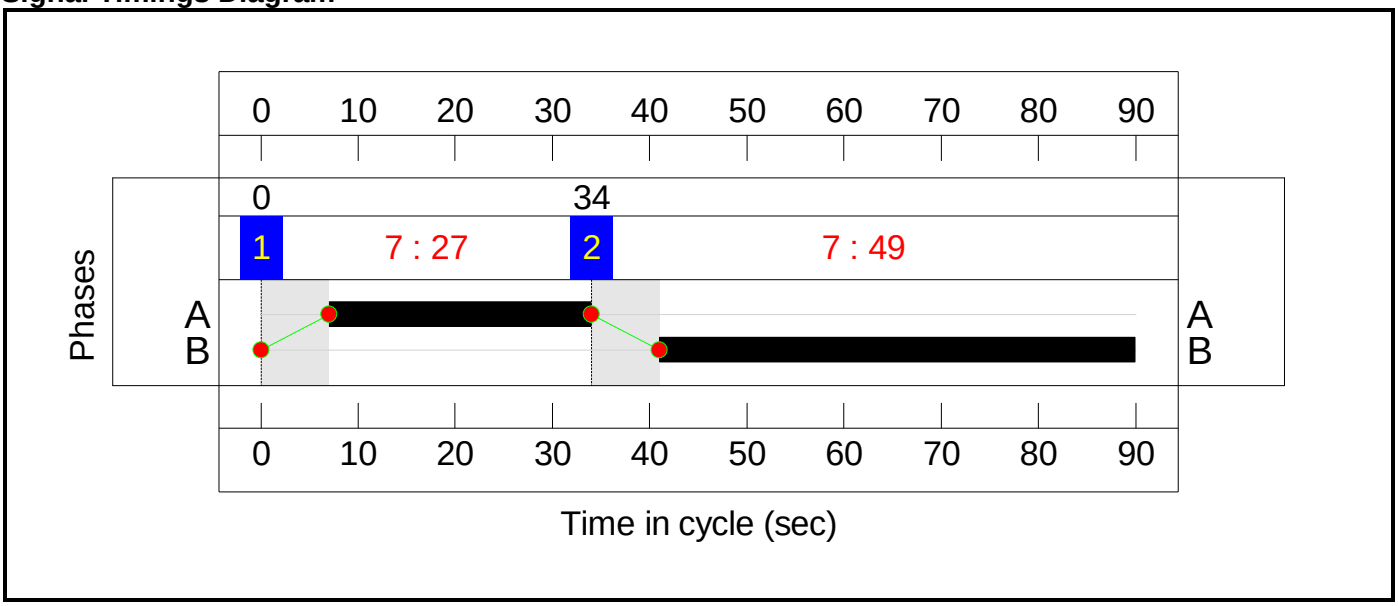
Lane Connector Input Data

Junction: J13 - A128 / A127				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	10/1	Internal	5	35
1/2	4/1	Internal	18	35
1/2	4/2	Internal	18	35
2/1	10/1	Internal	5	35
2/2	4/1	Internal	19	35
2/2	4/2	Internal	19	35
3/1	11/1	Internal	5	35
3/2	6/1	Internal	8	35
3/2	6/2	Internal	8	35
4/1	6/1	Internal	8	35
4/1	11/1	Internal	5	35
4/2	6/2	Internal	8	35
5/1	8/1	Internal	19	35
5/1	12/1	Internal	5	35
5/1	12/2	Internal	5	35
5/2	8/2	Internal	19	35
6/1	12/1	Internal	5	35
6/2	8/1	Internal	19	35
6/2	8/2	Internal	19	35
6/2	12/2	Internal	5	35
7/1	9/1	Internal	5	35
7/2	2/1	Internal	8	35
7/2	2/2	Internal	8	35
8/1	9/1	Internal	5	35
8/2	2/1	Internal	8	35
8/2	2/2	Internal	8	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Junction 13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**133.5%**	**5140**	**0**	**0**	**251.2**	**-**	**-**
J13 - A128 / A127	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**133.5%**	**5140**	**0**	**0**	**251.2**	**-**	**-**
1/2+1/1	A128 North Ahead Left	O	-		-	-	-	910	1940:1940	447+311	120.0 : 120.0%	1516	0	0	88.0	347.9	113.1
2/1	Ahead	U	-		-	-	-	563	1940	1940	28.5%	-	-	-	0.2	1.3	0.3
2/2	Right	U	-		-	-	-	771	2080	2080	27.8%	-	-	-	0.2	1.2	0.2
3/1	A127 East Left	O	-		-	-	-	322	1940	360	89.3%	322	0	0	4.7	52.3	9.3
3/2	A127 East Ahead	O	-		-	-	-	475	1940	444	107.0%	444	0	0	24.6	186.7	53.1
4/1	Right Ahead	U	-		-	-	-	1185	1940	1940	47.8%	-	-	-	0.5	1.8	0.5
4/2	Right	U	-		-	-	-	123	2080	2080	4.8%	-	-	-	0.0	0.9	0.0
5/2+5/1	A128 South Ahead Left	O	-		-	-	-	1429	1940:1940	650+1113	81.0 : 81.0%	2858	0	0	2.5	6.3	14.1
6/1	Ahead	U	-		-	-	-	1	1940	1940	0.0%	-	-	-	0.0	0.9	0.0
6/2	Right Ahead	U	-		-	-	-	597	2080	2080	26.9%	-	-	-	0.2	1.2	0.2
7/1	A127 West Left	U	A		1	27	-	95	1940	604	15.7%	-	-	-	0.7	26.0	1.8
7/2	A127 West Ahead	U	A		1	27	-	806	1940	604	133.5%	-	-	-	119.0	531.4	128.4
8/1	Ahead	U	B		1	49	-	947	1940	1078	86.6%	-	-	-	8.6	33.2	25.0
8/2	Right	U	B		1	49	-	528	2080	1156	45.7%	-	-	-	2.2	14.8	8.2

C1 PRC for Signalled Lanes (%): -48.4 Total Delay for Signalled Lanes (pcuHr): 130.44 Cycle Time (s): 90
PRC Over All Lanes (%): -48.4 Total Delay Over All Lanes(pcuHr): 251.24

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_14_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 17:51:29

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Junction 14a - Stream B-AC	0.1	5.20	0.12	A
Junction 14a - Stream C-B	0.0	0.00	0.00	A
Junction 14b - Stream B-AC	0.1	6.55	0.07	A
Junction 14b - Stream C-AB	0.0	0.00	0.00	A
	A1 - 2033 Reference Case			
Junction 14a - Stream B-AC	0.1	5.24	0.12	A
Junction 14a - Stream C-B	0.0	0.00	0.00	A
Junction 14b - Stream B-AC	0.1	6.60	0.08	A
Junction 14b - Stream C-AB	0.0	0.00	0.00	A
	A1 - 2033 Local Plan Growth			
Junction 14a - Stream B-AC	0.2	5.44	0.15	A
Junction 14a - Stream C-B	0.0	0.00	0.00	A
Junction 14b - Stream B-AC	0.2	7.24	0.15	A
Junction 14b - Stream C-AB	0.0	0.00	0.00	A

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

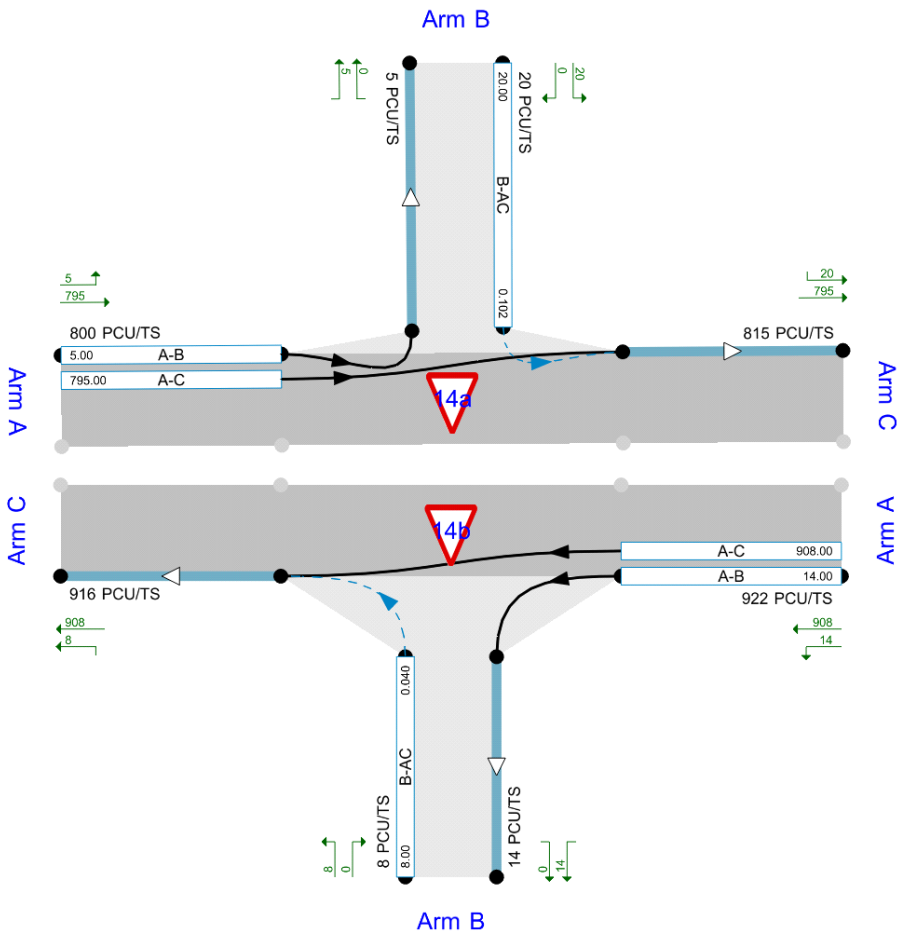
File summary

File Description

Title	A127 - Childerditch Lane
Location	Brentwood
Site number	14a
Date	06/08/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Streams (upstream end) show Total Demand (PCU/TS); Streams (downstream end) show RFC ()

Time Segment: 08:00-08:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
14a	A127 - Childerditch Lane	T-Junction	One-way from A to C	0.13	A
14b	untitled	T-Junction	One-way from A to C	0.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description	Arm type
14a	A	A127 West		Major
	B	Childerditch Lane N		Minor
	C	A127 East		Major
14b	A	A127 E		Major
	B	Childerditch Lane S		Minor
	C	A127 W		Major

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
14a	C	14.35	✓	4.50				
14b	C	14.35	✓	4.50			✓	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
14a	B	One lane	2.20	0	33
14b	B	One lane	2.50	0	47

Slope / Intercept / Capacity

Stream Intercept Adjustments

Junction	Stream intercept adjustment	Use adjustment	Reason	Direct intercept adjustment (PCU/TS)
14a	B-AC	✓	Validation to Traffic Master Data	50.00
	C-B			
14b	B-AC	✓	Validation to Traffic Master Data	50.00

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
14a	B-A	124.963	0.001	0.003	0.002	0.004
14a	B-C	148.268	0.001	0.003	-	-
14a	C-B	143.491	0.003	0.003	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
14b	B-A	130.808	0.001	0.003	0.002	0.004
14b	B-C	155.203	0.001	0.003	-	-
14b	C-B	143.491	0.003	0.003	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
14a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000
14b	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000

Origin-Destination Data

Junction 14a 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	5.00	795.00
	B	0.00	0.00	20.00
	C	0.00	0.00	0.00

Junction 14a 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	9.00	760.00
	B	0.00	0.00	23.00
	C	0.00	0.00	0.00

Junction 14a 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	782.00
	B	0.00	0.00	17.00
	C	0.00	0.00	0.00

Junction 14a 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	3.00	613.00
	B	0.00	0.00	16.00
	C	0.00	0.00	0.00

Junction 14b 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	14.00	908.00
	B	0.00	0.00	8.00
	C	0.00	0.00	0.00

Junction 14b 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	11.00	747.00
	B	0.00	0.00	11.00
	C	0.00	0.00	0.00

Junction 14b 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	5.00	739.00
	B	0.00	0.00	12.00
	C	0.00	0.00	0.00

Junction 14b 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	0.00	609.00
	B	0.00	0.00	15.00
	C	0.00	0.00	0.00

Vehicle Mix

Junction 14a 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

Junction 14a 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14a 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	0	0	0

Junction 14a 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

Junction 14b 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	27	5
	B	0	0	33
	C	0	0	0

Junction 14b 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	22	6
	B	0	0	22
	C	0	0	0

Junction 14b 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	25	6
	B	0	0	50
	C	0	0	0

Junction 14b 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	6
	B	0	0	27
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
14a	B-AC	0.12	5.20	0.1	A	19.00	76.00
	C-A					0.00	0.00
	C-B	0.00	0.00	0.0	A	0.00	0.00
	A-B					4.75	19.00
	A-C					737.50	2950.00
14b	B-AC	0.07	6.55	0.1	A	11.50	46.00
	C-AB	0.00	0.00	0.0	A	0.00	0.00
	C-A					0.00	0.00
	A-B					7.50	30.00
	A-C					750.75	3003.00

Main Results for each time segment

08:00 - 08:15

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	20.00	20.00	195.99	0.102	19.89	0.0	0.1	5.107	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.28	0.000	0.00	0.0	0.0	0.000	A
	A-B	5.00	5.00			5.00				
	A-C	795.00	795.00			795.00				
14b	B-AC	8.00	8.00	202.47	0.040	7.95	0.0	0.1	6.151	A
	C-AB	0.00	0.00	140.94	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	14.00	14.00			14.00				
	A-C	908.00	908.00			908.00				

08:15 - 08:30

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	23.00	23.00	196.09	0.117	22.98	0.1	0.1	5.199	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.37	0.000	0.00	0.0	0.0	0.000	A
	A-B	9.00	9.00			9.00				
	A-C	760.00	760.00			760.00				
14b	B-AC	11.00	11.00	202.96	0.054	10.98	0.1	0.1	5.938	A
	C-AB	0.00	0.00	141.40	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	11.00	11.00			11.00				
	A-C	747.00	747.00			747.00				

08:30 - 08:45

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	17.00	17.00	196.03	0.087	17.04	0.1	0.1	5.028	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.33	0.000	0.00	0.0	0.0	0.000	A
	A-B	2.00	2.00			2.00				
	A-C	782.00	782.00			782.00				
14b	B-AC	12.00	12.00	202.99	0.059	11.99	0.1	0.1	6.331	A
	C-AB	0.00	0.00	141.44	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	5.00	5.00			5.00				
	A-C	739.00	739.00			739.00				

08:45 - 09:00

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	16.00	16.00	196.52	0.081	16.01	0.1	0.1	4.987	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.79	0.000	0.00	0.0	0.0	0.000	A
	A-B	3.00	3.00			3.00				
	A-C	613.00	613.00			613.00				
14b	B-AC	15.00	15.00	203.38	0.074	14.98	0.1	0.1	6.545	A
	C-AB	0.00	0.00	141.81	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	0.00	0.00			0.00				
	A-C	609.00	609.00			609.00				

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
14a	A127 - Childerditch Lane	T-Junction	One-way from A to C	0.11	A
14b	untitled	T-Junction	One-way from A to C	0.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
14a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000
14b	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000

Origin-Destination Data

Junction 14a 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	5.00	982.00
	B	0.00	0.00	21.00
	C	0.00	0.00	0.00

Junction 14a 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	9.00	928.00
	B	0.00	0.00	24.00
	C	0.00	0.00	0.00

Junction 14a 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	948.00
	B	0.00	0.00	18.00
	C	0.00	0.00	0.00

Junction 14a 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	3.00	747.00
	B	0.00	0.00	17.00
	C	0.00	0.00	0.00

Junction 14b 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	16.00	1051.00
	B	0.00	0.00	9.00
	C	0.00	0.00	0.00

Junction 14b 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	12.00	883.00
	B	0.00	0.00	12.00
	C	0.00	0.00	0.00

Junction 14b 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	6.00	870.00
	B	0.00	0.00	13.00
	C	0.00	0.00	0.00

Junction 14b 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	1.00	736.00
	B	0.00	0.00	16.00
	C	0.00	0.00	0.00

Vehicle Mix

Junction 14a 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

Junction 14a 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14a 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	0	0	0

Junction 14a 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

Junction 14b 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	27	5
	B	0	0	33
	C	0	0	0

Junction 14b 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	22	6
	B	0	0	22
	C	0	0	0

Junction 14b 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	25	6
	B	0	0	50
	C	0	0	0

Junction 14b 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	6
	B	0	0	27
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
14a	B-AC	0.12	5.24	0.1	A	20.00	80.00
	C-A					0.00	0.00
	C-B	0.00	0.00	0.0	A	0.00	0.00
	A-B					4.75	19.00
	A-C					901.25	3605.00
14b	B-AC	0.08	6.60	0.1	A	12.50	50.00
	C-AB	0.00	0.00	0.0	A	0.00	0.00
	C-A					0.00	0.00
	A-B					8.75	35.00
	A-C					885.00	3540.00

Main Results for each time segment

08:00 - 08:15

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	21.00	21.00	195.46	0.107	20.88	0.0	0.1	5.152	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.76	0.000	0.00	0.0	0.0	0.000	A
	A-B	5.00	5.00			5.00				
	A-C	982.00	982.00			982.00				
14b	B-AC	9.00	9.00	202.04	0.045	8.94	0.0	0.1	6.197	A
	C-AB	0.00	0.00	140.54	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	16.00	16.00			16.00				
	A-C	1051.00	1051.00			1051.00				

08:15 - 08:30

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	24.00	24.00	195.61	0.123	23.98	0.1	0.1	5.243	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.90	0.000	0.00	0.0	0.0	0.000	A
	A-B	9.00	9.00			9.00				
	A-C	928.00	928.00			928.00				
14b	B-AC	12.00	12.00	202.55	0.059	11.98	0.1	0.1	5.987	A
	C-AB	0.00	0.00	141.02	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	12.00	12.00			12.00				
	A-C	883.00	883.00			883.00				

08:30 - 08:45

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	18.00	18.00	195.56	0.092	18.04	0.1	0.1	5.070	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.87	0.000	0.00	0.0	0.0	0.000	A
	A-B	2.00	2.00			2.00				
	A-C	948.00	948.00			948.00				
14b	B-AC	13.00	13.00	202.60	0.064	12.99	0.1	0.1	6.372	A
	C-AB	0.00	0.00	141.07	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	6.00	6.00			6.00				
	A-C	870.00	870.00			870.00				

08:45 - 09:00

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	17.00	17.00	196.13	0.087	17.01	0.1	0.1	5.026	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.42	0.000	0.00	0.0	0.0	0.000	A
	A-B	3.00	3.00			3.00				
	A-C	747.00	747.00			747.00				
14b	B-AC	16.00	16.00	203.00	0.079	15.98	0.1	0.1	6.601	A
	C-AB	0.00	0.00	141.46	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	1.00	1.00			1.00				
	A-C	736.00	736.00			736.00				

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
14a	A127 - Childerditch Lane	T-Junction	One-way from A to C	0.15	A
14b	untitled	T-Junction	One-way from A to C	0.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
14a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000
14b	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000

Origin-Destination Data

Junction 14a 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	5.00	1016.00
	B	0.00	0.00	28.00
	C	0.00	0.00	0.00

Junction 14a 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	9.00	958.00
	B	0.00	0.00	30.00
	C	0.00	0.00	0.00

Junction 14a 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	978.00
	B	0.00	0.00	24.00
	C	0.00	0.00	0.00

Junction 14a 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	3.00	772.00
	B	0.00	0.00	22.00
	C	0.00	0.00	0.00

Junction 14b 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	16.00	1175.00
	B	0.00	0.00	25.00
	C	0.00	0.00	0.00

Junction 14b 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	13.00	1001.00
	B	0.00	0.00	28.00
	C	0.00	0.00	0.00

Junction 14b 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	983.00
	B	0.00	0.00	28.00
	C	0.00	0.00	0.00

Junction 14b 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	845.00
	B	0.00	0.00	30.00
	C	0.00	0.00	0.00

Vehicle Mix

Junction 14a 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

Junction 14a 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14a 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	0	0	0

Junction 14a 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

Junction 14b 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	27	5
	B	0	0	33
	C	0	0	0

Junction 14b 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	22	6
	B	0	0	22
	C	0	0	0

Junction 14b 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	25	6
	B	0	0	50
	C	0	0	0

Junction 14b 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	6
	B	0	0	27
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
14a	B-AC	0.15	5.44	0.2	A	26.00	104.00
	C-A					0.00	0.00
	C-B	0.00	0.00	0.0	A	0.00	0.00
	A-B					4.75	19.00
	A-C					931.00	3724.00
14b	B-AC	0.15	7.24	0.2	A	27.75	111.00
	C-AB	0.00	0.00	0.0	A	0.00	0.00
	C-A					0.00	0.00
	A-B					9.50	38.00
	A-C					1001.00	4004.00

Main Results for each time segment

08:00 - 08:15

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	28.00	28.00	195.36	0.143	27.83	0.0	0.2	5.366	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.67	0.000	0.00	0.0	0.0	0.000	A
	A-B	5.00	5.00			5.00				
	A-C	1016.00	1016.00			1016.00				
14b	B-AC	25.00	25.00	201.67	0.124	24.81	0.0	0.2	6.761	A
	C-AB	0.00	0.00	140.20	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	16.00	16.00			16.00				
	A-C	1175.00	1175.00			1175.00				

08:15 - 08:30

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	30.00	30.00	195.52	0.153	29.99	0.2	0.2	5.436	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.82	0.000	0.00	0.0	0.0	0.000	A
	A-B	9.00	9.00			9.00				
	A-C	958.00	958.00			958.00				
14b	B-AC	28.00	28.00	202.20	0.138	27.98	0.2	0.2	6.598	A
	C-AB	0.00	0.00	140.69	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	13.00	13.00			13.00				
	A-C	1001.00	1001.00			1001.00				

08:30 - 08:45

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	24.00	24.00	195.47	0.123	24.04	0.2	0.1	5.250	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.78	0.000	0.00	0.0	0.0	0.000	A
	A-B	2.00	2.00			2.00				
	A-C	978.00	978.00			978.00				
14b	B-AC	28.00	28.00	202.26	0.138	27.99	0.2	0.2	6.838	A
	C-AB	0.00	0.00	140.76	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	7.00	7.00			7.00				
	A-C	983.00	983.00			983.00				

08:45 - 09:00

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	22.00	22.00	196.06	0.112	22.01	0.1	0.1	5.172	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.35	0.000	0.00	0.0	0.0	0.000	A
	A-B	3.00	3.00			3.00				
	A-C	772.00	772.00			772.00				
14b	B-AC	30.00	30.00	202.68	0.148	29.97	0.2	0.2	7.245	A
	C-AB	0.00	0.00	141.15	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	2.00	2.00			2.00				
	A-C	845.00	845.00			845.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_14_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 17:52:43

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Junction 14a - Stream B-AC	0.2	5.48	0.16	A
Junction 14a - Stream C-B	0.0	0.00	0.00	A
Junction 14b - Stream B-AC	0.0	5.37	0.03	A
Junction 14b - Stream C-AB	0.0	0.00	0.00	A
	A1 - 2033 Reference Case			
Junction 14a - Stream B-AC	0.2	5.74	0.20	A
Junction 14a - Stream C-B	0.0	0.00	0.00	A
Junction 14b - Stream B-AC	0.1	5.50	0.05	A
Junction 14b - Stream C-AB	0.0	0.00	0.00	A
	A1 - 2033 Local Plan Growth			
Junction 14a - Stream B-AC	0.3	6.01	0.24	A
Junction 14a - Stream C-B	0.0	0.00	0.00	A
Junction 14b - Stream B-AC	0.0	5.42	0.04	A
Junction 14b - Stream C-AB	0.0	0.00	0.00	A

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

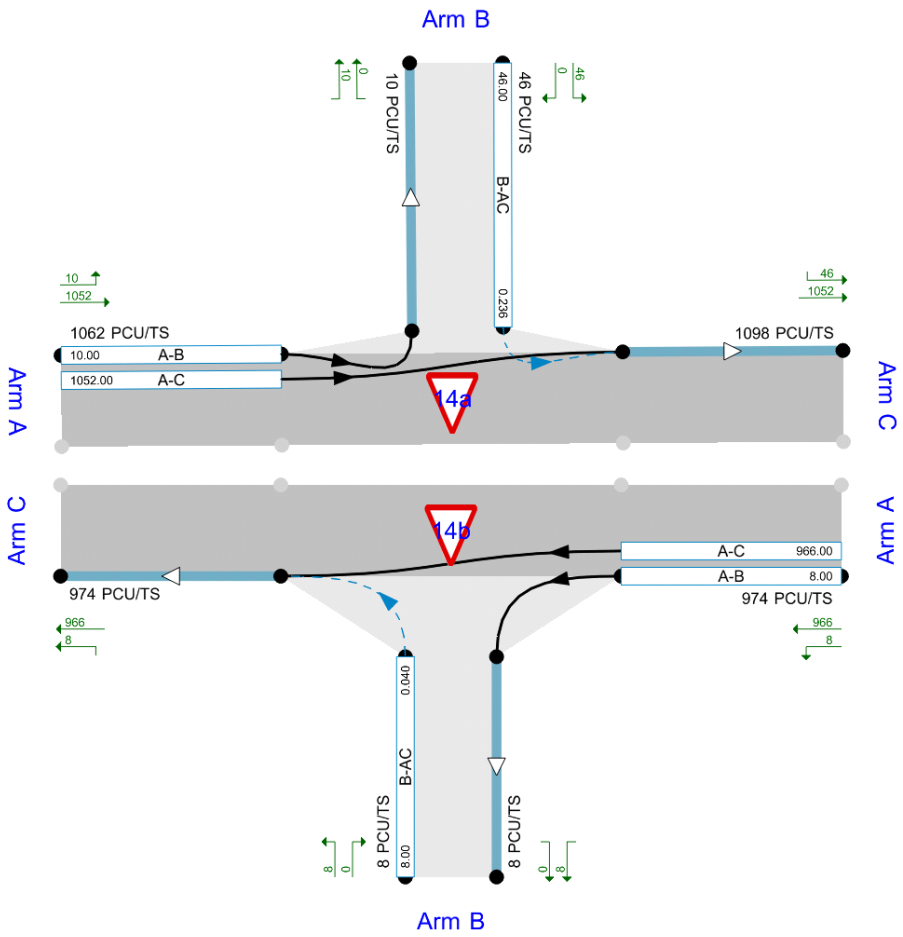
File summary

File Description

Title	A127 - Childerditch Lane
Location	Brentwood
Site number	14a
Date	06/08/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Streams (upstream end) show Total Demand (PCU/TS); Streams (downstream end) show RFC ()

Time Segment: 17:00-17:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
14a	A127 - Childerditch Lane	T-Junction	One-way from A to C	0.22	A
14b	untitled	T-Junction	One-way from A to C	0.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description	Arm type
14a	A	A127 West		Major
	B	Childerditch Lane N		Minor
	C	A127 East		Major
14b	A	A127 E		Major
	B	Childerditch Lane S		Minor
	C	A127 W		Major

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
14a	C	14.35	✓	4.50				
14b	C	14.35	✓	4.50			✓	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
14a	B	One lane	2.20	0	33
14b	B	One lane	2.50	0	47

Slope / Intercept / Capacity

Stream Intercept Adjustments

Junction	Stream intercept adjustment	Use adjustment	Reason	Direct intercept adjustment (PCU/TS)
14a	B-AC	✓	Validation to Traffic Master Data	50.00
	C-B			
14b	B-AC	✓	Validation to Traffic Master Data	50.00

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
14a	B-A	124.963	0.001	0.003	0.002	0.004
14a	B-C	148.268	0.001	0.003	-	-
14a	C-B	143.491	0.003	0.003	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
14b	B-A	130.808	0.001	0.003	0.002	0.004
14b	B-C	155.203	0.001	0.003	-	-
14b	C-B	143.491	0.003	0.003	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
14a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000
14b	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000

Origin-Destination Data

Junction 14a 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	10.00	751.00
	B	0.00	0.00	31.00
	C	0.00	0.00	0.00

Junction 14a 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	746.00
	B	0.00	0.00	28.00
	C	0.00	0.00	0.00

Junction 14a 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	14.00	654.00
	B	0.00	0.00	30.00
	C	0.00	0.00	0.00

Junction 14a 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	690.00
	B	0.00	0.00	32.00
	C	0.00	0.00	0.00

Junction 14b 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	4.00	703.00
	B	0.00	0.00	7.00
	C	0.00	0.00	0.00

Junction 14b 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	4.00	764.00
	B	0.00	0.00	4.00
	C	0.00	0.00	0.00

Junction 14b 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	3.00	776.00
	B	0.00	0.00	6.00
	C	0.00	0.00	0.00

Junction 14b 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	693.00
	B	0.00	0.00	6.00
	C	0.00	0.00	0.00

Vehicle Mix

Junction 14a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Junction 14a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	0	0	0

Junction 14a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	33	3
	B	0	0	17
	C	0	0	0

Junction 14b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	33	2
	B	0	0	0
	C	0	0	0

Junction 14b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	50	4
	B	0	0	0
	C	0	0	0

Junction 14b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
14a	B-AC	0.16	5.48	0.2	A	30.25	121.00
	C-A					0.00	0.00
	C-B	0.00	0.00	0.0	A	0.00	0.00
	A-B					8.25	33.00
	A-C					710.25	2841.00
14b	B-AC	0.03	5.37	0.0	A	5.75	23.00
	C-AB	0.00	0.00	0.0	A	0.00	0.00
	C-A					0.00	0.00
	A-B					3.25	13.00
	A-C					734.00	2936.00

Main Results for each time segment

17:00 - 17:15

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	31.00	31.00	196.11	0.158	30.81	0.0	0.2	5.439	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.39	0.000	0.00	0.0	0.0	0.000	A
	A-B	10.00	10.00			10.00				
	A-C	751.00	751.00			751.00				
14b	B-AC	7.00	7.00	203.10	0.034	6.96	0.0	0.0	5.367	A
	C-AB	0.00	0.00	141.54	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	4.00	4.00			4.00				
	A-C	703.00	703.00			703.00				

17:15 - 17:30

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	28.00	28.00	196.13	0.143	28.02	0.2	0.2	5.355	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.41	0.000	0.00	0.0	0.0	0.000	A
	A-B	7.00	7.00			7.00				
	A-C	746.00	746.00			746.00				
14b	B-AC	4.00	4.00	202.92	0.020	4.02	0.0	0.0	4.997	A
	C-AB	0.00	0.00	141.37	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	4.00	4.00			4.00				
	A-C	764.00	764.00			764.00				

17:30 - 17:45

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	30.00	30.00	196.39	0.153	29.99	0.2	0.2	5.408	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.65	0.000	0.00	0.0	0.0	0.000	A
	A-B	14.00	14.00			14.00				
	A-C	654.00	654.00			654.00				
14b	B-AC	6.00	6.00	202.88	0.030	5.99	0.0	0.0	4.570	A
	C-AB	0.00	0.00	141.34	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	3.00	3.00			3.00				
	A-C	776.00	776.00			776.00				

17:45 - 18:00

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	32.00	32.00	196.30	0.163	31.99	0.2	0.2	5.477	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.58	0.000	0.00	0.0	0.0	0.000	A
	A-B	2.00	2.00			2.00				
	A-C	690.00	690.00			690.00				
14b	B-AC	6.00	6.00	203.13	0.030	6.00	0.0	0.0	4.565	A
	C-AB	0.00	0.00	141.57	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	2.00	2.00			2.00				
	A-C	693.00	693.00			693.00				

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
14a	A127 - Childerditch Lane	T-Junction	One-way from A to C	0.23	A
14b	untitled	T-Junction	One-way from A to C	0.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
14a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000
14b	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000

Origin-Destination Data

Junction 14a 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	10.00	940.00
	B	0.00	0.00	39.00
	C	0.00	0.00	0.00

Junction 14a 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	941.00
	B	0.00	0.00	35.00
	C	0.00	0.00	0.00

Junction 14a 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	14.00	840.00
	B	0.00	0.00	37.00
	C	0.00	0.00	0.00

Junction 14a 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	843.00
	B	0.00	0.00	38.00
	C	0.00	0.00	0.00

Junction 14b 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	4.00	901.00
	B	0.00	0.00	11.00
	C	0.00	0.00	0.00

Junction 14b 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	4.00	967.00
	B	0.00	0.00	8.00
	C	0.00	0.00	0.00

Junction 14b 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	3.00	956.00
	B	0.00	0.00	9.00
	C	0.00	0.00	0.00

Junction 14b 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	851.00
	B	0.00	0.00	9.00
	C	0.00	0.00	0.00

Vehicle Mix

Junction 14a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Junction 14a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	0	0	0

Junction 14a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	33	3
	B	0	0	17
	C	0	0	0

Junction 14b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	33	2
	B	0	0	0
	C	0	0	0

Junction 14b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	50	4
	B	0	0	0
	C	0	0	0

Junction 14b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
14a	B-AC	0.20	5.74	0.2	A	37.25	149.00
	C-A					0.00	0.00
	C-B	0.00	0.00	0.0	A	0.00	0.00
	A-B					8.25	33.00
	A-C					891.00	3564.00
14b	B-AC	0.05	5.50	0.1	A	9.25	37.00
	C-AB	0.00	0.00	0.0	A	0.00	0.00
	C-A					0.00	0.00
	A-B					3.25	13.00
	A-C					918.75	3675.00

Main Results for each time segment

17:00 - 17:15

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	39.00	39.00	195.57	0.199	38.75	0.0	0.2	5.739	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.87	0.000	0.00	0.0	0.0	0.000	A
	A-B	10.00	10.00			10.00				
	A-C	940.00	940.00			940.00				
14b	B-AC	11.00	11.00	202.51	0.054	10.93	0.0	0.1	5.495	A
	C-AB	0.00	0.00	140.99	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	4.00	4.00			4.00				
	A-C	901.00	901.00			901.00				

17:15 - 17:30

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	35.00	35.00	195.57	0.179	35.03	0.2	0.2	5.606	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.87	0.000	0.00	0.0	0.0	0.000	A
	A-B	7.00	7.00			7.00				
	A-C	941.00	941.00			941.00				
14b	B-AC	8.00	8.00	202.31	0.040	8.02	0.1	0.0	5.078	A
	C-AB	0.00	0.00	140.81	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	4.00	4.00			4.00				
	A-C	967.00	967.00			967.00				

17:30 - 17:45

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	37.00	37.00	195.86	0.189	36.99	0.2	0.2	5.664	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.13	0.000	0.00	0.0	0.0	0.000	A
	A-B	14.00	14.00			14.00				
	A-C	840.00	840.00			840.00				
14b	B-AC	9.00	9.00	202.34	0.044	9.00	0.0	0.0	4.654	A
	C-AB	0.00	0.00	140.84	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	3.00	3.00			3.00				
	A-C	956.00	956.00			956.00				

17:45 - 18:00

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	38.00	38.00	195.86	0.194	37.99	0.2	0.2	5.700	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	141.16	0.000	0.00	0.0	0.0	0.000	A
	A-B	2.00	2.00			2.00				
	A-C	843.00	843.00			843.00				
14b	B-AC	9.00	9.00	202.66	0.044	9.00	0.0	0.0	4.646	A
	C-AB	0.00	0.00	141.13	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	2.00	2.00			2.00				
	A-C	851.00	851.00			851.00				

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
14a	A127 - Childerditch Lane	T-Junction	One-way from A to C	0.25	A
14b	untitled	T-Junction	One-way from A to C	0.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
14a	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000
14b	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C		DIRECT	✓	100.000

Origin-Destination Data

Junction 14a 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	10.00	1052.00
	B	0.00	0.00	46.00
	C	0.00	0.00	0.00

Junction 14a 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	1056.00
	B	0.00	0.00	43.00
	C	0.00	0.00	0.00

Junction 14a 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	14.00	951.00
	B	0.00	0.00	44.00
	C	0.00	0.00	0.00

Junction 14a 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	934.00
	B	0.00	0.00	44.00
	C	0.00	0.00	0.00

Junction 14b 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	8.00	966.00
	B	0.00	0.00	8.00
	C	0.00	0.00	0.00

Junction 14b 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	8.00	1033.00
	B	0.00	0.00	4.00
	C	0.00	0.00	0.00

Junction 14b 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	1016.00
	B	0.00	0.00	6.00
	C	0.00	0.00	0.00

Junction 14b 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	5.00	903.00
	B	0.00	0.00	6.00
	C	0.00	0.00	0.00

Vehicle Mix

Junction 14a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Junction 14a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	0	0	0

Junction 14a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Junction 14b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	33	3
	B	0	0	17
	C	0	0	0

Junction 14b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	33	2
	B	0	0	0
	C	0	0	0

Junction 14b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	50	4
	B	0	0	0
	C	0	0	0

Junction 14b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
14a	B-AC	0.24	6.01	0.3	A	44.25	177.00
	C-A					0.00	0.00
	C-B	0.00	0.00	0.0	A	0.00	0.00
	A-B					8.25	33.00
	A-C					998.25	3993.00
14b	B-AC	0.04	5.42	0.0	A	6.00	24.00
	C-AB	0.00	0.00	0.0	A	0.00	0.00
	C-A					0.00	0.00
	A-B					7.00	28.00
	A-C					979.50	3918.00

Main Results for each time segment

17:00 - 17:15

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	46.00	46.00	195.25	0.236	45.69	0.0	0.3	6.005	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.56	0.000	0.00	0.0	0.0	0.000	A
	A-B	10.00	10.00			10.00				
	A-C	1052.00	1052.00			1052.00				
14b	B-AC	8.00	8.00	202.31	0.040	7.95	0.0	0.0	5.416	A
	C-AB	0.00	0.00	140.80	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	8.00	8.00			8.00				
	A-C	966.00	966.00			966.00				

17:15 - 17:30

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	43.00	43.00	195.25	0.220	43.02	0.3	0.3	5.912	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.55	0.000	0.00	0.0	0.0	0.000	A
	A-B	7.00	7.00			7.00				
	A-C	1056.00	1056.00			1056.00				
14b	B-AC	4.00	4.00	202.11	0.020	4.03	0.0	0.0	5.041	A
	C-AB	0.00	0.00	140.62	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	8.00	8.00			8.00				
	A-C	1033.00	1033.00			1033.00				

17:30 - 17:45

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	44.00	44.00	195.54	0.225	44.00	0.3	0.3	5.938	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.83	0.000	0.00	0.0	0.0	0.000	A
	A-B	14.00	14.00			14.00				
	A-C	951.00	951.00			951.00				
14b	B-AC	6.00	6.00	202.16	0.030	5.99	0.0	0.0	4.587	A
	C-AB	0.00	0.00	140.67	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	7.00	7.00			7.00				
	A-C	1016.00	1016.00			1016.00				

17:45 - 18:00

Junction	Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
14a	B-AC	44.00	44.00	195.60	0.225	44.00	0.3	0.3	5.936	A
	C-A	0.00	0.00			0.00				
	C-B	0.00	0.00	140.91	0.000	0.00	0.0	0.0	0.000	A
	A-B	2.00	2.00			2.00				
	A-C	934.00	934.00			934.00				
14b	B-AC	6.00	6.00	202.50	0.030	6.00	0.0	0.0	4.579	A
	C-AB	0.00	0.00	140.98	0.000	0.00	0.0	0.0	0.000	A
	C-A	0.00	0.00			0.00				
	A-B	5.00	5.00			5.00				
	A-C	903.00	903.00			903.00				

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_15&16_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 14:48:03

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Junction 15 - Arm A	1.4	8.18	0.59	A
Junction 15 - Arm B	1.0	11.95	0.46	B
Junction 15 - Arm C	12.5	49.84	0.98	E
Junction 16 - Arm C	4.8	20.21	0.85	C
Junction 16 - Arm D	157.2	985.93	1.46	F
Junction 16 - Arm E	245.6	1189.78	1.50	F
	A1 - 2033 Reference Case			
Junction 15 - Arm A	1.6	8.98	0.62	A
Junction 15 - Arm B	1.2	13.06	0.50	B
Junction 15 - Arm C	12.5	50.49	0.98	F
Junction 16 - Arm C	6.1	23.57	0.88	C
Junction 16 - Arm D	189.9	1219.47	1.58	F
Junction 16 - Arm E	327.9	1553.31	1.64	F
	A1 - 2033 Local Plan Growth			
Junction 15 - Arm A	2.2	10.92	0.69	B
Junction 15 - Arm B	1.4	14.17	0.53	B
Junction 15 - Arm C	12.6	50.94	0.98	F
Junction 16 - Arm C	9.5	31.73	0.94	D
Junction 16 - Arm D	231.9	1552.19	1.71	F
Junction 16 - Arm E	434.3	1983.56	1.78	F

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

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

File summary

File Description

Title	A128 Ingrave Road - The Avenue - A128 Brentwood Road - Running Waters
Location	Brentwood
Site number	15 & 16
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	bhouse
Description	

Units

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

Flows show modelled flow through junction (PCU/TS).
Time Segment: 08:45-09:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 15	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and A have 85% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
15	(untitled)	Mini-roundabout	C, B, A	30.38	D
16	(untitled)	Mini-roundabout	C, D, E	782.04	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Junction	Arm	Name	Description
15	A	Ingrave Road	
	B	The Avenue	
	C	Brentwood Road	
16	C	Brentwood Road	
	D	Running Waters	
	E	Brentwood Road E	

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
15	A	3.30	3.30	6.70	17.9	20.00	17.00	0.0	
	B	3.30	3.30	6.00	11.3	20.00	11.00	0.0	
	C	4.40	4.40	6.20	10.3	17.50	8.00	0.0	
16	C	4.60	4.60	8.10	5.7	18.24	10.30	0.0	
	D	3.50	3.50	6.10	4.9	18.31	9.30	0.0	
	E	3.10	3.10	7.10	18.7	17.20	14.50	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
15	A	0.750	315.627
	B	0.663	245.880
	C	0.688	262.694
16	C	0.698	280.654
	D	0.647	240.108
	E	0.703	296.657

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
15	C	16	C	Queue limited	Normal	0.00	100.00	12.40
16	C	15	C	Queue limited	Normal	0.00	100.00	12.40

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
15	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
16	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 15 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	22.00	132.00
	B	5.00	0.00	71.00
	C	160.00	147.00	0.00

Junction 15 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	29.00	123.00
	B	5.00	0.00	45.00
	C	136.00	191.00	0.00

Junction 15 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	28.00	126.00
	B	7.00	0.00	58.00
	C	120.00	209.00	0.00

Junction 15 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	20.00	117.00
	B	6.00	0.00	57.00
	C	107.00	155.00	0.00

Junction 16 08:00 - 08:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	61.00	139.00
	D	99.00	0.00	62.00
	E	208.00	81.00	0.00

Junction 16 08:15 - 08:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	33.00	137.00
	D	111.00	0.00	72.00
	E	217.00	44.00	0.00

Junction 16 08:30 - 08:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	40.00	145.00
	D	99.00	0.00	64.00
	E	232.00	54.00	0.00

Junction 16 08:45 - 09:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	54.00	119.00
	D	96.00	0.00	60.00
	E	164.00	28.00	0.00

Vehicle Mix

Junction 15 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	1	0	25
	C	1	0	0

Junction 15 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	2
	B	2	0	25
	C	3	0	0

Junction 15 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	3	0	0
	C	1	0	0

Junction 15 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	4	0	0

Junction 16 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	3	1
	D	0	0	1
	E	1	0	0

Junction 16 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	4
	D	0	0	1
	E	1	2	0

Junction 16 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	5	1
	D	0	0	0
	E	2	2	0

Junction 16 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	4
	D	0	0	0
	E	3	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
15	A	0.59	8.18	1.4	A	149.25	597.00
	B	0.46	11.95	1.0	B	63.50	254.00
	C	0.98	49.84	12.5	E	230.45	921.82
16	C	0.85	20.21	4.8	C	181.91	727.63
	D	1.46	985.93	157.2	F	165.75	663.00
	E	1.50	1189.78	245.6	F	257.00	1028.00

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	154.00	154.00	70.06	263.11	0.585	152.60	124.35	0.0	1.4	8.184	A
	B	76.00	76.00	119.41	166.71	0.456	74.99	131.51	0.0	1.0	11.953	B
	C	241.53	241.53	21.80	247.70	0.975	229.13	200.86	0.0	12.4	36.935	E
16	C	200.86	200.86	61.89	237.46	0.846	196.05	241.53	0.0	4.8	20.213	C
	D	161.00	161.00	136.25	139.39	1.155	134.33	121.68	0.0	26.7	105.904	F
	E	289.00	289.00	82.60	224.08	1.290	220.81	187.98	0.0	68.2	153.226	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	152.00	152.00	45.52	281.50	0.540	152.19	99.64	1.4	1.2	7.112	A
	B	50.00	50.00	94.62	183.15	0.273	50.54	158.71	1.0	0.5	8.329	A
	C	224.45	224.45	28.97	242.77	0.925	224.37	168.74	12.4	12.5	49.838	E
16	C	168.74	168.74	39.26	253.26	0.666	171.42	224.45	4.8	2.1	11.694	B
	D	183.00	183.00	137.61	125.11	1.463	124.96	73.07	26.7	84.7	433.171	F
	E	261.00	261.00	76.02	187.86	1.389	187.69	186.55	68.2	141.5	509.007	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	154.00	154.00	57.96	272.18	0.566	153.90	89.81	1.2	1.3	7.786	A
	B	65.00	65.00	82.82	190.97	0.340	64.95	170.48	0.5	0.5	7.169	A
	C	225.20	225.20	27.99	243.44	0.925	225.31	183.87	12.5	12.4	49.626	E
16	C	183.87	183.87	33.18	257.50	0.714	183.55	225.20	2.1	2.4	12.319	B
	D	163.00	163.00	143.91	111.30	1.465	111.27	72.82	84.7	136.4	822.604	F
	E	286.00	286.00	67.51	190.89	1.498	190.87	187.67	141.5	236.6	918.648	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	137.00	137.00	56.99	272.91	0.502	137.26	99.59	1.3	1.1	6.872	A
	B	63.00	63.00	93.59	183.83	0.343	63.00	156.98	0.5	0.5	7.447	A
	C	230.64	230.64	20.08	248.88	0.927	230.48	174.16	12.4	12.5	49.232	E
16	C	174.16	174.16	34.56	256.53	0.679	174.37	230.64	2.4	2.2	11.300	B
	D	156.00	156.00	120.18	135.32	1.153	135.28	88.75	136.4	157.2	985.934	F
	E	192.00	192.00	82.16	183.05	1.049	183.03	173.29	236.6	245.6	1189.777	F

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 15	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and A have 85% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
15	(untitled)	Mini-roundabout	C, B, A	30.52	D
16	(untitled)	Mini-roundabout	C, D, E	1005.49	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
15	C	16	C	Queue limited	Normal	0.00	100.00	12.40
16	C	15	C	Queue limited	Normal	0.00	100.00	12.40

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
15	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
16	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 15 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	23.00	137.00
	B	5.00	0.00	77.00
	C	176.00	152.00	0.00

Junction 15 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	30.00	128.00
	B	5.00	0.00	51.00
	C	152.00	196.00	0.00

Junction 15 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	34.00	131.00
	B	11.00	0.00	59.00
	C	138.00	211.00	0.00

Junction 15 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	21.00	121.00
	B	7.00	0.00	62.00
	C	121.00	159.00	0.00

Junction 16 08:00 - 08:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	67.00	143.00
	D	103.00	0.00	62.00
	E	226.00	83.00	0.00

Junction 16 08:15 - 08:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	40.00	141.00
	D	115.00	0.00	72.00
	E	235.00	46.00	0.00

Junction 16 08:30 - 08:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	47.00	150.00
	D	103.00	0.00	65.00
	E	251.00	56.00	0.00

Junction 16 08:45 - 09:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	59.00	123.00
	D	99.00	0.00	60.00
	E	179.00	29.00	0.00

Vehicle Mix

Junction 15 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	1	0	25
	C	1	0	0

Junction 15 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	2
	B	2	0	25
	C	3	0	0

Junction 15 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	3	0	0
	C	1	0	0

Junction 15 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	4	0	0

Junction 16 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	3	1
	D	0	0	1
	E	1	0	0

Junction 16 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	4
	D	0	0	1
	E	1	2	0

Junction 16 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	5	1
	D	0	0	0
	E	2	2	0

Junction 16 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	4
	D	0	0	0
	E	3	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
15	A	0.62	8.98	1.6	A	156.25	625.00
	B	0.50	13.06	1.2	B	69.25	277.00
	C	0.98	50.49	12.5	F	229.01	916.05
16	C	0.88	23.57	6.1	C	191.11	764.45
	D	1.58	1219.47	189.9	F	169.75	679.00
	E	1.64	1553.31	327.9	F	276.25	1105.00

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	160.00	160.00	75.88	258.74	0.618	158.39	127.54	0.0	1.6	8.985	A
	B	82.00	82.00	122.61	164.59	0.498	80.81	128.66	0.0	1.2	13.061	B
	C	240.91	240.91	22.77	247.03	0.975	228.51	211.51	0.0	12.4	37.023	E
16	C	211.51	211.51	58.54	239.80	0.882	205.43	240.91	0.0	6.1	23.566	C
	D	165.00	165.00	139.89	134.38	1.228	130.57	124.08	0.0	34.4	134.705	F
	E	309.00	309.00	81.51	220.35	1.402	217.94	188.96	0.0	91.1	203.864	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	158.00	158.00	51.61	276.94	0.571	158.23	103.97	1.6	1.4	7.750	A
	B	56.00	56.00	98.95	180.28	0.311	56.63	154.73	1.2	0.6	8.963	A
	C	223.81	223.81	29.97	242.08	0.925	223.71	179.86	12.4	12.5	49.986	E
16	C	179.86	179.86	40.53	252.36	0.713	183.27	223.81	6.1	2.7	14.028	B
	D	187.00	187.00	142.17	121.67	1.537	121.58	81.63	34.4	99.8	539.593	F
	E	281.00	281.00	75.09	189.39	1.484	189.25	188.66	91.1	182.8	663.276	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	165.00	165.00	59.01	271.39	0.608	164.82	99.07	1.4	1.6	8.628	A
	B	70.00	70.00	88.11	187.46	0.373	69.97	167.35	0.6	0.6	7.703	A
	C	221.41	221.41	33.94	239.35	0.925	221.52	189.89	12.5	12.4	50.489	F
16	C	189.89	189.89	30.64	259.27	0.732	189.85	221.41	2.7	2.7	13.180	B
	D	168.00	168.00	144.60	106.30	1.580	106.28	75.88	99.8	161.6	993.887	F
	E	307.00	307.00	65.35	186.71	1.644	186.70	185.54	182.8	303.1	1191.725	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	142.00	142.00	61.95	269.19	0.528	142.38	105.86	1.6	1.2	7.362	A
	B	69.00	69.00	98.83	180.35	0.383	68.98	152.07	0.6	0.6	8.079	A
	C	229.92	229.92	21.15	248.15	0.927	229.76	183.18	12.4	12.5	49.369	E
16	C	183.18	183.18	33.42	257.33	0.712	183.29	229.92	2.7	2.6	12.523	B
	D	159.00	159.00	124.10	130.70	1.217	130.67	92.61	161.6	189.9	1219.466	F
	E	208.00	208.00	80.12	183.23	1.135	183.23	174.66	303.1	327.9	1553.308	F

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 15	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and A have 86% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
15	(untitled)	Mini-roundabout	C, B, A	30.69	D
16	(untitled)	Mini-roundabout	C, D, E	1287.81	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
15	C	16	C	Queue limited	Normal	0.00	100.00	12.40
16	C	15	C	Queue limited	Normal	0.00	100.00	12.40

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
15	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
16	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 15 08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	27.00	150.00
	B	6.00	0.00	80.00
	C	200.00	155.00	0.00

Junction 15 08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	33.00	140.00
	B	6.00	0.00	53.00
	C	175.00	199.00	0.00

Junction 15 08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	37.00	144.00
	B	13.00	0.00	62.00
	C	164.00	217.00	0.00

Junction 15 08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	23.00	133.00
	B	7.00	0.00	64.00
	C	142.00	162.00	0.00

Junction 16 08:00 - 08:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	70.00	157.00
	D	105.00	0.00	65.00
	E	252.00	89.00	0.00

Junction 16 08:15 - 08:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	43.00	154.00
	D	117.00	0.00	75.00
	E	259.00	51.00	0.00

Junction 16 08:30 - 08:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	50.00	163.00
	D	105.00	0.00	67.00
	E	276.00	62.00	0.00

Junction 16 08:45 - 09:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	62.00	133.00
	D	101.00	0.00	62.00
	E	200.00	34.00	0.00

Vehicle Mix

Junction 15 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	1	0	25
	C	1	0	0

Junction 15 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	2
	B	2	0	25
	C	3	0	0

Junction 15 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	3	0	0
	C	1	0	0

Junction 15 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	4	0	0

Junction 16 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	3	1
	D	0	0	1
	E	1	0	0

Junction 16 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	4
	D	0	0	1
	E	1	2	0

Junction 16 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	5	1
	D	0	0	0
	E	2	2	0

Junction 16 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	4
	D	0	0	0
	E	3	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
15	A	0.69	10.92	2.2	B	171.75	687.00
	B	0.53	14.17	1.4	B	72.75	291.00
	C	0.98	50.94	12.6	F	227.10	908.38
16	C	0.94	31.73	9.5	D	206.03	824.13
	D	1.71	1552.19	231.9	F	174.25	697.00
	E	1.78	1983.56	434.3	F	305.75	1223.00

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	177.00	177.00	78.74	256.60	0.690	174.83	133.24	0.0	2.2	10.921	B
	B	86.00	86.00	127.34	161.46	0.533	84.65	125.35	0.0	1.4	14.172	B
	C	238.42	238.42	26.67	244.35	0.976	226.02	226.90	0.0	12.4	37.377	E
16	C	226.90	226.90	57.14	240.78	0.942	217.43	238.42	0.0	9.5	31.729	D
	D	170.00	170.00	150.38	126.79	1.341	124.07	124.19	0.0	45.9	182.355	F
	E	341.00	341.00	76.63	220.73	1.545	218.93	197.82	0.0	122.1	268.908	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	173.00	173.00	53.70	275.37	0.628	173.41	110.98	2.2	1.8	9.044	A
	B	59.00	59.00	104.95	176.30	0.335	59.73	149.81	1.4	0.6	9.494	A
	C	221.87	221.87	32.99	240.00	0.924	221.77	194.11	12.4	12.5	50.432	F
16	C	194.11	194.11	43.72	250.14	0.776	199.75	221.87	9.5	3.8	20.100	C
	D	192.00	192.00	155.29	116.64	1.646	116.59	88.17	45.9	121.3	704.424	F
	E	310.00	310.00	71.43	194.27	1.596	194.16	200.46	122.1	237.9	852.610	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	181.00	181.00	61.99	269.16	0.672	180.72	107.95	1.8	2.0	10.378	B
	B	75.00	75.00	95.01	182.89	0.410	74.93	161.54	0.6	0.7	8.379	A
	C	219.51	219.51	36.92	237.30	0.925	219.63	205.79	12.5	12.4	50.938	F
16	C	205.79	205.79	31.17	258.90	0.795	205.79	219.51	3.8	3.8	17.199	C
	D	172.00	172.00	157.54	100.48	1.712	100.47	79.41	121.3	192.9	1321.869	F
	E	338.00	338.00	61.23	189.47	1.784	189.46	196.79	237.9	386.5	1496.490	F

08:45 - 09:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	156.00	156.00	63.95	267.69	0.583	156.57	113.29	2.0	1.5	8.419	A
	B	71.00	71.00	106.24	175.45	0.405	71.01	145.37	0.7	0.7	8.619	A
	C	228.58	228.58	23.20	246.74	0.926	228.41	197.32	12.4	12.6	49.658	E
16	C	197.32	197.32	33.23	257.46	0.766	197.63	228.58	3.8	3.5	15.593	C
	D	163.00	163.00	135.11	123.95	1.315	123.94	95.75	192.9	231.9	1552.188	F
	E	234.00	234.00	75.64	186.18	1.257	186.18	183.41	386.5	434.3	1983.565	F

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_15&16_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 25/10/2018 14:57:46

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Junction 15 - Arm A	249.9	1655.52	1.71	F
Junction 15 - Arm B	280.0	1784.70	1.69	F
Junction 15 - Arm C	2.8	13.26	0.74	B
Junction 16 - Arm C	12.4	55.14	0.98	F
Junction 16 - Arm D	1.5	15.78	0.61	C
Junction 16 - Arm E	5.5	22.71	0.86	C
	A1 - 2033 Reference Case			
Junction 15 - Arm A	287.2	1885.94	1.80	F
Junction 15 - Arm B	303.2	1977.63	1.76	F
Junction 15 - Arm C	3.5	15.94	0.79	C
Junction 16 - Arm C	12.4	55.28	0.98	F
Junction 16 - Arm D	1.9	18.13	0.66	C
Junction 16 - Arm E	7.6	30.85	0.90	D
	A1 - 2033 Local Plan Growth			
Junction 15 - Arm A	349.9	2276.11	1.93	F
Junction 15 - Arm B	329.9	2290.33	1.83	F
Junction 15 - Arm C	5.4	22.64	0.86	C
Junction 16 - Arm C	12.4	55.52	0.98	F
Junction 16 - Arm D	2.2	20.08	0.70	C
Junction 16 - Arm E	19.5	68.54	0.99	F

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

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

File summary

File Description

Title	A128 Ingrave Road - The Avenue - A128 Brentwood Road - Running Waters
Location	Brentwood
Site number	15 & 16
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	bhouse
Description	

Units

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

Flows show modelled flow through junction (PCU/TS).
Time Segment: 17:45-18:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 16	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and E have 85% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
15	(untitled)	Mini-roundabout	C, B, A	1141.24	F
16	(untitled)	Mini-roundabout	C, D, E	35.77	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Junction	Arm	Name	Description
15	A	Ingrave Road	
	B	The Avenue	
	C	Brentwood Road	
16	C	Brentwood Road	
	D	Running Waters	
	E	Brentwood Road E	

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
15	A	3.30	3.30	6.70	17.9	20.00	17.00	0.0	
	B	3.30	3.30	6.00	11.3	20.00	11.00	0.0	
	C	4.40	4.40	6.20	10.3	17.50	8.00	0.0	
16	C	4.60	4.60	8.10	5.7	18.24	10.30	0.0	
	D	3.50	3.50	6.10	4.9	18.31	9.30	0.0	
	E	3.10	3.10	7.10	18.7	17.20	14.50	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
15	A	0.750	315.627
	B	0.663	245.880
	C	0.688	262.694
16	C	0.698	280.654
	D	0.647	240.108
	E	0.703	296.657

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
15	C	16	C	Queue limited	Normal	0.00	100.00	12.40
16	C	15	C	Queue limited	Normal	0.00	100.00	12.40

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
15	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
16	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 15 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	6.00	136.00
	B	8.00	0.00	171.00
	C	124.00	61.00	0.00

Junction 15 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	4.00	192.00
	B	13.00	0.00	161.00
	C	131.00	54.00	0.00

Junction 15 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	190.00
	B	11.00	0.00	167.00
	C	127.00	65.00	0.00

Junction 15 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	2.00	181.00
	B	5.00	0.00	199.00
	C	120.00	60.00	0.00

Junction 16 17:00 - 17:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	118.00	196.00
	D	48.00	0.00	38.00
	E	137.00	66.00	0.00

Junction 16 17:15 - 17:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	114.00	235.00
	D	50.00	0.00	31.00
	E	145.00	75.00	0.00

Junction 16 17:30 - 17:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	116.00	240.00
	D	41.00	0.00	25.00
	E	150.00	80.00	0.00

Junction 16 17:45 - 18:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	127.00	248.00
	D	57.00	0.00	29.00
	E	121.00	45.00	0.00

Vehicle Mix

Junction 15 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Junction 15 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	9
	C	0	0	0

Junction 15 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Junction 15 17:45 - 18:00

Heavy Vehicle Percentages

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

Junction 16 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	2	1
	D	0	0	3
	E	1	0	0

Junction 16 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	1	1	0

Junction 16 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Junction 16 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
15	A	1.71	1655.52	249.9	F	179.50	718.00
	B	1.69	1784.70	280.0	F	183.75	735.00
	C	0.74	13.26	2.8	B	186.66	746.65
16	C	0.98	55.14	12.4	F	220.28	881.10
	D	0.61	15.78	1.5	C	79.75	319.00
	E	0.86	22.71	5.5	C	204.75	819.00

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	142.00	142.00	118.94	120.40	1.179	115.88	126.14	0.0	26.1	117.638	F
	B	179.00	179.00	120.57	126.79	1.412	124.51	64.21	0.0	54.5	224.270	F
	C	182.15	182.15	4.90	259.33	0.702	179.89	229.93	0.0	2.3	11.039	B
16	C	229.93	229.93	64.97	235.31	0.977	217.53	182.15	0.0	12.4	38.684	E
	D	86.00	86.00	135.78	152.26	0.565	84.73	146.72	0.0	1.3	13.266	B
	E	203.00	203.00	47.29	263.39	0.771	199.83	173.22	0.0	3.2	13.651	B

17:15 - 17:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	196.00	196.00	96.83	117.90	1.662	117.79	142.94	26.1	104.3	516.403	F
	B	174.00	174.00	136.89	103.17	1.687	102.88	59.52	54.5	125.6	793.345	F
	C	193.94	193.94	2.97	260.65	0.744	193.43	211.65	2.3	2.8	13.264	B
16	C	211.65	211.65	74.40	228.73	0.925	211.80	193.94	12.4	12.2	52.547	F
	D	81.00	81.00	142.01	148.23	0.546	81.04	144.20	1.3	1.2	13.412	B
	E	220.00	220.00	49.95	261.52	0.841	218.39	173.10	3.2	4.8	20.237	C

17:30 - 17:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	197.00	197.00	97.13	115.19	1.710	115.17	134.19	104.3	186.2	1122.102	F
	B	178.00	178.00	126.34	105.14	1.693	104.97	66.98	125.6	198.6	1351.772	F
	C	190.81	190.81	2.51	260.96	0.731	190.81	209.79	2.8	2.8	12.929	B
16	C	209.79	209.79	79.72	225.02	0.932	209.63	190.81	12.2	12.4	55.143	F
	D	66.00	66.00	141.31	148.68	0.444	66.41	148.03	1.2	0.8	10.993	B
	E	230.00	230.00	41.25	267.64	0.859	229.28	166.48	4.8	5.5	22.707	C

17:45 - 18:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	183.00	183.00	114.76	119.23	1.535	119.22	127.95	186.2	249.9	1655.524	F
	B	204.00	204.00	120.11	122.60	1.664	122.60	64.31	198.6	280.0	1784.700	F
	C	179.74	179.74	4.24	259.78	0.692	180.19	229.74	2.8	2.3	11.381	B
16	C	229.74	229.74	46.40	248.27	0.925	229.74	179.74	12.4	12.4	48.575	E
	D	86.00	86.00	152.10	141.71	0.607	85.33	124.05	0.8	1.5	15.777	C
	E	166.00	166.00	56.53	256.89	0.646	169.61	180.90	5.5	1.9	10.713	B

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 16	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and E have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
15	(untitled)	Mini-roundabout	C, B, A	1271.85	F
16	(untitled)	Mini-roundabout	C, D, E	39.01	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
15	C	16	C	Queue limited	Normal	0.00	100.00	12.40
16	C	15	C	Queue limited	Normal	0.00	100.00	12.40

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
15	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
16	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 15 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	145.00
	B	8.00	0.00	175.00
	C	129.00	67.00	0.00

Junction 15 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	5.00	203.00
	B	13.00	0.00	165.00
	C	137.00	61.00	0.00

Junction 15 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	8.00	200.00
	B	12.00	0.00	171.00
	C	132.00	72.00	0.00

Junction 15 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	3.00	190.00
	B	5.00	0.00	202.00
	C	125.00	66.00	0.00

Junction 16 17:00 - 17:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	123.00	205.00
	D	54.00	0.00	41.00
	E	143.00	67.00	0.00

Junction 16 17:15 - 17:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	118.00	245.00
	D	56.00	0.00	34.00
	E	151.00	76.00	0.00

Junction 16 17:30 - 17:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	121.00	250.00
	D	48.00	0.00	27.00
	E	156.00	81.00	0.00

Junction 16 17:45 - 18:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	131.00	257.00
	D	63.00	0.00	31.00
	E	126.00	46.00	0.00

Vehicle Mix

Junction 15 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Junction 15 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	9
	C	0	0	0

Junction 15 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Junction 15 17:45 - 18:00

Heavy Vehicle Percentages

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

Junction 16 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	2	1
	D	0	0	3
	E	1	0	0

Junction 16 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	1	1	0

Junction 16 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Junction 16 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
15	A	1.80	1885.94	287.2	F	190.25	761.00
	B	1.76	1977.63	303.2	F	187.75	751.00
	C	0.79	15.94	3.5	C	198.53	794.14
16	C	0.98	55.28	12.4	F	219.64	878.57
	D	0.66	18.13	1.9	C	88.50	354.00
	E	0.90	30.85	7.6	D	211.50	846.00

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	152.00	152.00	115.71	122.91	1.237	119.20	130.76	0.0	32.8	138.851	F
	B	183.00	183.00	125.47	122.95	1.488	121.00	70.66	0.0	62.0	259.795	F
	C	193.43	193.43	5.49	258.92	0.747	190.64	229.42	0.0	2.8	12.711	B
16	C	229.42	229.42	65.76	234.76	0.977	217.02	193.43	0.0	12.4	38.763	E
	D	95.00	95.00	135.64	152.35	0.624	93.40	147.14	0.0	1.6	15.083	C
	E	210.00	210.00	53.09	259.31	0.810	206.10	175.94	0.0	3.9	16.028	C

17:15 - 17:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	208.00	208.00	96.17	118.65	1.753	118.57	147.16	32.8	122.2	607.121	F
	B	178.00	178.00	141.54	102.05	1.744	101.79	66.73	62.0	138.2	884.429	F
	C	205.42	205.42	3.57	260.24	0.789	204.70	211.17	2.8	3.5	15.941	C
16	C	211.17	211.17	75.14	228.21	0.925	211.33	205.42	12.4	12.2	52.667	F
	D	90.00	90.00	142.01	148.23	0.607	90.03	144.46	1.6	1.6	15.481	C
	E	227.00	227.00	55.93	257.31	0.882	224.62	176.11	3.9	6.3	25.802	D

17:30 - 17:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	208.00	208.00	96.26	115.82	1.796	115.81	139.38	122.2	214.4	1302.912	F
	B	183.00	183.00	131.79	104.08	1.758	103.84	74.43	138.2	217.4	1479.945	F
	C	203.47	203.47	2.78	260.78	0.780	203.44	209.29	3.5	3.5	15.778	C
16	C	209.29	209.29	80.49	224.47	0.932	209.13	203.47	12.2	12.4	55.276	F
	D	75.00	75.00	140.93	148.93	0.504	75.53	148.69	1.6	1.0	12.351	B
	E	237.00	237.00	48.31	262.67	0.902	235.65	168.15	6.3	7.6	30.850	D

17:45 - 18:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	193.00	193.00	112.97	120.27	1.605	120.26	134.09	214.4	287.2	1885.935	F
	B	207.00	207.00	125.89	121.17	1.708	121.17	71.04	217.4	303.2	1977.633	F
	C	191.82	191.82	4.53	259.58	0.739	192.40	228.70	3.5	3.0	13.532	B
16	C	228.70	228.70	48.01	247.14	0.925	228.70	191.82	12.4	12.4	48.798	E
	D	94.00	94.00	151.63	142.01	0.662	93.19	125.09	1.0	1.9	18.126	C
	E	172.00	172.00	62.42	252.74	0.681	177.41	182.39	7.6	2.2	12.741	B

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 16	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms C and E have 85% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
15	(untitled)	Mini-roundabout	C, B, A	1484.67	F
16	(untitled)	Mini-roundabout	C, D, E	54.91	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/TS)	Flow multiplier (%)	Internal storage space (PCU)
15	C	16	C	Queue limited	Normal	0.00	100.00	12.40
16	C	15	C	Queue limited	Normal	0.00	100.00	12.40

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
15	A		DIRECT	✓	100.000
	B		DIRECT	✓	100.000
	C	✓			
16	C	✓			
	D		DIRECT	✓	100.000
	E		DIRECT	✓	100.000

Origin-Destination Data

Junction 15 17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	7.00	163.00
	B	9.00	0.00	176.00
	C	144.00	70.00	0.00

Junction 15 17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	5.00	222.00
	B	13.00	0.00	166.00
	C	154.00	64.00	0.00

Junction 15 17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	8.00	220.00
	B	12.00	0.00	172.00
	C	149.00	75.00	0.00

Junction 15 17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	3.00	207.00
	B	6.00	0.00	203.00
	C	140.00	69.00	0.00

Junction 16 17:00 - 17:15

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	124.00	224.00
	D	55.00	0.00	45.00
	E	160.00	70.00	0.00

Junction 16 17:15 - 17:30

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	120.00	265.00
	D	58.00	0.00	39.00
	E	170.00	79.00	0.00

Junction 16 17:30 - 17:45

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	122.00	270.00
	D	50.00	0.00	32.00
	E	175.00	84.00	0.00

Junction 16 17:45 - 18:00

Demand (PCU/TS)

		To		
		C	D	E
From	C	0.00	132.00	273.00
	D	64.00	0.00	35.00
	E	141.00	49.00	0.00

Vehicle Mix

Junction 15 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	0	0

Junction 15 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	9
	C	0	0	0

Junction 15 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Junction 15 17:45 - 18:00

Heavy Vehicle Percentages

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

Junction 16 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	2	1
	D	0	0	3
	E	1	0	0

Junction 16 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	1	1	0

Junction 16 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Junction 16 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		C	D	E
From	C	0	0	0
	D	0	0	0
	E	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
15	A	1.93	2276.11	349.9	F	208.75	835.00
	B	1.83	2290.33	329.9	F	189.25	757.00
	C	0.86	22.64	5.4	C	217.29	869.16
16	C	0.98	55.52	12.4	F	217.75	870.98
	D	0.70	20.08	2.2	C	94.50	378.00
	E	0.99	68.54	19.5	F	232.00	928.00

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	170.00	170.00	108.45	127.42	1.334	124.62	143.93	0.0	45.4	177.756	F
	B	185.00	185.00	138.38	115.61	1.600	114.00	72.40	0.0	71.0	311.691	F
	C	209.49	209.49	5.13	259.16	0.808	205.65	227.94	0.0	3.8	15.846	C
16	C	227.94	227.94	68.05	233.16	0.978	215.54	209.49	0.0	12.4	38.992	E
	D	100.00	100.00	138.74	150.35	0.665	98.10	144.85	0.0	1.9	16.899	C
	E	230.00	230.00	53.95	258.70	0.889	223.59	182.88	0.0	6.4	22.780	C

17:15 - 17:30

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	227.00	227.00	92.75	121.01	1.876	120.95	161.94	45.4	151.4	751.548	F
	B	179.00	179.00	156.51	98.38	1.819	98.18	68.76	71.0	151.8	1011.937	F
	C	223.18	223.18	3.53	260.26	0.858	221.73	210.17	3.8	5.3	22.327	C
16	C	210.17	210.17	76.68	227.14	0.925	210.33	223.18	12.4	12.2	52.917	F
	D	97.00	97.00	144.22	146.80	0.661	97.00	142.79	1.9	1.9	18.037	C
	E	249.00	249.00	57.91	255.92	0.973	241.96	183.31	6.4	13.5	47.521	E

17:30 - 17:45

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	228.00	228.00	92.70	118.23	1.928	118.23	154.66	151.4	261.2	1563.094	F
	B	184.00	184.00	147.40	100.30	1.835	99.96	76.47	151.8	235.9	1668.112	F
	C	221.38	221.38	2.60	260.90	0.849	221.27	208.33	5.3	5.4	22.638	C
16	C	208.33	208.33	81.96	223.45	0.932	208.17	221.38	12.2	12.4	55.518	F
	D	82.00	82.00	143.38	147.35	0.557	82.61	146.75	1.9	1.3	14.035	B
	E	259.00	259.00	50.35	261.24	0.991	252.99	175.64	13.5	19.5	68.535	F

17:45 - 18:00

Junction	Arm	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Throughput (exit side) (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
15	A	210.00	210.00	107.07	121.29	1.731	121.29	152.15	261.2	349.9	2276.110	F
	B	209.00	209.00	144.27	114.95	1.818	114.95	74.97	235.9	329.9	2290.332	F
	C	215.10	215.10	3.82	260.07	0.827	215.42	224.54	5.4	5.1	20.451	C
16	C	224.54	224.54	54.46	242.64	0.925	224.54	215.10	12.4	12.4	49.703	E
	D	99.00	99.00	151.54	142.07	0.697	98.14	127.46	1.3	2.2	20.082	C
	E	190.00	190.00	63.40	252.06	0.754	206.17	186.28	19.5	3.3	25.442	D

TRANSYT 15

Version: 15.5.1.7048
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: J15 & 16_Mitigation.t15
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\TRANSYT\PBA
Report generation date: 24/10/2018 16:12:26

»A1 - 2033 Reference Case (AM) : D1 - 2033 Reference Case (AM)* :
»A2 - 2033 Reference Case (PM) : D2 - 2033 Reference Case (PM)* :
»A3 - 2033 Local Plan Growth (AM) : D3 - 2033 Local Plan Growth (AM)* :
»A4 - 2033 Local Plan (PM) : D4 - 2033 Local Plan Growth (PM)* :

File summary

File description

File title	J15 & J16 - A128 Ingrave Road / The Avenue / A128 Brentwood Road / Running Waters
Location	Brentwood
Site number	J15 & J16
UTCRegion	
Driving side	Left
Date	18/03/2010
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	28085
Enumerator	PBA\rcox
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber
			✓		✓	✓	✓	✓	✓	✓	✓		

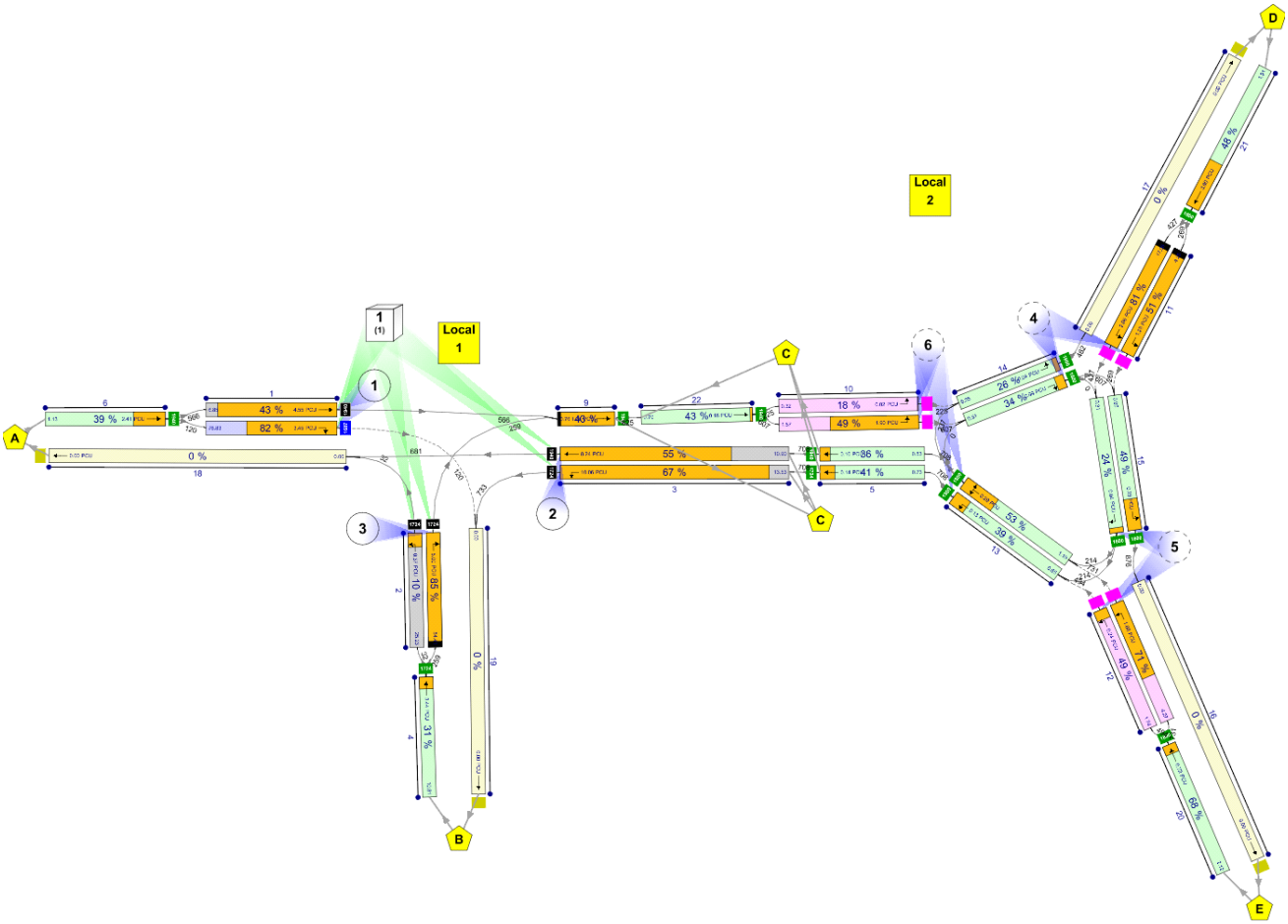
Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	PCU	PCU	perHour	s	-Hour	perHour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Network Diagrams



J15 & J16 - A128 Ingrave Road / The Avenue / A128 Brentwood Road / Running Waters
Cycletime 0s / 90s , Timesteps 89 / 90
3, 3
Diagram produced using TRANSYT 15.5.1.7048

A1 - 2033 Reference Case (AM)
D1 - 2033 Reference Case (AM)*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 9 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Give-Way Data	Arm 1 - Traffic Stream 2 - All movements	Traffic Stream 1/2: Opposed Saturation Flow is the same as or greater than Unopposed Saturation Flow.
Warning	OD Matrix Flows	Local Matrix 1	Flow Inconsistency between OD Matrix 2 and OD Matrix 1. (Traffic Stream 3/2)
Warning	OD Matrix Flows	Local Matrix 2	Flow Inconsistency between OD Matrix 2 and OD Matrix 2. (Traffic Stream 5/2)
Info	Arm Data	Arm 4	No traffic node specified for arm(s): 4, 6, 20, 21, 22

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
1	24/10/2018 14:53:03	24/10/2018 14:53:04	08:00	90	235.73	15.27	76.46	2/2	0	0	2/2	11/2	2/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2033 Reference Case (AM)		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2033 Reference Case (AM)				08:00	

Signal Timings

Network Default: 90s cycle time; 90 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	Junction 15		2	NetworkDefault	90

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Traffic

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, C	1
	2	B	1
	3	A	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2	48, 72
	2	(untitled)	Single	1, 3, 2	44, 49, 72

Intergreen Matrix for Controller Stream 1

		To		
		A	B	C
From	A		7	
	B	7		7
	C		7	

Banned Stage transitions for Controller Stream 1

		To		
		1	2	3
From	1			
	2			
	3			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	7	0
	2	7	0	7
	3	0	7	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	79	44	55	1	7
	2	✓	3	A	44	49	5	1	1
	3	✓	2	B	56	72	16	1	7

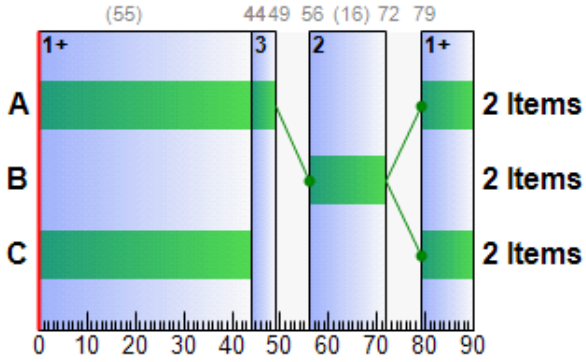
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	79	49	60
	B	1	✓	56	72	16
	C	1	✓	79	44	55

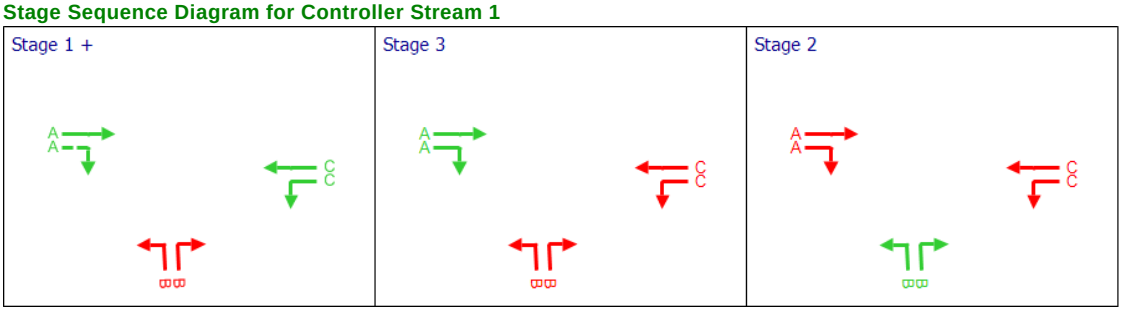
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1	1	1	A	79	49	60
1	2	1	1	A	79	49	60
2	1	3	1	B	56	72	16
2	2	3	1	B	56	72	16
3	1	2	1	C	79	44	55
3	2	2	1	C	79	44	55

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	40	127	516	1940	60	7.14	4.52	90.31	14.54	2.26	16.80
		2	65	39	108	245	60	45.61	2.29	45.74	19.43	1.34	20.77
	2	1	9	911	29	1724	16	25.21	0.35	11.56	2.88	0.17	3.06
		2	76	18	249	1724	16	43.13	4.12	137.44	42.36	2.04	44.40
	3	1	67	34	720	1724	55	13.98	10.13	92.12	39.68	5.01	44.70
		2	49	85	588	1940	55	10.36	6.82	62.02	24.04	3.42	27.46
	4	1	28	226	278	1724	90	9.26	3.08	8.86	10.16	1.50	11.66
	5	1	38	137	656	1724	90	0.64	0.12	11.68	1.66	0.00	1.66
		2	34	166	656	1940	90	0.47	0.09	8.13	1.23	0.00	1.23
	6	1	35	158	624	1940	90	0.81	1.83	20.00	1.98	0.60	2.59
	9	1	40	126	765	1940	90	0.67	1.21	113.83	2.01	0.05	2.06
	10	1	17	430	213	1255	90	0.29	0.02	0.58	0.25	0.00	0.25
		2	44	103	557	1255	90	1.25	1.84	61.44	2.74	0.18	2.92
	11	1	46	96	259	563	90	3.57	1.21	121.35	3.64	0.28	3.93
		2	75	20	420	561	90	11.58	2.10	210.23	19.18	1.02	20.20
	12	1	44	104	446	1009	90	1.41	0.17	5.83	2.48	0.00	2.48
		2	64	41	660	1035	90	3.05	0.93	30.85	7.93	0.29	8.22
	13	1	36	147	656	1800	90	0.57	0.10	10.44	1.48	0.00	1.48
		2	48	86	870	1800	90	0.93	0.23	22.57	3.21	0.00	3.21
	14	1	24	279	427	1800	90	0.31	0.04	3.69	0.52	0.00	0.52
		2	31	191	557	1800	90	0.45	0.07	6.93	0.98	0.00	0.98
	15	1	45	99	816	1800	90	0.83	0.19	18.77	2.67	0.00	2.67
		2	23	286	420	1800	90	0.30	0.04	3.55	0.50	0.00	0.50
	16	1	0	Unrestricted	816	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	0	Unrestricted	427	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	0	Unrestricted	617	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	0	Unrestricted	828	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	61	46	1106	1800	90	1.59	0.49	4.61	6.93	0.00	6.93
	21	1	41	118	679	1800	90	0.93	1.47	12.23	2.49	0.73	3.22
	22	1	40	127	770	1940	90	0.61	0.13	1.63	1.85	0.00	1.85

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	1	1	3.42	7.14	0.89	0.13	14.54	14.54	35.00	175.40	5.21	2.26	2.26
		2	3.42	45.61	0.79	0.58	19.43	19.43	98.83	84.86	21.88	1.34	1.34
	2	1	2.04	25.21	0.20	0.00	2.88	2.88	47.85	13.70	0.17	0.17	0.17
		2	2.04	43.13	1.80	1.18	42.36	42.36	65.36	117.65	45.11	2.04	2.04
	3	1	7.71	13.98	2.12	0.68	39.68	39.68	55.55	372.84	26.87	5.01	5.01
		2	7.71	10.36	1.46	0.23	24.04	24.04	46.36	263.60	9.22	3.42	3.42
	4	1	24.00	9.26	0.66	0.05	10.16	10.16	43.16	117.88	2.09	1.50	1.50
	5	1	1.00	0.64	0.00	0.12	1.66	1.66	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.47	0.00	0.09	1.23	1.23	0.00	0.00	0.00	0.00	0.00
	6	1	6.30	0.81	0.05	0.09	1.98	1.98	7.73	44.52	3.73	0.60	0.60
	9	1	1.00	0.67	0.01	0.13	2.01	2.01	1.13	3.37	5.25	0.05	0.05
	10	1	1.80	0.29	0.00	0.02	0.25	0.25	0.00	0.00	0.00	0.00	0.00
		2	1.80	1.25	0.02	0.18	2.74	2.74	2.54	7.13	7.04	0.18	0.18
	11	1	1.00	3.57	0.06	0.19	3.64	3.64	16.75	28.02	15.37	0.28	0.28
		2	1.00	11.58	0.27	1.08	19.18	19.18	37.45	74.89	82.38	1.02	1.02
	12	1	2.08	1.41	0.00	0.17	2.48	2.48	0.00	0.00	0.00	0.00	0.00
		2	2.08	3.05	0.00	0.56	7.93	7.93	3.44	0.59	22.14	0.29	0.29
	13	1	1.00	0.57	0.00	0.10	1.48	1.48	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.93	0.00	0.23	3.21	3.21	0.00	0.00	0.00	0.00	0.00
	14	1	1.00	0.31	0.00	0.04	0.52	0.52	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.45	0.00	0.07	0.98	0.98	0.00	0.00	0.00	0.00	0.00
	15	1	1.00	0.83	0.00	0.19	2.67	2.67	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.30	0.00	0.04	0.50	0.50	0.00	0.00	0.00	0.00	0.00
	16	1	18.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	18.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	24.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	7.30	1.59	0.00	0.49	6.93	6.93	0.00	0.00	0.00	0.00	0.00
	21	1	8.27	0.93	0.03	0.15	2.49	2.49	8.55	46.49	11.59	0.73	0.73
	22	1	5.52	0.61	0.00	0.13	1.85	1.85	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	1	1	0.00	4.52	5.00	90.31	0.00	0.00	0.00	0.13	4.48	0.00	0.70	0.70	
		2	0.00	2.29	5.00	45.74	0.00	0.00	0.00	0.58	1.45	0.00	0.00	0.00	
	2	1	0.00	0.35	3.00	11.56	0.00	0.00	0.00	0.00	0.35	8.00	0.00	8.00	
		2	0.00	4.12	3.00	137.44	0.53	0.00	0.00	1.18	4.12	0.00	0.00	0.00	
	3	1	0.00	10.13	11.00	92.12	0.00	0.00	0.00	0.68	8.18	0.00	0.00	0.00	
		2	0.00	6.82	11.00	62.02	0.00	0.00	0.00	0.23	6.24	0.00	0.00	0.00	
	4	1	0.00	3.08	34.78	8.86	0.00	0.00	0.00			0.00	37.37	37.37	
	5	1	0.00	0.12	1.00	11.68	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.09	1.06	8.13	0.00	0.00	0.00			0.00	0.00	0.00	
	6	1	0.00	1.83	9.13	20.00	0.00	0.00	0.00			0.00	7.00	7.00	
	9	1	0.00	1.21	1.06	113.83	0.03	0.00	0.00			12.00	0.86	12.86	
	10	1	0.00	0.02	3.00	0.58	0.00	0.00	0.00			12.00	0.00	12.00	
		2	0.00	1.84	3.00	61.44	0.00	0.00	0.00			12.00	0.00	12.00	
	11	1	0.00	1.21	1.00	121.35	0.07	0.00	0.00			0.00	0.00	0.00	
		2	0.00	2.10	1.00	210.23	0.64	0.00	0.00			0.00	0.00	0.00	
	12	1	0.00	0.17	3.00	5.83	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.93	3.00	30.85	0.00	0.00	0.00			0.00	0.00	0.00	
	13	1	0.00	0.10	1.00	10.44	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.23	1.00	22.57	0.00	0.00	0.00			0.00	0.00	0.00	
	14	1	0.00	0.04	1.00	3.69	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.07	1.00	6.93	0.00	0.00	0.00			11.00	0.00	11.00	
	15	1	0.00	0.19	1.00	18.77	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.04	1.00	3.55	0.00	0.00	0.00			0.00	0.00	0.00	
	16	1	0.00	0.00	27.02	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	17	1	0.00	0.00	27.14	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	18	1	0.00	0.00	35.32	0.00	0.00	0.00	0.00			2.00	0.00	2.00	
	19	1	0.00	0.00	32.29	0.00	0.00	0.00	0.00			13.00	0.00	13.00	
	20	1	0.00	0.49	10.58	4.61	0.00	0.00	0.00			0.00	0.00	0.00	
	21	1	0.00	1.47	11.98	12.23	0.00	0.00	0.00			0.00	7.88	7.88	
	22	1	0.00	0.13	8.00	1.63	0.00	0.00	0.00			12.00	0.00	12.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
1	24/10/2018 14:53:03	24/10/2018 14:53:04	08:00	90	235.73	15.27	76.46	2/2	0	0	2/2	11/2	2/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	76	18	16733	2422	3.29	216.83	18.91	235.73

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	6.47	3.29	8.36	6.91	216.83	216.83	9.62	1350.94	258.05	18.91	18.91

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	210.23	0.00	82.00	53.82	135.82

A2 - 2033 Reference Case (PM)
D2 - 2033 Reference Case (PM)*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 9 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Give-Way Data	Arm 1 - Traffic Stream 2 - All movements	Traffic Stream 1/2: Opposed Saturation Flow is the same as or greater than Unopposed Saturation Flow.
Warning	OD Matrix Flows	Local Matrix 1	Flow Inconsistency between OD Matrix 2 and OD Matrix 1. (Traffic Stream 3/1)
Warning	OD Matrix Flows	Local Matrix 1	Flow Inconsistency between OD Matrix 2 and OD Matrix 1. (Traffic Stream 3/2)
Warning	OD Matrix Flows	Local Matrix 2	Flow Inconsistency between OD Matrix 2 and OD Matrix 2. (Traffic Stream 5/1)
Warning	OD Matrix Flows	Local Matrix 2	Flow Inconsistency between OD Matrix 2 and OD Matrix 2. (Traffic Stream 5/2)
Info	Arm Data	Arm 4	No traffic node specified for arm(s): 4, 6, 20, 21, 22

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
2	24/10/2018 14:53:04	24/10/2018 14:53:04	08:00	90	563.33	37.40	96.01	1/1	2	7	1/1	4/1	1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2033 Reference Case (PM)		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2033 Reference Case (PM)				08:00	

Signal Timings

Network Default: 90s cycle time; 90 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	Junction 15		1	NetworkDefault	90

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Traffic

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, C	1
	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2	43, 89

Intergreen Matrix for Controller Stream 1

		To		
		A	B	C
From	A		7	
	B	7		7
	C		7	

Banned Stage transitions for Controller Stream 1

		To	
		1	2
From	1		
	2		

Interstage Matrix for Controller Stream 1

		To	
		1	2
From	1	0	7
	2	7	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	6	43	37	1	7
	2	✓	2	B	50	89	39	1	7

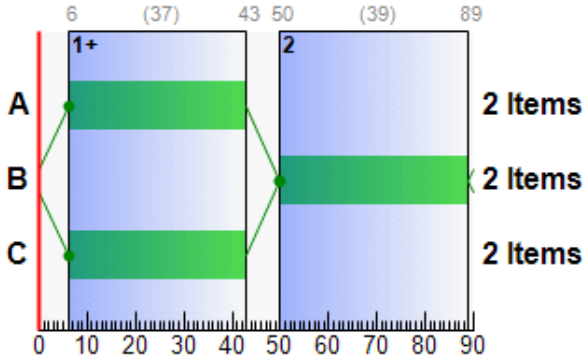
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	6	43	37
	B	1	✓	50	89	39
	C	1	✓	6	43	37

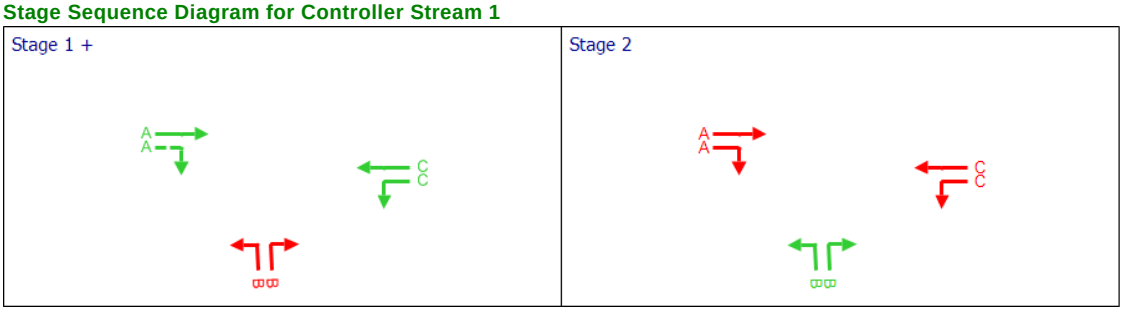
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1	1	1	A	6	43	37
1	2	1	1	A	6	43	37
2	1	3	1	B	50	89	39
2	2	3	1	B	50	89	39
3	1	2	1	C	6	43	37
3	2	2	1	C	6	43	37

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	96	-6	738	1940	37	47.71	11.85	236.99	138.89	5.59	144.48
		2	14	528	22	364	37	20.13	1.48	29.52	1.75	0.17	1.92
	2	1	5	1715	38	1724	39	7.22	0.16	5.27	1.08	0.08	1.16
		2	93	-3	713	1724	39	33.25	8.03	267.54	93.51	3.85	97.36
	3	1	37	145	268	1724	37	19.39	4.49	40.81	20.48	2.22	22.69
		2	64	41	523	1940	37	24.67	10.13	92.12	50.93	5.08	56.00
	4	1	82	10	751	1724	90	25.01	15.17	43.60	74.08	7.36	81.44
	5	1	23	289	399	1724	90	0.31	0.03	3.48	0.49	0.00	0.49
		2	21	338	399	1940	90	0.24	0.03	2.51	0.38	0.00	0.38
	6	1	71	26	760	1940	90	18.12	14.81	162.19	54.31	7.08	61.39
	9	1	77	17	1451	1940	90	3.24	2.35	221.44	18.52	0.32	18.84
	10	1	40	122	492	1216	90	1.01	0.14	4.58	1.95	0.00	1.95
		2	79	14	957	1216	90	5.39	1.43	47.73	20.33	0.00	20.33
	11	1	43	108	133	307	90	4.44	0.16	16.39	2.33	0.00	2.33
		2	73	23	222	304	90	16.54	1.96	196.32	14.48	0.54	15.02
	12	1	24	267	288	1176	90	0.50	0.04	1.32	0.56	0.00	0.56
		2	47	91	558	1186	90	1.35	0.21	6.95	2.96	0.00	2.96
	13	1	22	306	399	1800	90	0.28	0.03	3.16	0.45	0.00	0.45
		2	37	142	669	1800	90	0.59	0.11	10.98	1.56	0.00	1.56
	14	1	42	113	762	1800	90	0.73	0.16	15.52	2.20	0.00	2.20
		2	53	69	957	1800	90	1.13	0.30	30.12	4.28	0.00	4.28
	15	1	61	49	1090	1800	90	1.53	0.46	46.34	6.58	0.00	6.58
		2	12	630	222	1800	90	0.14	0.01	0.87	0.12	0.00	0.12
	16	1	0	Unrestricted	1090	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	0	Unrestricted	762	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	0	Unrestricted	561	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	0	Unrestricted	290	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	47	91	846	1800	90	0.89	0.21	1.97	2.96	0.00	2.96
	21	1	20	356	355	1800	90	0.25	0.02	0.20	0.34	0.00	0.34
	22	1	75	20	1449	1940	90	2.72	1.09	13.67	15.53	0.00	15.53

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	1	1	3.42	47.71	2.32	7.46	138.89	138.89	60.40	175.69	270.09	5.59	5.59
		2	3.42	20.13	0.11	0.01	1.75	1.75	61.25	13.00	0.48	0.17	0.17
	2	1	2.04	7.22	0.07	0.00	1.08	1.08	16.64	6.27	0.05	0.08	0.08
		2	2.04	33.25	1.50	5.08	93.51	93.51	43.09	117.65	189.56	3.85	3.85
	3	1	7.71	19.39	1.34	0.11	20.48	20.48	66.03	172.50	4.25	2.22	2.22
		2	7.71	24.67	3.03	0.56	50.93	50.93	77.39	382.83	22.19	5.08	5.08
	4	1	24.00	25.01	3.44	1.77	74.08	74.08	78.11	517.39	69.23	7.36	7.36
	5	1	1.00	0.31	0.00	0.03	0.49	0.49	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.24	0.00	0.03	0.38	0.38	0.00	0.00	0.00	0.00	0.00
	6	1	6.30	18.12	2.95	0.88	54.31	54.31	74.30	530.00	34.70	7.08	7.08
	9	1	1.00	3.24	0.03	1.27	18.52	18.52	3.69	3.06	50.55	0.32	0.32
	10	1	1.80	1.01	0.00	0.14	1.95	1.95	0.00	0.00	0.00	0.00	0.00
		2	1.80	5.39	0.00	1.43	20.33	20.33	0.00	0.00	0.00	0.00	0.00
	11	1	1.00	4.44	0.00	0.16	2.33	2.33	0.00	0.00	0.00	0.00	0.00
		2	1.00	16.54	0.07	0.94	14.48	14.48	37.56	13.89	69.50	0.54	0.54
	12	1	2.08	0.50	0.00	0.04	0.56	0.56	0.00	0.00	0.00	0.00	0.00
		2	2.08	1.35	0.00	0.21	2.96	2.96	0.00	0.00	0.00	0.00	0.00
	13	1	1.00	0.28	0.00	0.03	0.45	0.45	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.59	0.00	0.11	1.56	1.56	0.00	0.00	0.00	0.00	0.00
	14	1	1.00	0.73	0.00	0.16	2.20	2.20	0.00	0.00	0.00	0.00	0.00
		2	1.00	1.13	0.00	0.30	4.28	4.28	0.00	0.00	0.00	0.00	0.00
	15	1	1.00	1.53	0.00	0.46	6.58	6.58	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.14	0.00	0.01	0.12	0.12	0.00	0.00	0.00	0.00	0.00
	16	1	18.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	18.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	24.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	7.30	0.89	0.00	0.21	2.96	2.96	0.00	0.00	0.00	0.00	0.00
	21	1	8.27	0.25	0.00	0.02	0.34	0.34	0.00	0.00	0.00	0.00	0.00
	22	1	5.52	2.72	0.00	1.09	15.53	15.53	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	1	1	0.00	11.85	5.00	236.99	5.75	0.00	0.00	7.46	11.85	0.00	2.34	2.34	
		2	0.00	1.48	5.00	29.52	0.00	0.00	0.00	0.01	0.14	14.00	0.00	14.00	
	2	1	0.00	0.16	3.00	5.27	0.00	0.00	0.00	0.00	0.16	7.00	0.00	7.00	
		2	0.00	8.03	3.00	267.54	3.75	0.00	0.00	5.08	8.03	0.00	0.00	0.00	
	3	1	0.00	4.49	11.00	40.81	0.00	0.00	0.00	0.11	4.17	0.00	0.00	0.00	
		2	0.00	10.13	11.00	92.12	0.00	0.00	0.00	0.56	8.98	0.00	0.00	0.00	
	4	1	0.00	15.17	34.78	43.60	0.00	0.00	0.00			0.00	42.02	42.02	
	5	1	0.00	0.03	1.00	3.48	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.03	1.06	2.51	0.00	0.00	0.00			0.00	0.00	0.00	
	6	1	0.00	14.81	9.13	162.19	0.88	0.00	0.00			0.00	40.56	40.56	
	9	1	0.00	2.35	1.06	221.44	0.71	0.00	0.00			12.00	2.55	14.55	
	10	1	0.00	0.14	3.00	4.58	0.00	0.00	0.00			12.00	0.00	12.00	
		2	0.00	1.43	3.00	47.73	0.00	0.00	0.00			12.00	0.00	12.00	
	11	1	0.00	0.16	1.00	16.39	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	1.96	1.00	196.32	0.51	0.00	0.00			0.00	0.00	0.00	
	12	1	0.00	0.04	3.00	1.32	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.21	3.00	6.95	0.00	0.00	0.00			0.00	0.00	0.00	
	13	1	0.00	0.03	1.00	3.16	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.11	1.00	10.98	0.00	0.00	0.00			0.00	0.00	0.00	
	14	1	0.00	0.16	1.00	15.52	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.30	1.00	30.12	0.00	0.00	0.00			10.00	0.00	10.00	
	15	1	0.00	0.46	1.00	46.34	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.01	1.00	0.87	0.00	0.00	0.00			0.00	0.00	0.00	
	16	1	0.00	0.00	27.02	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	17	1	0.00	0.00	27.14	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	18	1	0.00	0.00	35.32	0.00	0.00	0.00	0.00			5.00	0.00	5.00	
	19	1	0.00	0.00	32.29	0.00	0.00	0.00	0.00			41.00	0.00	41.00	
	20	1	0.00	0.21	10.58	1.97	0.00	0.00	0.00			0.00	0.00	0.00	
	21	1	0.00	0.02	11.98	0.20	0.00	0.00	0.00			0.00	0.00	0.00	
	22	1	0.00	1.09	8.00	13.67	0.00	0.00	0.00			12.00	0.00	12.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
2	24/10/2018 14:53:04	24/10/2018 14:53:04	08:00	90	563.33	37.40	96.01	1/1	2	7	1/1	4/1	1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	96	-6	18164	2386	7.41	531.05	32.28	563.33

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	6.38	7.41	14.87	22.53	531.05	531.05	14.55	1932.26	710.58	32.28	32.28

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	267.54	0.00	125.00	87.48	212.48

A3 - 2033 Local Plan Growth (AM)
D3 - 2033 Local Plan Growth (AM)*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 9 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Give-Way Data	Arm 1 - Traffic Stream 2 - All movements	Traffic Stream 1/2: Opposed Saturation Flow is the same as or greater than Unopposed Saturation Flow.
Info	Arm Data	Arm 4	No traffic node specified for arm(s): 4, 6, 20, 21, 22

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
3	24/10/2018 14:53:05	24/10/2018 14:53:05	08:00	90	305.58	19.91	84.51	2/2	0	0	2/2	11/2	2/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2033 Local Plan Growth (AM)		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2033 Local Plan Growth (AM)				08:00	

Signal Timings

Network Default: 90s cycle time; 90 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	Junction 15		2	NetworkDefault	90

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Traffic

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, C	1
	2	B	1
	3	A	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2	46, 71
	2	(untitled)	Single	1, 3, 2	45, 50, 72

Intergreen Matrix for Controller Stream 1

		To		
		A	B	C
From	A		7	
	B	7		7
	C		7	

Banned Stage transitions for Controller Stream 1

		To		
		1	2	3
From	1			
	2			
	3			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	7	0
	2	7	0	7
	3	0	7	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	79	45	56	1	7
	2	✓	3	A	45	50	5	1	1
	3	✓	2	B	57	72	15	1	7

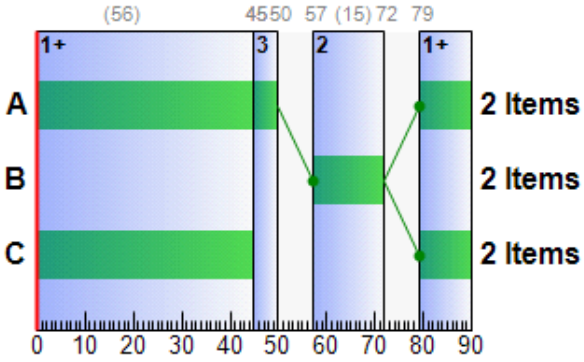
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	79	50	61
	B	1	✓	57	72	15
	C	1	✓	79	45	56

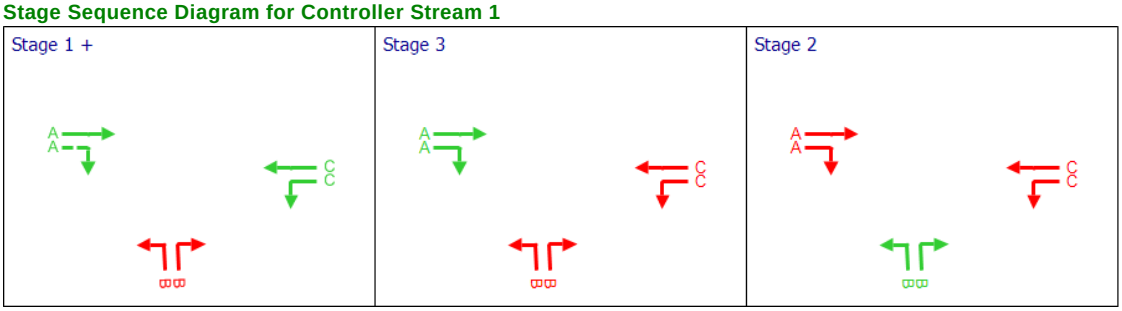
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1	1	1	A	79	50	61
1	2	1	1	A	79	50	61
2	1	3	1	B	57	72	15
2	2	3	1	B	57	72	15
3	1	2	1	C	79	45	56
3	2	2	1	C	79	45	56

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	43	110	566	1940	61	6.85	4.55	91.02	15.29	2.28	17.58
		2	82	10	120	212	61	76.83	3.45	68.98	36.36	1.99	38.36
	2	1	10	762	32	1724	15	25.23	0.37	12.32	3.18	0.19	3.37
		2	85	7	259	1724	15	54.41	5.00	166.51	55.59	2.43	58.02
	3	1	67	34	734	1724	56	13.53	10.06	91.41	39.14	4.98	44.13
		2	55	62	681	1940	56	10.90	8.24	74.87	29.31	4.13	33.43
	4	1	31	195	291	1724	90	10.81	3.44	9.90	12.40	1.72	14.13
	5	1	41	119	708	1724	90	0.73	0.14	14.29	2.03	0.00	2.03
		2	36	147	708	1940	90	0.53	0.10	9.86	1.49	0.00	1.49
	6	1	39	131	686	1940	90	1.13	2.41	26.40	3.06	0.96	4.02
	9	1	43	109	825	1940	90	0.76	1.24	116.72	2.46	0.06	2.52
	10	1	18	397	225	1242	90	0.32	0.02	0.67	0.28	0.00	0.28
		2	49	84	607	1242	90	1.57	1.90	63.32	3.76	0.40	4.16
	11	1	51	77	269	530	90	4.28	1.28	127.79	4.54	0.29	4.83
		2	81	11	428	528	90	17.08	2.66	266.43	28.83	0.82	29.65
	12	1	49	83	494	1003	90	1.74	0.24	7.95	3.39	0.00	3.39
		2	71	27	731	1029	90	4.27	1.88	62.63	12.31	0.50	12.81
	13	1	39	129	708	1800	90	0.65	0.13	12.74	1.81	0.00	1.81
		2	53	71	945	1800	90	1.10	0.29	28.96	4.11	0.00	4.11
	14	1	26	251	462	1800	90	0.35	0.04	4.43	0.63	0.00	0.63
		2	34	167	607	1800	90	0.51	0.09	8.57	1.22	0.00	1.22
	15	1	49	85	876	1800	90	0.95	0.23	23.03	3.27	0.00	3.27
		2	24	279	428	1800	90	0.31	0.04	3.71	0.53	0.00	0.53
	16	1	0	Unrestricted	876	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	0	Unrestricted	462	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	0	Unrestricted	713	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	0	Unrestricted	854	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	68	32	1225	1800	90	2.12	0.72	6.82	10.24	0.00	10.24
	21	1	48	88	697	1800	90	1.91	3.90	32.52	5.26	2.03	7.30
	22	1	43	110	832	1940	90	0.70	0.16	2.01	2.28	0.00	2.28

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	1	1	3.42	6.85	0.92	0.16	15.29	15.29	32.16	175.61	6.42	2.28	2.28
		2	3.42	76.83	0.98	1.58	36.36	36.36	132.53	103.40	55.63	1.99	1.99
	2	1	2.04	25.23	0.22	0.01	3.18	3.18	46.18	14.54	0.24	0.19	0.19
		2	2.04	54.41	1.86	2.05	55.59	55.59	74.76	117.65	75.98	2.43	2.43
	3	1	7.71	13.53	2.07	0.68	39.14	39.14	54.15	370.18	27.04	4.98	4.98
		2	7.71	10.90	1.72	0.34	29.31	29.31	48.29	315.37	13.70	4.13	4.13
	4	1	24.00	10.81	0.81	0.07	12.40	12.40	47.24	134.80	2.68	1.72	1.72
	5	1	1.00	0.73	0.00	0.14	2.03	2.03	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.53	0.00	0.10	1.49	1.49	0.00	0.00	0.00	0.00	0.00
	6	1	6.30	1.13	0.09	0.12	3.06	3.06	11.16	71.64	4.94	0.96	0.96
	9	1	1.00	0.76	0.01	0.16	2.46	2.46	1.20	3.45	6.48	0.06	0.06
	10	1	1.80	0.32	0.00	0.02	0.28	0.28	0.00	0.00	0.00	0.00	0.00
		2	1.80	1.57	0.03	0.23	3.76	3.76	5.28	13.52	18.50	0.40	0.40
	11	1	1.00	4.28	0.06	0.26	4.54	4.54	16.46	23.93	20.36	0.29	0.29
		2	1.00	17.08	0.38	1.65	28.83	28.83	29.56	63.14	63.36	0.82	0.82
	12	1	2.08	1.74	0.00	0.24	3.39	3.39	0.00	0.00	0.00	0.00	0.00
		2	2.08	4.27	0.00	0.86	12.31	12.31	5.48	5.90	34.15	0.50	0.50
	13	1	1.00	0.65	0.00	0.13	1.81	1.81	0.00	0.00	0.00	0.00	0.00
		2	1.00	1.10	0.00	0.29	4.11	4.11	0.00	0.00	0.00	0.00	0.00
	14	1	1.00	0.35	0.00	0.04	0.63	0.63	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.51	0.00	0.09	1.22	1.22	0.00	0.00	0.00	0.00	0.00
	15	1	1.00	0.95	0.00	0.23	3.27	3.27	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.31	0.00	0.04	0.53	0.53	0.00	0.00	0.00	0.00	0.00
	16	1	18.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	18.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	24.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	7.30	2.12	0.00	0.72	10.24	10.24	0.00	0.00	0.00	0.00	0.00
	21	1	8.27	1.91	0.15	0.22	5.26	5.26	23.26	144.81	17.34	2.03	2.03
	22	1	5.52	0.70	0.00	0.16	2.28	2.28	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	1	1	0.00	4.55	5.00	91.02	0.00	0.00	0.00	0.16	4.54	0.00	0.80	0.80	
		2	0.00	3.45	5.00	68.98	0.00	0.00	0.00	1.58	2.50	0.00	0.00	0.00	
	2	1	0.00	0.37	3.00	12.32	0.00	0.00	0.00	0.01	0.37	6.00	0.00	6.00	
		2	0.00	5.00	3.00	166.51	1.18	0.00	0.00	2.05	5.00	0.00	0.00	0.00	
	3	1	0.00	10.06	11.00	91.41	0.00	0.00	0.00	0.68	8.22	0.00	0.00	0.00	
		2	0.00	8.24	11.00	74.87	0.00	0.00	0.00	0.34	7.21	0.00	0.00	0.00	
	4	1	0.00	3.44	34.78	9.90	0.00	0.00	0.00			0.00	40.27	40.27	
	5	1	0.00	0.14	1.00	14.29	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.10	1.06	9.86	0.00	0.00	0.00			0.00	0.00	0.00	
	6	1	0.00	2.41	9.13	26.40	0.00	0.00	0.00			0.00	8.20	8.20	
	9	1	0.00	1.24	1.06	116.72	0.03	0.00	0.00			12.00	1.04	13.04	
	10	1	0.00	0.02	3.00	0.67	0.00	0.00	0.00			12.00	0.00	12.00	
		2	0.00	1.90	3.00	63.32	0.00	0.00	0.00			12.00	0.00	12.00	
	11	1	0.00	1.28	1.00	127.79	0.10	0.00	0.00			0.00	0.00	0.00	
		2	0.00	2.66	1.00	266.43	1.31	0.00	0.00			0.00	0.00	0.00	
	12	1	0.00	0.24	3.00	7.95	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	1.88	3.00	62.63	0.00	0.00	0.00			0.00	0.00	0.00	
	13	1	0.00	0.13	1.00	12.74	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.29	1.00	28.96	0.00	0.00	0.00			0.00	0.00	0.00	
	14	1	0.00	0.04	1.00	4.43	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.09	1.00	8.57	0.00	0.00	0.00			11.00	0.00	11.00	
	15	1	0.00	0.23	1.00	23.03	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.04	1.00	3.71	0.00	0.00	0.00			0.00	0.00	0.00	
	16	1	0.00	0.00	27.02	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	17	1	0.00	0.00	27.14	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	18	1	0.00	0.00	35.32	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	19	1	0.00	0.00	32.29	0.00	0.00	0.00	0.00			10.00	0.00	10.00	
	20	1	0.00	0.72	10.58	6.82	0.00	0.00	0.00			0.00	0.00	0.00	
	21	1	0.00	3.90	11.98	32.52	0.00	0.00	0.00			0.00	17.05	17.05	
	22	1	0.00	0.16	8.00	2.01	0.00	0.00	0.00			12.00	0.00	12.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
3	24/10/2018 14:53:05	24/10/2018 14:53:05	08:00	90	305.58	19.91	84.51	2/2	0	0	2/2	11/2	2/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	85	7	18049	2424	3.97	282.79	22.79	305.58

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	6.47	3.97	9.31	10.61	282.79	282.79	10.55	1557.92	346.82	22.79	22.79

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	266.43	0.00	75.00	67.36	142.36

A4 - 2033 Local Plan (PM)
D4 - 2033 Local Plan Growth (PM)*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 5 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 9 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 45 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 1	Traffic Stream 1: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Traffic Stream Data	Arm 11 - Traffic Stream 2	Traffic Stream 2: CTM uses a whole number of cells. CTM is using the length adjusted by 39 %.
Warning	Give-Way Data	Arm 1 - Traffic Stream 2 - All movements	Traffic Stream 1/2: Opposed Saturation Flow is the same as or greater than Unopposed Saturation Flow.
Warning	OD Matrix Flows	Local Matrix 1	Flow Inconsistency between OD Matrix 2 and OD Matrix 1. (Traffic Stream 3/1)
Warning	OD Matrix Flows	Local Matrix 1	Flow Inconsistency between OD Matrix 2 and OD Matrix 1. (Traffic Stream 3/2)
Warning	OD Matrix Flows	Local Matrix 2	Flow Inconsistency between OD Matrix 2 and OD Matrix 2. (Traffic Stream 5/1)
Warning	OD Matrix Flows	Local Matrix 2	Flow Inconsistency between OD Matrix 2 and OD Matrix 2. (Traffic Stream 5/2)
Info	Arm Data	Arm 4	No traffic node specified for arm(s): 4, 6, 20, 21, 22

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
4	24/10/2018 14:53:11	24/10/2018 14:53:15	08:00	90	1114.65	74.92	103.69	6/1	3	10	1/1	6/1	6/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2033 Local Plan (PM)		D4	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2033 Local Plan Growth (PM)				08:00	

Signal Timings

Network Default: 90s cycle time; 90 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	Junction 15		1	NetworkDefault	90

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Traffic

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A, C	1
	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2	45, 0

Intergreen Matrix for Controller Stream 1

		To		
		A	B	C
From	A		7	
	B	7		7
	C		7	

Banned Stage transitions for Controller Stream 1

		To	
		1	2
From	1		
	2		

Interstage Matrix for Controller Stream 1

		To	
		1	2
From	1	0	7
	2	7	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	7	45	38	1	7
	2	✓	2	B	52	0	38	1	7

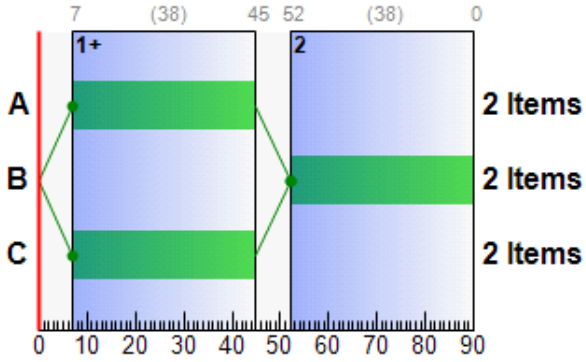
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	7	45	38
	B	1	✓	52	0	38
	C	1	✓	7	45	38

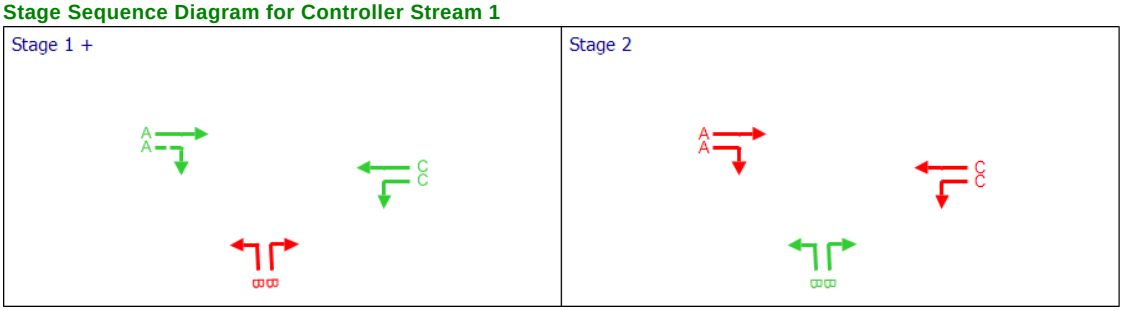
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1	1	1	A	7	45	38
1	2	1	1	A	7	45	38
2	1	3	1	B	52	0	38
2	2	3	1	B	52	0	38
3	1	2	1	C	7	45	38
3	2	2	1	C	7	45	38

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	1	1	100	-10	784	1940	38	74.14	17.91	358.20	229.30	7.77	237.07
		2	18	407	22	288	38	22.27	1.48	29.66	1.95	0.19	2.14
	2	1	5	1581	40	1724	38	7.36	0.17	5.52	1.16	0.08	1.24
		2	96	-6	717	1724	38	44.70	10.31	343.62	126.40	4.82	131.22
	3	1	37	143	277	1724	38	18.77	4.59	41.71	20.50	2.28	22.79
		2	70	29	587	1940	38	25.32	10.78	98.01	58.62	5.40	64.02
	4	1	84	7	757	1724	90	27.71	15.88	45.64	82.73	7.79	90.52
	5	1	25	256	436	1724	90	0.35	0.04	4.28	0.61	0.00	0.61
		2	24	279	436	1940	90	0.38	1.11	104.93	0.66	0.06	0.72
	6	1	104	-13	836	1940	90	122.85	43.13	472.35	405.12	18.81	423.93
	9	1	80	13	1501	1940	90	3.82	2.64	248.32	22.62	0.39	23.01
	10	1	40	123	487	1206	90	1.01	0.14	4.54	1.93	0.00	1.93
		2	84	7	1012	1206	90	7.60	3.80	126.51	30.34	2.08	32.42
	11	1	56	61	151	270	90	8.32	0.35	34.91	4.96	0.00	4.96
		2	85	6	226	267	90	35.21	3.07	306.89	31.39	1.08	32.47
	12	1	28	225	323	1168	90	0.59	0.05	1.76	0.75	0.00	0.75
		2	51	76	605	1183	90	1.59	0.27	8.90	3.79	0.00	3.79
	13	1	24	272	436	1800	90	0.32	0.04	3.87	0.55	0.00	0.55
		2	40	126	718	1800	90	0.66	0.13	13.22	1.88	0.00	1.88
	14	1	43	111	769	1800	90	0.74	0.16	15.89	2.26	0.00	2.26
		2	56	60	1012	1800	90	1.28	0.36	36.08	5.12	0.00	5.12
	15	1	65	39	1163	1800	90	1.82	0.59	58.85	8.36	0.00	8.36
		2	13	617	226	1800	90	0.14	0.01	0.90	0.13	0.00	0.13
	16	1	0	Unrestricted	1163	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	0	Unrestricted	769	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	0	Unrestricted	627	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	0	Unrestricted	299	Unrestricted	90	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	52	75	928	1800	90	1.06	0.27	2.59	3.89	0.00	3.89
	21	1	21	330	377	1800	90	0.26	0.03	0.23	0.39	0.00	0.39
	22	1	77	16	1499	1940	90	3.13	1.30	16.27	18.48	0.00	18.48

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	1	1	3.42	74.14	2.63	13.52	229.30	229.30	78.99	162.00	457.35	7.77	7.77
		2	3.42	22.27	0.12	0.02	1.95	1.95	67.66	14.25	0.76	0.19	0.19
	2	1	2.04	7.36	0.08	0.00	1.16	1.16	16.56	6.56	0.06	0.08	0.08
		2	2.04	44.70	1.53	7.37	126.40	126.40	53.56	117.65	266.39	4.82	4.82
	3	1	7.71	18.77	1.33	0.11	20.50	20.50	65.77	177.84	4.34	2.28	2.28
		2	7.71	25.32	3.33	0.80	58.62	58.62	73.39	399.28	31.51	5.40	5.40
	4	1	24.00	27.71	3.68	2.15	82.73	82.73	82.11	538.12	83.46	7.79	7.79
	5	1	1.00	0.35	0.00	0.04	0.61	0.61	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.38	0.01	0.04	0.66	0.66	2.44	9.15	1.48	0.06	0.06
	6	1	6.30	122.85	5.33	23.20	405.12	405.12	186.07	788.01	712.21	18.81	18.81
	9	1	1.00	3.82	0.03	1.56	22.62	22.62	4.32	3.06	61.77	0.39	0.39
	10	1	1.80	1.01	0.00	0.14	1.93	1.93	0.00	0.00	0.00	0.00	0.00
		2	1.80	7.60	0.01	2.13	30.34	30.34	16.38	2.54	163.34	2.08	2.08
	11	1	1.00	8.32	0.00	0.35	4.96	4.96	0.00	0.00	0.00	0.00	0.00
		2	1.00	35.21	0.16	2.05	31.39	31.39	73.37	28.25	137.56	1.08	1.08
	12	1	2.08	0.59	0.00	0.05	0.75	0.75	0.00	0.00	0.00	0.00	0.00
		2	2.08	1.59	0.00	0.27	3.79	3.79	0.00	0.00	0.00	0.00	0.00
	13	1	1.00	0.32	0.00	0.04	0.55	0.55	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.66	0.00	0.13	1.88	1.88	0.00	0.00	0.00	0.00	0.00
	14	1	1.00	0.74	0.00	0.16	2.26	2.26	0.00	0.00	0.00	0.00	0.00
		2	1.00	1.28	0.00	0.36	5.12	5.12	0.00	0.00	0.00	0.00	0.00
	15	1	1.00	1.82	0.00	0.59	8.36	8.36	0.00	0.00	0.00	0.00	0.00
		2	1.00	0.14	0.00	0.01	0.13	0.13	0.00	0.00	0.00	0.00	0.00
	16	1	18.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	1	18.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	18	1	24.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	1	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	1	7.30	1.06	0.00	0.27	3.89	3.89	0.00	0.00	0.00	0.00	0.00
	21	1	8.27	0.26	0.00	0.03	0.39	0.39	0.00	0.00	0.00	0.00	0.00
	22	1	5.52	3.13	0.00	1.30	18.48	18.48	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Max end of green queue (PCU)	Max end of red queue (PCU)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	1	1	0.00	17.91	5.00	358.20	12.32	0.00	0.00	13.86	17.91	0.00	2.63	2.63	
		2	0.00	1.48	5.00	29.66	0.00	0.00	0.00	0.02	0.13	12.00	0.00	12.00	
	2	1	0.00	0.17	3.00	5.52	0.00	0.00	0.00	0.00	0.17	5.00	0.00	5.00	
		2	0.00	10.31	3.00	343.62	6.07	0.00	0.00	7.37	10.31	0.00	0.00	0.00	
	3	1	0.00	4.59	11.00	41.71	0.00	0.00	0.00	0.11	4.26	0.00	0.00	0.00	
		2	0.00	10.78	11.00	98.01	0.00	0.00	0.00	0.80	10.25	0.00	0.00	0.00	
	4	1	0.00	15.88	34.78	45.64	0.00	0.00	0.00			0.00	43.04	43.04	
	5	1	0.00	0.04	1.00	4.28	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	1.11	1.06	104.93	0.01	0.00	0.00			0.00	4.82	4.82	
	6	1	0.00	43.13	9.13	472.35	24.04	0.00	0.00			0.00	52.60	52.60	
	9	1	0.00	2.64	1.06	248.32	1.03	0.00	0.00			11.00	2.77	13.77	
	10	1	0.00	0.14	3.00	4.54	0.00	0.00	0.00			11.00	0.00	11.00	
		2	0.00	3.80	3.00	126.51	0.42	0.42	0.00			11.00	0.00	11.00	
	11	1	0.00	0.35	1.00	34.91	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	3.07	1.00	306.89	1.88	0.00	0.00			0.00	0.00	0.00	
	12	1	0.00	0.05	3.00	1.76	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.27	3.00	8.90	0.00	0.00	0.00			0.00	0.00	0.00	
	13	1	0.00	0.04	1.00	3.87	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.13	1.00	13.22	0.00	0.00	0.00			0.00	0.00	0.00	
	14	1	0.00	0.16	1.00	15.89	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.36	1.00	36.08	0.00	0.00	0.00			9.00	0.00	9.00	
	15	1	0.00	0.59	1.00	58.85	0.00	0.00	0.00			0.00	0.00	0.00	
		2	0.00	0.01	1.00	0.90	0.00	0.00	0.00			0.00	0.00	0.00	
	16	1	0.00	0.00	27.02	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	17	1	0.00	0.00	27.14	0.00	0.00	0.00	0.00			0.00	0.00	0.00	
	18	1	0.00	0.00	35.32	0.00	0.00	0.00	0.00			4.00	0.00	4.00	
	19	1	0.00	0.00	32.29	0.00	0.00	0.00	0.00			40.00	0.00	40.00	
	20	1	0.00	0.27	10.58	2.59	0.00	0.00	0.00			0.00	0.00	0.00	
	21	1	0.00	0.03	11.98	0.23	0.00	0.00	0.00			0.00	0.00	0.00	
	22	1	0.00	1.30	8.00	16.27	0.00	0.00	0.00			11.00	0.00	11.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Ite wit wor over PR
4	24/10/2018 14:53:11	24/10/2018 14:53:15	08:00	90	1114.65	74.92	103.69	6/1	3	10	1/1	6/1	6/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	104	-13	19184	2388	14.06	1063.90	50.75	1114.65

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	6.37	14.06	18.25	56.68	1063.90	1063.90	22.01	2246.71	1920.22	50.75	50.75

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	472.35	0.00	114.00	105.85	219.85

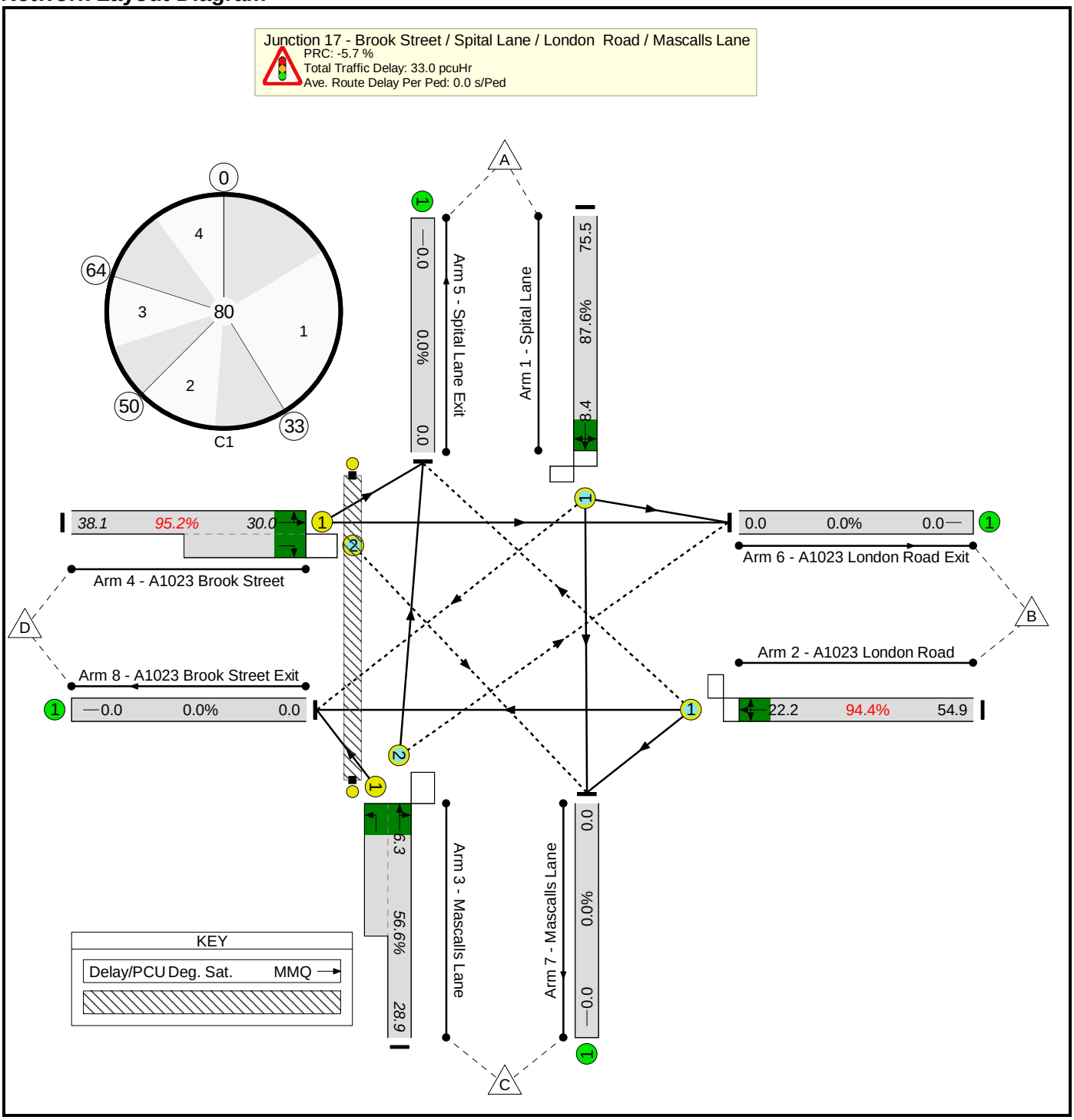
Brentwood PBA Modelling

Project and User Details

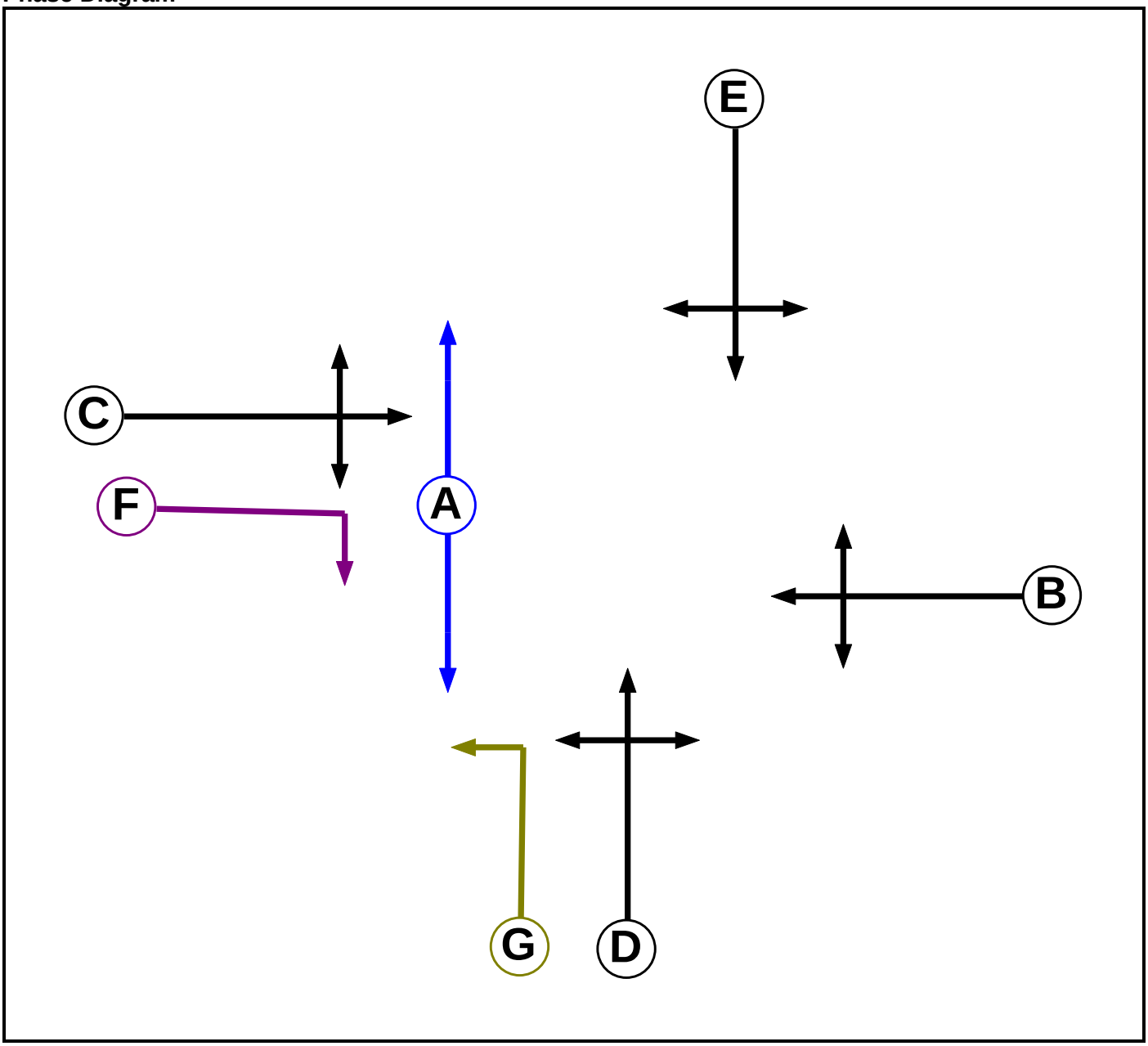
Project:	**28085 Brentwood**
Title:	**J17 - Spital Lane / A1023 London Road / Mascalls Lane / A1023 Brook Street**
Location:	Brentwood
Additional detail:	
File name:	28085_17_LS_LSM_RevA.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 3: '2017 Baseline AM' (FG1: '2017 Baseline (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		13	13	13	13	13	13
	B	8		-	8	7	-	8
	C	5	-		6	6	-	-
	D	6	5	5		-	5	-
	E	8	5	6	-		6	-
	F	5	-	-	6	5		-
	G	6	5	-	-	-	-	

Lane Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Spital Lane)	O	E	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
											Arm 8 Right	17.00
2/1 (A1023 London Road)	O	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	18.00
											Arm 7 Left	14.00
											Arm 8 Ahead	Inf
3/1 (Mascalls Lane)	U	D G	2	3	8.5	Geom	-	4.00	0.00	Y	Arm 8 Left	8.00
3/2 (Mascalls Lane)	O	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
4/1 (A1023 Brook Street)	U	C	2	3	60.0	Geom	-	2.70	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
4/2 (A1023 Brook Street)	O	C F	2	3	7.8	Geom	-	2.70	0.00	N	Arm 7 Right	25.00
5/1 (Spital Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A1023 London Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Mascalls Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 Brook Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

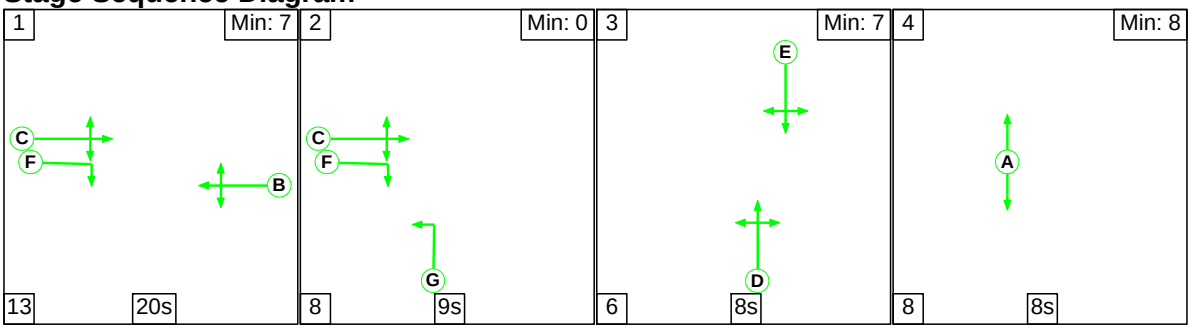
Lane Saturation Flows

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Spital Lane)	3.20	0.00	Y	Arm 6 Left	6.00	62.7 %	1644	1644
				Arm 7 Ahead	Inf	14.3 %		
				Arm 8 Right	17.00	23.0 %		
2/1 (A1023 London Road)	4.00	0.00	Y	Arm 5 Right	18.00	1.7 %	1989	1989
				Arm 7 Left	14.00	10.9 %		
				Arm 8 Ahead	Inf	87.3 %		
3/1 (Mascalls Lane)	4.00	0.00	Y	Arm 8 Left	8.00	100.0 %	1697	1697
3/2 (Mascalls Lane)	3.20	0.00	N	Arm 5 Ahead	Inf	58.3 %	1992	1992
				Arm 6 Right	15.00	41.7 %		
4/1 (A1023 Brook Street)	2.70	0.00	Y	Arm 5 Left	12.00	7.2 %	1868	1868
				Arm 6 Ahead	Inf	92.8 %		
4/2 (A1023 Brook Street)	2.70	0.00	N	Arm 7 Right	25.00	100.0 %	1910	1910
5/1 (Spital Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 London Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Mascalls Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 Brook Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

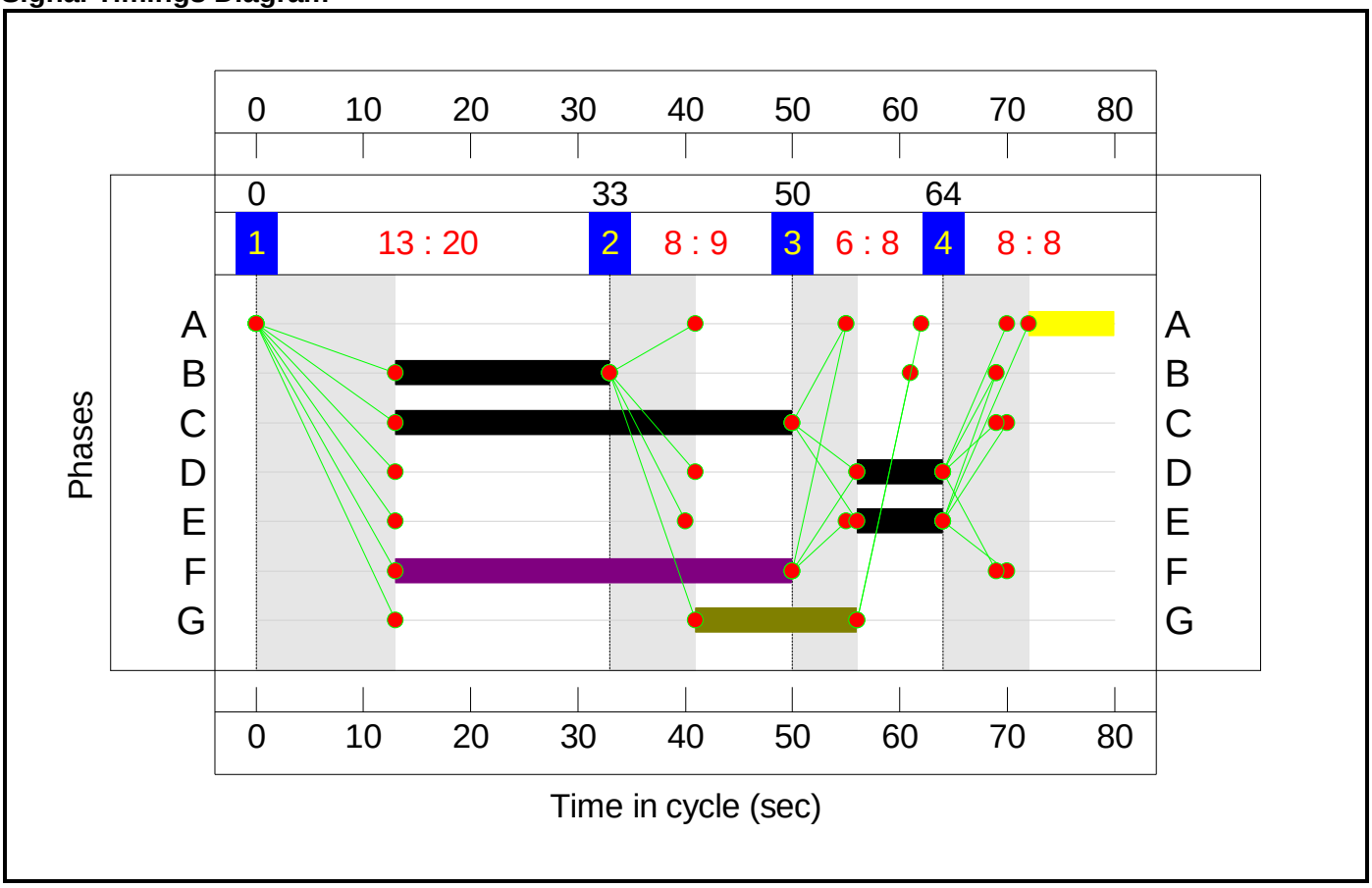
Lane Connector Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/1	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	8/1	Internal	3	35
3/2	5/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	3	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



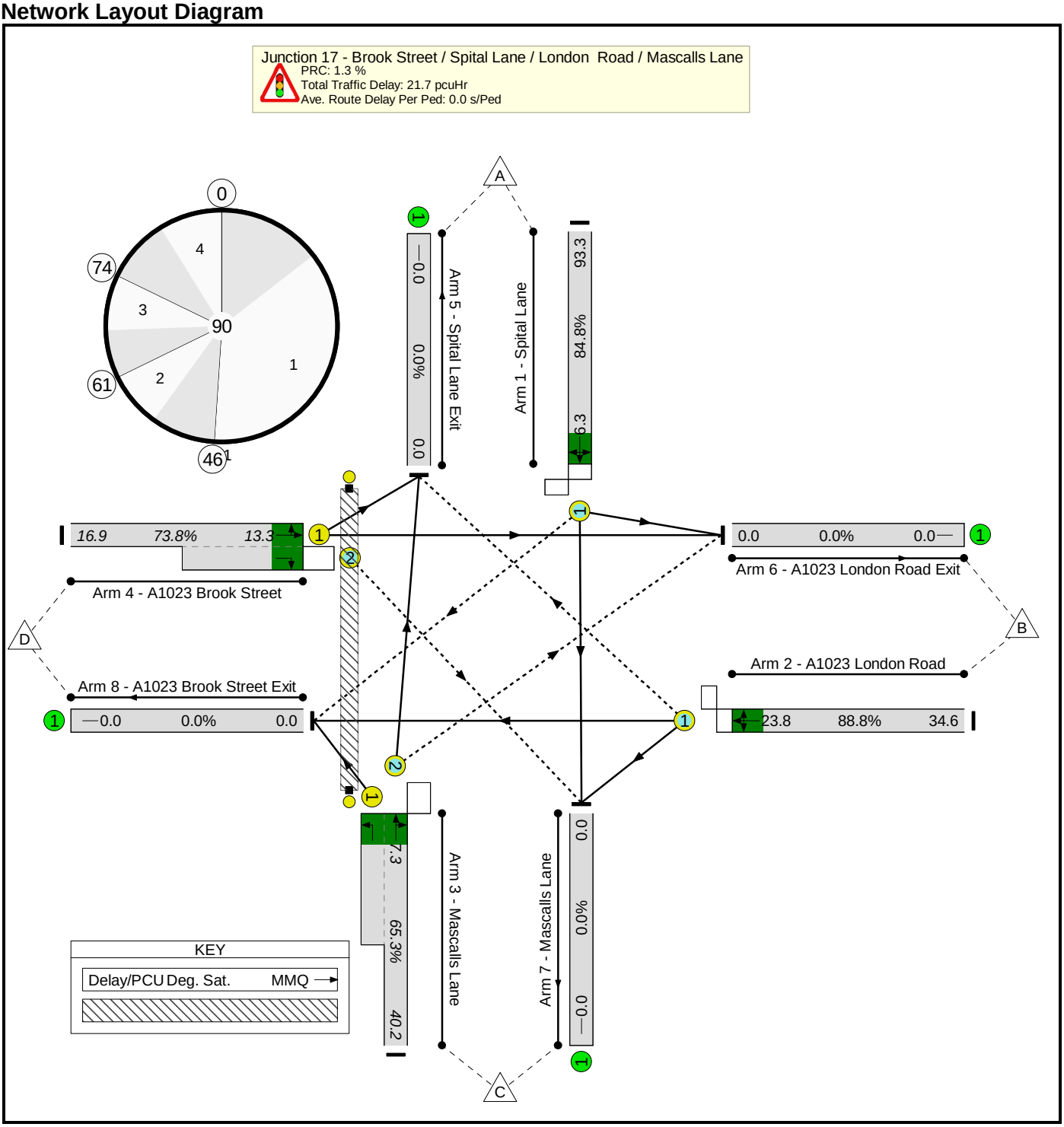
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J17 - Spital Lane / A1023 London Road / Mascalls Lane / A1023 Brook Street	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**95.2%**	**134**	**281**	**11**	**33.0**	**-**	**-**
Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**95.2%**	**134**	**281**	**11**	**33.0**	**-**	**-**
1/1	Spital Lane Left Ahead Right	O	E		1	8	-	252	1644	288	87.6%	57	0	1	5.3	75.5	8.4
2/1	A1023 London Road Right Left Ahead	O	B		1	20	-	743	1989	787	94.4%	11	0	2	11.3	54.9	22.2
3/2+3/1	Mascalls Lane Ahead Right Left	O+U	D	G	1	8:23	15	375	1992:1697	663	56.6%	25	0	0	3.0	28.9	6.3
4/1+4/2	A1023 Brook Street Left Ahead Right	U+O	C	F	1	37	37	1262	1868:1910	1326	95.2%	40	281	8	13.4	38.1	30.0
Ped Link: P1	Unnamed Ped Link	-	A		1	8	-	0	-	0	0.0%	-	-	-	-	-	-

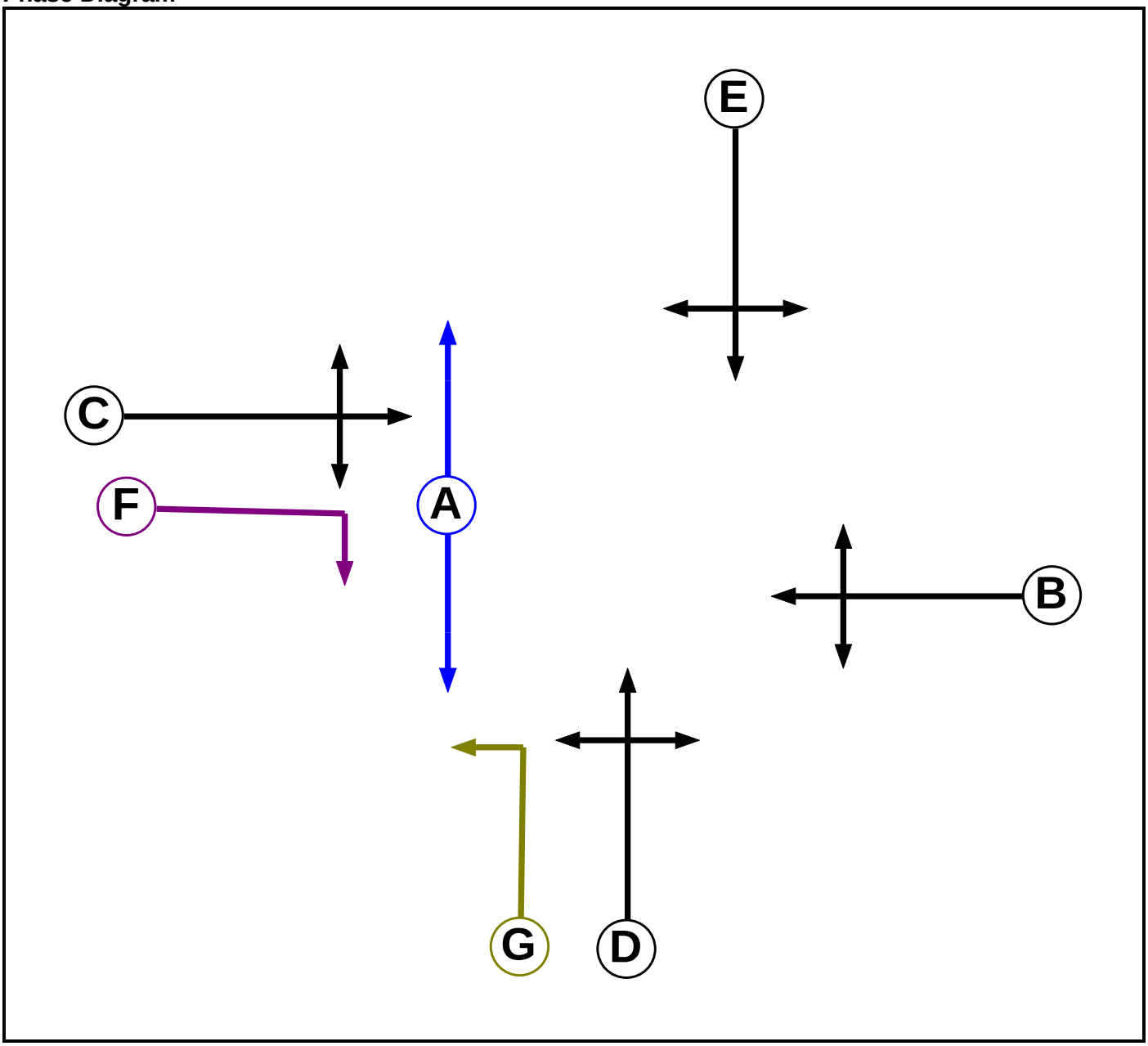
C1 PRC for Signalled Lanes (%): -5.7 Total Delay for Signalled Lanes (pcuHr): 32.98 Cycle Time (s): 80
PRC Over All Lanes (%): -5.7 Total Delay Over All Lanes(pcuHr): 32.98

Scenario 4: '2017 Baseline PM' (FG2: '2017 Baseline (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		13	13	13	13	13	13
	B	8		-	8	7	-	8
	C	5	-		6	6	-	-
	D	6	5	5		-	5	-
	E	8	5	6	-		6	-
	F	5	-	-	6	5		-
	G	6	5	-	-	-	-	

Lane Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Spital Lane)	O	E	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
											Arm 8 Right	17.00
2/1 (A1023 London Road)	O	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	18.00
											Arm 7 Left	14.00
											Arm 8 Ahead	Inf
3/1 (Mascalls Lane)	U	D G	2	3	8.5	Geom	-	4.00	0.00	Y	Arm 8 Left	8.00
3/2 (Mascalls Lane)	O	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
4/1 (A1023 Brook Street)	U	C	2	3	60.0	Geom	-	2.70	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
4/2 (A1023 Brook Street)	O	C F	2	3	7.8	Geom	-	2.70	0.00	N	Arm 7 Right	25.00
5/1 (Spital Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A1023 London Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Mascalls Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 Brook Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

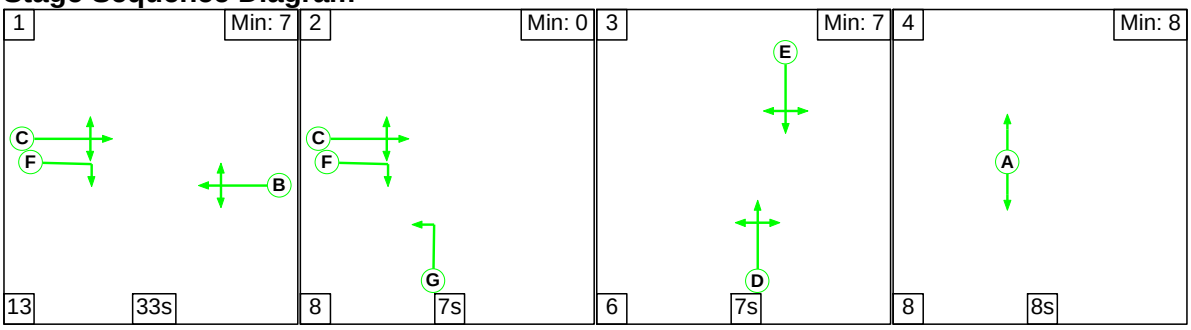
Lane Saturation Flows

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Spital Lane)	3.20	0.00	Y	Arm 6 Left	6.00	44.4 %	1698	1698
				Arm 7 Ahead	Inf	23.1 %		
				Arm 8 Right	17.00	32.5 %		
2/1 (A1023 London Road)	4.00	0.00	Y	Arm 5 Right	18.00	1.1 %	1995	1995
				Arm 7 Left	14.00	8.3 %		
				Arm 8 Ahead	Inf	90.6 %		
3/1 (Mascalls Lane)	4.00	0.00	Y	Arm 8 Left	8.00	100.0 %	1697	1697
3/2 (Mascalls Lane)	3.20	0.00	N	Arm 5 Ahead	Inf	49.0 %	1974	1974
				Arm 6 Right	15.00	51.0 %		
4/1 (A1023 Brook Street)	2.70	0.00	Y	Arm 5 Left	12.00	4.7 %	1874	1874
				Arm 6 Ahead	Inf	95.3 %		
4/2 (A1023 Brook Street)	2.70	0.00	N	Arm 7 Right	25.00	100.0 %	1910	1910
5/1 (Spital Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 London Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Mascalls Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 Brook Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

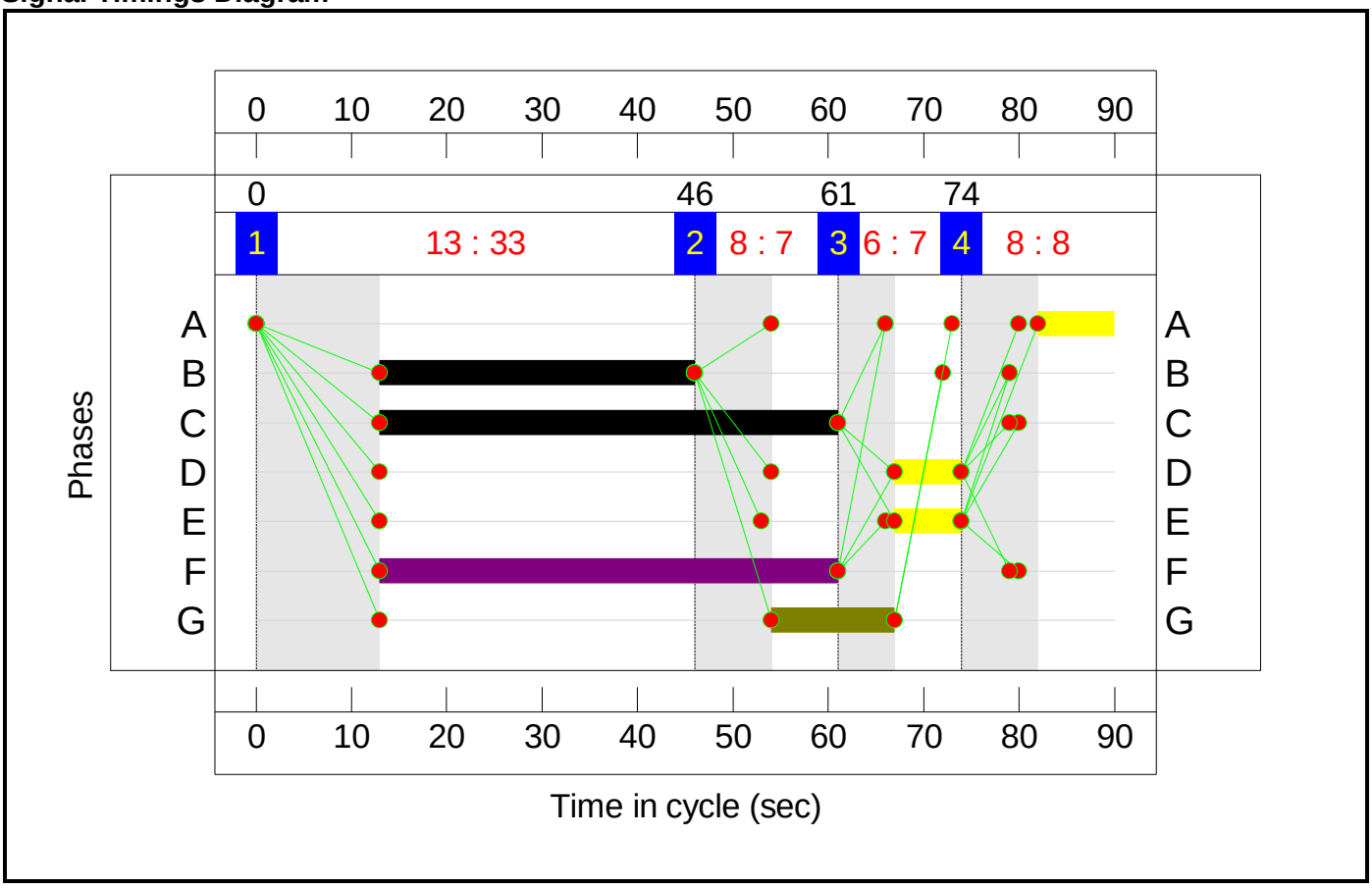
Lane Connector Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/1	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	8/1	Internal	3	35
3/2	5/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	3	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



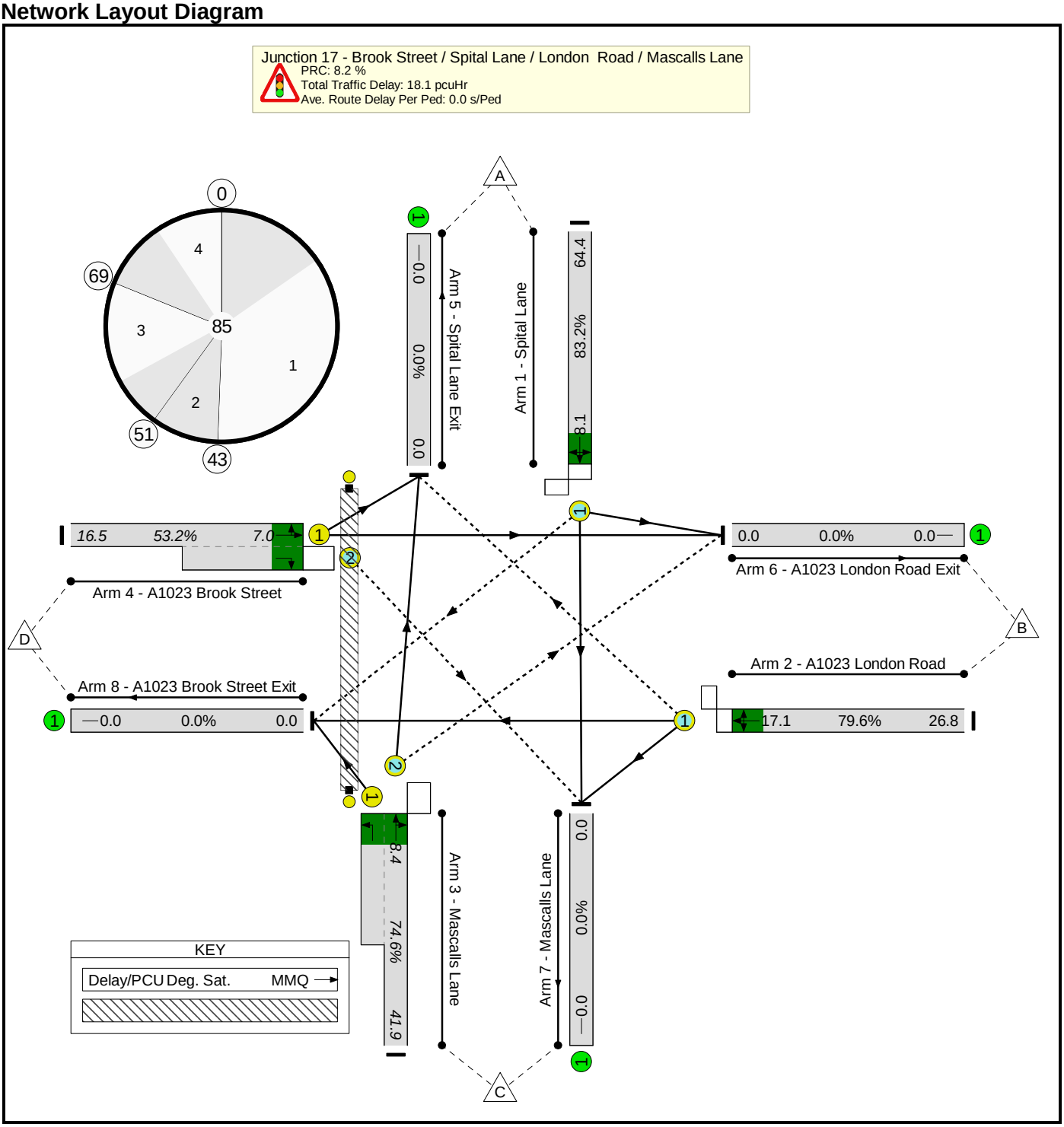
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J17 - Spital Lane / A1023 London Road / Mascalls Lane / A1023 Brook Street	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.8%**	**156**	**179**	**6**	**21.7**	**-**	**-**
Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.8%**	**156**	**179**	**6**	**21.7**	**-**	**-**
1/1	Spital Lane Left Ahead Right	O	E		1	7	-	160	1698	189	84.8%	51	0	1	4.1	93.3	6.3
2/1	A1023 London Road Right Left Ahead	O	B		1	33	-	905	1995	1019	88.8%	10	0	0	8.7	34.6	23.8
3/2+3/1	Mascalls Lane Ahead Right Left	O+U	D	G	1	7:20	13	343	1974:1697	525	65.3%	26	0	0	3.8	40.2	7.3
4/1+4/2	A1023 Brook Street Left Ahead Right	U+O	C	F	1	48	48	1063	1874:1910	1440	73.8%	69	179	6	5.0	16.9	13.3
Ped Link: P1	Unnamed Ped Link	-	A		1	8	-	0	-	0	0.0%	-	-	-	-	-	-

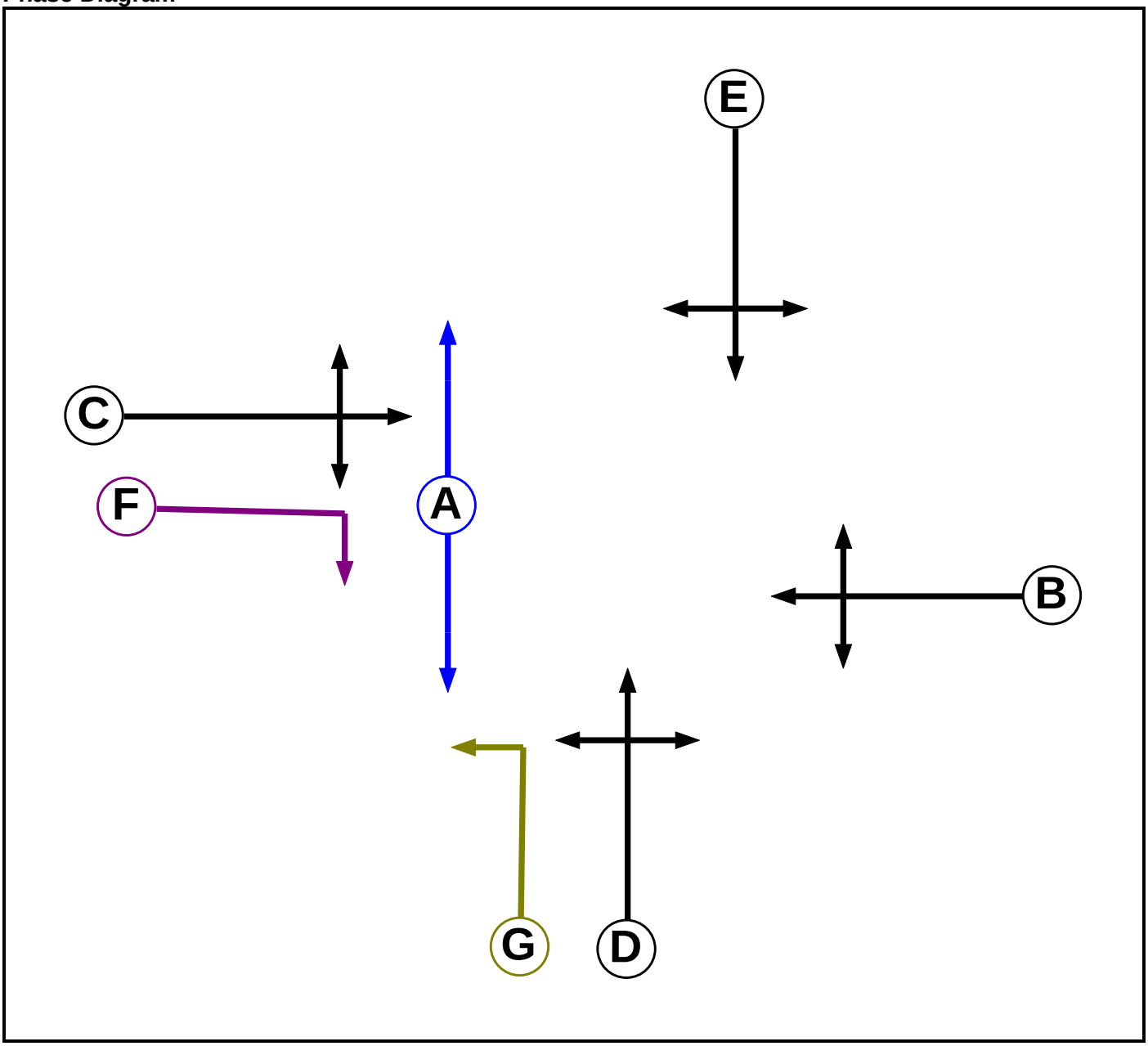
C1 PRC for Signalled Lanes (%): 1.3 Total Delay for Signalled Lanes (pcuHr): 21.66 Cycle Time (s): 90
PRC Over All Lanes (%): 1.3 Total Delay Over All Lanes(pcuHr): 21.66

Scenario 5: '2033 Reference AM' (FG3: '2033 Reference Case (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		13	13	13	13	13	13
	B	8		-	8	7	-	8
	C	5	-		6	6	-	-
	D	6	5	5		-	5	-
	E	8	5	6	-		6	-
	F	5	-	-	6	5		-
	G	6	5	-	-	-	-	

Lane Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Spital Lane)	O	E	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
											Arm 8 Right	17.00
2/1 (A1023 London Road)	O	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	18.00
											Arm 7 Left	14.00
											Arm 8 Ahead	Inf
3/1 (Mascalls Lane)	U	D G	2	3	8.5	Geom	-	4.00	0.00	Y	Arm 8 Left	8.00
3/2 (Mascalls Lane)	O	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
4/1 (A1023 Brook Street)	U	C	2	3	60.0	Geom	-	2.70	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
4/2 (A1023 Brook Street)	O	C F	2	3	7.8	Geom	-	2.70	0.00	N	Arm 7 Right	25.00
5/1 (Spital Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A1023 London Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Mascalls Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 Brook Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

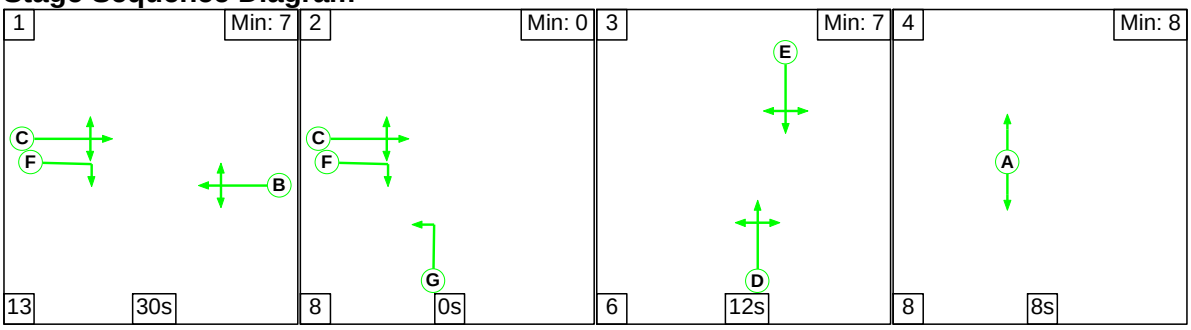
Lane Saturation Flows

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Spital Lane)	3.20	0.00	Y	Arm 6 Left	6.00	62.0 %	1646	1646
				Arm 7 Ahead	Inf	14.3 %		
				Arm 8 Right	17.00	23.6 %		
2/1 (A1023 London Road)	4.00	0.00	Y	Arm 5 Right	18.00	1.7 %	1989	1989
				Arm 7 Left	14.00	10.9 %		
				Arm 8 Ahead	Inf	87.5 %		
3/1 (Mascalls Lane)	4.00	0.00	Y	Arm 8 Left	8.00	100.0 %	1697	1697
3/2 (Mascalls Lane)	3.20	0.00	N	Arm 5 Ahead	Inf	56.1 %	1988	1988
				Arm 6 Right	15.00	43.9 %		
4/1 (A1023 Brook Street)	2.70	0.00	Y	Arm 5 Left	12.00	7.6 %	1867	1867
				Arm 6 Ahead	Inf	92.4 %		
4/2 (A1023 Brook Street)	2.70	0.00	N	Arm 7 Right	25.00	100.0 %	1910	1910
5/1 (Spital Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 London Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Mascalls Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 Brook Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

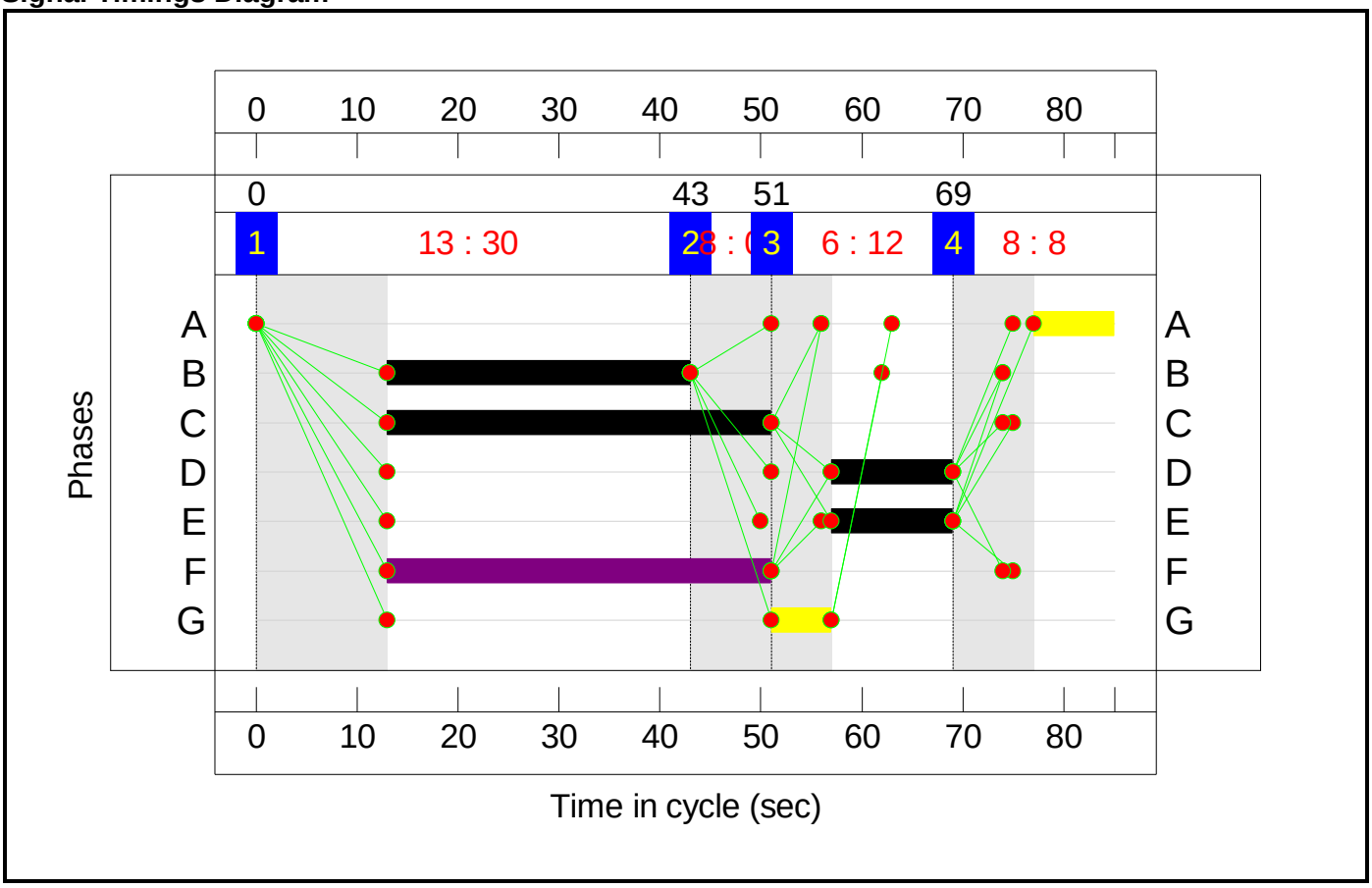
Lane Connector Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/1	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	8/1	Internal	3	35
3/2	5/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	3	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



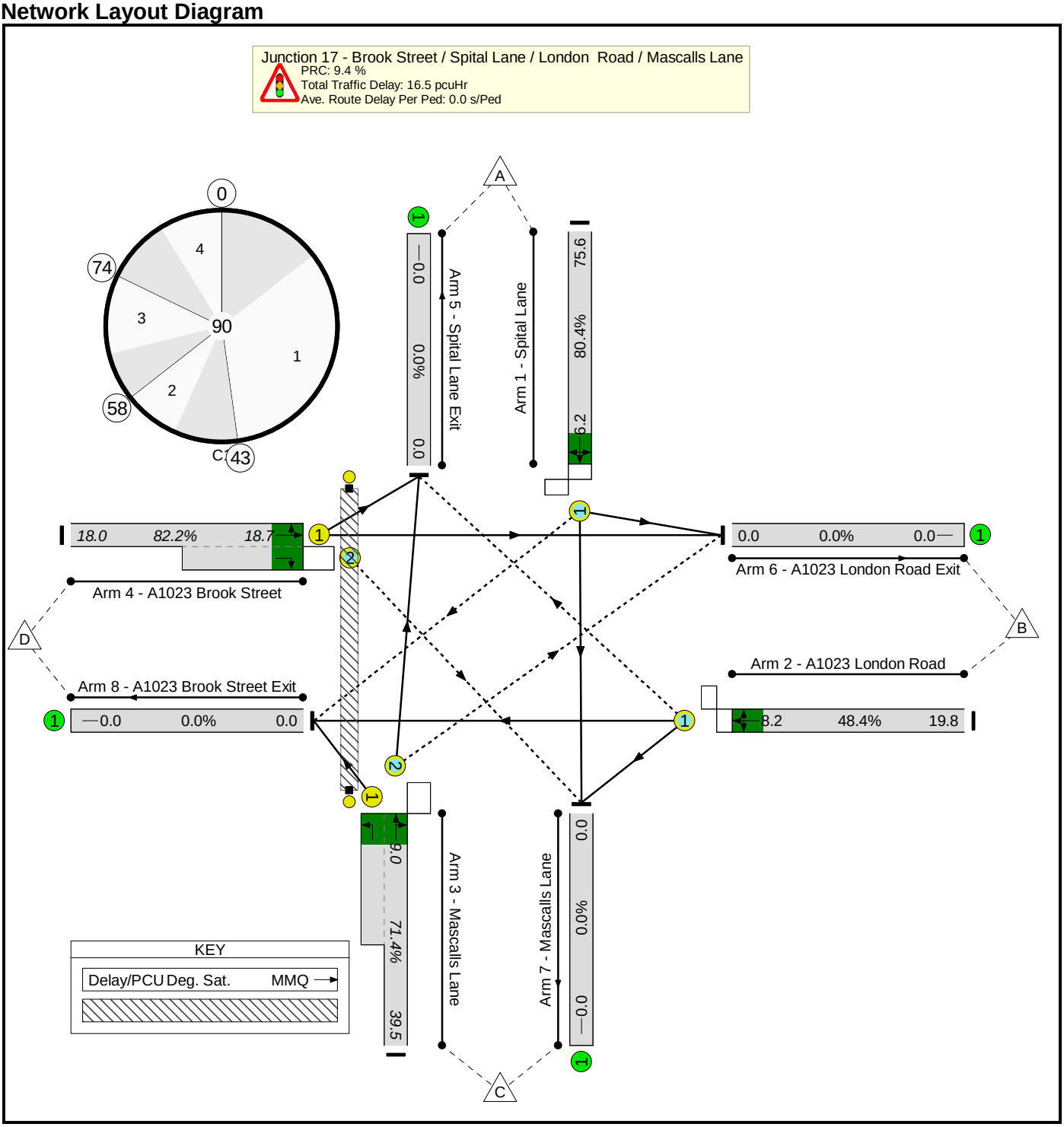
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J17 - Spital Lane / A1023 London Road / Mascalls Lane / A1023 Brook Street	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.2%**	**225**	**47**	**5**	**18.1**	**-**	**-**
Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.2%**	**225**	**47**	**5**	**18.1**	**-**	**-**
1/1	Spital Lane Left Ahead Right	O	E		1	12	-	258	1646	310	83.2%	60	0	1	4.6	64.4	8.1
2/1	A1023 London Road Right Left Ahead	O	B		1	30	-	782	1989	983	79.6%	13	0	0	5.8	26.8	17.1
3/2+3/1	Mascalls Lane Ahead Right Left	O+U	D	G	1	12:18	6	392	1988:1697	526	74.6%	29	0	0	4.6	41.9	8.4
4/1+4/2	A1023 Brook Street Left Ahead Right	U+O	C	F	1	38	38	675	1867:1910	1268	53.2%	123	47	4	3.1	16.5	7.0
Ped Link: P1	Unnamed Ped Link	-	A		1	8	-	0	-	0	0.0%	-	-	-	-	-	-

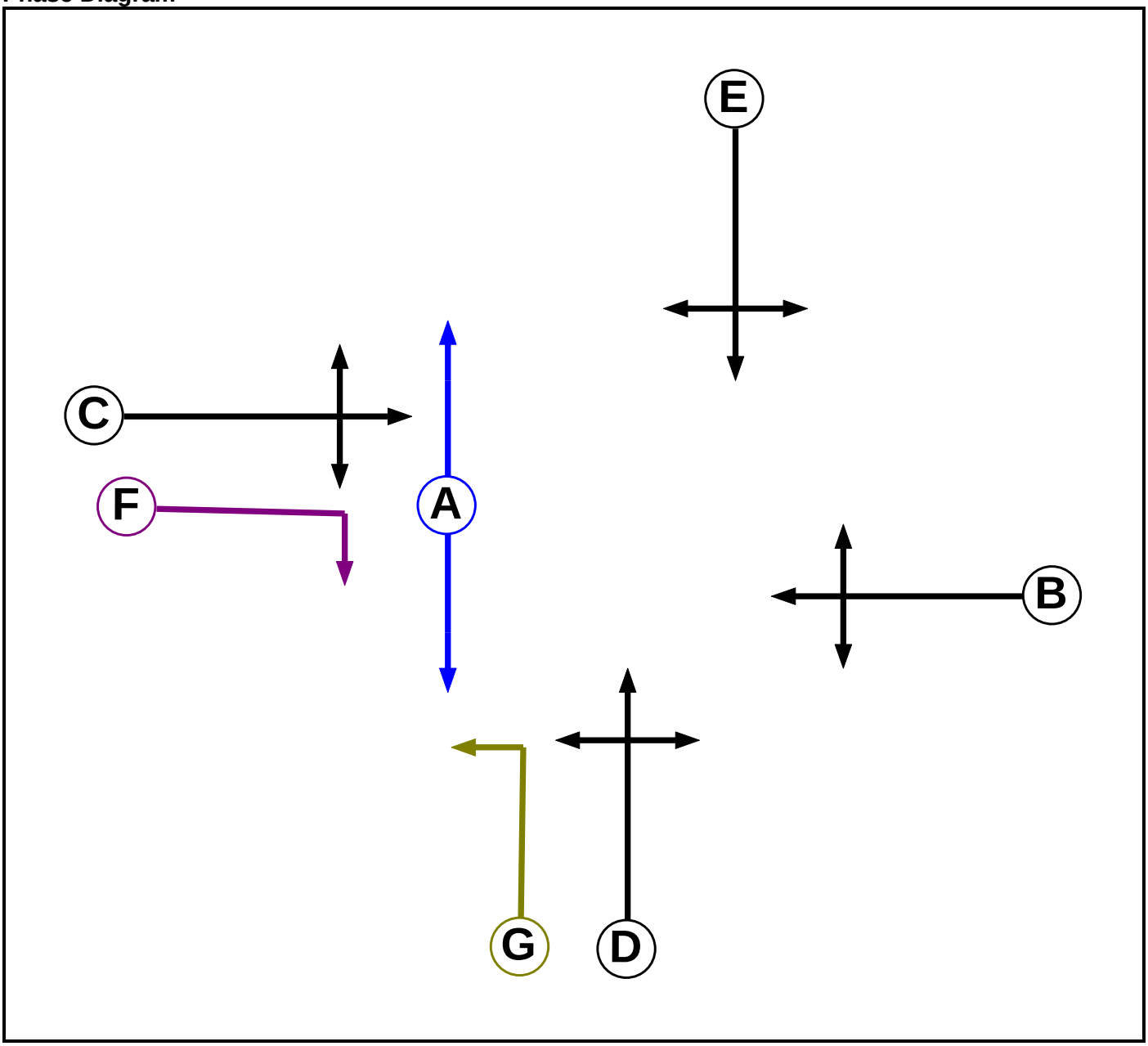
C1 PRC for Signalled Lanes (%): 8.2 Total Delay for Signalled Lanes (pcuHr): 18.08 Cycle Time (s): 85
PRC Over All Lanes (%): 8.2 Total Delay Over All Lanes(pcuHr): 18.08

Scenario 6: '2033 Reference PM' (FG4: '2033 Reference Case (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		13	13	13	13	13	13
	B	8		-	8	7	-	8
	C	5	-		6	6	-	-
	D	6	5	5		-	5	-
	E	8	5	6	-		6	-
	F	5	-	-	6	5		-
	G	6	5	-	-	-	-	

Lane Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Spital Lane)	O	E	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
											Arm 8 Right	17.00
2/1 (A1023 London Road)	O	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	18.00
											Arm 7 Left	14.00
											Arm 8 Ahead	Inf
3/1 (Mascalls Lane)	U	D G	2	3	8.5	Geom	-	4.00	0.00	Y	Arm 8 Left	8.00
3/2 (Mascalls Lane)	O	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
4/1 (A1023 Brook Street)	U	C	2	3	60.0	Geom	-	2.70	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
4/2 (A1023 Brook Street)	O	C F	2	3	7.8	Geom	-	2.70	0.00	N	Arm 7 Right	25.00
5/1 (Spital Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A1023 London Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Mascalls Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 Brook Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

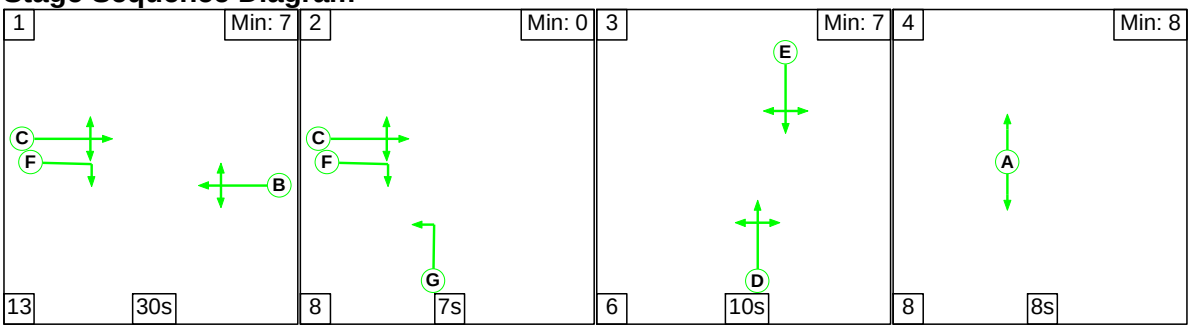
Lane Saturation Flows

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Spital Lane)	3.20	0.00	Y	Arm 6 Left	6.00	39.4 %	1708	1708
				Arm 7 Ahead	Inf	21.7 %		
				Arm 8 Right	17.00	38.9 %		
2/1 (A1023 London Road)	4.00	0.00	Y	Arm 5 Right	18.00	1.1 %	1999	1999
				Arm 7 Left	14.00	6.8 %		
				Arm 8 Ahead	Inf	92.2 %		
3/1 (Mascalls Lane)	4.00	0.00	Y	Arm 8 Left	8.00	100.0 %	1697	1697
3/2 (Mascalls Lane)	3.20	0.00	N	Arm 5 Ahead	Inf	45.5 %	1968	1968
				Arm 6 Right	15.00	54.5 %		
4/1 (A1023 Brook Street)	2.70	0.00	Y	Arm 5 Left	12.00	4.9 %	1874	1874
				Arm 6 Ahead	Inf	95.1 %		
4/2 (A1023 Brook Street)	2.70	0.00	N	Arm 7 Right	25.00	100.0 %	1910	1910
5/1 (Spital Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 London Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Mascalls Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 Brook Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

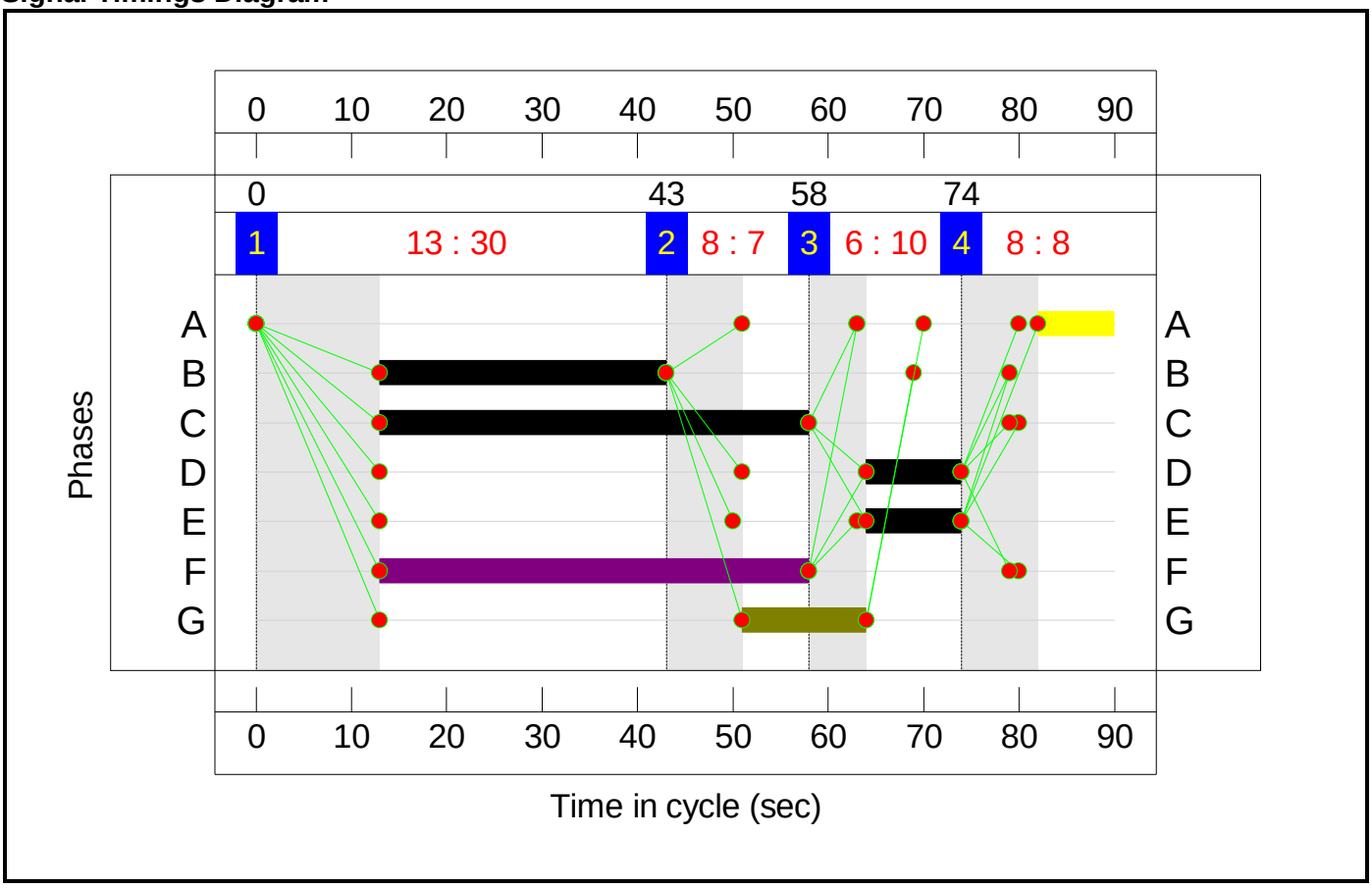
Lane Connector Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/1	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	8/1	Internal	3	35
3/2	5/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	3	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



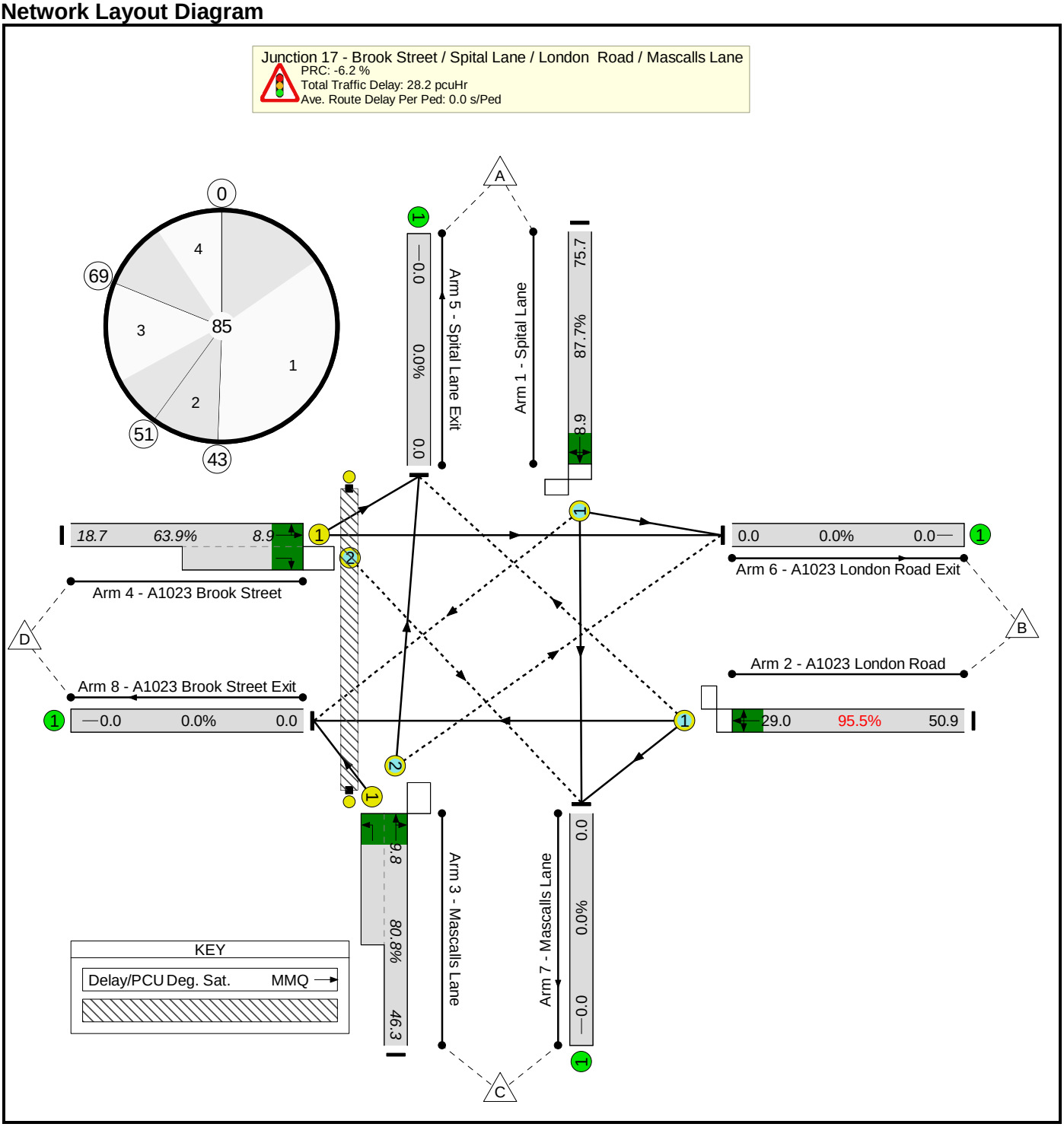
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J17 - Spital Lane / A1023 London Road / Mascalls Lane / A1023 Brook Street	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.2%**	**328**	**39**	**7**	**16.5**	**-**	**-**
Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.2%**	**328**	**39**	**7**	**16.5**	**-**	**-**
1/1	Spital Lane Left Ahead Right	O	E		1	10	-	180	1708	224	80.4%	69	0	1	3.8	75.6	6.2
2/1	A1023 London Road Right Left Ahead	O	B		1	30	-	459	1999	948	48.4%	5	0	0	2.5	19.8	8.2
3/2+3/1	Mascalls Lane Ahead Right Left	O+U	D	G	1	10:23	13	411	1968:1697	576	71.4%	30	0	0	4.5	39.5	9.0
4/1+4/2	A1023 Brook Street Left Ahead Right	U+O	C	F	1	45	45	1132	1874:1910	1377	82.2%	224	39	6	5.7	18.0	18.7
Ped Link: P1	Unnamed Ped Link	-	A		1	8	-	0	-	0	0.0%	-	-	-	-	-	-

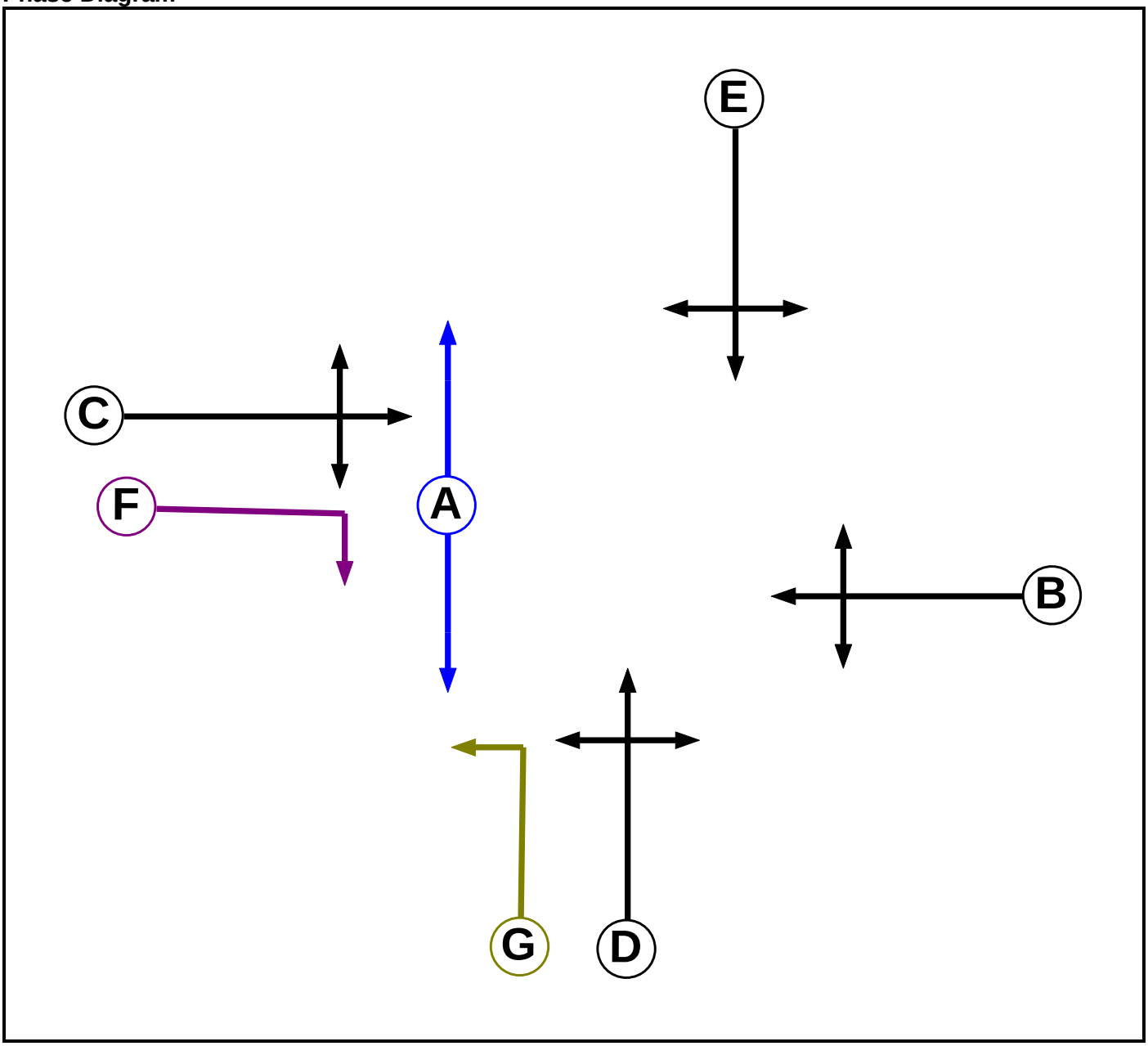
C1 PRC for Signalled Lanes (%): 9.4 Total Delay for Signalled Lanes (pcuHr): 16.49 Cycle Time (s): 90
PRC Over All Lanes (%): 9.4 Total Delay Over All Lanes(pcuHr): 16.49

Scenario 7: '2033 Local Plan Growth AM' (FG5: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		13	13	13	13	13	13
	B	8		-	8	7	-	8
	C	5	-		6	6	-	-
	D	6	5	5		-	5	-
	E	8	5	6	-		6	-
	F	5	-	-	6	5		-
	G	6	5	-	-	-	-	

Lane Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Spital Lane)	O	E	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
											Arm 8 Right	17.00
2/1 (A1023 London Road)	O	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	18.00
											Arm 7 Left	14.00
											Arm 8 Ahead	Inf
3/1 (Mascalls Lane)	U	D G	2	3	8.5	Geom	-	4.00	0.00	Y	Arm 8 Left	8.00
3/2 (Mascalls Lane)	O	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
4/1 (A1023 Brook Street)	U	C	2	3	60.0	Geom	-	2.70	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
4/2 (A1023 Brook Street)	O	C F	2	3	7.8	Geom	-	2.70	0.00	N	Arm 7 Right	25.00
5/1 (Spital Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A1023 London Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Mascalls Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 Brook Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

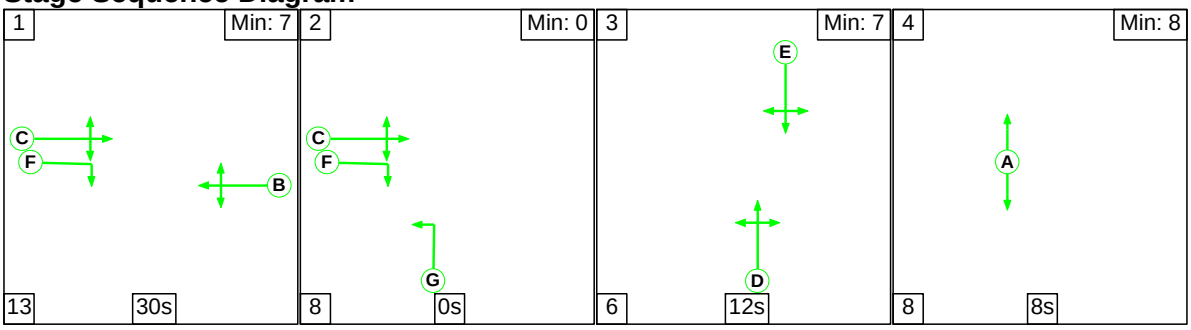
Lane Saturation Flows

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Spital Lane)	3.20	0.00	Y	Arm 6 Left	6.00	61.6 %	1646	1646
				Arm 7 Ahead	Inf	14.3 %		
				Arm 8 Right	17.00	24.0 %		
2/1 (A1023 London Road)	4.00	0.00	Y	Arm 5 Right	18.00	1.4 %	1989	1989
				Arm 7 Left	14.00	11.1 %		
				Arm 8 Ahead	Inf	87.5 %		
3/1 (Mascalls Lane)	4.00	0.00	Y	Arm 8 Left	8.00	100.0 %	1697	1697
3/2 (Mascalls Lane)	3.20	0.00	N	Arm 5 Ahead	Inf	52.7 %	1981	1981
				Arm 6 Right	15.00	47.3 %		
4/1 (A1023 Brook Street)	2.70	0.00	Y	Arm 5 Left	12.00	6.6 %	1870	1870
				Arm 6 Ahead	Inf	93.4 %		
4/2 (A1023 Brook Street)	2.70	0.00	N	Arm 7 Right	25.00	100.0 %	1910	1910
5/1 (Spital Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 London Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Mascalls Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 Brook Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

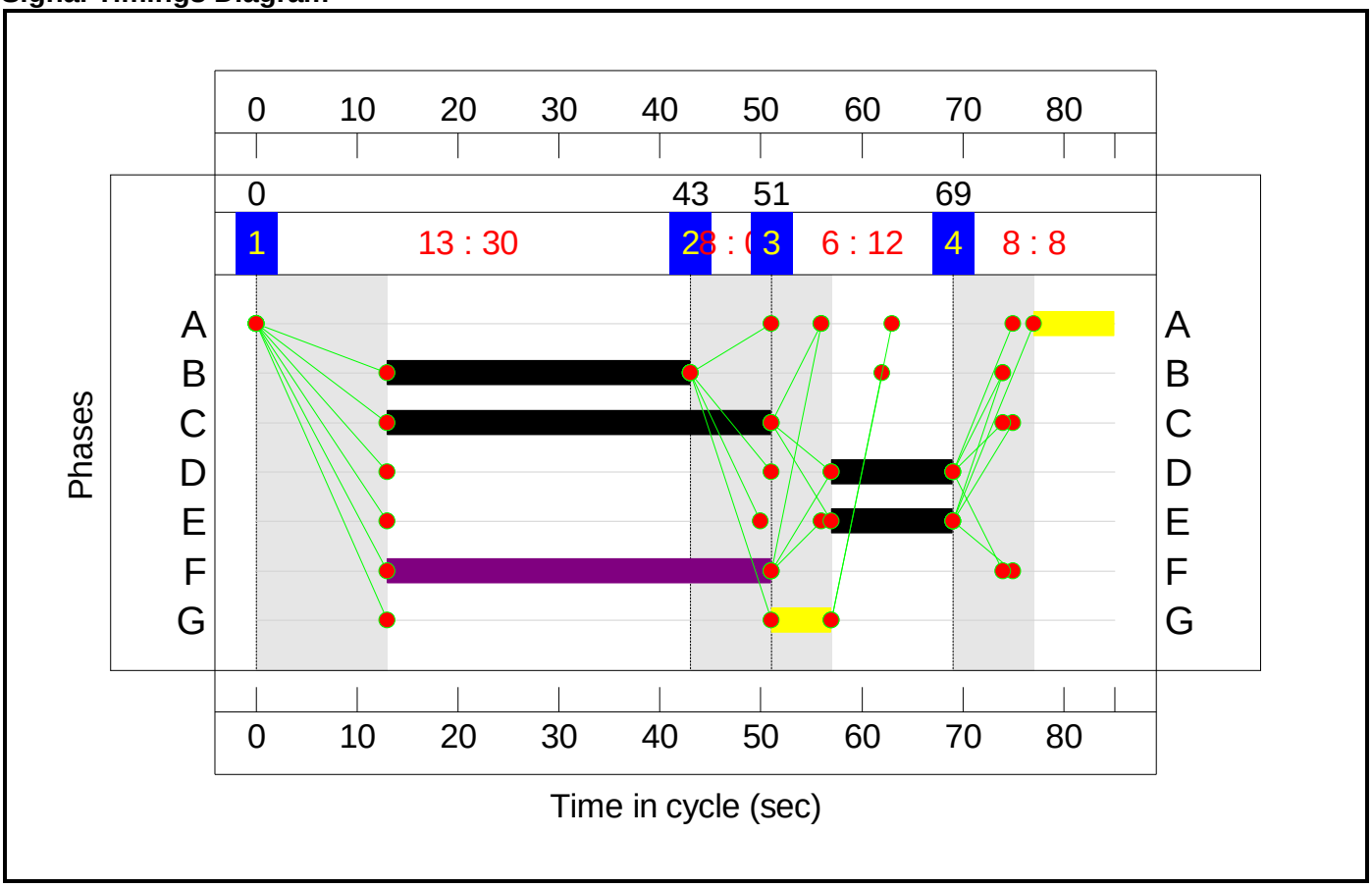
Lane Connector Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/1	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	8/1	Internal	3	35
3/2	5/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	3	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



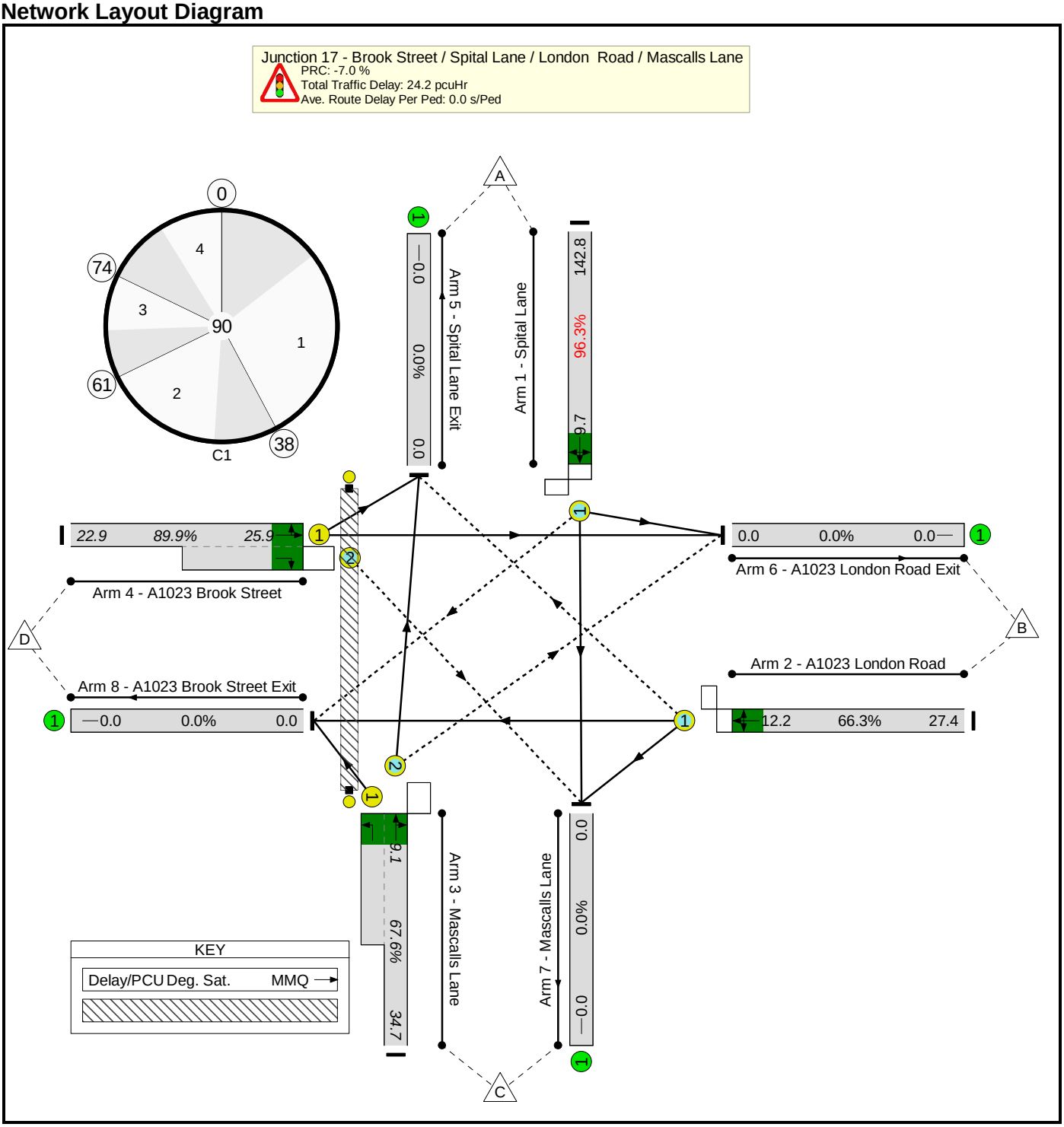
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J17 - Spital Lane / A1023 London Road / Mascalls Lane / A1023 Brook Street	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**95.5%**	**145**	**134**	**5**	**28.2**	**-**	**-**
Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**95.5%**	**145**	**134**	**5**	**28.2**	**-**	**-**
1/1	Spital Lane Left Ahead Right	O	E		1	12	-	258	1646	294	87.7%	61	0	1	5.4	75.7	8.9
2/1	A1023 London Road Right Left Ahead	O	B		1	30	-	939	1989	983	95.5%	13	0	0	13.3	50.9	29.0
3/2+3/1	Mascalls Lane Ahead Right Left	O+U	D	G	1	12:18	6	427	1981:1697	528	80.8%	35	0	0	5.5	46.3	9.8
4/1+4/2	A1023 Brook Street Left Ahead Right	U+O	C	F	1	38	38	763	1870:1910	1193	63.9%	36	134	4	4.0	18.7	8.9
Ped Link: P1	Unnamed Ped Link	-	A		1	8	-	0	-	0	0.0%	-	-	-	-	-	-

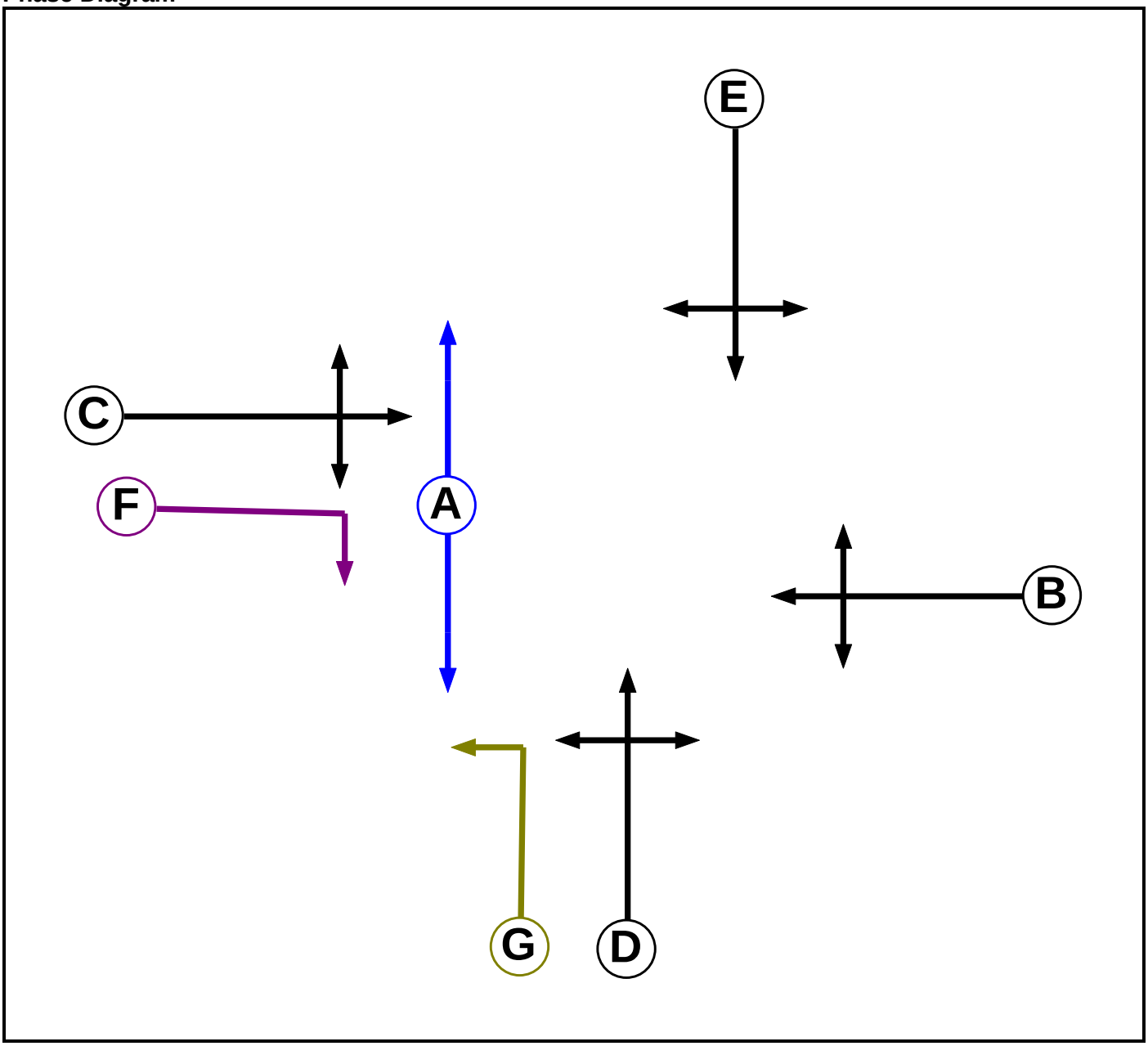
C1 PRC for Signalled Lanes (%): -6.2 Total Delay for Signalled Lanes (pcuHr): 28.16 Cycle Time (s): 85
PRC Over All Lanes (%): -6.2 Total Delay Over All Lanes(pcuHr): 28.16

Scenario 8: '2033 Local Plan Growth PM' (FG6: '2033 Local Plan Growth (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		13	13	13	13	13	13
	B	8		-	8	7	-	8
	C	5	-		6	6	-	-
	D	6	5	5		-	5	-
	E	8	5	6	-		6	-
	F	5	-	-	6	5		-
	G	6	5	-	-	-	-	

Lane Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Spital Lane)	O	E	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	6.00
											Arm 7 Ahead	Inf
											Arm 8 Right	17.00
2/1 (A1023 London Road)	O	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	18.00
											Arm 7 Left	14.00
											Arm 8 Ahead	Inf
3/1 (Mascalls Lane)	U	D G	2	3	8.5	Geom	-	4.00	0.00	Y	Arm 8 Left	8.00
3/2 (Mascalls Lane)	O	D	2	3	60.0	Geom	-	3.20	0.00	N	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
4/1 (A1023 Brook Street)	U	C	2	3	60.0	Geom	-	2.70	0.00	Y	Arm 5 Left	12.00
											Arm 6 Ahead	Inf
4/2 (A1023 Brook Street)	O	C F	2	3	7.8	Geom	-	2.70	0.00	N	Arm 7 Right	25.00
5/1 (Spital Lane Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A1023 London Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

7/1 (Mascalls Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1023 Brook Street Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

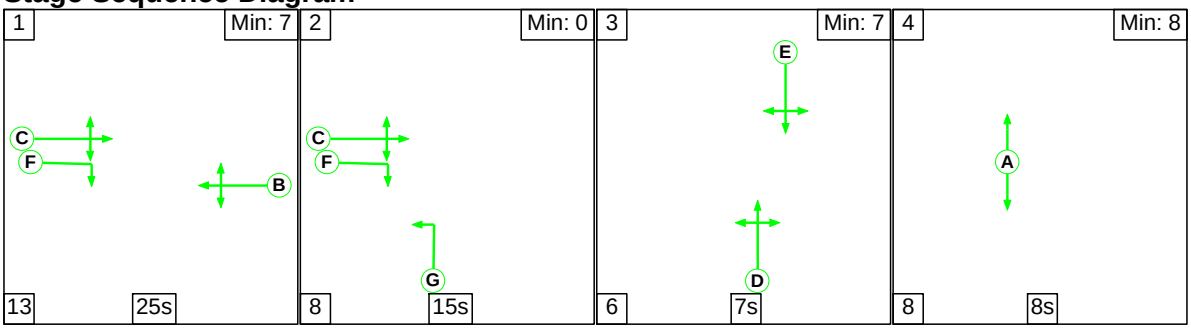
Lane Saturation Flows

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Spital Lane)	3.20	0.00	Y	Arm 6 Left	6.00	38.8 %	1711	1711
				Arm 7 Ahead	Inf	22.4 %		
				Arm 8 Right	17.00	38.8 %		
2/1 (A1023 London Road)	4.00	0.00	Y	Arm 5 Right	18.00	0.7 %	2000	2000
				Arm 7 Left	14.00	6.4 %		
				Arm 8 Ahead	Inf	92.9 %		
3/1 (Mascalls Lane)	4.00	0.00	Y	Arm 8 Left	8.00	100.0 %	1697	1697
3/2 (Mascalls Lane)	3.20	0.00	N	Arm 5 Ahead	Inf	32.5 %	1944	1944
				Arm 6 Right	15.00	67.5 %		
4/1 (A1023 Brook Street)	2.70	0.00	Y	Arm 5 Left	12.00	4.3 %	1875	1875
				Arm 6 Ahead	Inf	95.7 %		
4/2 (A1023 Brook Street)	2.70	0.00	N	Arm 7 Right	25.00	100.0 %	1910	1910
5/1 (Spital Lane Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A1023 London Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Mascalls Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1023 Brook Street Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

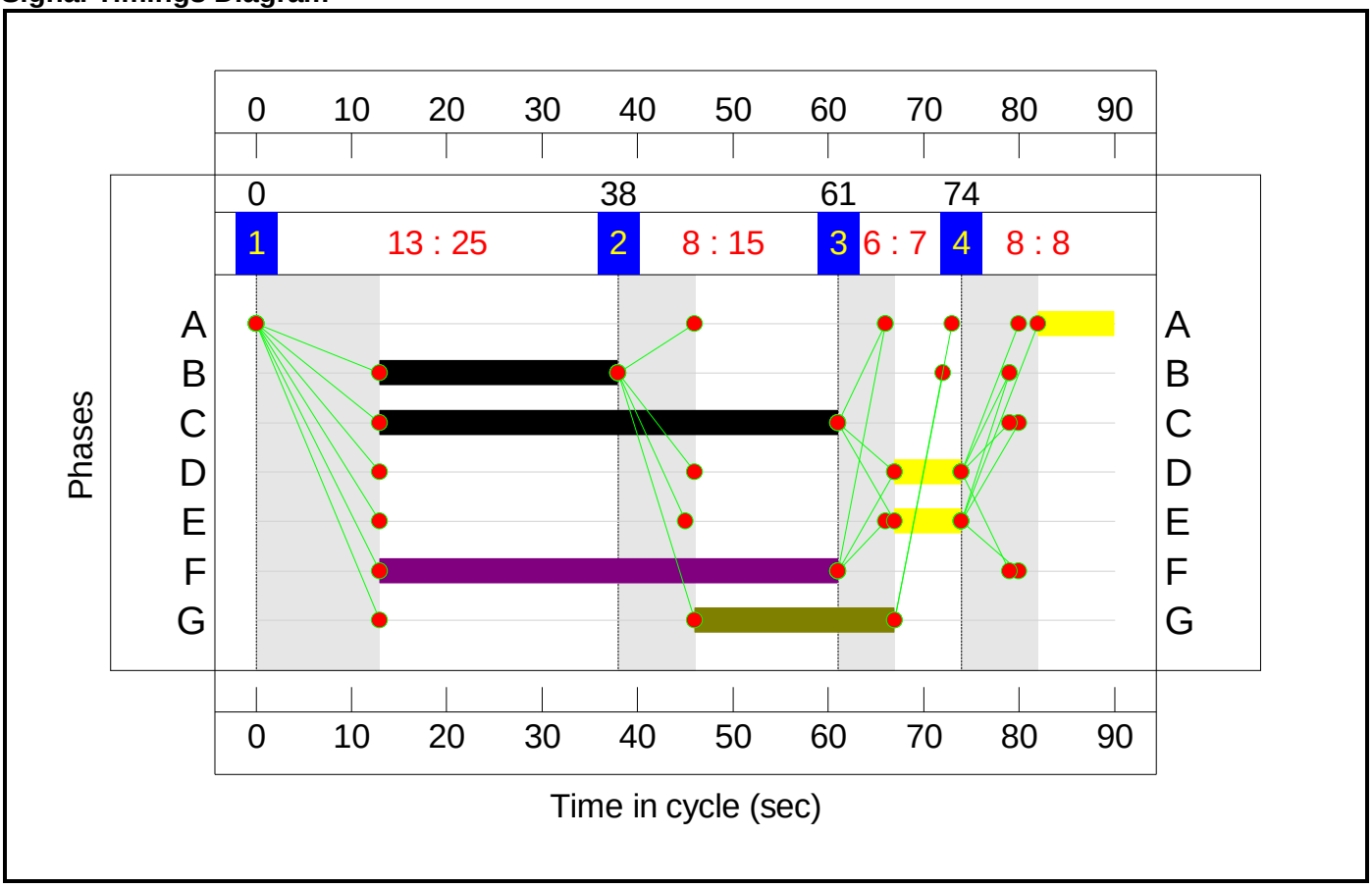
Lane Connector Input Data

Junction: Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	6/1	Internal	3	35
1/1	7/1	Internal	3	35
1/1	8/1	Internal	3	35
2/1	5/1	Internal	3	35
2/1	7/1	Internal	3	35
2/1	8/1	Internal	4	35
3/1	8/1	Internal	3	35
3/2	5/1	Internal	3	35
3/2	6/1	Internal	3	35
4/1	5/1	Internal	3	35
4/1	6/1	Internal	4	35
4/2	7/1	Internal	3	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J17 - Spital Lane / A1023 London Road / Mascalls Lane / A1023 Brook Street	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**96.3%**	**293**	**116**	**20**	**24.2**	**-**	**-**
Junction 17 - Brook Street / Spital Lane / London Road / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**96.3%**	**293**	**116**	**20**	**24.2**	**-**	**-**
1/1	Spital Lane Left Ahead Right	O	E		1	7	-	183	1711	190	96.3%	65	0	6	7.3	142.8	9.7
2/1	A1023 London Road Right Left Ahead	O	B		1	25	-	560	2000	844	66.3%	4	0	0	4.3	27.4	12.2
3/2+3/1	Mascalls Lane Ahead Right Left	O+U	D	G	1	7:28	21	467	1944:1697	691	67.6%	47	0	7	4.5	34.7	9.1
4/1+4/2	A1023 Brook Street Left Ahead Right	U+O	C	F	1	48	48	1291	1875:1910	1437	89.9%	177	116	7	8.2	22.9	25.9
Ped Link: P1	Unnamed Ped Link	-	A		1	8	-	0	-	0	0.0%	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): -7.0 Total Delay for Signalled Lanes (pcuHr): 24.25 Cycle Time (s): 90
PRC Over All Lanes (%): -7.0 Total Delay Over All Lanes(pcuHr): 24.25

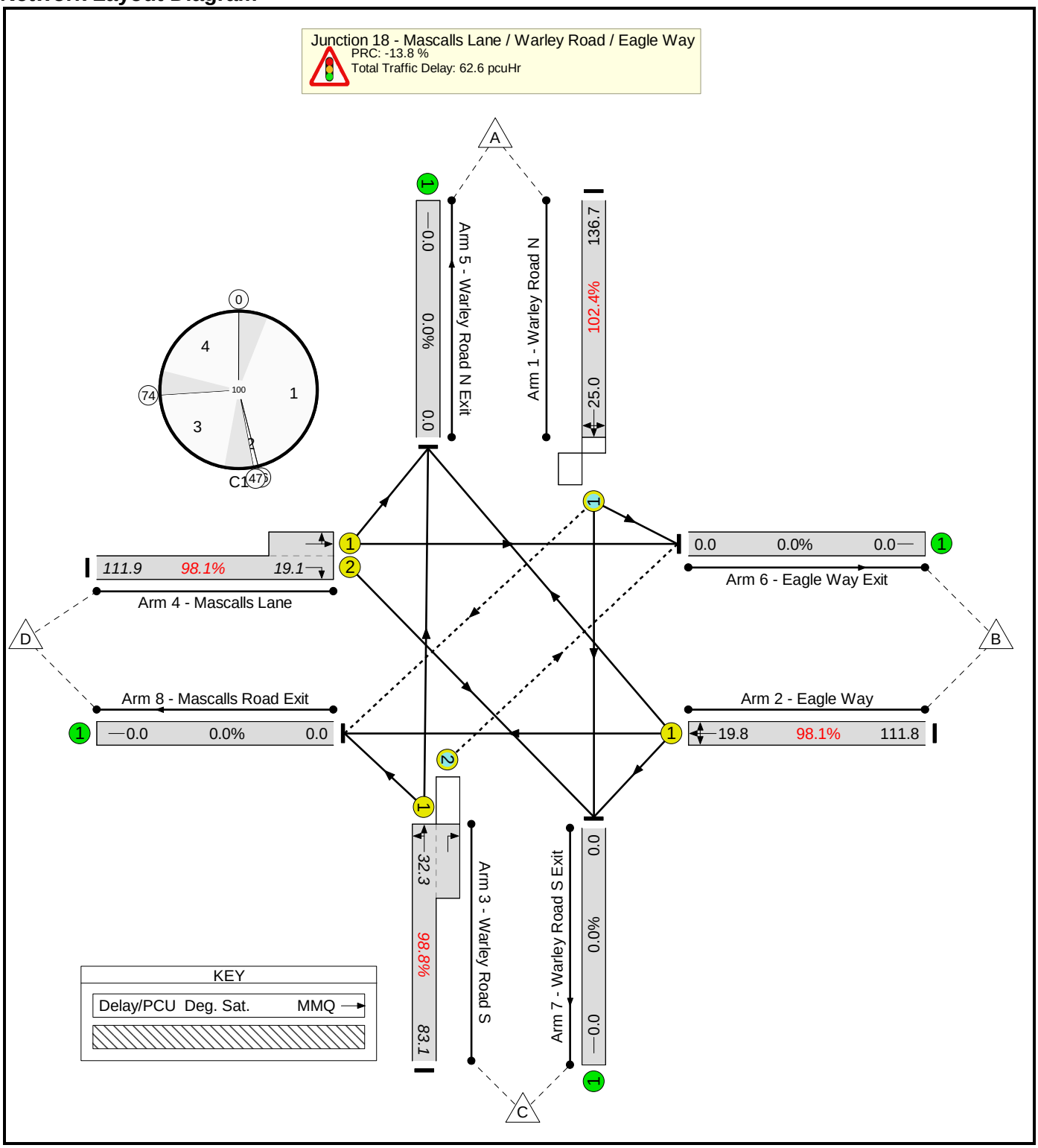
Brentwood PBA Modelling

Project and User Details

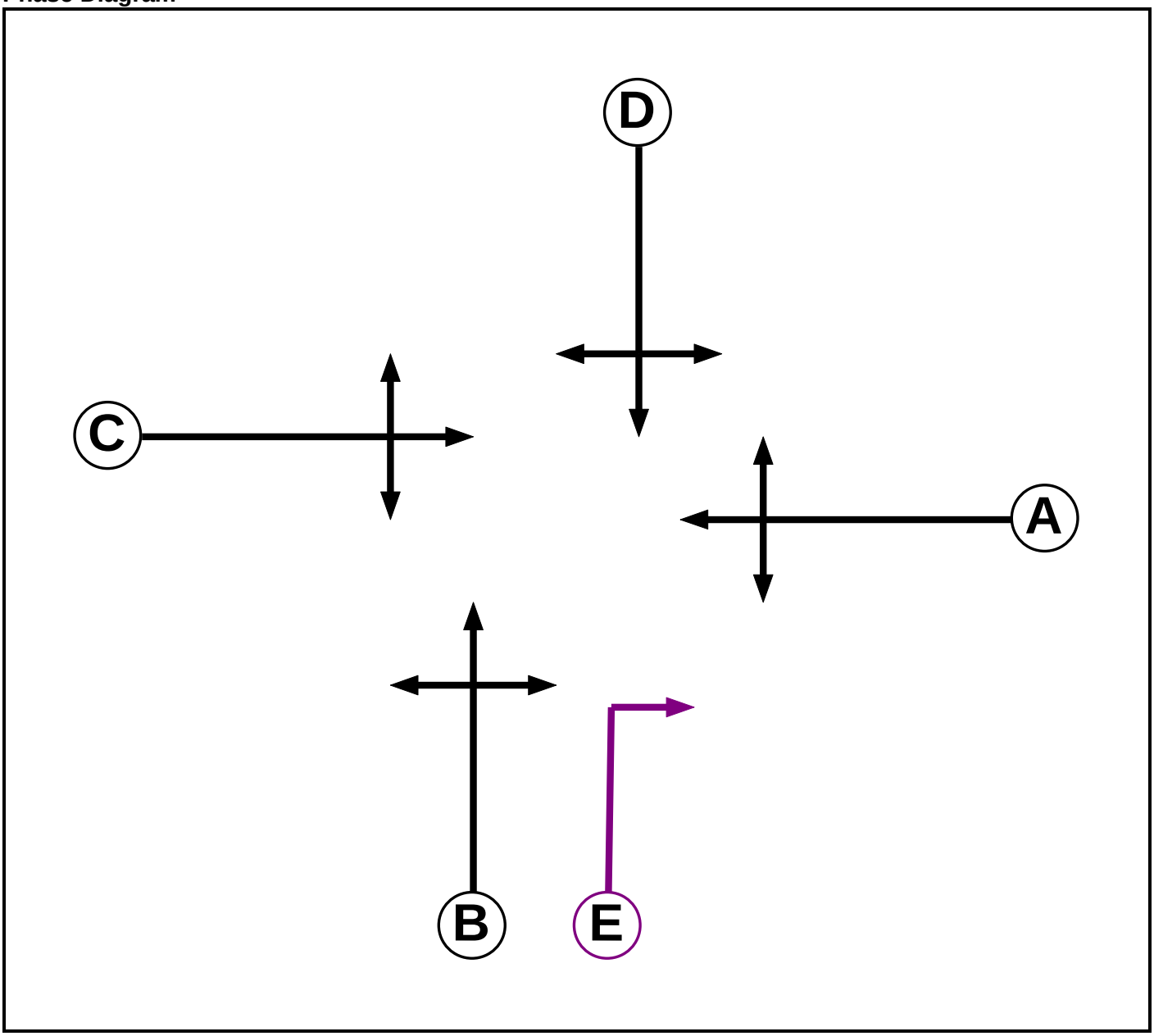
Project:	**28085 Brentwood**
Title:	**J18 - Warley Road / Eagle Way / Mascalls Lane**
Location:	Brentwood
Additional detail:	
File name:	28085_18_LS_LSM.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 1: '2017 Baseline (AM)' (FG1: '2017 Baseline (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

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

Lane Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Warley Road N)	O	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	9.00
											Arm 7 Ahead	Inf
											Arm 8 Right	9.00
2/1 (Eagle Way)	U	A	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	17.00
											Arm 8 Ahead	Inf
3/1 (Warley Road S)	U	B	2	3	60.0	Geom	-	2.10	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	6.00
3/2 (Warley Road S)	O	B E	2	3	4.7	Geom	-	2.40	0.00	Y	Arm 6 Right	13.00
4/1 (Mascalls Lane)	U	C	2	3	4.1	Geom	-	2.40	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
4/2 (Mascalls Lane)	U	C	2	3	60.0	Geom	-	2.40	0.00	N	Arm 7 Right	14.00
5/1 (Warley Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Eagle Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Warley Road S Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Mascalls Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

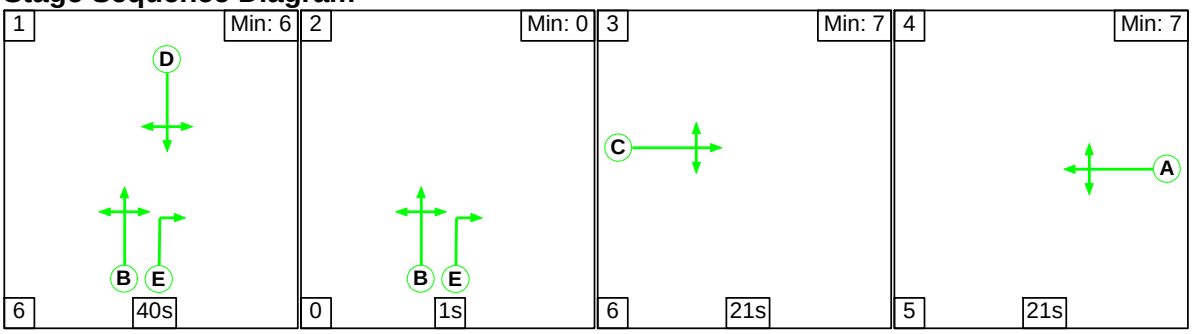
Lane Saturation Flows

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Warley Road N)	3.20	0.00	Y	Arm 6 Left	9.00	5.8 %	1862	1862
				Arm 7 Ahead	Inf	76.6 %		
				Arm 8 Right	9.00	17.6 %		
2/1 (Eagle Way)	4.00	0.00	Y	Arm 5 Right	15.00	9.2 %	1922	1922
				Arm 7 Left	17.00	44.6 %		
				Arm 8 Ahead	Inf	46.3 %		
3/1 (Warley Road S)	2.10	0.00	Y	Arm 5 Ahead	Inf	96.8 %	1811	1811
				Arm 8 Left	6.00	3.2 %		
3/2 (Warley Road S)	2.40	0.00	Y	Arm 6 Right	13.00	100.0 %	1663	1663
4/1 (Mascalls Lane)	2.40	0.00	Y	Arm 5 Left	15.00	28.0 %	1804	1804
				Arm 6 Ahead	Inf	72.0 %		
4/2 (Mascalls Lane)	2.40	0.00	N	Arm 7 Right	14.00	100.0 %	1802	1802
5/1 (Warley Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Eagle Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Warley Road S Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Mascalls Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

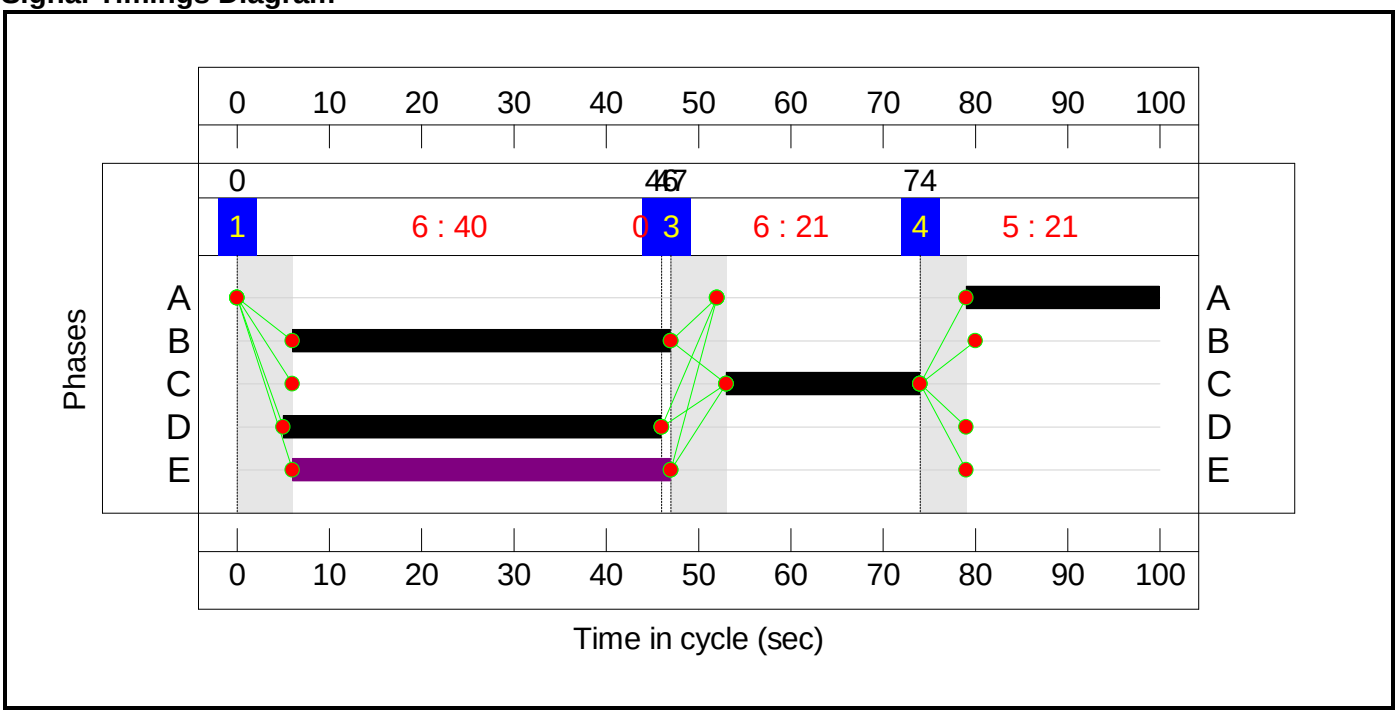
Lane Connector Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	6/1	Internal	5	35
1/1	7/1	Internal	5	35
1/1	8/1	Internal	5	35
2/1	5/1	Internal	5	35
2/1	7/1	Internal	5	35
2/1	8/1	Internal	5	35
3/1	5/1	Internal	5	35
3/1	8/1	Internal	5	35
3/2	6/1	Internal	5	35
4/1	5/1	Internal	5	35
4/1	6/1	Internal	5	35
4/2	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



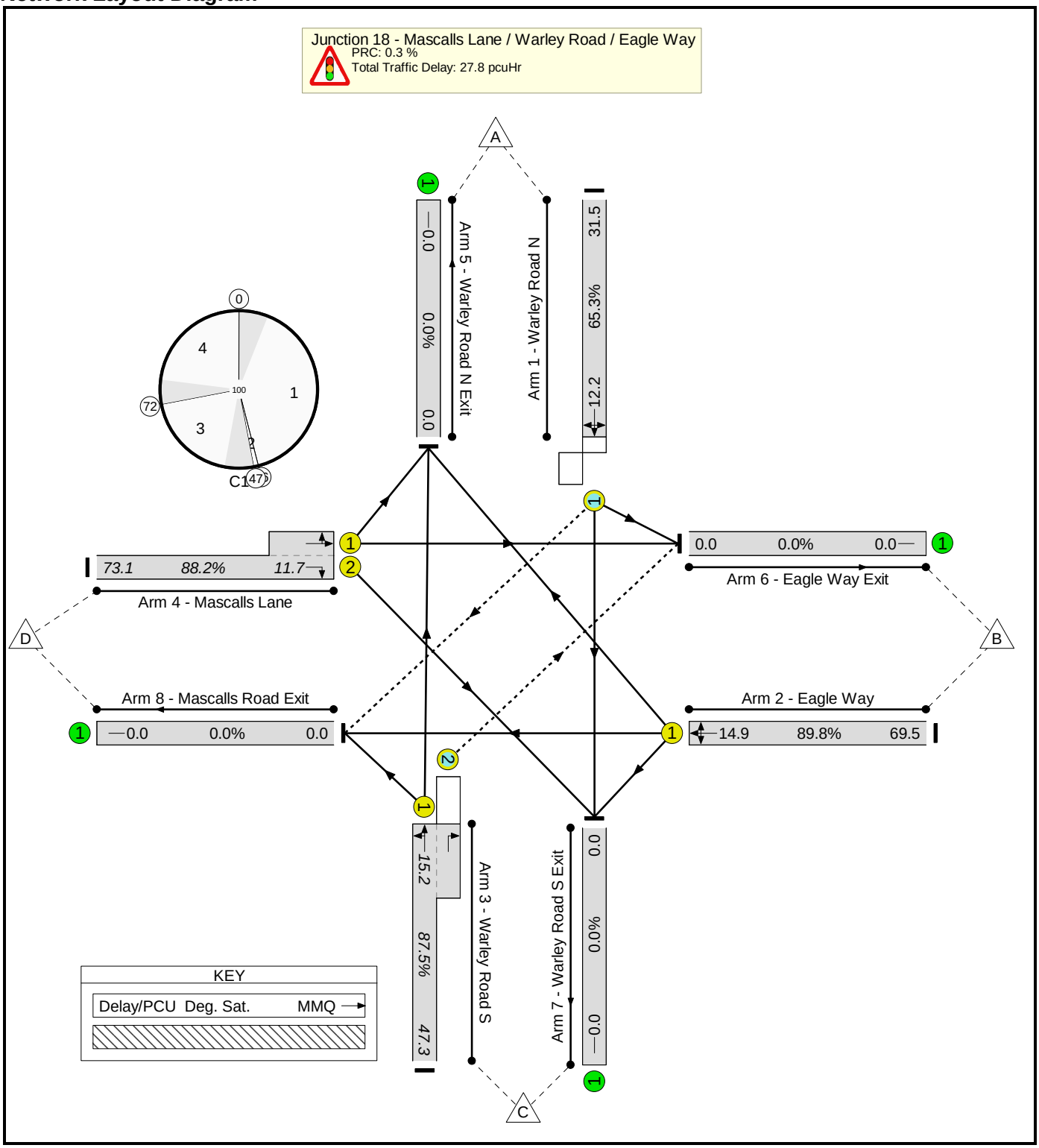
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J18 - Warley Road / Eagle Way / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**102.4%**	**217**	**0**	**79**	**62.6**	**-**	**-**
Junction 18 - Mascalls Lane / Warley Road / Eagle Way	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**102.4%**	**217**	**0**	**79**	**62.6**	**-**	**-**
1/1	Warley Road N Left Ahead Right	O	D		1	41	-	482	1862	471	102.4%	13	0	70	18.3	136.7	25.0
2/1	Eagle Way Right Left Ahead	U	A		1	21	-	415	1922	423	98.1%	-	-	-	12.9	111.8	19.8
3/1+3/2	Warley Road S Ahead Right Left	U+O	B	E	1	41	41	810	1811:1663	820	98.8%	204	0	9	18.7	83.1	32.3
4/2+4/1	Mascalls Lane Left Ahead Right	U	C		1	21	-	409	1802:1804	417	98.1%	-	-	-	12.7	111.9	19.1

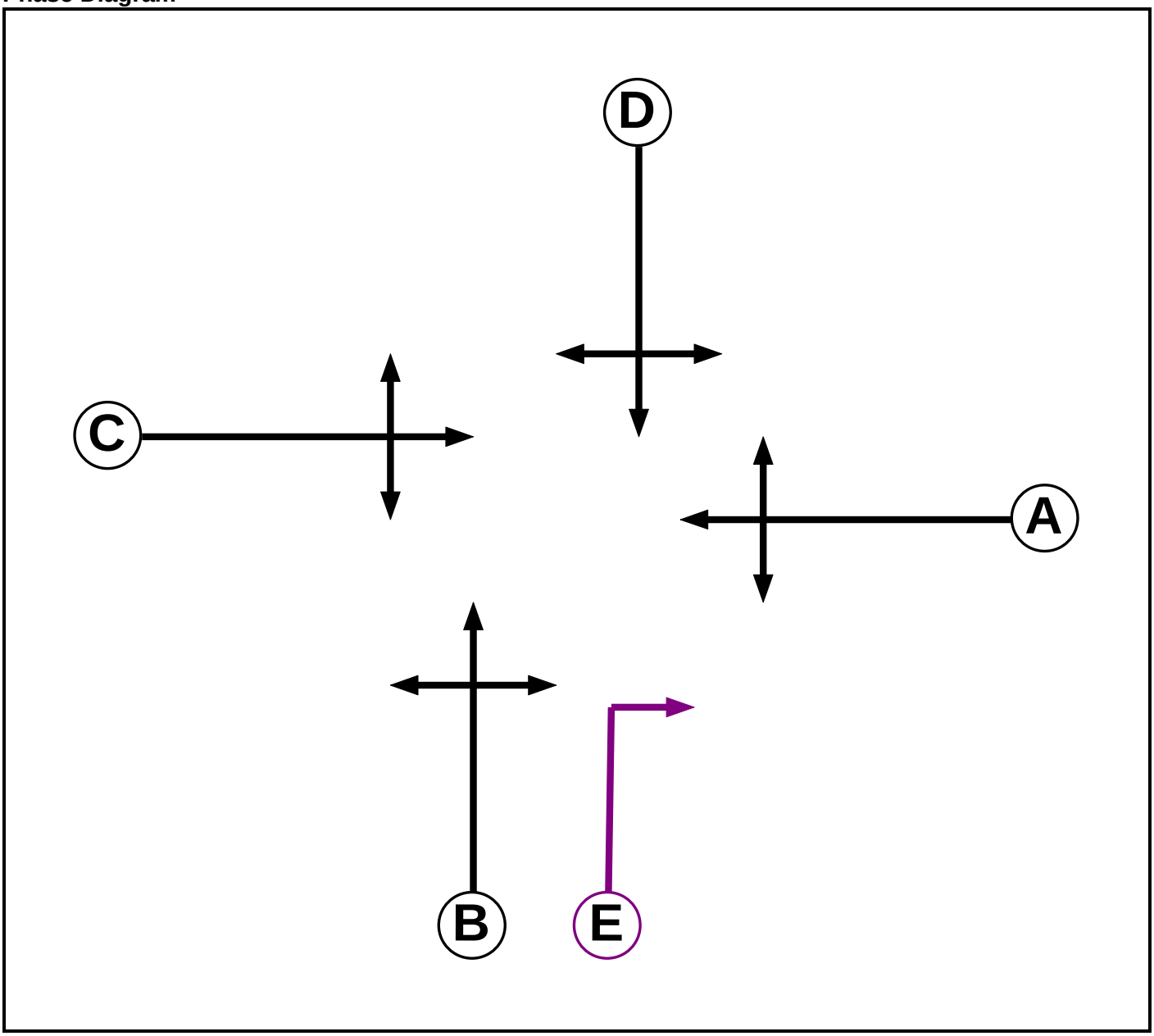
C1 PRC for Signalled Lanes (%): -13.8 Total Delay for Signalled Lanes (pcuHr): 62.59 Cycle Time (s): 100
PRC Over All Lanes (%): -13.8 Total Delay Over All Lanes(pcuHr): 62.59

Scenario 2: '2017 Baseline (PM)' (FG2: '2017 Baseline (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

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

Lane Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Warley Road N)	O	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	9.00
											Arm 7 Ahead	Inf
											Arm 8 Right	9.00
2/1 (Eagle Way)	U	A	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	17.00
											Arm 8 Ahead	Inf
3/1 (Warley Road S)	U	B	2	3	60.0	Geom	-	2.10	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	6.00
3/2 (Warley Road S)	O	B E	2	3	4.7	Geom	-	2.40	0.00	Y	Arm 6 Right	13.00
4/1 (Mascalls Lane)	U	C	2	3	4.1	Geom	-	2.40	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
4/2 (Mascalls Lane)	U	C	2	3	60.0	Geom	-	2.40	0.00	N	Arm 7 Right	14.00
5/1 (Warley Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Eagle Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Warley Road S Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Mascalls Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

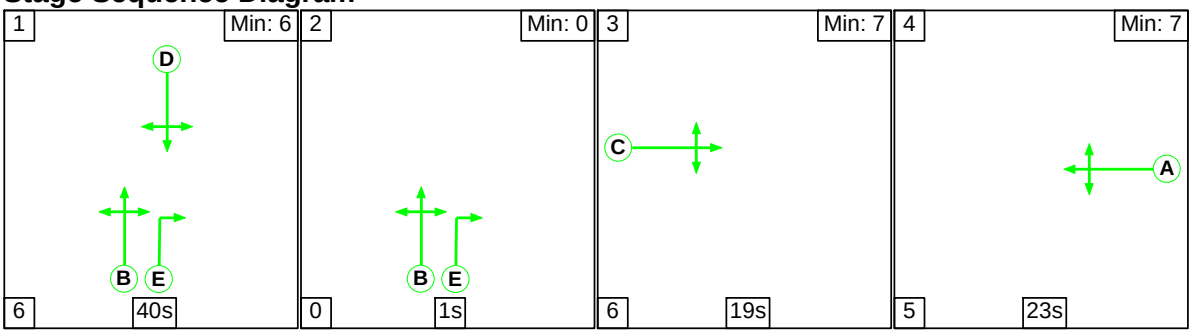
Lane Saturation Flows

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Warley Road N)	3.20	0.00	Y	Arm 6 Left	9.00	7.1 %	1859	1859
				Arm 7 Ahead	Inf	75.5 %		
				Arm 8 Right	9.00	17.4 %		
2/1 (Eagle Way)	4.00	0.00	Y	Arm 5 Right	15.00	6.5 %	1931	1931
				Arm 7 Left	17.00	42.1 %		
				Arm 8 Ahead	Inf	51.4 %		
3/1 (Warley Road S)	2.10	0.00	Y	Arm 5 Ahead	Inf	96.8 %	1811	1811
				Arm 8 Left	6.00	3.2 %		
3/2 (Warley Road S)	2.40	0.00	Y	Arm 6 Right	13.00	100.0 %	1663	1663
4/1 (Mascalls Lane)	2.40	0.00	Y	Arm 5 Left	15.00	29.0 %	1803	1803
				Arm 6 Ahead	Inf	71.0 %		
4/2 (Mascalls Lane)	2.40	0.00	N	Arm 7 Right	14.00	100.0 %	1802	1802
5/1 (Warley Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Eagle Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Warley Road S Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Mascalls Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

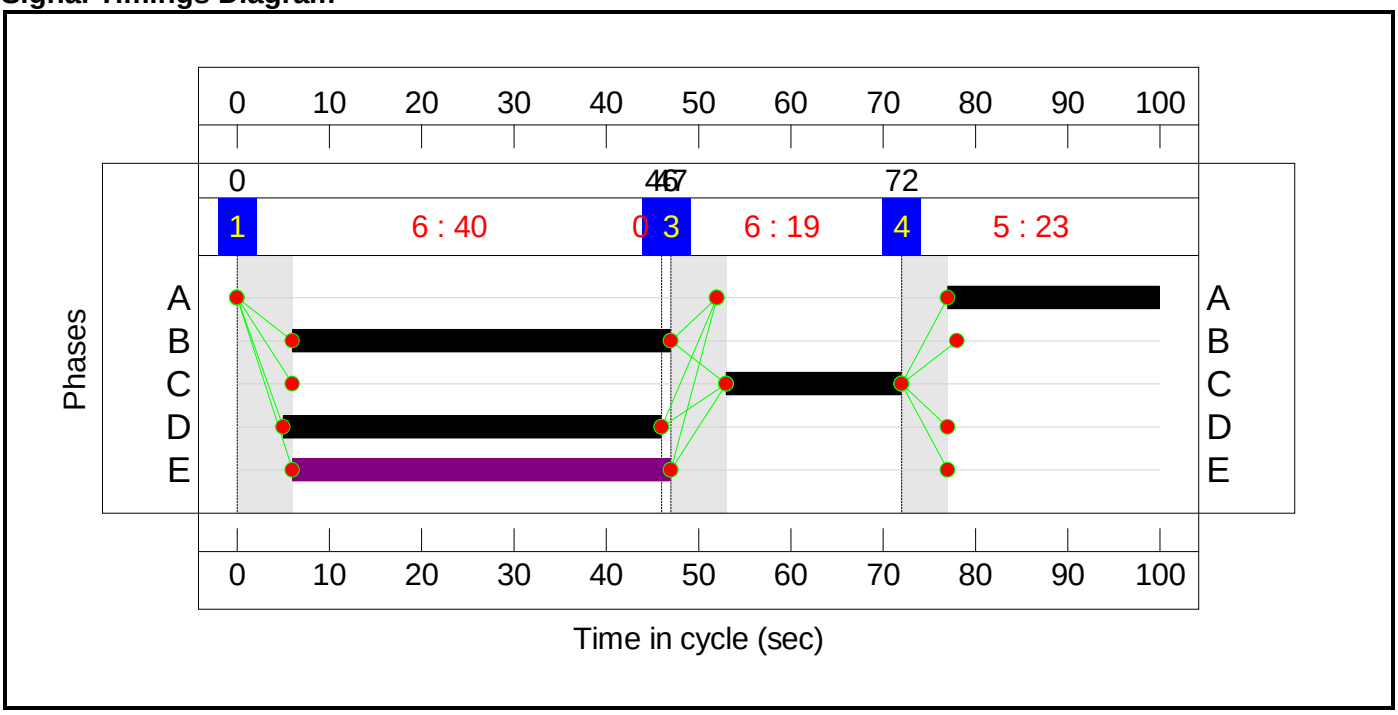
Lane Connector Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	6/1	Internal	5	35
1/1	7/1	Internal	5	35
1/1	8/1	Internal	5	35
2/1	5/1	Internal	5	35
2/1	7/1	Internal	5	35
2/1	8/1	Internal	5	35
3/1	5/1	Internal	5	35
3/1	8/1	Internal	5	35
3/2	6/1	Internal	5	35
4/1	5/1	Internal	5	35
4/1	6/1	Internal	5	35
4/2	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



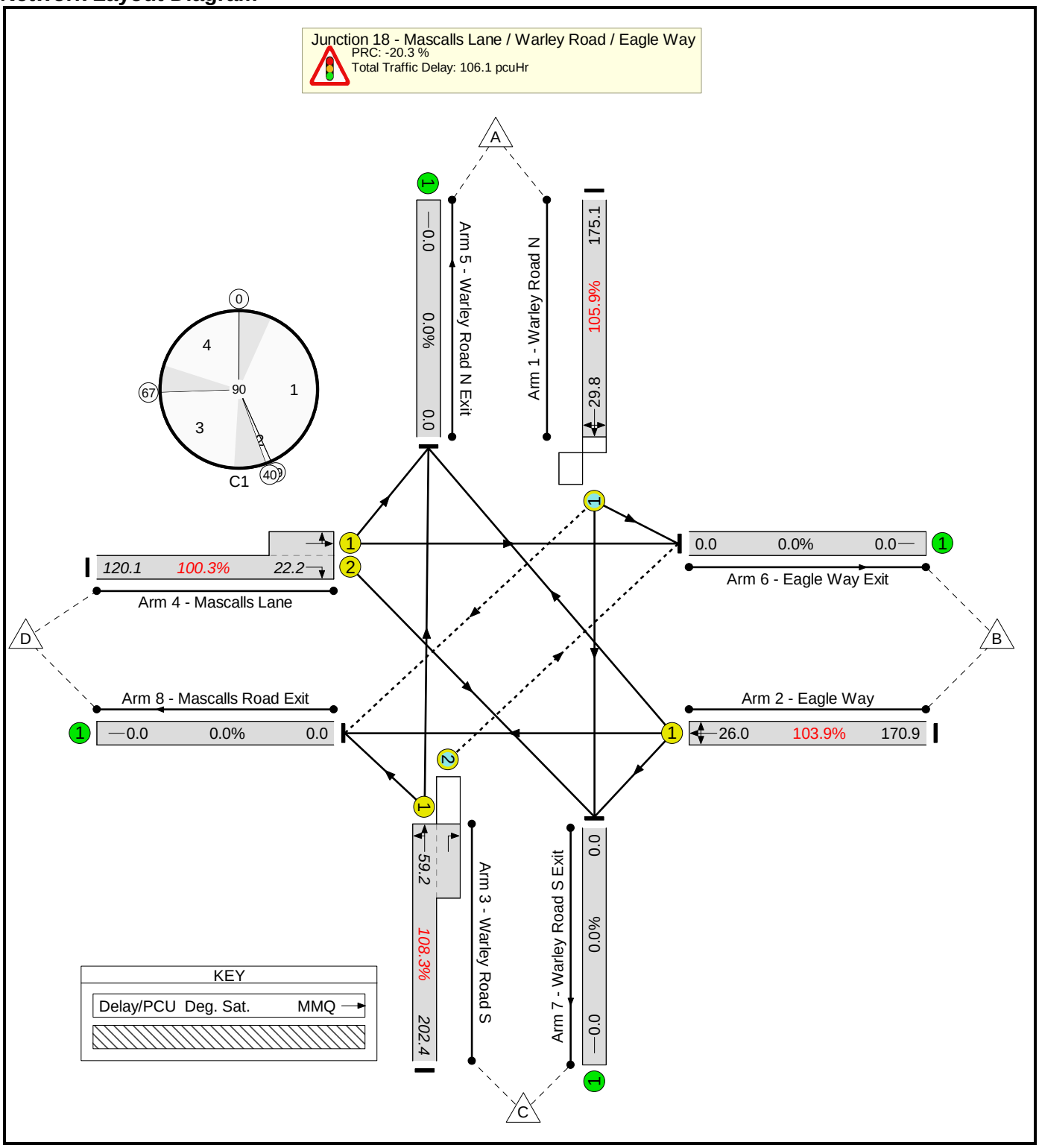
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J18 - Warley Road / Eagle Way / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.8%**	**274**	**0**	**53**	**27.8**	**-**	**-**
Junction 18 - Mascalls Lane / Warley Road / Eagle Way	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.8%**	**274**	**0**	**53**	**27.8**	**-**	**-**
1/1	Warley Road N Left Ahead Right	O	D		1	41	-	506	1859	775	65.3%	87	0	1	4.4	31.5	12.2
2/1	Eagle Way Right Left Ahead	U	A		1	23	-	416	1931	463	89.8%	-	-	-	8.0	69.5	14.9
3/1+3/2	Warley Road S Ahead Right Left	U+O	B	E	1	41	41	651	1811:1663	744	87.5%	187	0	52	8.5	47.3	15.2
4/2+4/1	Mascalls Lane Left Ahead Right	U	C		1	19	-	337	1802:1803	382	88.2%	-	-	-	6.8	73.1	11.7

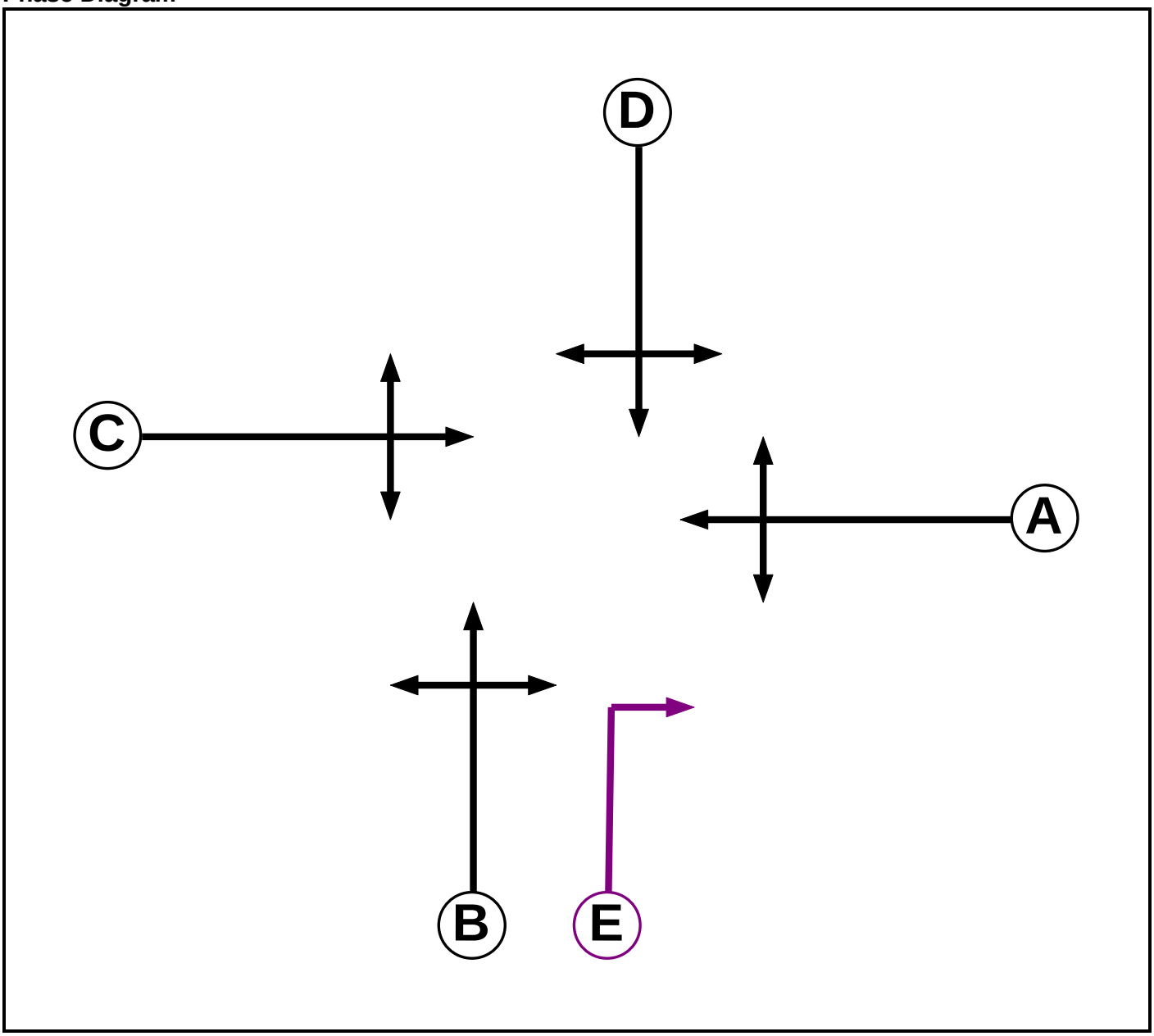
C1 PRC for Signalled Lanes (%): 0.3 Total Delay for Signalled Lanes (pcuHr): 27.85 Cycle Time (s): 100
PRC Over All Lanes (%): 0.3 Total Delay Over All Lanes(pcuHr): 27.85

Scenario 3: '2033 Reference Case (AM)' (FG3: '2033 Reference Case (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

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

Lane Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Warley Road N)	O	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	9.00
											Arm 7 Ahead	Inf
											Arm 8 Right	9.00
2/1 (Eagle Way)	U	A	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	17.00
											Arm 8 Ahead	Inf
3/1 (Warley Road S)	U	B	2	3	60.0	Geom	-	2.10	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	6.00
3/2 (Warley Road S)	O	B E	2	3	4.7	Geom	-	2.40	0.00	Y	Arm 6 Right	13.00
4/1 (Mascalls Lane)	U	C	2	3	4.1	Geom	-	2.40	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
4/2 (Mascalls Lane)	U	C	2	3	60.0	Geom	-	2.40	0.00	N	Arm 7 Right	14.00
5/1 (Warley Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Eagle Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Warley Road S Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Mascalls Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

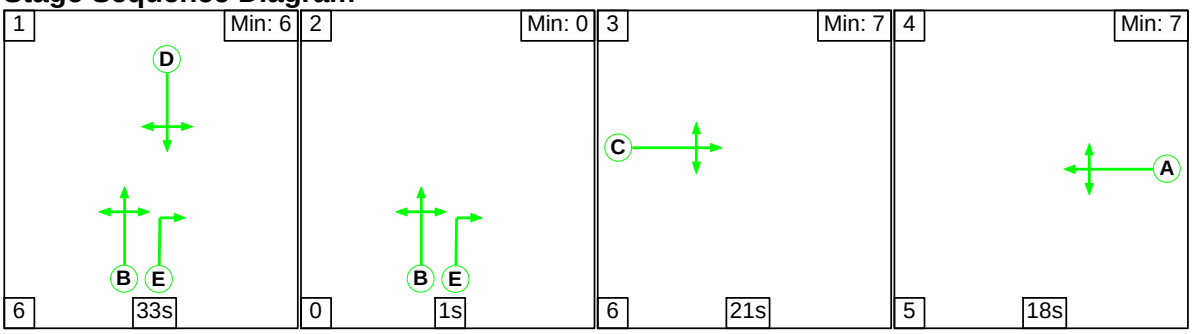
Lane Saturation Flows

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Warley Road N)	3.20	0.00	Y	Arm 6 Left	9.00	5.7 %	1863	1863
				Arm 7 Ahead	Inf	76.8 %		
				Arm 8 Right	9.00	17.5 %		
2/1 (Eagle Way)	4.00	0.00	Y	Arm 5 Right	15.00	9.2 %	1923	1923
				Arm 7 Left	17.00	43.8 %		
				Arm 8 Ahead	Inf	46.9 %		
3/1 (Warley Road S)	2.10	0.00	Y	Arm 5 Ahead	Inf	96.9 %	1811	1811
				Arm 8 Left	6.00	3.1 %		
3/2 (Warley Road S)	2.40	0.00	Y	Arm 6 Right	13.00	100.0 %	1663	1663
4/1 (Mascalls Lane)	2.40	0.00	Y	Arm 5 Left	15.00	27.1 %	1806	1806
				Arm 6 Ahead	Inf	72.9 %		
4/2 (Mascalls Lane)	2.40	0.00	N	Arm 7 Right	14.00	100.0 %	1802	1802
5/1 (Warley Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Eagle Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Warley Road S Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Mascalls Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

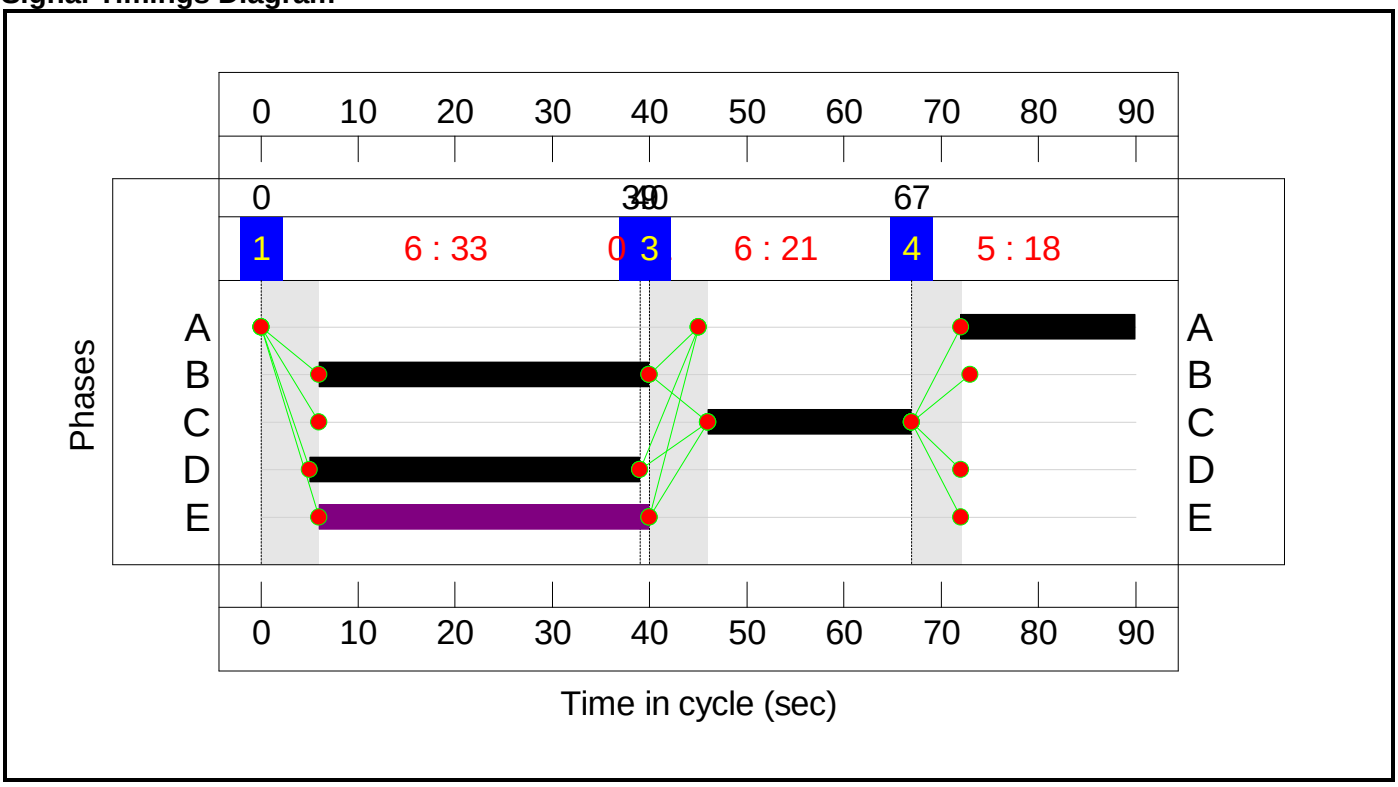
Lane Connector Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	6/1	Internal	5	35
1/1	7/1	Internal	5	35
1/1	8/1	Internal	5	35
2/1	5/1	Internal	5	35
2/1	7/1	Internal	5	35
2/1	8/1	Internal	5	35
3/1	5/1	Internal	5	35
3/1	8/1	Internal	5	35
3/2	6/1	Internal	5	35
4/1	5/1	Internal	5	35
4/1	6/1	Internal	5	35
4/2	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



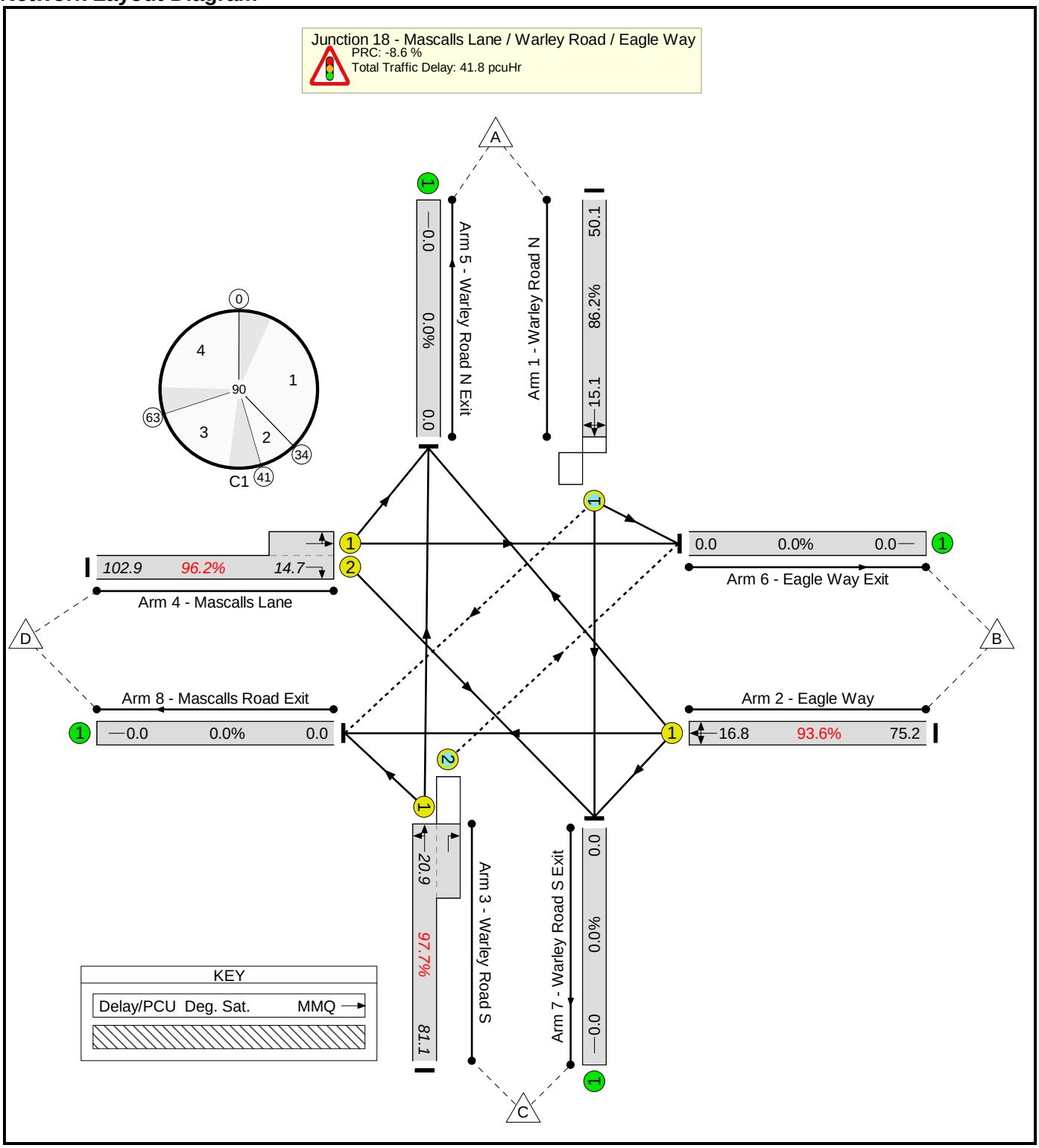
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J18 - Warley Road / Eagle Way / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.3%**	**187**	**0**	**90**	**106.1**	**-**	**-**
Junction 18 - Mascalls Lane / Warley Road / Eagle Way	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.3%**	**187**	**0**	**90**	**106.1**	**-**	**-**
1/1	Warley Road N Left Ahead Right	O	D		1	34	-	487	1863	460	105.9%	0	0	80	23.7	175.1	29.8
2/1	Eagle Way Right Left Ahead	U	A		1	18	-	422	1923	406	103.9%	-	-	-	20.0	170.9	26.0
3/1+3/2	Warley Road S Ahead Right Left	U+O	B	E	1	34	34	835	1811:1663	771	108.3%	187	0	10	46.9	202.4	59.2
4/2+4/1	Mascalls Lane Left Ahead Right	U	C		1	21	-	462	1802:1806	461	100.3%	-	-	-	15.4	120.1	22.2

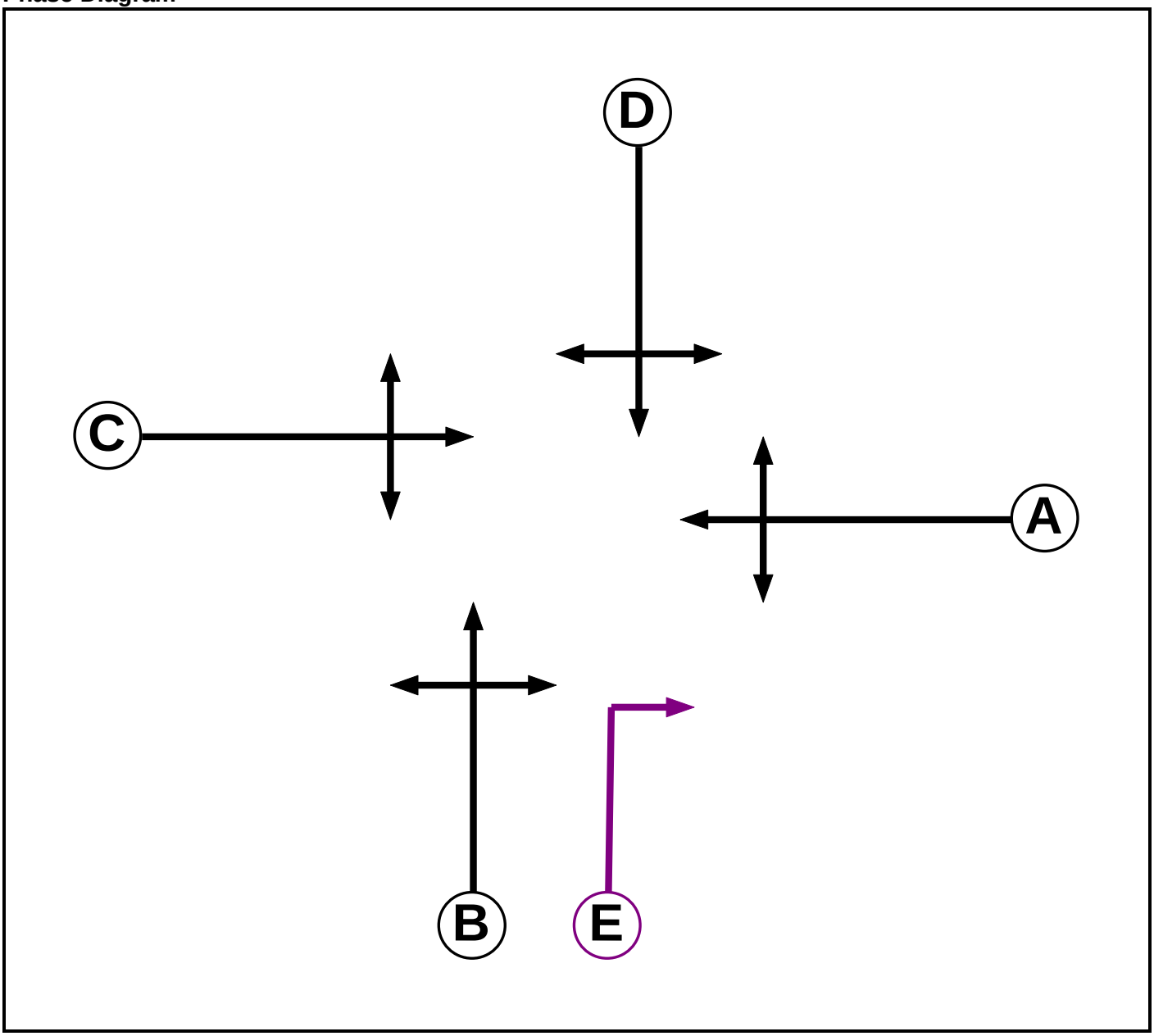
C1 PRC for Signalled Lanes (%): -20.3 Total Delay for Signalled Lanes (pcuHr): 106.09 Cycle Time (s): 90
PRC Over All Lanes (%): -20.3 Total Delay Over All Lanes(pcuHr): 106.09

Scenario 4: '2033 Reference Case (PM)' (FG4: '2033 Reference Case (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

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

Lane Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Warley Road N)	O	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	9.00
											Arm 7 Ahead	Inf
											Arm 8 Right	9.00
2/1 (Eagle Way)	U	A	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	17.00
											Arm 8 Ahead	Inf
3/1 (Warley Road S)	U	B	2	3	60.0	Geom	-	2.10	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	6.00
3/2 (Warley Road S)	O	B E	2	3	4.7	Geom	-	2.40	0.00	Y	Arm 6 Right	13.00
4/1 (Mascalls Lane)	U	C	2	3	4.1	Geom	-	2.40	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
4/2 (Mascalls Lane)	U	C	2	3	60.0	Geom	-	2.40	0.00	N	Arm 7 Right	14.00
5/1 (Warley Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Eagle Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Warley Road S Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Mascalls Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

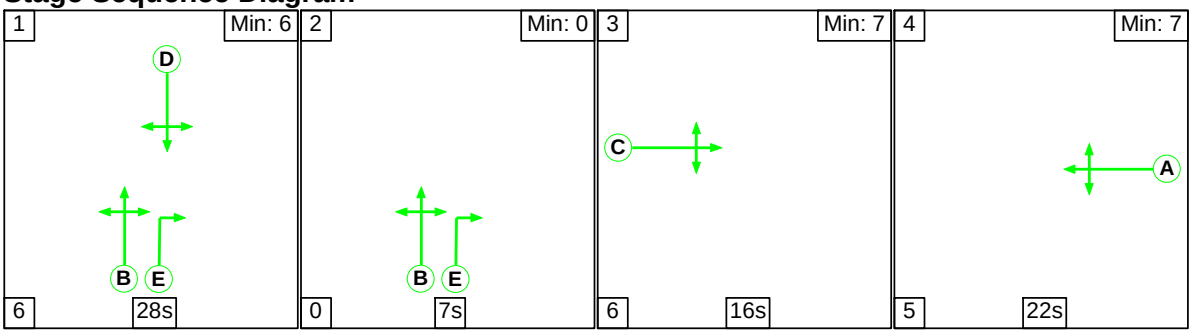
Lane Saturation Flows

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Warley Road N)	3.20	0.00	Y	Arm 6 Left	9.00	7.3 %	1854	1854
				Arm 7 Ahead	Inf	73.8 %		
				Arm 8 Right	9.00	19.0 %		
2/1 (Eagle Way)	4.00	0.00	Y	Arm 5 Right	15.00	5.8 %	1939	1939
				Arm 7 Left	17.00	37.7 %		
				Arm 8 Ahead	Inf	56.5 %		
3/1 (Warley Road S)	2.10	0.00	Y	Arm 5 Ahead	Inf	96.9 %	1811	1811
				Arm 8 Left	6.00	3.1 %		
3/2 (Warley Road S)	2.40	0.00	Y	Arm 6 Right	13.00	100.0 %	1663	1663
4/1 (Mascalls Lane)	2.40	0.00	Y	Arm 5 Left	15.00	28.4 %	1804	1804
				Arm 6 Ahead	Inf	71.6 %		
4/2 (Mascalls Lane)	2.40	0.00	N	Arm 7 Right	14.00	100.0 %	1802	1802
5/1 (Warley Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Eagle Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Warley Road S Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Mascalls Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

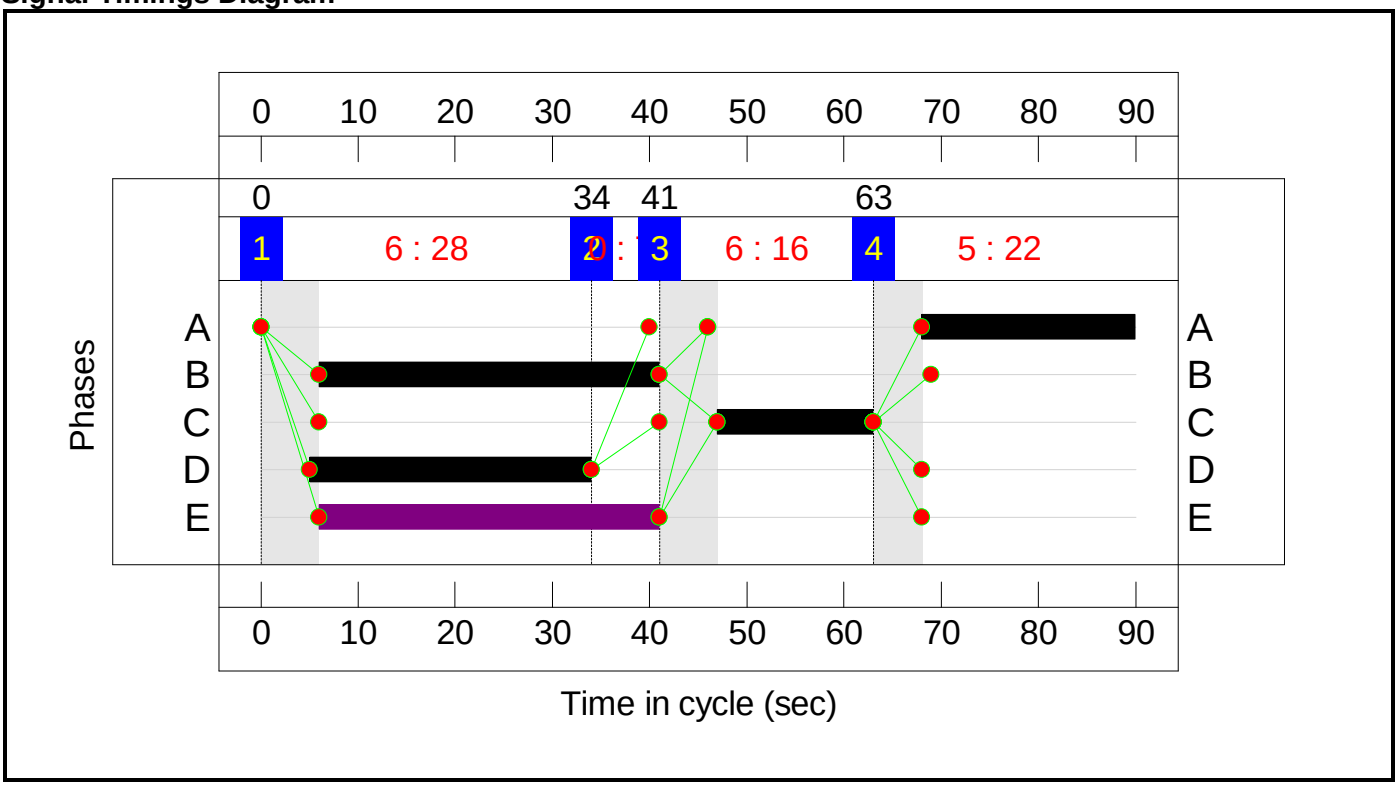
Lane Connector Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	6/1	Internal	5	35
1/1	7/1	Internal	5	35
1/1	8/1	Internal	5	35
2/1	5/1	Internal	5	35
2/1	7/1	Internal	5	35
2/1	8/1	Internal	5	35
3/1	5/1	Internal	5	35
3/1	8/1	Internal	5	35
3/2	6/1	Internal	5	35
4/1	5/1	Internal	5	35
4/1	6/1	Internal	5	35
4/2	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



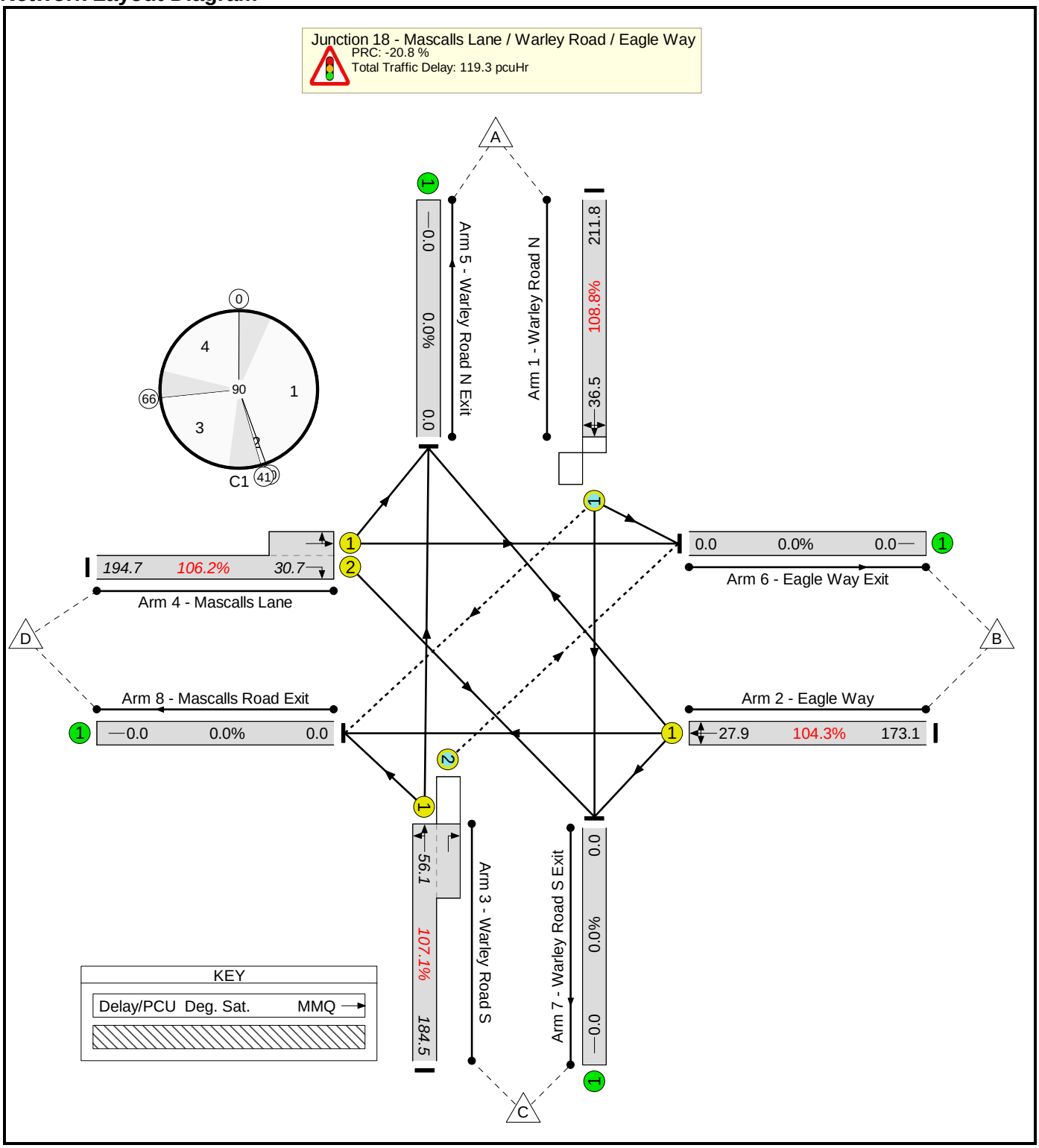
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J18 - Warley Road / Eagle Way / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**97.7%**	**165**	**92**	**81**	**41.8**	**-**	**-**
Junction 18 - Mascalls Lane / Warley Road / Eagle Way	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**97.7%**	**165**	**92**	**81**	**41.8**	**-**	**-**
1/1	Warley Road N Left Ahead Right	O	D		1	29	-	522	1854	606	86.2%	98	0	1	7.3	50.1	15.1
2/1	Eagle Way Right Left Ahead	U	A		1	22	-	464	1939	496	93.6%	-	-	-	9.7	75.2	16.8
3/1+3/2	Warley Road S Ahead Right Left	U+O	B	E	1	35	35	661	1811:1663	676	97.7%	67	92	80	14.9	81.1	20.9
4/2+4/1	Mascalls Lane Left Ahead Right	U	C		1	16	-	350	1802:1804	364	96.2%	-	-	-	10.0	102.9	14.7

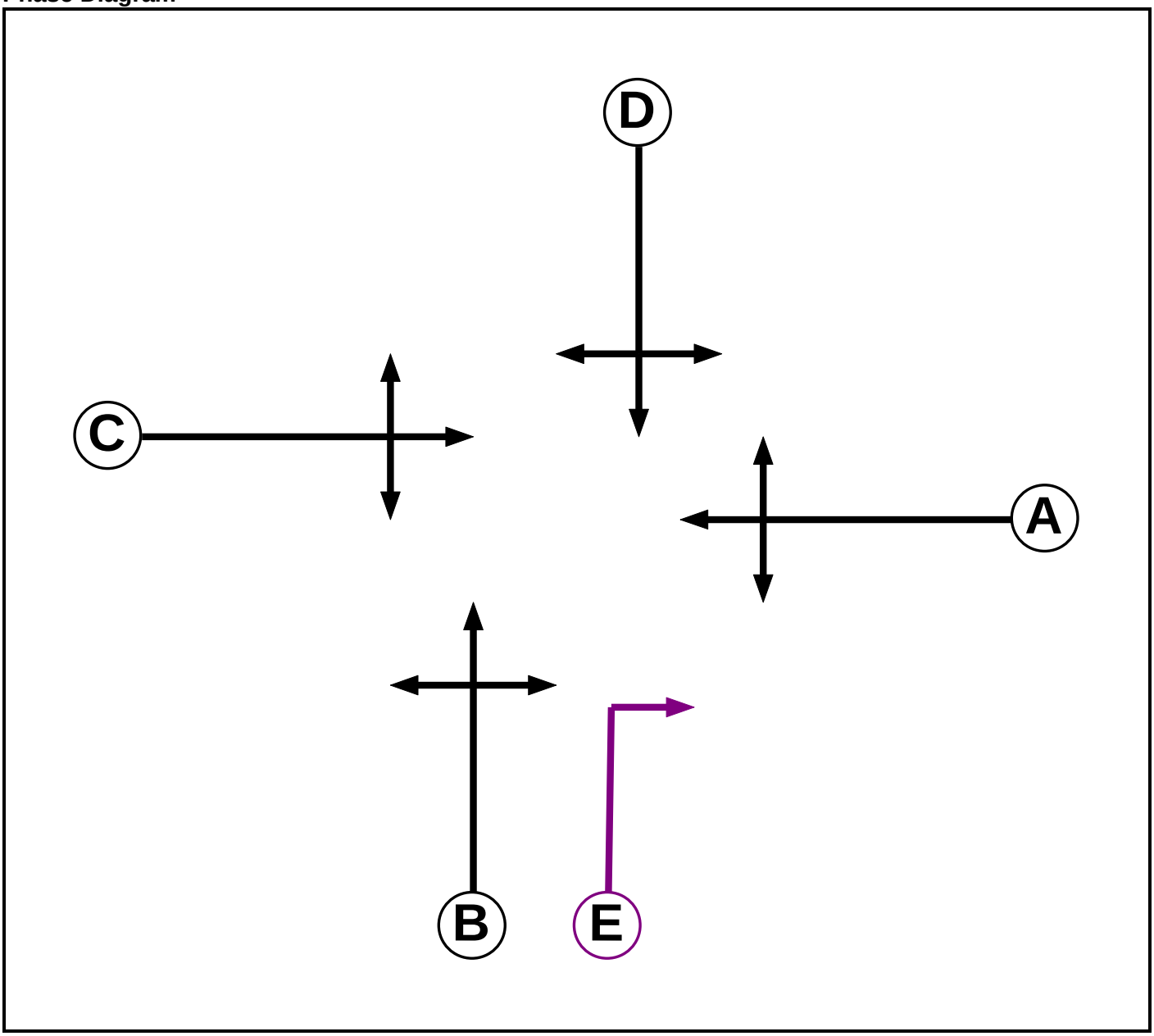
C1 PRC for Signalled Lanes (%): -8.6 Total Delay for Signalled Lanes (pcuHr): 41.85 Cycle Time (s): 90
PRC Over All Lanes (%): -8.6 Total Delay Over All Lanes(pcuHr): 41.85

Scenario 5: '2033 Local Plan Growth (AM)' (FG5: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

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

Lane Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Warley Road N)	O	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	9.00
											Arm 7 Ahead	Inf
											Arm 8 Right	9.00
2/1 (Eagle Way)	U	A	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	17.00
											Arm 8 Ahead	Inf
3/1 (Warley Road S)	U	B	2	3	60.0	Geom	-	2.10	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	6.00
3/2 (Warley Road S)	O	B E	2	3	4.7	Geom	-	2.40	0.00	Y	Arm 6 Right	13.00
4/1 (Mascalls Lane)	U	C	2	3	4.1	Geom	-	2.40	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
4/2 (Mascalls Lane)	U	C	2	3	60.0	Geom	-	2.40	0.00	N	Arm 7 Right	14.00
5/1 (Warley Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Eagle Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Warley Road S Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Mascalls Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

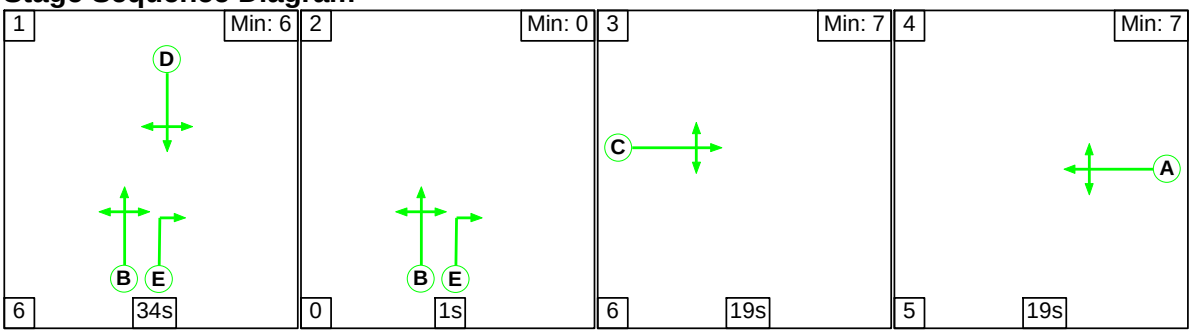
Lane Saturation Flows

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Warley Road N)	3.20	0.00	Y	Arm 6 Left	9.00	5.6 %	1865	1865
				Arm 7 Ahead	Inf	77.5 %		
				Arm 8 Right	9.00	16.9 %		
2/1 (Eagle Way)	4.00	0.00	Y	Arm 5 Right	15.00	8.7 %	1928	1928
				Arm 7 Left	17.00	41.4 %		
				Arm 8 Ahead	Inf	49.9 %		
3/1 (Warley Road S)	2.10	0.00	Y	Arm 5 Ahead	Inf	97.0 %	1811	1811
				Arm 8 Left	6.00	3.0 %		
3/2 (Warley Road S)	2.40	0.00	Y	Arm 6 Right	13.00	100.0 %	1663	1663
4/1 (Mascalls Lane)	2.40	0.00	Y	Arm 5 Left	15.00	31.4 %	1798	1798
				Arm 6 Ahead	Inf	68.6 %		
4/2 (Mascalls Lane)	2.40	0.00	N	Arm 7 Right	14.00	100.0 %	1802	1802
5/1 (Warley Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Eagle Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Warley Road S Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Mascalls Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

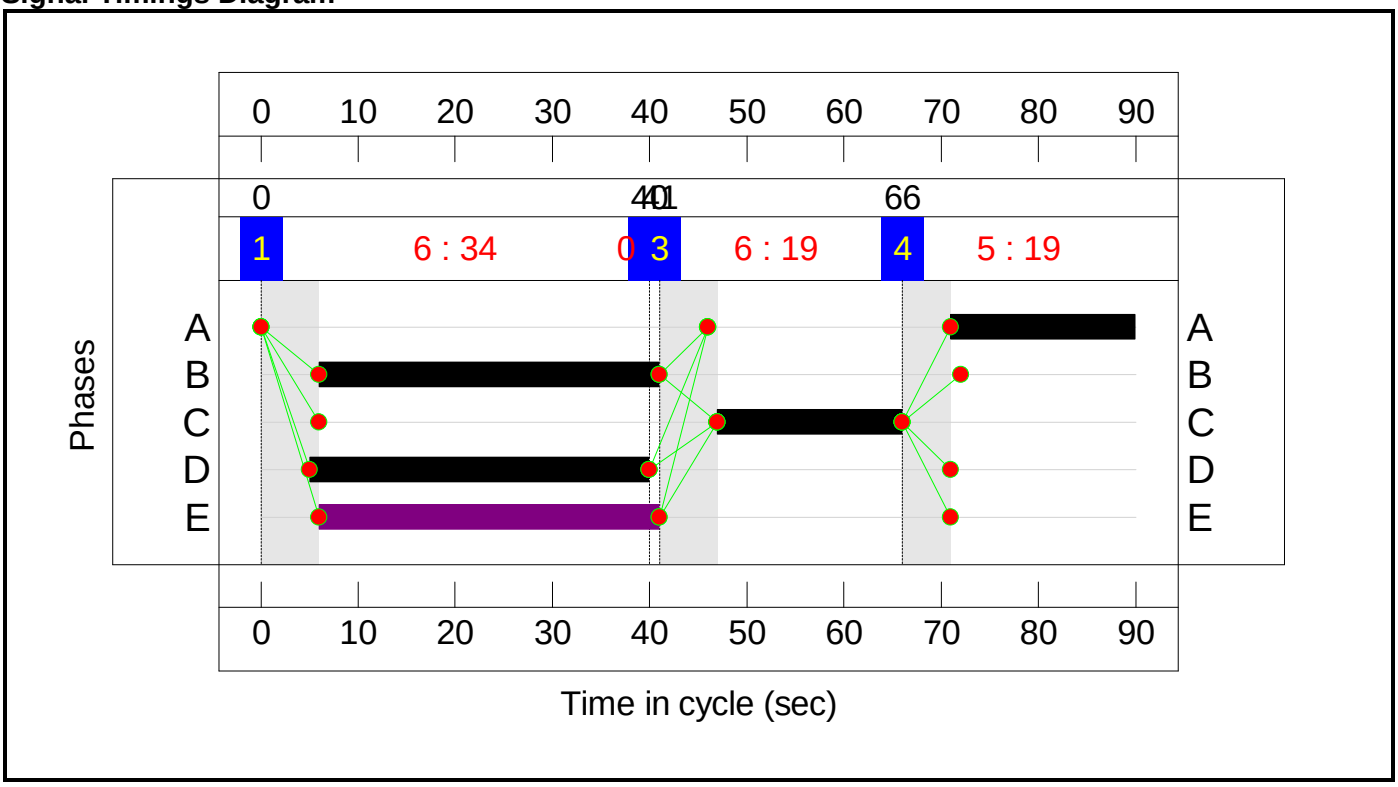
Lane Connector Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	6/1	Internal	5	35
1/1	7/1	Internal	5	35
1/1	8/1	Internal	5	35
2/1	5/1	Internal	5	35
2/1	7/1	Internal	5	35
2/1	8/1	Internal	5	35
3/1	5/1	Internal	5	35
3/1	8/1	Internal	5	35
3/2	6/1	Internal	5	35
4/1	5/1	Internal	5	35
4/1	6/1	Internal	5	35
4/2	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



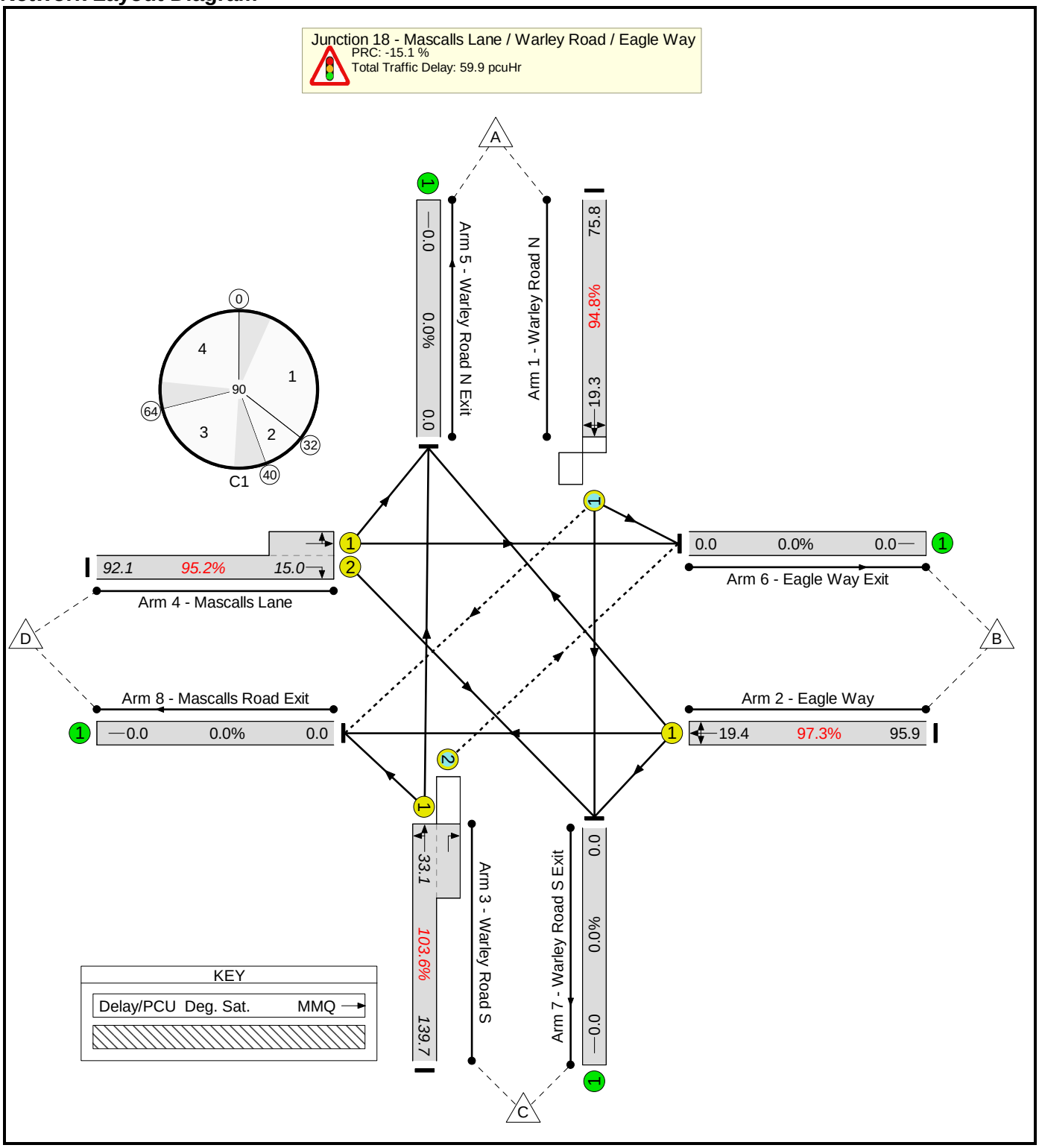
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J18 - Warley Road / Eagle Way / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**189**	**0**	**90**	**119.3**	**-**	**-**
Junction 18 - Mascalls Lane / Warley Road / Eagle Way	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**189**	**0**	**90**	**119.3**	**-**	**-**
1/1	Warley Road N Left Ahead Right	O	D		1	35	-	515	1865	474	108.8%	0	0	80	30.3	211.8	36.5
2/1	Eagle Way Right Left Ahead	U	A		1	19	-	447	1928	428	104.3%	-	-	-	21.5	173.1	27.9
3/1+3/2	Warley Road S Ahead Right Left	U+O	B	E	1	35	35	846	1811:1663	790	107.1%	189	0	10	43.4	184.5	56.1
4/2+4/1	Mascalls Lane Left Ahead Right	U	C		1	19	-	447	1802:1798	421	106.2%	-	-	-	24.2	194.7	30.7

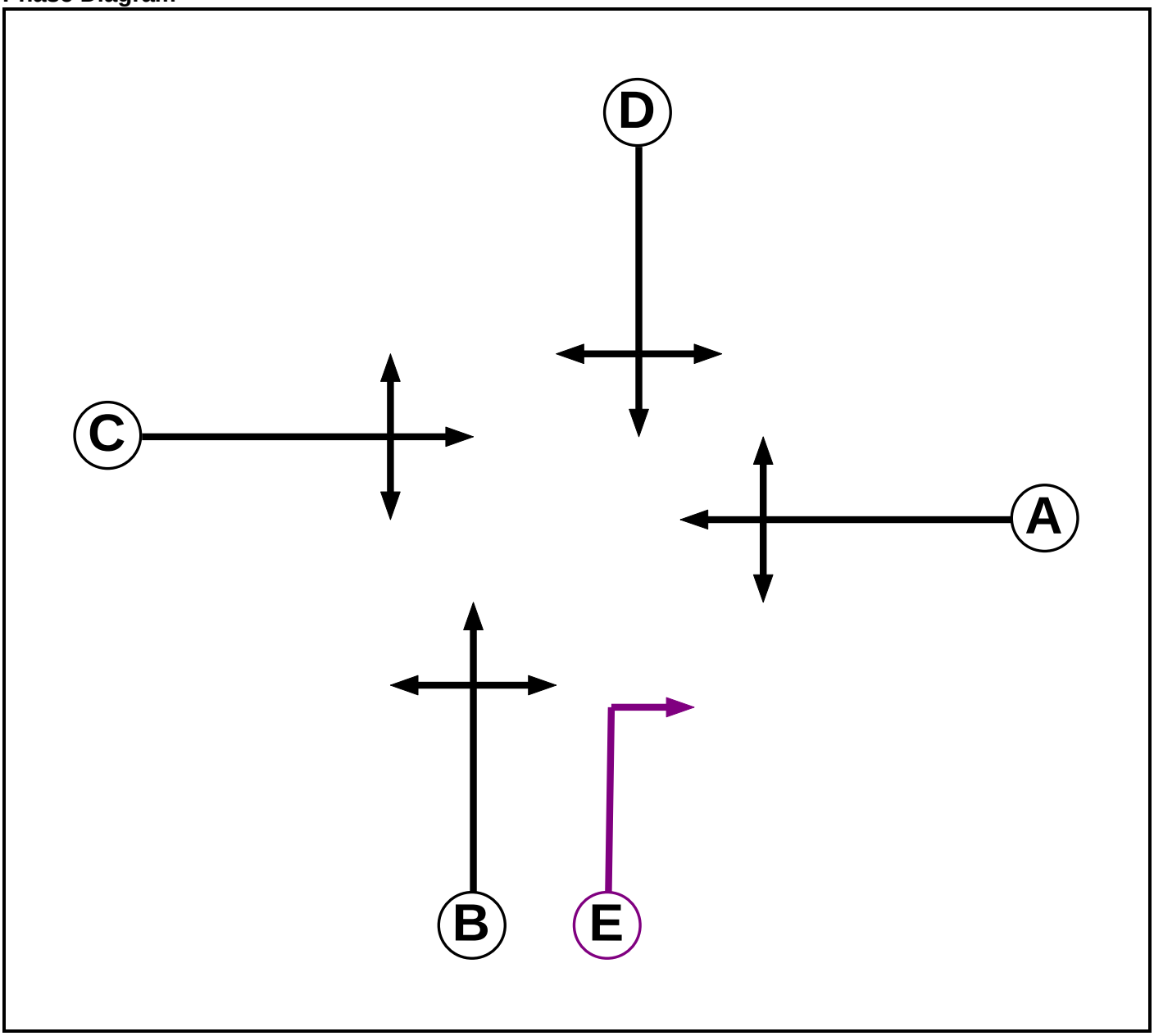
C1 PRC for Signalled Lanes (%): -20.8 Total Delay for Signalled Lanes (pcuHr): 119.33 Cycle Time (s): 90
PRC Over All Lanes (%): -20.8 Total Delay Over All Lanes(pcuHr): 119.33

Scenario 6: '2033 Local Plan Growth (PM)' (FG6: '2033 Local Plan Growth (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

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

Lane Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Warley Road N)	O	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Left	9.00
											Arm 7 Ahead	Inf
											Arm 8 Right	9.00
2/1 (Eagle Way)	U	A	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	17.00
											Arm 8 Ahead	Inf
3/1 (Warley Road S)	U	B	2	3	60.0	Geom	-	2.10	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	6.00
3/2 (Warley Road S)	O	B E	2	3	4.7	Geom	-	2.40	0.00	Y	Arm 6 Right	13.00
4/1 (Mascalls Lane)	U	C	2	3	4.1	Geom	-	2.40	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
4/2 (Mascalls Lane)	U	C	2	3	60.0	Geom	-	2.40	0.00	N	Arm 7 Right	14.00
5/1 (Warley Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Eagle Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Warley Road S Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Mascalls Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

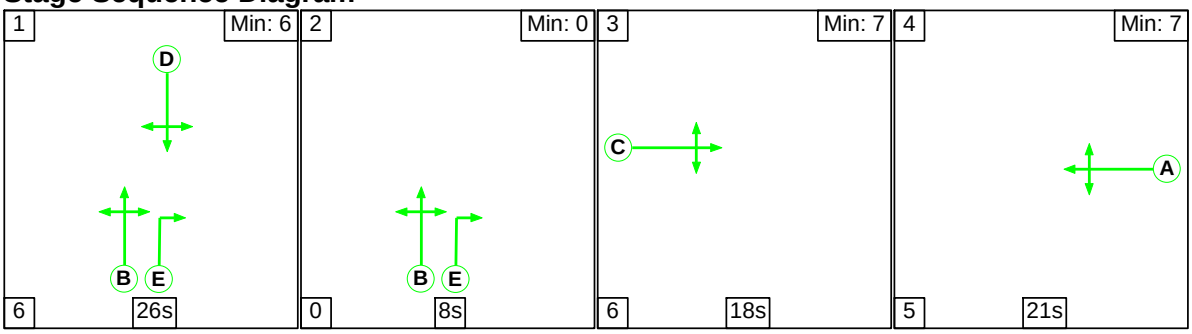
Lane Saturation Flows

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Warley Road N)	3.20	0.00	Y	Arm 6 Left	9.00	7.3 %	1850	1850
				Arm 7 Ahead	Inf	72.6 %		
				Arm 8 Right	9.00	20.1 %		
2/1 (Eagle Way)	4.00	0.00	Y	Arm 5 Right	15.00	6.1 %	1939	1939
				Arm 7 Left	17.00	37.7 %		
				Arm 8 Ahead	Inf	56.2 %		
3/1 (Warley Road S)	2.10	0.00	Y	Arm 5 Ahead	Inf	96.9 %	1811	1811
				Arm 8 Left	6.00	3.1 %		
3/2 (Warley Road S)	2.40	0.00	Y	Arm 6 Right	13.00	100.0 %	1663	1663
4/1 (Mascalls Lane)	2.40	0.00	Y	Arm 5 Left	15.00	26.5 %	1807	1807
				Arm 6 Ahead	Inf	73.5 %		
4/2 (Mascalls Lane)	2.40	0.00	N	Arm 7 Right	14.00	100.0 %	1802	1802
5/1 (Warley Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Eagle Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Warley Road S Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Mascalls Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

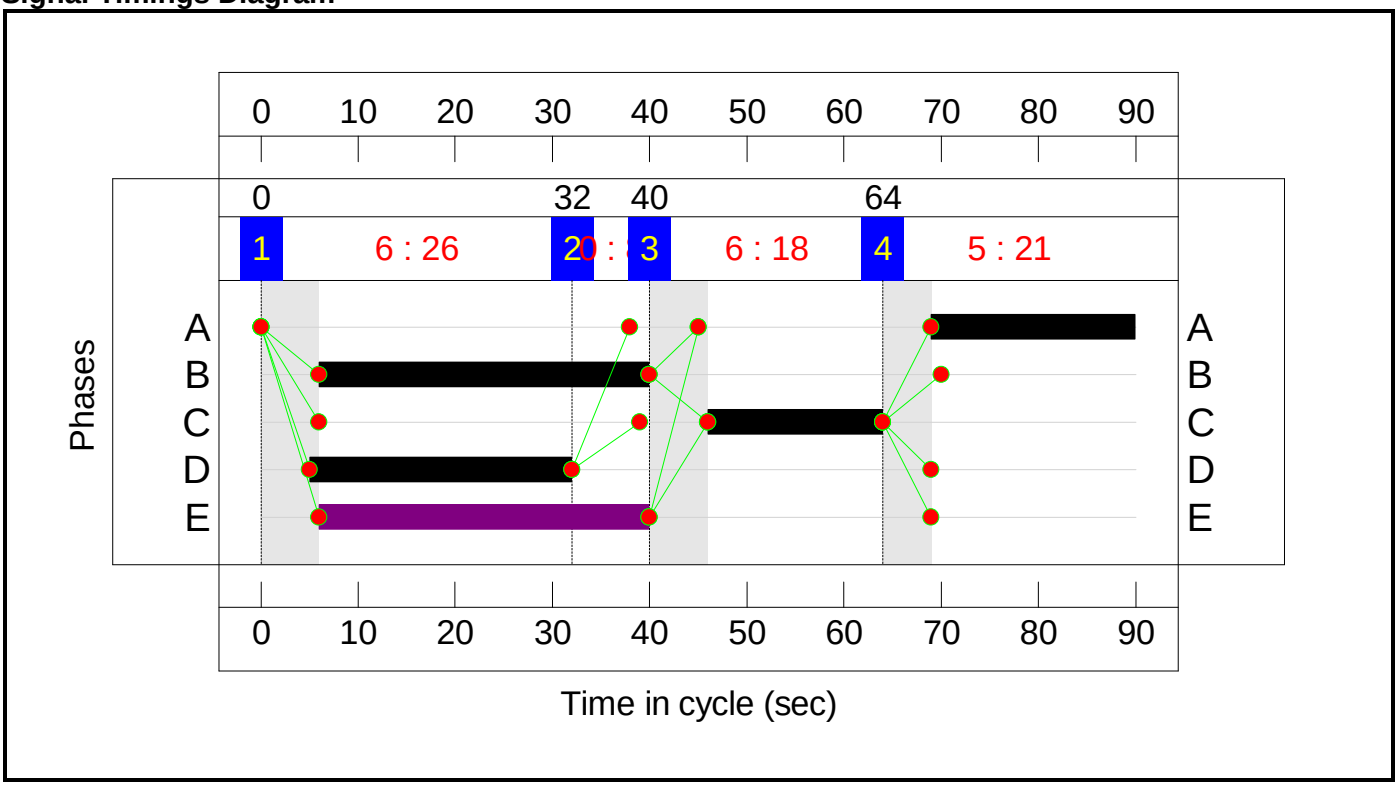
Lane Connector Input Data

Junction: Junction 18 - Mascalls Lane / Warley Road / Eagle Way				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	6/1	Internal	5	35
1/1	7/1	Internal	5	35
1/1	8/1	Internal	5	35
2/1	5/1	Internal	5	35
2/1	7/1	Internal	5	35
2/1	8/1	Internal	5	35
3/1	5/1	Internal	5	35
3/1	8/1	Internal	5	35
3/2	6/1	Internal	5	35
4/1	5/1	Internal	5	35
4/1	6/1	Internal	5	35
4/2	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J18 - Warley Road / Eagle Way / Mascalls Lane	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**103.6%**	**139**	**111**	**83**	**59.9**	**-**	**-**
Junction 18 - Mascalls Lane / Warley Road / Eagle Way	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**103.6%**	**139**	**111**	**83**	**59.9**	**-**	**-**
1/1	Warley Road N Left Ahead Right	O	D		1	27	-	532	1850	561	94.8%	104	0	3	11.2	75.8	19.3
2/1	Eagle Way Right Left Ahead	U	A		1	21	-	461	1939	474	97.3%	-	-	-	12.3	95.9	19.4
3/1+3/2	Warley Road S Ahead Right Left	U+O	B	E	1	34	34	686	1811:1663	662	103.6%	35	111	80	26.6	139.7	33.1
4/2+4/1	Mascalls Lane Left Ahead Right	U	C		1	18	-	383	1802:1807	402	95.2%	-	-	-	9.8	92.1	15.0

C1 PRC for Signalled Lanes (%): -15.1 Total Delay for Signalled Lanes (pcuHr): 59.89 Cycle Time (s): 90
PRC Over All Lanes (%): -15.1 Total Delay Over All Lanes(pcuHr): 59.89

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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Filename: 28085_19_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 17:53:31

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Stream B-C	26.3	587.80	1.27	F
Stream B-A	42.2	489.70	1.30	F
Stream C-AB	1.1	8.46	0.36	A
	A1 - 2033 Reference Case			
Stream B-C	49.4	1001.76	1.43	F
Stream B-A	73.1	887.68	1.51	F
Stream C-AB	1.3	8.51	0.38	A
	A1 - 2033 Local Plan Growth			
Stream B-C	107.9	1907.50	1.79	F
Stream B-A	120.4	1673.30	1.98	F
Stream C-AB	2.0	8.79	0.47	A

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

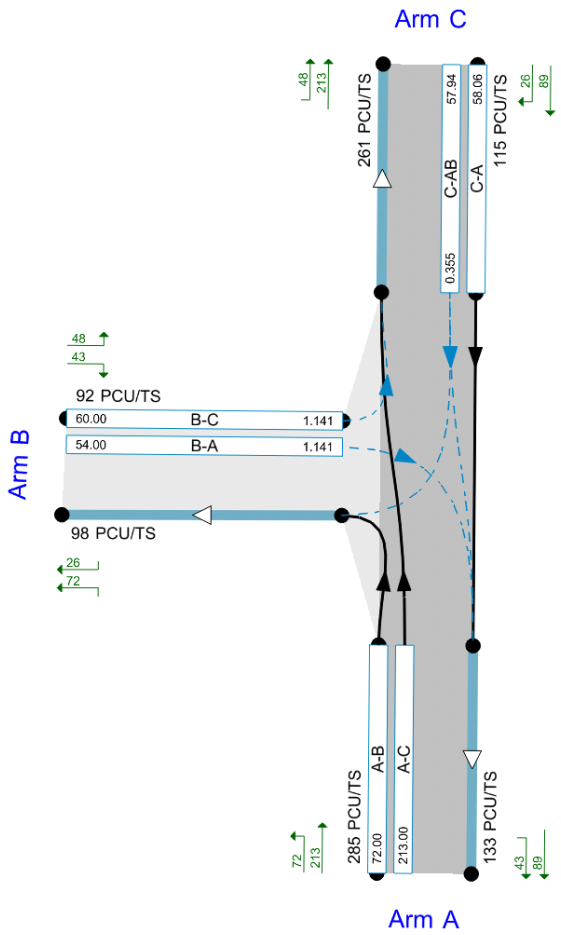
File summary

File Description

Title	Warley Street - A127 Eastbound
Location	Brentwood
Site number	19
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Streams (upstream end) show Total Demand (PCU/TS); Streams (downstream end) show RFC ()

Time Segment: 08:00-08:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth with Peak Spreading	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	D1,D3,D5	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Eastbound	T-Junction	Two-way	128.30	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Warley Street S		Major
B	A127 Slip Road		Minor
C	Warley Street N		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.05			102.3	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	7.85	4.71	3.47	3.40		2.00	37	32

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	134.547	0.094	0.236	0.149	0.338
1	B-C	175.048	0.102	0.259	-	-
1	C-B	158.306	0.234	0.234	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	72.00	213.00
	B	54.00	0.00	60.00
	C	90.00	26.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.25	0.75
	B	0.47	0.00	0.53
	C	0.78	0.22	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	62.00	196.00
	B	55.00	0.00	52.00
	C	101.00	25.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.24	0.76
	B	0.51	0.00	0.49
	C	0.80	0.20	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	78.00	172.00
	B	75.00	0.00	55.00
	C	117.00	26.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.31	0.69
	B	0.58	0.00	0.42
	C	0.82	0.18	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	52.00	140.00
	B	81.00	0.00	37.00
	C	96.00	27.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.27	0.73
	B	0.69	0.00	0.31
	C	0.78	0.22	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	6	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.060	1.000	1.000
	C	1.000	1.000	1.000

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	2
	C	0	4	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.020
	C	1.000	1.040	1.000

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	4	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.040	1.000	1.000
	C	1.010	1.000	1.000

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	1
	B	7	0	0
	C	2	4	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.040	1.010
	B	1.070	1.000	1.000
	C	1.020	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A	285.00	285.00
	B	114.00	114.00
	C	116.00	116.00
08:15-08:30	A	258.00	258.00
	B	107.00	107.00
	C	126.00	126.00
08:30-08:45	A	250.00	250.00
	B	130.00	130.00
	C	143.00	143.00
08:45-09:00	A	192.00	192.00
	B	118.00	118.00
	C	123.00	123.00

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.27	587.80	26.3	F	51.00	204.00
B-A	1.30	489.70	42.2	F	66.25	265.00
C-AB	0.36	8.46	1.1	A	60.33	241.31
C-A					66.67	266.69
A-B					66.00	264.00
A-C					180.25	721.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	60.00	60.00	52.59	1.141	48.41	0.0	11.6	137.615	F
B-A	54.00	54.00	47.33	1.141	43.13	0.0	10.9	143.589	F
C-AB	57.94	57.94	163.26	0.355	56.97	0.0	1.0	8.459	A
C-A	58.06	58.06			58.06				
A-B	72.00	72.00			72.00				
A-C	213.00	213.00			213.00				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	52.00	52.00	50.56	1.029	49.48	11.6	14.1	265.790	F
B-A	55.00	55.00	52.37	1.050	48.95	10.9	16.9	277.681	F
C-AB	58.89	58.89	177.35	0.332	58.91	1.0	1.0	7.691	A
C-A	67.11	67.11			67.11				
A-B	62.00	62.00			62.00				
A-C	196.00	196.00			196.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	55.00	55.00	43.34	1.269	42.85	14.1	26.3	467.493	F
B-A	75.00	75.00	57.65	1.301	57.61	16.9	34.3	403.255	F
C-AB	67.92	67.92	191.26	0.355	67.79	1.0	1.1	7.441	A
C-A	75.08	75.08			75.08				
A-B	78.00	78.00			78.00				
A-C	172.00	172.00			172.00				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	37.00	37.00	40.35	0.917	38.87	26.3	24.4	587.801	F
B-A	81.00	81.00	73.55	1.101	73.16	34.3	42.2	489.703	F
C-AB	56.57	56.57	185.67	0.305	56.87	1.1	0.8	7.117	A
C-A	66.43	66.43			66.43				
A-B	52.00	52.00			52.00				
A-C	140.00	140.00			140.00				

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Eastbound	T-Junction	Two-way	231.72	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	77.00	224.00
	B	57.00	0.00	70.00
	C	101.00	26.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.26	0.74
	B	0.45	0.00	0.55
	C	0.80	0.20	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	66.00	206.00
	B	58.00	0.00	61.00
	C	111.00	25.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.24	0.76
	B	0.49	0.00	0.51
	C	0.82	0.18	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	82.00	183.00
	B	78.00	0.00	65.00
	C	129.00	26.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.31	0.69
	B	0.55	0.00	0.45
	C	0.83	0.17	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	55.00	149.00
	B	83.00	0.00	45.00
	C	105.00	27.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.27	0.73
	B	0.65	0.00	0.35
	C	0.80	0.20	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	6	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.060	1.000	1.000
	C	1.000	1.000	1.000

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	2
	C	0	4	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.020
	C	1.000	1.040	1.000

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	4	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.040	1.000	1.000
	C	1.010	1.000	1.000

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	1
	B	7	0	0
	C	2	4	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.040	1.010
	B	1.070	1.000	1.000
	C	1.020	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A	301.00	301.00
	B	127.00	127.00
	C	127.00	127.00
08:15-08:30	A	272.00	272.00
	B	119.00	119.00
	C	136.00	136.00
08:30-08:45	A	265.00	265.00
	B	143.00	143.00
	C	155.00	155.00
08:45-09:00	A	204.00	204.00
	B	128.00	128.00
	C	132.00	132.00

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.43	1001.76	49.4	F	60.25	241.00
B-A	1.51	887.68	73.1	F	69.00	276.00
C-AB	0.38	8.51	1.3	A	66.53	266.14
C-A					70.97	283.86
A-B					70.00	280.00
A-C					190.50	762.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	70.00	70.00	52.15	1.342	49.70	0.0	20.3	209.269	F
B-A	57.00	57.00	42.47	1.342	39.98	0.0	17.0	216.021	F
C-AB	64.55	64.55	169.12	0.382	63.39	0.0	1.2	8.511	A
C-A	62.45	62.45			62.45				
A-B	77.00	77.00			77.00				
A-C	224.00	224.00			224.00				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	61.00	61.00	51.41	1.187	51.64	20.3	29.7	483.038	F
B-A	58.00	58.00	47.44	1.223	45.43	17.0	29.6	475.703	F
C-AB	64.74	64.74	182.83	0.354	64.79	1.2	1.1	7.726	A
C-A	71.26	71.26			71.26				
A-B	66.00	66.00			66.00				
A-C	206.00	206.00			206.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	65.00	65.00	45.36	1.433	45.42	29.7	49.2	810.848	F
B-A	78.00	78.00	51.55	1.513	51.16	29.6	56.4	699.652	F
C-AB	75.76	75.76	198.20	0.382	75.60	1.1	1.3	7.502	A
C-A	79.24	79.24			79.24				
A-B	82.00	82.00			82.00				
A-C	183.00	183.00			183.00				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	45.00	45.00	45.37	0.992	44.80	49.2	49.4	1001.761	F
B-A	83.00	83.00	67.13	1.236	66.35	56.4	73.1	887.685	F
C-AB	61.08	61.08	190.38	0.321	61.48	1.3	0.9	7.124	A
C-A	70.92	70.92			70.92				
A-B	55.00	55.00			55.00				
A-C	149.00	149.00			149.00				

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Eastbound	T-Junction	Two-way	444.55	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	85.00	241.00
	B	61.00	0.00	86.00
	C	128.00	27.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.26	0.74
	B	0.41	0.00	0.59
	C	0.83	0.17	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	74.00	223.00
	B	61.00	0.00	76.00
	C	137.00	26.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.25	0.75
	B	0.45	0.00	0.55
	C	0.84	0.16	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	91.00	201.00
	B	82.00	0.00	81.00
	C	156.00	27.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.31	0.69
	B	0.50	0.00	0.50
	C	0.85	0.15	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	63.00	164.00
	B	86.00	0.00	58.00
	C	128.00	28.00	0.00

Proportions

		To		
		A	B	C
From	A	0.00	0.28	0.72
	B	0.60	0.00	0.40
	C	0.82	0.18	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	6	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.060	1.000	1.000
	C	1.000	1.000	1.000

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	2
	C	0	4	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.020
	C	1.000	1.040	1.000

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	4	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.010	1.000
	B	1.040	1.000	1.000
	C	1.010	1.000	1.000

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	1
	B	7	0	0
	C	2	4	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.040	1.010
	B	1.070	1.000	1.000
	C	1.020	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A	326.00	326.00
	B	147.00	147.00
	C	155.00	155.00
08:15-08:30	A	297.00	297.00
	B	137.00	137.00
	C	163.00	163.00
08:30-08:45	A	292.00	292.00
	B	163.00	163.00
	C	183.00	183.00
08:45-09:00	A	227.00	227.00
	B	144.00	144.00
	C	156.00	156.00

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.79	1907.50	107.9	F	75.25	301.00
B-A	1.98	1673.30	120.4	F	72.50	290.00
C-AB	0.47	8.79	2.0	A	87.06	348.23
C-A					77.19	308.77
A-B					78.25	313.00
A-C					207.25	829.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	86.00	86.00	49.02	1.755	47.77	0.0	38.2	376.328	F
B-A	61.00	61.00	34.77	1.755	33.48	0.0	27.5	380.640	F
C-AB	85.92	85.92	186.66	0.460	84.10	0.0	1.8	8.790	A
C-A	69.08	69.08			69.08				
A-B	85.00	85.00			85.00				
A-C	241.00	241.00			241.00				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76.00	76.00	50.06	1.518	50.24	38.2	64.0	990.734	F
B-A	61.00	61.00	38.79	1.572	38.10	27.5	50.4	907.195	F
C-AB	85.19	85.19	199.74	0.427	85.29	1.8	1.7	8.014	A
C-A	77.81	77.81			77.81				
A-B	74.00	74.00			74.00				
A-C	223.00	223.00			223.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	81.00	81.00	45.32	1.787	45.30	64.0	99.7	1589.213	F
B-A	82.00	82.00	41.39	1.981	41.37	50.4	91.1	1377.502	F
C-AB	100.37	100.37	215.71	0.465	100.09	1.7	2.0	8.001	A
C-A	82.63	82.63			82.63				
A-B	91.00	91.00			91.00				
A-C	201.00	201.00			201.00				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	58.00	58.00	49.93	1.162	49.80	99.7	107.9	1907.498	F
B-A	86.00	86.00	56.07	1.534	56.64	91.1	120.4	1673.302	F
C-AB	76.76	76.76	204.36	0.376	77.51	2.0	1.2	7.274	A
C-A	79.24	79.24			79.24				
A-B	63.00	63.00			63.00				
A-C	164.00	164.00			164.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_19_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 17:58:21

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Stream B-C	0.6	13.29	0.36	B
Stream B-A	1.5	30.25	0.61	D
Stream C-AB	1.3	7.87	0.44	A
	A1 - 2033 Reference Case			
Stream B-C	1.8	32.62	0.65	D
Stream B-A	3.5	66.31	0.81	F
Stream C-AB	2.0	8.42	0.52	A
	A1 - 2033 Local Plan Growth			
Stream B-C	10.5	166.79	1.00	F
Stream B-A	9.9	175.49	1.00	F
Stream C-AB	3.1	9.21	0.61	A

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

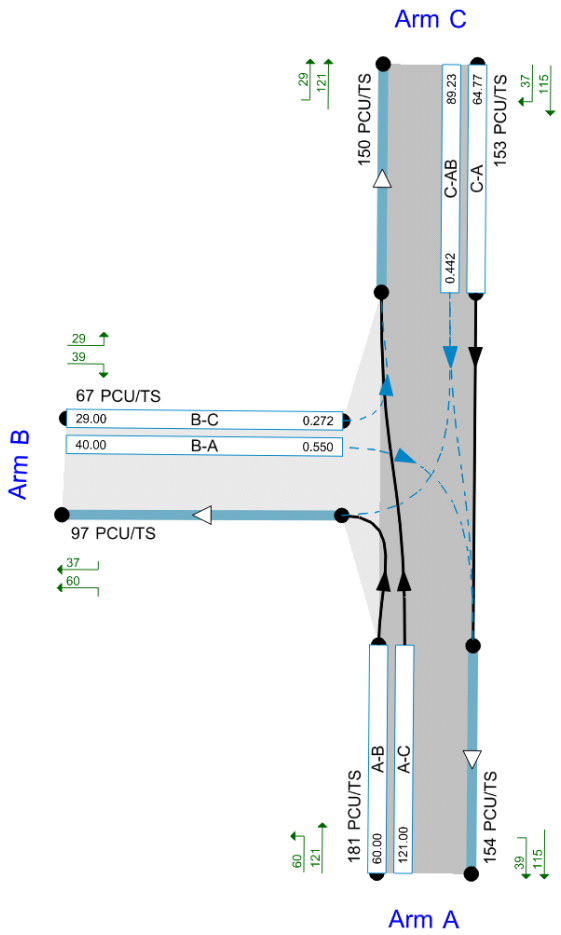
File summary

File Description

Title	Warley Street - A127 Eastbound
Location	Brentwood
Site number	19
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Streams (upstream end) show Total Demand (PCU/TS); Streams (downstream end) show RFC ()

Time Segment: 17:00-17:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Eastbound	T-Junction	Two-way	5.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Warley Street S		Major
B	A127 Slip Road		Minor
C	Warley Street N		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.05			102.3	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	7.85	4.71	3.47	3.40		2.00	37	32

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	140.161	0.097	0.246	0.155	0.352
1	B-C	167.892	0.098	0.248	-	-
1	C-B	158.306	0.234	0.234	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	60.00	121.00
	B	40.00	0.00	29.00
	C	116.00	38.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	53.00	111.00
	B	39.00	0.00	41.00
	C	120.00	37.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	51.00	108.00
	B	47.00	0.00	36.00
	C	109.00	37.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	45.00	103.00
	B	34.00	0.00	30.00
	C	136.00	30.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	0
	B	6	0	0
	C	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	0
	B	3	0	0
	C	0	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	0
	B	2	0	0
	C	0	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	3	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.36	13.29	0.6	B	34.00	136.00
B-A	0.61	30.25	1.5	D	40.00	160.00
C-AB	0.44	7.87	1.3	A	84.39	337.57
C-A					71.36	285.43
A-B					52.25	209.00
A-C					110.75	443.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	29.00	29.00	106.71	0.272	28.63	0.0	0.4	11.474	B
B-A	40.00	40.00	72.70	0.550	38.79	0.0	1.2	27.269	D
C-AB	89.23	89.23	202.04	0.442	87.89	0.0	1.3	7.871	A
C-A	64.77	64.77			64.77				
A-B	60.00	60.00			60.00				
A-C	121.00	121.00			121.00				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	41.00	41.00	112.98	0.363	40.81	0.4	0.6	12.437	B
B-A	39.00	39.00	72.10	0.541	39.00	1.2	1.2	28.787	D
C-AB	88.39	88.39	208.50	0.424	88.42	1.3	1.3	7.569	A
C-A	68.61	68.61			68.61				
A-B	53.00	53.00			53.00				
A-C	111.00	111.00			111.00				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	36.00	36.00	103.75	0.347	36.02	0.6	0.5	13.293	B
B-A	47.00	47.00	76.97	0.611	46.70	1.2	1.5	30.253	D
C-AB	81.71	81.71	201.31	0.406	81.85	1.3	1.2	7.602	A
C-A	64.29	64.29			64.29				
A-B	51.00	51.00			51.00				
A-C	108.00	108.00			108.00				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	30.00	30.00	120.23	0.250	30.20	0.5	0.3	10.018	B
B-A	34.00	34.00	76.87	0.442	34.67	1.5	0.8	22.080	C
C-AB	78.23	78.23	222.75	0.351	78.36	1.2	1.1	6.281	A
C-A	87.77	87.77			87.77				
A-B	45.00	45.00			45.00				
A-C	103.00	103.00			103.00				

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Eastbound	T-Junction	Two-way	11.67	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	68.00	138.00
	B	44.00	0.00	44.00
	C	142.00	39.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	61.00	128.00
	B	43.00	0.00	56.00
	C	145.00	38.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	59.00	124.00
	B	51.00	0.00	51.00
	C	134.00	38.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	52.00	117.00
	B	37.00	0.00	43.00
	C	157.00	30.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	0
	B	6	0	0
	C	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	0
	B	3	0	0
	C	0	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	0
	B	2	0	0
	C	0	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	3	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.65	32.62	1.8	D	48.50	194.00
B-A	0.81	66.31	3.5	F	43.75	175.00
C-AB	0.52	8.42	2.0	A	104.50	418.00
C-A					76.25	305.00
A-B					60.00	240.00
A-C					126.75	507.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	44.00	44.00	88.52	0.497	43.05	0.0	0.9	19.419	C
B-A	44.00	44.00	59.80	0.736	41.58	0.0	2.4	47.662	E
C-AB	112.51	112.51	217.34	0.518	110.52	0.0	2.0	8.420	A
C-A	68.49	68.49			68.49				
A-B	68.00	68.00			68.00				
A-C	138.00	138.00			138.00				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	56.00	56.00	91.01	0.615	55.45	0.9	1.5	24.898	C
B-A	43.00	43.00	58.83	0.731	42.80	2.4	2.6	58.705	F
C-AB	110.88	110.88	223.27	0.497	110.92	2.0	1.9	8.146	A
C-A	72.12	72.12			72.12				
A-B	61.00	61.00			61.00				
A-C	128.00	128.00			128.00				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	51.00	51.00	77.94	0.654	50.74	1.5	1.8	32.620	D
B-A	51.00	51.00	63.09	0.808	50.13	2.6	3.5	66.314	F
C-AB	102.16	102.16	216.03	0.473	102.38	1.9	1.7	8.046	A
C-A	69.84	69.84			69.84				
A-B	59.00	59.00			59.00				
A-C	124.00	124.00			124.00				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	43.00	43.00	108.37	0.397	44.09	1.8	0.7	14.223	B
B-A	37.00	37.00	66.67	0.555	39.12	3.5	1.4	35.352	E
C-AB	92.45	92.45	235.10	0.393	92.80	1.7	1.4	6.401	A
C-A	94.55	94.55			94.55				
A-B	52.00	52.00			52.00				
A-C	117.00	117.00			117.00				

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Eastbound	T-Junction	Two-way	36.25	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	73.00	141.00
	B	46.00	0.00	51.00
	C	177.00	40.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	66.00	131.00
	B	45.00	0.00	63.00
	C	180.00	39.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	64.00	128.00
	B	53.00	0.00	58.00
	C	167.00	39.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	55.00	120.00
	B	39.00	0.00	49.00
	C	186.00	31.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	0
	B	6	0	0
	C	0	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	0
	B	3	0	0
	C	0	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	0
	B	2	0	0
	C	0	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	3	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.00	166.79	10.5	F	55.25	221.00
B-A	1.00	175.49	9.9	F	45.75	183.00
C-AB	0.61	9.21	3.1	A	136.20	544.80
C-A					78.55	314.20
A-B					64.50	258.00
A-C					130.00	520.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	51.00	51.00	66.92	0.762	48.39	0.0	2.6	43.987	E
B-A	46.00	46.00	50.70	0.907	41.33	0.0	4.7	81.280	F
C-AB	147.86	147.86	242.64	0.609	144.75	0.0	3.1	9.207	A
C-A	69.14	69.14			69.14				
A-B	73.00	73.00			73.00				
A-C	141.00	141.00			141.00				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	63.00	63.00	63.95	0.985	58.06	2.6	7.5	105.439	F
B-A	45.00	45.00	48.42	0.929	43.12	4.7	6.6	140.119	F
C-AB	146.45	146.45	249.01	0.588	146.48	3.1	3.1	9.057	A
C-A	72.55	72.55			72.55				
A-B	66.00	66.00			66.00				
A-C	131.00	131.00			131.00				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	58.00	58.00	58.10	0.998	55.03	7.5	10.5	166.787	F
B-A	53.00	53.00	52.79	1.004	49.63	6.6	9.9	175.493	F
C-AB	133.03	133.03	239.97	0.554	133.47	3.1	2.6	8.700	A
C-A	72.97	72.97			72.97				
A-B	64.00	64.00			64.00				
A-C	128.00	128.00			128.00				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	49.00	49.00	81.03	0.605	57.84	10.5	1.7	49.994	E
B-A	39.00	39.00	56.63	0.689	46.20	9.9	2.7	103.532	F
C-AB	117.46	117.46	256.21	0.458	118.17	2.6	1.9	6.652	A
C-A	99.54	99.54			99.54				
A-B	55.00	55.00			55.00				
A-C	120.00	120.00			120.00				

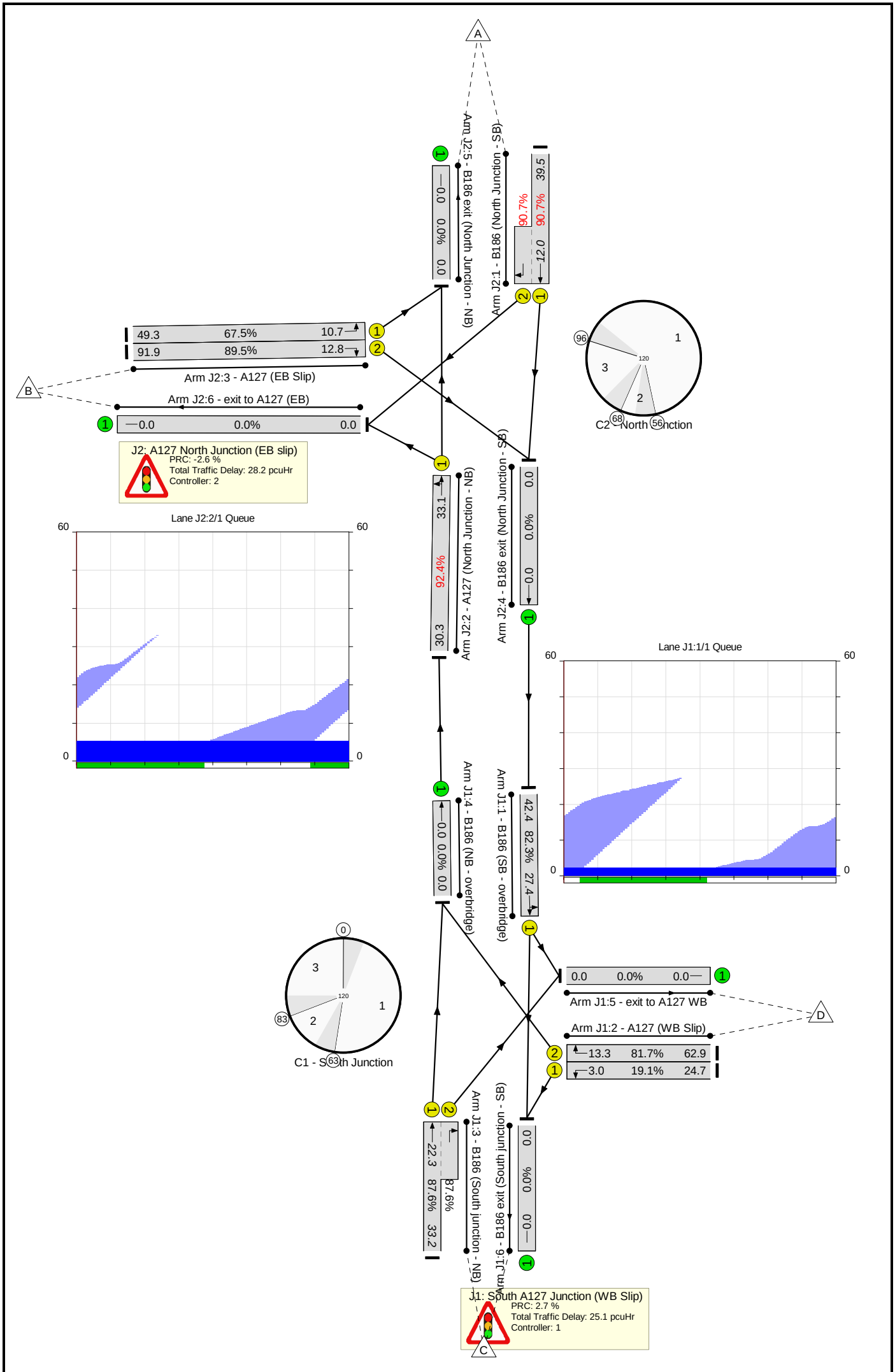
Brentwood PBA Modelling

Project and User Details

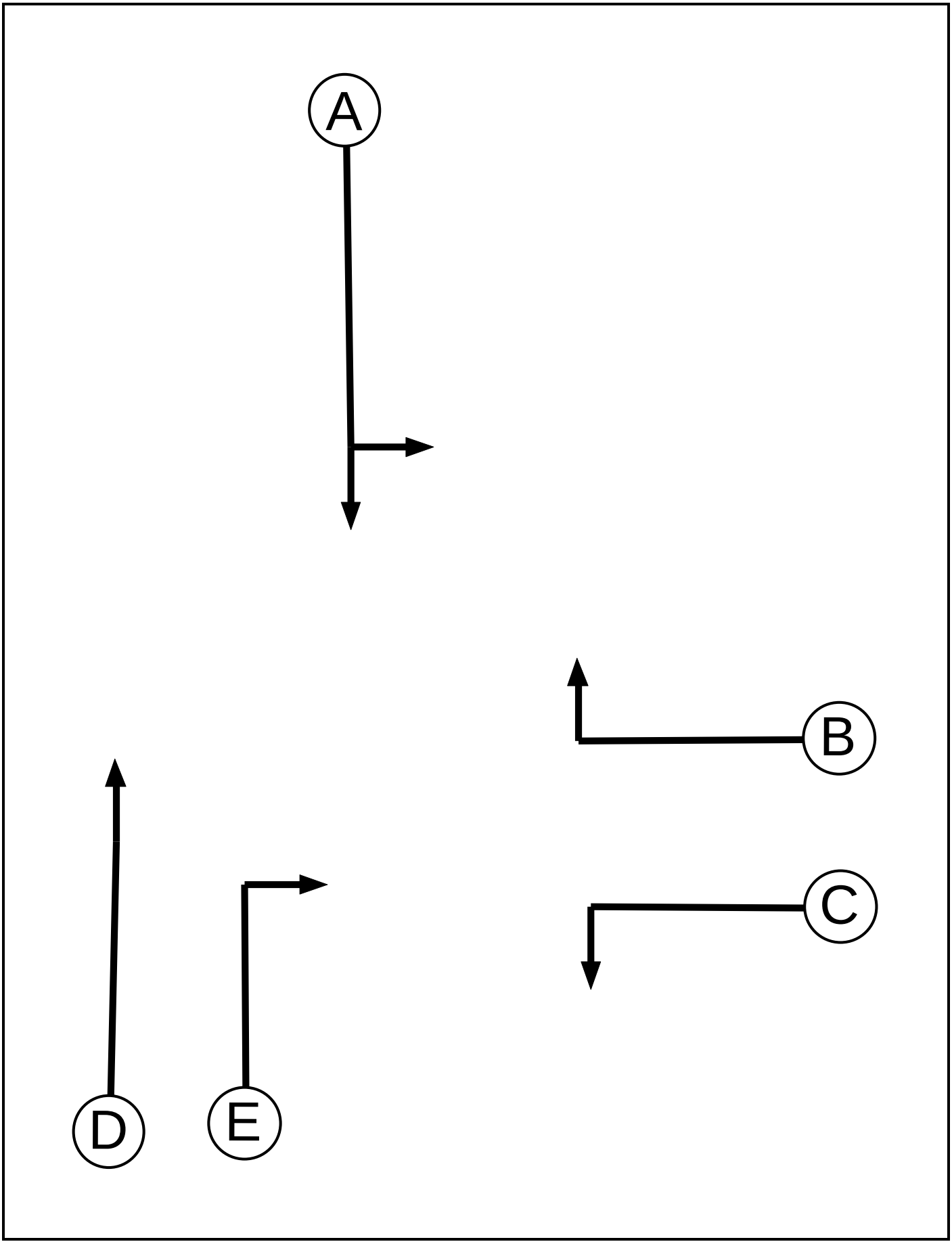
Project:	**A127 Enhancements**
Title:	**Proposed Singalisation (Single Carriageway Overbridge)**
Location:	A127 On / Off Slips with B186 Warley
Additional detail:	PBA has taken the model provided and has added in Reference Case and Local Plan Growth Scenarios.
File name:	28085_19+20_LS_LSM.lsg3x
Author:	Calum Robertson
Company:	Jacobs
Address:	95 Bothwell Street, Glasgow, G2 7HX
Linsig Version:	3, 2, 39, 0

Scenario 1: '2033 Local Plan Growth Scenario with Mitigation (AM)' (FG1: '2033 Local Plan Growth Scenario with Mitigation (AM)', Plan 1: 'Network Control Plan 1')

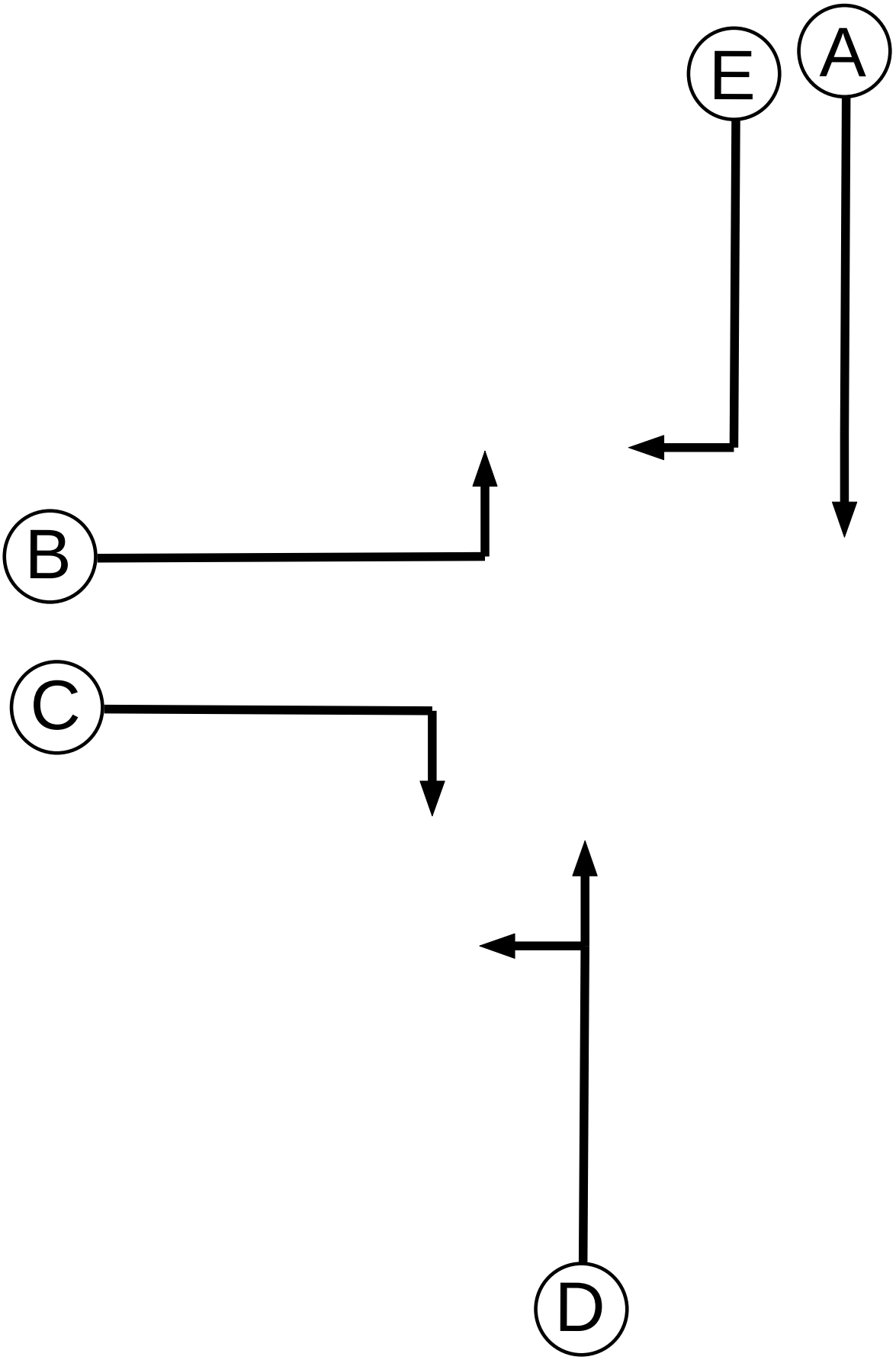
Network Layout Diagram


A
B
C
D
Arm J2:5 - B186 exit (North Junction - NB)
Arm J2:1 - B186 (North Junction - SB)
Arm J2:3 - A127 (EB Slip)
Arm J2:6 - exit to A127 (EB)
J2: A127 North Junction (EB slip)
PRC: -2.6 %
Total Traffic Delay: 28.2 pcuHr
Controller: 2
Lane J2:2/1 Queue
Arm J2:2 - A127 (North Junction - NB)
Arm J2:4 - B186 exit (North Junction - SB)
C2 - North Junction
Lane J1:1/1 Queue
Arm J1:4 - B186 (NB - overbridge)
Arm J1:1 - B186 (SB - overbridge)
Arm J1:5 - exit to A127 WB
Arm J1:2 - A127 (WB Slip)
C1 - South Junction
Arm J1:3 - B186 (South junction - NB)
Arm J1:6 - B186 exit (South junction - SB)
J1: South A127 Junction (WB Slip)
PRC: 2.7 %
Total Traffic Delay: 25.1 pcuHr
Controller: 1

Phase Diagram
C1 - South Junction



C2 - North Junction


E
A
B
C
D

Phase Intergreens Matrix

C1 - South Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		7	7	-	5
B	7		-	7	7
C	7	-		-	-
D	-	7	-		-
E	5	7	-	-	

C2 - North Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		-	7	-	-
B	-		-	7	-
C	7	-		7	7
D	-	7	7		5
E	-	-	7	5	

Lane Input Data

Junction: J1: South A127 Junction (WB Slip)

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J1:1/1 (B186 (SB - overbridge))	U	A	2	3	15.7	Geom	-	3.63	0.00	N	Arm J1:5 Left	25.00
											Arm J1:6 Ahead	Inf
J1:2/1 (A127 (WB Slip))	U	C	2	3	26.1	Geom	-	3.00	3.00	Y	Arm J1:6 Left	25.00
J1:2/2 (A127 (WB Slip))	U	B	2	3	26.1	Geom	-	3.25	3.00	Y	Arm J1:4 Right	25.00
J1:3/1 (B186 (South junction - NB))	U	D	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J1:4 Ahead	Inf
J1:3/2 (B186 (South junction - NB))	U	E	2	3	5.0	Geom	-	3.50	0.00	N	Arm J1:5 Right	15.00
J1:4/1 (B186 (NB - overbridge))	U		2	3	0.9	Inf	-	-	-	-	-	-
J1:5/1 (exit to A127 WB)	U		2	3	60.0	Inf	-	-	-	-	-	-

J1:6/1 (B186 exit (South junction - SB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Junction: J2: A127 North Junction (EB slip)												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
J2:1/1 (B186 (North Junction - SB))	U	A	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J2:4 Ahead	Inf
J2:1/2 (B186 (North Junction - SB))	U	E	2	3	5.0	Geom	-	3.50	0.00	Y	Arm J2:6 Right	15.00
J2:2/1 (A127 (North Junction - NB))	U	D	2	3	15.7	Geom	-	3.66	0.00	Y	Arm J2:5 Ahead	Inf
											Arm J2:6 Left	25.00
J2:3/1 (A127 (EB Slip))	U	B	2	3	33.0	Geom	-	3.30	3.00	Y	Arm J2:5 Left	25.00
J2:3/2 (A127 (EB Slip))	U	C	2	3	7.0	Geom	-	3.66	3.00	Y	Arm J2:4 Right	25.00
J2:4/1 (B186 exit (North Junction - SB))	U		2	3	0.9	Inf	-	-	-	-	-	-
J2:5/1 (B186 exit (North Junction - NB))	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:6/1 (exit to A127 (EB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: J1: South A127 Junction (WB Slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (B186 (SB - overbridge))	3.63	0.00	N	Arm J1:5 Left	25.00	25.1 %	2087	2087
				Arm J1:6 Ahead	Inf	74.9 %		
J1:2/1 (A127 (WB Slip))	3.00	3.00	Y	Arm J1:6 Left	25.00	100.0 %	1688	1688
J1:2/2 (A127 (WB Slip))	3.25	3.00	Y	Arm J1:4 Right	25.00	100.0 %	1711	1711
J1:3/1 (B186 (South junction - NB))	3.50	3.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1839	1839
J1:3/2 (B186 (South junction - NB))	3.50	0.00	N	Arm J1:5 Right	15.00	100.0 %	1914	1914
J1:4/1 (B186 (NB - overbridge) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (exit to A127 WB Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/1 (B186 exit (South junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J2: A127 North Junction (EB slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (B186 (North Junction - SB))	3.50	3.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1839	1839
J2:1/2 (B186 (North Junction - SB))	3.50	0.00	Y	Arm J2:6 Right	15.00	100.0 %	1786	1786
J2:2/1 (A127 (North Junction - NB))	3.66	0.00	Y	Arm J2:5 Ahead	Inf	72.4 %	1949	1949
				Arm J2:6 Left	25.00	27.6 %		
J2:3/1 (A127 (EB Slip))	3.30	3.00	Y	Arm J2:5 Left	25.00	100.0 %	1716	1716
J2:3/2 (A127 (EB Slip))	3.66	3.00	Y	Arm J2:4 Right	25.00	100.0 %	1750	1750
J2:4/1 (B186 exit (North Junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:5/1 (B186 exit (North Junction - NB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:6/1 (exit to A127 (EB) Lane 1)	Infinite Saturation Flow						Inf	Inf

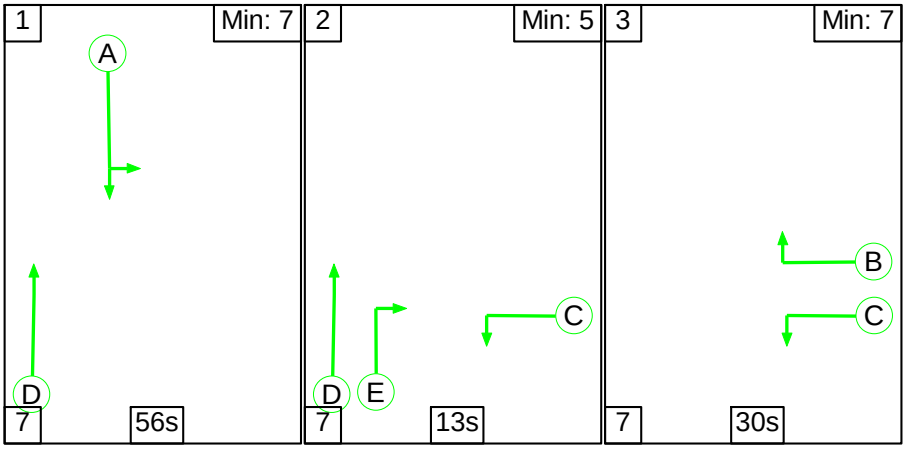
Lane Connector Input Data

Junction: J1: South A127 Junction (WB Slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:1/1	J1:5/1	Internal	35	35
J1:1/1	J1:6/1	Internal	35	35
J1:2/1	J1:6/1	Internal	35	35
J1:2/2	J1:4/1	Internal	1	35
J1:3/1	J1:4/1	Internal	1	35
J1:3/2	J1:5/1	Internal	35	35
J1:4/1	J2:2/1	Leaving	9	35
J2:4/1	J1:1/1	Entering	9	35

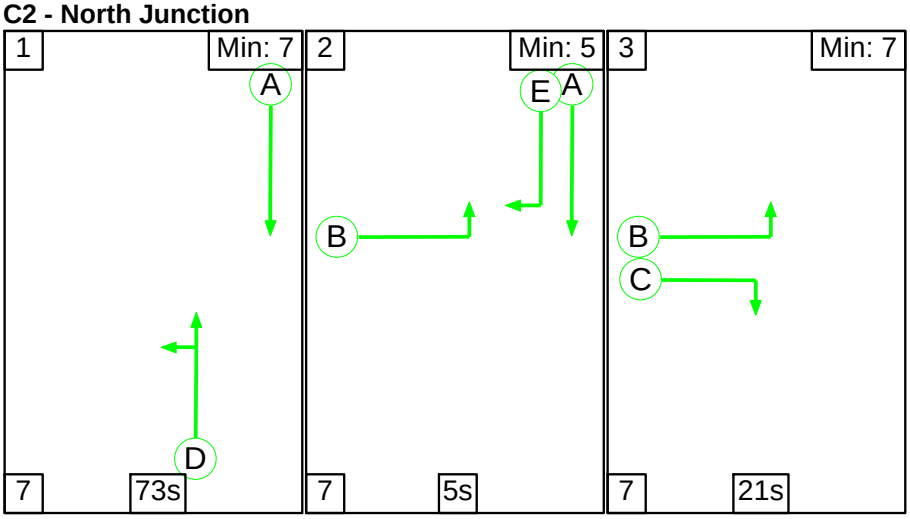
Junction: J2: A127 North Junction (EB slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:4/1	J2:2/1	Entering	9	35
J2:1/1	J2:4/1	Internal	1	35
J2:1/2	J2:6/1	Internal	35	35
J2:2/1	J2:5/1	Internal	35	35
J2:2/1	J2:6/1	Internal	35	35
J2:3/1	J2:5/1	Internal	35	35
J2:3/2	J2:4/1	Internal	1	35
J2:4/1	J1:1/1	Leaving	9	35

Stage Sequence Diagram

C1 - South Junction

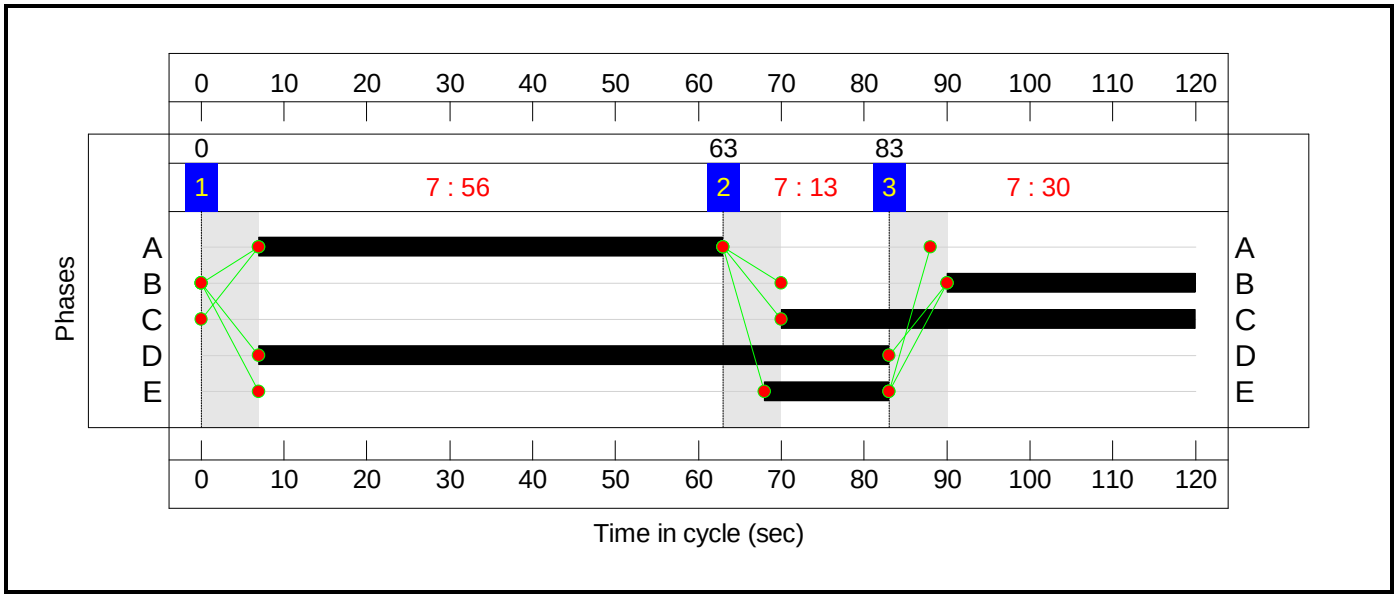


C2 - North Junction

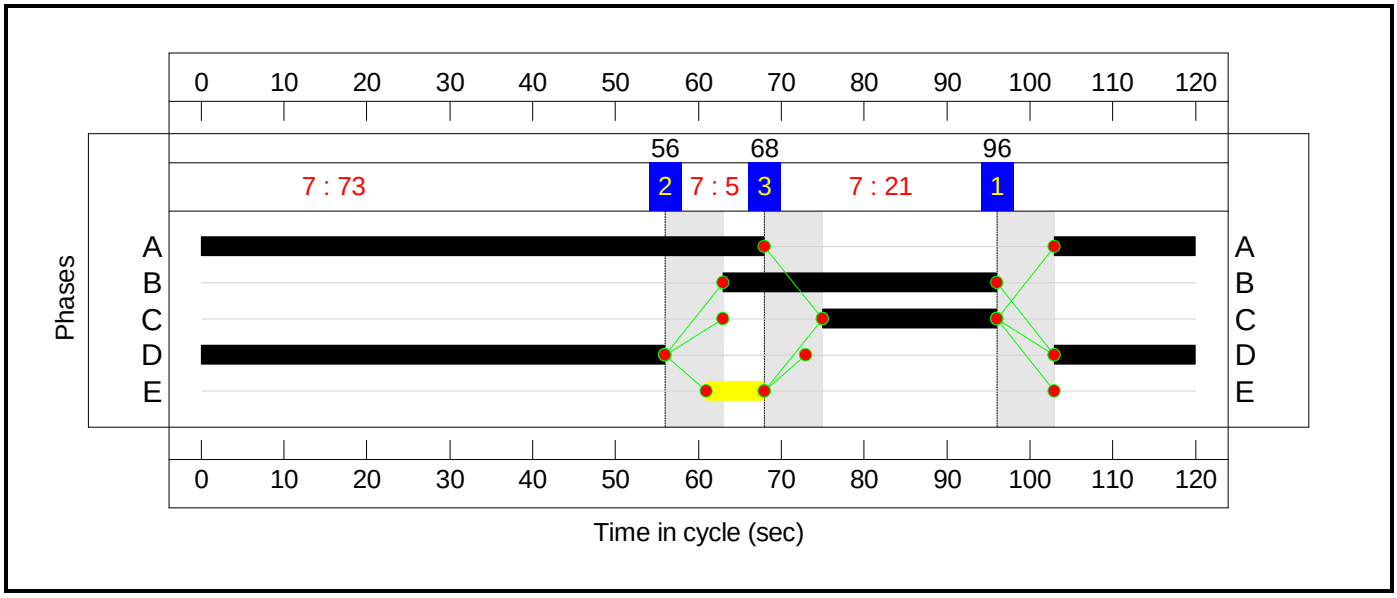


Signal Timings Diagram

C1 - South Junction



C2 - North Junction



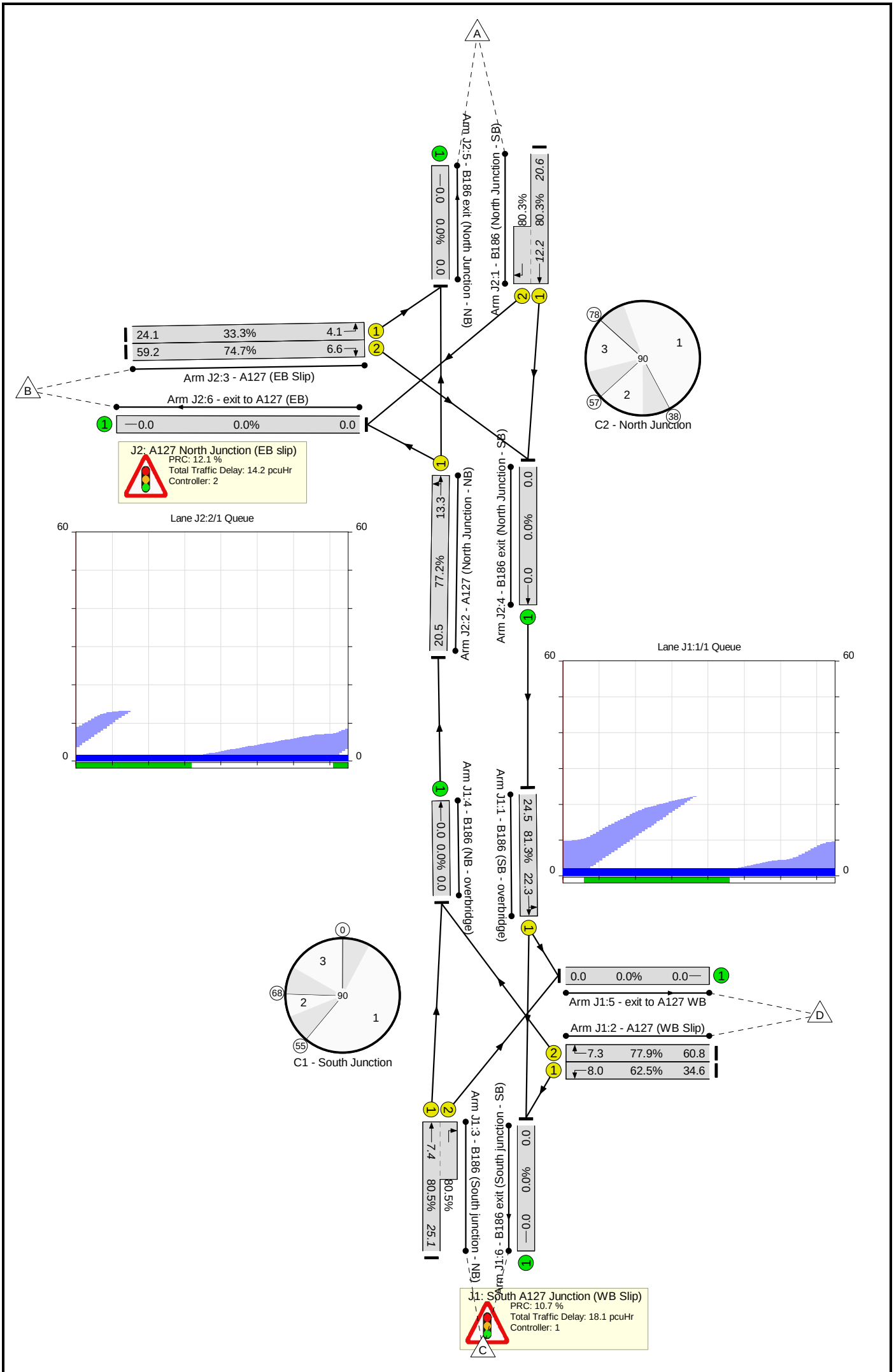
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Proposed Singalisation (Single Carriageway Overbridge)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.4%**	**0**	**0**	**0**	**53.3**	**-**	**-**
J1: South A127 Junction (WB Slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.6%**	**0**	**0**	**0**	**25.1**	**-**	**-**
1/1	B186 (SB - overbridge) Left Ahead	U	C1:A		1	56	-	816	2087	991	82.3%	-	-	-	9.6	42.4	27.4
2/1	A127 (WB Slip) Left	U	C1:C		1	50	-	137	1688	717	19.1%	-	-	-	0.9	24.7	3.0
2/2	A127 (WB Slip) Right	U	C1:B		1	30	-	361	1711	442	81.7%	-	-	-	6.3	62.9	13.3
3/1+3/2	B186 (South junction - NB) Ahead Right	U	C1:D C1:E		1	76:15	-	896	1839:1914	855+168	87.6 : 87.6%	-	-	-	8.3	33.2	22.3
J2: A127 North Junction (EB slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.4%**	**0**	**0**	**0**	**28.2**	**-**	**-**
1/1+1/2	B186 (North Junction - SB) Ahead Right	U	C2:A C2:E		1	85:7	-	637	1839:1786	583+119	90.7 : 90.7%	-	-	-	7.0	39.5	12.0
2/1	A127 (North Junction - NB) Ahead Left	U	C2:D		1	73	-	1110	1949	1202	92.4%	-	-	-	9.3	30.3	33.1
3/1	A127 (EB Slip) Left	U	C2:B		1	33	-	328	1716	486	67.5%	-	-	-	4.5	49.3	10.7
3/2	A127 (EB Slip) Right	U	C2:C		1	21	-	287	1750	321	89.5%	-	-	-	7.3	91.9	12.8

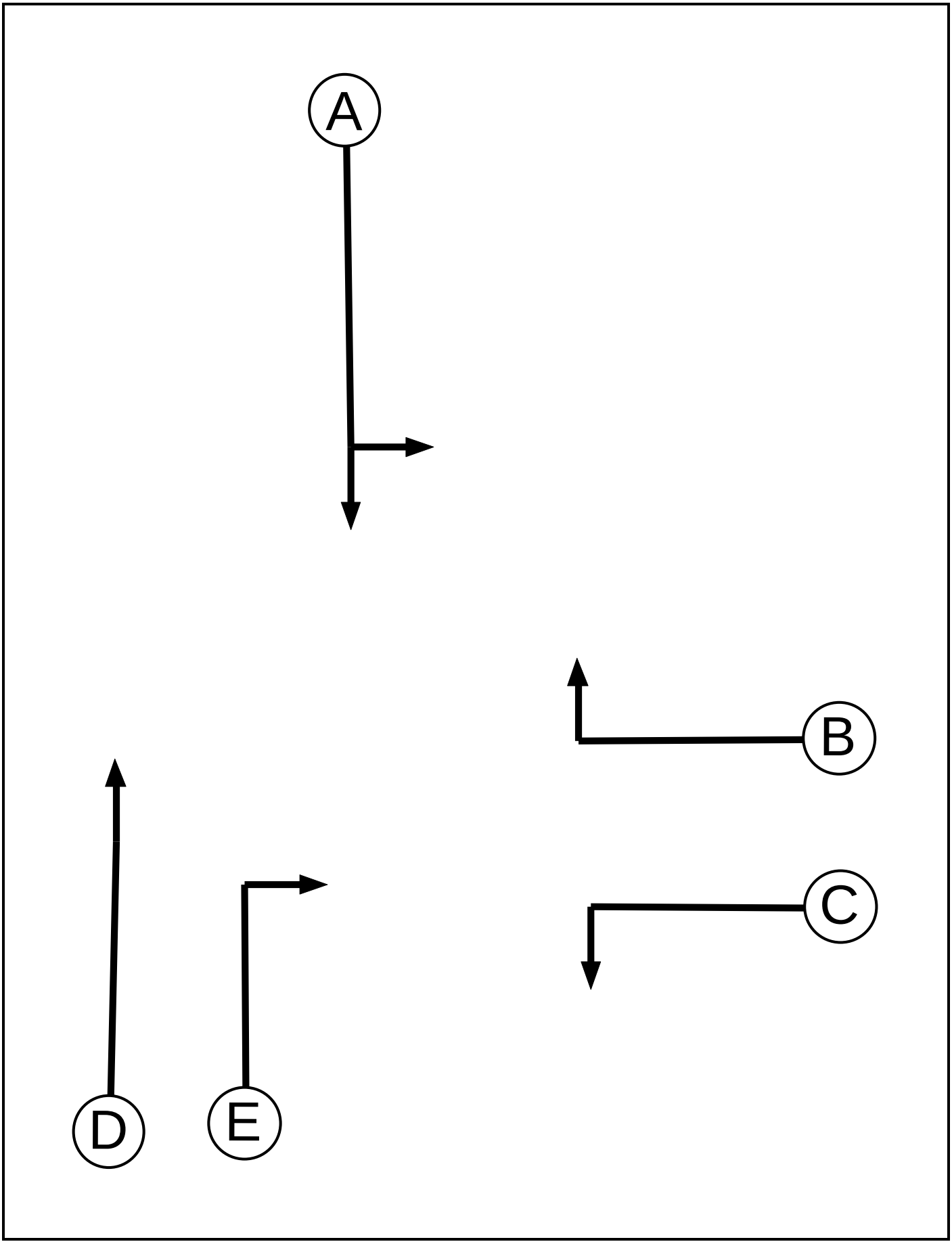
C1 - South Junction	PRC for Signalled Lanes (%):	2.7	Total Delay for Signalled Lanes (pcuHr):	25.12	Cycle Time (s): 120
C2 - North Junction	PRC for Signalled Lanes (%):	-2.6	Total Delay for Signalled Lanes (pcuHr):	28.16	Cycle Time (s): 120
	PRC Over All Lanes (%):	-2.6	Total Delay Over All Lanes(pcuHr):	53.28	

Scenario 2: '2033 Local Plan Growth Scenario with Mitigation (PM)' (FG2: '2033 Local Plan Growth Scenario with Mitigation (PM)', Plan 1: 'Network Control Plan 1')

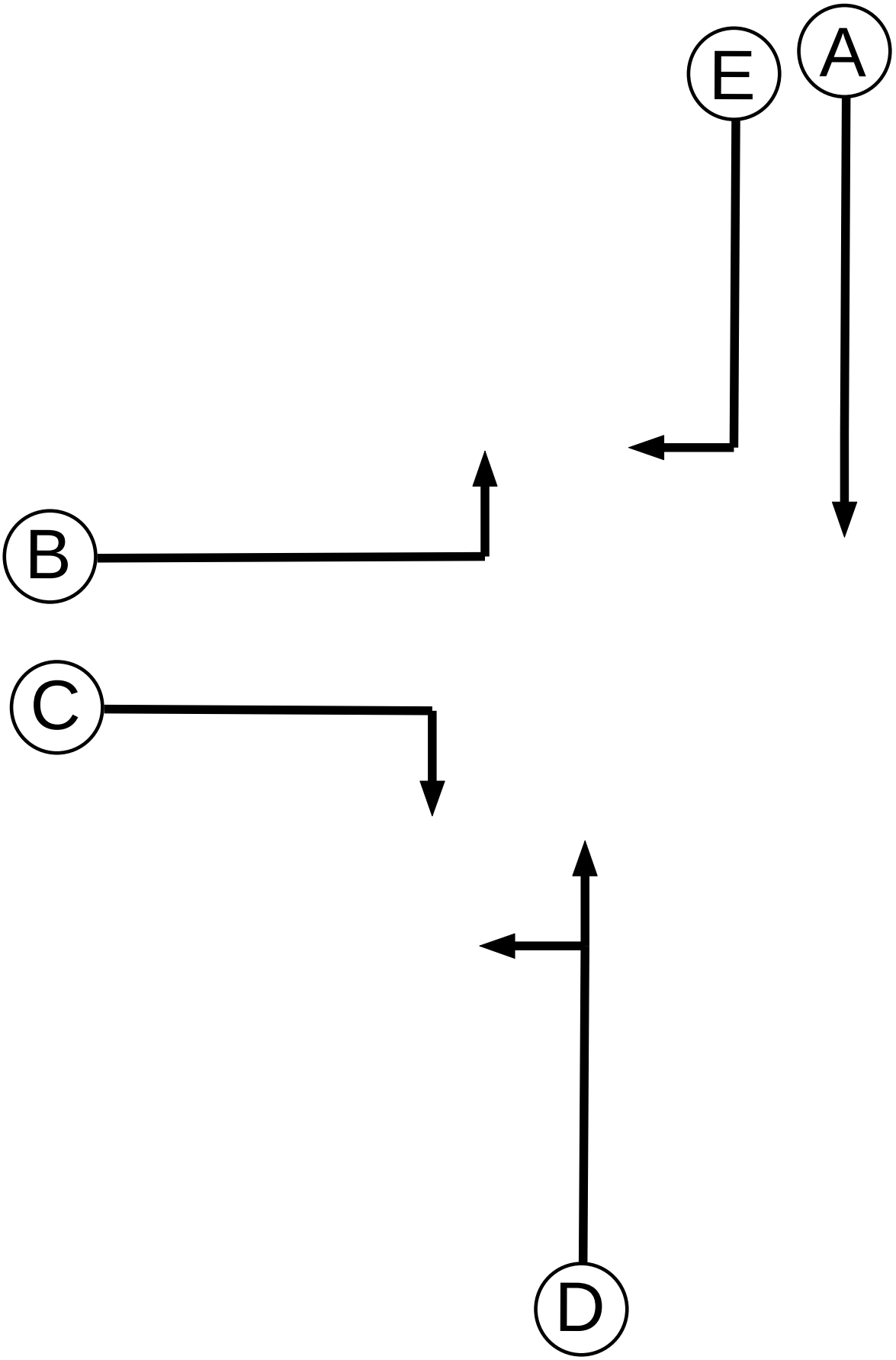
Network Layout Diagram


A
B
C
D
Arm J2:5 - B186 exit (North Junction - NB)
Arm J2:1 - B186 (North Junction - SB)
Arm J2:3 - A127 (EB Slip)
Arm J2:6 - exit to A127 (EB)
J2: A127 North Junction (EB slip)
PRC: 12.1 %
Total Traffic Delay: 14.2 pcuHr
Controller: 2
C2 - North Junction
Lane J2:2/1 Queue
Arm J2:2 - A127 (North Junction - NB)
Arm J2:4 - B186 exit (North Junction - SB)
Lane J1:1/1 Queue
Arm J1:4 - B186 (NB - overbridge)
Arm J1:1 - B186 (SB - overbridge)
Arm J1:5 - exit to A127 WB
Arm J1:2 - A127 (WB Slip)
C1 - South Junction
Arm J1:3 - B186 (South junction - NB)
Arm J1:6 - B186 exit (South junction - SB)
J1: South A127 Junction (WB Slip)
PRC: 10.7 %
Total Traffic Delay: 18.1 pcuHr
Controller: 1

Phase Diagram
C1 - South Junction



C2 - North Junction


E
A
B
C
D

Phase Intergreens Matrix

C1 - South Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		7	7	-	5
B	7		-	7	7
C	7	-		-	-
D	-	7	-		-
E	5	7	-	-	

C2 - North Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		-	7	-	-
B	-		-	7	-
C	7	-		7	7
D	-	7	7		5
E	-	-	7	5	

Lane Input Data

Junction: J1: South A127 Junction (WB Slip)

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J1:1/1 (B186 (SB - overbridge))	U	A	2	3	15.7	Geom	-	3.63	0.00	N	Arm J1:5 Left	25.00
											Arm J1:6 Ahead	Inf
J1:2/1 (A127 (WB Slip))	U	C	2	3	26.1	Geom	-	3.00	3.00	Y	Arm J1:6 Left	25.00
J1:2/2 (A127 (WB Slip))	U	B	2	3	26.1	Geom	-	3.25	3.00	Y	Arm J1:4 Right	25.00
J1:3/1 (B186 (South junction - NB))	U	D	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J1:4 Ahead	Inf
J1:3/2 (B186 (South junction - NB))	U	E	2	3	5.0	Geom	-	3.50	0.00	N	Arm J1:5 Right	15.00
J1:4/1 (B186 (NB - overbridge))	U		2	3	0.9	Inf	-	-	-	-	-	-
J1:5/1 (exit to A127 WB)	U		2	3	60.0	Inf	-	-	-	-	-	-

J1:6/1 (B186 exit (South junction - SB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Junction: J2: A127 North Junction (EB slip)												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
J2:1/1 (B186 (North Junction - SB))	U	A	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J2:4 Ahead	Inf
J2:1/2 (B186 (North Junction - SB))	U	E	2	3	5.0	Geom	-	3.50	0.00	Y	Arm J2:6 Right	15.00
J2:2/1 (A127 (North Junction - NB))	U	D	2	3	15.7	Geom	-	3.66	0.00	Y	Arm J2:5 Ahead	Inf
											Arm J2:6 Left	25.00
J2:3/1 (A127 (EB Slip))	U	B	2	3	33.0	Geom	-	3.30	3.00	Y	Arm J2:5 Left	25.00
J2:3/2 (A127 (EB Slip))	U	C	2	3	7.0	Geom	-	3.66	3.00	Y	Arm J2:4 Right	25.00
J2:4/1 (B186 exit (North Junction - SB))	U		2	3	0.9	Inf	-	-	-	-	-	-
J2:5/1 (B186 exit (North Junction - NB))	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:6/1 (exit to A127 (EB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: J1: South A127 Junction (WB Slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (B186 (SB - overbridge))	3.63	0.00	N	Arm J1:5 Left	25.00	39.7 %	2069	2069
				Arm J1:6 Ahead	Inf	60.3 %		
J1:2/1 (A127 (WB Slip))	3.00	3.00	Y	Arm J1:6 Left	25.00	100.0 %	1688	1688
J1:2/2 (A127 (WB Slip))	3.25	3.00	Y	Arm J1:4 Right	25.00	100.0 %	1711	1711
J1:3/1 (B186 (South junction - NB))	3.50	3.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1839	1839
J1:3/2 (B186 (South junction - NB))	3.50	0.00	N	Arm J1:5 Right	15.00	100.0 %	1914	1914
J1:4/1 (B186 (NB - overbridge) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (exit to A127 WB Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/1 (B186 exit (South junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J2: A127 North Junction (EB slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (B186 (North Junction - SB))	3.50	3.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1839	1839
J2:1/2 (B186 (North Junction - SB))	3.50	0.00	Y	Arm J2:6 Right	15.00	100.0 %	1786	1786
J2:2/1 (A127 (North Junction - NB))	3.66	0.00	Y	Arm J2:5 Ahead	Inf	67.5 %	1943	1943
				Arm J2:6 Left	25.00	32.5 %		
J2:3/1 (A127 (EB Slip))	3.30	3.00	Y	Arm J2:5 Left	25.00	100.0 %	1716	1716
J2:3/2 (A127 (EB Slip))	3.66	3.00	Y	Arm J2:4 Right	25.00	100.0 %	1750	1750
J2:4/1 (B186 exit (North Junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:5/1 (B186 exit (North Junction - NB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:6/1 (exit to A127 (EB) Lane 1)	Infinite Saturation Flow						Inf	Inf

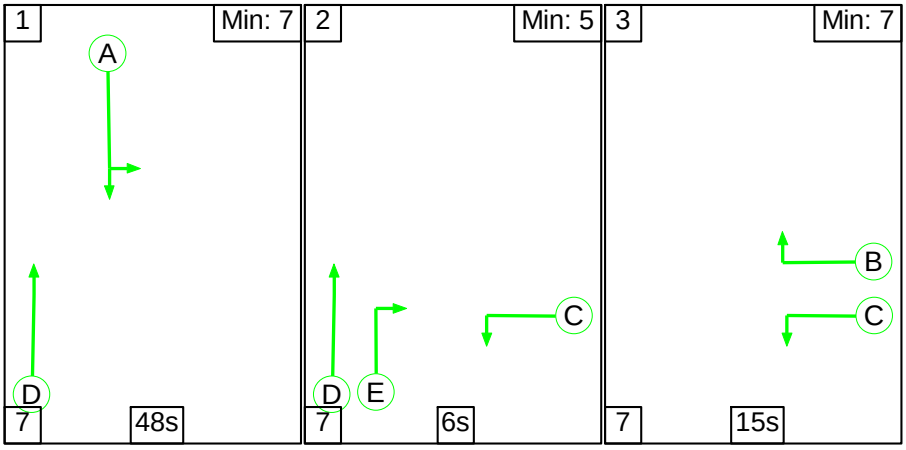
Lane Connector Input Data

Junction: J1: South A127 Junction (WB Slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:1/1	J1:5/1	Internal	35	35
J1:1/1	J1:6/1	Internal	35	35
J1:2/1	J1:6/1	Internal	35	35
J1:2/2	J1:4/1	Internal	1	35
J1:3/1	J1:4/1	Internal	1	35
J1:3/2	J1:5/1	Internal	35	35
J1:4/1	J2:2/1	Leaving	9	35
J2:4/1	J1:1/1	Entering	9	35

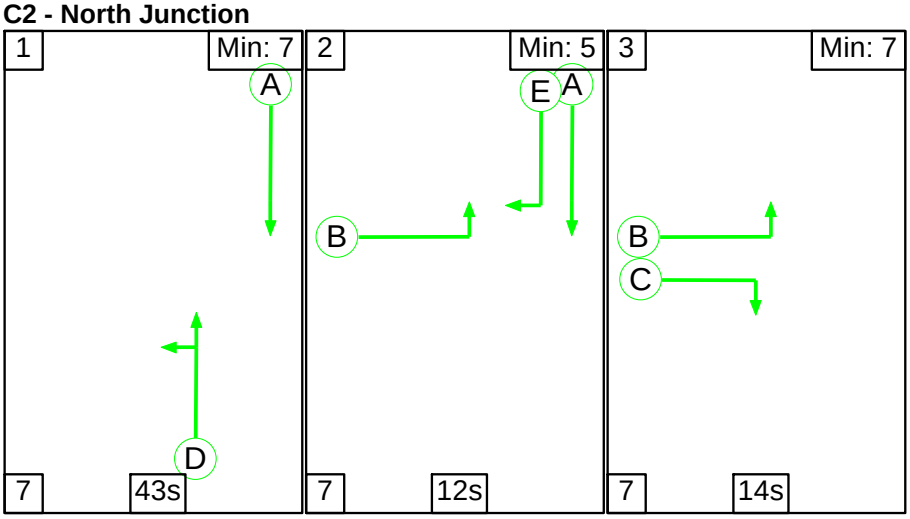
Junction: J2: A127 North Junction (EB slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:4/1	J2:2/1	Entering	9	35
J2:1/1	J2:4/1	Internal	1	35
J2:1/2	J2:6/1	Internal	35	35
J2:2/1	J2:5/1	Internal	35	35
J2:2/1	J2:6/1	Internal	35	35
J2:3/1	J2:5/1	Internal	35	35
J2:3/2	J2:4/1	Internal	1	35
J2:4/1	J1:1/1	Leaving	9	35

Stage Sequence Diagram

C1 - South Junction

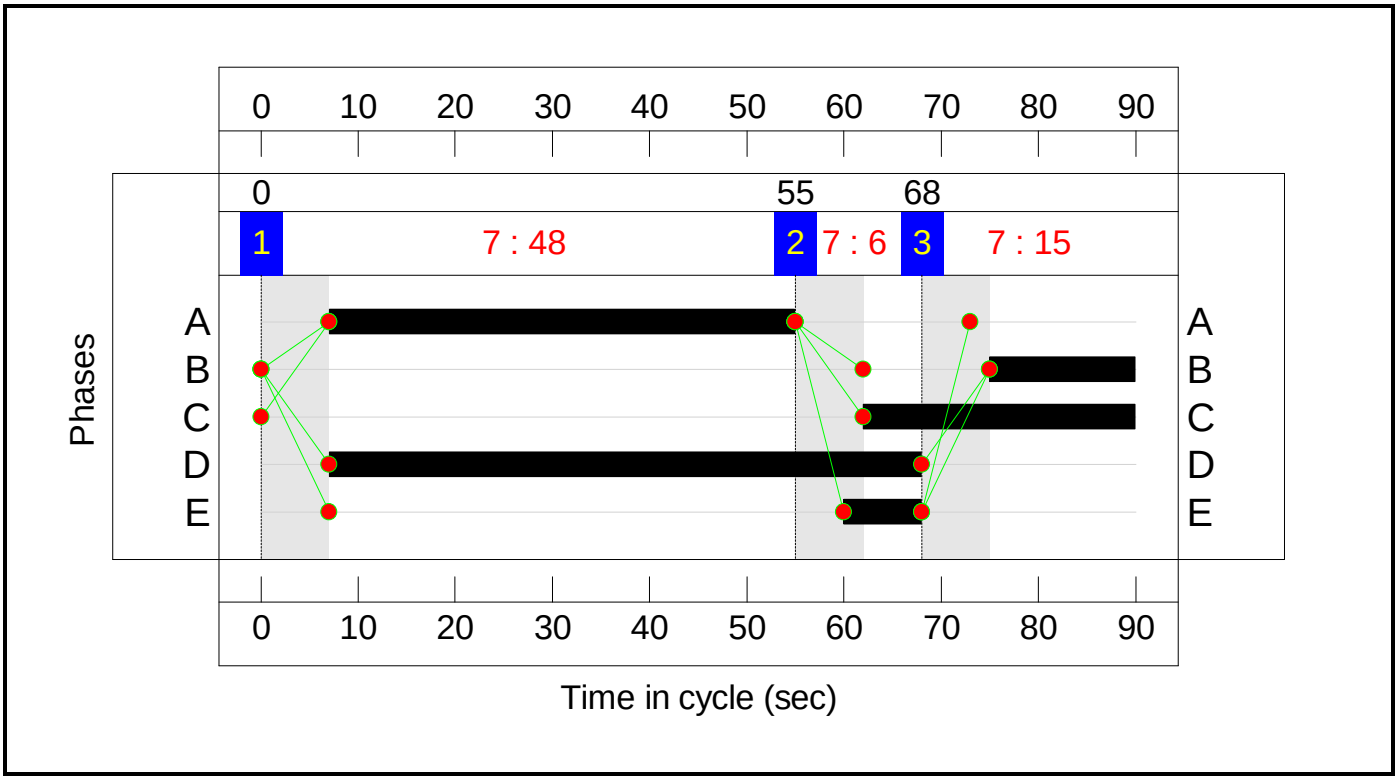


C2 - North Junction

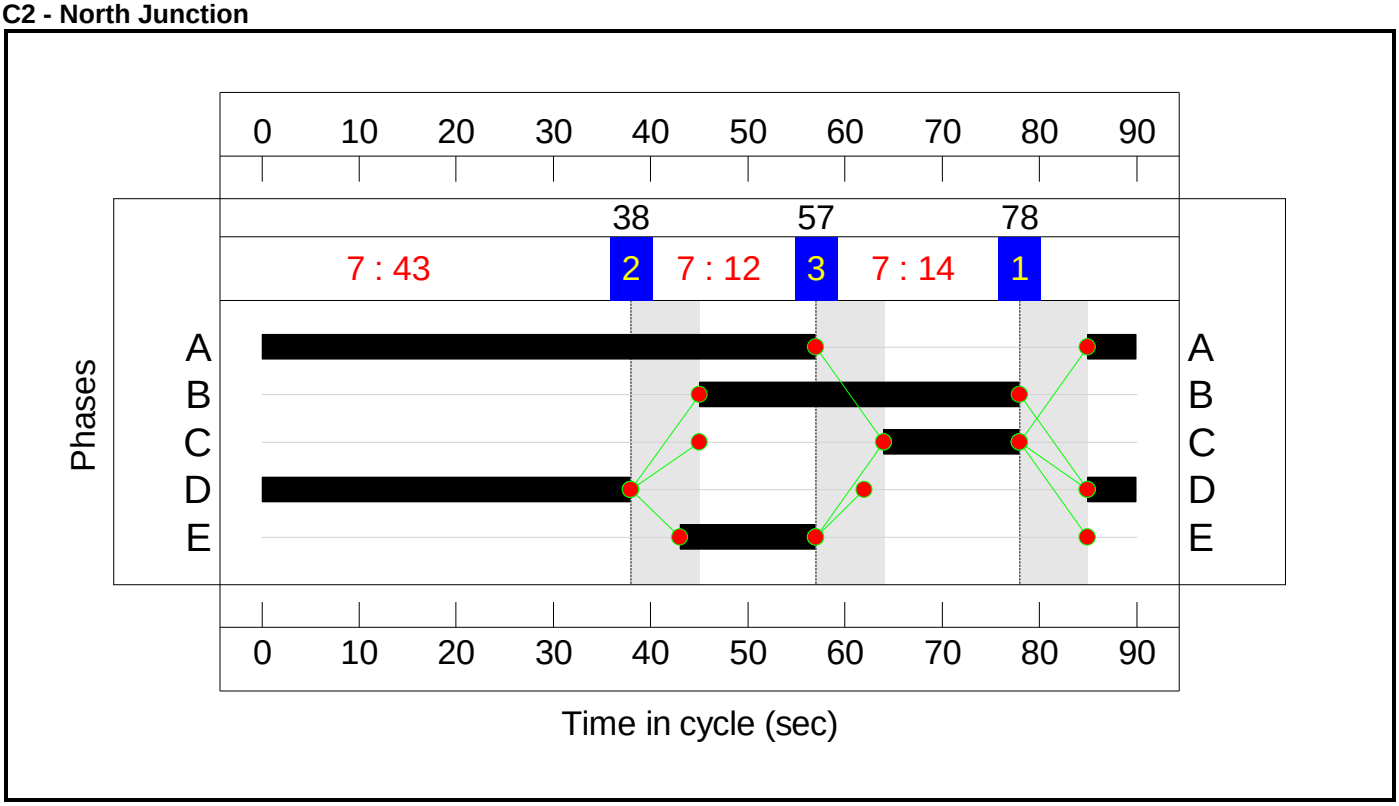


Signal Timings Diagram

C1 - South Junction



C2 - North Junction



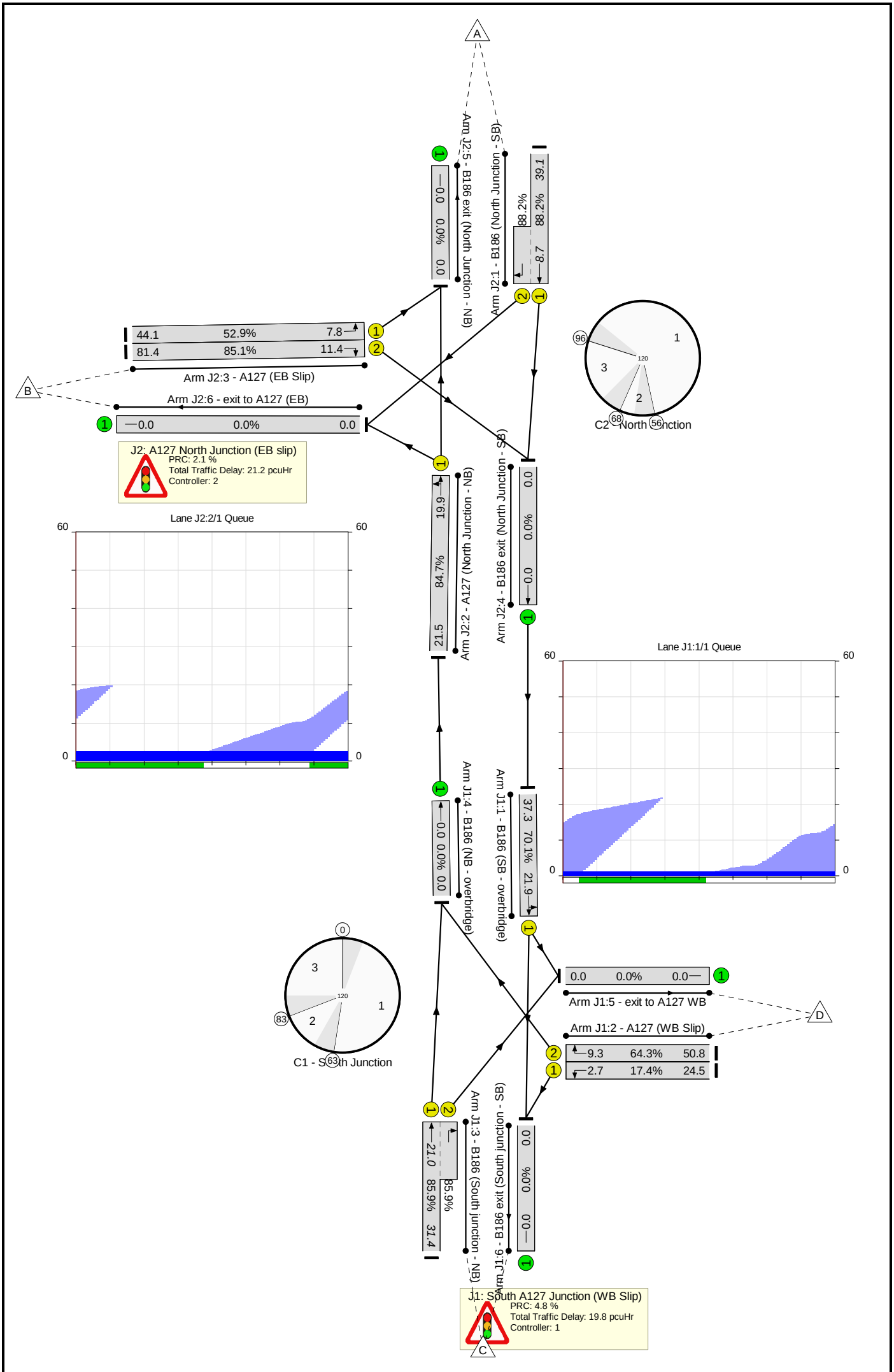
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Proposed Singalisation (Single Carriageway Overbridge)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.3%**	**0**	**0**	**0**	**32.3**	**-**	**-**
J1: South A127 Junction (WB Slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.3%**	**0**	**0**	**0**	**18.1**	**-**	**-**
1/1	B186 (SB - overbridge) Left Ahead	U	C1:A		1	48	-	916	2069	1126	81.3%	-	-	-	6.2	24.5	22.3
2/1	A127 (WB Slip) Left	U	C1:C		1	28	-	340	1688	544	62.5%	-	-	-	3.3	34.6	8.0
2/2	A127 (WB Slip) Right	U	C1:B		1	15	-	237	1711	304	77.9%	-	-	-	4.0	60.8	7.3
3/1+3/2	B186 (South junction - NB) Ahead Right	U	C1:D C1:E		1	61:8	-	650	1839:1914	616+191	80.5 : 80.5%	-	-	-	4.5	25.1	7.4
J2: A127 North Junction (EB slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.3%**	**0**	**0**	**0**	**14.2**	**-**	**-**
1/1+1/2	B186 (North Junction - SB) Ahead Right	U	C2:A C2:E		1	62:14	-	875	1839:1786	870+221	80.3 : 80.3%	-	-	-	5.0	20.6	12.2
2/1	A127 (North Junction - NB) Ahead Left	U	C2:D		1	43	-	733	1943	950	77.2%	-	-	-	4.2	20.5	13.3
3/1	A127 (EB Slip) Left	U	C2:B		1	33	-	216	1716	648	33.3%	-	-	-	1.4	24.1	4.1
3/2	A127 (EB Slip) Right	U	C2:C		1	14	-	218	1750	292	74.7%	-	-	-	3.6	59.2	6.6

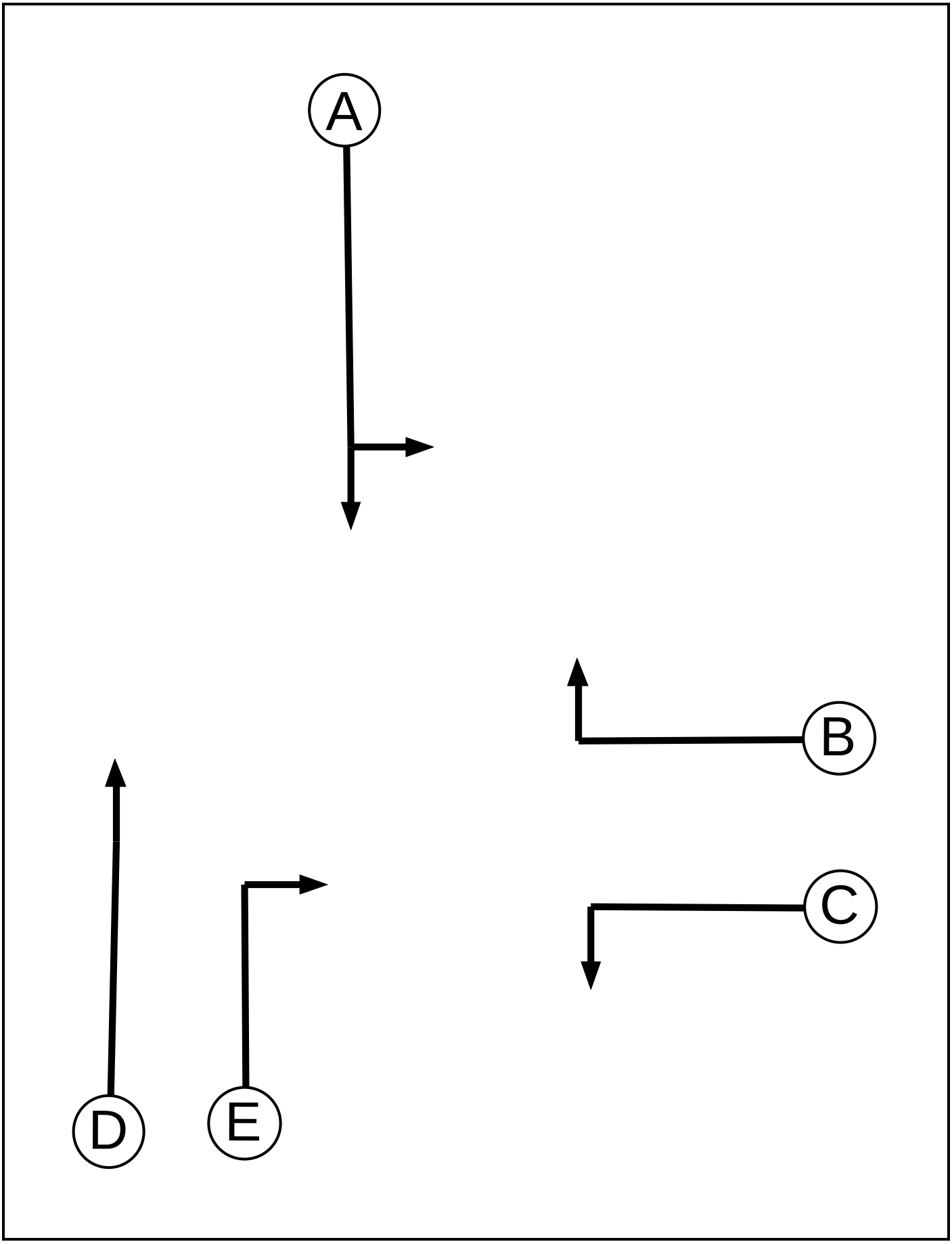
C1 - South Junction	PRC for Signalled Lanes (%): 10.7	Total Delay for Signalled Lanes (pcuHr): 18.05	Cycle Time (s): 90	
C2 - North Junction	PRC for Signalled Lanes (%): 12.1	Total Delay for Signalled Lanes (pcuHr): 14.22	Cycle Time (s): 90	
	PRC Over All Lanes (%): 10.7	Total Delay Over All Lanes(pcuHr): 32.27		

Scenario 3: '2033 Reference Case Scenario with Mitigation (AM)' (FG3: '2033 Reference Case Scenario with Mitigation (AM)', Plan 1: 'Network Control Plan 1')

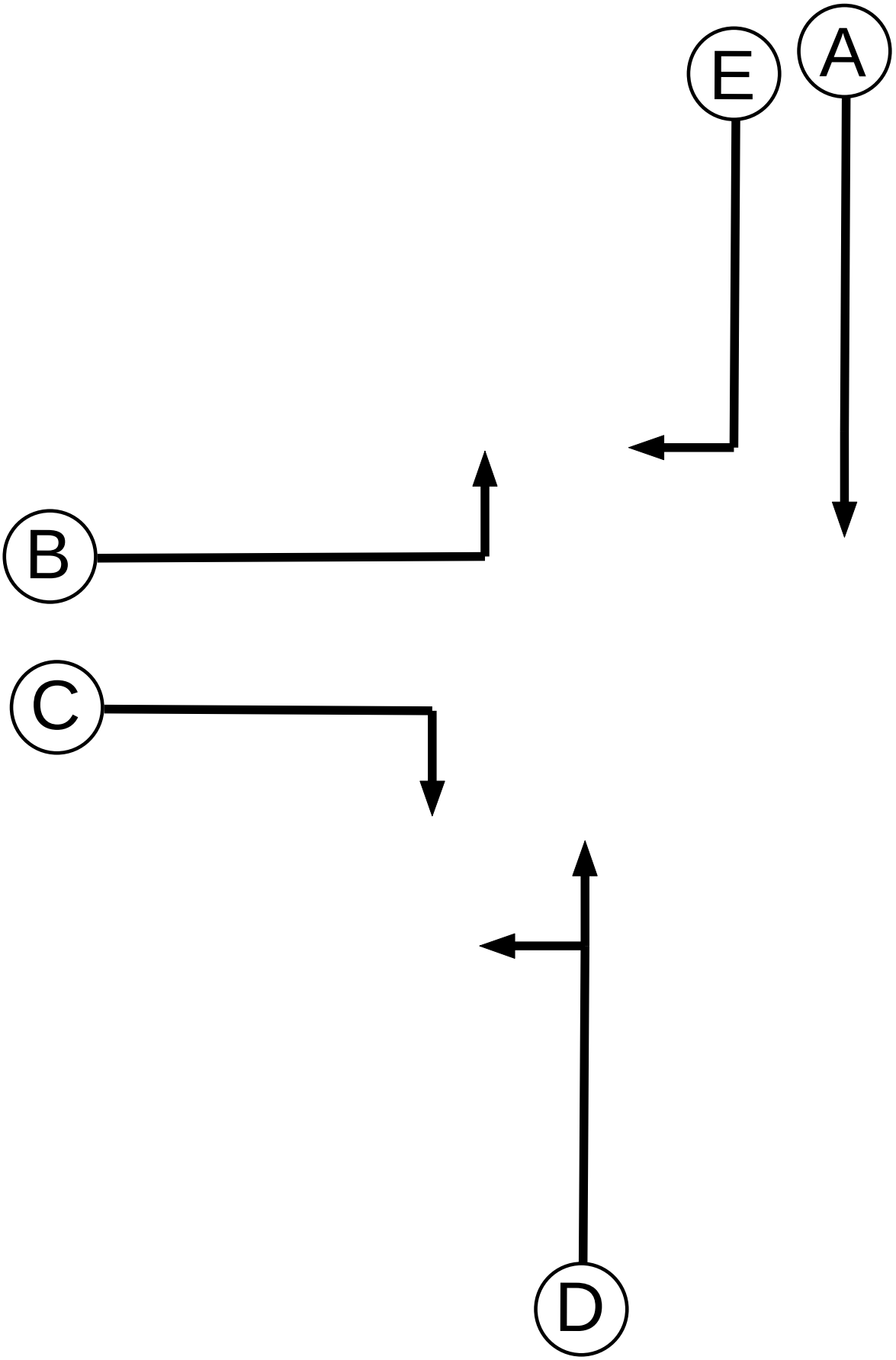
Network Layout Diagram


A
Arm J2:5 - B186 exit (North Junction - NB)
Arm J2:1 - B186 (North Junction - SB)
0.0 0.0% 0.0
88.2% 88.2% 39.1
8.7
44.1 52.9% 7.8
81.4 85.1% 11.4
Arm J2:3 - A127 (EB Slip)
B
Arm J2:6 - exit to A127 (EB)
0.0 0.0% 0.0
J2: A127 North Junction (EB slip)
PRC: 2.1 %
Total Traffic Delay: 21.2 pcuHr
Controller: 2
C2 - North Junction
Lane J2:2/1 Queue
Arm J2:2 - A127 (North Junction - NB)
Arm J2:4 - B186 exit (North Junction - SB)
21.5 84.7% 19.9
0.0 0.0% 0.0
Lane J1:1/1 Queue
Arm J1:4 - B186 (NB - overbridge)
Arm J1:1 - B186 (SB - overbridge)
0.0 0.0% 0.0
37.3 70.1% 21.9
C1 - South Junction
0.0 0.0% 0.0
Arm J1:5 - exit to A127 WB
D
Arm J1:2 - A127 (WB Slip)
9.3 64.3% 50.8
2.7 17.4% 24.5
Arm J1:3 - B186 (South junction - SB)
Arm J1:6 - B186 exit (South junction - NB)
21.0 85.9% 31.4
85.9%
0.0 0.0% 0.0
J1: South A127 Junction (WB Slip)
PRC: 4.8 %
Total Traffic Delay: 19.8 pcuHr
Controller: 1
C

Phase Diagram
C1 - South Junction



C2 - North Junction


E
A
B
C
D

Phase Intergreens Matrix

C1 - South Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		7	7	-	5
B	7		-	7	7
C	7	-		-	-
D	-	7	-		-
E	5	7	-	-	

C2 - North Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		-	7	-	-
B	-		-	7	-
C	7	-		7	7
D	-	7	7		5
E	-	-	7	5	

Lane Input Data

Junction: J1: South A127 Junction (WB Slip)

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J1:1/1 (B186 (SB - overbridge))	U	A	2	3	15.7	Geom	-	3.63	0.00	N	Arm J1:5 Left	25.00
											Arm J1:6 Ahead	Inf
J1:2/1 (A127 (WB Slip))	U	C	2	3	26.1	Geom	-	3.00	3.00	Y	Arm J1:6 Left	25.00
J1:2/2 (A127 (WB Slip))	U	B	2	3	26.1	Geom	-	3.25	3.00	Y	Arm J1:4 Right	25.00
J1:3/1 (B186 (South junction - NB))	U	D	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J1:4 Ahead	Inf
J1:3/2 (B186 (South junction - NB))	U	E	2	3	5.0	Geom	-	3.50	0.00	N	Arm J1:5 Right	15.00
J1:4/1 (B186 (NB - overbridge))	U		2	3	0.9	Inf	-	-	-	-	-	-
J1:5/1 (exit to A127 WB)	U		2	3	60.0	Inf	-	-	-	-	-	-

J1:6/1 (B186 exit (South junction - SB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Junction: J2: A127 North Junction (EB slip)												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
J2:1/1 (B186 (North Junction - SB))	U	A	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J2:4 Ahead	Inf
J2:1/2 (B186 (North Junction - SB))	U	E	2	3	5.0	Geom	-	3.50	0.00	Y	Arm J2:6 Right	15.00
J2:2/1 (A127 (North Junction - NB))	U	D	2	3	15.7	Geom	-	3.66	0.00	Y	Arm J2:5 Ahead	Inf
											Arm J2:6 Left	25.00
J2:3/1 (A127 (EB Slip))	U	B	2	3	33.0	Geom	-	3.30	3.00	Y	Arm J2:5 Left	25.00
J2:3/2 (A127 (EB Slip))	U	C	2	3	7.0	Geom	-	3.66	3.00	Y	Arm J2:4 Right	25.00
J2:4/1 (B186 exit (North Junction - SB))	U		2	3	0.9	Inf	-	-	-	-	-	-
J2:5/1 (B186 exit (North Junction - NB))	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:6/1 (exit to A127 (EB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: J1: South A127 Junction (WB Slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (B186 (SB - overbridge))	3.63	0.00	N	Arm J1:5 Left	25.00	16.2 %	2098	2098
				Arm J1:6 Ahead	Inf	83.8 %		
J1:2/1 (A127 (WB Slip))	3.00	3.00	Y	Arm J1:6 Left	25.00	100.0 %	1688	1688
J1:2/2 (A127 (WB Slip))	3.25	3.00	Y	Arm J1:4 Right	25.00	100.0 %	1711	1711
J1:3/1 (B186 (South junction - NB))	3.50	3.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1839	1839
J1:3/2 (B186 (South junction - NB))	3.50	0.00	N	Arm J1:5 Right	15.00	100.0 %	1914	1914
J1:4/1 (B186 (NB - overbridge) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (exit to A127 WB Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/1 (B186 exit (South junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J2: A127 North Junction (EB slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (B186 (North Junction - SB))	3.50	3.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1839	1839
J2:1/2 (B186 (North Junction - SB))	3.50	0.00	Y	Arm J2:6 Right	15.00	100.0 %	1786	1786
J2:2/1 (A127 (North Junction - NB))	3.66	0.00	Y	Arm J2:5 Ahead	Inf	72.9 %	1949	1949
				Arm J2:6 Left	25.00	27.1 %		
J2:3/1 (A127 (EB Slip))	3.30	3.00	Y	Arm J2:5 Left	25.00	100.0 %	1716	1716
J2:3/2 (A127 (EB Slip))	3.66	3.00	Y	Arm J2:4 Right	25.00	100.0 %	1750	1750
J2:4/1 (B186 exit (North Junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:5/1 (B186 exit (North Junction - NB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:6/1 (exit to A127 (EB) Lane 1)	Infinite Saturation Flow						Inf	Inf

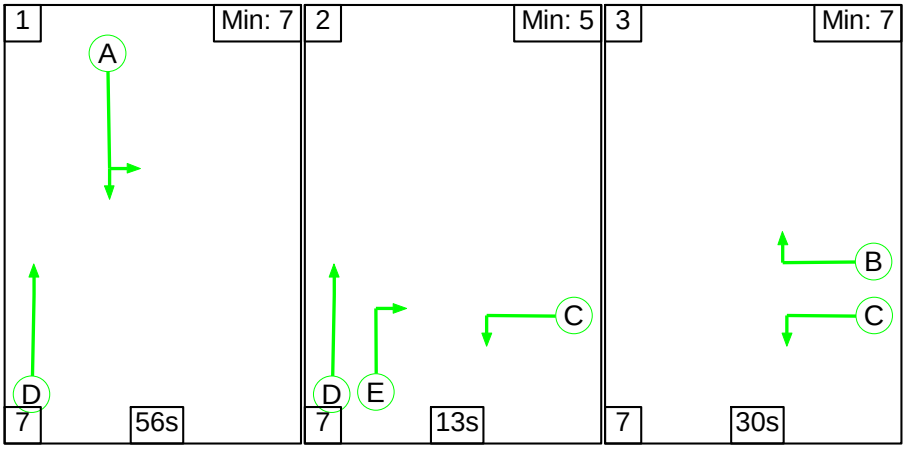
Lane Connector Input Data

Junction: J1: South A127 Junction (WB Slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:1/1	J1:5/1	Internal	35	35
J1:1/1	J1:6/1	Internal	35	35
J1:2/1	J1:6/1	Internal	35	35
J1:2/2	J1:4/1	Internal	1	35
J1:3/1	J1:4/1	Internal	1	35
J1:3/2	J1:5/1	Internal	35	35
J1:4/1	J2:2/1	Leaving	9	35
J2:4/1	J1:1/1	Entering	9	35

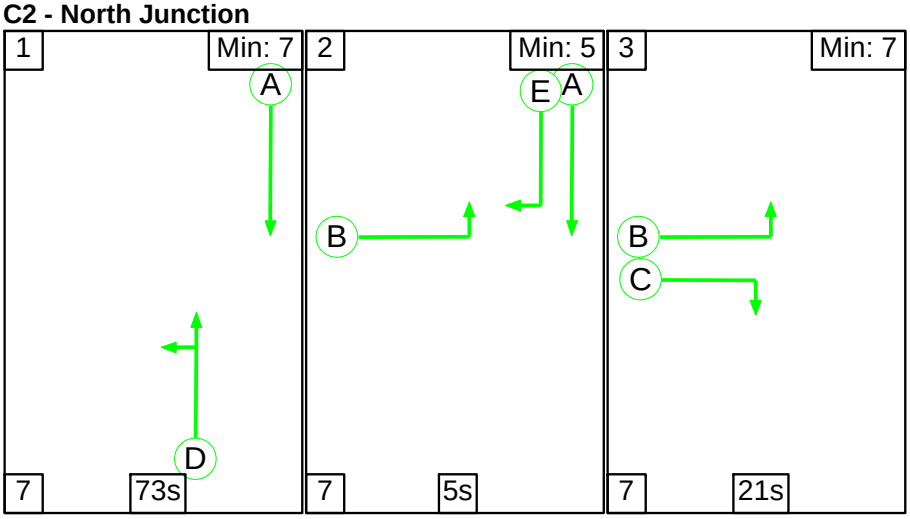
Junction: J2: A127 North Junction (EB slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:4/1	J2:2/1	Entering	9	35
J2:1/1	J2:4/1	Internal	1	35
J2:1/2	J2:6/1	Internal	35	35
J2:2/1	J2:5/1	Internal	35	35
J2:2/1	J2:6/1	Internal	35	35
J2:3/1	J2:5/1	Internal	35	35
J2:3/2	J2:4/1	Internal	1	35
J2:4/1	J1:1/1	Leaving	9	35

Stage Sequence Diagram

C1 - South Junction

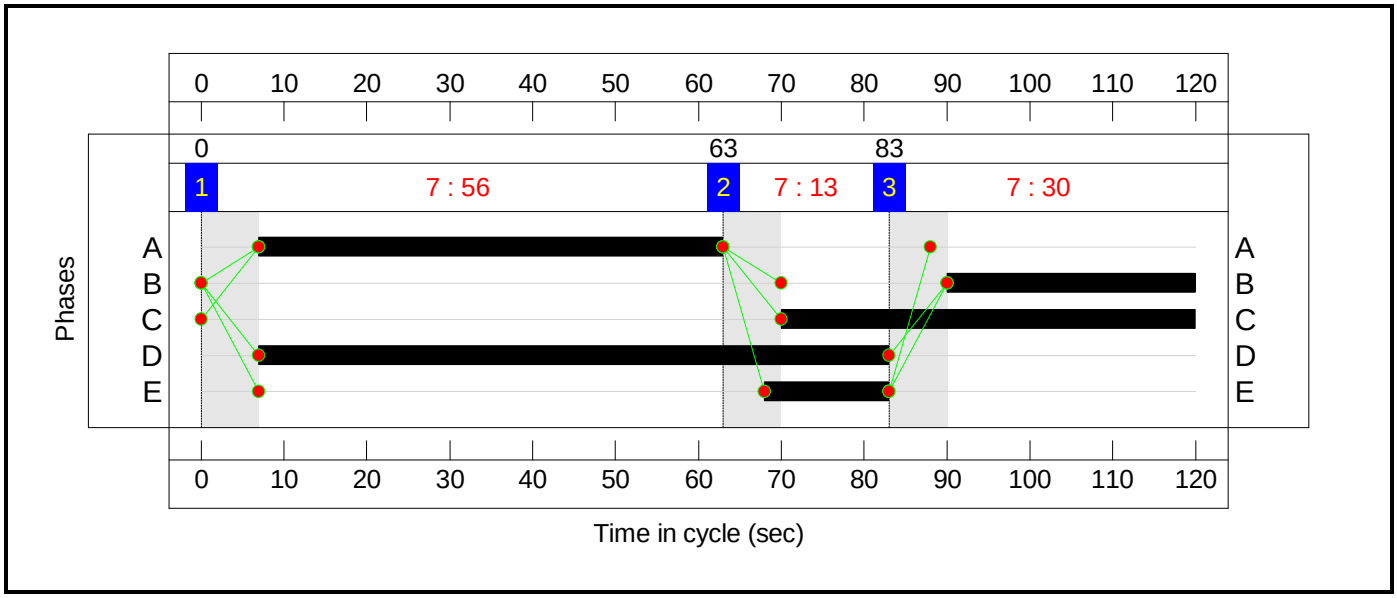


C2 - North Junction

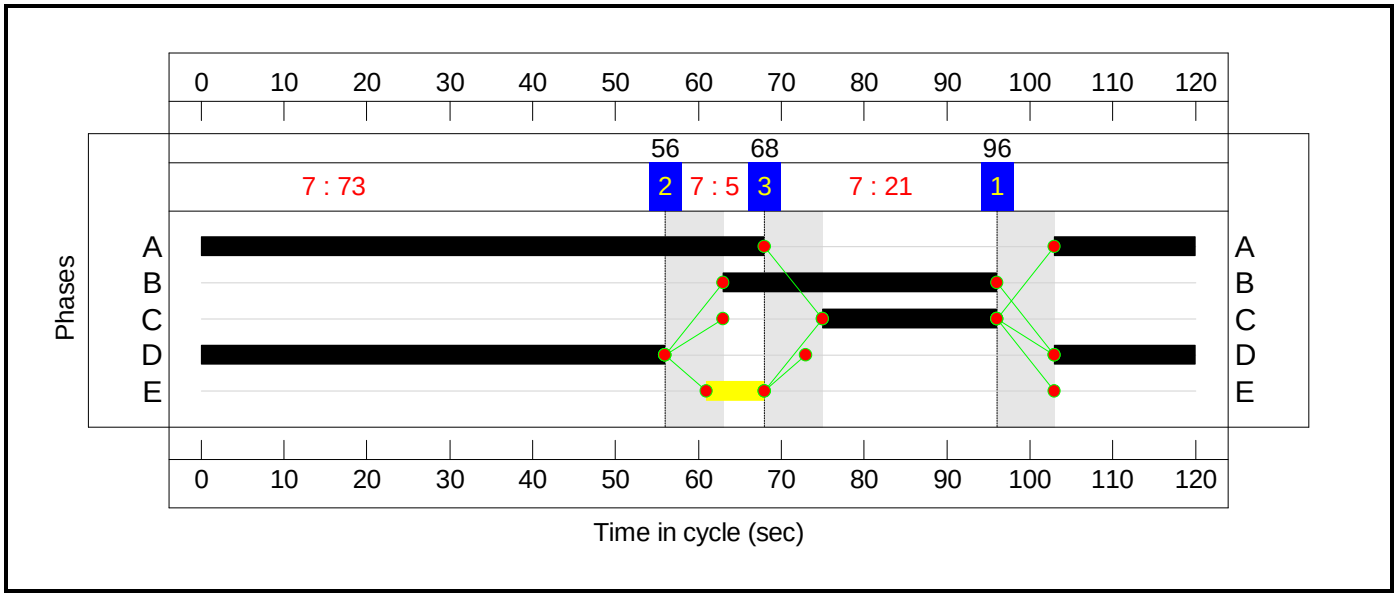


Signal Timings Diagram

C1 - South Junction



C2 - North Junction



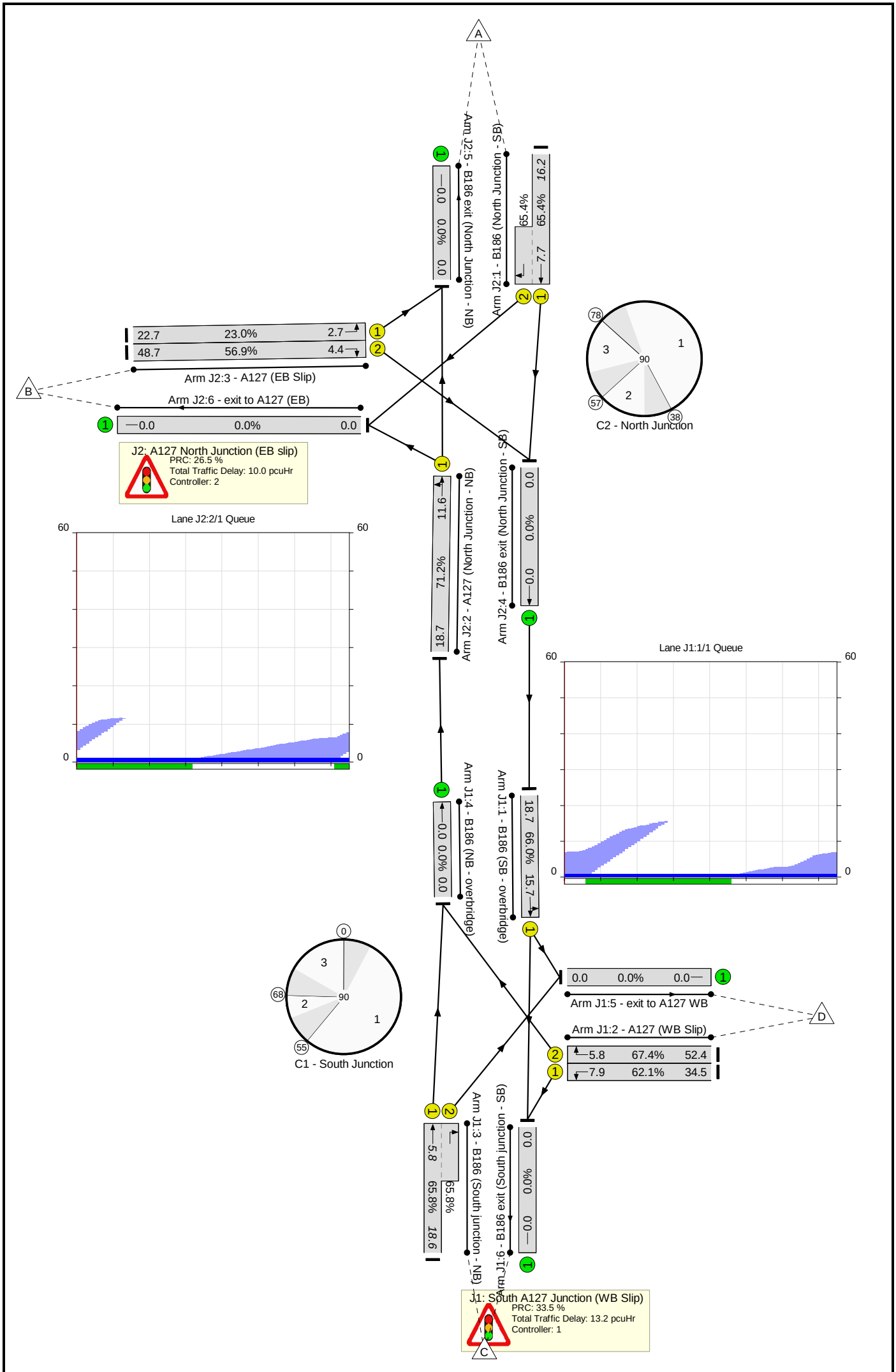
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Proposed Singalisation (Single Carriageway Overbridge)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.2%**	**0**	**0**	**0**	**40.9**	**-**	**-**
J1: South A127 Junction (WB Slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.9%**	**0**	**0**	**0**	**19.8**	**-**	**-**
1/1	B186 (SB - overbridge) Left Ahead	U	C1:A		1	56	-	699	2098	997	70.1%	-	-	-	7.2	37.3	21.9
2/1	A127 (WB Slip) Left	U	C1:C		1	50	-	125	1688	717	17.4%	-	-	-	0.8	24.5	2.7
2/2	A127 (WB Slip) Right	U	C1:B		1	30	-	284	1711	442	64.3%	-	-	-	4.0	50.8	9.3
3/1+3/2	B186 (South junction - NB) Ahead Right	U	C1:D C1:E		1	76:15	-	878	1839:1914	855+168	85.9 : 85.9%	-	-	-	7.7	31.4	21.0
J2: A127 North Junction (EB slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.2%**	**0**	**0**	**0**	**21.2**	**-**	**-**
1/1+1/2	B186 (North Junction - SB) Ahead Right	U	C2:A C2:E		1	85:7	-	531	1839:1786	483+119	88.2 : 88.2%	-	-	-	5.8	39.1	8.7
2/1	A127 (North Junction - NB) Ahead Left	U	C2:D		1	73	-	1018	1949	1202	84.7%	-	-	-	6.1	21.5	19.9
3/1	A127 (EB Slip) Left	U	C2:B		1	33	-	257	1716	486	52.9%	-	-	-	3.1	44.1	7.8
3/2	A127 (EB Slip) Right	U	C2:C		1	21	-	273	1750	321	85.1%	-	-	-	6.2	81.4	11.4

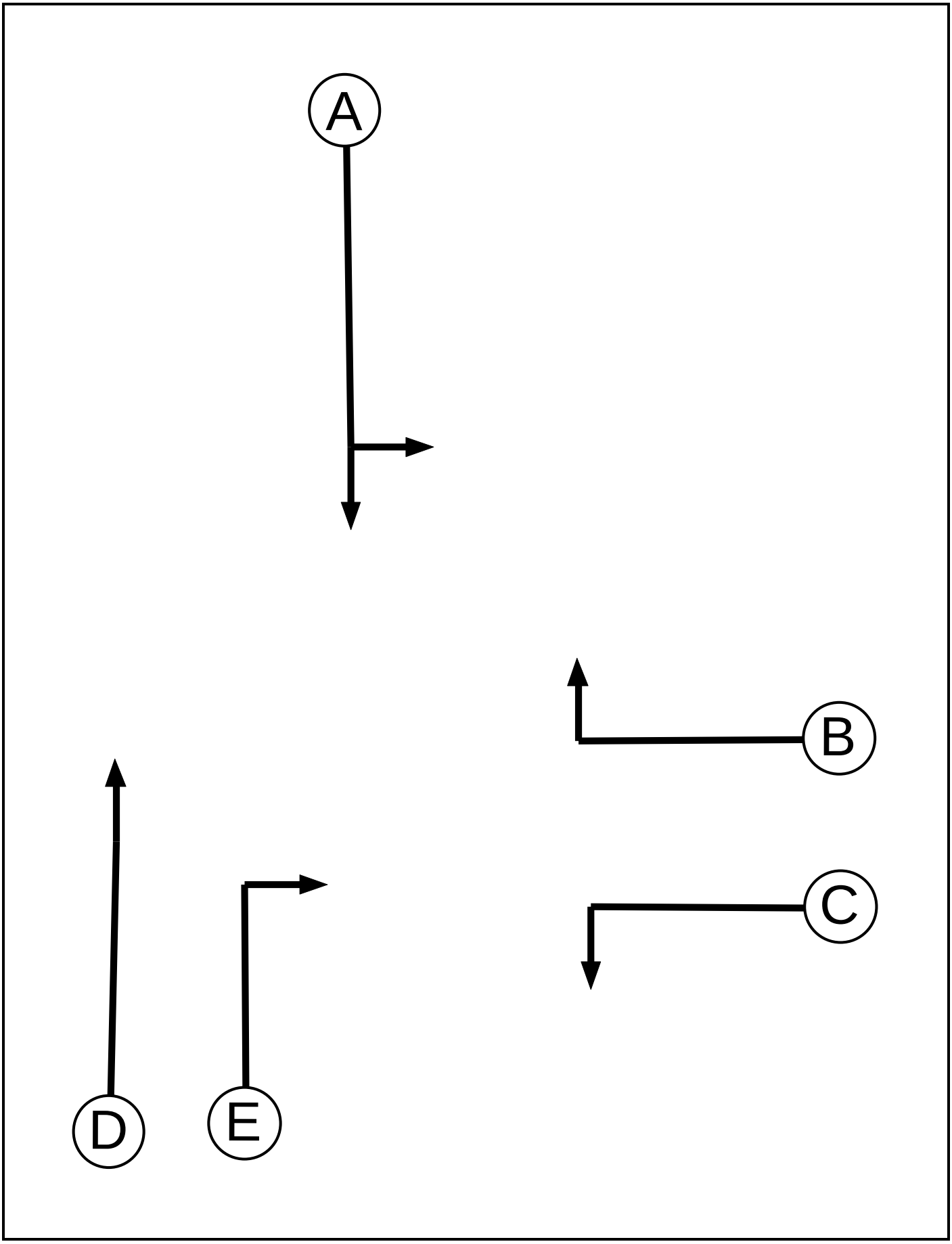
C1 - South Junction	PRC for Signalled Lanes (%): 4.8	Total Delay for Signalled Lanes (pcuHr): 19.77	Cycle Time (s): 120	
C2 - North Junction	PRC for Signalled Lanes (%): 2.1	Total Delay for Signalled Lanes (pcuHr): 21.17	Cycle Time (s): 120	
	PRC Over All Lanes (%): 2.1	Total Delay Over All Lanes(pcuHr): 40.94		

Scenario 4: '2033 Reference Case Scenario with Mitigation (PM)' (FG4: '2033 Reference Case Scenario with Mitigation (PM)', Plan 1: 'Network Control Plan 1')

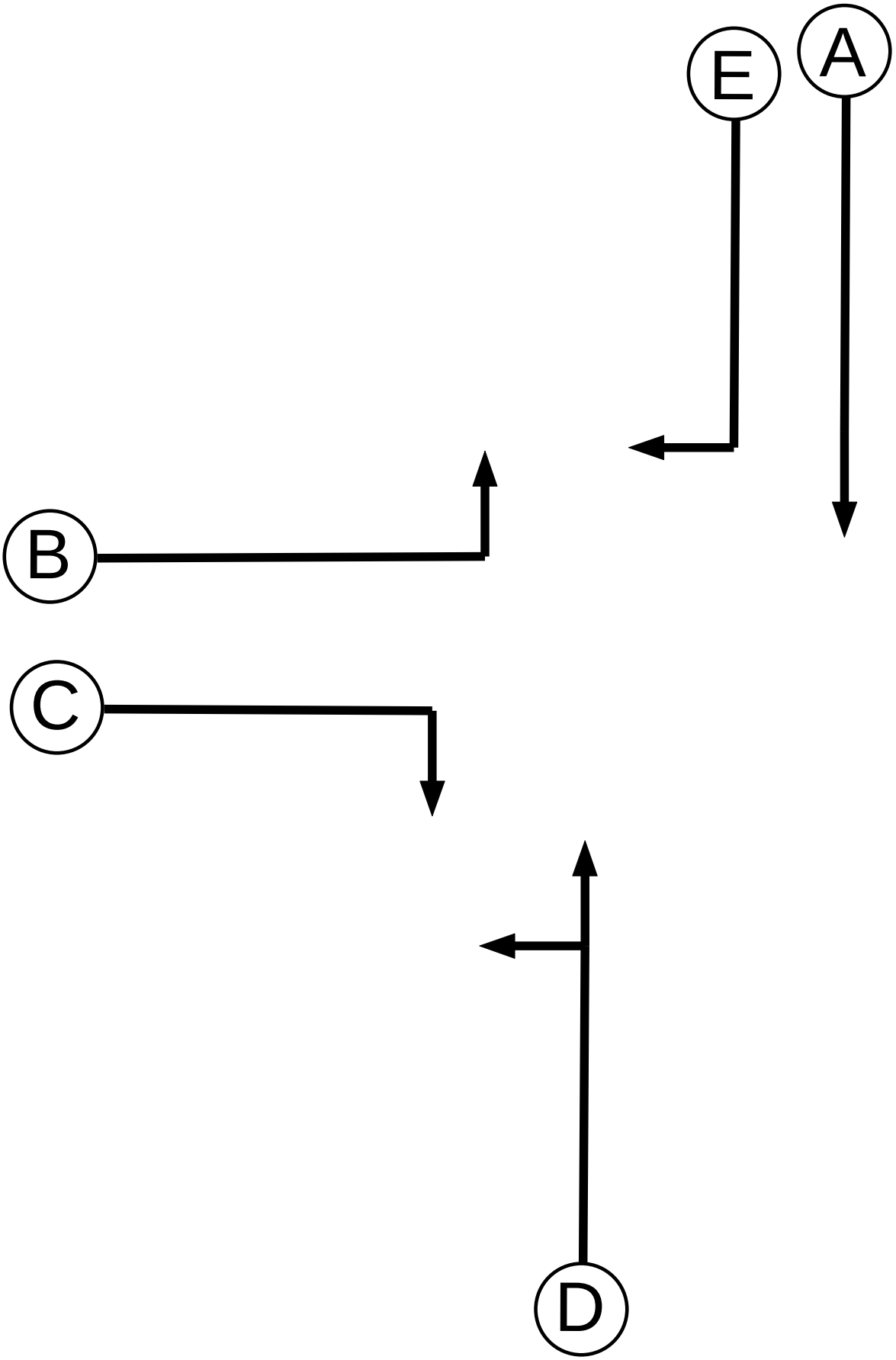
Network Layout Diagram


A
B
C
D
Arm J2:5 - B186 exit (North Junction - NB)
0.0 0.0% 0.0
Arm J2:1 - B186 (North Junction - SB)
65.4% 16.2
65.4% 7.7
22.7 23.0% 2.7
48.7 56.9% 4.4
Arm J2:3 - A127 (EB Slip)
Arm J2:6 - exit to A127 (EB)
0.0 0.0% 0.0
J2: A127 North Junction (EB slip)
PRC: 26.5 %
Total Traffic Delay: 10.0 pcuHr
Controller: 2
C2 - North Junction
78
1
3
90
2
57
38
Lane J2:2/1 Queue
60
0
Arm J2:2 - A127 (North Junction - NB)
18.7 71.2% 11.6
Arm J2:4 - B186 exit (North Junction - SB)
0.0 0.0% 0.0
Lane J1:1/1 Queue
Arm J1:4 - B186 (NB - overbridge)
0.0 0.0% 0.0
Arm J1:1 - B186 (SB - overbridge)
18.7 66.0% 15.7
0
3
68
2
90
1
55
C1 - South Junction
0.0 0.0% 0.0
Arm J1:5 - exit to A127 WB
Arm J1:2 - A127 (WB Slip)
5.8 67.4% 52.4
7.9 62.1% 34.5
Arm J1:3 - B186 (South junction - NB)
18.6 65.8% 5.8
55.8%
Arm J1:6 - B186 exit (South junction - SB)
0.0 0.0% 0.0
J1: South A127 Junction (WB Slip)
PRC: 33.5 %
Total Traffic Delay: 13.2 pcuHr
Controller: 1

Phase Diagram
C1 - South Junction



C2 - North Junction


E
A
B
C
D

Phase Intergreens Matrix

C1 - South Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		7	7	-	5
B	7		-	7	7
C	7	-		-	-
D	-	7	-		-
E	5	7	-	-	

C2 - North Junction

Terminating Phase	Starting Phase				
	A	B	C	D	E
A		-	7	-	-
B	-		-	7	-
C	7	-		7	7
D	-	7	7		5
E	-	-	7	5	

Lane Input Data

Junction: J1: South A127 Junction (WB Slip)

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J1:1/1 (B186 (SB - overbridge))	U	A	2	3	15.7	Geom	-	3.63	0.00	N	Arm J1:5 Left	25.00
											Arm J1:6 Ahead	Inf
J1:2/1 (A127 (WB Slip))	U	C	2	3	26.1	Geom	-	3.00	3.00	Y	Arm J1:6 Left	25.00
J1:2/2 (A127 (WB Slip))	U	B	2	3	26.1	Geom	-	3.25	3.00	Y	Arm J1:4 Right	25.00
J1:3/1 (B186 (South junction - NB))	U	D	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J1:4 Ahead	Inf
J1:3/2 (B186 (South junction - NB))	U	E	2	3	5.0	Geom	-	3.50	0.00	N	Arm J1:5 Right	15.00
J1:4/1 (B186 (NB - overbridge))	U		2	3	0.9	Inf	-	-	-	-	-	-
J1:5/1 (exit to A127 WB)	U		2	3	60.0	Inf	-	-	-	-	-	-

J1:6/1 (B186 exit (South junction - SB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Junction: J2: A127 North Junction (EB slip)												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
J2:1/1 (B186 (North Junction - SB))	U	A	2	3	26.1	Geom	-	3.50	3.00	Y	Arm J2:4 Ahead	Inf
J2:1/2 (B186 (North Junction - SB))	U	E	2	3	5.0	Geom	-	3.50	0.00	Y	Arm J2:6 Right	15.00
J2:2/1 (A127 (North Junction - NB))	U	D	2	3	15.7	Geom	-	3.66	0.00	Y	Arm J2:5 Ahead	Inf
											Arm J2:6 Left	25.00
J2:3/1 (A127 (EB Slip))	U	B	2	3	33.0	Geom	-	3.30	3.00	Y	Arm J2:5 Left	25.00
J2:3/2 (A127 (EB Slip))	U	C	2	3	7.0	Geom	-	3.66	3.00	Y	Arm J2:4 Right	25.00
J2:4/1 (B186 exit (North Junction - SB))	U		2	3	0.9	Inf	-	-	-	-	-	-
J2:5/1 (B186 exit (North Junction - NB))	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:6/1 (exit to A127 (EB))	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: J1: South A127 Junction (WB Slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (B186 (SB - overbridge))	3.63	0.00	N	Arm J1:5 Left	25.00	34.2 %	2075	2075
				Arm J1:6 Ahead	Inf	65.8 %		
J1:2/1 (A127 (WB Slip))	3.00	3.00	Y	Arm J1:6 Left	25.00	100.0 %	1688	1688
J1:2/2 (A127 (WB Slip))	3.25	3.00	Y	Arm J1:4 Right	25.00	100.0 %	1711	1711
J1:3/1 (B186 (South junction - NB))	3.50	3.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1839	1839
J1:3/2 (B186 (South junction - NB))	3.50	0.00	N	Arm J1:5 Right	15.00	100.0 %	1914	1914
J1:4/1 (B186 (NB - overbridge) Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:5/1 (exit to A127 WB Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/1 (B186 exit (South junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J2: A127 North Junction (EB slip)								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (B186 (North Junction - SB))	3.50	3.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1839	1839
J2:1/2 (B186 (North Junction - SB))	3.50	0.00	Y	Arm J2:6 Right	15.00	100.0 %	1786	1786
J2:2/1 (A127 (North Junction - NB))	3.66	0.00	Y	Arm J2:5 Ahead	Inf	67.5 %	1943	1943
				Arm J2:6 Left	25.00	32.5 %		
J2:3/1 (A127 (EB Slip))	3.30	3.00	Y	Arm J2:5 Left	25.00	100.0 %	1716	1716
J2:3/2 (A127 (EB Slip))	3.66	3.00	Y	Arm J2:4 Right	25.00	100.0 %	1750	1750
J2:4/1 (B186 exit (North Junction - SB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:5/1 (B186 exit (North Junction - NB) Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:6/1 (exit to A127 (EB) Lane 1)	Infinite Saturation Flow						Inf	Inf

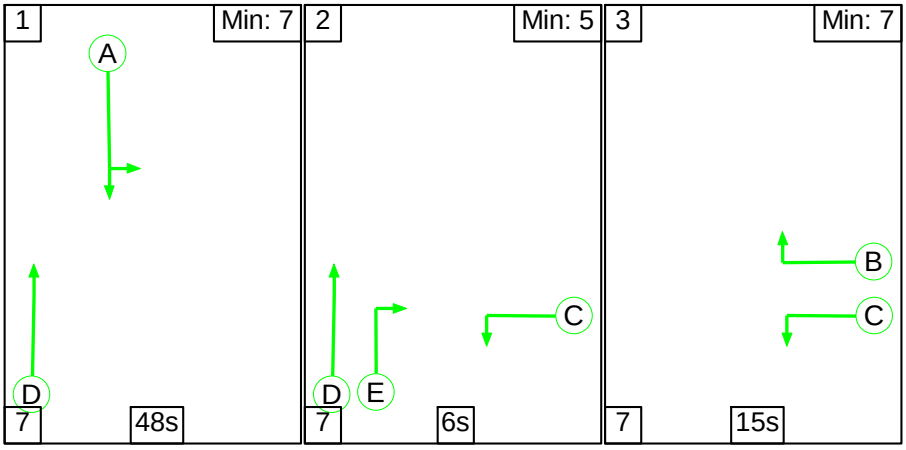
Lane Connector Input Data

Junction: J1: South A127 Junction (WB Slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:1/1	J1:5/1	Internal	35	35
J1:1/1	J1:6/1	Internal	35	35
J1:2/1	J1:6/1	Internal	35	35
J1:2/2	J1:4/1	Internal	1	35
J1:3/1	J1:4/1	Internal	1	35
J1:3/2	J1:5/1	Internal	35	35
J1:4/1	J2:2/1	Leaving	9	35
J2:4/1	J1:1/1	Entering	9	35

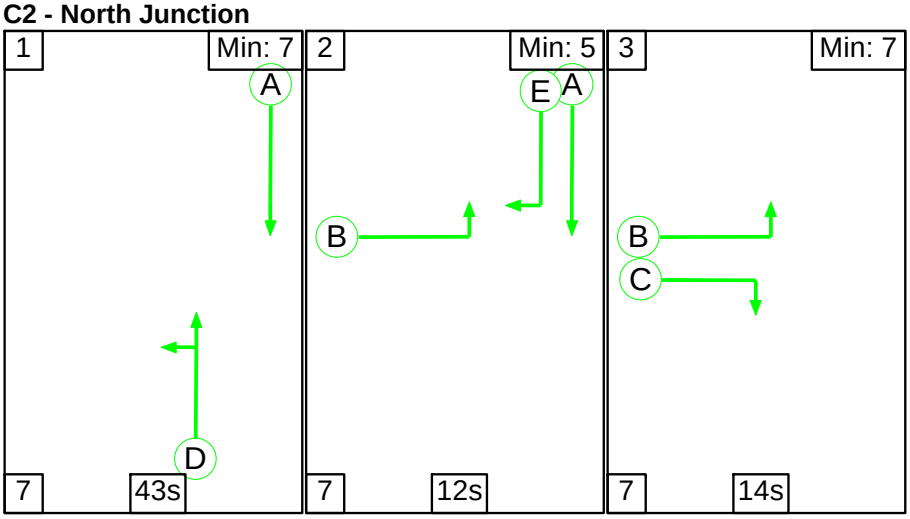
Junction: J2: A127 North Junction (EB slip)				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
J1:4/1	J2:2/1	Entering	9	35
J2:1/1	J2:4/1	Internal	1	35
J2:1/2	J2:6/1	Internal	35	35
J2:2/1	J2:5/1	Internal	35	35
J2:2/1	J2:6/1	Internal	35	35
J2:3/1	J2:5/1	Internal	35	35
J2:3/2	J2:4/1	Internal	1	35
J2:4/1	J1:1/1	Leaving	9	35

Stage Sequence Diagram

C1 - South Junction

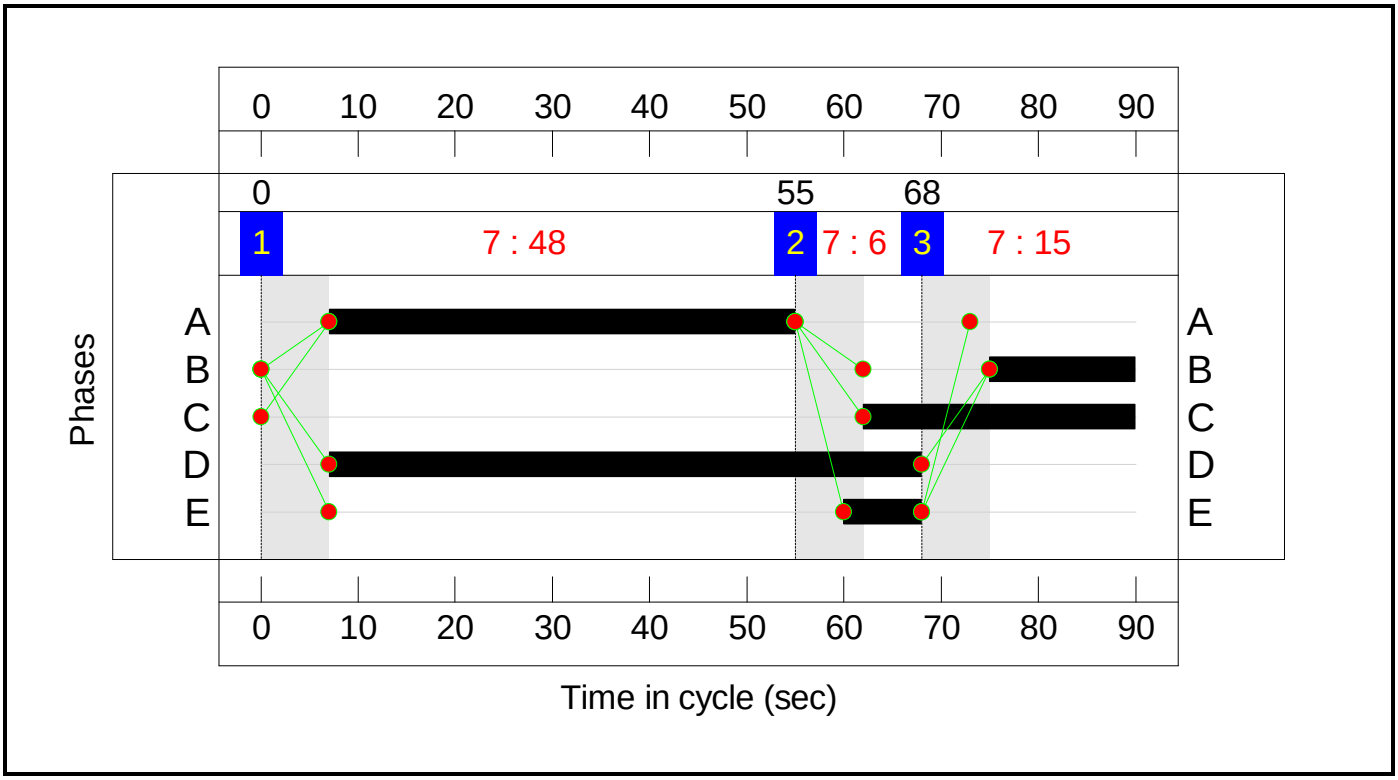


C2 - North Junction

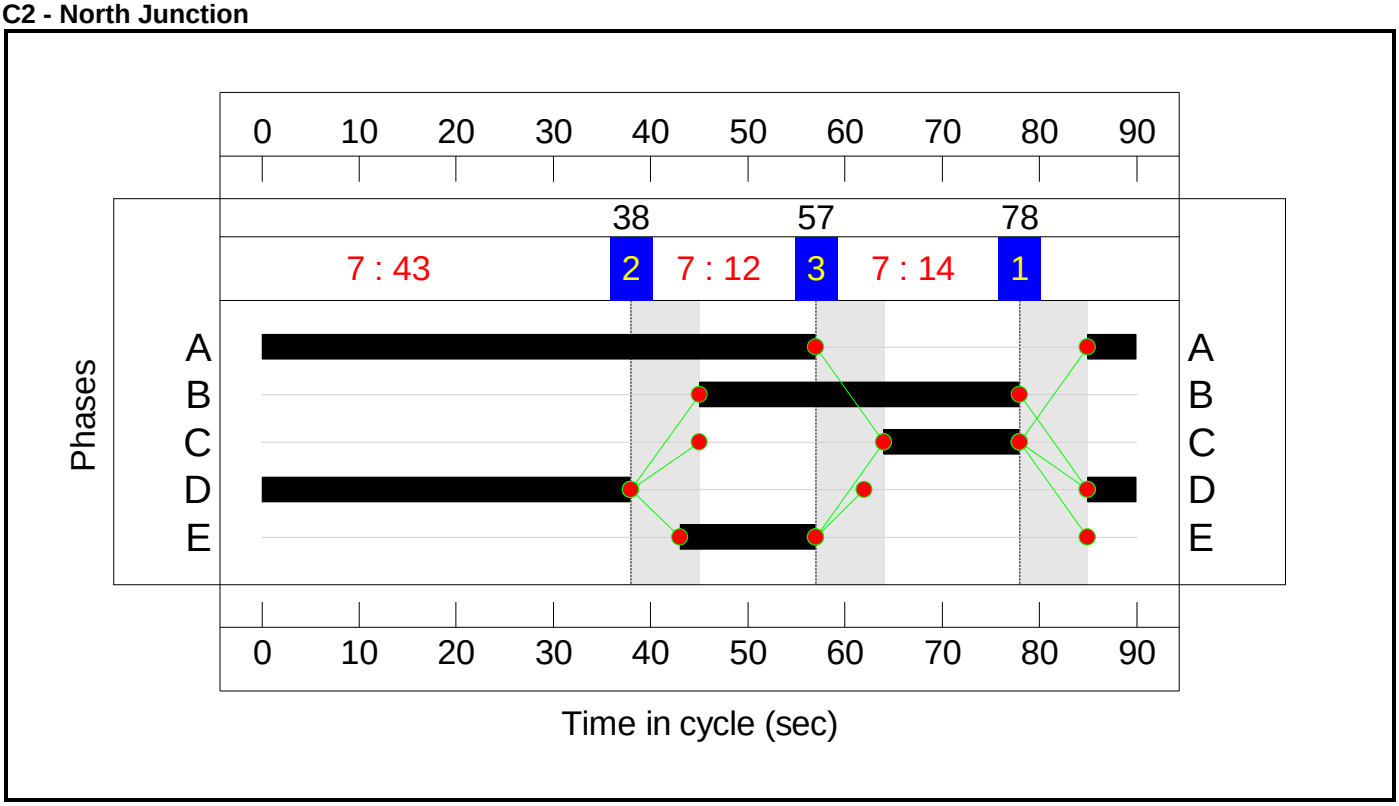


Signal Timings Diagram

C1 - South Junction



C2 - North Junction



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Proposed Singalisation (Single Carriageway Overbridge)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.2%**	**0**	**0**	**0**	**23.1**	**-**	**-**
J1: South A127 Junction (WB Slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.4%**	**0**	**0**	**0**	**13.2**	**-**	**-**
1/1	B186 (SB - overbridge) Left Ahead	U	C1:A		1	48	-	746	2075	1130	66.0%	-	-	-	3.9	18.7	15.7
2/1	A127 (WB Slip) Left	U	C1:C		1	28	-	338	1688	544	62.1%	-	-	-	3.2	34.5	7.9
2/2	A127 (WB Slip) Right	U	C1:B		1	15	-	205	1711	304	67.4%	-	-	-	3.0	52.4	5.8
3/1+3/2	B186 (South junction - NB) Ahead Right	U	C1:D C1:E		1	61:8	-	597	1839:1914	715+191	65.8 : 65.8%	-	-	-	3.1	18.6	5.8
J2: A127 North Junction (EB slip)	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.2%**	**0**	**0**	**0**	**10.0**	**-**	**-**
1/1+1/2	B186 (North Junction - SB) Ahead Right	U	C2:A C2:E		1	62:14	-	724	1839:1786	887+220	65.4 : 65.4%	-	-	-	3.3	16.2	7.7
2/1	A127 (North Junction - NB) Ahead Left	U	C2:D		1	43	-	676	1943	950	71.2%	-	-	-	3.5	18.7	11.6
3/1	A127 (EB Slip) Left	U	C2:B		1	33	-	149	1716	648	23.0%	-	-	-	0.9	22.7	2.7
3/2	A127 (EB Slip) Right	U	C2:C		1	14	-	166	1750	292	56.9%	-	-	-	2.2	48.7	4.4

C1 - South Junction	PRC for Signalled Lanes (%):	33.5	Total Delay for Signalled Lanes (pcuHr):	13.18	Cycle Time (s): 90
C2 - North Junction	PRC for Signalled Lanes (%):	26.5	Total Delay for Signalled Lanes (pcuHr):	9.96	Cycle Time (s): 90
	PRC Over All Lanes (%):	26.5	Total Delay Over All Lanes(pcuHr):	23.14	

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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Filename: 28085_20_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 25/10/2018 13:00:08

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Stream B-C	14.7	352.95	1.09	F
Stream B-A	25.6	304.45	1.12	F
Stream C-AB	2.9	8.61	0.59	A
	A1 - 2033 Reference Case			
Stream B-C	29.9	784.72	1.41	F
Stream B-A	65.0	761.42	1.30	F
Stream C-AB	3.4	9.24	0.62	A
	A1 - 2033 Local Plan Growth			
Stream B-C	62.5	1960.15	2.18	F
Stream B-A	164.3	2038.45	1.83	F
Stream C-AB	4.7	11.56	0.69	B

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

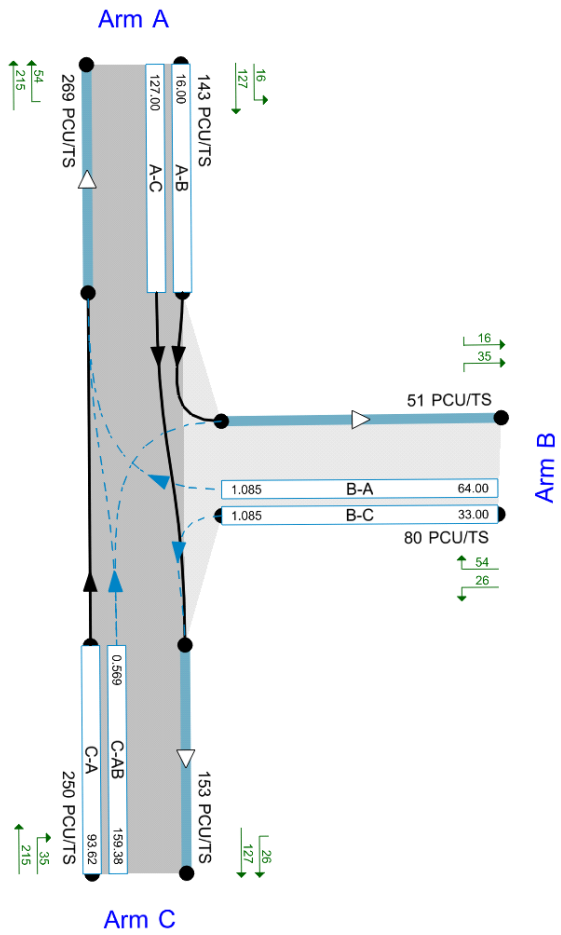
File summary

File Description

Title	Warley Street - A127 Westbound
Location	Brentwood
Site number	20
Date	05/08/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Streams (upstream end) show Total Demand (PCU/TS); Streams (downstream end) show RFC ()

Time Segment: 08:00-08:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth with Peak Spreading	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	✓	D1,D3,D5	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Westbound	T-Junction	Two-way	67.36	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Warley Street N		Major
B	A127 Slip Road		Minor
C	Warley Street S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.10			92.7	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	6.81	4.41	4.00	4.00		2.00	64	58

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	146.756	0.106	0.269	0.169	0.384
1	B-C	164.105	0.100	0.253	-	-
1	C-B	156.909	0.242	0.242	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	16.00	127.00
	B	64.00	0.00	33.00
	C	217.00	36.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	21.00	132.00
	B	63.00	0.00	19.00
	C	192.00	40.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	33.00	151.00
	B	55.00	0.00	33.00
	C	194.00	35.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	22.00	147.00
	B	77.00	0.00	40.00
	C	115.00	32.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	3	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	1
	B	2	0	0
	C	1	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	7	2
	B	0	0	15
	C	1	3	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	1	0	9
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.09	352.95	14.7	F	31.25	125.00
B-A	1.12	304.45	25.6	F	64.75	259.00
C-AB	0.59	8.61	2.9	A	133.55	534.19
C-A					81.70	326.81
A-B					23.00	92.00
A-C					139.25	557.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	33.00	33.00	30.41	1.085	26.40	0.0	6.6	162.964	F
B-A	64.00	64.00	58.97	1.085	53.74	0.0	10.3	113.365	F
C-AB	159.38	159.38	280.32	0.569	156.55	0.0	2.8	7.338	A
C-A	93.62	93.62			93.62				
A-B	16.00	16.00			16.00				
A-C	127.00	127.00			127.00				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	19.00	19.00	21.48	0.885	18.96	6.6	6.6	311.814	F
B-A	63.00	63.00	61.48	1.025	59.99	10.3	13.3	203.880	F
C-AB	154.51	154.51	262.33	0.589	154.41	2.8	2.9	8.614	A
C-A	77.49	77.49			77.49				
A-B	21.00	21.00			21.00				
A-C	132.00	132.00			132.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	33.00	33.00	30.98	1.065	29.73	6.6	9.9	287.873	F
B-A	55.00	55.00	53.36	1.031	51.71	13.3	16.6	273.202	F
C-AB	144.46	144.46	259.55	0.557	144.52	2.9	2.9	8.095	A
C-A	84.54	84.54			84.54				
A-B	33.00	33.00			33.00				
A-C	151.00	151.00			151.00				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	40.00	40.00	36.58	1.093	35.23	9.9	14.7	352.945	F
B-A	77.00	77.00	68.59	1.123	67.92	16.6	25.6	304.445	F
C-AB	75.83	75.83	202.97	0.374	77.59	2.9	1.1	7.447	A
C-A	71.17	71.17			71.17				
A-B	22.00	22.00			22.00				
A-C	147.00	147.00			147.00				

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Westbound	T-Junction	Two-way	164.54	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	26.00	131.00
	B	74.00	0.00	33.00
	C	223.00	36.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	30.00	136.00
	B	73.00	0.00	19.00
	C	197.00	40.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	43.00	155.00
	B	65.00	0.00	33.00
	C	200.00	35.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	30.00	150.00
	B	86.00	0.00	40.00
	C	120.00	32.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	3	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	1
	B	2	0	0
	C	1	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	7	2
	B	0	0	15
	C	1	3	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	1	0	9
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.41	784.72	29.9	F	31.25	125.00
B-A	1.30	761.42	65.0	F	74.50	298.00
C-AB	0.62	9.24	3.4	A	141.88	567.52
C-A					78.87	315.48
A-B					32.25	129.00
A-C					143.00	572.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	33.00	33.00	25.38	1.300	23.06	0.0	9.9	259.292	F
B-A	74.00	74.00	56.92	1.300	54.19	0.0	19.8	187.150	F
C-AB	169.85	169.85	282.98	0.600	166.58	0.0	3.3	7.806	A
C-A	89.15	89.15			89.15				
A-B	26.00	26.00			26.00				
A-C	131.00	131.00			131.00				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	19.00	19.00	18.34	1.036	17.64	9.9	11.3	562.262	F
B-A	73.00	73.00	58.81	1.241	59.24	19.8	33.6	450.110	F
C-AB	163.42	163.42	264.53	0.618	163.32	3.3	3.4	9.239	A
C-A	73.58	73.58			73.58				
A-B	30.00	30.00			30.00				
A-C	136.00	136.00			136.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	33.00	33.00	23.38	1.411	22.68	11.3	21.6	624.834	F
B-A	65.00	65.00	52.03	1.249	52.02	33.6	46.6	648.975	F
C-AB	154.57	154.57	262.47	0.589	154.59	3.4	3.4	8.689	A
C-A	80.43	80.43			80.43				
A-B	43.00	43.00			43.00				
A-C	155.00	155.00			155.00				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	40.00	40.00	31.51	1.269	31.71	21.6	29.9	784.718	F
B-A	86.00	86.00	67.78	1.269	67.51	46.6	65.0	761.423	F
C-AB	79.68	79.68	205.05	0.389	81.80	3.4	1.2	7.608	A
C-A	72.32	72.32			72.32				
A-B	30.00	30.00			30.00				
A-C	150.00	150.00			150.00				

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Westbound	T-Junction	Two-way	470.12	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	50.00	138.00
	B	96.00	0.00	36.00
	C	227.00	37.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	53.00	143.00
	B	93.00	0.00	22.00
	C	201.00	41.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	67.00	162.00
	B	87.00	0.00	37.00
	C	204.00	36.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	51.00	157.00
	B	105.00	0.00	43.00
	C	124.00	33.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	0	3	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	1
	B	2	0	0
	C	1	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	7	2
	B	0	0	15
	C	1	3	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	1	0	9
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	2.18	1960.15	62.5	F	34.50	138.00
B-A	1.83	2038.45	164.3	F	95.25	381.00
C-AB	0.69	11.56	4.7	B	158.40	633.61
C-A					67.35	269.39
A-B					55.25	221.00
A-C					150.00	600.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	36.00	36.00	19.65	1.832	18.58	0.0	17.4	522.364	F
B-A	96.00	96.00	52.39	1.832	51.25	0.0	44.8	407.467	F
C-AB	189.16	189.16	282.20	0.670	184.72	0.0	4.4	9.342	A
C-A	74.84	74.84			74.84				
A-B	50.00	50.00			50.00				
A-C	138.00	138.00			138.00				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	22.00	22.00	15.25	1.443	15.16	17.4	24.3	1306.822	F
B-A	93.00	93.00	53.28	1.745	53.42	44.8	84.3	1152.980	F
C-AB	181.97	181.97	264.27	0.689	181.76	4.4	4.7	11.563	B
C-A	60.03	60.03			60.03				
A-B	53.00	53.00			53.00				
A-C	143.00	143.00			143.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	37.00	37.00	16.99	2.178	16.96	24.3	44.3	1544.206	F
B-A	87.00	87.00	47.52	1.831	47.51	84.3	123.8	1712.436	F
C-AB	174.29	174.29	262.26	0.665	174.26	4.7	4.7	10.893	B
C-A	65.71	65.71			65.71				
A-B	67.00	67.00			67.00				
A-C	162.00	162.00			162.00				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	43.00	43.00	24.58	1.750	24.83	44.3	62.5	1960.149	F
B-A	105.00	105.00	64.42	1.630	64.48	123.8	164.3	2038.455	F
C-AB	88.20	88.20	204.02	0.432	91.35	4.7	1.5	8.442	A
C-A	68.80	68.80			68.80				
A-B	51.00	51.00			51.00				
A-C	157.00	157.00			157.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_20_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 18:00:18

»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline			
Stream B-C	14.3	140.59	1.02	F
Stream B-A	9.9	173.62	1.01	F
Stream C-AB	2.1	9.18	0.55	A
	A1 - 2033 Reference Case			
Stream B-C	31.9	352.77	1.14	F
Stream B-A	20.8	371.46	1.14	F
Stream C-AB	2.7	10.52	0.61	B
	A1 - 2033 Local Plan Growth			
Stream B-C	85.9	1052.52	1.49	F
Stream B-A	62.5	1060.42	1.49	F
Stream C-AB	6.8	19.89	0.82	C

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

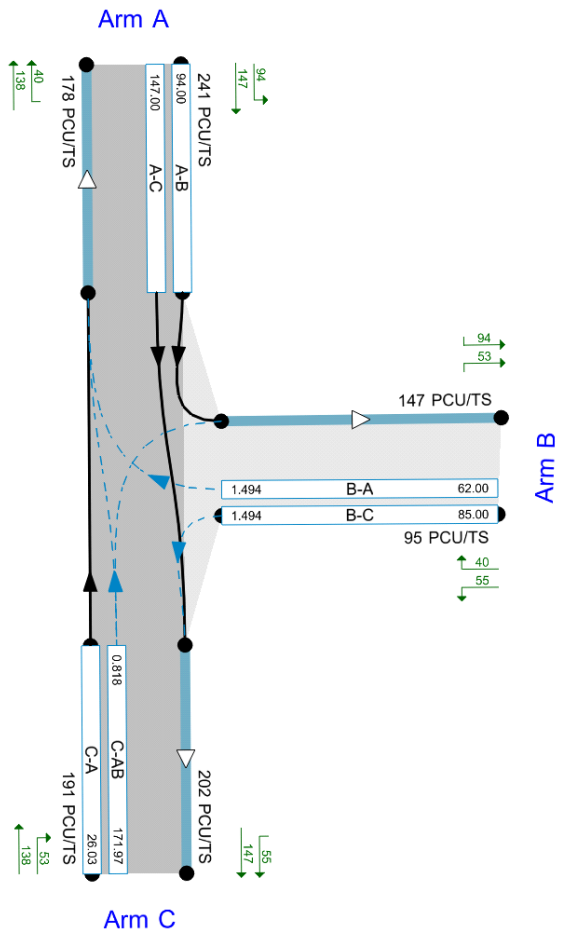
File summary

File Description

Title	Warley Street - A127 Westbound
Location	Brentwood
Site number	20
Date	05/08/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/TS).
Streams (upstream end) show Total Demand (PCU/TS); Streams (downstream end) show RFC ()

Time Segment: 17:00-17:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Westbound	T-Junction	Two-way	47.84	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Warley Street N		Major
B	A127 Slip Road		Minor
C	Warley Street S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.10			92.7	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	6.81	4.41	4.00	4.00		2.00	64	58

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	132.890	0.096	0.244	0.153	0.348
1	B-C	181.478	0.111	0.280	-	-
1	C-B	156.909	0.242	0.242	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	29.00	125.00
	B	50.00	0.00	82.00
	C	131.00	47.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	47.00	111.00
	B	54.00	0.00	93.00
	C	115.00	20.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	33.00	122.00
	B	45.00	0.00	74.00
	C	117.00	34.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	50.00	120.00
	B	50.00	0.00	82.00
	C	96.00	25.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	2	0	1
	C	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	1	12	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.02	140.59	14.3	F	82.75	331.00
B-A	1.01	173.62	9.9	F	49.75	199.00
C-AB	0.55	9.18	2.1	A	74.54	298.15
C-A					71.71	286.85
A-B					39.75	159.00
A-C					119.50	478.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	82.00	82.00	81.47	1.007	73.13	0.0	8.9	77.666	F
B-A	50.00	50.00	49.68	1.007	43.20	0.0	6.8	101.661	F
C-AB	119.61	119.61	215.80	0.554	117.51	0.0	2.1	9.184	A
C-A	58.39	58.39			58.39				
A-B	29.00	29.00			29.00				
A-C	125.00	125.00			125.00				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	93.00	93.00	90.99	1.022	87.57	8.9	14.3	140.586	F
B-A	54.00	54.00	54.31	0.994	50.91	6.8	9.9	173.618	F
C-AB	47.21	47.21	204.27	0.231	48.72	2.1	0.6	5.916	A
C-A	87.79	87.79			87.79				
A-B	47.00	47.00			47.00				
A-C	111.00	111.00			111.00				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	74.00	74.00	85.52	0.865	79.20	14.3	9.1	136.533	F
B-A	45.00	45.00	53.17	0.846	47.47	9.9	7.4	161.857	F
C-AB	79.41	79.41	205.59	0.386	78.86	0.6	1.1	7.368	A
C-A	71.59	71.59			71.59				
A-B	33.00	33.00			33.00				
A-C	122.00	122.00			122.00				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	82.00	82.00	87.88	0.933	81.36	9.1	9.7	113.802	F
B-A	50.00	50.00	55.39	0.903	49.82	7.4	7.6	143.827	F
C-AB	51.92	51.92	187.54	0.277	52.36	1.1	0.7	6.766	A
C-A	69.08	69.08			69.08				
A-B	50.00	50.00			50.00				
A-C	120.00	120.00			120.00				

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Westbound	T-Junction	Two-way	104.03	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	63.00	129.00
	B	53.00	0.00	84.00
	C	136.00	47.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	79.00	115.00
	B	57.00	0.00	95.00
	C	120.00	20.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	64.00	126.00
	B	47.00	0.00	76.00
	C	122.00	34.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	79.00	123.00
	B	53.00	0.00	84.00
	C	101.00	25.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	2	0	1
	C	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	1	12	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.14	352.77	31.9	F	84.75	339.00
B-A	1.14	371.46	20.8	F	52.50	210.00
C-AB	0.61	10.52	2.7	B	80.75	323.01
C-A					70.50	281.99
A-B					71.25	285.00
A-C					123.25	493.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	84.00	84.00	73.93	1.136	69.21	0.0	14.8	117.862	F
B-A	53.00	53.00	46.65	1.136	42.51	0.0	10.5	140.972	F
C-AB	129.96	129.96	213.05	0.610	127.25	0.0	2.7	10.525	B
C-A	53.04	53.04			53.04				
A-B	63.00	63.00			63.00				
A-C	129.00	129.00			129.00				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	95.00	95.00	83.38	1.139	82.46	14.8	27.3	255.803	F
B-A	57.00	57.00	51.25	1.112	49.47	10.5	18.0	291.709	F
C-AB	51.39	51.39	201.93	0.255	53.40	2.7	0.7	6.218	A
C-A	88.61	88.61			88.61				
A-B	79.00	79.00			79.00				
A-C	115.00	115.00			115.00				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76.00	76.00	78.09	0.973	75.95	27.3	27.4	329.324	F
B-A	47.00	47.00	49.13	0.957	46.93	18.0	18.1	349.454	F
C-AB	85.79	85.79	203.16	0.422	85.13	0.7	1.4	7.919	A
C-A	70.21	70.21			70.21				
A-B	64.00	64.00			64.00				
A-C	126.00	126.00			126.00				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	84.00	84.00	80.33	1.046	79.52	27.4	31.9	352.768	F
B-A	53.00	53.00	51.27	1.034	50.29	18.1	20.8	371.462	F
C-AB	55.87	55.87	185.39	0.301	56.42	1.4	0.8	7.107	A
C-A	70.13	70.13			70.13				
A-B	79.00	79.00			79.00				
A-C	123.00	123.00			123.00				

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Warley Str - A127 Westbound	T-Junction	Two-way	284.39	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	94.00	147.00
	B	62.00	0.00	85.00
	C	143.00	55.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	109.00	132.00
	B	66.00	0.00	96.00
	C	127.00	28.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	92.00	142.00
	B	56.00	0.00	76.00
	C	128.00	41.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To		
		A	B	C
From	A	0.00	105.00	139.00
	B	61.00	0.00	84.00
	C	107.00	32.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	2	0	1
	C	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	1	12	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	1.49	1052.52	85.9	F	85.25	341.00
B-A	1.49	1060.42	62.5	F	61.25	245.00
C-AB	0.82	19.89	6.8	C	112.41	449.63
C-A					52.84	211.37
A-B					100.00	400.00
A-C					140.00	560.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	85.00	85.00	56.91	1.494	55.06	0.0	29.9	250.628	F
B-A	62.00	62.00	41.51	1.494	39.70	0.0	22.3	267.488	F
C-AB	171.97	171.97	210.24	0.818	165.15	0.0	6.8	19.895	C
C-A	26.03	26.03			26.03				
A-B	94.00	94.00			94.00				
A-C	147.00	147.00			147.00				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	96.00	96.00	68.45	1.403	68.33	29.9	57.6	613.748	F
B-A	66.00	66.00	47.99	1.375	47.34	22.3	41.0	635.780	F
C-AB	82.98	82.98	201.37	0.412	88.36	6.8	1.4	8.461	A
C-A	72.02	72.02			72.02				
A-B	109.00	109.00			109.00				
A-C	132.00	132.00			132.00				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76.00	76.00	63.97	1.188	64.11	57.6	69.5	888.011	F
B-A	56.00	56.00	46.42	1.206	46.32	41.0	50.6	889.694	F
C-AB	115.24	115.24	200.48	0.575	114.15	1.4	2.5	11.019	B
C-A	53.76	53.76			53.76				
A-B	92.00	92.00			92.00				
A-C	142.00	142.00			142.00				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	84.00	84.00	67.65	1.242	67.60	69.5	85.9	1052.521	F
B-A	61.00	61.00	49.20	1.240	49.13	50.6	62.5	1060.416	F
C-AB	79.43	79.43	182.84	0.434	80.49	2.5	1.5	9.053	A
C-A	59.57	59.57			59.57				
A-B	105.00	105.00			105.00				
A-C	139.00	139.00			139.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_22_J9_SSM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 18:01:49

»(Default Analysis Set) - 2017 Baseline, AM
»(Default Analysis Set) - 2017 Baseline, PM
»(Default Analysis Set) - 2033 Reference Case, AM
»(Default Analysis Set) - 2033 Reference Case, PM
»(Default Analysis Set) - 2033 Local Plan Growth, AM
»(Default Analysis Set) - 2033 Local Plan Growth, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2017 Baseline							
Stream B-AC	0.1	10.07	0.08	B	0.1	9.37	0.08	A
Stream C-B	0.0	5.30	0.03	A	0.0	4.92	0.00	A
	A1 - 2033 Reference Case							
Stream B-AC	0.1	10.24	0.09	B	0.1	9.52	0.09	A
Stream C-B	0.0	5.35	0.03	A	0.0	4.93	0.00	A
	A1 - 2033 Local Plan Growth							
Stream B-AC	0.1	10.60	0.09	B	0.1	9.74	0.09	A
Stream C-B	0.0	5.43	0.03	A	0.0	4.95	0.00	A

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

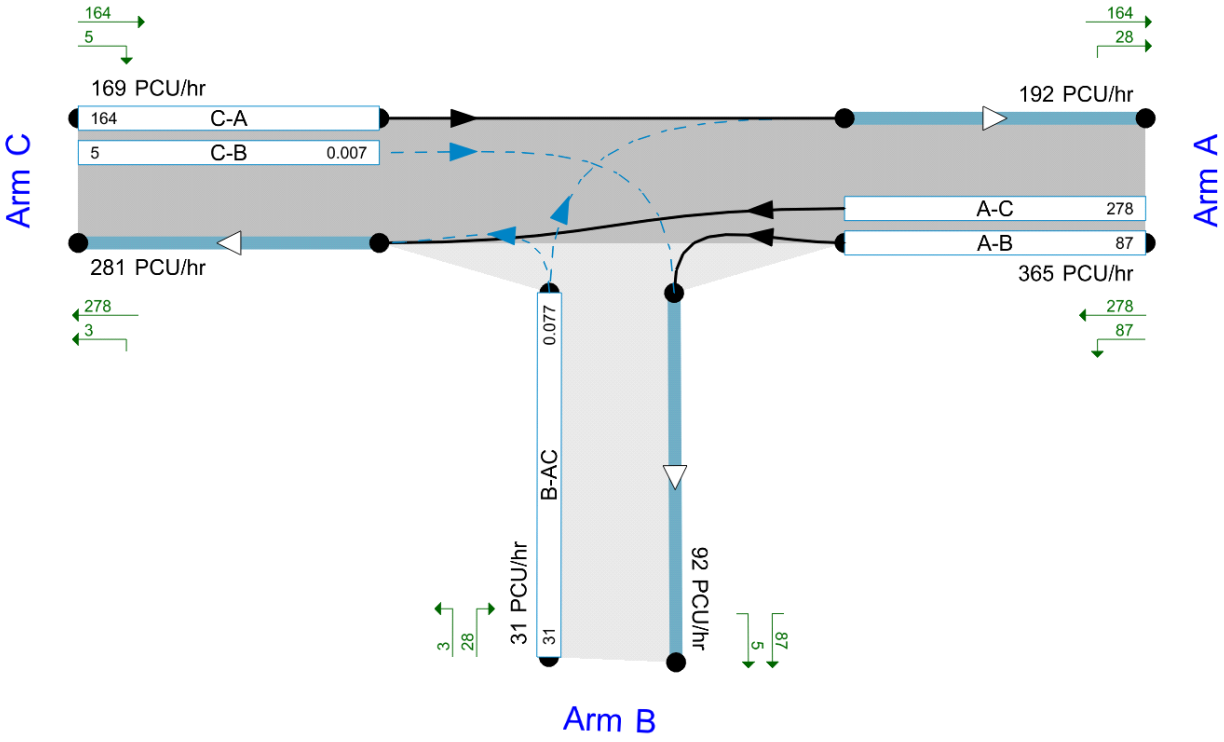
File summary

File Description

Title	A1023 Chelmsford Road - Alexander Lane
Location	Brentwood
Site number	22
Date	05/08/2014
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	proose
Description	

Units

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



Flows show modelled flow through junction (PCU/hr).
Streams (upstream end) show Total Demand (PCU/hr); Streams (downstream end) show RFC ()

Time Segment: 08:00-08:15

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	A1023 Chelmsford Rd - Alexander Ln	T-Junction	Two-way	0.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Chelmsford Road E		Major
B	Alexander Lane		Minor
C	Chelmsford Road W		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00		✓	3.20	250.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.80	27	15

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	484	0.088	0.223	0.140	0.318
1	B-C	621	0.095	0.240	-	-
1	C-B	797	0.309	0.309	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	87	278
	B	28	0	3
	C	164	5	0

08:15 - 08:30

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	92	216
	B	26	0	6
	C	203	9	0

08:30 - 08:45

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	83	189
	B	32	0	2
	C	181	18	0

08:45 - 09:00

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	45	172
	B	24	0	2
	C	126	1	0

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	4	0	0
	C	1	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	25
	C	2	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	7	0	0
	C	1	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	10.07	0.1	B	31	31
C-A					169	169
C-B	0.03	5.30	0.0	A	8	8
A-B					77	77
A-C					214	214

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	31	8	401	0.077	31	0.0	0.1	10.068	B
C-A	164	41			164				
C-B	5	1	684	0.007	5	0.0	0.0	5.299	A
A-B	87	22			87				
A-C	278	70			278				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	419	0.076	32	0.1	0.1	9.647	A
C-A	203	51			203				
C-B	9	2	702	0.013	9	0.0	0.0	5.195	A
A-B	92	23			92				
A-C	216	54			216				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	34	9	410	0.083	34	0.1	0.1	10.053	B
C-A	181	45			181				
C-B	18	5	713	0.025	18	0.0	0.0	5.179	A
A-B	83	21			83				
A-C	189	47			189				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	26	7	432	0.060	26	0.1	0.1	9.206	A
C-A	126	32			126				
C-B	1	0.25	730	0.001	1	0.0	0.0	4.939	A
A-B	45	11			45				
A-C	172	43			172				

(Default Analysis Set) - 2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	A1023 Chelmsford Rd - Alexander Ln	T-Junction	Two-way	0.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	154
	B	29	0	6
	C	223	2	0

17:15 - 17:30

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	33	164
	B	27	0	3
	C	258	2	0

17:30 - 17:45

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	30	153
	B	23	0	2
	C	211	2	0

17:45 - 18:00

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	51	153
	B	23	0	0
	C	244	2	0

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	4	0	0
	C	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	0	0

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	9.37	0.1	A	28	28
C-A					234	234
C-B	0.00	4.92	0.0	A	2	2
A-B					36	36
A-C					156	156

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	35	9	436	0.080	35	0.0	0.1	8.957	A
C-A	223	56			223				
C-B	2	0.50	740	0.003	2	0.0	0.0	4.878	A
A-B	31	8			31				
A-C	154	39			154				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	30	8	420	0.071	30	0.1	0.1	9.368	A
C-A	258	65			258				
C-B	2	0.50	736	0.003	2	0.0	0.0	4.903	A
A-B	33	8			33				
A-C	164	41			164				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	25	6	427	0.059	25	0.1	0.1	9.151	A
C-A	211	53			211				
C-B	2	0.50	740	0.003	2	0.0	0.0	4.874	A
A-B	30	8			30				
A-C	153	38			153				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	23	6	411	0.056	23	0.1	0.1	9.291	A
C-A	244	61			244				
C-B	2	0.50	734	0.003	2	0.0	0.0	4.917	A
A-B	51	13			51				
A-C	153	38			153				

(Default Analysis Set) - 2033 Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	A1023 Chelmsford Rd - Alexander Ln	T-Junction	Two-way	0.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	90	294
	B	29	0	3
	C	170	5	0

08:15 - 08:30

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	95	231
	B	27	0	6
	C	208	9	0

08:30 - 08:45

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	85	203
	B	33	0	2
	C	186	18	0

08:45 - 09:00

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	47	183
	B	24	0	2
	C	130	1	0

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	4	0	0
	C	1	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	25
	C	2	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	7	0	0
	C	1	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	10.24	0.1	B	32	32
C-A					174	174
C-B	0.03	5.35	0.0	A	8	8
A-B					79	79
A-C					228	228

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	396	0.081	32	0.0	0.1	10.237	B
C-A	170	43			170				
C-B	5	1	678	0.007	5	0.0	0.0	5.345	A
A-B	90	23			90				
A-C	294	74			294				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	33	8	414	0.080	33	0.1	0.1	9.796	A
C-A	208	52			208				
C-B	9	2	696	0.013	9	0.0	0.0	5.237	A
A-B	95	24			95				
A-C	231	58			231				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	35	9	406	0.086	35	0.1	0.1	10.188	B
C-A	186	47			186				
C-B	18	5	708	0.025	18	0.0	0.0	5.216	A
A-B	85	21			85				
A-C	203	51			203				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	26	7	429	0.061	26	0.1	0.1	9.286	A
C-A	130	33			130				
C-B	1	0.25	726	0.001	1	0.0	0.0	4.966	A
A-B	47	12			47				
A-C	183	46			183				

(Default Analysis Set) - 2033 Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	A1023 Chelmsford Rd - Alexander Ln	T-Junction	Two-way	0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	32	159
	B	31	0	6
	C	238	2	0

17:15 - 17:30

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	34	169
	B	29	0	3
	C	275	2	0

17:30 - 17:45

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	157
	B	25	0	2
	C	225	2	0

17:45 - 18:00

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	51	157
	B	25	0	0
	C	255	2	0

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	4	0	0
	C	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	0	0

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	9.52	0.1	A	30	30
C-A					248	248
C-B	0.00	4.93	0.0	A	2	2
A-B					37	37
A-C					161	161

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	37	9	432	0.086	37	0.0	0.1	9.099	A
C-A	238	60			238				
C-B	2	0.50	738	0.003	2	0.0	0.0	4.890	A
A-B	32	8			32				
A-C	159	40			159				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	416	0.077	32	0.1	0.1	9.522	A
C-A	275	69			275				
C-B	2	0.50	734	0.003	2	0.0	0.0	4.915	A
A-B	34	9			34				
A-C	169	42			169				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	27	7	423	0.064	27	0.1	0.1	9.281	A
C-A	225	56			225				
C-B	2	0.50	739	0.003	2	0.0	0.0	4.884	A
A-B	31	8			31				
A-C	157	39			157				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	25	6	408	0.061	25	0.1	0.1	9.397	A
C-A	255	64			255				
C-B	2	0.50	733	0.003	2	0.0	0.0	4.926	A
A-B	51	13			51				
A-C	157	39			157				

(Default Analysis Set) - 2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	A1023 Chelmsford Rd - Alexander Ln	T-Junction	Two-way	0.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	99	319
	B	32	0	3
	C	185	5	0

08:15 - 08:30

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	103	254
	B	30	0	6
	C	223	9	0

08:30 - 08:45

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	93	225
	B	35	0	2
	C	199	18	0

08:45 - 09:00

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	53	199
	B	27	0	2
	C	140	1	0

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	4	0	0
	C	1	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	0
	B	0	0	25
	C	2	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	7	0	0
	C	1	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	10.60	0.1	B	34	34
C-A					187	187
C-B	0.03	5.43	0.0	A	8	8
A-B					87	87
A-C					249	249

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	35	9	386	0.091	35	0.0	0.1	10.596	B
C-A	185	46			185				
C-B	5	1	668	0.007	5	0.0	0.0	5.430	A
A-B	99	25			99				
A-C	319	80			319				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	36	9	404	0.089	36	0.1	0.1	10.124	B
C-A	223	56			223				
C-B	9	2	687	0.013	9	0.0	0.0	5.311	A
A-B	103	26			103				
A-C	254	64			254				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	37	9	398	0.093	37	0.1	0.1	10.443	B
C-A	199	50			199				
C-B	18	5	699	0.026	18	0.0	0.0	5.287	A
A-B	93	23			93				
A-C	225	56			225				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	29	7	423	0.069	29	0.1	0.1	9.502	A
C-A	140	35			140				
C-B	1	0.25	719	0.001	1	0.0	0.0	5.013	A
A-B	53	13			53				
A-C	199	50			199				

(Default Analysis Set) - 2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	A1023 Chelmsford Rd - Alexander Ln	T-Junction	Two-way	0.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	33	170
	B	34	0	6
	C	258	2	0

17:15 - 17:30

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	36	182
	B	31	0	3
	C	296	2	0

17:30 - 17:45

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	32	168
	B	27	0	2
	C	244	2	0

17:45 - 18:00

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	53	166
	B	26	0	0
	C	270	2	0

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	4	0	0
	C	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	0	0

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	9.74	0.1	A	32	32
C-A					267	267
C-B	0.00	4.95	0.0	A	2	2
A-B					39	39
A-C					172	172

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	40	10	425	0.094	40	0.0	0.1	9.329	A
C-A	258	65			258				
C-B	2	0.50	734	0.003	2	0.0	0.0	4.915	A
A-B	33	8			33				
A-C	170	43			170				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	34	9	409	0.083	34	0.1	0.1	9.738	A
C-A	296	74			296				
C-B	2	0.50	730	0.003	2	0.0	0.0	4.946	A
A-B	36	9			36				
A-C	182	46			182				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	29	7	417	0.070	29	0.1	0.1	9.470	A
C-A	244	61			244				
C-B	2	0.50	735	0.003	2	0.0	0.0	4.909	A
A-B	32	8			32				
A-C	168	42			168				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	26	7	404	0.064	26	0.1	0.1	9.531	A
C-A	270	68			270				
C-B	2	0.50	729	0.003	2	0.0	0.0	4.949	A
A-B	53	13			53				
A-C	166	42			166				

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: 28085_23_J9_SSM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\ARCADY\Junctions 9
Report generation date: 24/10/2018 17:49:50

»2017 Baseline, AM
»2017 Baseline, PM
»2033 Reference Case, AM
»2033 Reference Case, PM
»2033 Local Plan Growth, AM
»2033 Local Plan Growth, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2017 Baseline							
Arm A	4.8	18.09	0.82	C	1.6	8.20	0.60	A
Arm B	0.7	4.49	0.40	A	0.7	4.23	0.40	A
Arm C	0.5	9.05	0.33	A	0.4	7.59	0.26	A
Arm E	2.6	10.21	0.71	B	3.1	11.25	0.75	B
Arm F	0.5	3.03	0.32	A	1.3	4.78	0.55	A
	2033 Reference Case							
Arm A	8.0	28.88	0.89	D	1.8	8.93	0.62	A
Arm B	0.9	5.00	0.44	A	0.8	4.41	0.42	A
Arm C	0.6	10.22	0.35	B	0.4	7.88	0.27	A
Arm E	3.0	11.67	0.74	B	3.9	13.55	0.79	B
Arm F	0.7	3.34	0.38	A	1.6	5.49	0.60	A
	2033 Local Plan Growth							
Arm A	11.9	41.96	0.94	E	2.1	10.27	0.66	B
Arm B	1.0	5.40	0.48	A	0.9	4.82	0.45	A
Arm C	0.6	11.08	0.37	B	0.4	8.70	0.29	A
Arm E	8.3	27.40	0.90	D	4.8	15.81	0.82	C
Arm F	0.8	3.75	0.43	A	1.7	5.72	0.62	A

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

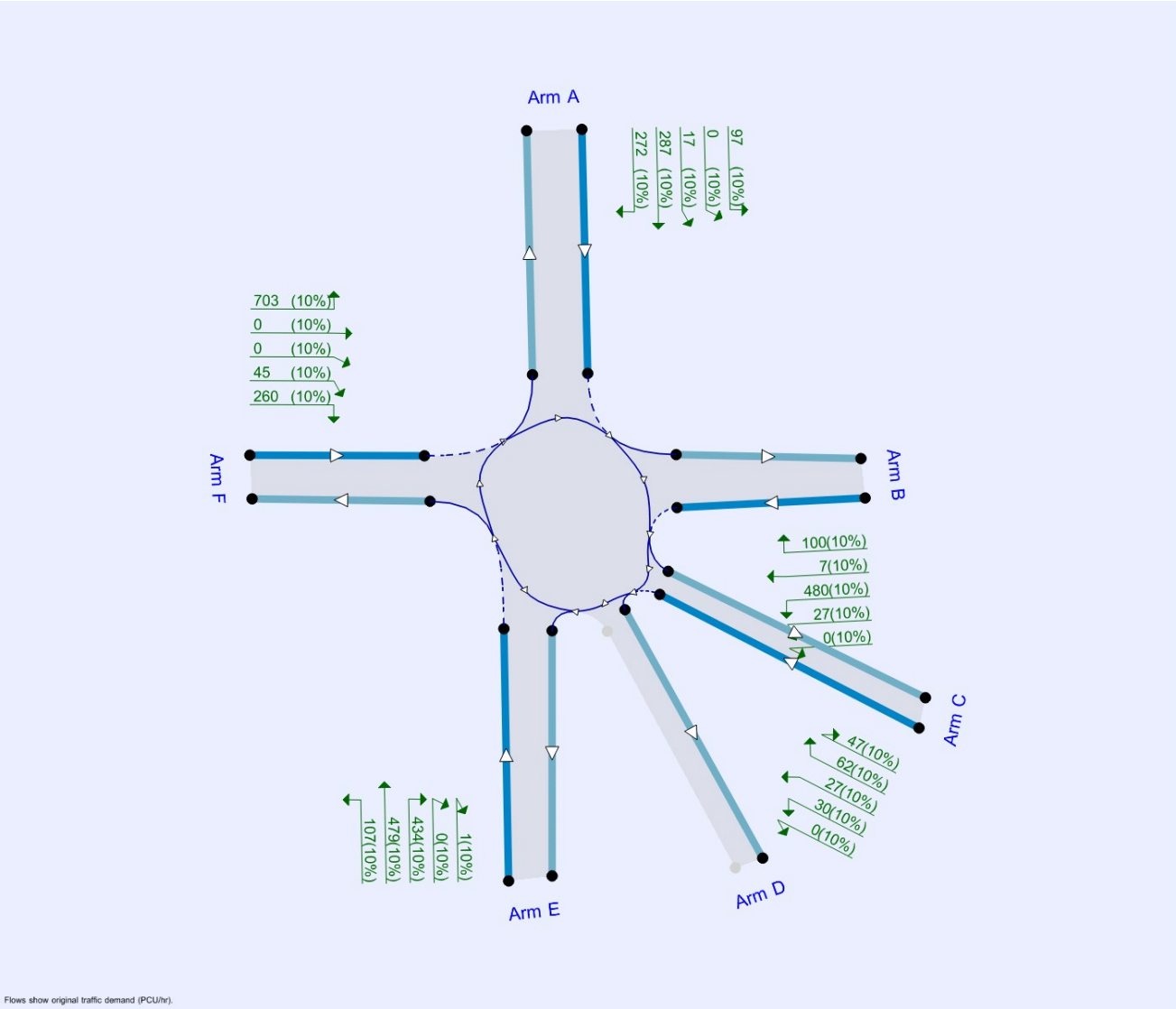
File summary

File Description

Title	A12 Junction 12
Location	23
Site number	
Date	01/04/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	Bhouse
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	08:00	09:30	15	✓
D2	2017 Baseline	PM	ONE HOUR	17:00	18:30	15	✓
D3	2033 Reference Case	AM	ONE HOUR	08:00	09:30	15	✓
D4	2033 Reference Case	PM	ONE HOUR	17:00	18:30	15	✓
D5	2033 Local Plan Growth	AM	ONE HOUR	08:00	09:30	15	✓
D6	2033 Local Plan Growth	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	A, B, C, D, E, F	10.12	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Roman Rd	
B	Ingatestone Bypass E	
C	Services	
D	Driveway	
E	Chelmsford Rd	
F	A12 W	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.65	8.50	6.0	20.0	99.0	30.0	
B	6.00	6.50	1.0	40.0	99.0	18.0	
C	4.00	6.00	2.0	10.0	99.0	36.0	
D							✓
E	3.40	6.50	18.5	20.0	99.0	32.0	
F	7.00	8.10	5.0	90.0	99.0	13.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.424	1516
B	0.506	2000
C	0.374	1262
D		
E	0.439	1630
F	0.588	2541

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	896	100.000
B		ONE HOUR	✓	532	100.000
C		ONE HOUR	✓	193	100.000
D					
E		ONE HOUR	✓	847	100.000
F		ONE HOUR	✓	567	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
		A	B	C	D	E	F
From	A	0	154	0	32	407	303
	B	156	0	0	71	285	20
	C	46	39	0	0	30	78
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	248	418	0	35	0	146
	F	388	1	0	27	150	1

Vehicle Mix

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	10	10	10	10	10	10
	B	10	10	10	10	10	10
	C	10	10	10	10	10	10
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	10	10	10	10	10	10
	F	10	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.82	18.09	4.8	C	822	1233
B	0.40	4.49	0.7	A	488	732
C	0.33	9.05	0.5	A	177	266
D						
E	0.71	10.21	2.6	B	777	1166
F	0.32	3.03	0.5	A	520	780

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	675	169	503	1302	0.518	670	628	0.0	1.2	6.218	A
B	401	100	715	1639	0.244	399	458	0.0	0.4	3.192	A
C	145	36	1114	845	0.172	144	0	0.0	0.2	5.643	A
D			1134				124				
E	638	159	481	1419	0.449	634	653	0.0	0.9	5.023	A
F	427	107	705	2126	0.201	426	410	0.0	0.3	2.328	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	805	201	602	1260	0.639	803	752	1.2	1.9	8.595	A
B	478	120	856	1567	0.305	478	549	0.4	0.5	3.633	A
C	174	43	1334	763	0.227	173	0	0.2	0.3	6.708	A
D			1359				148				
E	761	190	577	1377	0.553	760	782	0.9	1.3	6.392	A
F	510	127	845	2044	0.249	509	491	0.3	0.4	2.580	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	987	247	736	1203	0.820	976	920	1.9	4.5	16.669	C
B	586	146	1042	1473	0.398	585	669	0.5	0.7	4.455	A
C	212	53	1627	653	0.325	212	0	0.3	0.5	8.951	A
D			1658				181				
E	933	233	703	1322	0.706	928	954	1.3	2.5	9.929	A
F	624	156	1033	1934	0.323	624	599	0.4	0.5	3.020	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	987	247	739	1202	0.821	986	923	4.5	4.8	18.086	C
B	586	146	1051	1468	0.399	586	674	0.7	0.7	4.485	A
C	212	53	1636	650	0.327	212	0	0.5	0.5	9.052	A
D			1667				182				
E	933	233	708	1320	0.707	932	960	2.5	2.6	10.208	B
F	624	156	1037	1931	0.323	624	603	0.5	0.5	3.029	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	805	201	606	1259	0.640	817	756	4.8	2.0	9.173	A
B	478	120	868	1561	0.306	479	555	0.7	0.5	3.665	A
C	174	43	1347	758	0.229	174	0	0.5	0.3	6.795	A
D			1372				149				
E	761	190	583	1375	0.554	766	790	2.6	1.4	6.560	A
F	510	127	851	2040	0.250	510	498	0.5	0.4	2.590	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	675	169	506	1301	0.519	678	632	2.0	1.2	6.387	A
B	401	100	722	1635	0.245	401	462	0.5	0.4	3.212	A
C	145	36	1123	842	0.173	146	0	0.3	0.2	5.693	A
D			1144				125				
E	638	159	486	1417	0.450	640	658	1.4	0.9	5.107	A
F	427	107	711	2123	0.201	427	414	0.4	0.3	2.335	A

2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	A, B, C, D, E, F	7.38	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	ONE HOUR	17:00	18:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	645	100.000
B		ONE HOUR	✓	569	100.000
C		ONE HOUR	✓	166	100.000
D					
E		ONE HOUR	✓	933	100.000
F		ONE HOUR	✓	918	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
		A	B	C	D	E	F
From	A	20	97	0	17	253	258
	B	101	0	0	27	434	7
	C	62	47	0	0	30	27
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	443	409	0	1	0	80
	F	683	0	0	45	190	0

Vehicle Mix

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	10	10	10	10	10	10
	B	10	10	10	10	10	10
	C	10	10	10	10	10	10
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	10	10	10	10	10	10
	F	10	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.60	8.20	1.6	A	592	888
B	0.40	4.23	0.7	A	522	783
C	0.26	7.59	0.4	A	152	228
D						
E	0.75	11.25	3.1	B	856	1284
F	0.55	4.78	1.3	A	842	1264

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	486	121	518	1296	0.375	483	981	0.0	0.7	4.857	A
B	428	107	587	1703	0.252	427	414	0.0	0.4	3.101	A
C	125	31	1014	882	0.142	124	0	0.0	0.2	5.219	A
D			1071				68				
E	702	176	391	1459	0.482	698	680	0.0	1.0	5.182	A
F	691	173	811	2064	0.335	689	279	0.0	0.6	2.874	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	580	145	621	1252	0.463	579	1175	0.7	0.9	5.869	A
B	512	128	704	1644	0.311	511	496	0.4	0.5	3.492	A
C	149	37	1215	808	0.185	149	0	0.2	0.2	6.009	A
D			1283				81				
E	839	210	468	1425	0.589	837	814	1.0	1.5	6.710	A
F	825	206	971	1970	0.419	824	334	0.6	0.8	3.453	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	710	178	759	1194	0.595	708	1436	0.9	1.6	8.100	A
B	626	157	860	1565	0.400	626	606	0.5	0.7	4.211	A
C	183	46	1486	706	0.259	182	0	0.2	0.4	7.551	A
D			1569				99				
E	1027	257	573	1379	0.745	1021	996	1.5	3.1	10.887	B
F	1011	253	1186	1843	0.548	1009	408	0.8	1.3	4.731	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	710	178	762	1192	0.596	710	1441	1.6	1.6	8.205	A
B	626	157	863	1563	0.401	626	609	0.7	0.7	4.226	A
C	183	46	1490	705	0.259	183	0	0.4	0.4	7.585	A
D			1573				99				
E	1027	257	575	1378	0.745	1027	999	3.1	3.1	11.254	B
F	1011	253	1192	1840	0.549	1011	410	1.3	1.3	4.775	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	580	145	625	1250	0.464	582	1182	1.6	1.0	5.950	A
B	512	128	708	1642	0.311	512	500	0.7	0.5	3.510	A
C	149	37	1220	806	0.185	150	0	0.4	0.3	6.044	A
D			1289				81				
E	839	210	471	1424	0.589	845	818	3.1	1.6	6.913	A
F	825	206	980	1965	0.420	827	336	1.3	0.8	3.487	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	486	121	522	1294	0.375	487	988	1.0	0.7	4.913	A
B	428	107	591	1701	0.252	429	418	0.5	0.4	3.116	A
C	125	31	1020	880	0.142	125	0	0.3	0.2	5.248	A
D			1078				68				
E	702	176	394	1457	0.482	705	684	1.6	1.0	5.278	A
F	691	173	818	2060	0.335	692	281	0.8	0.6	2.898	A

2033 Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	A, B, C, D, E, F	13.79	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	966	100.000
B		ONE HOUR	✓	576	100.000
C		ONE HOUR	✓	193	100.000
D					
E		ONE HOUR	✓	867	100.000
F		ONE HOUR	✓	670	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
		A	B	C	D	E	F
From	A	0	159	0	32	415	360
	B	156	0	0	71	329	20
	C	46	39	0	0	30	78
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	252	428	0	35	0	152
	F	477	1	0	27	164	1

Vehicle Mix

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	10	10	10	10	10	10
	B	10	10	10	10	10	10
	C	10	10	10	10	10	10
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	10	10	10	10	10	10
	F	10	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.89	28.88	8.0	D	886	1330
B	0.44	5.00	0.9	A	529	793
C	0.35	10.22	0.6	B	177	266
D						
E	0.74	11.67	3.0	B	796	1193
F	0.38	3.34	0.7	A	615	922

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	727	182	521	1295	0.562	722	698	0.0	1.4	6.845	A
B	434	108	773	1609	0.270	432	469	0.0	0.4	3.360	A
C	145	36	1205	811	0.179	144	0	0.0	0.2	5.931	A
D			1226				124				
E	653	163	524	1400	0.466	649	702	0.0	0.9	5.243	A
F	504	126	716	2120	0.238	503	457	0.0	0.3	2.446	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	868	217	623	1251	0.694	864	836	1.4	2.4	10.127	B
B	518	129	926	1532	0.338	517	562	0.4	0.6	3.901	A
C	174	43	1443	722	0.240	173	0	0.2	0.3	7.201	A
D			1468				148				
E	779	195	627	1355	0.575	777	841	0.9	1.5	6.830	A
F	602	151	857	2037	0.296	602	547	0.3	0.5	2.759	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1064	266	762	1193	0.892	1044	1022	2.4	7.3	24.052	C
B	634	159	1122	1433	0.443	633	684	0.6	0.9	4.946	A
C	212	53	1755	606	0.351	212	0	0.3	0.6	10.023	B
D			1786				181				
E	955	239	762	1296	0.737	949	1023	1.5	2.9	11.219	B
F	738	184	1047	1925	0.383	737	664	0.5	0.7	3.330	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1064	266	765	1191	0.893	1061	1025	7.3	8.0	28.884	D
B	634	159	1136	1425	0.445	634	690	0.9	0.9	5.004	A
C	212	53	1770	600	0.354	212	0	0.6	0.6	10.220	B
D			1801				182				
E	955	239	770	1293	0.739	954	1031	2.9	3.0	11.675	B
F	738	184	1052	1922	0.384	738	672	0.7	0.7	3.342	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	868	217	628	1249	0.695	890	840	8.0	2.6	11.646	B
B	518	129	948	1520	0.341	519	570	0.9	0.6	3.959	A
C	174	43	1467	713	0.243	174	0	0.6	0.4	7.363	A
D			1492				149				
E	779	195	639	1350	0.577	785	854	3.0	1.5	7.085	A
F	602	151	865	2032	0.296	603	559	0.7	0.5	2.774	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	727	182	525	1293	0.562	732	702	2.6	1.4	7.113	A
B	434	108	783	1604	0.270	434	474	0.6	0.4	3.388	A
C	145	36	1217	807	0.180	146	0	0.4	0.2	5.997	A
D			1238				125				
E	653	163	529	1398	0.467	655	709	1.5	1.0	5.344	A
F	504	126	722	2117	0.238	505	462	0.5	0.3	2.459	A

2033 Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	A, B, C, D, E, F	8.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	ONE HOUR	17:00	18:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	667	100.000
B		ONE HOUR	✓	591	100.000
C		ONE HOUR	✓	166	100.000
D					
E		ONE HOUR	✓	975	100.000
F		ONE HOUR	✓	990	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
		A	B	C	D	E	F
From	A	20	97	0	17	254	279
	B	109	0	0	27	448	7
	C	62	47	0	0	30	27
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	451	437	0	1	0	86
	F	751	0	0	45	194	0

Vehicle Mix

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	10	10	10	10	10	10
	B	10	10	10	10	10	10
	C	10	10	10	10	10	10
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	10	10	10	10	10	10
	F	10	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.62	8.93	1.8	A	612	918
B	0.42	4.41	0.8	A	542	813
C	0.27	7.88	0.4	A	152	228
D						
E	0.79	13.55	3.9	B	895	1342
F	0.60	5.49	1.6	A	908	1363

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	502	126	542	1286	0.391	499	1044	0.0	0.7	5.021	A
B	445	111	607	1693	0.263	443	435	0.0	0.4	3.164	A
C	125	31	1050	869	0.144	124	0	0.0	0.2	5.311	A
D			1107				67				
E	734	184	413	1449	0.507	730	694	0.0	1.1	5.469	A
F	745	186	844	2045	0.364	743	299	0.0	0.6	3.036	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	600	150	649	1240	0.483	598	1250	0.7	1.0	6.157	A
B	531	133	727	1632	0.325	531	521	0.4	0.5	3.592	A
C	149	37	1258	792	0.189	149	0	0.2	0.3	6.160	A
D			1326				81				
E	877	219	494	1413	0.620	874	831	1.1	1.8	7.307	A
F	890	222	1010	1947	0.457	889	358	0.6	0.9	3.740	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	734	184	793	1179	0.623	731	1527	1.0	1.8	8.779	A
B	651	163	889	1551	0.420	650	635	0.5	0.8	4.392	A
C	183	46	1538	687	0.266	182	0	0.3	0.4	7.843	A
D			1622				99				
E	1073	268	605	1365	0.787	1065	1017	1.8	3.8	12.874	B
F	1090	273	1233	1816	0.600	1087	437	0.9	1.6	5.413	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	734	184	797	1178	0.624	734	1533	1.8	1.8	8.927	A
B	651	163	892	1549	0.420	651	639	0.8	0.8	4.408	A
C	183	46	1542	685	0.267	183	0	0.4	0.4	7.884	A
D			1626				99				
E	1073	268	607	1364	0.787	1073	1019	3.8	3.9	13.545	B
F	1090	273	1240	1811	0.602	1090	439	1.6	1.6	5.488	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	600	150	655	1238	0.485	603	1259	1.8	1.0	6.264	A
B	531	133	731	1630	0.326	532	527	0.8	0.5	3.612	A
C	149	37	1264	789	0.189	150	0	0.4	0.3	6.198	A
D			1332				81				
E	877	219	497	1412	0.621	885	835	3.9	1.8	7.629	A
F	890	222	1021	1940	0.459	893	361	1.6	0.9	3.792	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	502	126	547	1284	0.391	503	1051	1.0	0.7	5.085	A
B	445	111	611	1691	0.263	445	439	0.5	0.4	3.182	A
C	125	31	1057	867	0.144	125	0	0.3	0.2	5.343	A
D			1114				68				
E	734	184	416	1448	0.507	737	698	1.8	1.1	5.590	A
F	745	186	851	2040	0.365	747	301	0.9	0.6	3.062	A

2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	A, B, C, D, E, F	22.03	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	ONE HOUR	08:00	09:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	992	100.000
B		ONE HOUR	✓	607	100.000
C		ONE HOUR	✓	193	100.000
D					
E		ONE HOUR	✓	1051	100.000
F		ONE HOUR	✓	722	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
		A	B	C	D	E	F
From	A	0	158	0	32	438	364
	B	156	0	0	71	360	20
	C	46	39	0	0	30	78
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	328	463	0	35	0	225
	F	510	1	0	27	183	1

Vehicle Mix

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	10	10	10	10	10	10
	B	10	10	10	10	10	10
	C	10	10	10	10	10	10
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	10	10	10	10	10	10
	F	10	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.94	41.96	11.9	E	910	1365
B	0.48	5.40	1.0	A	557	835
C	0.37	11.08	0.6	B	177	266
D						
E	0.90	27.40	8.3	D	964	1447
F	0.43	3.75	0.8	A	663	994

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	747	187	561	1278	0.584	741	779	0.0	1.5	7.293	A
B	457	114	807	1592	0.287	455	494	0.0	0.4	3.480	A
C	145	36	1263	790	0.184	144	0	0.0	0.2	6.128	A
D			1283				124				
E	791	198	526	1399	0.565	786	757	0.0	1.4	6.398	A
F	544	136	798	2072	0.262	542	514	0.0	0.4	2.586	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	892	223	671	1231	0.724	887	933	1.5	2.8	11.339	B
B	546	136	966	1511	0.361	545	591	0.4	0.6	4.096	A
C	174	43	1511	697	0.249	173	0	0.2	0.4	7.557	A
D			1536				148				
E	945	236	630	1354	0.698	941	906	1.4	2.5	9.490	A
F	649	162	956	1979	0.328	648	616	0.4	0.5	2.974	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1092	273	815	1170	0.933	1063	1137	2.8	10.0	31.039	D
B	668	167	1164	1411	0.474	667	714	0.6	1.0	5.312	A
C	212	53	1831	577	0.368	211	0	0.4	0.6	10.794	B
D			1862				180				
E	1157	289	763	1295	0.893	1137	1099	2.5	7.4	22.646	C
F	795	199	1158	1860	0.427	794	742	0.5	0.8	3.712	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1092	273	823	1166	0.936	1084	1144	10.0	11.9	41.961	E
B	668	167	1182	1402	0.477	668	725	1.0	1.0	5.398	A
C	212	53	1851	570	0.373	212	0	0.6	0.6	11.081	B
D			1882				181				
E	1157	289	772	1291	0.896	1154	1110	7.4	8.3	27.402	D
F	795	199	1172	1852	0.429	795	754	0.8	0.8	3.746	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	892	223	684	1225	0.728	927	943	11.9	3.1	14.700	B
B	546	136	1002	1493	0.365	547	610	1.0	0.6	4.192	A
C	174	43	1549	683	0.254	175	0	0.6	0.4	7.810	A
D			1573				150				
E	945	236	647	1346	0.702	967	926	8.3	2.7	11.021	B
F	649	162	978	1966	0.330	650	637	0.8	0.5	3.013	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	747	187	566	1275	0.586	753	785	3.1	1.6	7.662	A
B	457	114	818	1586	0.288	458	501	0.6	0.4	3.514	A
C	145	36	1276	785	0.185	146	0	0.4	0.3	6.204	A
D			1297				125				
E	791	198	533	1396	0.567	796	764	2.7	1.5	6.651	A
F	544	136	808	2066	0.263	544	521	0.5	0.4	2.602	A

2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	A, B, C, D, E, F	9.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	ONE HOUR	17:00	18:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	693	100.000
B		ONE HOUR	✓	614	100.000
C		ONE HOUR	✓	166	100.000
D					
E		ONE HOUR	✓	1021	100.000
F		ONE HOUR	✓	1008	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
		A	B	C	D	E	F
From	A	20	97	0	17	287	272
	B	100	0	0	27	480	7
	C	62	47	0	0	30	27
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	479	434	0	1	0	107
	F	703	0	0	45	260	0

Vehicle Mix

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	10	10	10	10	10	10
	B	10	10	10	10	10	10
	C	10	10	10	10	10	10
	D	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	E	10	10	10	10	10	10
	F	10	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.66	10.27	2.1	B	636	954
B	0.45	4.82	0.9	A	563	845
C	0.29	8.70	0.4	A	152	228
D						
E	0.82	15.81	4.8	C	937	1405
F	0.62	5.72	1.7	A	925	1387

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	522	130	589	1266	0.412	519	1022	0.0	0.8	5.281	A
B	462	116	676	1658	0.279	461	432	0.0	0.4	3.302	A
C	125	31	1136	837	0.149	124	0	0.0	0.2	5.551	A
D			1193				67				
E	769	192	401	1454	0.528	764	792	0.0	1.2	5.694	A
F	759	190	855	2038	0.372	756	309	0.0	0.6	3.082	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	623	156	706	1216	0.512	621	1224	0.8	1.1	6.640	A
B	552	138	809	1591	0.347	551	518	0.4	0.6	3.808	A
C	149	37	1361	753	0.198	149	0	0.2	0.3	6.553	A
D			1429				81				
E	918	229	480	1420	0.647	915	949	1.2	2.0	7.797	A
F	906	227	1025	1939	0.467	905	370	0.6	1.0	3.825	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	763	191	861	1150	0.663	759	1494	1.1	2.1	10.026	B
B	676	169	989	1500	0.451	675	631	0.6	0.9	4.793	A
C	183	46	1664	640	0.286	182	0	0.3	0.4	8.643	A
D			1747				99				
E	1124	281	587	1373	0.819	1114	1160	2.0	4.6	14.720	B
F	1110	277	1248	1807	0.614	1107	452	1.0	1.7	5.632	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	763	191	866	1148	0.665	763	1501	2.1	2.1	10.265	B
B	676	169	993	1498	0.451	676	636	0.9	0.9	4.818	A
C	183	46	1669	638	0.287	183	0	0.4	0.4	8.704	A
D			1753				99				
E	1124	281	589	1372	0.819	1123	1164	4.6	4.8	15.808	C
F	1110	277	1258	1801	0.616	1110	455	1.7	1.7	5.724	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	623	156	713	1213	0.514	627	1234	2.1	1.2	6.797	A
B	552	138	815	1588	0.348	553	525	0.9	0.6	3.834	A
C	149	37	1368	750	0.199	150	0	0.4	0.3	6.606	A
D			1437				81				
E	918	229	483	1418	0.647	929	954	4.8	2.1	8.261	A
F	906	227	1038	1931	0.469	909	374	1.7	1.0	3.889	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	522	130	594	1264	0.413	523	1030	1.2	0.8	5.360	A
B	462	116	681	1656	0.279	463	437	0.6	0.4	3.320	A
C	125	31	1144	834	0.150	125	0	0.3	0.2	5.589	A
D			1201				68				
E	769	192	404	1453	0.529	772	797	2.1	1.3	5.840	A
F	759	190	864	2033	0.373	760	312	1.0	0.7	3.115	A

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_24_J9_SSM_AM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 18:03:06

»2017 Baseline, AM
»2033 Reference Case, AM
»2033 Local Plan Growth, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2017 Baseline			
Stream B-C	0.1	8.97	0.08	A
Stream B-AD	0.2	13.75	0.19	B
Stream A-BCD	0.0	0.00	0.00	A
Stream D-A	0.1	9.57	0.13	A
Stream D-BC	3.2	34.30	0.79	D
Stream C-ABD	0.2	10.38	0.11	B
	2033 Reference Case			
Stream B-C	0.1	9.05	0.09	A
Stream B-AD	0.2	14.60	0.20	B
Stream A-BCD	0.0	0.00	0.00	A
Stream D-A	0.2	9.80	0.15	A
Stream D-BC	5.9	52.20	0.91	F
Stream C-ABD	0.2	10.58	0.11	B
	2033 Local Plan Growth			
Stream B-C	0.2	9.39	0.16	A
Stream B-AD	0.3	18.51	0.24	C
Stream A-BCD	0.0	0.00	0.00	A
Stream D-A	0.2	10.23	0.15	B
Stream D-BC	17.9	110.38	1.14	F
Stream C-ABD	0.4	13.06	0.24	B

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

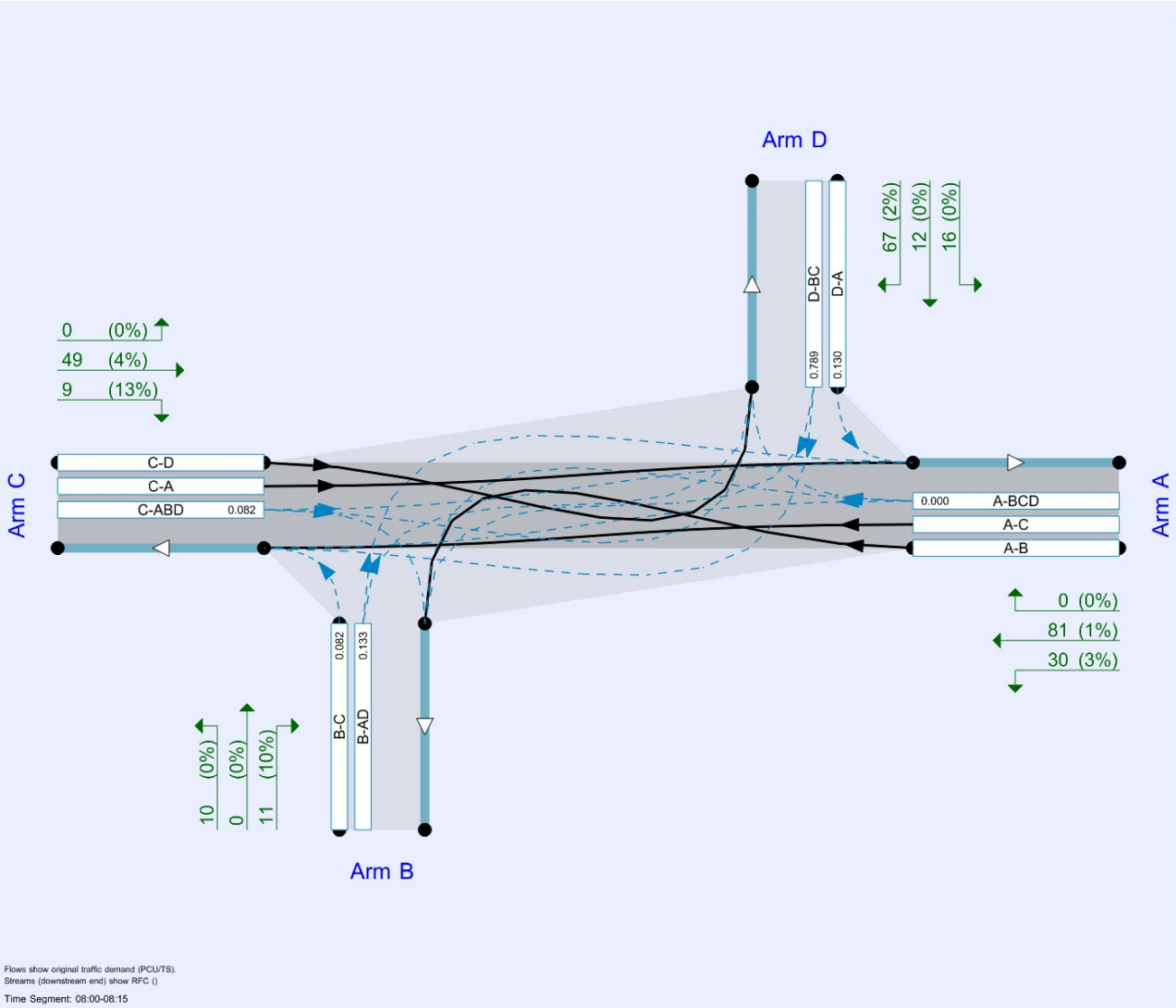
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/04/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PBA\bhouse
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth with Peak Spreading	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D3,D5	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	9.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Roman Rd E		Major
B	Roman Rd S		Minor
C	Roman Rd W		Major
D	Roman Rd N		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.20				0.0	✓	0.00
C	6.20		✓	2.20	77.6	✓	3.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare			10.00	7.00	5.00	3.90	3.90		2.00	24	21
D	Two lanes	3.50	3.40								33	33

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	143.491	-	-	-	0.220	0.220	0.220	-	0.220	-	-
1	B-AD	133.378	0.096	0.243	-	-	-	0.153	0.348	0.153	0.096	0.243
1	B-C	168.402	0.102	0.259	-	-	-	-	-	-	0.102	0.259
1	C-B	154.726	0.238	0.238	-	-	-	-	-	-	0.238	0.238
1	D-A	169.246	-	-	-	0.260	0.103	0.260	-	0.103	-	-
1	D-BC	131.177	0.151	0.151	0.342	0.239	0.095	0.239	-	0.095	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	30.00	81.00	0.00
	B	11.00	0.00	10.00	0.00
	C	49.00	9.00	0.00	0.00
	D	16.00	12.00	67.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	43.00	56.00	0.00
	B	5.00	0.00	9.00	0.00
	C	78.00	6.00	0.00	0.00
	D	13.00	6.00	51.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	36.00	60.00	0.00
	B	17.00	0.00	10.00	0.00
	C	83.00	11.00	0.00	0.00
	D	10.00	5.00	55.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	34.00	58.00	0.00
	B	6.00	0.00	10.00	0.00
	C	60.00	14.00	0.00	0.00
	D	17.00	4.00	34.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	1	0
	B	10	0	0	0
	C	4	13	0	0
	D	0	0	2	0

08:15 - 08:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	6	0
	B	0	0	13	0
	C	3	20	0	0
	D	20	0	2	0

08:30 - 08:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	0	0
	B	0	0	11	0
	C	4	25	0	0
	D	11	0	8	0

08:45 - 09:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	6	2	0
	B	0	0	0	0
	C	2	18	0	0
	D	0	0	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.08	8.97	0.1	A	9.75	39.00
B-AD	0.19	13.75	0.2	B	9.75	39.00
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					35.75	143.00
A-C					63.75	255.00
D-A	0.13	9.57	0.1	A	14.00	56.00
D-BC	0.79	34.30	3.2	D	58.50	234.00
C-ABD	0.11	10.38	0.2	B	10.02	40.06
C-D					0.00	0.00
C-A					67.48	269.94

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	121.60	0.082	9.91	0.0	0.1	8.046	A
B-AD	11.00	11.00	82.66	0.133	10.83	0.0	0.2	13.752	B
A-BCD	0.00	0.00	130.26	0.000	0.00	0.0	0.0	0.000	A
A-B	30.00	30.00			30.00				
A-C	81.00	81.00			81.00				
D-A	16.00	16.00	123.33	0.130	15.85	0.0	0.1	8.363	A
D-BC	79.00	79.00	100.09	0.789	75.82	0.0	3.2	34.300	D
C-ABD	9.01	9.01	109.63	0.082	8.91	0.0	0.1	10.085	B
C-D	0.00	0.00			0.00				
C-A	48.99	48.99			48.99				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	9.00	9.00	140.97	0.064	9.02	0.1	0.1	7.186	A
B-AD	5.00	5.00	82.56	0.061	5.10	0.2	0.1	12.460	B
A-BCD	0.00	0.00	125.16	0.000	0.00	0.0	0.0	0.000	A
A-B	43.00	43.00			43.00				
A-C	56.00	56.00			56.00				
D-A	13.00	13.00	124.57	0.104	13.02	0.1	0.1	8.624	A
D-BC	57.00	57.00	96.35	0.592	58.62	3.2	1.6	25.171	D
C-ABD	6.00	6.00	116.92	0.051	6.04	0.1	0.1	9.376	A
C-D	0.00	0.00			0.00				
C-A	78.00	78.00			78.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	122.30	0.082	9.97	0.1	0.1	8.974	A
B-AD	17.00	17.00	87.80	0.194	16.83	0.1	0.2	12.653	B
A-BCD	0.00	0.00	121.43	0.000	0.00	0.0	0.0	0.000	A
A-B	36.00	36.00			36.00				
A-C	60.00	60.00			60.00				
D-A	10.00	10.00	119.46	0.084	10.02	0.1	0.1	9.572	A
D-BC	60.00	60.00	92.75	0.647	59.81	1.6	1.7	27.188	D
C-ABD	11.02	11.02	117.54	0.094	10.96	0.1	0.1	10.379	B
C-D	0.00	0.00			0.00				
C-A	82.98	82.98			82.98				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	145.20	0.069	10.02	0.1	0.1	7.033	A
B-AD	6.00	6.00	87.90	0.068	6.16	0.2	0.1	11.030	B
A-BCD	0.00	0.00	128.89	0.000	0.00	0.0	0.0	0.000	A
A-B	34.00	34.00			34.00				
A-C	58.00	58.00			58.00				
D-A	17.00	17.00	137.13	0.124	16.96	0.1	0.1	7.812	A
D-BC	38.00	38.00	101.46	0.375	39.09	1.7	0.7	15.723	C
C-ABD	14.03	14.03	123.70	0.113	14.01	0.1	0.2	9.950	A
C-D	0.00	0.00			0.00				
C-A	59.97	59.97			59.97				

2033 Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	13.52	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	35.00	82.00	0.00
	B	12.00	0.00	10.00	0.00
	C	56.00	10.00	0.00	0.00
	D	17.00	17.00	72.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	45.00	56.00	0.00
	B	5.00	0.00	9.00	0.00
	C	81.00	6.00	0.00	0.00
	D	13.00	8.00	53.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	37.00	60.00	0.00
	B	17.00	0.00	10.00	0.00
	C	86.00	11.00	0.00	0.00
	D	10.00	7.00	57.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	35.00	59.00	0.00
	B	6.00	0.00	10.00	0.00
	C	63.00	14.00	0.00	0.00
	D	17.00	6.00	35.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	1	0
	B	10	0	0	0
	C	4	13	0	0
	D	0	0	2	0

08:15 - 08:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	6	0
	B	0	0	13	0
	C	3	20	0	0
	D	20	0	2	0

08:30 - 08:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	0	0
	B	0	0	11	0
	C	4	25	0	0
	D	11	0	8	0

08:45 - 09:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	6	2	0
	B	0	0	0	0
	C	2	18	0	0
	D	0	0	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.09	9.05	0.1	A	9.75	39.00
B-AD	0.20	14.60	0.2	B	10.00	40.00
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					38.00	152.00
A-C					64.25	257.00
D-A	0.15	9.80	0.2	A	14.25	57.00
D-BC	0.91	52.20	5.9	F	63.75	255.00
C-ABD	0.11	10.58	0.2	B	10.27	41.07
C-D					0.00	0.00
C-A					71.48	285.93

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	117.57	0.085	9.91	0.0	0.1	8.353	A
B-AD	12.00	12.00	79.45	0.151	11.81	0.0	0.2	14.596	B
A-BCD	0.00	0.00	128.50	0.000	0.00	0.0	0.0	0.000	A
A-B	35.00	35.00			35.00				
A-C	82.00	82.00			82.00				
D-A	17.00	17.00	116.89	0.145	16.83	0.0	0.2	8.980	A
D-BC	89.00	89.00	97.27	0.915	83.06	0.0	5.9	52.201	F
C-ABD	10.01	10.01	105.86	0.095	9.89	0.0	0.1	10.583	B
C-D	0.00	0.00			0.00				
C-A	55.99	55.99			55.99				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	9.00	9.00	139.24	0.065	9.02	0.1	0.1	7.278	A
B-AD	5.00	5.00	80.79	0.062	5.12	0.2	0.1	12.782	B
A-BCD	0.00	0.00	124.49	0.000	0.00	0.0	0.0	0.000	A
A-B	45.00	45.00			45.00				
A-C	56.00	56.00			56.00				
D-A	13.00	13.00	121.06	0.107	13.04	0.2	0.1	8.878	A
D-BC	61.00	61.00	95.32	0.640	64.99	5.9	2.0	33.276	D
C-ABD	6.00	6.00	114.83	0.052	6.05	0.1	0.1	9.544	A
C-D	0.00	0.00			0.00				
C-A	81.00	81.00			81.00				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	121.36	0.082	9.97	0.1	0.1	9.050	A
B-AD	17.00	17.00	86.44	0.197	16.83	0.1	0.2	12.900	B
A-BCD	0.00	0.00	120.77	0.000	0.00	0.0	0.0	0.000	A
A-B	37.00	37.00			37.00				
A-C	60.00	60.00			60.00				
D-A	10.00	10.00	116.89	0.086	10.02	0.1	0.1	9.804	A
D-BC	64.00	64.00	91.88	0.697	63.80	2.0	2.2	31.506	D
C-ABD	11.03	11.03	116.27	0.095	10.96	0.1	0.1	10.504	B
C-D	0.00	0.00			0.00				
C-A	85.97	85.97			85.97				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	144.21	0.069	10.02	0.1	0.1	7.083	A
B-AD	6.00	6.00	86.66	0.069	6.17	0.2	0.1	11.205	B
A-BCD	0.00	0.00	128.23	0.000	0.00	0.0	0.0	0.000	A
A-B	35.00	35.00			35.00				
A-C	59.00	59.00			59.00				
D-A	17.00	17.00	135.00	0.126	16.96	0.1	0.1	7.955	A
D-BC	41.00	41.00	100.44	0.408	42.39	2.2	0.8	16.971	C
C-ABD	14.04	14.04	122.44	0.115	14.01	0.1	0.2	10.066	B
C-D	0.00	0.00			0.00				
C-A	62.96	62.96			62.96				

2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	28.60	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	41.00	82.00	0.00
	B	17.00	0.00	18.00	0.00
	C	60.00	24.00	0.00	0.00
	D	17.00	34.00	73.00	0.00

08:15 - 08:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	48.00	56.00	0.00
	B	8.00	0.00	13.00	0.00
	C	83.00	13.00	0.00	0.00
	D	13.00	16.00	54.00	0.00

08:30 - 08:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	40.00	60.00	0.00
	B	19.00	0.00	13.00	0.00
	C	87.00	16.00	0.00	0.00
	D	10.00	14.00	57.00	0.00

08:45 - 09:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	38.00	58.00	0.00
	B	8.00	0.00	13.00	0.00
	C	64.00	19.00	0.00	0.00
	D	17.00	13.00	36.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	1	0
	B	10	0	0	0
	C	4	13	0	0
	D	0	0	2	0

08:15 - 08:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	6	0
	B	0	0	13	0
	C	3	20	0	0
	D	20	0	2	0

08:30 - 08:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	0	0
	B	0	0	11	0
	C	4	25	0	0
	D	11	0	8	0

08:45 - 09:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	6	2	0
	B	0	0	0	0
	C	2	18	0	0
	D	0	0	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.16	9.39	0.2	A	14.25	57.00
B-AD	0.24	18.51	0.3	C	13.00	52.00
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					41.75	167.00
A-C					64.00	256.00
D-A	0.15	10.23	0.2	B	14.25	57.00
D-BC	1.14	110.38	17.9	F	74.25	297.00
C-ABD	0.24	13.06	0.4	B	18.14	72.57
C-D					0.00	0.00
C-A					73.36	293.43

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	18.00	18.00	114.64	0.157	17.82	0.0	0.2	9.277	A
B-AD	17.00	17.00	69.83	0.243	16.66	0.0	0.3	18.505	C
A-BCD	0.00	0.00	126.52	0.000	0.00	0.0	0.0	0.000	A
A-B	41.00	41.00			41.00				
A-C	82.00	82.00			82.00				
D-A	17.00	17.00	111.92	0.152	16.82	0.0	0.2	9.448	A
D-BC	107.00	107.00	94.21	1.136	89.15	0.0	17.9	110.377	F
C-ABD	24.33	24.33	101.41	0.240	23.97	0.0	0.4	13.061	B
C-D	0.00	0.00			0.00				
C-A	59.67	59.67			59.67				

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	13.00	13.00	132.57	0.098	13.07	0.2	0.1	7.859	A
B-AD	8.00	8.00	75.52	0.106	8.22	0.3	0.1	14.400	B
A-BCD	0.00	0.00	123.35	0.000	0.00	0.0	0.0	0.000	A
A-B	48.00	48.00			48.00				
A-C	56.00	56.00			56.00				
D-A	13.00	13.00	111.37	0.117	13.03	0.2	0.1	9.744	A
D-BC	70.00	70.00	93.64	0.748	84.06	17.9	3.8	107.808	F
C-ABD	13.03	13.03	109.34	0.119	13.23	0.4	0.2	10.760	B
C-D	0.00	0.00			0.00				
C-A	82.97	82.97			82.97				

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	13.00	13.00	120.45	0.108	12.98	0.1	0.1	9.386	A
B-AD	19.00	19.00	81.99	0.232	18.83	0.1	0.3	14.215	B
A-BCD	0.00	0.00	120.09	0.000	0.00	0.0	0.0	0.000	A
A-B	40.00	40.00			40.00				
A-C	60.00	60.00			60.00				
D-A	10.00	10.00	112.45	0.089	10.03	0.1	0.1	10.230	B
D-BC	71.00	71.00	90.70	0.783	71.03	3.8	3.8	45.331	E
C-ABD	16.10	16.10	113.90	0.141	16.05	0.2	0.2	11.241	B
C-D	0.00	0.00			0.00				
C-A	86.90	86.90			86.90				

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	13.00	13.00	141.55	0.092	13.03	0.1	0.1	7.408	A
B-AD	8.00	8.00	83.79	0.095	8.19	0.3	0.1	11.931	B
A-BCD	0.00	0.00	127.55	0.000	0.00	0.0	0.0	0.000	A
A-B	38.00	38.00			38.00				
A-C	58.00	58.00			58.00				
D-A	17.00	17.00	130.49	0.130	16.96	0.1	0.2	8.273	A
D-BC	49.00	49.00	99.40	0.493	51.68	3.8	1.1	21.121	C
C-ABD	19.12	19.12	120.09	0.159	19.09	0.2	0.2	10.827	B
C-D	0.00	0.00			0.00				
C-A	63.88	63.88			63.88				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk

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Filename: 28085_24_J9_SSM_PM.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 24/10/2018 18:05:23

»2017 Baseline, PM
»2033 Reference Case, PM
»2033 Local Plan Growth, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	2017 Baseline			
Stream B-C	0.1	7.45	0.08	A
Stream B-AD	0.2	13.89	0.18	B
Stream A-BCD	0.0	0.00	0.00	A
Stream D-A	0.1	9.59	0.09	A
Stream D-BC	1.3	27.97	0.56	D
Stream C-ABD	0.1	7.98	0.11	A
	2033 Reference Case			
Stream B-C	0.1	7.47	0.08	A
Stream B-AD	0.2	14.14	0.19	B
Stream A-BCD	0.0	0.00	0.00	A
Stream D-A	0.1	9.70	0.09	A
Stream D-BC	1.3	29.42	0.58	D
Stream C-ABD	0.1	8.09	0.11	A
	2033 Local Plan Growth			
Stream B-C	0.1	7.72	0.13	A
Stream B-AD	0.3	15.99	0.22	C
Stream A-BCD	0.0	0.00	0.00	A
Stream D-A	0.1	9.99	0.09	A
Stream D-BC	1.7	34.48	0.64	D
Stream C-ABD	0.2	8.58	0.15	A

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

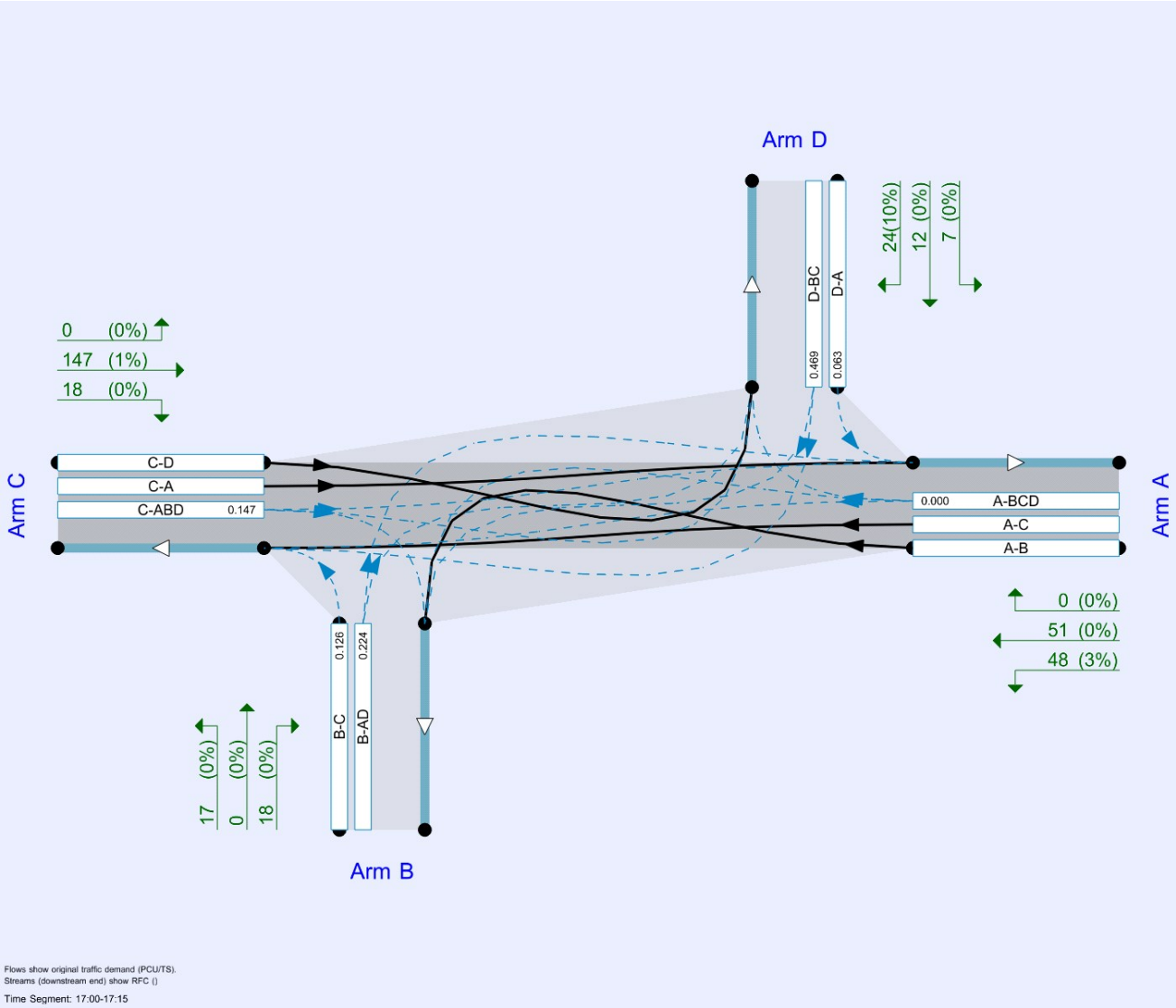
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/04/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PBA\bhouse
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	4.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Roman Rd E		Major
B	Roman Rd S		Minor
C	Roman Rd W		Major
D	Roman Rd N		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.20				0.0	✓	0.00
C	6.20		✓	2.20	77.6	✓	3.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare			10.00	7.00	5.00	3.90	3.90		2.00	24	21
D	Two lanes	3.50	3.40								33	33

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	143.491	-	-	-	0.220	0.220	0.220	-	0.220	-	-
1	B-AD	137.922	0.100	0.252	-	-	-	0.158	0.360	0.158	0.100	0.252
1	B-C	162.561	0.099	0.250	-	-	-	-	-	-	0.099	0.250
1	C-B	154.726	0.238	0.238	-	-	-	-	-	-	0.238	0.238
1	D-A	169.246	-	-	-	0.260	0.103	0.260	-	0.103	-	-
1	D-BC	131.177	0.151	0.151	0.342	0.239	0.095	0.239	-	0.095	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	39.00	51.00	0.00
	B	16.00	0.00	10.00	0.00
	C	143.00	12.00	0.00	0.00
	D	7.00	7.00	24.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	28.00	37.00	0.00
	B	14.00	0.00	9.00	0.00
	C	170.00	10.00	0.00	0.00
	D	3.00	4.00	34.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	31.00	45.00	0.00
	B	10.00	0.00	8.00	0.00
	C	179.00	14.00	0.00	0.00
	D	9.00	4.00	38.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	35.00	28.00	0.00
	B	14.00	0.00	9.00	0.00
	C	175.00	12.00	0.00	0.00
	D	3.00	9.00	30.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	0	0
	B	0	0	0	0
	C	1	0	0	0
	D	0	0	10	0

17:15 - 17:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	8	0	0	0
	C	4	0	0	0
	D	0	0	3	0

17:30 - 17:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	2	0
	B	0	0	14	0
	C	1	0	0	0
	D	0	0	6	0

17:45 - 18:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	6	0	0
	B	0	0	0	0
	C	1	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.08	7.45	0.1	A	9.00	36.00
B-AD	0.18	13.89	0.2	B	13.50	54.00
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					33.25	133.00
A-C					40.25	161.00
D-A	0.09	9.59	0.1	A	5.50	22.00
D-BC	0.56	27.97	1.3	D	37.50	150.00
C-ABD	0.11	7.98	0.1	A	12.01	48.06
C-D					0.00	0.00
C-A					166.74	666.94

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	132.81	0.075	9.92	0.0	0.1	7.318	A
B-AD	16.00	16.00	87.49	0.183	15.78	0.0	0.2	12.515	B
A-BCD	0.00	0.00	108.44	0.000	0.00	0.0	0.0	0.000	A
A-B	39.00	39.00			39.00				
A-C	51.00	51.00			51.00				
D-A	7.00	7.00	115.44	0.061	6.94	0.0	0.1	8.291	A
D-BC	31.00	31.00	79.55	0.390	30.34	0.0	0.7	19.430	C
C-ABD	12.01	12.01	126.09	0.095	11.91	0.0	0.1	7.875	A
C-D	0.00	0.00			0.00				
C-A	142.99	142.99			142.99				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	9.00	9.00	135.87	0.066	9.01	0.1	0.1	7.093	A
B-AD	14.00	14.00	85.99	0.163	14.02	0.2	0.2	12.860	B
A-BCD	0.00	0.00	102.88	0.000	0.00	0.0	0.0	0.000	A
A-B	28.00	28.00			28.00				
A-C	37.00	37.00			37.00				
D-A	3.00	3.00	106.17	0.028	3.03	0.1	0.0	8.730	A
D-BC	38.00	38.00	77.27	0.492	37.68	0.7	1.0	24.053	C
C-ABD	10.01	10.01	130.16	0.077	10.03	0.1	0.1	7.495	A
C-D	0.00	0.00			0.00				
C-A	169.99	169.99			169.99				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	8.00	8.00	136.60	0.059	8.01	0.1	0.1	7.396	A
B-AD	10.00	10.00	78.25	0.128	10.05	0.2	0.2	13.890	B
A-BCD	0.00	0.00	101.78	0.000	0.00	0.0	0.0	0.000	A
A-B	31.00	31.00			31.00				
A-C	45.00	45.00			45.00				
D-A	9.00	9.00	102.71	0.088	8.93	0.0	0.1	9.590	A
D-BC	42.00	42.00	74.42	0.564	41.73	1.0	1.3	27.973	D
C-ABD	14.03	14.03	126.68	0.111	13.99	0.1	0.1	7.983	A
C-D	0.00	0.00			0.00				
C-A	178.97	178.97			178.97				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	9.00	9.00	137.78	0.065	8.99	0.1	0.1	7.448	A
B-AD	14.00	14.00	86.38	0.162	13.97	0.2	0.2	12.422	B
A-BCD	0.00	0.00	101.79	0.000	0.00	0.0	0.0	0.000	A
A-B	35.00	35.00			35.00				
A-C	28.00	28.00			28.00				
D-A	3.00	3.00	104.25	0.029	3.07	0.1	0.0	8.901	A
D-BC	39.00	39.00	76.39	0.511	39.11	1.3	1.1	25.565	D
C-ABD	12.01	12.01	130.32	0.092	12.03	0.1	0.1	7.609	A
C-D	0.00	0.00			0.00				
C-A	174.99	174.99			174.99				

2033 Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	4.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	44.00	52.00	0.00
	B	16.00	0.00	10.00	0.00
	C	147.00	12.00	0.00	0.00
	D	7.00	7.00	24.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	32.00	37.00	0.00
	B	14.00	0.00	9.00	0.00
	C	173.00	10.00	0.00	0.00
	D	3.00	4.00	35.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	36.00	46.00	0.00
	B	10.00	0.00	8.00	0.00
	C	182.00	14.00	0.00	0.00
	D	9.00	4.00	38.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	39.00	28.00	0.00
	B	14.00	0.00	9.00	0.00
	C	178.00	12.00	0.00	0.00
	D	3.00	9.00	30.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	0	0
	B	0	0	0	0
	C	1	0	0	0
	D	0	0	10	0

17:15 - 17:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	8	0	0	0
	C	4	0	0	0
	D	0	0	3	0

17:30 - 17:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	2	0
	B	0	0	14	0
	C	1	0	0	0
	D	0	0	6	0

17:45 - 18:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	6	0	0
	B	0	0	0	0
	C	1	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.08	7.47	0.1	A	9.00	36.00
B-AD	0.19	14.14	0.2	B	13.50	54.00
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					37.75	151.00
A-C					40.75	163.00
D-A	0.09	9.70	0.1	A	5.50	22.00
D-BC	0.58	29.42	1.3	D	37.75	151.00
C-ABD	0.11	8.09	0.1	A	12.02	48.06
C-D					0.00	0.00
C-A					169.98	679.94

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	10.00	10.00	131.99	0.076	9.92	0.0	0.1	7.367	A
B-AD	16.00	16.00	86.10	0.186	15.78	0.0	0.2	12.718	B
A-BCD	0.00	0.00	107.56	0.000	0.00	0.0	0.0	0.000	A
A-B	44.00	44.00			44.00				
A-C	52.00	52.00			52.00				
D-A	7.00	7.00	114.21	0.061	6.94	0.0	0.1	8.384	A
D-BC	31.00	31.00	77.68	0.399	30.31	0.0	0.7	20.164	C
C-ABD	12.01	12.01	124.67	0.096	11.91	0.0	0.1	7.974	A
C-D	0.00	0.00			0.00				
C-A	146.99	146.99			146.99				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	9.00	9.00	135.16	0.067	9.01	0.1	0.1	7.136	A
B-AD	14.00	14.00	84.86	0.165	14.02	0.2	0.2	13.061	B
A-BCD	0.00	0.00	102.22	0.000	0.00	0.0	0.0	0.000	A
A-B	32.00	32.00			32.00				
A-C	37.00	37.00			37.00				
D-A	3.00	3.00	104.81	0.029	3.03	0.1	0.0	8.846	A
D-BC	39.00	39.00	75.95	0.513	38.62	0.7	1.1	25.482	D
C-ABD	10.01	10.01	128.97	0.078	10.03	0.1	0.1	7.570	A
C-D	0.00	0.00			0.00				
C-A	172.99	172.99			172.99				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	8.00	8.00	135.76	0.059	8.01	0.1	0.1	7.445	A
B-AD	10.00	10.00	77.03	0.130	10.05	0.2	0.2	14.142	B
A-BCD	0.00	0.00	101.12	0.000	0.00	0.0	0.0	0.000	A
A-B	36.00	36.00			36.00				
A-C	46.00	46.00			46.00				
D-A	9.00	9.00	101.63	0.089	8.93	0.0	0.1	9.702	A
D-BC	42.00	42.00	72.80	0.577	41.75	1.1	1.3	29.423	D
C-ABD	14.03	14.03	125.25	0.112	13.99	0.1	0.1	8.087	A
C-D	0.00	0.00			0.00				
C-A	181.97	181.97			181.97				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	9.00	9.00	137.32	0.066	8.99	0.1	0.1	7.475	A
B-AD	14.00	14.00	85.49	0.164	13.97	0.2	0.2	12.576	B
A-BCD	0.00	0.00	101.13	0.000	0.00	0.0	0.0	0.000	A
A-B	39.00	39.00			39.00				
A-C	28.00	28.00			28.00				
D-A	3.00	3.00	103.27	0.029	3.07	0.1	0.0	8.987	A
D-BC	39.00	39.00	75.07	0.520	39.13	1.3	1.2	26.555	D
C-ABD	12.01	12.01	129.36	0.093	12.03	0.1	0.1	7.671	A
C-D	0.00	0.00			0.00				
C-A	177.99	177.99			177.99				

2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	5.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000
D		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	48.00	51.00	0.00
	B	18.00	0.00	17.00	0.00
	C	147.00	18.00	0.00	0.00
	D	7.00	12.00	24.00	0.00

17:15 - 17:30

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	35.00	37.00	0.00
	B	16.00	0.00	15.00	0.00
	C	173.00	15.00	0.00	0.00
	D	3.00	7.00	34.00	0.00

17:30 - 17:45

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	39.00	46.00	0.00
	B	12.00	0.00	15.00	0.00
	C	183.00	19.00	0.00	0.00
	D	9.00	8.00	38.00	0.00

17:45 - 18:00

Demand (PCU/TS)

		To			
		A	B	C	D
From	A	0.00	42.00	28.00	0.00
	B	16.00	0.00	15.00	0.00
	C	179.00	17.00	0.00	0.00
	D	3.00	12.00	30.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	0	0
	B	0	0	0	0
	C	1	0	0	0
	D	0	0	10	0

17:15 - 17:30

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	8	0	0	0
	C	4	0	0	0
	D	0	0	3	0

17:30 - 17:45

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	3	2	0
	B	0	0	14	0
	C	1	0	0	0
	D	0	0	6	0

17:45 - 18:00

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	6	0	0
	B	0	0	0	0
	C	1	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.13	7.72	0.1	A	15.50	62.00
B-AD	0.22	15.99	0.3	C	15.50	62.00
A-BCD	0.00	0.00	0.0	A	0.00	0.00
A-B					41.00	164.00
A-C					40.50	162.00
D-A	0.09	9.99	0.1	A	5.50	22.00
D-BC	0.64	34.48	1.7	D	41.25	165.00
C-ABD	0.15	8.58	0.2	A	17.32	69.26
C-D					0.00	0.00
C-A					170.43	681.74

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	17.00	17.00	135.10	0.126	16.86	0.0	0.1	7.602	A
B-AD	18.00	18.00	80.25	0.224	17.72	0.0	0.3	14.329	B
A-BCD	0.00	0.00	107.12	0.000	0.00	0.0	0.0	0.000	A
A-B	48.00	48.00			48.00				
A-C	51.00	51.00			51.00				
D-A	7.00	7.00	111.53	0.063	6.93	0.0	0.1	8.599	A
D-BC	36.00	36.00	76.75	0.469	35.10	0.0	0.9	22.558	C
C-ABD	18.07	18.07	123.10	0.147	17.90	0.0	0.2	8.542	A
C-D	0.00	0.00			0.00				
C-A	146.93	146.93			146.93				

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	15.00	15.00	138.27	0.108	15.02	0.1	0.1	7.305	A
B-AD	16.00	16.00	79.91	0.200	16.02	0.3	0.3	14.465	B
A-BCD	0.00	0.00	101.76	0.000	0.00	0.0	0.0	0.000	A
A-B	35.00	35.00			35.00				
A-C	37.00	37.00			37.00				
D-A	3.00	3.00	103.27	0.029	3.04	0.1	0.0	8.982	A
D-BC	41.00	41.00	75.01	0.547	40.69	0.9	1.2	27.584	D
C-ABD	15.03	15.03	127.93	0.118	15.07	0.2	0.1	7.977	A
C-D	0.00	0.00			0.00				
C-A	172.97	172.97			172.97				

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	15.00	15.00	139.29	0.108	14.99	0.1	0.1	7.657	A
B-AD	12.00	12.00	71.35	0.168	12.04	0.3	0.2	15.991	C
A-BCD	0.00	0.00	100.45	0.000	0.00	0.0	0.0	0.000	A
A-B	39.00	39.00			39.00				
A-C	46.00	46.00			46.00				
D-A	9.00	9.00	98.95	0.091	8.93	0.0	0.1	9.991	A
D-BC	46.00	46.00	71.62	0.642	45.53	1.2	1.7	34.476	D
C-ABD	19.10	19.10	123.97	0.154	19.06	0.1	0.2	8.575	A
C-D	0.00	0.00			0.00				
C-A	182.90	182.90			182.90				

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	15.00	15.00	140.15	0.107	15.00	0.1	0.1	7.720	A
B-AD	16.00	16.00	80.08	0.200	15.97	0.2	0.2	14.029	B
A-BCD	0.00	0.00	100.46	0.000	0.00	0.0	0.0	0.000	A
A-B	42.00	42.00			42.00				
A-C	28.00	28.00			28.00				
D-A	3.00	3.00	100.97	0.030	3.07	0.1	0.0	9.198	A
D-BC	42.00	42.00	73.89	0.568	42.21	1.7	1.5	30.275	D
C-ABD	17.06	17.06	128.13	0.133	17.08	0.2	0.2	8.108	A
C-D	0.00	0.00			0.00				
C-A	178.94	178.94			178.94				

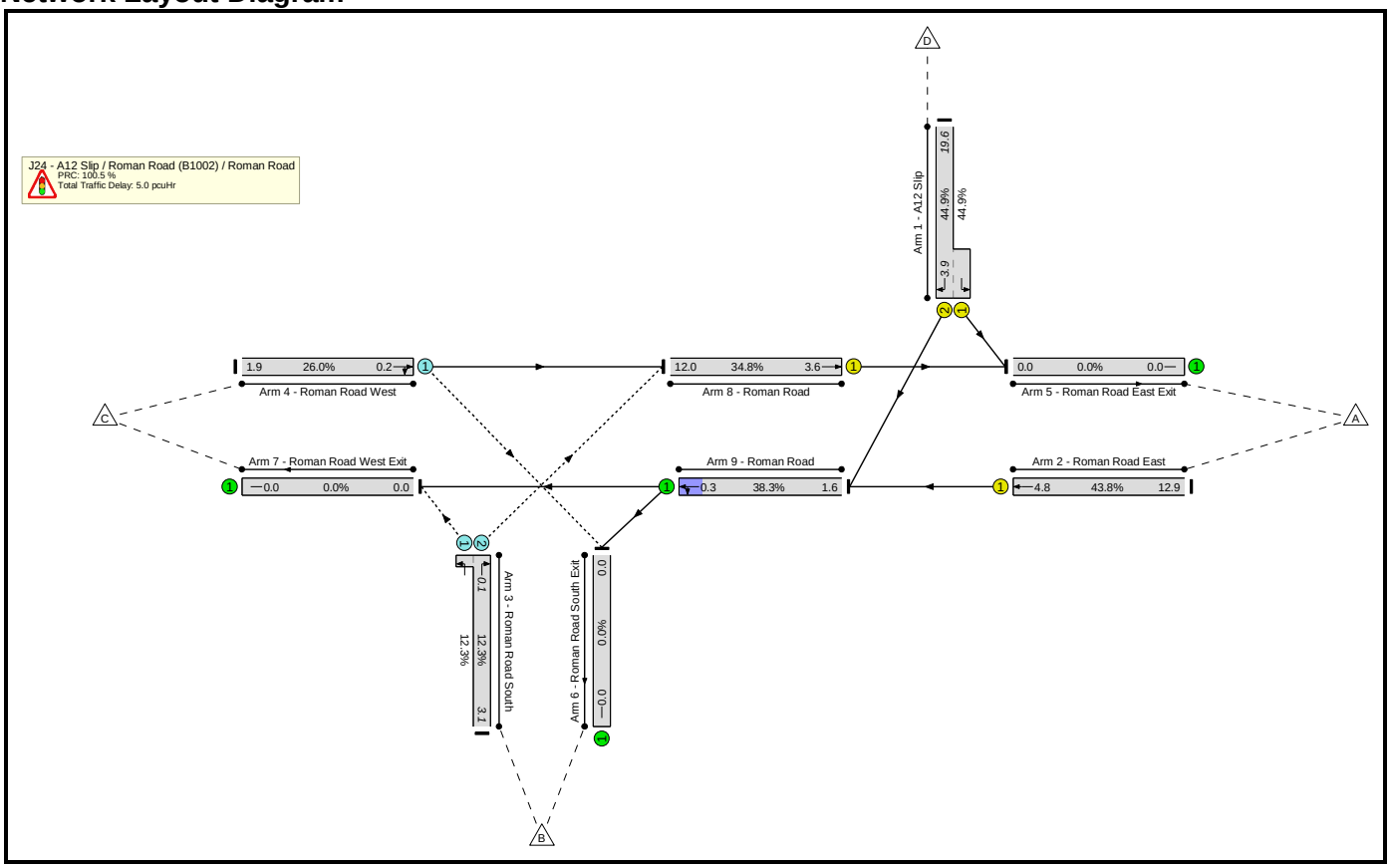
Brentwood PBA Modelling

Project and User Details

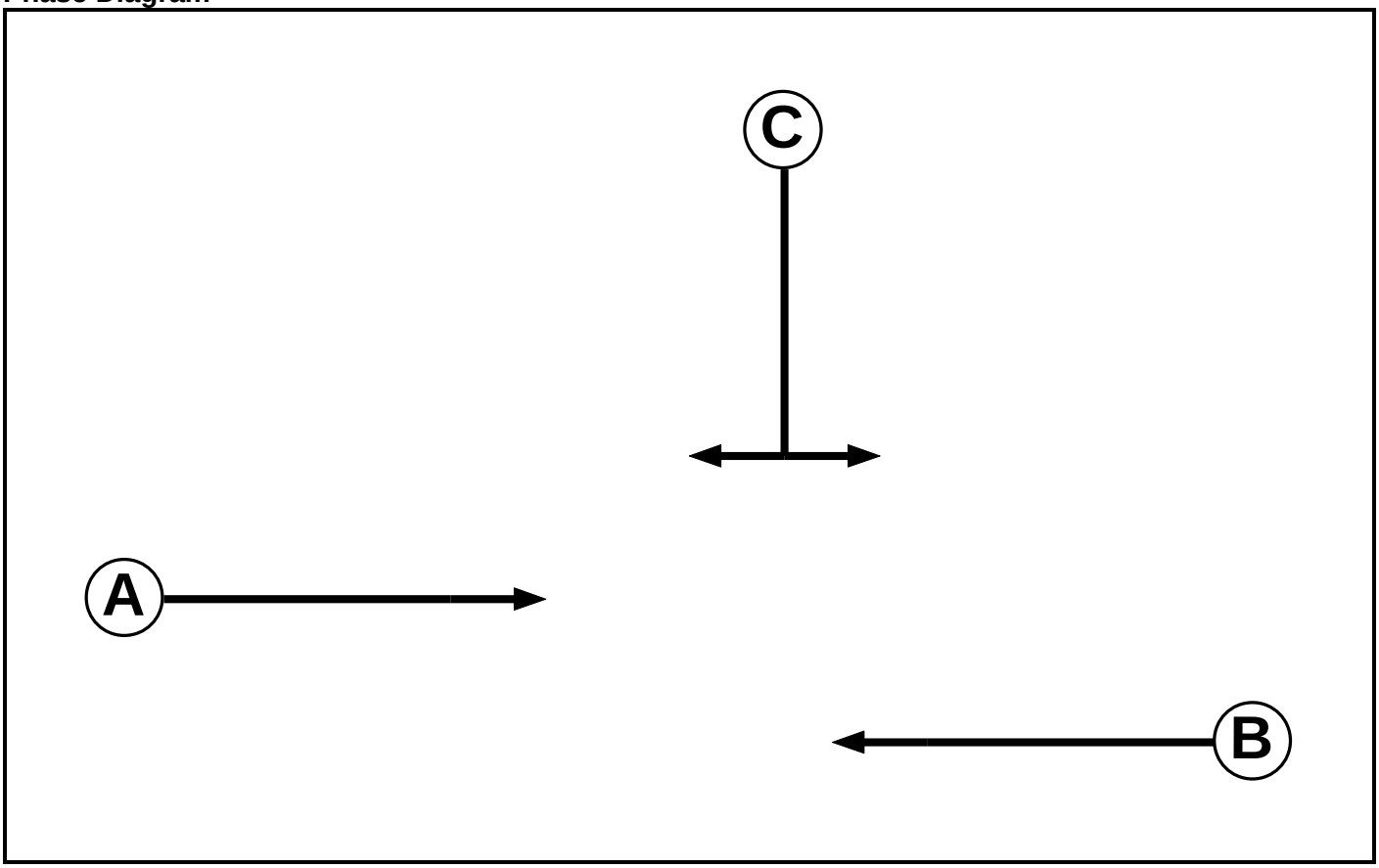
Project:	**28085 - Brentwood**
Title:	**J24 - A12 Slip / Roman Road (B1002) / Roman Road**
Location:	
Additional detail:	
File name:	28085_24_LS_LSM_Mit.lsg3x
Author:	R Cox
Company:	Peter Brett Assoicates
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 1: '2033 Reference (AM)' (FG1: '2033 Reference (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase			
Terminating Phase		A	B	C
	A		-	6
	B	-		6
	C	6	6	

Lane Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A12 Slip)	U	C	2	3	4.3	Geom	-	3.50	0.00	Y	Arm 5 Left	Inf
1/2 (A12 Slip)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Right	Inf
2/1 (Roman Road East)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
3/1 (Roman Road South)	O		2	3	1.0	User	1800	-	-	-	-	-
3/2 (Roman Road South)	O		2	3	60.0	User	1800	-	-	-	-	-
4/1 (Roman Road West)	O		2	3	60.0	User	1800	-	-	-	-	-
5/1 (Roman Road East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Roman Road South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Roman Road West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Roman Road)	U	A	2	3	10.8	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
9/1 (Roman Road)	U		2	3	10.3	User	1800	-	-	-	-	-

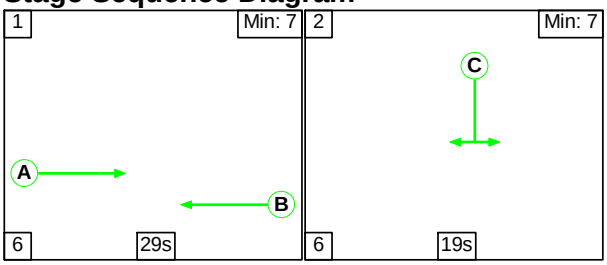
Lane Saturation Flows

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road								
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 (A12 Slip)	3.50	0.00	Y	Arm 5 Left	Inf	100.0 %	1965	1965
1/2 (A12 Slip)	3.50	0.00	Y	Arm 9 Right	Inf	100.0 %	1965	1965
2/1 (Roman Road East)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (Roman Road South Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Roman Road South Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (Roman Road West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Roman Road East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Roman Road South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Roman Road West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Roman Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
9/1 (Roman Road Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

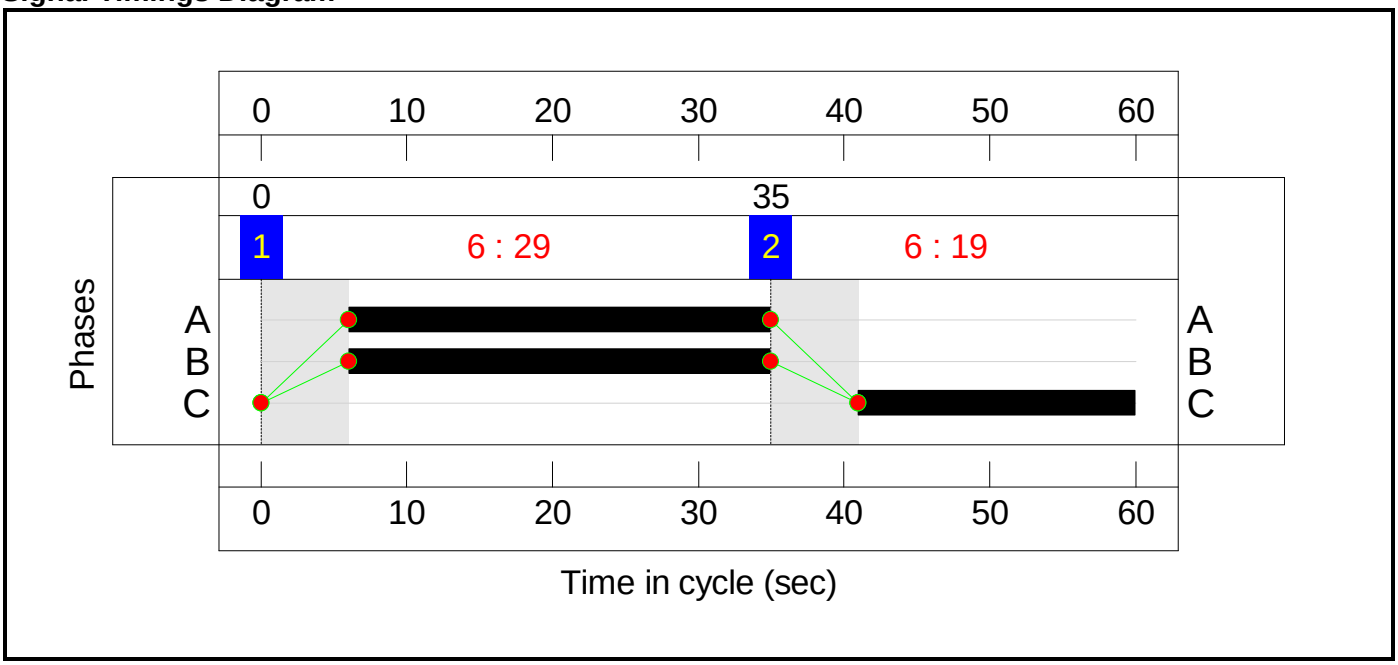
Lane Connector Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	5	35
1/2	9/1	Internal	6	35
2/1	9/1	Internal	6	35
3/1	7/1	Internal	5	35
3/2	8/1	Internal	6	35
4/1	6/1	Internal	5	35
4/1	8/1	Internal	6	35
8/1	5/1	Internal	5	35
9/1	6/1	Internal	5	35
9/1	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



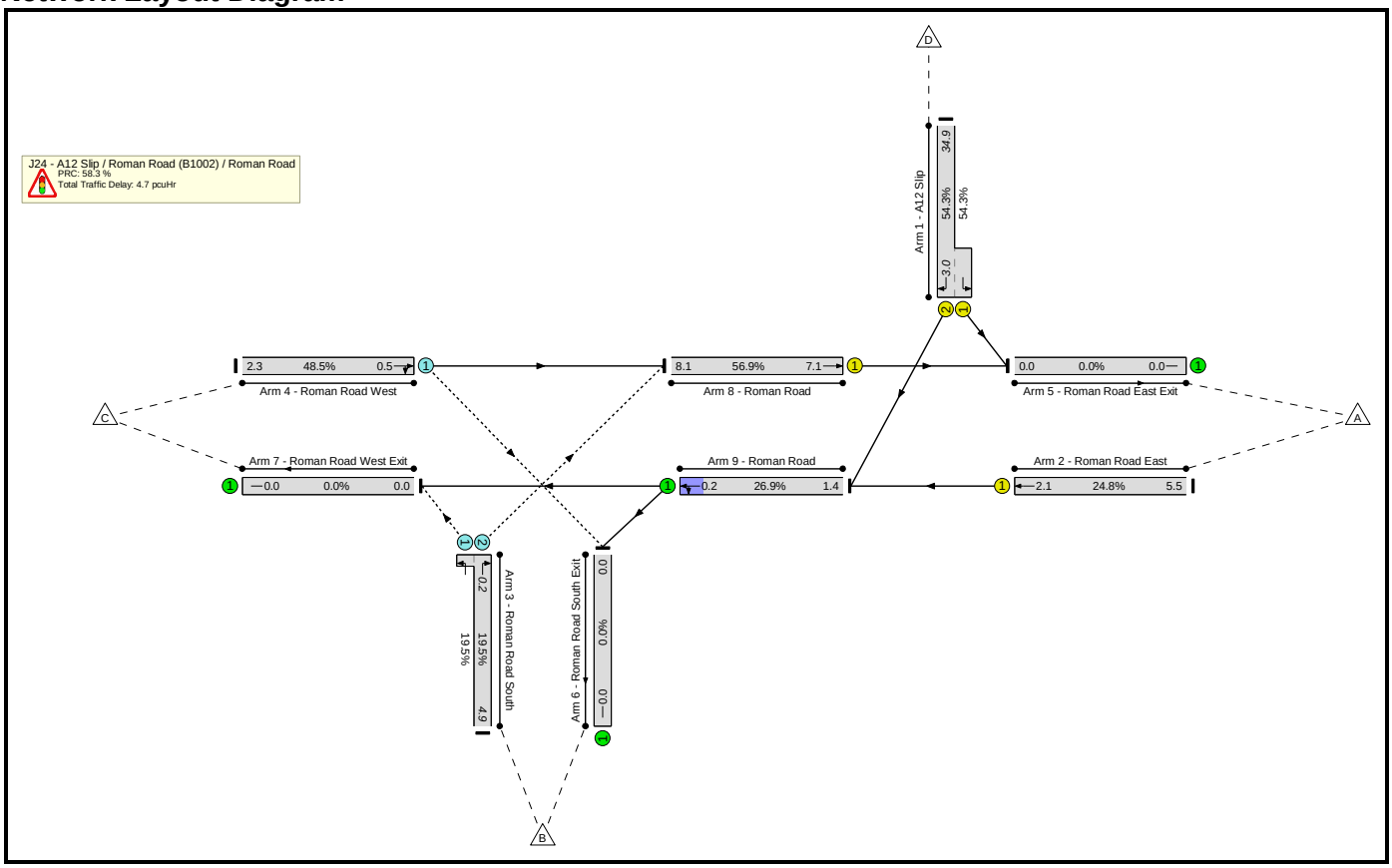
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**44.9%**	**203**	**0**	**0**	**5.0**	**-**	**-**
J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**44.9%**	**203**	**0**	**0**	**5.0**	**-**	**-**
1/2+1/1	A12 Slip Left Right	U	C		1	19	-	328	1965:1965	601+129	44.9 : 44.9%	-	-	-	1.8	19.6	3.9
2/1	Roman Road East Ahead	U	B		1	29	-	419	1915	957	43.8%	-	-	-	1.5	12.9	4.8
3/2+3/1	Roman Road South Left Right	O	-		-	-	-	81	1800:1800	334+326	12.3 : 12.3%	162	0	0	0.1	3.1	0.1
4/1	Roman Road West Right Ahead	O	-		-	-	-	333	1800	1283	26.0%	41	0	0	0.2	1.9	0.2
8/1	Roman Road Ahead	U	A		1	29	-	333	1915	957	34.8%	-	-	-	1.1	12.0	3.6
9/1	Roman Road Left Ahead	U	-		-	-	-	689	1800	1800	38.3%	-	-	-	0.3	1.6	0.3

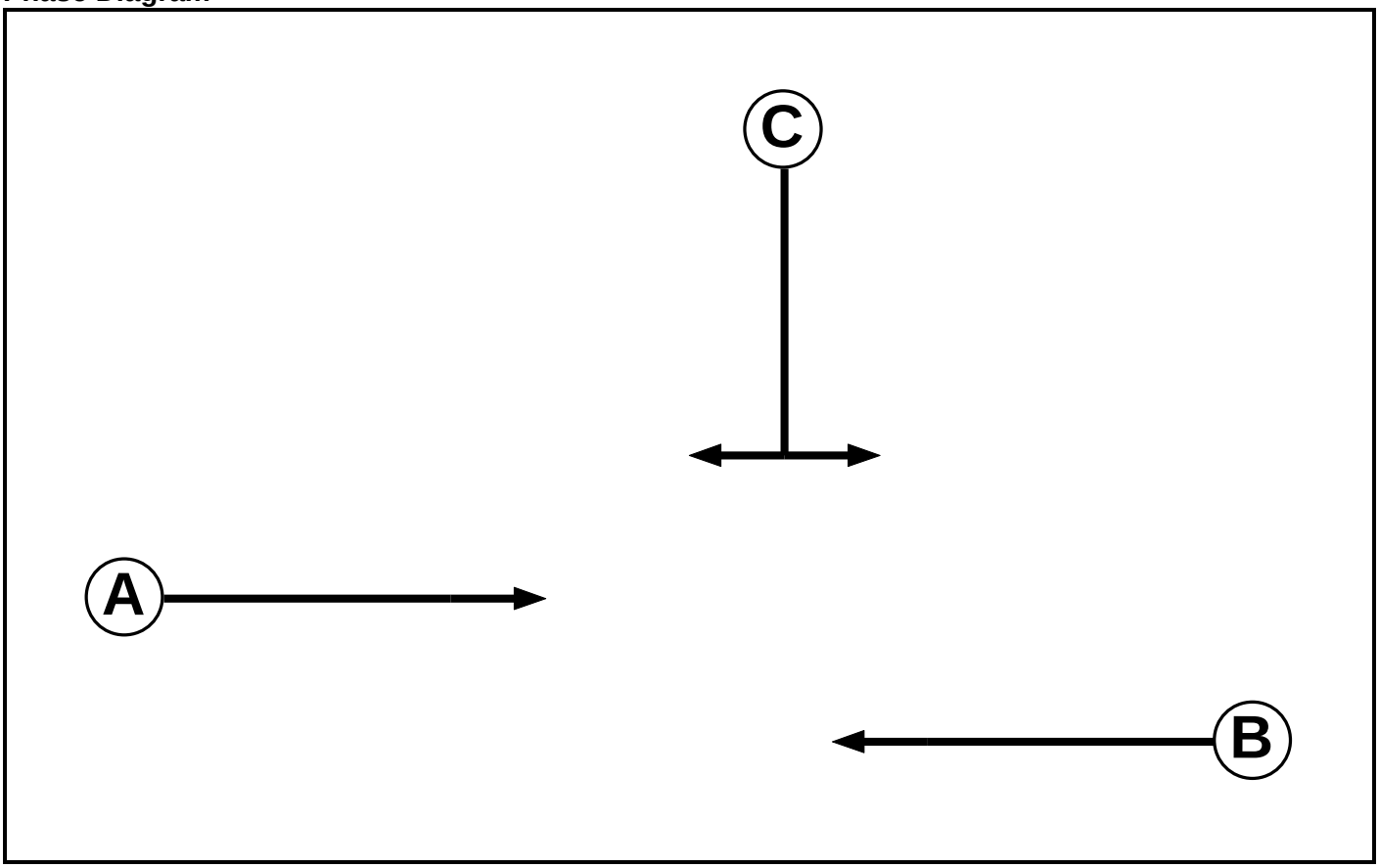
C1 PRC for Signalled Lanes (%): 100.5 Total Delay for Signalled Lanes (pcuHr): 4.40 Cycle Time (s): 60
PRC Over All Lanes (%): 100.5 Total Delay Over All Lanes(pcuHr): 4.96

Scenario 2: '2033 Reference (PM)' (FG2: '2033 Reference (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase			
Terminating Phase		A	B	C
	A		-	6
	B	-		6
	C	6	6	

Lane Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A12 Slip)	U	C	2	3	4.3	Geom	-	3.50	0.00	Y	Arm 5 Left	Inf
1/2 (A12 Slip)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Right	Inf
2/1 (Roman Road East)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
3/1 (Roman Road South)	O		2	3	1.0	User	1800	-	-	-	-	-
3/2 (Roman Road South)	O		2	3	60.0	User	1800	-	-	-	-	-
4/1 (Roman Road West)	O		2	3	60.0	User	1800	-	-	-	-	-
5/1 (Roman Road East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Roman Road South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Roman Road West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Roman Road)	U	A	2	3	10.8	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
9/1 (Roman Road)	U		2	3	10.3	User	1800	-	-	-	-	-

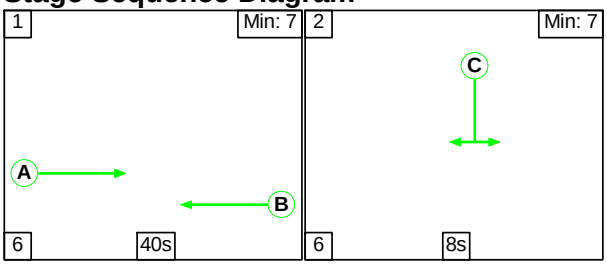
Lane Saturation Flows

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road								
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 (A12 Slip)	3.50	0.00	Y	Arm 5 Left	Inf	100.0 %	1965	1965
1/2 (A12 Slip)	3.50	0.00	Y	Arm 9 Right	Inf	100.0 %	1965	1965
2/1 (Roman Road East)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (Roman Road South Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Roman Road South Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (Roman Road West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Roman Road East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Roman Road South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Roman Road West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Roman Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
9/1 (Roman Road Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

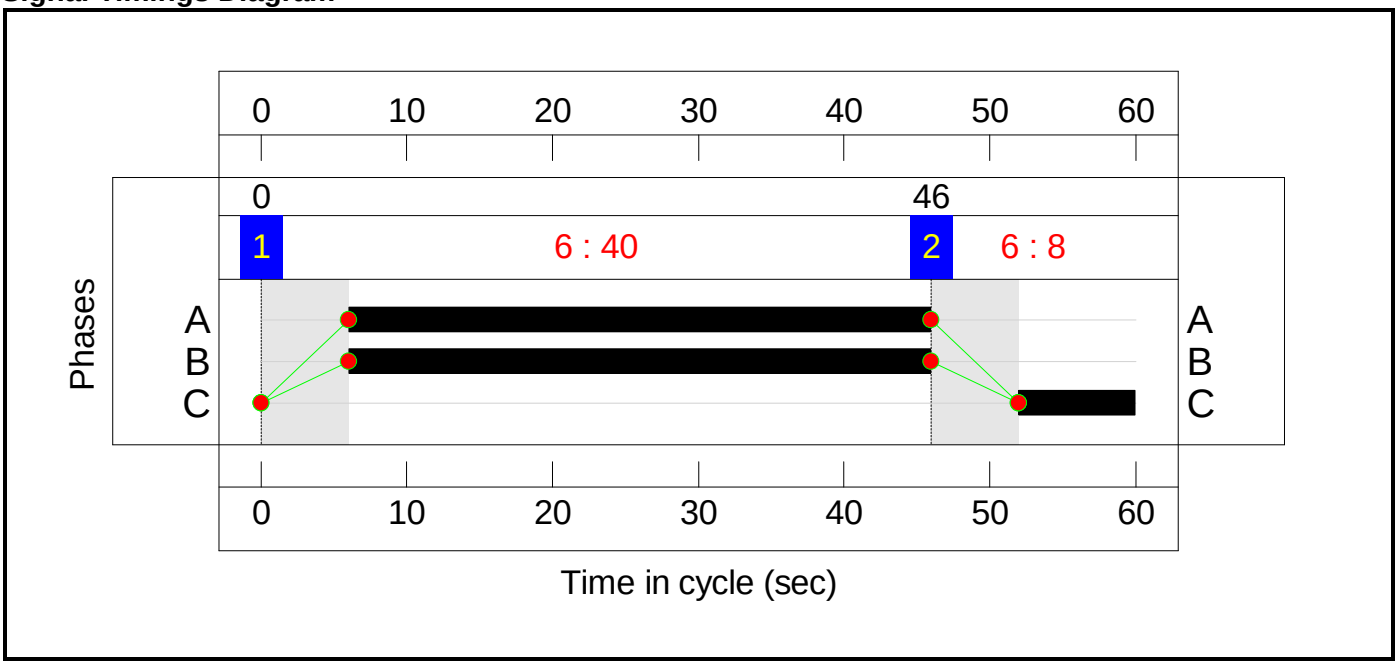
Lane Connector Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	5	35
1/2	9/1	Internal	6	35
2/1	9/1	Internal	6	35
3/1	7/1	Internal	5	35
3/2	8/1	Internal	6	35
4/1	6/1	Internal	5	35
4/1	8/1	Internal	6	35
8/1	5/1	Internal	5	35
9/1	6/1	Internal	5	35
9/1	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



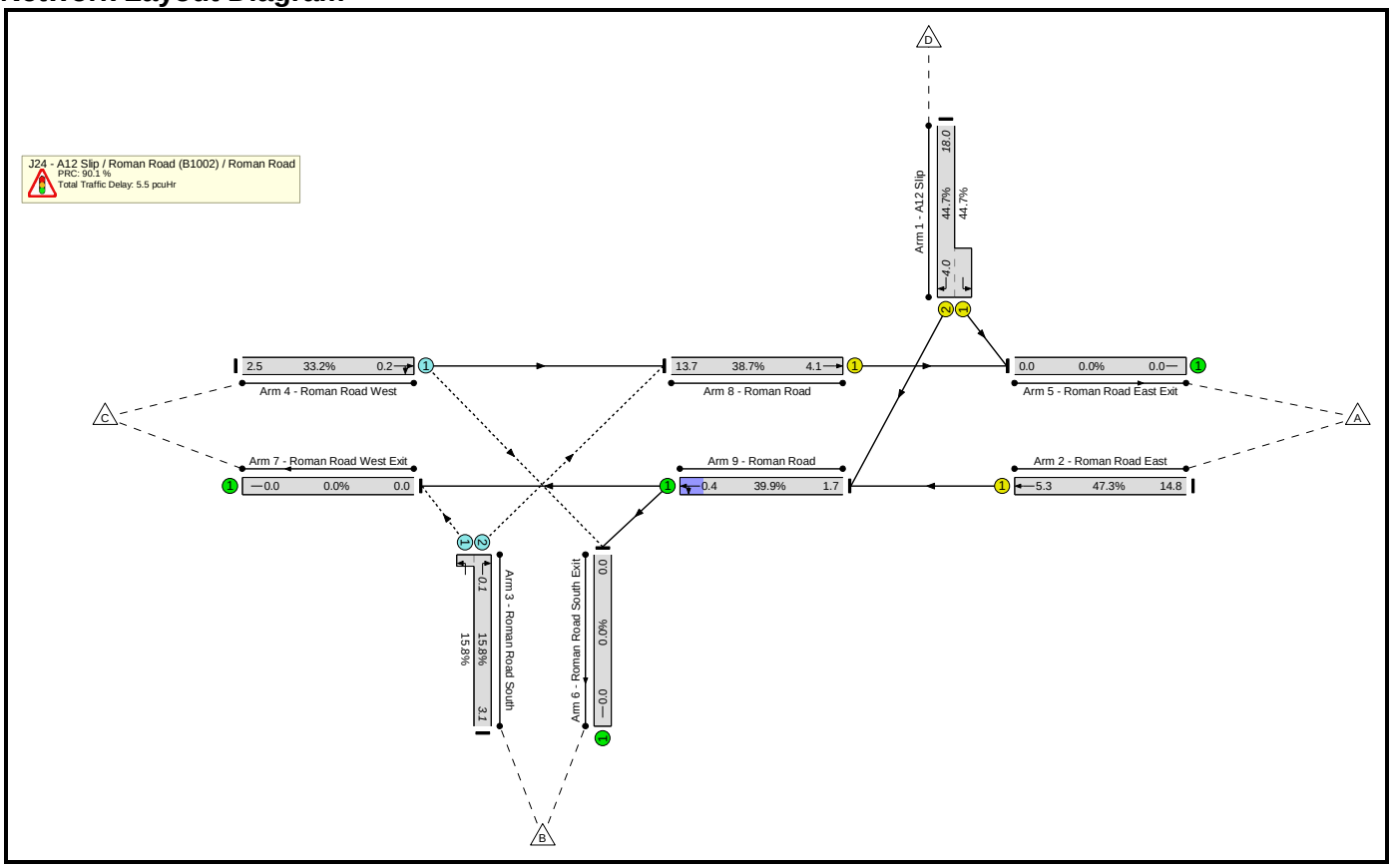
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**56.9%**	**229**	**0**	**0**	**4.7**	**-**	**-**
J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**56.9%**	**229**	**0**	**0**	**4.7**	**-**	**-**
1/2+1/1	A12 Slip Left Right	U	C		1	8	-	184	1965:1965	295+44	54.3 : 54.3%	-	-	-	1.8	34.9	3.0
2/1	Roman Road East Ahead	U	B		1	40	-	324	1915	1309	24.8%	-	-	-	0.5	5.5	2.1
3/2+3/1	Roman Road South Left Right	O	-		-	-	-	90	1800:1800	277+185	19.5 : 19.5%	180	0	0	0.1	4.9	0.2
4/1	Roman Road West Right Ahead	O	-		-	-	-	739	1800	1524	48.5%	49	0	0	0.5	2.3	0.5
8/1	Roman Road Ahead	U	A		1	40	-	744	1915	1309	56.9%	-	-	-	1.7	8.1	7.1
9/1	Roman Road Left Ahead	U	-		-	-	-	484	1800	1800	26.9%	-	-	-	0.2	1.4	0.2

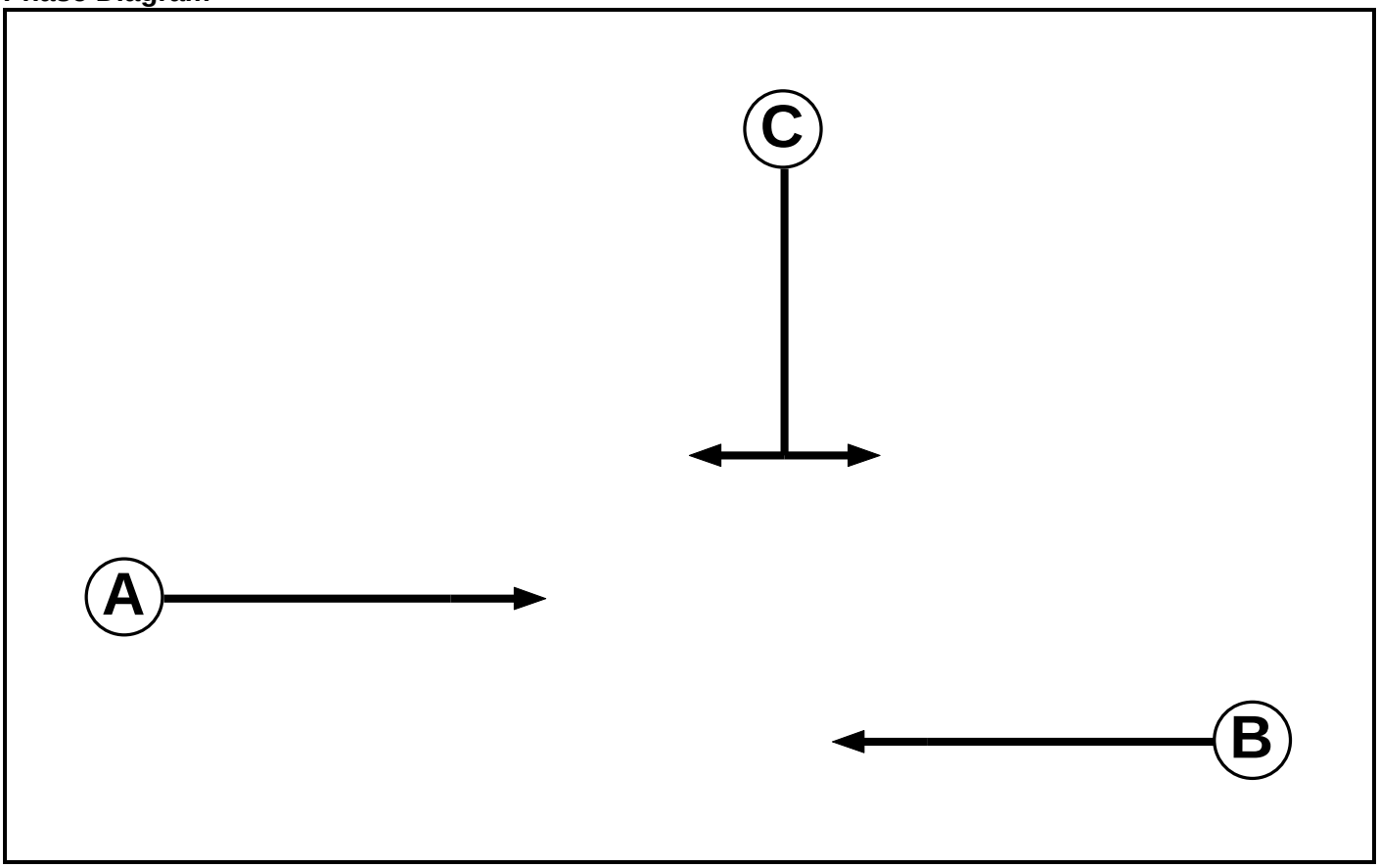
C1 PRC for Signalled Lanes (%): 58.3 Total Delay for Signalled Lanes (pcuHr): 3.95 Cycle Time (s): 60
PRC Over All Lanes (%): 58.3 Total Delay Over All Lanes(pcuHr): 4.73

Scenario 3: '2033 Local Plan Growth (AM)' (FG3: '2033 Local Plan Growth (AM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase			
Terminating Phase		A	B	C
	A		-	6
	B	-		6
	C	6	6	

Lane Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A12 Slip)	U	C	2	3	4.3	Geom	-	3.50	0.00	Y	Arm 5 Left	Inf
1/2 (A12 Slip)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Right	Inf
2/1 (Roman Road East)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
3/1 (Roman Road South)	O		2	3	1.0	User	1800	-	-	-	-	-
3/2 (Roman Road South)	O		2	3	60.0	User	1800	-	-	-	-	-
4/1 (Roman Road West)	O		2	3	60.0	User	1800	-	-	-	-	-
5/1 (Roman Road East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Roman Road South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Roman Road West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Roman Road)	U	A	2	3	10.8	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
9/1 (Roman Road)	U		2	3	10.3	User	1800	-	-	-	-	-

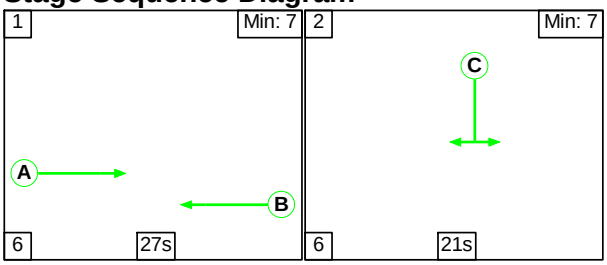
Lane Saturation Flows

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road								
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 (A12 Slip)	3.50	0.00	Y	Arm 5 Left	Inf	100.0 %	1965	1965
1/2 (A12 Slip)	3.50	0.00	Y	Arm 9 Right	Inf	100.0 %	1965	1965
2/1 (Roman Road East)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (Roman Road South Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Roman Road South Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (Roman Road West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Roman Road East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Roman Road South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Roman Road West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Roman Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
9/1 (Roman Road Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

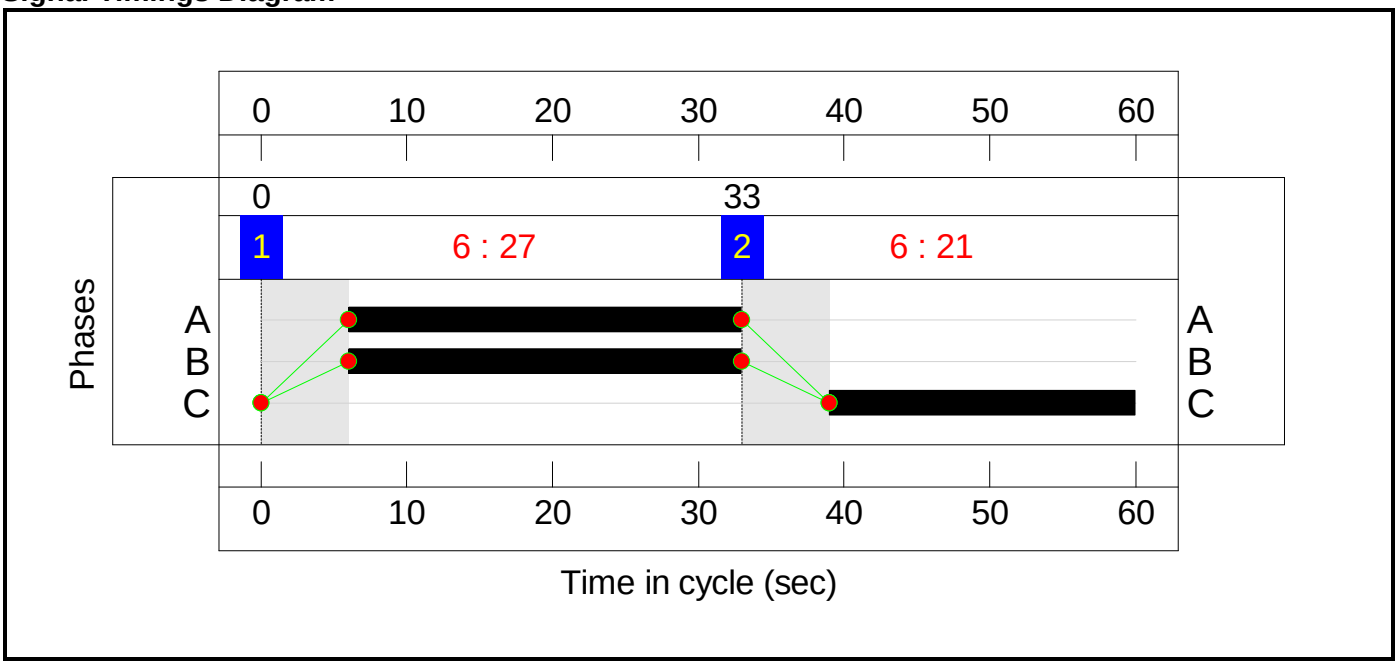
Lane Connector Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	5	35
1/2	9/1	Internal	6	35
2/1	9/1	Internal	6	35
3/1	7/1	Internal	5	35
3/2	8/1	Internal	6	35
4/1	6/1	Internal	5	35
4/1	8/1	Internal	6	35
8/1	5/1	Internal	5	35
9/1	6/1	Internal	5	35
9/1	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



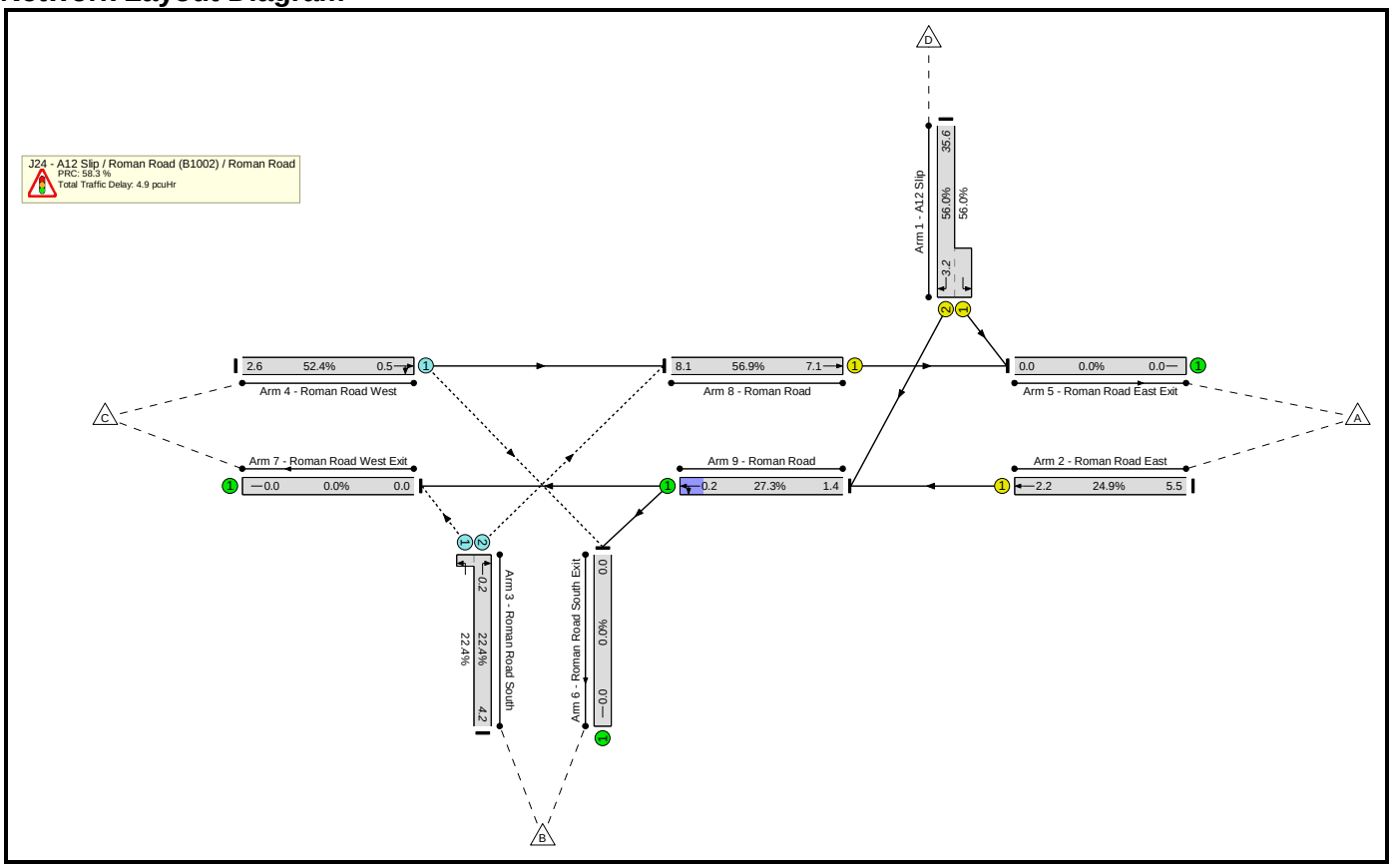
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**47.3%**	**289**	**0**	**0**	**5.5**	**-**	**-**
J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**47.3%**	**289**	**0**	**0**	**5.5**	**-**	**-**
1/2+1/1	A12 Slip Left Right	U	C		1	21	-	353	1965:1965	663+128	44.7 : 44.7%	-	-	-	1.8	18.0	4.0
2/1	Roman Road East Ahead	U	B		1	27	-	423	1915	894	47.3%	-	-	-	1.7	14.8	5.3
3/2+3/1	Roman Road South Left Right	O	-		-	-	-	109	1800:1800	328+360	15.8 : 15.8%	218	0	0	0.1	3.1	0.1
4/1	Roman Road West Right Ahead	O	-		-	-	-	365	1800	1098	33.2%	71	0	0	0.2	2.5	0.2
8/1	Roman Road Ahead	U	A		1	27	-	346	1915	894	38.7%	-	-	-	1.3	13.7	4.1
9/1	Roman Road Left Ahead	U	-		-	-	-	719	1800	1800	39.9%	-	-	-	0.3	1.7	0.4

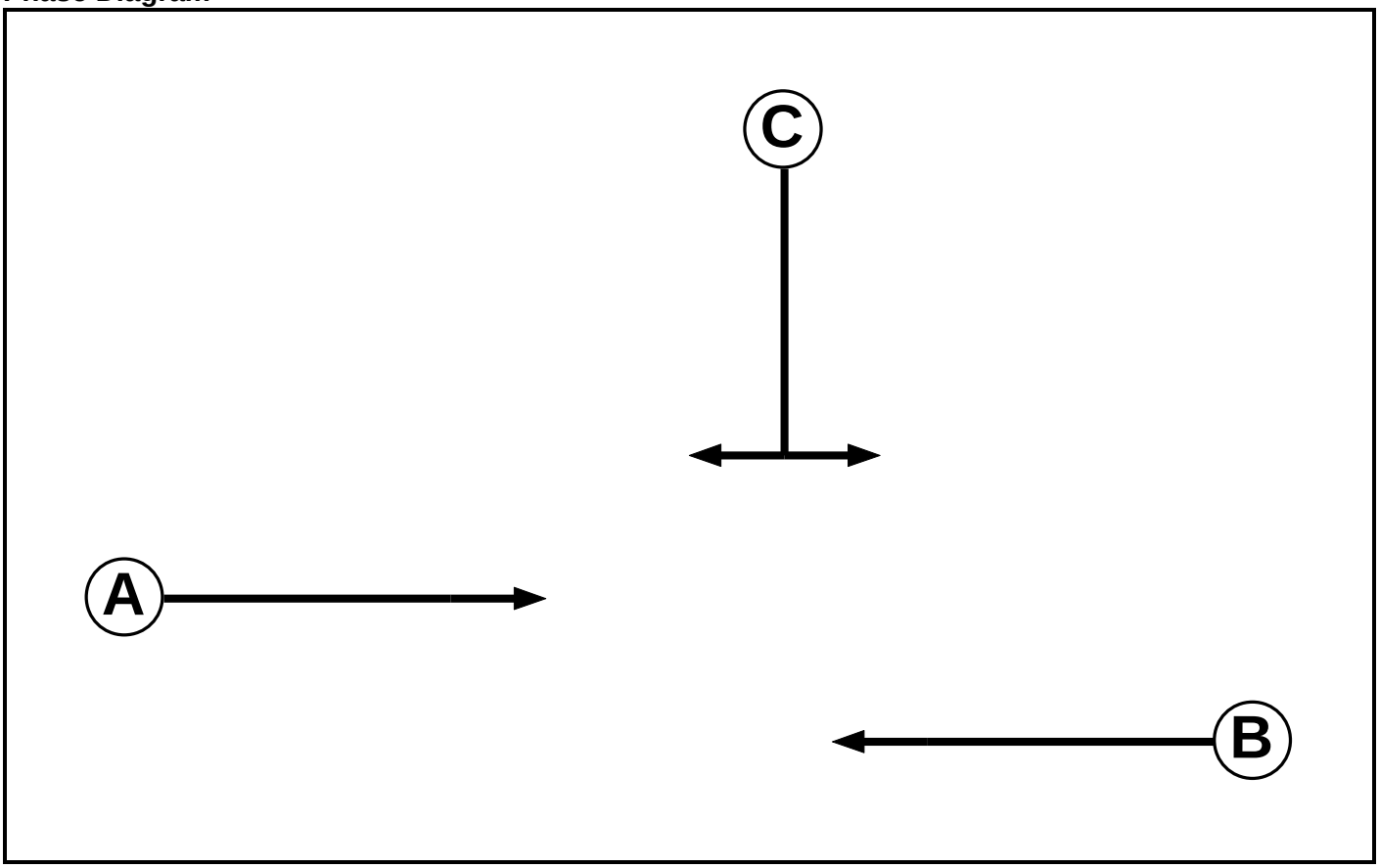
C1 PRC for Signalled Lanes (%): 90.1 Total Delay for Signalled Lanes (pcuHr): 4.82 Cycle Time (s): 60
PRC Over All Lanes (%): 90.1 Total Delay Over All Lanes(pcuHr): 5.49

Scenario 4: '2033 Local Plan Growth (PM)' (FG4: '2033 Local Plan Growth (PM)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

	Starting Phase			
Terminating Phase		A	B	C
	A		-	6
	B	-		6
	C	6	6	

Lane Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A12 Slip)	U	C	2	3	4.3	Geom	-	3.50	0.00	Y	Arm 5 Left	Inf
1/2 (A12 Slip)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Right	Inf
2/1 (Roman Road East)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
3/1 (Roman Road South)	O		2	3	1.0	User	1800	-	-	-	-	-
3/2 (Roman Road South)	O		2	3	60.0	User	1800	-	-	-	-	-
4/1 (Roman Road West)	O		2	3	60.0	User	1800	-	-	-	-	-
5/1 (Roman Road East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Roman Road South Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Roman Road West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Roman Road)	U	A	2	3	10.8	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
9/1 (Roman Road)	U		2	3	10.3	User	1800	-	-	-	-	-

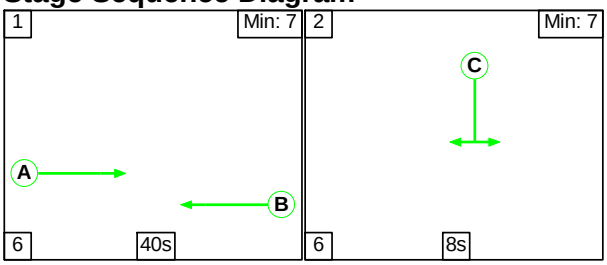
Lane Saturation Flows

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road								
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 (A12 Slip)	3.50	0.00	Y	Arm 5 Left	Inf	100.0 %	1965	1965
1/2 (A12 Slip)	3.50	0.00	Y	Arm 9 Right	Inf	100.0 %	1965	1965
2/1 (Roman Road East)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
3/1 (Roman Road South Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/2 (Roman Road South Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (Roman Road West Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/1 (Roman Road East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Roman Road South Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Roman Road West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Roman Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915	1915
9/1 (Roman Road Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

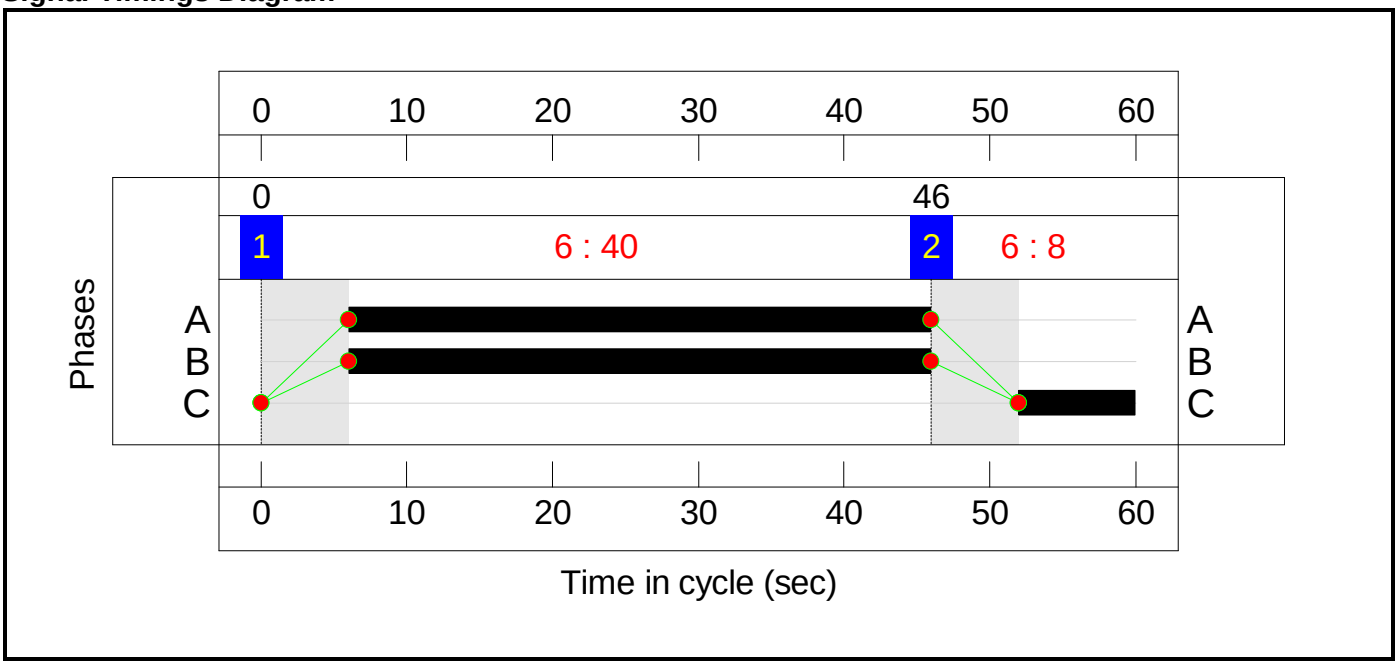
Lane Connector Input Data

Junction: J24 - A12 Slip / Roman Road (B1002) / Roman Road				
Org Lane	**Dest Lane**	**Junction**	**Mean Cruise Time**	**Platoon Dispersion**
1/1	5/1	Internal	5	35
1/2	9/1	Internal	6	35
2/1	9/1	Internal	6	35
3/1	7/1	Internal	5	35
3/2	8/1	Internal	6	35
4/1	6/1	Internal	5	35
4/1	8/1	Internal	6	35
8/1	5/1	Internal	5	35
9/1	6/1	Internal	5	35
9/1	7/1	Internal	5	35

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**56.9%**	**318**	**0**	**0**	**4.9**	**-**	**-**
J24 - A12 Slip / Roman Road (B1002) / Roman Road	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**56.9%**	**318**	**0**	**0**	**4.9**	**-**	**-**
1/2+1/1	A12 Slip Left Right	U	C		1	8	-	187	1965:1965	295+39	56.0 : 56.0%	-	-	-	1.9	35.6	3.2
2/1	Roman Road East Ahead	U	B		1	40	-	326	1915	1309	24.9%	-	-	-	0.5	5.5	2.2
3/2+3/1	Roman Road South Left Right	O	-		-	-	-	124	1800:1800	277+277	22.4 : 22.4%	248	0	0	0.1	4.2	0.2
4/1	Roman Road West Right Ahead	O	-		-	-	-	752	1800	1435	52.4%	70	0	0	0.5	2.6	0.5
8/1	Roman Road Ahead	U	A		1	40	-	744	1915	1309	56.9%	-	-	-	1.7	8.1	7.1
9/1	Roman Road Left Ahead	U	-		-	-	-	491	1800	1800	27.3%	-	-	-	0.2	1.4	0.2

C1 PRC for Signalled Lanes (%): 58.3 Total Delay for Signalled Lanes (pcuHr): 4.02 Cycle Time (s): 60
PRC Over All Lanes (%): 58.3 Total Delay Over All Lanes(pcuHr): 4.90

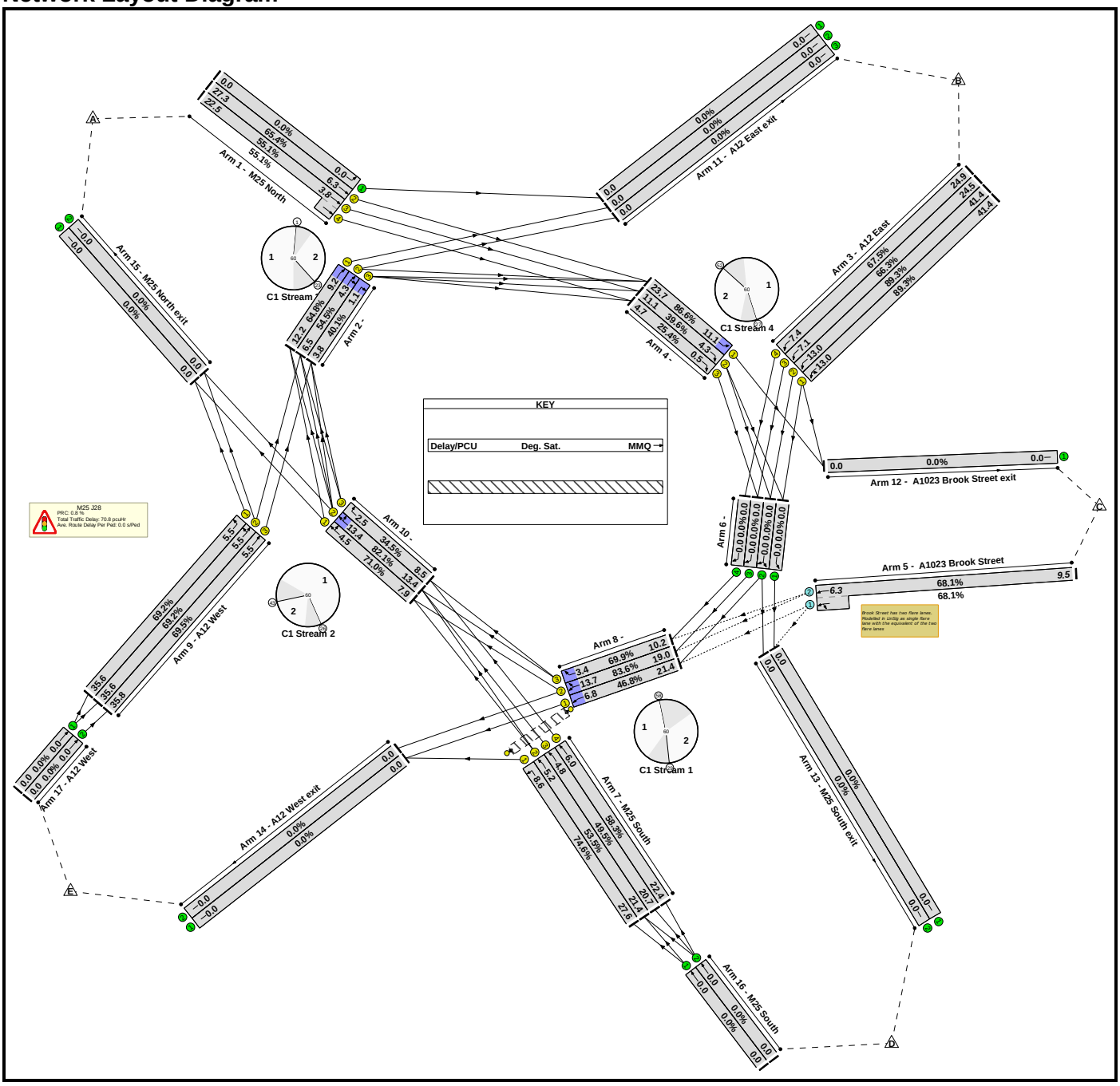
Brentwood PBA Modelling

Project and User Details

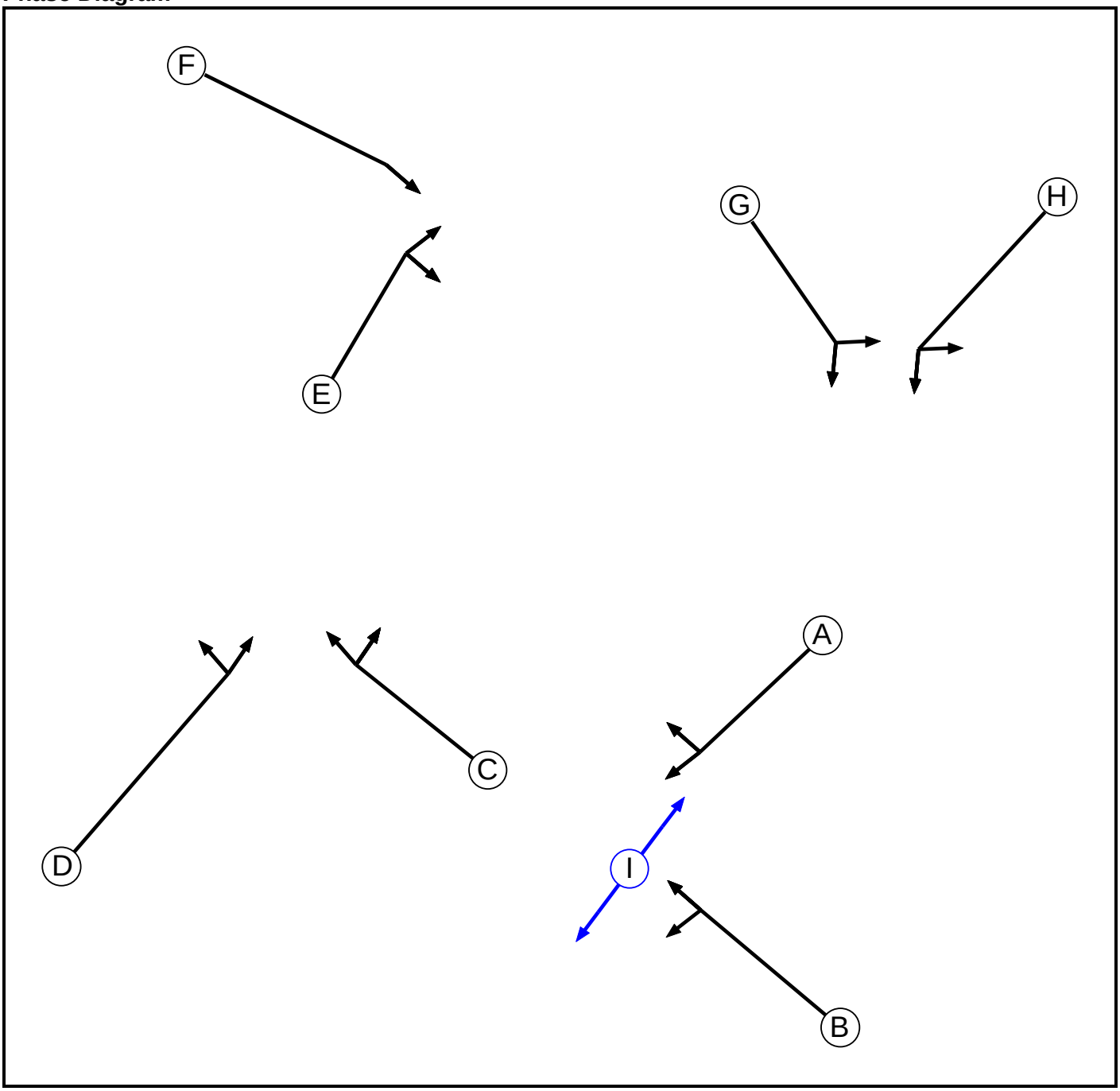
Project:	**M25 J28 Feasibility Study**
Title:	**LinSig**
Location:	
Additional detail:	
File name:	28085_25_LS_LSM.lsg3x
Author:	ATKINS
Company:	ATKINS, WOODCOTE GROVE
Address:	
Linsig Version:	3, 2, 39, 0

Scenario 1: '2018 Baseline (AM)' (FG1: '2018 Baseline (AM)', Plan 1: 'AM PEAK - CLF PLAN 4')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

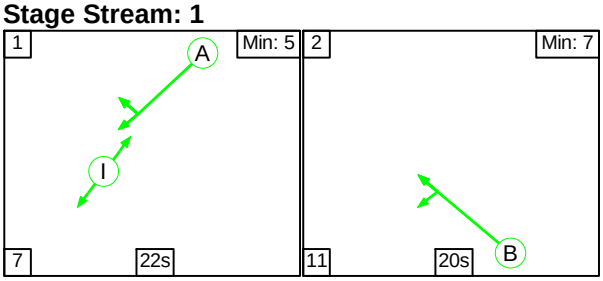
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

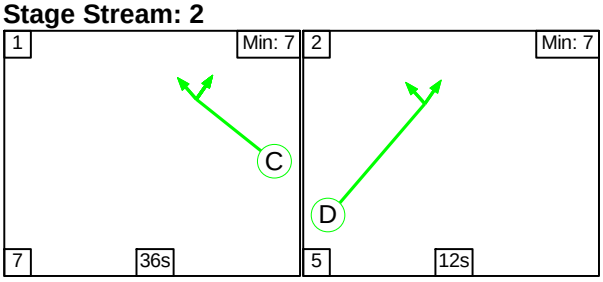
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

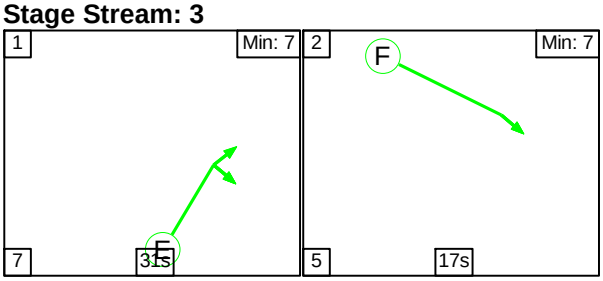
Stage Stream: 1



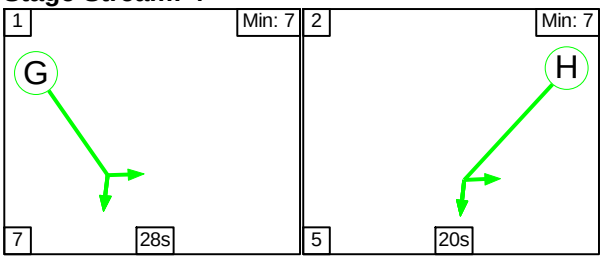
Stage Stream: 2



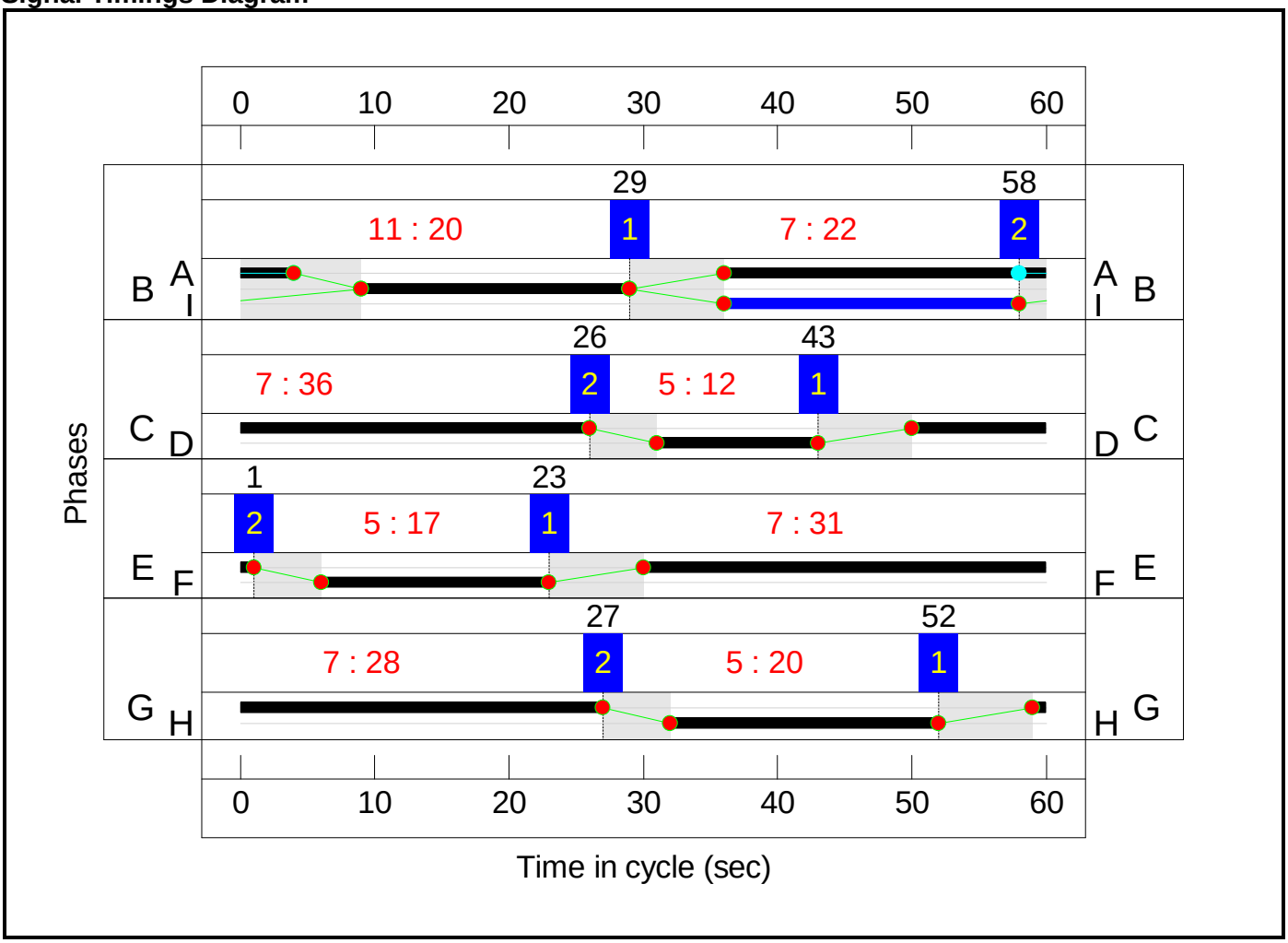
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

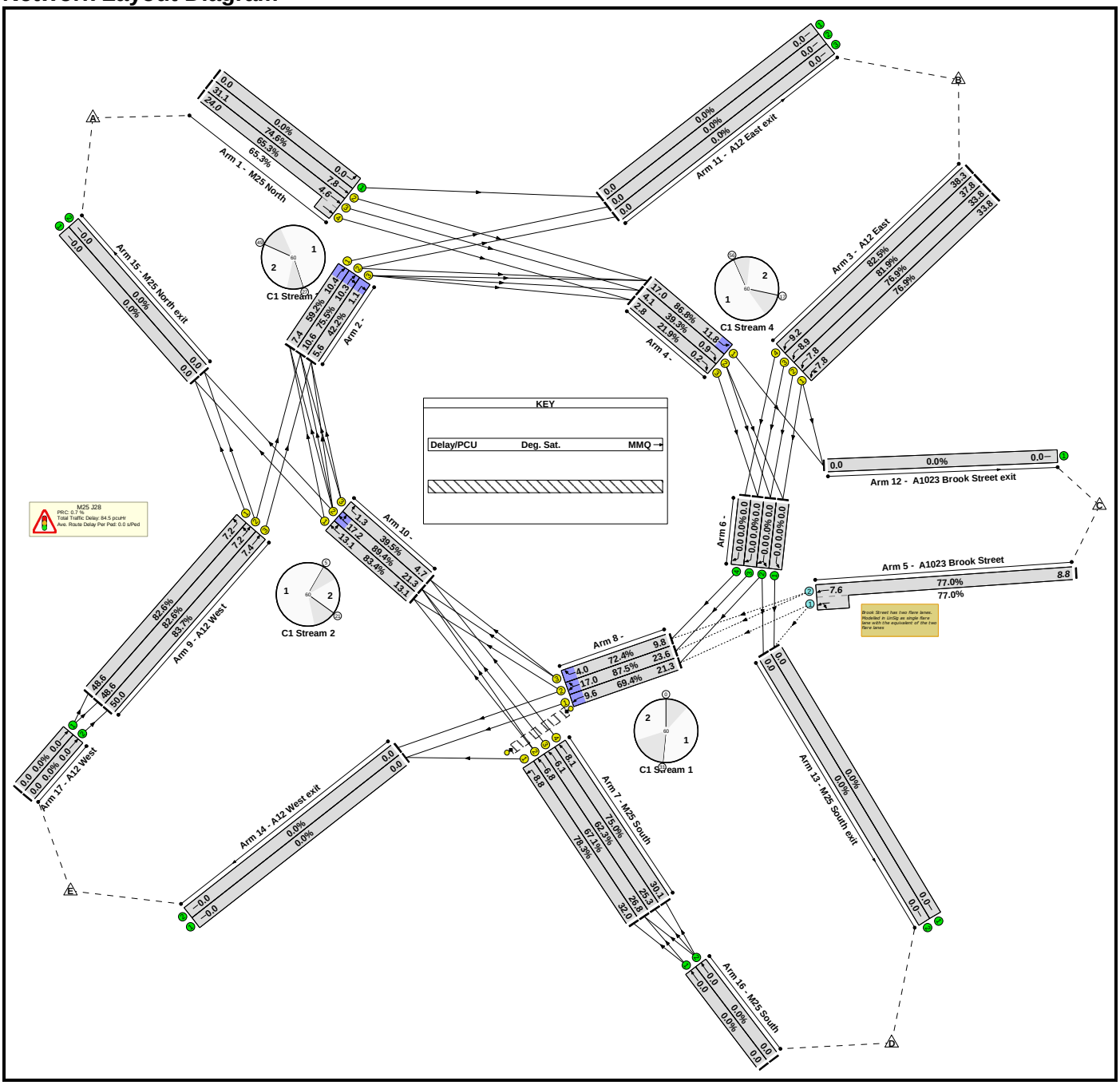
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.3%**	**1628**	**0**	**0**	**70.8**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.3%**	**1628**	**0**	**0**	**70.8**	**-**	**-**
1/2	M25 North Ahead	U	F		1	17	-	373	1900	570	65.4%	-	-	-	2.8	27.3	6.3
1/3+1/4	M25 North Ahead	U	F		1	17	-	364	1900:1900	238+423	55.1 : 55.1%	-	-	-	2.3	22.5	3.8
2/1	Ahead	U	E		1	31	-	657	1900	1013	64.8%	-	-	-	2.2	12.2	9.2
2/2	Right Ahead	U	E		1	31	-	552	1900	1013	54.5%	-	-	-	1.0	6.5	4.3
2/3	Right	U	E		1	31	-	406	1900	1013	40.1%	-	-	-	0.4	3.8	1.1
3/1	A12 East Ahead U-Turn	U	H		1	20	-	594	1900	665	89.3%	-	-	-	6.8	41.4	13.0
3/2	A12 East Ahead	U	H		1	20	-	594	1900	665	89.3%	-	-	-	6.8	41.4	13.0
3/3	A12 East Ahead	U	H		1	20	-	441	1900	665	66.3%	-	-	-	3.0	24.5	7.1
3/4	A12 East Ahead	U	H		1	20	-	449	1900	665	67.5%	-	-	-	3.1	24.9	7.4
4/1	Ahead	U	G		1	28	-	795	1900	918	86.6%	-	-	-	5.2	23.7	11.1
4/2	Right	U	G		1	28	-	364	1900	918	39.6%	-	-	-	1.1	11.1	4.3
4/3	Right	U	G		1	28	-	233	1900	918	25.4%	-	-	-	0.3	4.7	0.5
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	814	1800:1800	421+774	68.1 : 68.1%	1628	0	0	2.2	9.5	6.3
7/1	M25 South Left	U	B		1	20	-	496	1900	665	74.6%	-	-	-	3.8	27.6	8.6
7/2	M25 South Ahead	U	B		1	20	-	356	1900	665	53.5%	-	-	-	2.1	21.4	5.2
7/3	M25 South Ahead	U	B		1	20	-	329	1900	665	49.5%	-	-	-	1.9	20.7	4.8
7/4	M25 South Ahead	U	B		1	20	-	388	1900	665	58.3%	-	-	-	2.4	22.4	6.0
8/1	Ahead	U	A		1	28	-	430	1900	918	46.8%	-	-	-	2.6	21.4	6.8

8/2	Right Ahead	U	A		1	28	-	768	1900	918	83.6%	-	-	-	4.1	19.0	13.7
8/3	Right	U	A		1	28	-	642	1900	918	69.9%	-	-	-	1.8	10.2	3.4
9/1	A12 West Left	U	D		1	12	-	285	1900	412	69.2%	-	-	-	2.8	35.6	5.5
9/2	A12 West Ahead Left	U	D		1	12	-	285	1900	412	69.2%	-	-	-	2.8	35.6	5.5
9/3	A12 West Ahead	U	D		1	12	-	286	1900	412	69.5%	-	-	-	2.8	35.8	5.5
10/1	Right Ahead	U	C		1	36	-	832	1900	1172	71.0%	-	-	-	1.8	7.9	4.5
10/2	Right Ahead	U	C		1	36	-	962	1900	1172	82.1%	-	-	-	3.6	13.4	13.4
10/3	Right	U	C		1	36	-	404	1900	1172	34.5%	-	-	-	1.0	8.5	2.5
Ped Link: P1	Unnamed Ped Link	-	I		1	22	-	0	-	0	0.0%	-	-	-	-	-	-

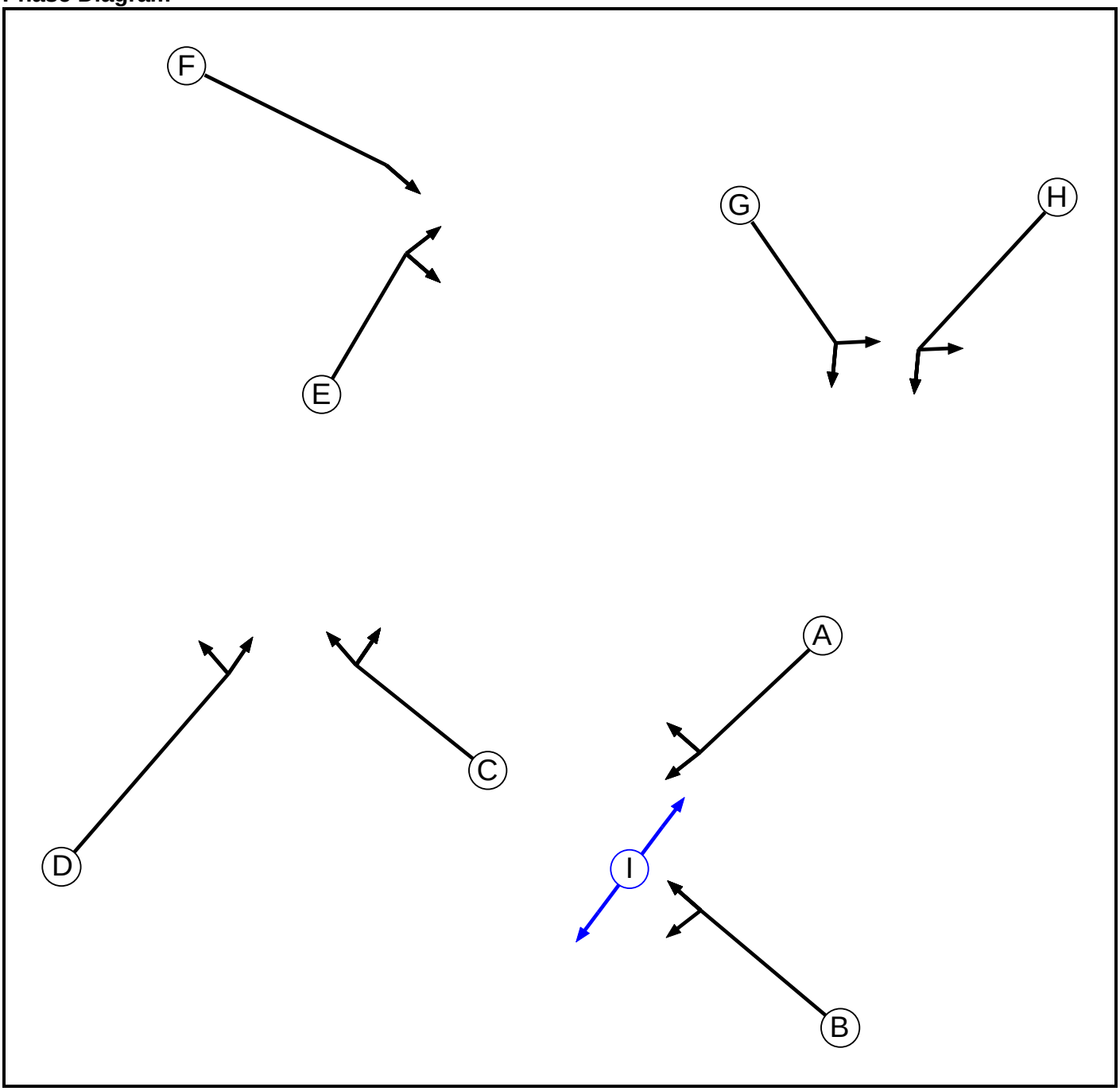
C1	Stream: 1	PRC for Signalled Lanes (%):	7.6	Total Delay for Signalled Lanes (pcuHr):	18.66	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	9.6	Total Delay for Signalled Lanes (pcuHr):	14.83	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	37.5	Total Delay for Signalled Lanes (pcuHr):	8.77	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	0.8	Total Delay for Signalled Lanes (pcuHr):	26.41	Cycle Time (s):	60
		PRC Over All Lanes (%):	0.8	Total Delay Over All Lanes(pcuHr):	70.83		

Scenario 2: '2018 Baseline (PM)' (FG2: '2018 Baseline (PM)', Plan 3: 'PM PEAK - CLF PLAN 6')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

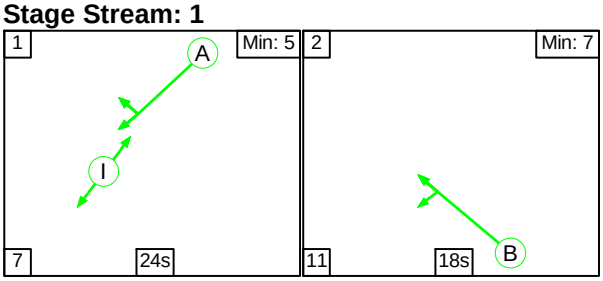
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

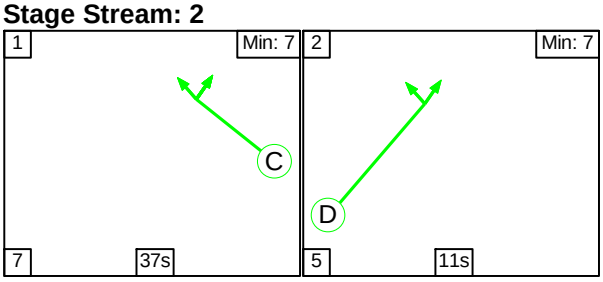
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

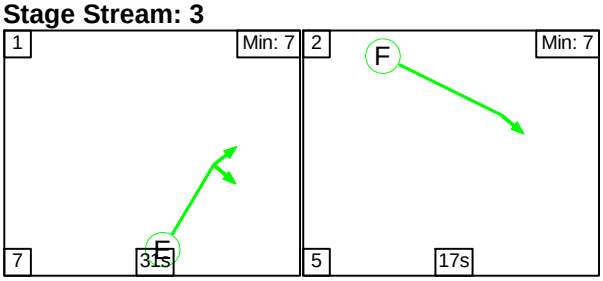
Stage Stream: 1



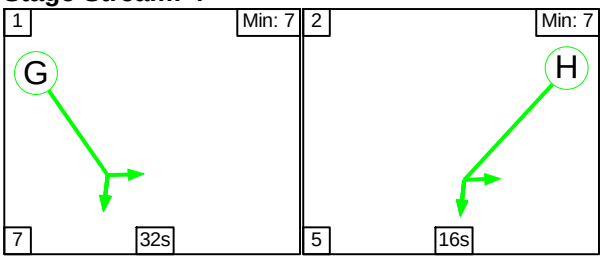
Stage Stream: 2



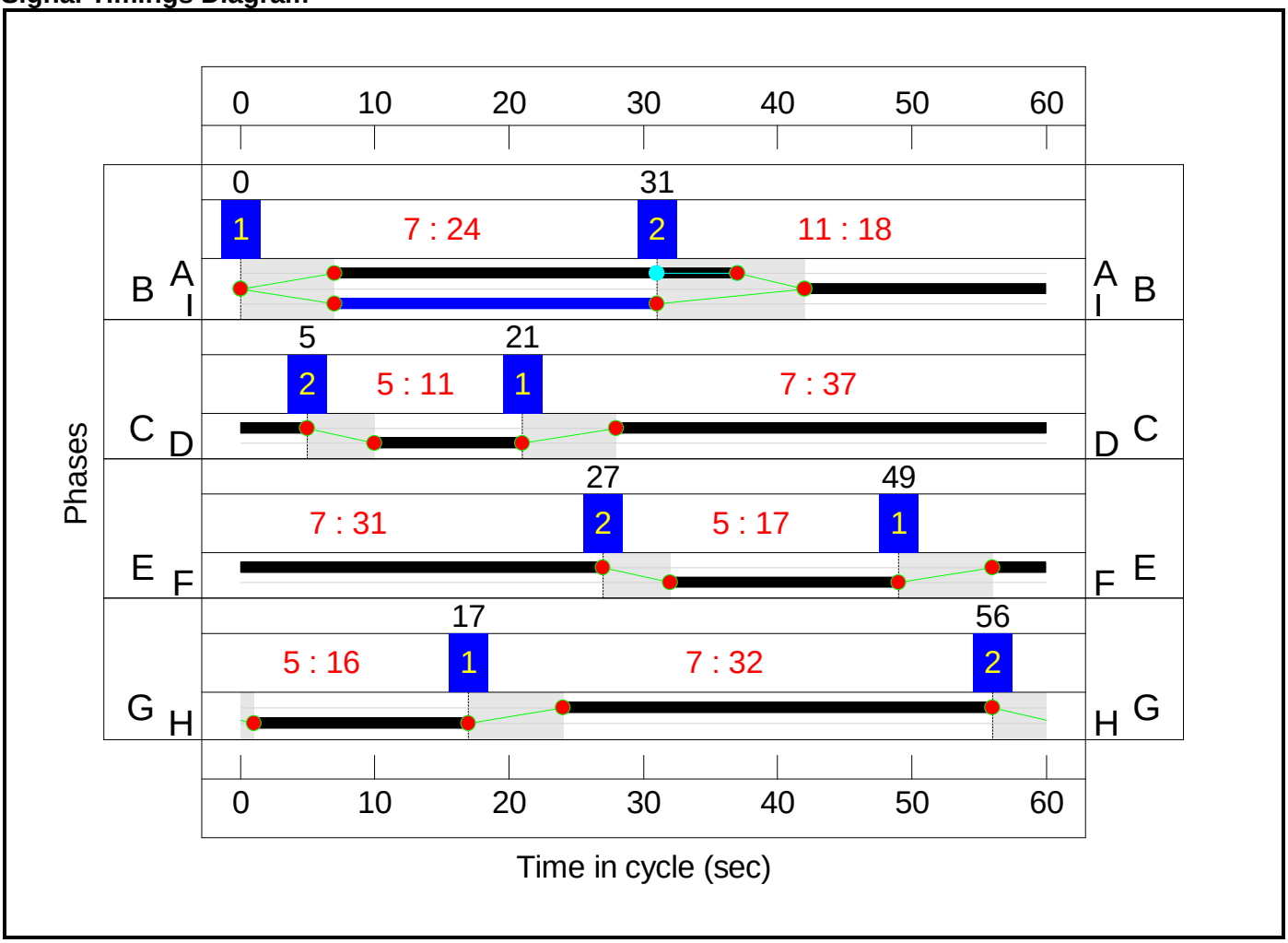
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

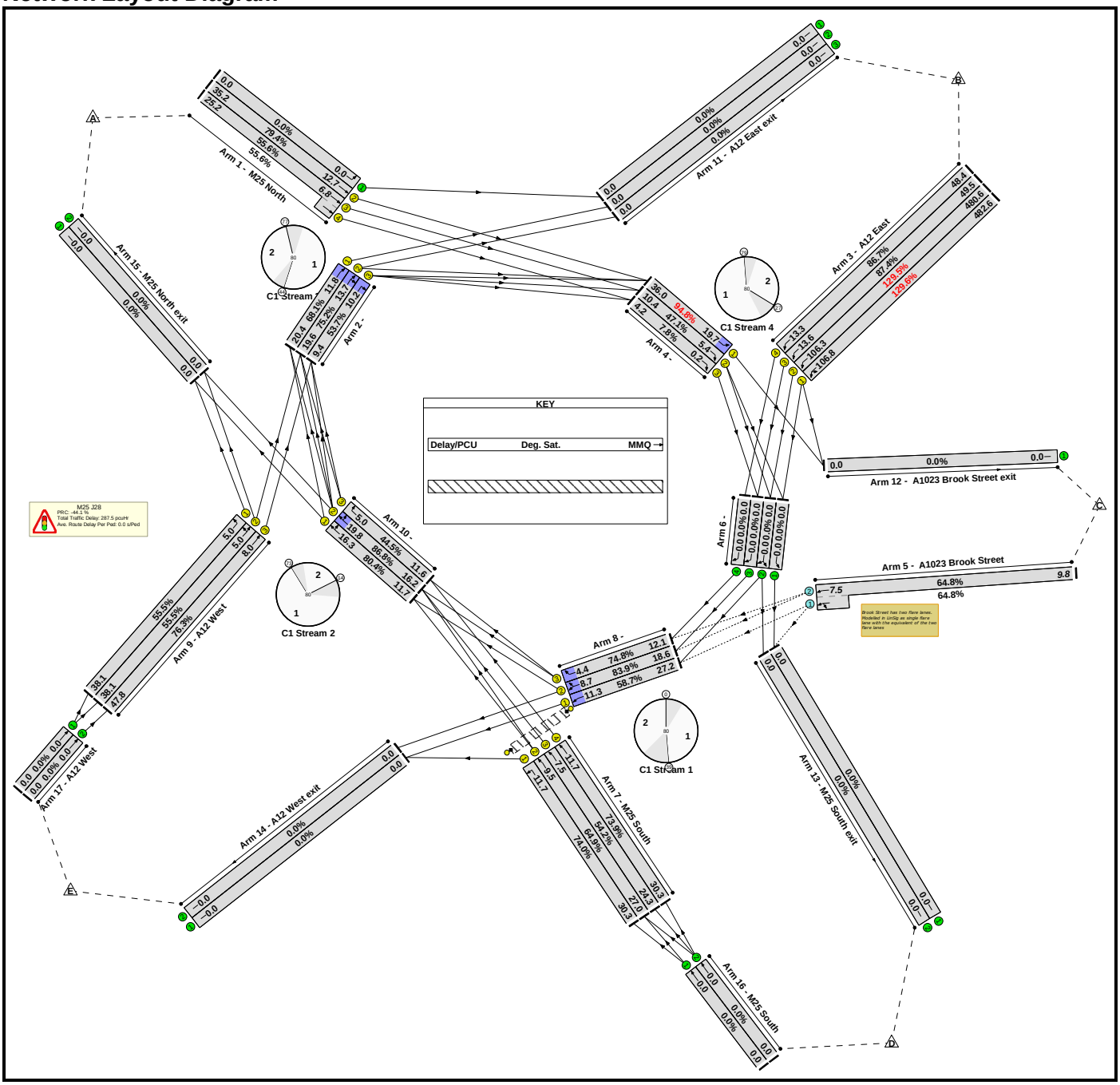
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.4%**	**2242**	**0**	**0**	**84.5**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.4%**	**2242**	**0**	**0**	**84.5**	**-**	**-**
1/2	M25 North Ahead	U	F		1	17	-	425	1900	570	74.6%	-	-	-	3.7	31.1	7.8
1/3+1/4	M25 North Ahead	U	F		1	17	-	475	1900:1900	377+351	65.3 : 65.3%	-	-	-	3.2	24.0	4.6
2/1	Ahead	U	E		1	31	-	600	1900	1013	59.2%	-	-	-	1.2	7.4	10.4
2/2	Right Ahead	U	E		1	31	-	765	1900	1013	75.5%	-	-	-	2.2	10.6	10.3
2/3	Right	U	E		1	31	-	428	1900	1013	42.2%	-	-	-	0.7	5.6	1.1
3/1	A12 East Ahead U-Turn	U	H		1	16	-	414	1900	538	76.9%	-	-	-	3.9	33.8	7.8
3/2	A12 East Ahead	U	H		1	16	-	414	1900	538	76.9%	-	-	-	3.9	33.8	7.8
3/3	A12 East Ahead	U	H		1	16	-	441	1900	538	81.9%	-	-	-	4.6	37.8	8.9
3/4	A12 East Ahead	U	H		1	16	-	444	1900	538	82.5%	-	-	-	4.7	38.3	9.2
4/1	Ahead	U	G		1	32	-	907	1900	1045	86.8%	-	-	-	4.3	17.0	11.8
4/2	Right	U	G		1	32	-	411	1900	1045	39.3%	-	-	-	0.5	4.1	0.9
4/3	Right	U	G		1	32	-	229	1900	1045	21.9%	-	-	-	0.2	2.8	0.2
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	1121	1800:1800	592+864	77.0 : 77.0%	2242	0	0	2.7	8.8	7.6
7/1	M25 South Left	U	B		1	18	-	471	1900	602	78.3%	-	-	-	4.2	32.0	8.8
7/2	M25 South Ahead	U	B		1	18	-	404	1900	602	67.1%	-	-	-	3.0	26.8	6.8
7/3	M25 South Ahead	U	B		1	18	-	375	1900	602	62.3%	-	-	-	2.6	25.3	6.1
7/4	M25 South Ahead	U	B		1	18	-	451	1900	602	75.0%	-	-	-	3.8	30.1	8.1
8/1	Ahead	U	A		1	30	-	681	1900	982	69.4%	-	-	-	4.0	21.3	9.6

8/2	Right Ahead	U	A		1	30	-	859	1900	982	87.5%	-	-	-	5.6	23.6	17.0
8/3	Right	U	A		1	30	-	711	1900	982	72.4%	-	-	-	1.9	9.8	4.0
9/1	A12 West Left	U	D		1	11	-	314	1900	380	82.6%	-	-	-	4.2	48.6	7.2
9/2	A12 West Ahead Left	U	D		1	11	-	314	1900	380	82.6%	-	-	-	4.2	48.6	7.2
9/3	A12 West Ahead	U	D		1	11	-	318	1900	380	83.7%	-	-	-	4.4	50.0	7.4
10/1	Right Ahead	U	C		1	37	-	1003	1900	1203	83.4%	-	-	-	3.6	13.1	13.1
10/2	Right Ahead	U	C		1	37	-	1076	1900	1203	89.4%	-	-	-	6.4	21.3	17.2
10/3	Right	U	C		1	37	-	475	1900	1203	39.5%	-	-	-	0.6	4.7	1.3
Ped Link: P1	Unnamed Ped Link	-	I		1	24	-	0	-	0	0.0%	-	-	-	-	-	-

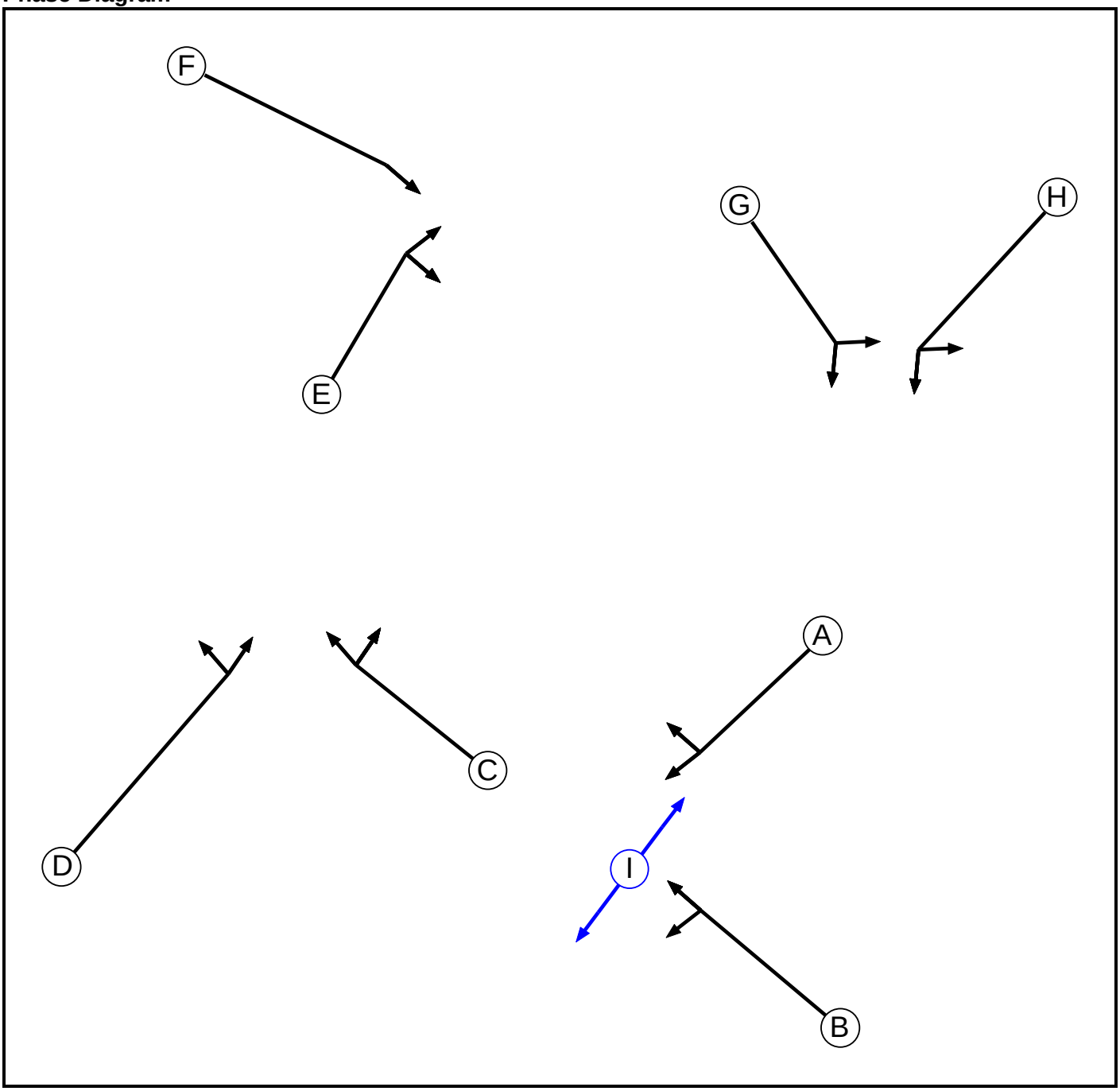
C1	Stream: 1	PRC for Signalled Lanes (%):	2.9	Total Delay for Signalled Lanes (pcuHr):	25.20	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	0.7	Total Delay for Signalled Lanes (pcuHr):	23.53	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	19.2	Total Delay for Signalled Lanes (pcuHr):	10.97	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	3.7	Total Delay for Signalled Lanes (pcuHr):	22.05	Cycle Time (s):	60
		PRC Over All Lanes (%):	0.7	Total Delay Over All Lanes(pcuHr):	84.50		

Scenario 3: '2033 Reference Case (AM)' (FG3: '2033 Reference Case (AM)', Plan 1: 'AM PEAK - CLF PLAN 4')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

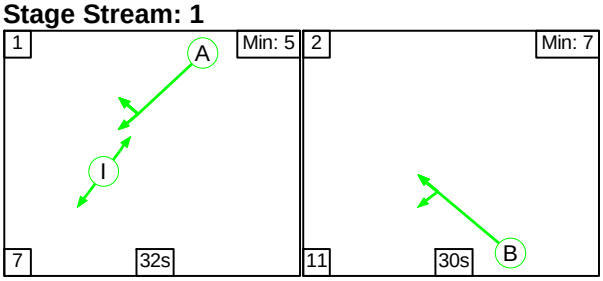
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

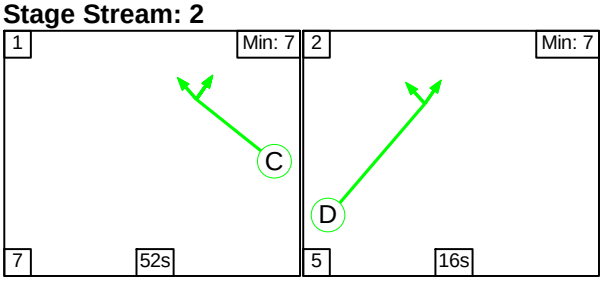
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

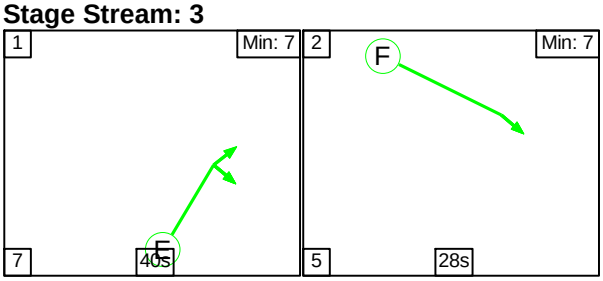
Stage Stream: 1



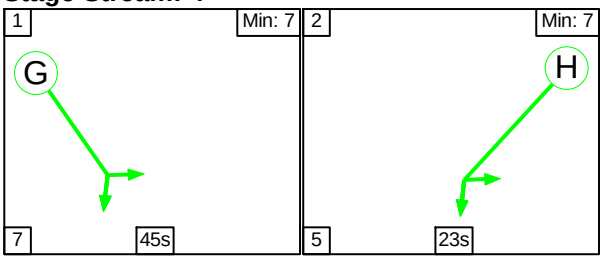
Stage Stream: 2



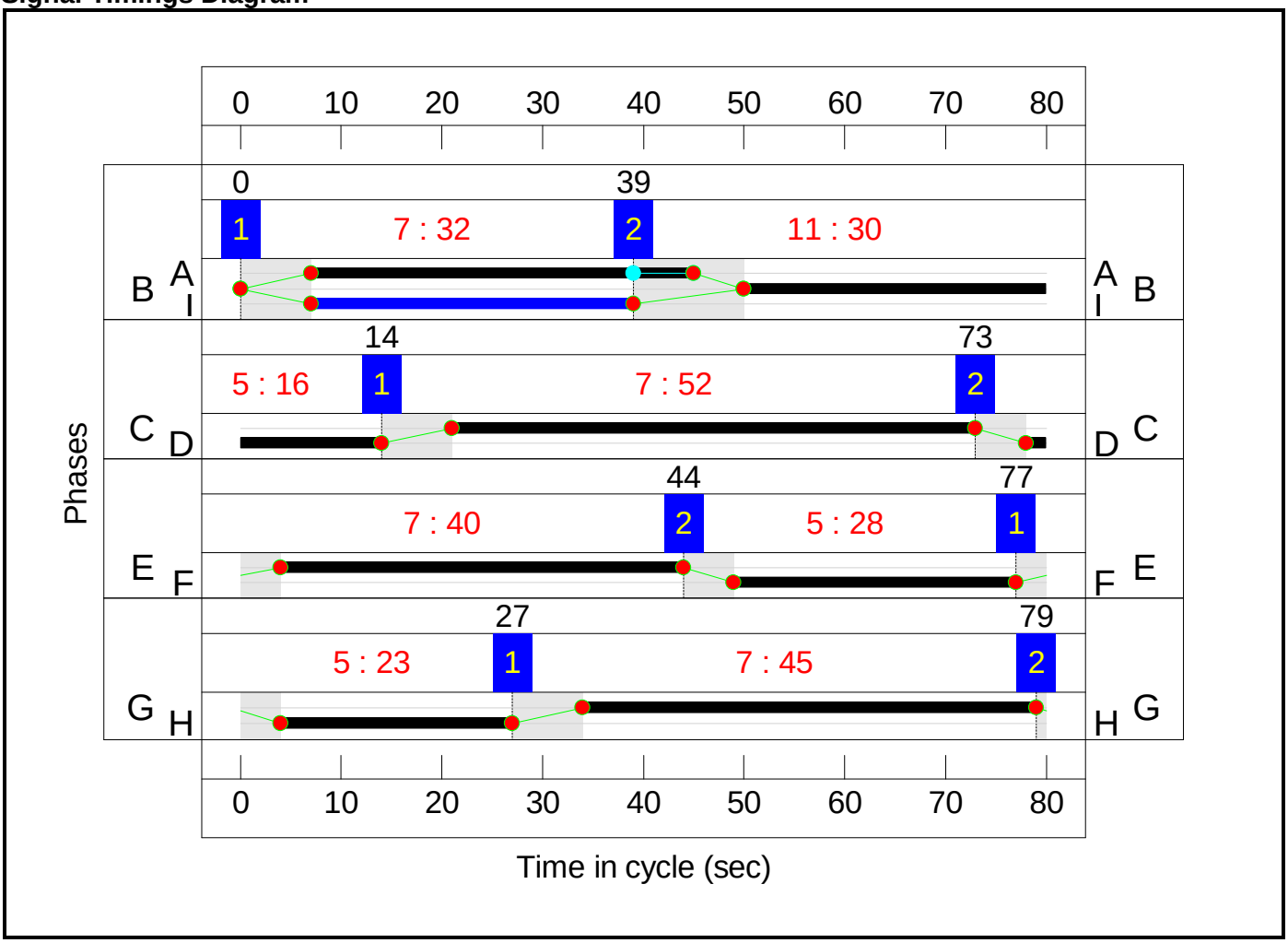
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

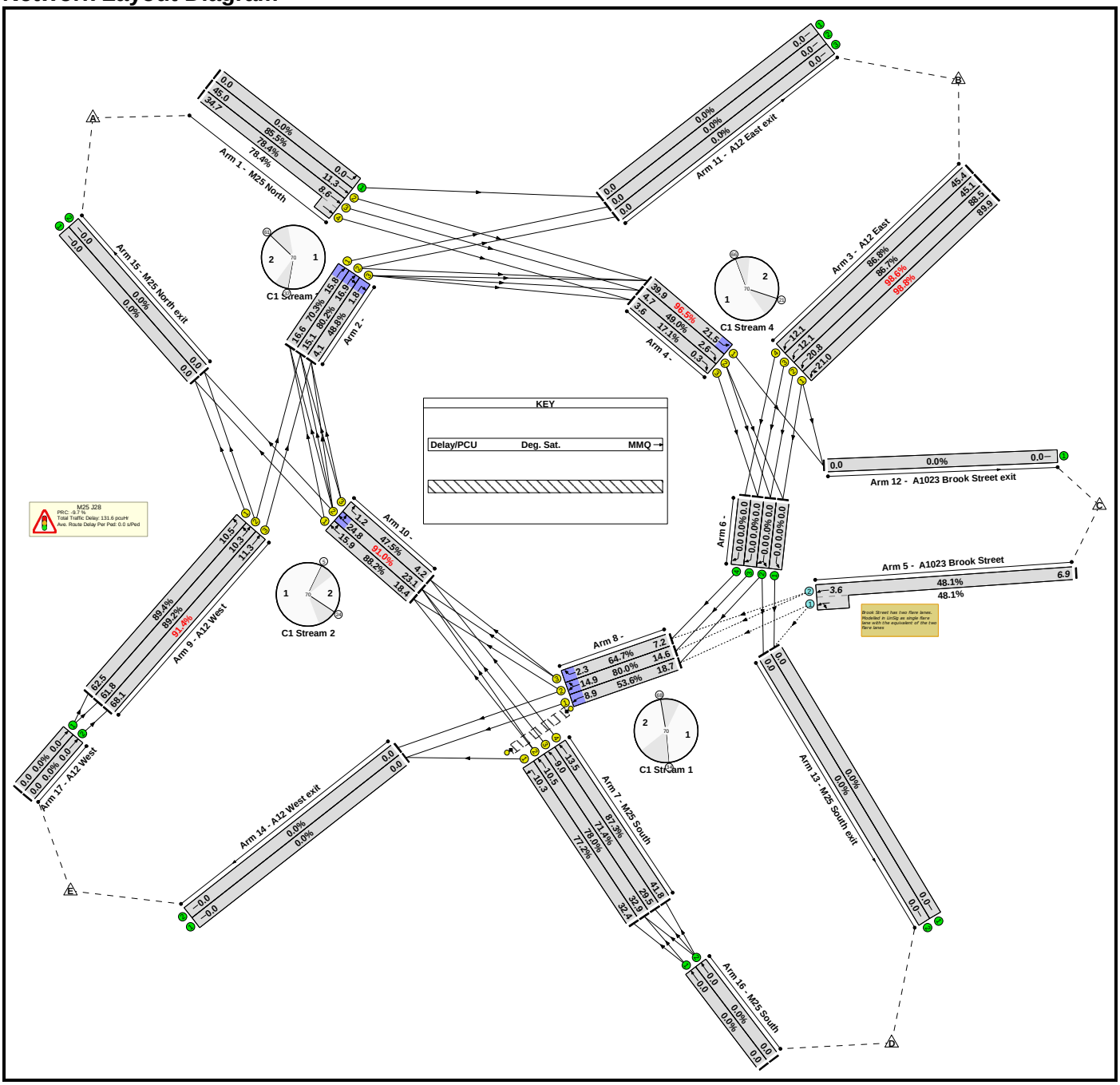
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**129.6%**	**1836**	**0**	**0**	**287.5**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**129.6%**	**1836**	**0**	**0**	**287.5**	**-**	**-**
1/2	M25 North Ahead	U	F		1	28	-	547	1900	689	79.4%	-	-	-	5.3	35.2	12.7
1/3+1/4	M25 North Ahead	U	F		1	28	-	399	1900:1900	565+153	55.6 : 55.6%	-	-	-	2.8	25.2	6.8
2/1	Ahead	U	E		1	40	-	663	1900	974	68.1%	-	-	-	3.8	20.4	11.8
2/2	Right Ahead	U	E		1	40	-	732	1900	974	75.2%	-	-	-	4.0	19.6	13.7
2/3	Right	U	E		1	40	-	523	1900	974	53.7%	-	-	-	1.4	9.4	10.2
3/1	A12 East Ahead U-Turn	U	H		1	23	-	739	1900	570	129.6%	-	-	-	99.1	482.6	106.8
3/2	A12 East Ahead	U	H		1	23	-	738	1900	570	129.5%	-	-	-	98.5	480.6	106.3
3/3	A12 East Ahead	U	H		1	23	-	498	1900	570	87.4%	-	-	-	6.9	49.5	13.6
3/4	A12 East Ahead	U	H		1	23	-	494	1900	570	86.7%	-	-	-	6.6	48.4	13.3
4/1	Ahead	U	G		1	45	-	1036	1900	1092	94.8%	-	-	-	10.4	36.0	19.7
4/2	Right	U	G		1	45	-	515	1900	1092	47.1%	-	-	-	1.5	10.4	5.4
4/3	Right	U	G		1	45	-	85	1900	1092	7.8%	-	-	-	0.1	4.2	0.2
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	918	1800:1800	606+810	64.8 : 64.8%	1836	0	0	2.5	9.8	7.5
7/1	M25 South Left	U	B		1	30	-	545	1900	736	74.0%	-	-	-	4.6	30.3	11.7
7/2	M25 South Ahead	U	B		1	30	-	478	1900	736	64.9%	-	-	-	3.6	27.0	9.5
7/3	M25 South Ahead	U	B		1	30	-	399	1900	736	54.2%	-	-	-	2.7	24.3	7.5
7/4	M25 South Ahead	U	B		1	30	-	544	1900	736	73.9%	-	-	-	4.6	30.3	11.7
8/1	Ahead	U	A		1	38	-	544	1900	926	58.7%	-	-	-	4.1	27.2	11.3

8/2	Right Ahead	U	A		1	38	-	777	1900	926	83.9%	-	-	-	4.0	18.6	8.7
8/3	Right	U	A		1	38	-	693	1900	926	74.8%	-	-	-	2.3	12.1	4.4
9/1	A12 West Left	U	D		1	16	-	224	1900	404	55.5%	-	-	-	2.4	38.1	5.0
9/2	A12 West Ahead Left	U	D		1	16	-	224	1900	404	55.5%	-	-	-	2.4	38.1	5.0
9/3	A12 West Ahead	U	D		1	16	-	308	1900	404	76.3%	-	-	-	4.1	47.8	8.0
10/1	Right Ahead	U	C		1	52	-	1012	1900	1259	80.4%	-	-	-	3.3	11.7	16.3
10/2	Right Ahead	U	C		1	52	-	1092	1900	1259	86.8%	-	-	-	4.9	16.2	19.8
10/3	Right	U	C		1	52	-	560	1900	1259	44.5%	-	-	-	1.8	11.6	5.0
Ped Link: P1	Unnamed Ped Link	-	I		1	32	-	0	-	0	0.0%	-	-	-	-	-	-

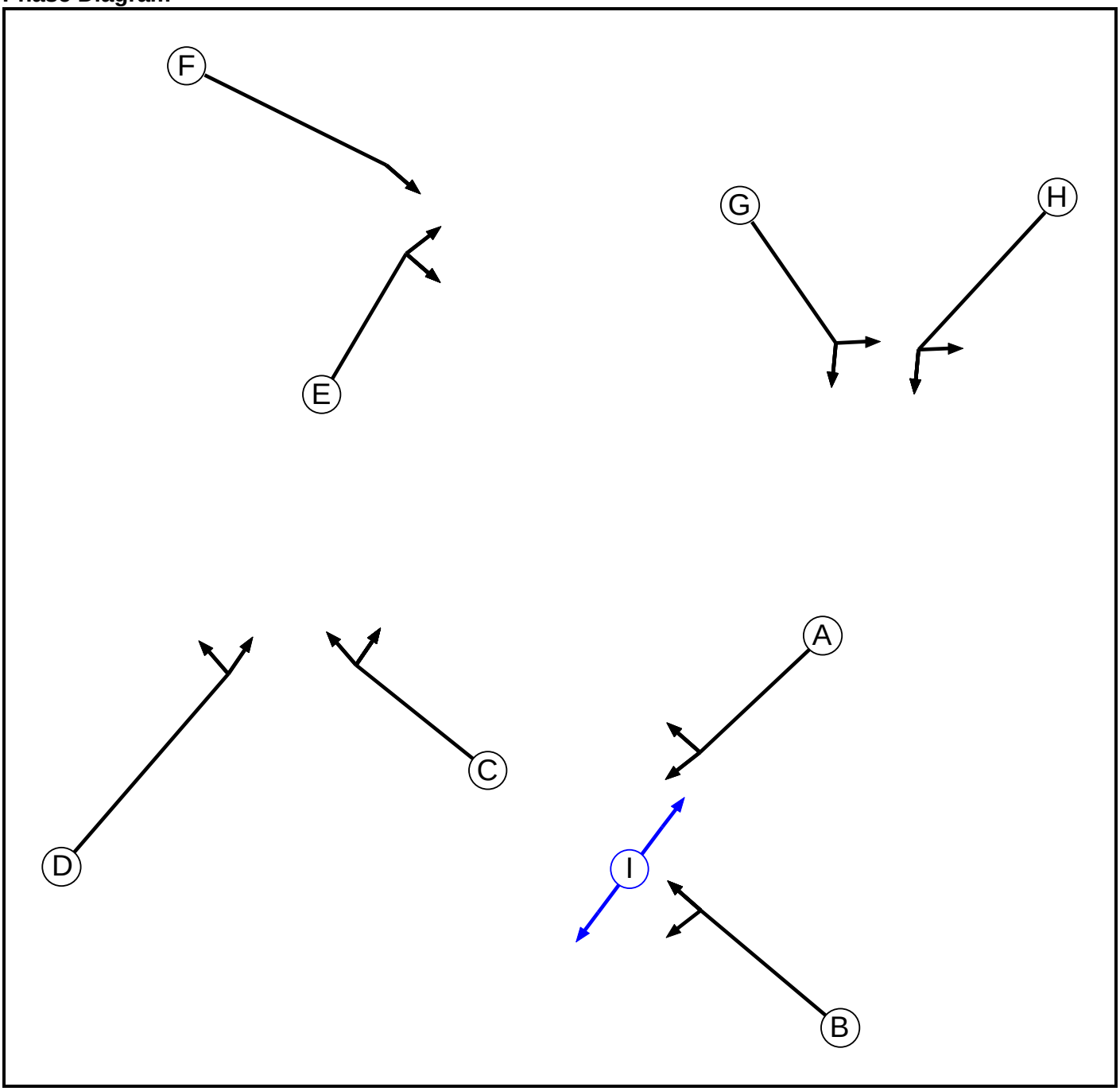
C1	Stream: 1 PRC for Signalled Lanes (%):	7.3	Total Delay for Signalled Lanes (pcuHr):	25.90	Cycle Time (s):	80
C1	Stream: 2 PRC for Signalled Lanes (%):	3.7	Total Delay for Signalled Lanes (pcuHr):	18.83	Cycle Time (s):	80
C1	Stream: 3 PRC for Signalled Lanes (%):	13.3	Total Delay for Signalled Lanes (pcuHr):	17.26	Cycle Time (s):	80
C1	Stream: 4 PRC for Signalled Lanes (%):	-44.1	Total Delay for Signalled Lanes (pcuHr):	223.04	Cycle Time (s):	80
	PRC Over All Lanes (%):	-44.1	Total Delay Over All Lanes(pcuHr):	287.54		

Scenario 4: '2033 Reference Case (PM)' (FG4: '2033 Reference Case (PM)', Plan 3: 'PM PEAK - CLF PLAN 6')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

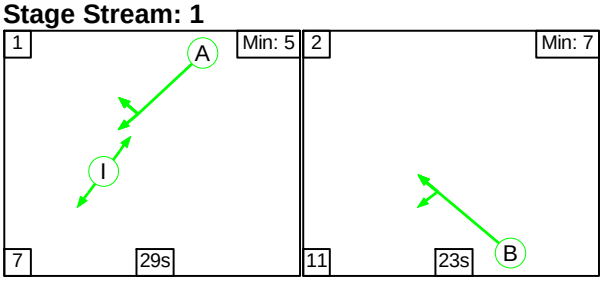
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

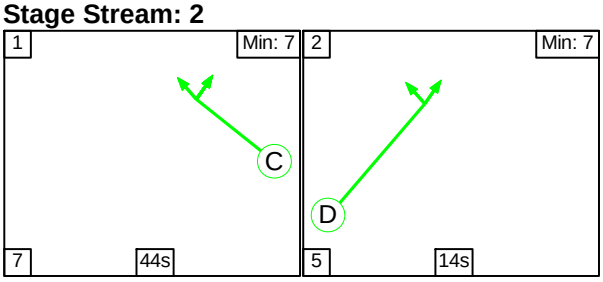
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

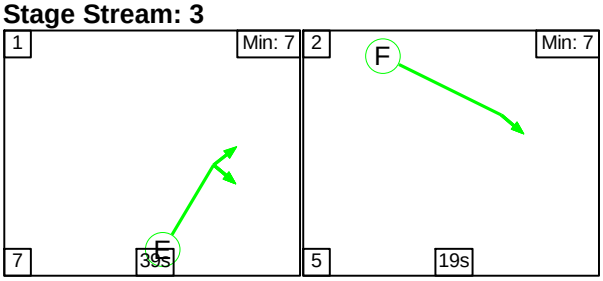
Stage Stream: 1



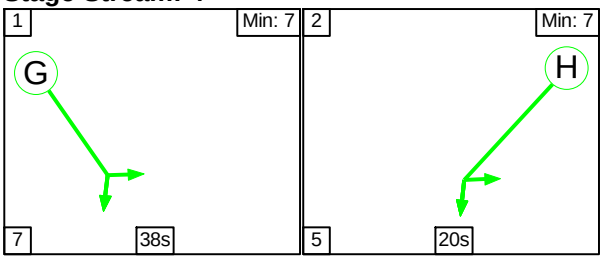
Stage Stream: 2



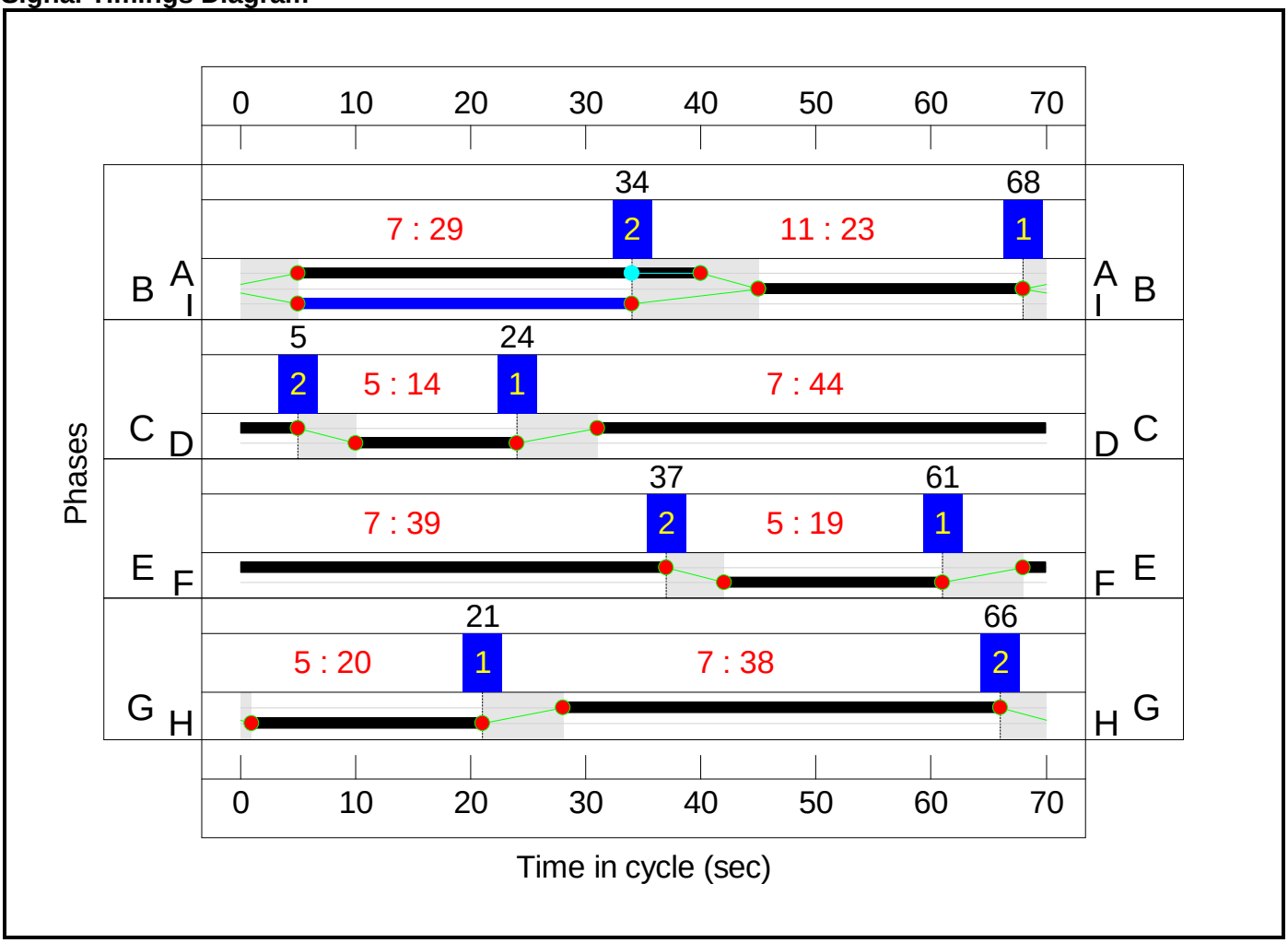
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

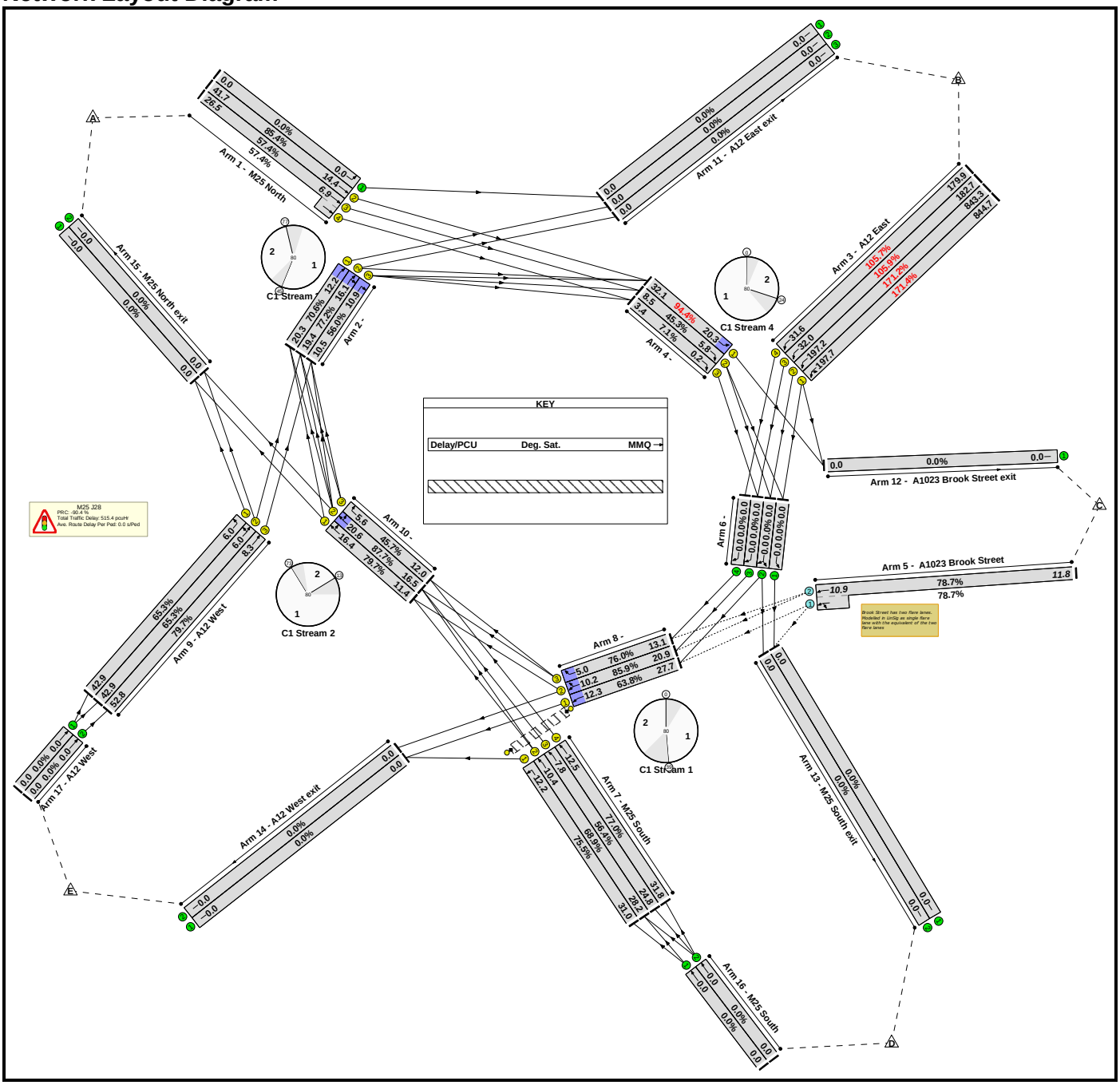
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**98.8%**	**1228**	**0**	**0**	**131.6**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**98.8%**	**1228**	**0**	**0**	**131.6**	**-**	**-**
1/2	M25 North Ahead	U	F		1	19	-	464	1900	543	85.5%	-	-	-	5.8	45.0	11.3
1/3+1/4	M25 North Ahead	U	F		1	19	-	490	1900:1900	394+231	78.4 : 78.4%	-	-	-	4.7	34.7	8.6
2/1	Ahead	U	E		1	39	-	763	1900	1086	70.3%	-	-	-	3.5	16.6	15.8
2/2	Right Ahead	U	E		1	39	-	871	1900	1086	80.2%	-	-	-	3.6	15.1	16.9
2/3	Right	U	E		1	39	-	530	1900	1086	48.8%	-	-	-	0.6	4.1	1.8
3/1	A12 East Ahead U-Turn	U	H		1	20	-	563	1900	570	98.8%	-	-	-	14.1	89.9	21.0
3/2	A12 East Ahead	U	H		1	20	-	562	1900	570	98.6%	-	-	-	13.8	88.5	20.8
3/3	A12 East Ahead	U	H		1	20	-	494	1900	570	86.7%	-	-	-	6.2	45.1	12.1
3/4	A12 East Ahead	U	H		1	20	-	495	1900	570	86.8%	-	-	-	6.2	45.4	12.1
4/1	Ahead	U	G		1	38	-	1021	1900	1059	96.5%	-	-	-	11.3	39.9	21.5
4/2	Right	U	G		1	38	-	519	1900	1059	49.0%	-	-	-	0.7	4.7	2.6
4/3	Right	U	G		1	38	-	181	1900	1059	17.1%	-	-	-	0.2	3.6	0.3
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	614	1800:1800	508+770	48.1 : 48.1%	1228	0	0	1.2	6.9	3.6
7/1	M25 South Left	U	B		1	23	-	503	1900	651	77.2%	-	-	-	4.5	32.4	10.3
7/2	M25 South Ahead	U	B		1	23	-	508	1900	651	78.0%	-	-	-	4.6	32.9	10.5
7/3	M25 South Ahead	U	B		1	23	-	465	1900	651	71.4%	-	-	-	3.8	29.5	9.0
7/4	M25 South Ahead	U	B		1	23	-	569	1900	651	87.3%	-	-	-	6.6	41.8	13.5
8/1	Ahead	U	A		1	35	-	524	1900	977	53.6%	-	-	-	2.7	18.7	8.9

8/2	Right Ahead	U	A		1	35	-	782	1900	977	80.0%	-	-	-	3.2	14.6	14.9
8/3	Right	U	A		1	35	-	632	1900	977	64.7%	-	-	-	1.3	7.2	2.3
9/1	A12 West Left	U	D		1	14	-	364	1900	407	89.4%	-	-	-	6.3	62.5	10.5
9/2	A12 West Ahead Left	U	D		1	14	-	363	1900	407	89.2%	-	-	-	6.2	61.8	10.3
9/3	A12 West Ahead	U	D		1	14	-	372	1900	407	91.4%	-	-	-	7.0	68.1	11.3
10/1	Right Ahead	U	C		1	44	-	1077	1900	1221	88.2%	-	-	-	5.5	18.4	15.9
10/2	Right Ahead	U	C		1	44	-	1111	1900	1221	91.0%	-	-	-	7.1	23.1	24.8
10/3	Right	U	C		1	44	-	580	1900	1221	47.5%	-	-	-	0.7	4.2	1.2
Ped Link: P1	Unnamed Ped Link	-	I		1	29	-	0	-	0	0.0%	-	-	-	-	-	-

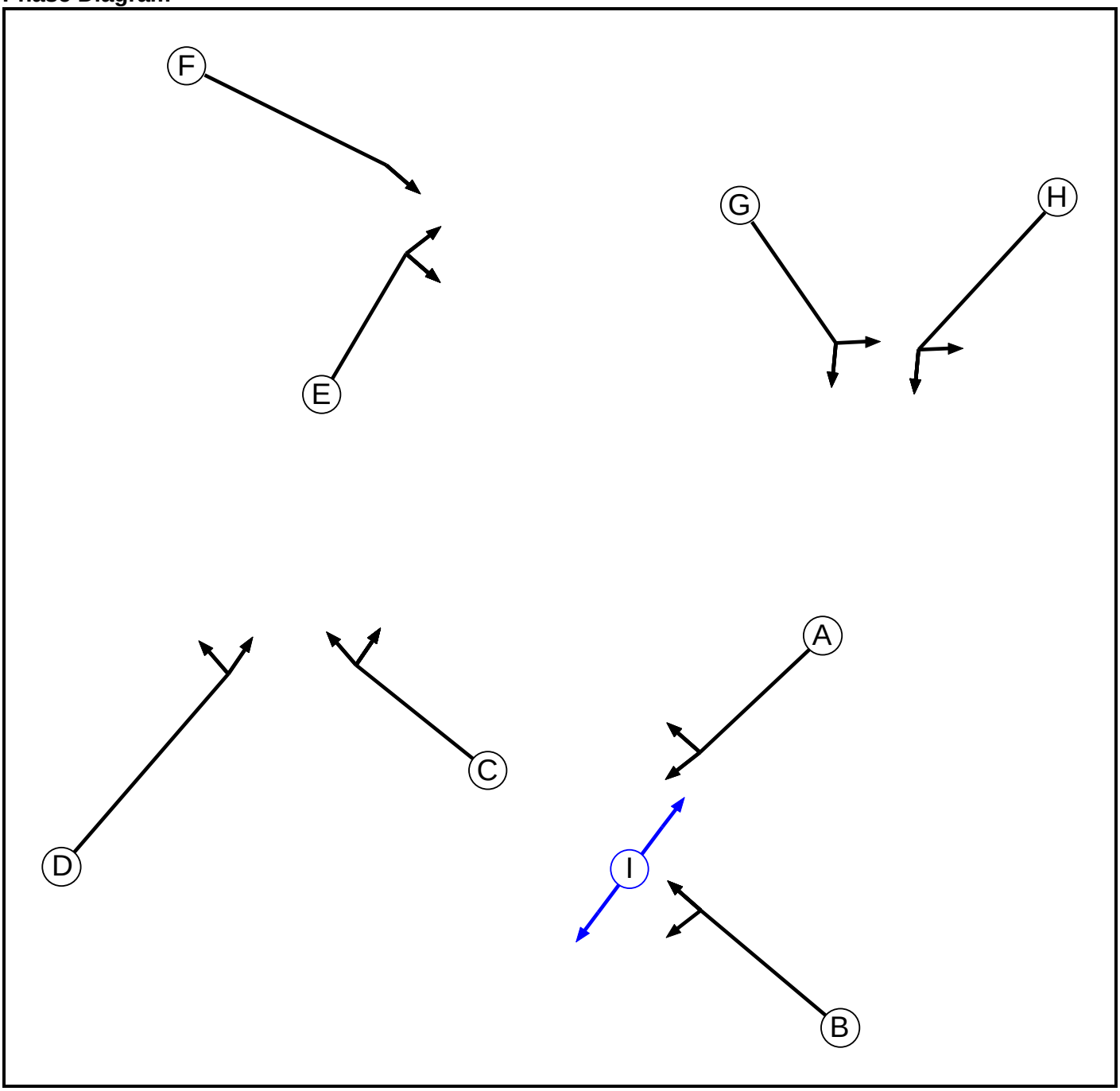
C1	Stream: 1	PRC for Signalled Lanes (%):	3.0	Total Delay for Signalled Lanes (pcuHr):	26.76	Cycle Time (s):	70
C1	Stream: 2	PRC for Signalled Lanes (%):	-1.5	Total Delay for Signalled Lanes (pcuHr):	32.90	Cycle Time (s):	70
C1	Stream: 3	PRC for Signalled Lanes (%):	5.3	Total Delay for Signalled Lanes (pcuHr):	18.30	Cycle Time (s):	70
C1	Stream: 4	PRC for Signalled Lanes (%):	-9.7	Total Delay for Signalled Lanes (pcuHr):	52.49	Cycle Time (s):	70
		PRC Over All Lanes (%):	-9.7	Total Delay Over All Lanes(pcuHr):	131.63		

Scenario 5: '2033 Local Plan Growth (AM)' (FG5: '2033 Local Plan Growth (AM)', Plan 1: 'AM PEAK - CLF PLAN 4')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

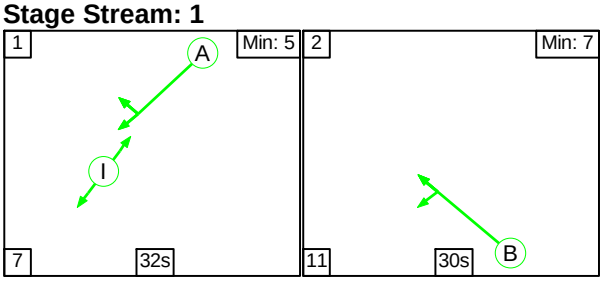
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

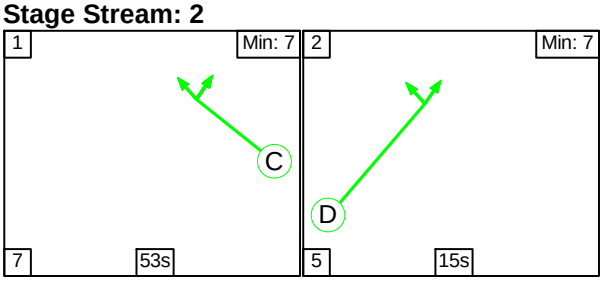
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

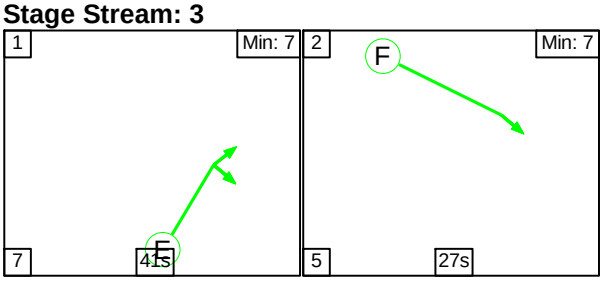
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



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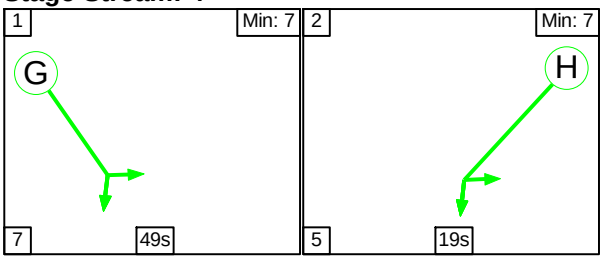
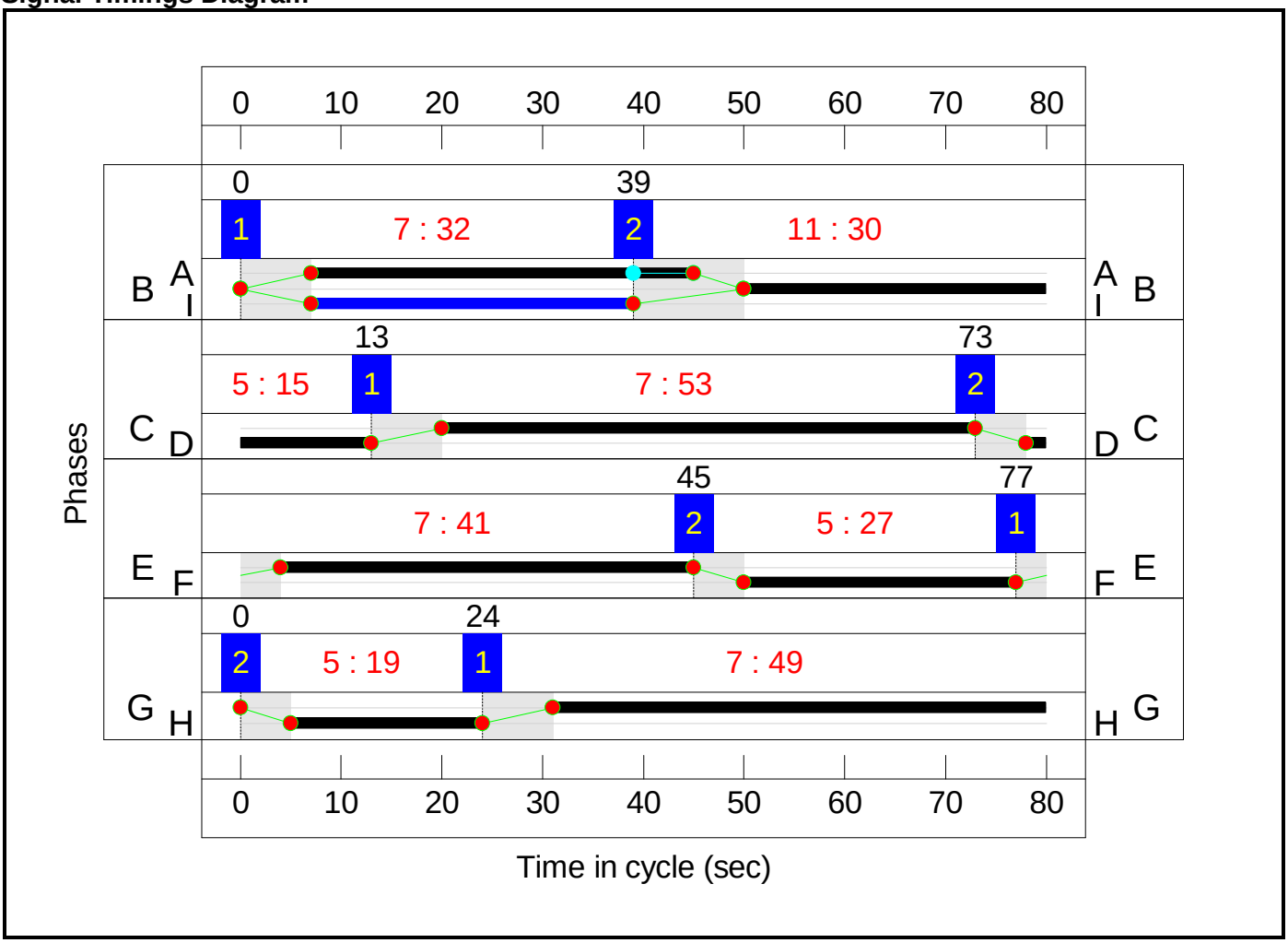


Signal Timings Diagram



Network Results

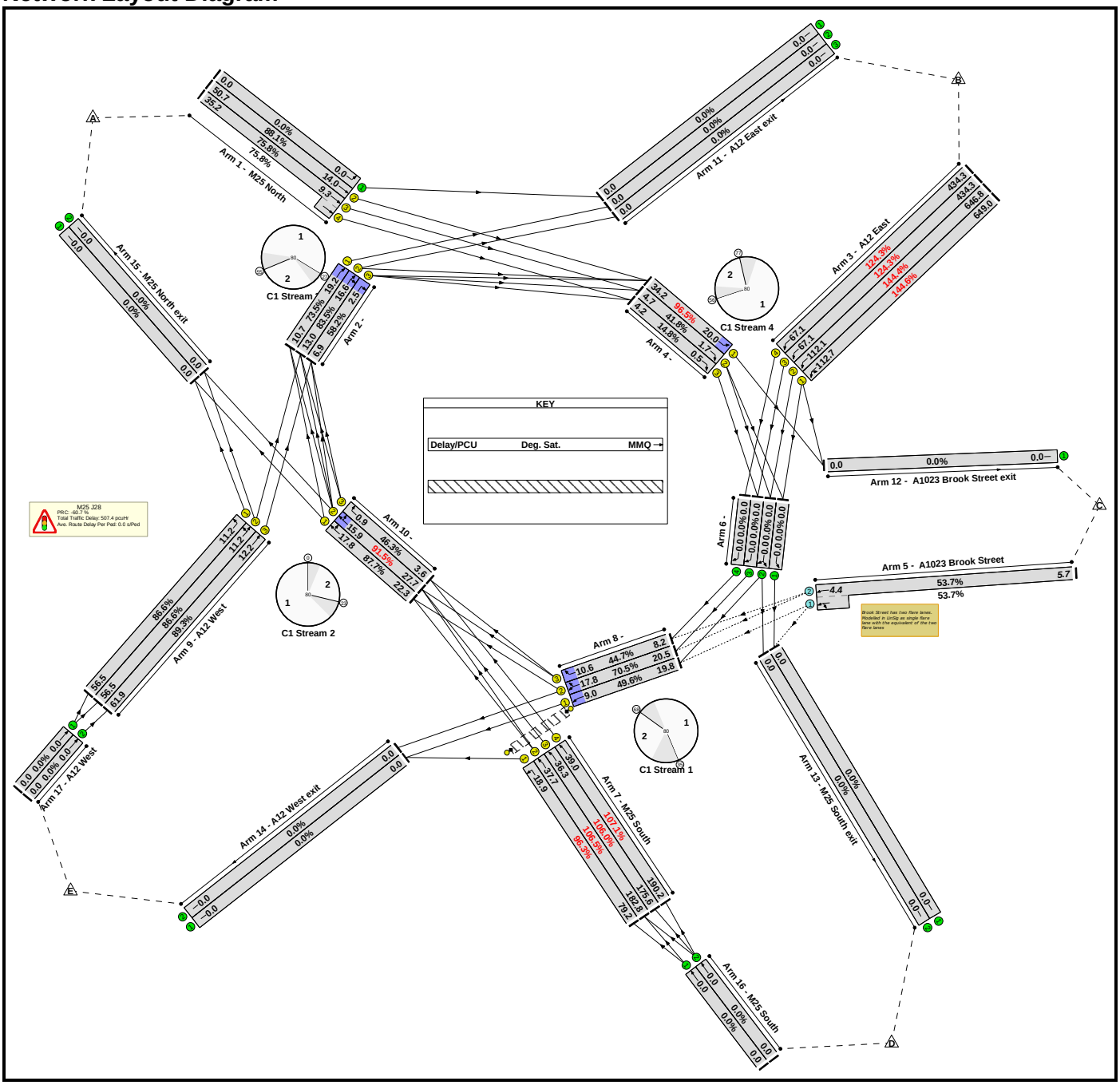
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**171.4%**	**2292**	**0**	**0**	**515.4**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**171.4%**	**2292**	**0**	**0**	**515.4**	**-**	**-**
1/2	M25 North Ahead	U	F		1	27	-	568	1900	665	85.4%	-	-	-	6.6	41.7	14.4
1/3+1/4	M25 North Ahead	U	F		1	27	-	398	1900:1900	547+146	57.4 : 57.4%	-	-	-	2.9	26.5	6.9
2/1	Ahead	U	E		1	41	-	704	1900	997	70.6%	-	-	-	4.0	20.3	12.2
2/2	Right Ahead	U	E		1	41	-	770	1900	997	77.2%	-	-	-	4.2	19.4	16.1
2/3	Right	U	E		1	41	-	559	1900	997	56.0%	-	-	-	1.6	10.5	10.9
3/1	A12 East Ahead U-Turn	U	H		1	19	-	814	1900	475	171.4%	-	-	-	191.0	844.7	197.7
3/2	A12 East Ahead	U	H		1	19	-	813	1900	475	171.2%	-	-	-	190.4	843.3	197.2
3/3	A12 East Ahead	U	H		1	19	-	503	1900	475	105.9%	-	-	-	25.5	182.7	32.0
3/4	A12 East Ahead	U	H		1	19	-	502	1900	475	105.7%	-	-	-	25.1	179.9	31.6
4/1	Ahead	U	G		1	49	-	1121	1900	1187	94.4%	-	-	-	10.0	32.1	20.3
4/2	Right	U	G		1	49	-	538	1900	1187	45.3%	-	-	-	1.3	8.5	5.8
4/3	Right	U	G		1	49	-	84	1900	1187	7.1%	-	-	-	0.1	3.4	0.2
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	1146	1800:1800	592+864	78.7 : 78.7%	2292	0	0	3.7	11.8	10.9
7/1	M25 South Left	U	B		1	30	-	556	1900	736	75.5%	-	-	-	4.8	31.0	12.2
7/2	M25 South Ahead	U	B		1	30	-	507	1900	736	68.9%	-	-	-	4.0	28.2	10.4
7/3	M25 South Ahead	U	B		1	30	-	415	1900	736	56.4%	-	-	-	2.9	24.8	7.8
7/4	M25 South Ahead	U	B		1	30	-	567	1900	736	77.0%	-	-	-	5.0	31.8	12.5
8/1	Ahead	U	A		1	38	-	591	1900	926	63.8%	-	-	-	4.6	27.7	12.3

8/2	Right Ahead	U	A		1	38	-	824	1900	926	85.9%	-	-	-	4.6	20.9	10.2
8/3	Right	U	A		1	38	-	731	1900	926	76.0%	-	-	-	2.6	13.1	5.0
9/1	A12 West Left	U	D		1	15	-	248	1900	380	65.3%	-	-	-	3.0	42.9	6.0
9/2	A12 West Ahead Left	U	D		1	15	-	248	1900	380	65.3%	-	-	-	3.0	42.9	6.0
9/3	A12 West Ahead	U	D		1	15	-	303	1900	380	79.7%	-	-	-	4.4	52.8	8.3
10/1	Right Ahead	U	C		1	53	-	1049	1900	1283	79.7%	-	-	-	3.2	11.4	16.4
10/2	Right Ahead	U	C		1	53	-	1152	1900	1283	87.7%	-	-	-	5.1	16.5	20.6
10/3	Right	U	C		1	53	-	586	1900	1283	45.7%	-	-	-	2.0	12.0	5.6
Ped Link: P1	Unnamed Ped Link	-	I		1	32	-	0	-	0	0.0%	-	-	-	-	-	-

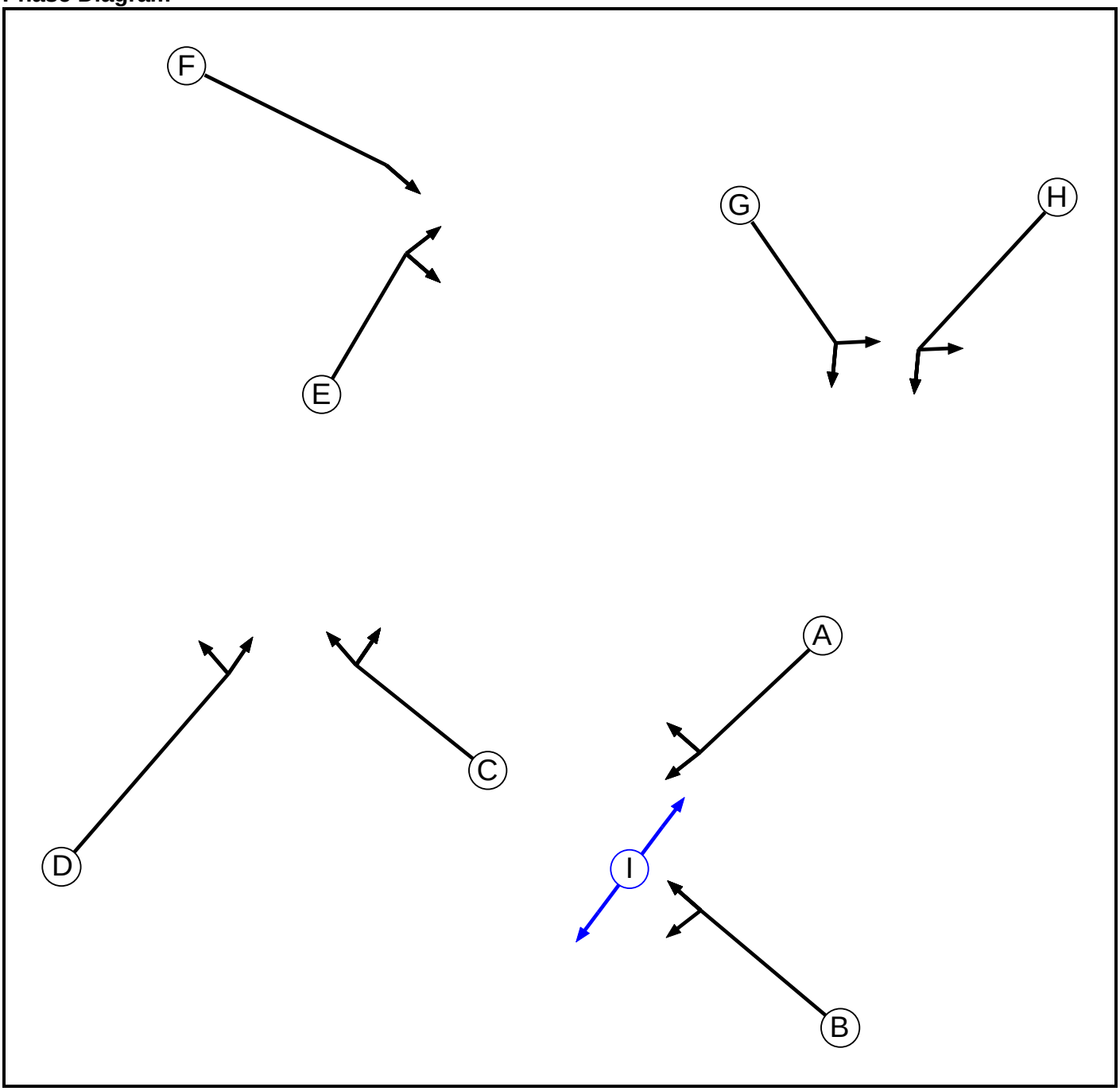
C1	Stream: 1 PRC for Signalled Lanes (%):	4.7	Total Delay for Signalled Lanes (pcuHr):	28.37	Cycle Time (s):	80
C1	Stream: 2 PRC for Signalled Lanes (%):	2.6	Total Delay for Signalled Lanes (pcuHr):	20.67	Cycle Time (s):	80
C1	Stream: 3 PRC for Signalled Lanes (%):	5.4	Total Delay for Signalled Lanes (pcuHr):	19.26	Cycle Time (s):	80
C1	Stream: 4 PRC for Signalled Lanes (%):	-90.4	Total Delay for Signalled Lanes (pcuHr):	443.37	Cycle Time (s):	80
	PRC Over All Lanes (%):	-90.4	Total Delay Over All Lanes(pcuHr):	515.41		

Scenario 6: '2033 Local Plan Growth (PM)' (FG6: '2033 Local Plan Growth (PM)', Plan 3: 'PM PEAK - CLF PLAN 6')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

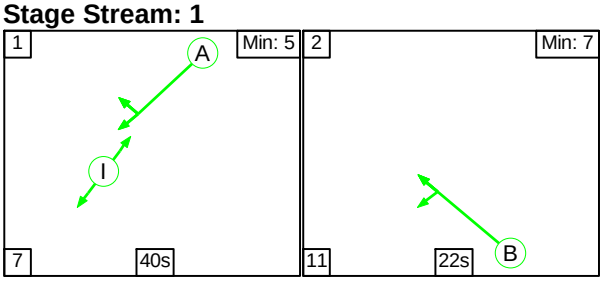
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

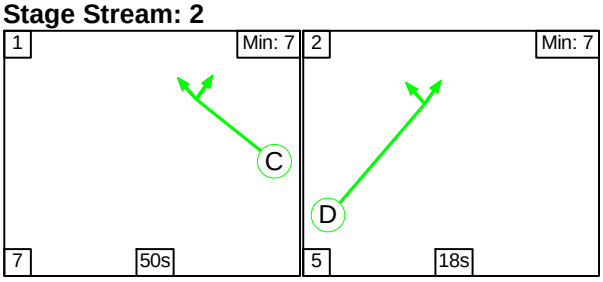
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

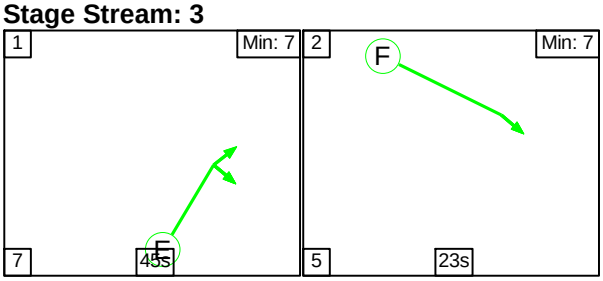
Stage Stream: 1



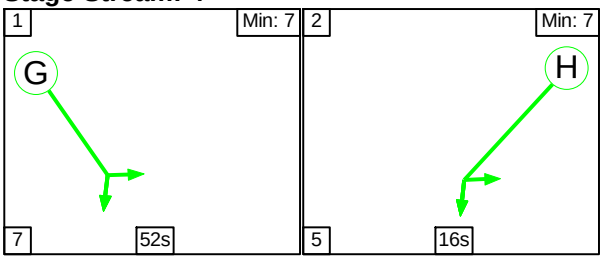
Stage Stream: 2



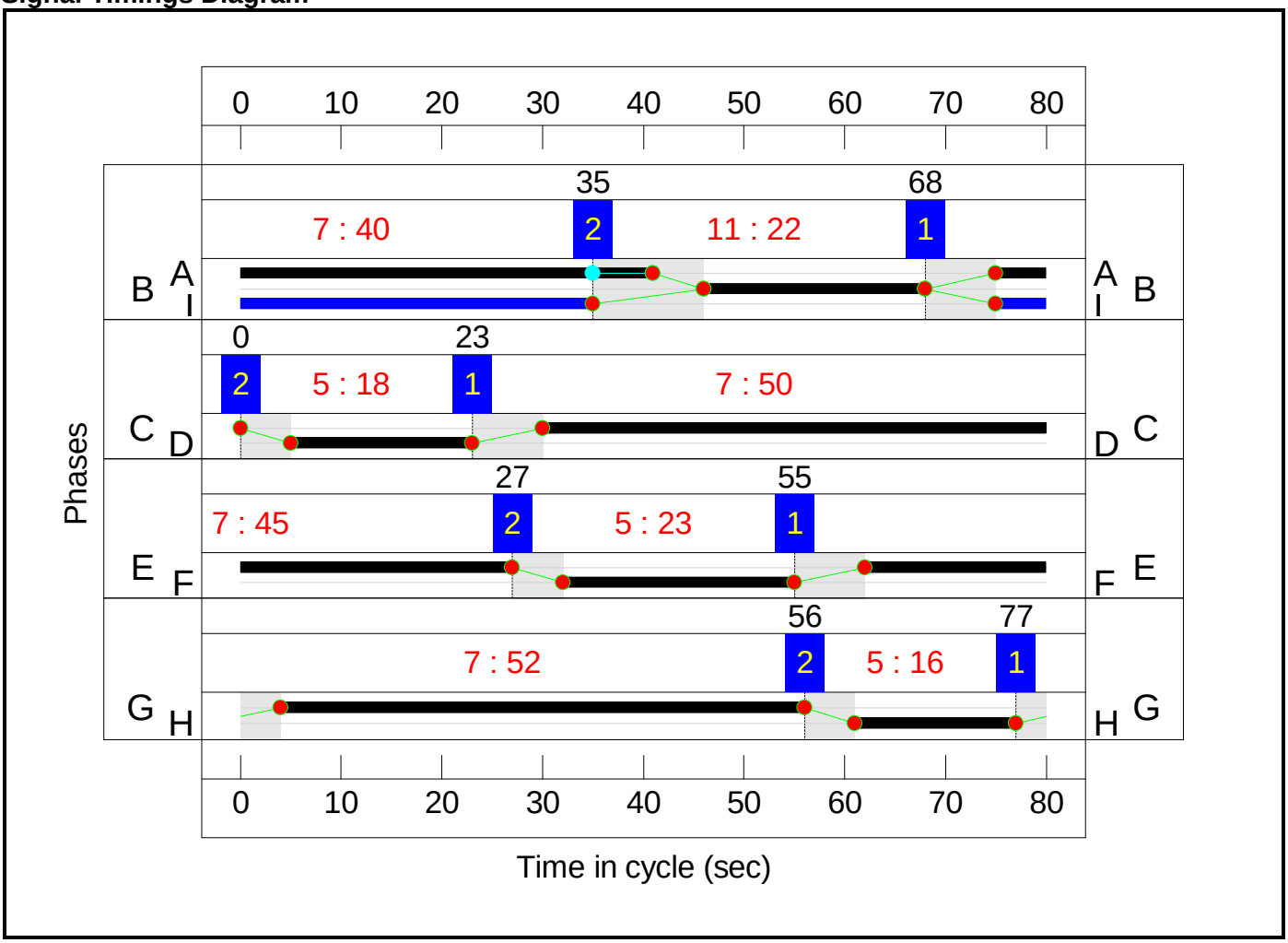
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

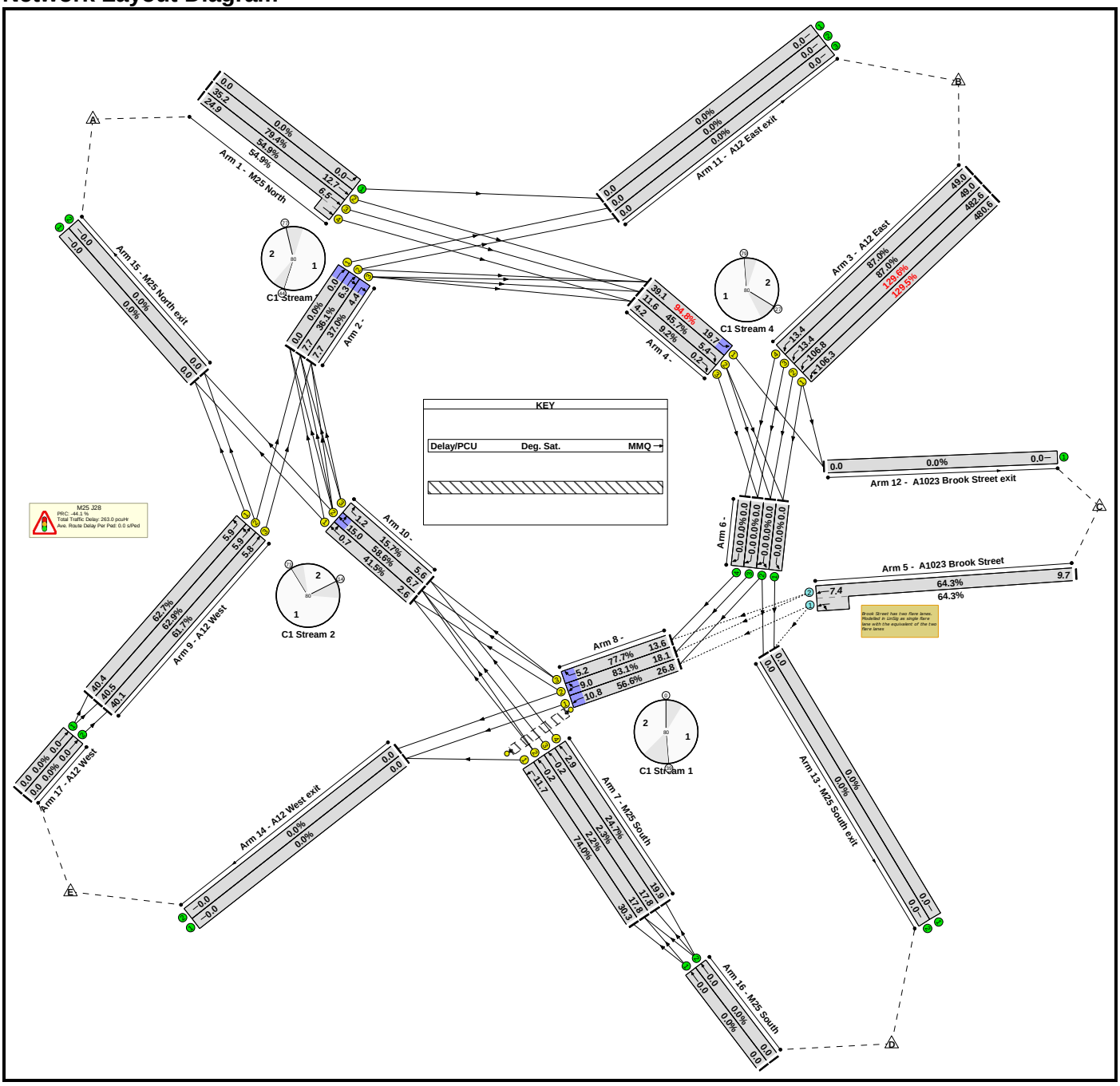
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**144.6%**	**1534**	**0**	**0**	**507.4**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**144.6%**	**1534**	**0**	**0**	**507.4**	**-**	**-**
1/2	M25 North Ahead	U	F		1	23	-	502	1900	570	88.1%	-	-	-	7.1	50.7	14.0
1/3+1/4	M25 North Ahead	U	F		1	23	-	489	1900:1900	400+245	75.8 : 75.8%	-	-	-	4.8	35.2	9.3
2/1	Ahead	U	E		1	45	-	854	1900	1092	73.5%	-	-	-	2.4	10.7	19.2
2/2	Right Ahead	U	E		1	45	-	954	1900	1092	83.5%	-	-	-	3.3	13.0	16.6
2/3	Right	U	E		1	45	-	651	1900	1092	58.2%	-	-	-	1.2	6.9	2.5
3/1	A12 East Ahead U-Turn	U	H		1	16	-	584	1900	404	144.6%	-	-	-	105.3	649.0	112.7
3/2	A12 East Ahead	U	H		1	16	-	583	1900	404	144.4%	-	-	-	104.7	646.8	112.1
3/3	A12 East Ahead	U	H		1	16	-	502	1900	404	124.3%	-	-	-	60.6	434.3	67.1
3/4	A12 East Ahead	U	H		1	16	-	502	1900	404	124.3%	-	-	-	60.6	434.3	67.1
4/1	Ahead	U	G		1	52	-	1230	1900	1259	96.5%	-	-	-	11.6	34.2	20.0
4/2	Right	U	G		1	52	-	526	1900	1259	41.8%	-	-	-	0.7	4.7	1.7
4/3	Right	U	G		1	52	-	186	1900	1259	14.8%	-	-	-	0.2	4.2	0.5
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	767	1800:1800	544+885	53.7 : 53.7%	1534	0	0	1.2	5.7	4.4
7/1	M25 South Left	U	B		1	22	-	526	1900	546	96.3%	-	-	-	11.6	79.2	18.9
7/2	M25 South Ahead	U	B		1	22	-	582	1900	546	106.5%	-	-	-	29.6	182.8	37.7
7/3	M25 South Ahead	U	B		1	22	-	579	1900	546	106.0%	-	-	-	28.2	175.6	36.3
7/4	M25 South Ahead	U	B		1	22	-	585	1900	546	107.1%	-	-	-	30.9	190.2	39.0
8/1	Ahead	U	A		1	46	-	554	1900	1116	49.6%	-	-	-	3.0	19.8	9.0

8/2	Right Ahead	U	A		1	46	-	885	1900	1116	70.5%	-	-	-	4.5	20.5	17.8
8/3	Right	U	A		1	46	-	597	1900	1116	44.7%	-	-	-	1.1	8.2	10.6
9/1	A12 West Left	U	D		1	18	-	391	1900	451	86.6%	-	-	-	6.1	56.5	11.2
9/2	A12 West Ahead Left	U	D		1	18	-	391	1900	451	86.6%	-	-	-	6.1	56.5	11.2
9/3	A12 West Ahead	U	D		1	18	-	403	1900	451	89.3%	-	-	-	6.9	61.9	12.2
10/1	Right Ahead	U	C		1	50	-	1190	1900	1211	87.7%	-	-	-	6.6	22.3	17.8
10/2	Right Ahead	U	C		1	50	-	1245	1900	1211	91.5%	-	-	-	8.5	27.7	15.9
10/3	Right	U	C		1	50	-	600	1900	1211	46.3%	-	-	-	0.6	3.6	0.9
Ped Link: P1	Unnamed Ped Link	-	I		1	40	-	0	-	0	0.0%	-	-	-	-	-	-

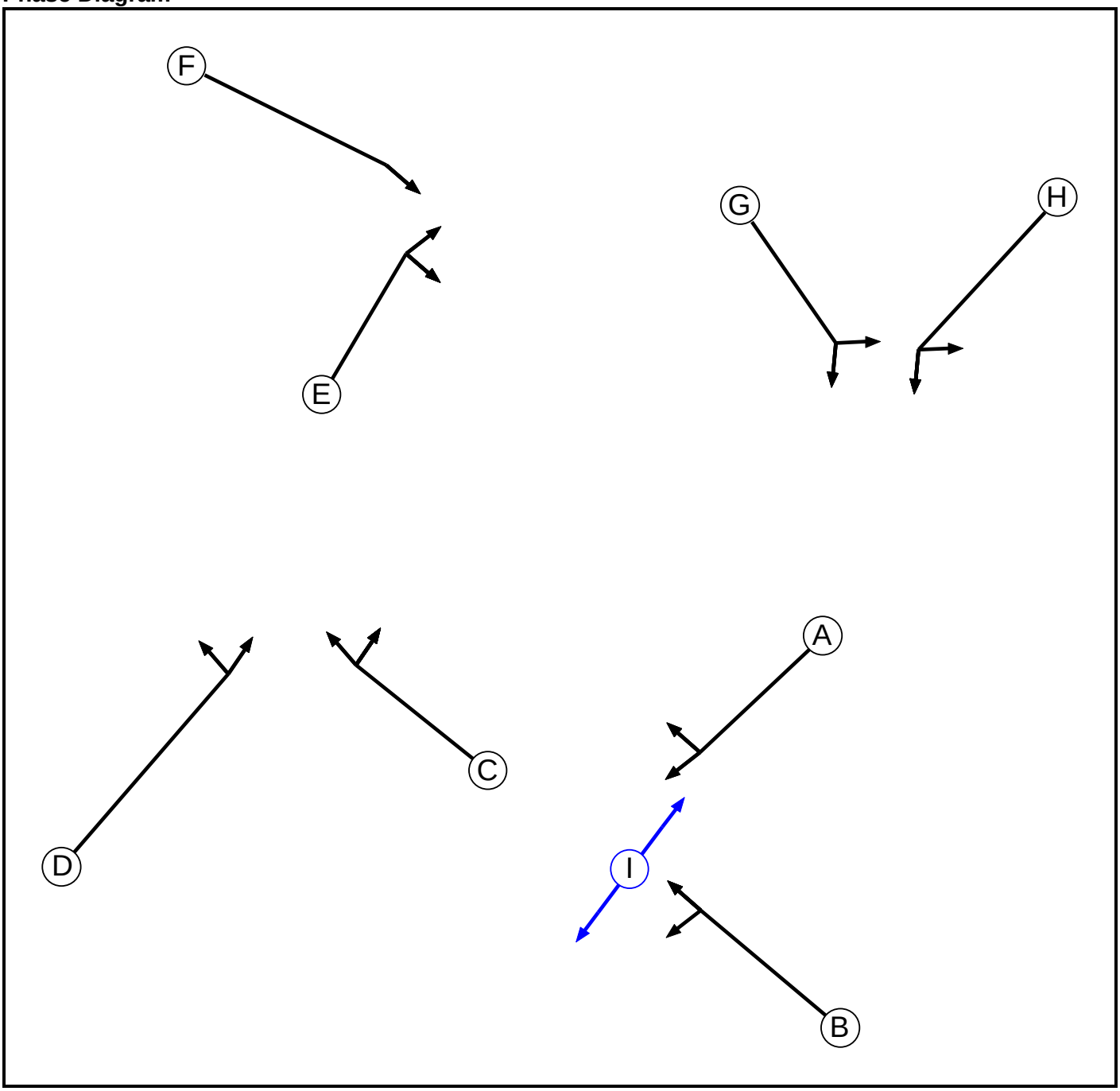
C1	Stream: 1	PRC for Signalled Lanes (%):	-19.0	Total Delay for Signalled Lanes (pcuHr):	108.94	Cycle Time (s):	80
C1	Stream: 2	PRC for Signalled Lanes (%):	-1.7	Total Delay for Signalled Lanes (pcuHr):	34.88	Cycle Time (s):	80
C1	Stream: 3	PRC for Signalled Lanes (%):	2.2	Total Delay for Signalled Lanes (pcuHr):	18.75	Cycle Time (s):	80
C1	Stream: 4	PRC for Signalled Lanes (%):	-60.7	Total Delay for Signalled Lanes (pcuHr):	343.61	Cycle Time (s):	80
		PRC Over All Lanes (%):	-60.7	Total Delay Over All Lanes(pcuHr):	507.41		

Scenario 7: '2033 Reference Case with Mitigation (AM)' (FG7: '2033 Reference Case with Mitigation (AM)', Plan 1: 'AM PEAK - CLF PLAN 4')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

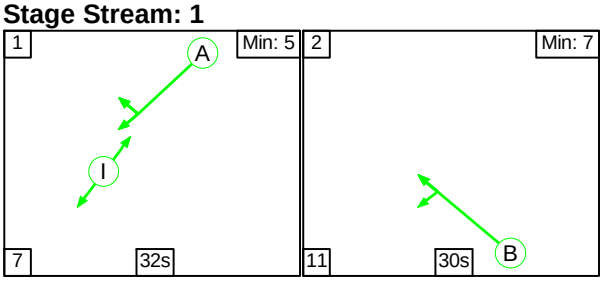
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

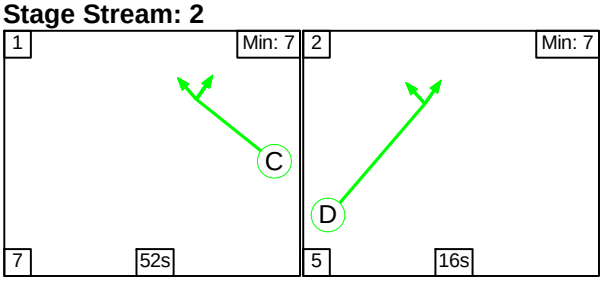
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

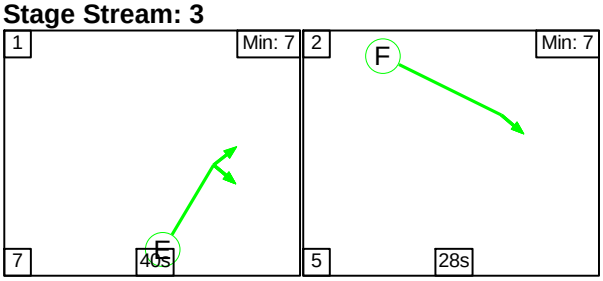
Stage Stream: 1



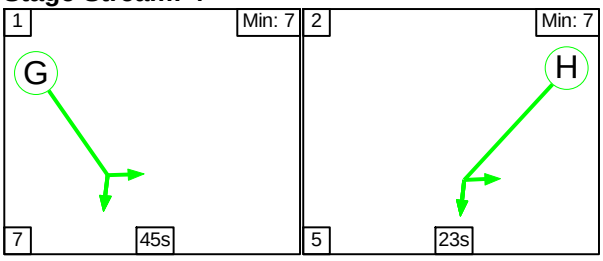
Stage Stream: 2



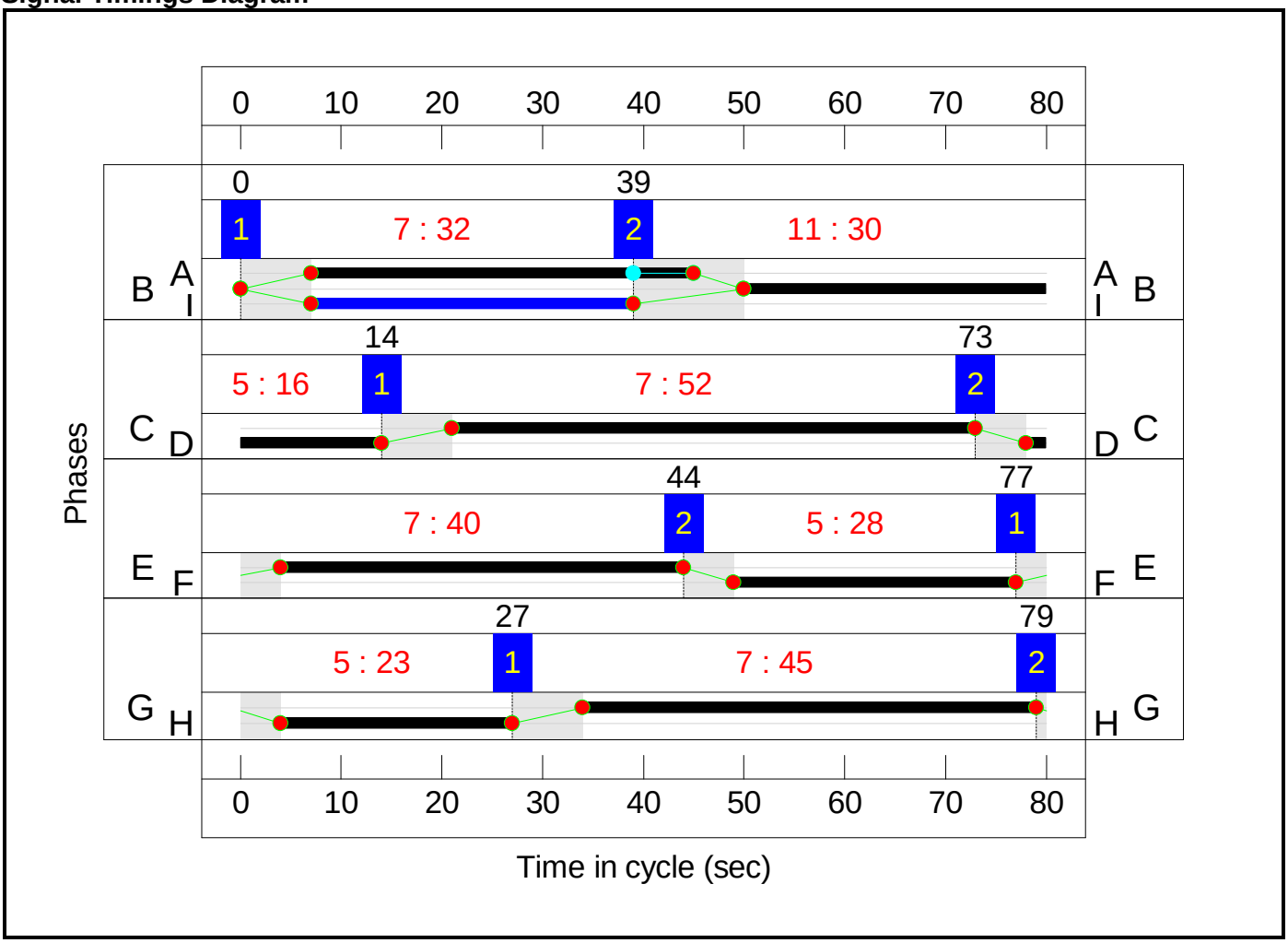
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

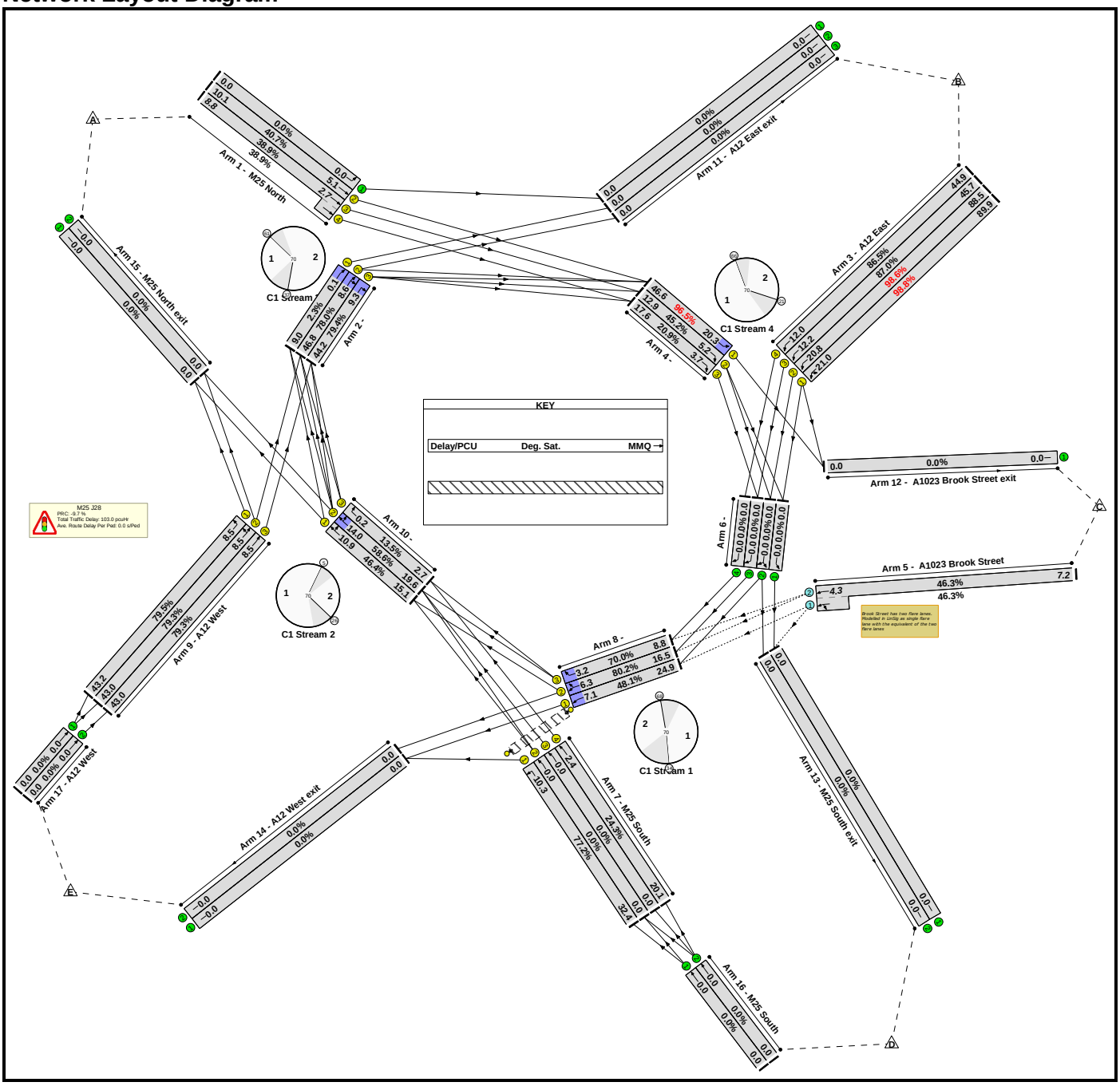
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**129.6%**	**1836**	**0**	**0**	**263.0**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**129.6%**	**1836**	**0**	**0**	**263.0**	**-**	**-**
1/2	M25 North Ahead	U	F		1	28	-	547	1900	689	79.4%	-	-	-	5.3	35.2	12.7
1/3+1/4	M25 North Ahead	U	F		1	28	-	399	1900:1900	543+184	54.9 : 54.9%	-	-	-	2.8	24.9	6.5
2/1	Ahead	U	E		1	40	-	0	1900	974	0.0%	-	-	-	0.0	0.0	0.0
2/2	Right Ahead	U	E		1	40	-	352	1900	974	36.1%	-	-	-	0.8	7.7	6.3
2/3	Right	U	E		1	40	-	360	1900	974	37.0%	-	-	-	0.8	7.7	4.4
3/1	A12 East Ahead U-Turn	U	H		1	23	-	738	1900	570	129.5%	-	-	-	98.5	480.6	106.3
3/2	A12 East Ahead	U	H		1	23	-	739	1900	570	129.6%	-	-	-	99.1	482.6	106.8
3/3	A12 East Ahead	U	H		1	23	-	496	1900	570	87.0%	-	-	-	6.7	49.0	13.4
3/4	A12 East Ahead	U	H		1	23	-	496	1900	570	87.0%	-	-	-	6.7	49.0	13.4
4/1	Ahead	U	G		1	45	-	1036	1900	1092	94.8%	-	-	-	11.3	39.1	19.7
4/2	Right	U	G		1	45	-	499	1900	1092	45.7%	-	-	-	1.6	11.6	5.4
4/3	Right	U	G		1	45	-	101	1900	1092	9.2%	-	-	-	0.1	4.2	0.2
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	918	1800:1800	617+810	64.3 : 64.3%	1836	0	0	2.5	9.7	7.4
7/1	M25 South Left	U	B		1	30	-	545	1900	736	74.0%	-	-	-	4.6	30.3	11.7
7/2	M25 South Ahead	U	B		1	30	-	16	1900	736	2.2%	-	-	-	0.1	17.8	0.2
7/3	M25 South Ahead	U	B		1	30	-	17	1900	736	2.3%	-	-	-	0.1	17.8	0.2
7/4	M25 South Ahead	U	B		1	30	-	182	1900	736	24.7%	-	-	-	1.0	19.9	2.9
8/1	Ahead	U	A		1	38	-	524	1900	926	56.6%	-	-	-	3.9	26.8	10.8

8/2	Right Ahead	U	A		1	38	-	770	1900	926	83.1%	-	-	-	3.9	18.1	9.0
8/3	Right	U	A		1	38	-	720	1900	926	77.7%	-	-	-	2.7	13.6	5.2
9/1	A12 West Left	U	D		1	16	-	253	1900	404	62.7%	-	-	-	2.8	40.4	5.9
9/2	A12 West Ahead Left	U	D		1	16	-	254	1900	404	62.9%	-	-	-	2.9	40.5	5.9
9/3	A12 West Ahead	U	D		1	16	-	249	1900	404	61.7%	-	-	-	2.8	40.1	5.8
10/1	Right Ahead	U	C		1	52	-	523	1900	1259	41.5%	-	-	-	0.4	2.6	0.7
10/2	Right Ahead	U	C		1	52	-	737	1900	1259	58.6%	-	-	-	1.4	6.7	15.0
10/3	Right	U	C		1	52	-	198	1900	1259	15.7%	-	-	-	0.3	5.6	1.2
Ped Link: P1	Unnamed Ped Link	-	I		1	32	-	0	-	0	0.0%	-	-	-	-	-	-

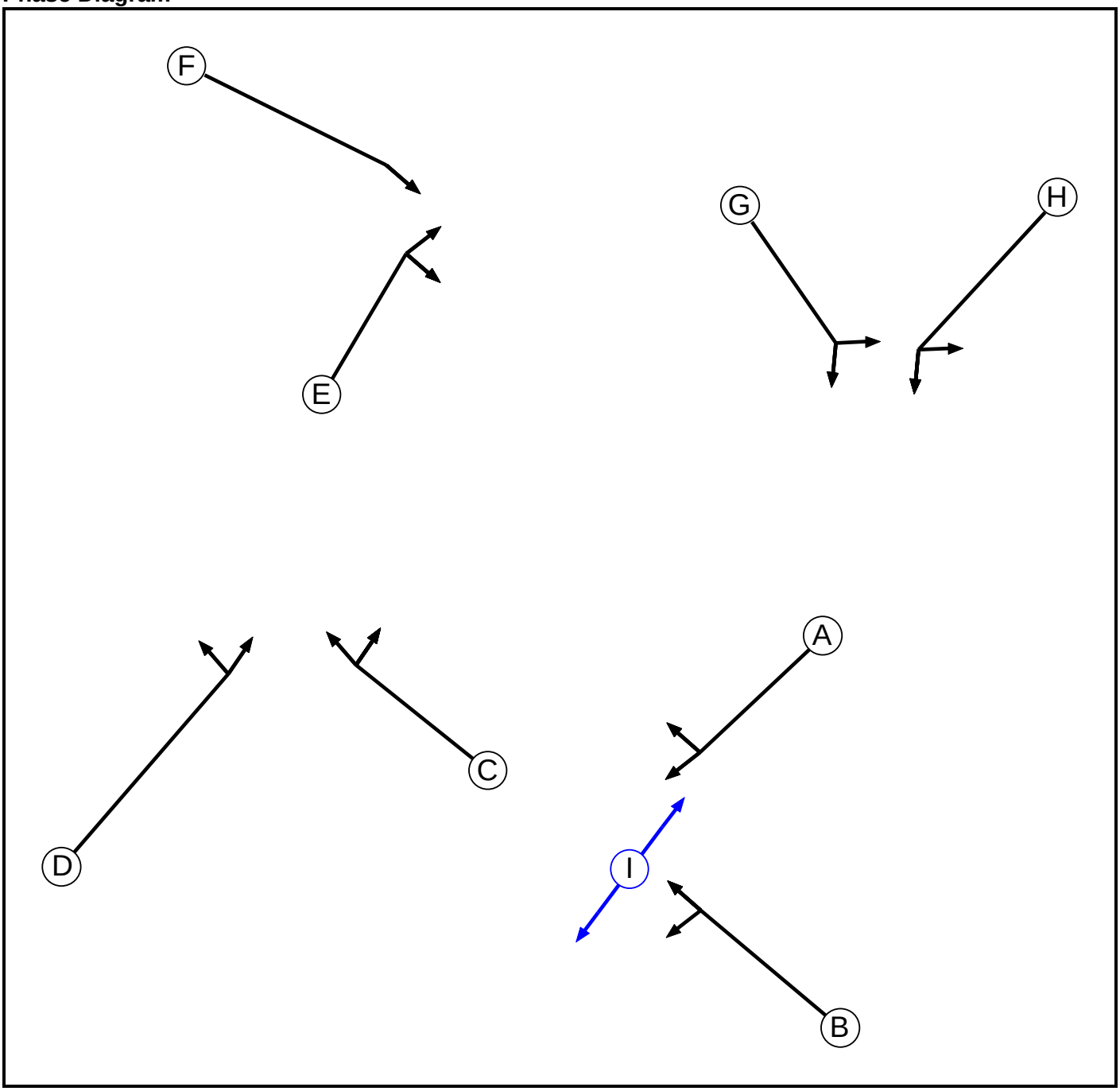
C1	Stream: 1	PRC for Signalled Lanes (%):	8.3	Total Delay for Signalled Lanes (pcuHr):	16.26	Cycle Time (s):	80
C1	Stream: 2	PRC for Signalled Lanes (%):	43.1	Total Delay for Signalled Lanes (pcuHr):	10.53	Cycle Time (s):	80
C1	Stream: 3	PRC for Signalled Lanes (%):	13.3	Total Delay for Signalled Lanes (pcuHr):	9.63	Cycle Time (s):	80
C1	Stream: 4	PRC for Signalled Lanes (%):	-44.1	Total Delay for Signalled Lanes (pcuHr):	224.09	Cycle Time (s):	80
		PRC Over All Lanes (%):	-44.1	Total Delay Over All Lanes(pcuHr):	262.99		

Scenario 8: '2033 Reference Case with Mitigation (PM)' (FG8: '2033 Reference Case with Mitigation (PM)', Plan 3: 'PM PEAK - CLF PLAN 6')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

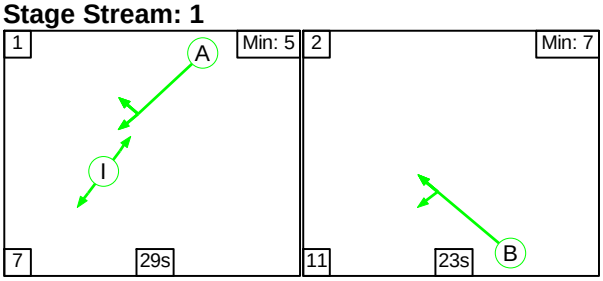
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

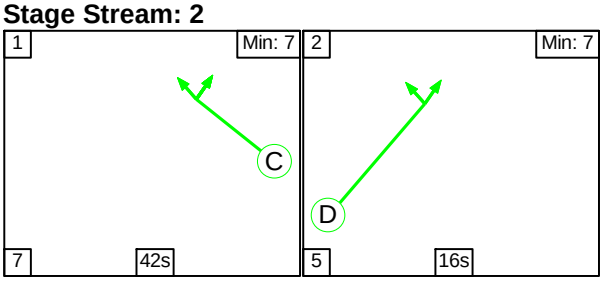
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

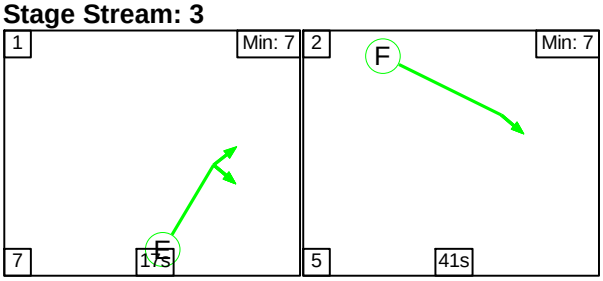
Stage Stream: 1



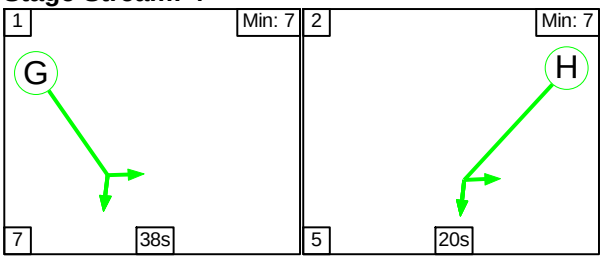
Stage Stream: 2



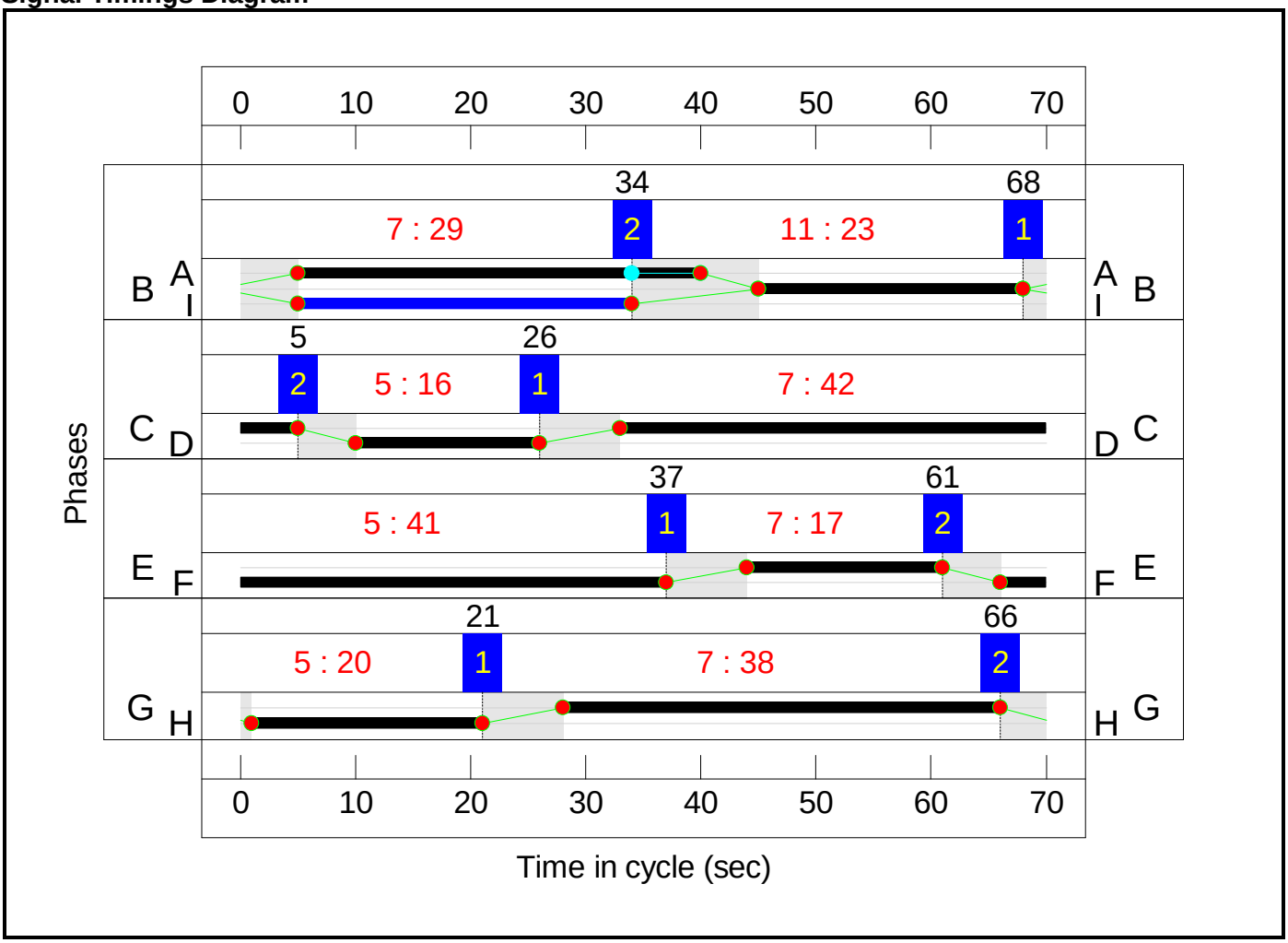
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

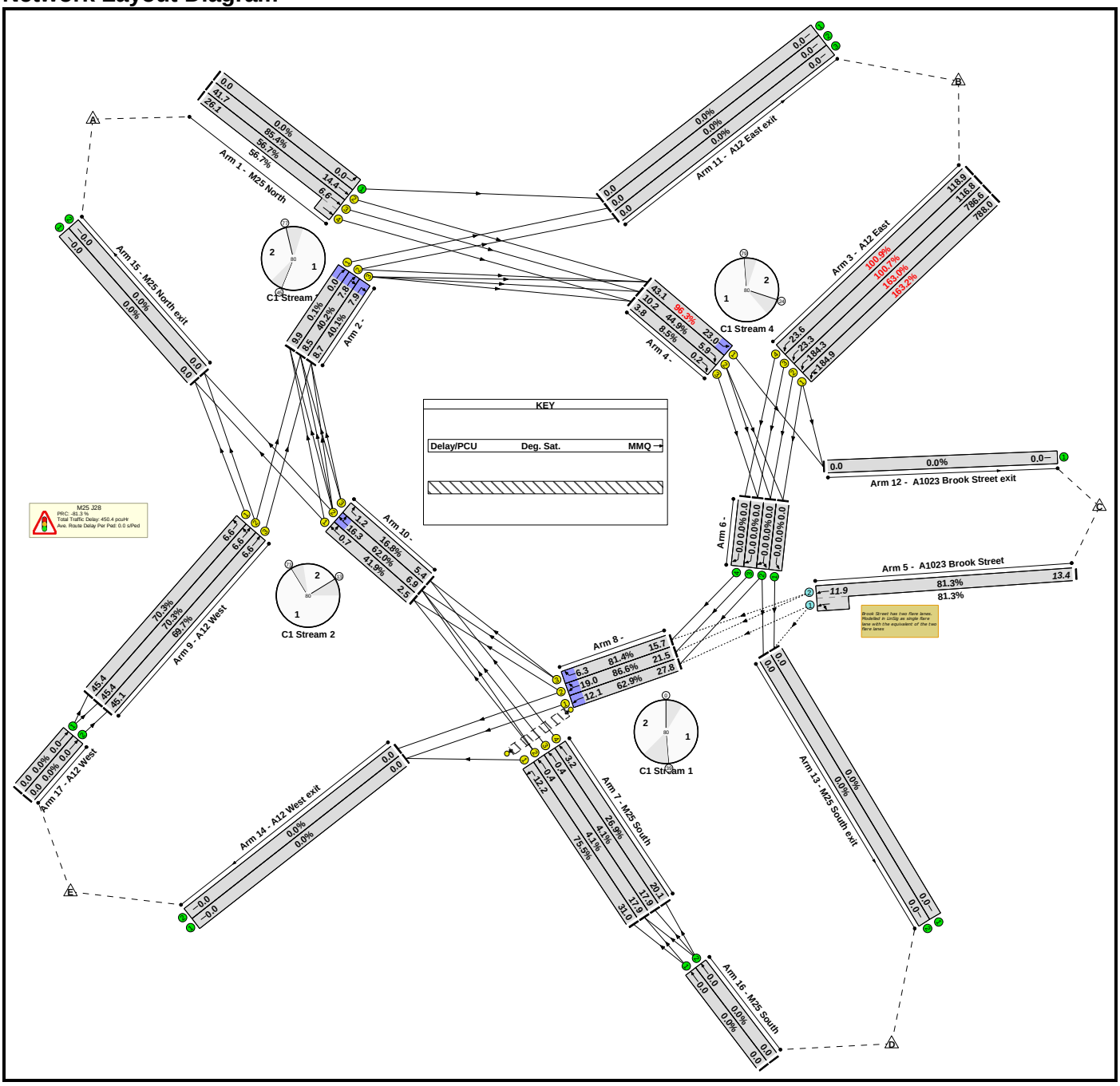
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**98.8%**	**1228**	**0**	**0**	**103.0**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**98.8%**	**1228**	**0**	**0**	**103.0**	**-**	**-**
1/2	M25 North Ahead	U	F		1	41	-	464	1900	1140	40.7%	-	-	-	1.3	10.1	5.1
1/3+1/4	M25 North Ahead	U	F		1	41	-	490	1900:1900	691+567	38.9 : 38.9%	-	-	-	1.2	8.8	2.7
2/1	Ahead	U	E		1	17	-	11	1900	489	2.3%	-	-	-	0.0	9.0	0.1
2/2	Right Ahead	U	E		1	17	-	381	1900	489	78.0%	-	-	-	4.9	46.8	8.6
2/3	Right	U	E		1	17	-	388	1900	489	79.4%	-	-	-	4.8	44.2	9.3
3/1	A12 East Ahead U-Turn	U	H		1	20	-	563	1900	570	98.8%	-	-	-	14.1	89.9	21.0
3/2	A12 East Ahead	U	H		1	20	-	562	1900	570	98.6%	-	-	-	13.8	88.5	20.8
3/3	A12 East Ahead	U	H		1	20	-	496	1900	570	87.0%	-	-	-	6.3	45.7	12.2
3/4	A12 East Ahead	U	H		1	20	-	493	1900	570	86.5%	-	-	-	6.1	44.9	12.0
4/1	Ahead	U	G		1	38	-	1021	1900	1059	96.5%	-	-	-	13.2	46.6	20.3
4/2	Right	U	G		1	38	-	479	1900	1059	45.2%	-	-	-	1.7	12.9	5.2
4/3	Right	U	G		1	38	-	221	1900	1059	20.9%	-	-	-	1.1	17.6	3.7
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	614	1800:1800	558+770	46.3 : 46.3%	1228	0	0	1.2	7.2	4.3
7/1	M25 South Left	U	B		1	23	-	503	1900	651	77.2%	-	-	-	4.5	32.4	10.3
7/2	M25 South Ahead	U	B		1	23	-	0	1900	651	0.0%	-	-	-	0.0	0.0	0.0
7/3	M25 South Ahead	U	B		1	23	-	0	1900	651	0.0%	-	-	-	0.0	0.0	0.0
7/4	M25 South Ahead	U	B		1	23	-	158	1900	651	24.3%	-	-	-	0.9	20.1	2.4
8/1	Ahead	U	A		1	35	-	470	1900	977	48.1%	-	-	-	3.3	24.9	7.1

8/2	Right Ahead	U	A		1	35	-	784	1900	977	80.2%	-	-	-	3.6	16.5	6.3
8/3	Right	U	A		1	35	-	684	1900	977	70.0%	-	-	-	1.7	8.8	3.2
9/1	A12 West Left	U	D		1	16	-	367	1900	461	79.5%	-	-	-	4.4	43.2	8.5
9/2	A12 West Ahead Left	U	D		1	16	-	366	1900	461	79.3%	-	-	-	4.4	43.0	8.5
9/3	A12 West Ahead	U	D		1	16	-	366	1900	461	79.3%	-	-	-	4.4	43.0	8.5
10/1	Right Ahead	U	C		1	42	-	542	1900	1167	46.4%	-	-	-	2.3	15.1	10.9
10/2	Right Ahead	U	C		1	42	-	684	1900	1167	58.6%	-	-	-	3.7	19.6	14.0
10/3	Right	U	C		1	42	-	158	1900	1167	13.5%	-	-	-	0.1	2.7	0.2
Ped Link: P1	Unnamed Ped Link	-	I		1	29	-	0	-	0	0.0%	-	-	-	-	-	-

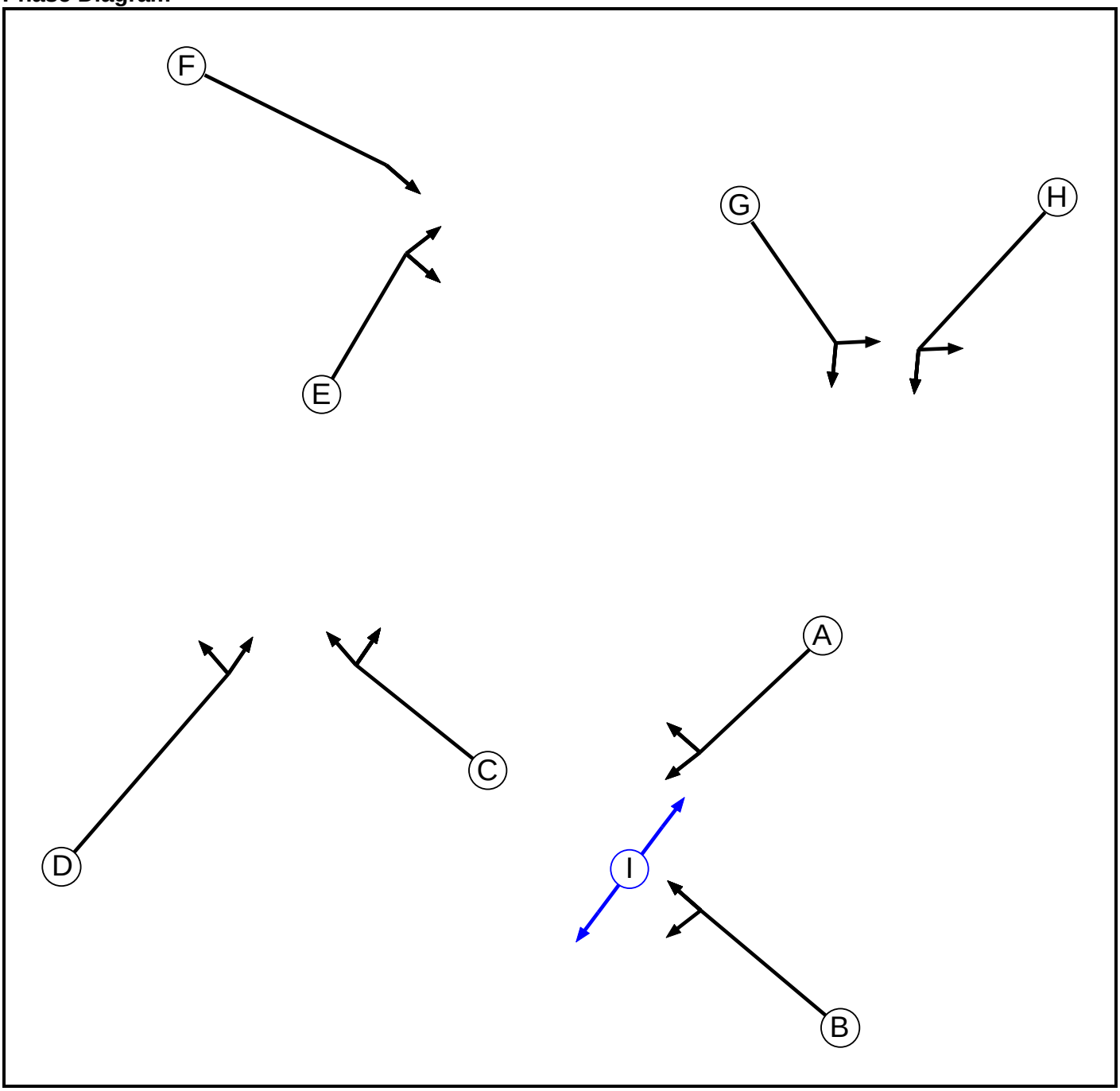
C1	Stream: 1 PRC for Signalled Lanes (%):	12.2	Total Delay for Signalled Lanes (pcuHr):	13.93	Cycle Time (s):	70
C1	Stream: 2 PRC for Signalled Lanes (%):	13.2	Total Delay for Signalled Lanes (pcuHr):	19.27	Cycle Time (s):	70
C1	Stream: 3 PRC for Signalled Lanes (%):	13.3	Total Delay for Signalled Lanes (pcuHr):	12.23	Cycle Time (s):	70
C1	Stream: 4 PRC for Signalled Lanes (%):	-9.7	Total Delay for Signalled Lanes (pcuHr):	56.32	Cycle Time (s):	70
	PRC Over All Lanes (%):	-9.7	Total Delay Over All Lanes(pcuHr):	102.97		

Scenario 9: '2033 Local Plan Growth with Mitigation (AM)' (FG9: '2033 Local Plan Growth with Mitigation (AM)', Plan 1: 'AM PEAK - CLF PLAN 4')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

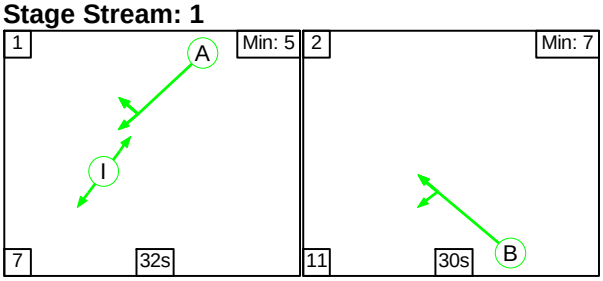
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

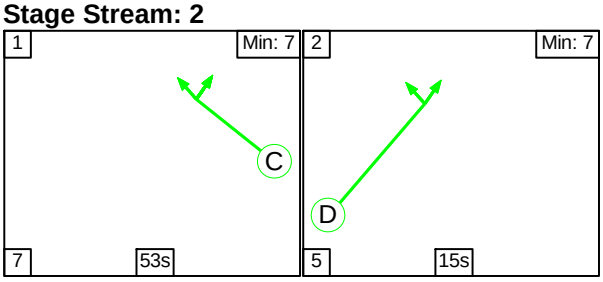
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

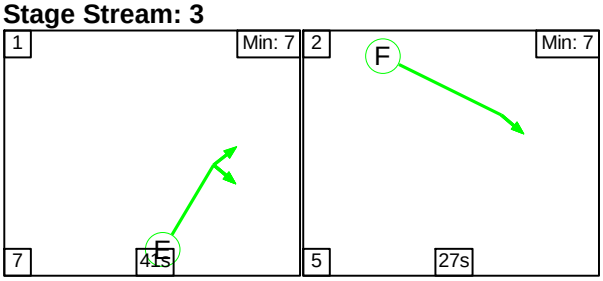
Stage Stream: 1



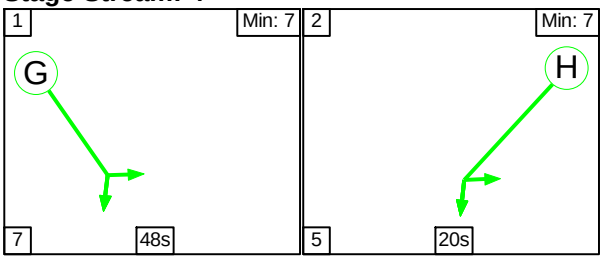
Stage Stream: 2



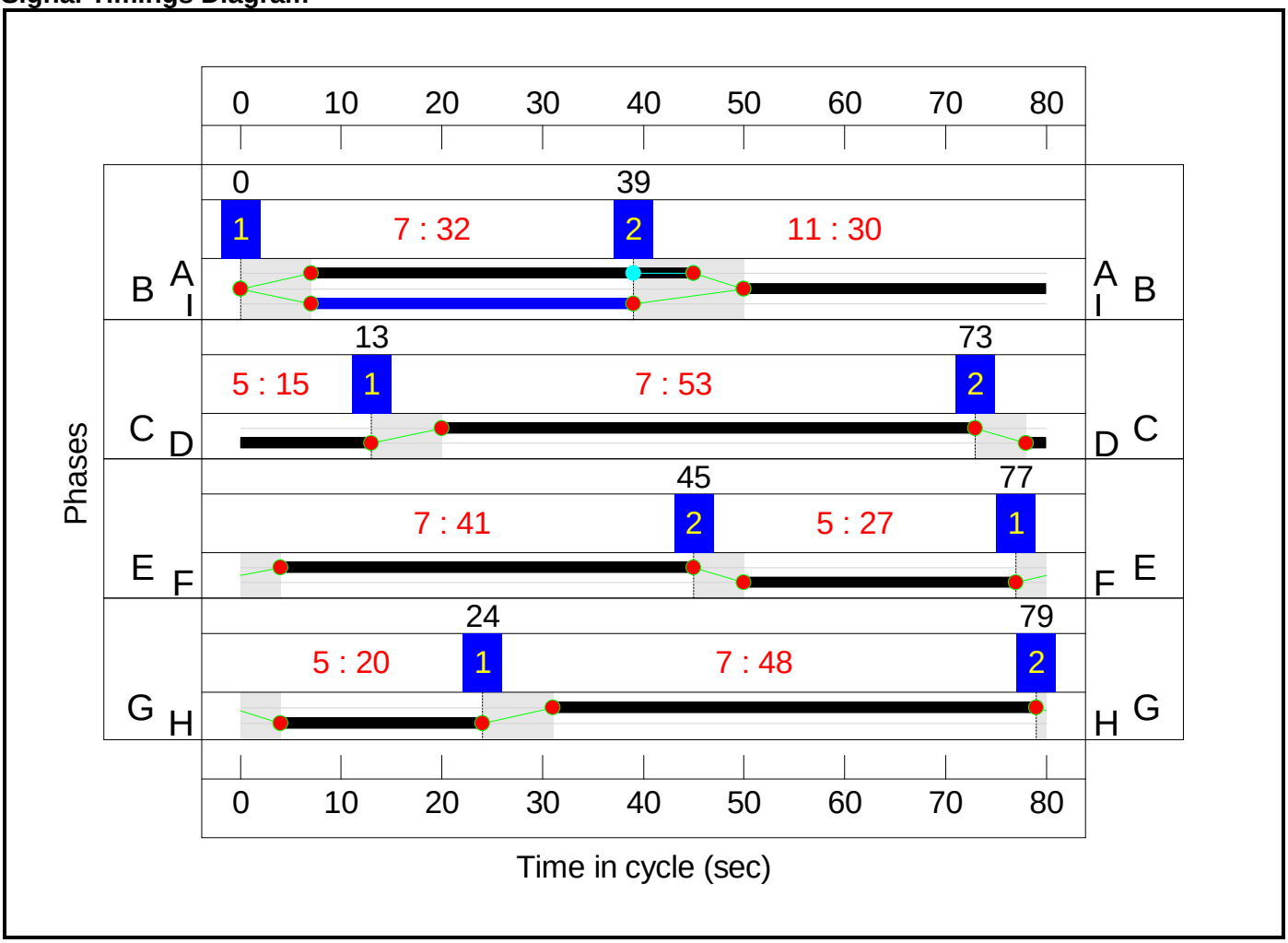
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

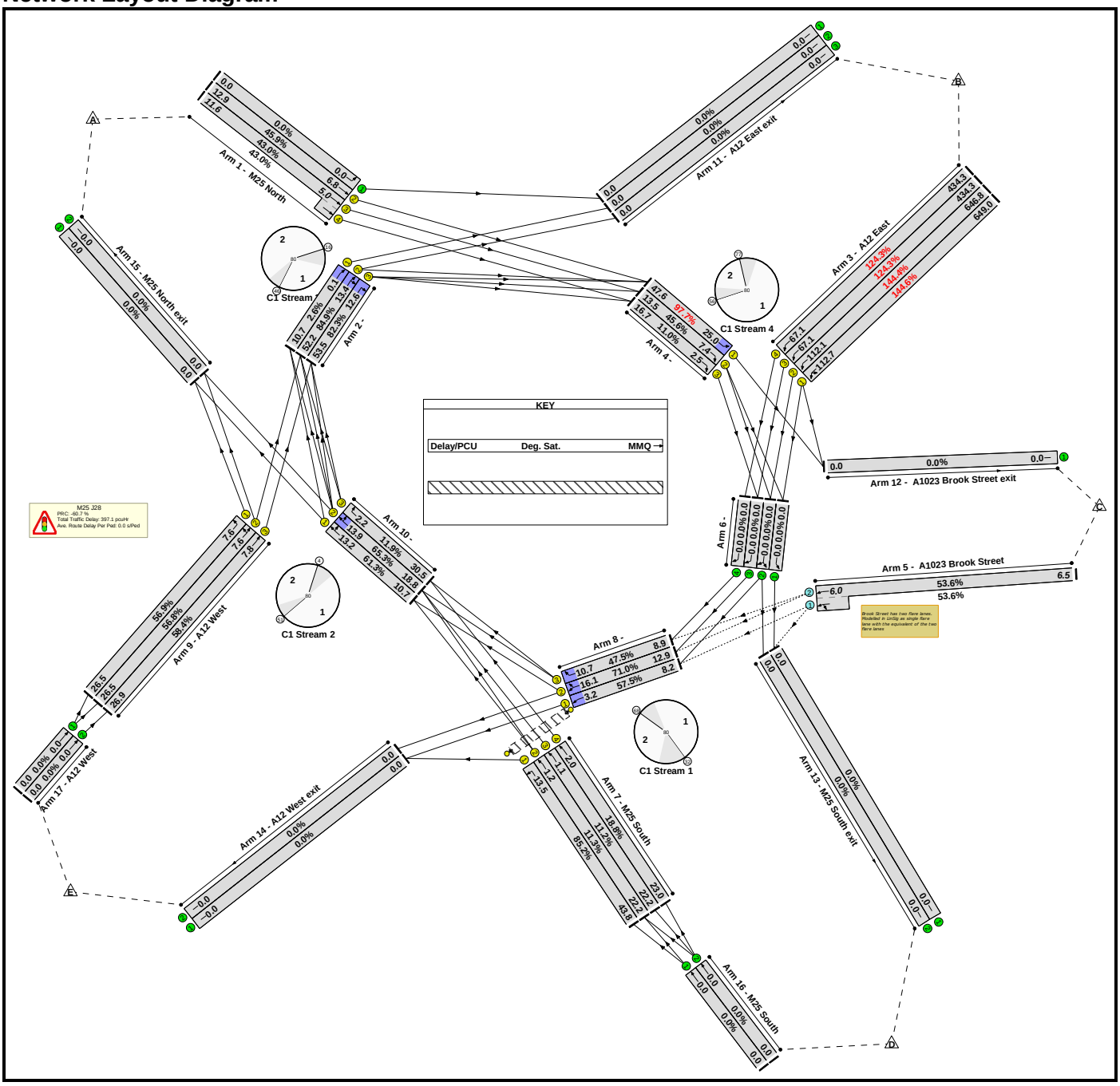
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**163.2%**	**2292**	**0**	**0**	**450.4**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**163.2%**	**2292**	**0**	**0**	**450.4**	**-**	**-**
1/2	M25 North Ahead	U	F		1	27	-	568	1900	665	85.4%	-	-	-	6.6	41.7	14.4
1/3+1/4	M25 North Ahead	U	F		1	27	-	398	1900:1900	528+175	56.7 : 56.7%	-	-	-	2.9	26.1	6.6
2/1	Ahead	U	E		1	41	-	1	1900	997	0.1%	-	-	-	0.0	9.9	0.0
2/2	Right Ahead	U	E		1	41	-	401	1900	997	40.2%	-	-	-	1.0	8.5	7.8
2/3	Right	U	E		1	41	-	400	1900	997	40.1%	-	-	-	1.0	8.7	7.9
3/1	A12 East Ahead U-Turn	U	H		1	20	-	814	1900	499	163.2%	-	-	-	178.2	788.0	184.9
3/2	A12 East Ahead	U	H		1	20	-	813	1900	499	163.0%	-	-	-	177.6	786.6	184.3
3/3	A12 East Ahead	U	H		1	20	-	502	1900	499	100.7%	-	-	-	16.3	116.8	23.3
3/4	A12 East Ahead	U	H		1	20	-	503	1900	499	100.9%	-	-	-	16.6	118.9	23.6
4/1	Ahead	U	G		1	48	-	1121	1900	1164	96.3%	-	-	-	13.4	43.1	23.0
4/2	Right	U	G		1	48	-	523	1900	1164	44.9%	-	-	-	1.5	10.2	5.9
4/3	Right	U	G		1	48	-	99	1900	1164	8.5%	-	-	-	0.1	3.8	0.2
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	1146	1800:1800	564+845	81.3 : 81.3%	2292	0	0	4.3	13.4	11.9
7/1	M25 South Left	U	B		1	30	-	556	1900	736	75.5%	-	-	-	4.8	31.0	12.2
7/2	M25 South Ahead	U	B		1	30	-	30	1900	736	4.1%	-	-	-	0.1	17.9	0.4
7/3	M25 South Ahead	U	B		1	30	-	30	1900	736	4.1%	-	-	-	0.1	17.9	0.4
7/4	M25 South Ahead	U	B		1	30	-	198	1900	736	26.9%	-	-	-	1.1	20.1	3.2
8/1	Ahead	U	A		1	38	-	583	1900	926	62.9%	-	-	-	4.5	27.8	12.1

8/2	Right Ahead	U	A		1	38	-	805	1900	926	86.6%	-	-	-	4.8	21.5	19.0
8/3	Right	U	A		1	38	-	758	1900	926	81.4%	-	-	-	3.3	15.7	6.3
9/1	A12 West Left	U	D		1	15	-	267	1900	380	70.3%	-	-	-	3.4	45.4	6.6
9/2	A12 West Ahead Left	U	D		1	15	-	267	1900	380	70.3%	-	-	-	3.4	45.4	6.6
9/3	A12 West Ahead	U	D		1	15	-	265	1900	380	69.7%	-	-	-	3.3	45.1	6.6
10/1	Right Ahead	U	C		1	53	-	540	1900	1283	41.9%	-	-	-	0.4	2.5	0.7
10/2	Right Ahead	U	C		1	53	-	800	1900	1283	62.0%	-	-	-	1.5	6.9	16.3
10/3	Right	U	C		1	53	-	216	1900	1283	16.8%	-	-	-	0.3	5.4	1.2
Ped Link: P1	Unnamed Ped Link	-	I		1	32	-	0	-	0	0.0%	-	-	-	-	-	-

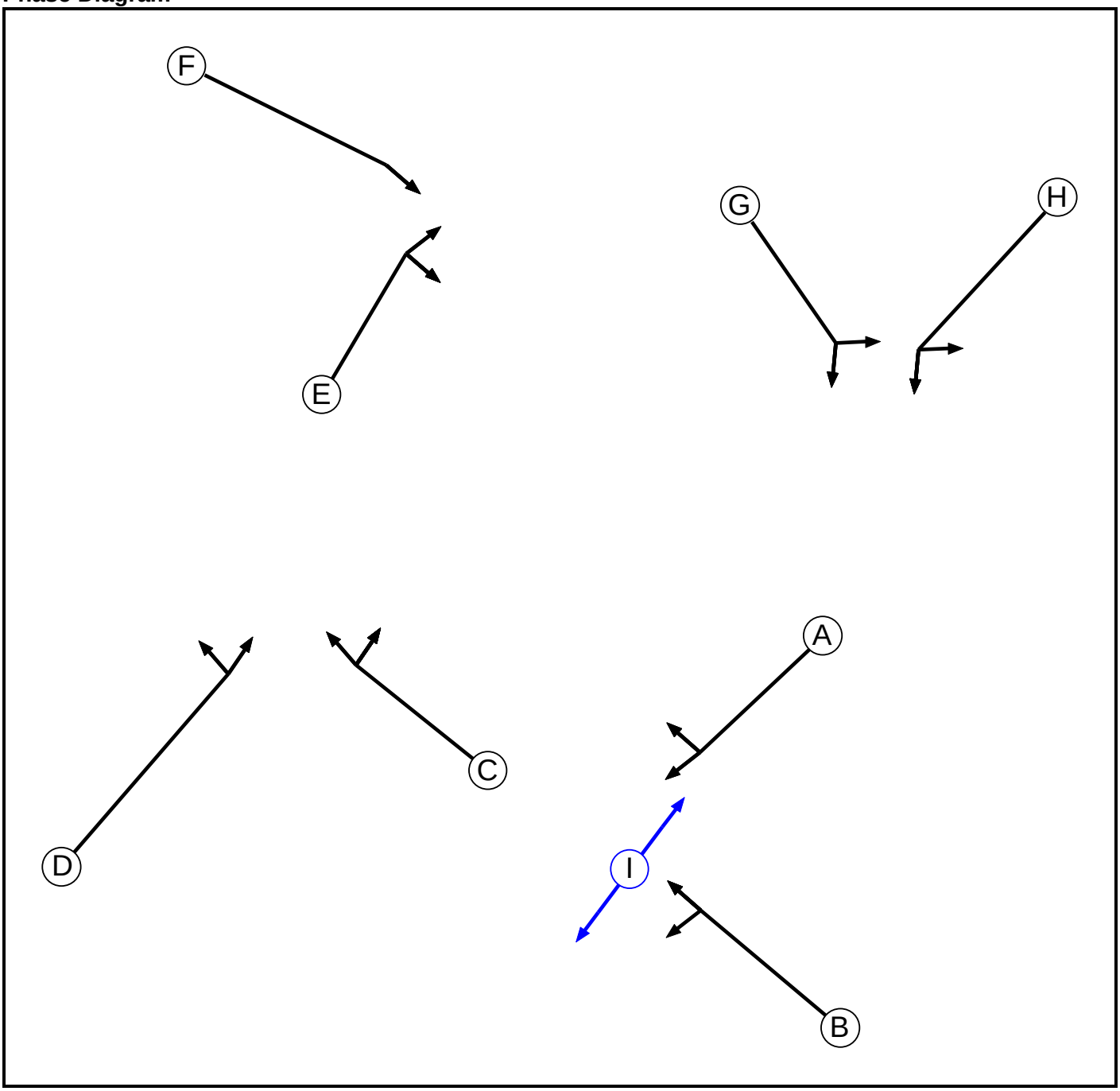
C1	Stream: 1	PRC for Signalled Lanes (%):	4.0	Total Delay for Signalled Lanes (pcuHr):	18.77	Cycle Time (s):	80
C1	Stream: 2	PRC for Signalled Lanes (%):	28.1	Total Delay for Signalled Lanes (pcuHr):	12.28	Cycle Time (s):	80
C1	Stream: 3	PRC for Signalled Lanes (%):	5.4	Total Delay for Signalled Lanes (pcuHr):	11.38	Cycle Time (s):	80
C1	Stream: 4	PRC for Signalled Lanes (%):	-81.3	Total Delay for Signalled Lanes (pcuHr):	403.74	Cycle Time (s):	80
		PRC Over All Lanes (%):	-81.3	Total Delay Over All Lanes(pcuHr):	450.43		

Scenario 10: '2033 Local Plan Growth with Mitigation (PM)' (FG10: '2033 Local Plan Growth with Mitigation (PM)', Plan 3: 'PM PEAK - CLF PLAN 6')

Network Layout Diagram



Phase Diagram



Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	-	-	-	-	-	-	-
	B	7		-	-	-	-	-	-	7
	C	-	-		5	-	-	-	-	-
	D	-	-	7		-	-	-	-	-
	E	-	-	-	-		5	-	-	-
	F	-	-	-	-	7		-	-	-
	G	-	-	-	-	-	-		5	-
	H	-	-	-	-	-	-	7		-
	I	-	11	-	-	-	-	-	-	

Lane Input Data

Junction: M25 J28

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M25 North)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/3 (M25 North)	U	F	2	3	60.0	User	1900	-	-	-	-	-
1/4 (M25 North)	U	F	2	3	3.0	User	1900	-	-	-	-	-
2/1	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/2	U	E	2	3	21.2	User	1900	-	-	-	-	-
2/3	U	E	2	3	21.2	User	1900	-	-	-	-	-
3/1 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
3/4 (A12 East)	U	H	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/2	U	G	2	3	22.6	User	1900	-	-	-	-	-
4/3	U	G	2	3	22.6	User	1900	-	-	-	-	-
5/1 (A1023 Brook Street)	O		2	3	5.0	User	1800	-	-	-	-	-
5/2 (A1023 Brook Street)	O		2	3	60.0	User	1800	-	-	-	-	-
6/1	U		2	3	12.2	Inf	-	-	-	-	-	-
6/2	U		2	3	12.2	Inf	-	-	-	-	-	-

6/3	U		2	3	12.2	Inf	-	-	-	-	-	-
6/4	U		2	3	12.2	Inf	-	-	-	-	-	-
7/1 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/2 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/3 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
7/4 (M25 South)	U	B	2	3	15.7	User	1900	-	-	-	-	-
8/1	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/2	U	A	2	3	19.5	User	1900	-	-	-	-	-
8/3	U	A	2	3	19.5	User	1900	-	-	-	-	-
9/1 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/2 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
9/3 (A12 West)	U	D	2	3	8.7	User	1900	-	-	-	-	-
10/1	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/2	U	C	2	3	28.7	User	1900	-	-	-	-	-
10/3	U	C	2	3	28.7	User	1900	-	-	-	-	-
11/1 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (A12 East exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A1023 Brook Street exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2 (M25 South exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (A12 West exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2 (M25 North exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2 (M25 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

17/2 (A12 West)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Junction: M25 J28								
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 (M25 North Lane 1)	Infinite Saturation Flow						Inf	Inf
1/2 (M25 North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (M25 North Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
1/4 (M25 North Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A12 East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A12 East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A12 East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
3/4 (A12 East Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A1023 Brook Street Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
5/2 (A1023 Brook Street Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
6/4	Infinite Saturation Flow						Inf	Inf
7/1 (M25 South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (M25 South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/3 (M25 South Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/4 (M25 South Lane 4)	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
8/3	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (A12 West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

9/2 (A12 West Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
9/3 (A12 West Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
10/1	This lane uses a directly entered Saturation Flow	1900	1900
10/2	This lane uses a directly entered Saturation Flow	1900	1900
10/3	This lane uses a directly entered Saturation Flow	1900	1900
11/1 (A12 East exit Lane 1)	Infinite Saturation Flow	Inf	Inf
11/2 (A12 East exit Lane 2)	Infinite Saturation Flow	Inf	Inf
11/3 (A12 East exit Lane 3)	Infinite Saturation Flow	Inf	Inf
12/1 (A1023 Brook Street exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/1 (M25 South exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (M25 South exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A12 West exit Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (A12 West exit Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1 (M25 North exit Lane 1)	Infinite Saturation Flow	Inf	Inf
15/2 (M25 North exit Lane 2)	Infinite Saturation Flow	Inf	Inf
16/1 (M25 South Lane 1)	Infinite Saturation Flow	Inf	Inf
16/2 (M25 South Lane 2)	Infinite Saturation Flow	Inf	Inf
17/1 (A12 West Lane 1)	Infinite Saturation Flow	Inf	Inf
17/2 (A12 West Lane 2)	Infinite Saturation Flow	Inf	Inf

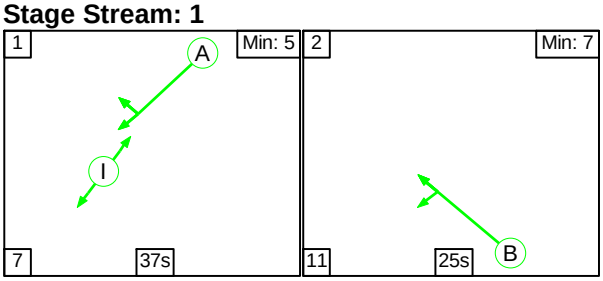
Lane Connector Input Data

Junction: M25 J28				
Org Lane	Dest Lane	Junction	Mean Cruise Time	Platoon Dispersion
1/1	11/1	Internal	10	35
1/2	4/1	Internal	7	35
1/3	4/2	Internal	7	35
1/4	4/3	Internal	7	35
2/1	11/2	Internal	10	35
2/2	4/1	Internal	7	35
2/2	11/3	Internal	10	35
2/3	4/1	Internal	7	35
2/3	4/2	Internal	7	35
2/3	4/3	Internal	7	35
3/1	6/1	Internal	4	35
3/1	12/1	Internal	10	35
3/2	6/2	Internal	4	35
3/3	6/3	Internal	4	35
3/4	6/4	Internal	4	35
4/1	12/1	Internal	10	35
4/2	6/1	Internal	4	35
4/2	6/2	Internal	4	35
4/3	6/3	Internal	4	35
5/1	8/1	Internal	6	35
5/1	13/1	Internal	10	35
5/2	8/2	Internal	6	35
5/2	8/3	Internal	6	35
6/1	13/1	Internal	10	35
6/2	8/1	Internal	6	35
6/2	13/2	Internal	10	35
6/3	8/2	Internal	6	35
6/4	8/3	Internal	6	35
7/1	14/1	Internal	10	35
7/2	10/1	Internal	9	35
7/2	10/2	Internal	9	35
7/3	10/2	Internal	9	35
7/4	10/3	Internal	9	35
8/1	14/1	Internal	10	35
8/2	10/1	Internal	9	35
8/2	14/2	Internal	10	35
8/3	10/2	Internal	9	35
8/3	10/3	Internal	9	35

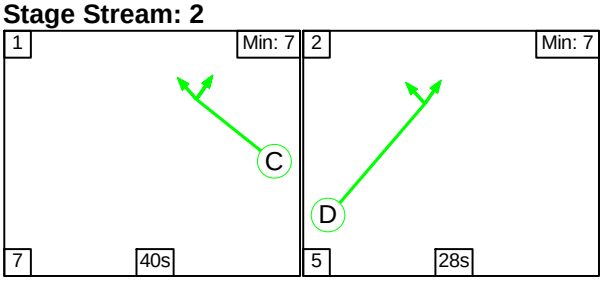
9/1	15/1	Internal	10	35
9/2	2/2	Internal	7	35
9/2	15/2	Internal	10	35
9/3	2/3	Internal	7	35
10/1	2/1	Internal	7	35
10/1	15/1	Internal	10	35
10/2	2/1	Internal	7	35
10/2	2/2	Internal	7	35
10/2	2/3	Internal	7	35
10/2	15/2	Internal	10	35
10/3	2/2	Internal	7	35
10/3	2/3	Internal	7	35
16/1	7/1	Internal	1	35
16/1	7/2	Internal	1	35
16/2	7/2	Internal	5	35
16/2	7/3	Internal	1	35
16/2	7/4	Internal	1	35
17/1	9/1	Internal	1	35
17/1	9/2	Internal	1	35
17/2	9/3	Internal	1	35

Stage Sequence Diagram

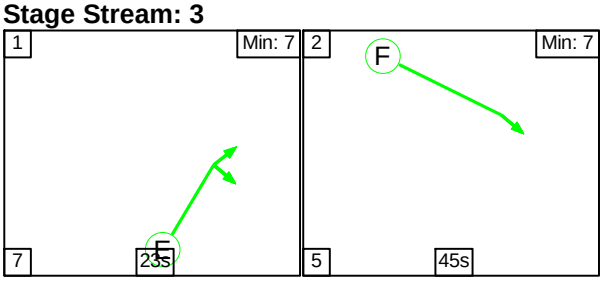
Stage Stream: 1



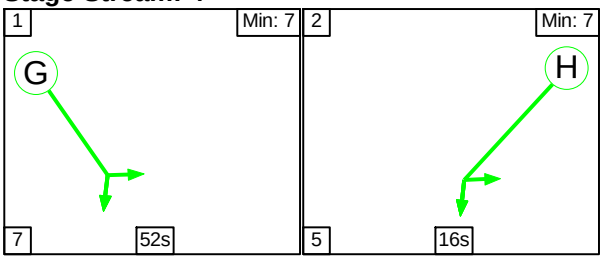
Stage Stream: 2



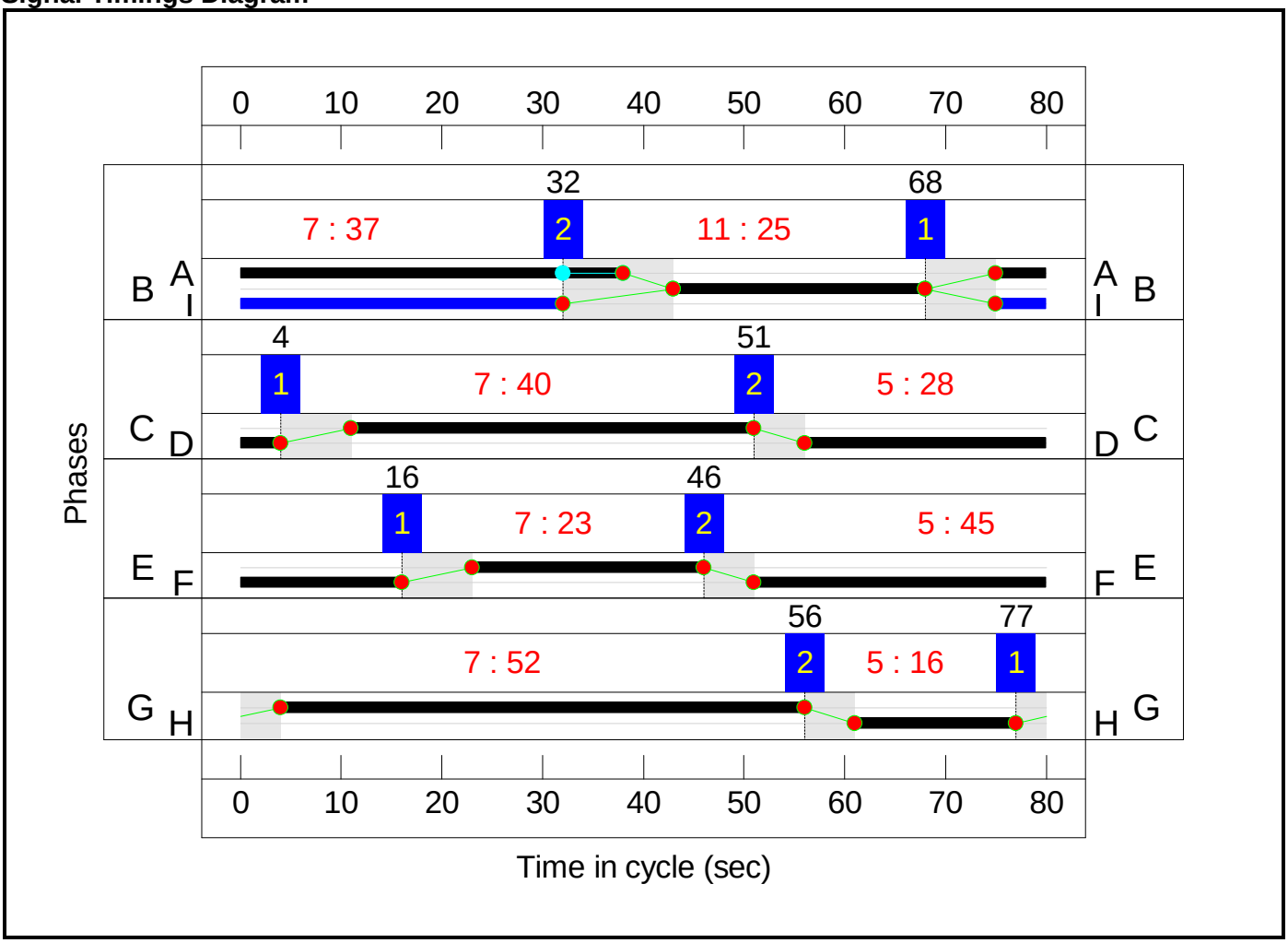
Stage Stream: 3



Stage Stream: 4



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: LinSig	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**144.6%**	**1534**	**0**	**0**	**397.1**	**-**	**-**
M25 J28	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**144.6%**	**1534**	**0**	**0**	**397.1**	**-**	**-**
1/2	M25 North Ahead	U	F		1	45	-	502	1900	1092	45.9%	-	-	-	1.8	12.9	6.8
1/3+1/4	M25 North Ahead	U	F		1	45	-	489	1900:1900	817+321	43.0 : 43.0%	-	-	-	1.6	11.6	5.0
2/1	Ahead	U	E		1	23	-	15	1900	570	2.6%	-	-	-	0.0	10.7	0.1
2/2	Right Ahead	U	E		1	23	-	484	1900	570	84.9%	-	-	-	7.0	52.2	13.4
2/3	Right	U	E		1	23	-	469	1900	570	82.3%	-	-	-	7.0	53.5	12.6
3/1	A12 East Ahead U-Turn	U	H		1	16	-	584	1900	404	144.6%	-	-	-	105.3	649.0	112.7
3/2	A12 East Ahead	U	H		1	16	-	583	1900	404	144.4%	-	-	-	104.7	646.8	112.1
3/3	A12 East Ahead	U	H		1	16	-	502	1900	404	124.3%	-	-	-	60.6	434.3	67.1
3/4	A12 East Ahead	U	H		1	16	-	502	1900	404	124.3%	-	-	-	60.6	434.3	67.1
4/1	Ahead	U	G		1	52	-	1230	1900	1259	97.7%	-	-	-	16.2	47.6	25.0
4/2	Right	U	G		1	52	-	574	1900	1259	45.6%	-	-	-	2.1	13.5	7.4
4/3	Right	U	G		1	52	-	138	1900	1259	11.0%	-	-	-	0.6	16.7	2.5
5/2+5/1	A1023 Brook Street Ahead Left	O	-		-	-	-	767	1800:1800	547+885	53.6 : 53.6%	1534	0	0	1.4	6.5	6.0
7/1	M25 South Left	U	B		1	25	-	526	1900	618	85.2%	-	-	-	6.4	43.8	13.5
7/2	M25 South Ahead	U	B		1	25	-	70	1900	618	11.3%	-	-	-	0.4	22.2	1.2
7/3	M25 South Ahead	U	B		1	25	-	69	1900	618	11.2%	-	-	-	0.4	22.2	1.1
7/4	M25 South Ahead	U	B		1	25	-	116	1900	618	18.8%	-	-	-	0.7	23.0	2.0
8/1	Ahead	U	A		1	43	-	601	1900	1045	57.5%	-	-	-	1.4	8.2	3.2

8/2	Right Ahead	U	A		1	43	-	840	1900	1045	71.0%	-	-	-	2.7	12.9	16.1
8/3	Right	U	A		1	43	-	595	1900	1045	47.5%	-	-	-	1.2	8.9	10.7
9/1	A12 West Left	U	D		1	28	-	392	1900	689	56.9%	-	-	-	2.9	26.5	7.6
9/2	A12 West Ahead Left	U	D		1	28	-	391	1900	689	56.8%	-	-	-	2.9	26.5	7.6
9/3	A12 West Ahead	U	D		1	28	-	402	1900	689	58.4%	-	-	-	3.0	26.9	7.8
10/1	Right Ahead	U	C		1	40	-	694	1900	974	61.3%	-	-	-	1.8	10.7	13.2
10/2	Right Ahead	U	C		1	40	-	734	1900	974	65.3%	-	-	-	3.3	18.8	13.9
10/3	Right	U	C		1	40	-	116	1900	974	11.9%	-	-	-	1.0	30.5	2.2
Ped Link: P1	Unnamed Ped Link	-	I		1	37	-	0	-	0	0.0%	-	-	-	-	-	-

C1	Stream: 1	PRC for Signalled Lanes (%):	5.7	Total Delay for Signalled Lanes (pcuHr):	13.26	Cycle Time (s):	80
C1	Stream: 2	PRC for Signalled Lanes (%):	37.8	Total Delay for Signalled Lanes (pcuHr):	14.84	Cycle Time (s):	80
C1	Stream: 3	PRC for Signalled Lanes (%):	6.0	Total Delay for Signalled Lanes (pcuHr):	17.39	Cycle Time (s):	80
C1	Stream: 4	PRC for Signalled Lanes (%):	-60.7	Total Delay for Signalled Lanes (pcuHr):	350.19	Cycle Time (s):	80
		PRC Over All Lanes (%):	-60.7	Total Delay Over All Lanes(pcuHr):	397.07		

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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Filename: 28085_27_J9_SSM Rev A.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 25/10/2018 14:05:19

»2017 Baseline, AM
»2017 Baseline, PM
»2033 Reference Case, AM
»2033 Reference Case, PM
»2033 Local Plan Growth, AM
»2033 Local Plan Growth, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2017 Baseline							
Stream B-C	0.6	12.22	0.34	B	2.1	26.08	0.66	D
Stream B-A	0.8	39.78	0.42	E	1.8	67.38	0.64	F
Stream C-AB	1.3	17.59	0.54	C	0.8	13.19	0.42	B
	2033 Reference Case							
Stream B-C	0.8	17.89	0.44	C	15.7	194.41	1.00	F
Stream B-A	1.6	81.92	0.61	F	7.3	263.40	0.94	F
Stream C-AB	1.7	23.07	0.62	C	0.9	14.09	0.45	B
	2033 Local Plan Growth							
Stream B-C	10.3	170.76	0.97	F	59.7	724.58	1.22	F
Stream B-A	5.1	258.26	0.89	F	19.1	778.52	1.16	F
Stream C-AB	1.7	24.00	0.62	C	1.3	17.44	0.54	C

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

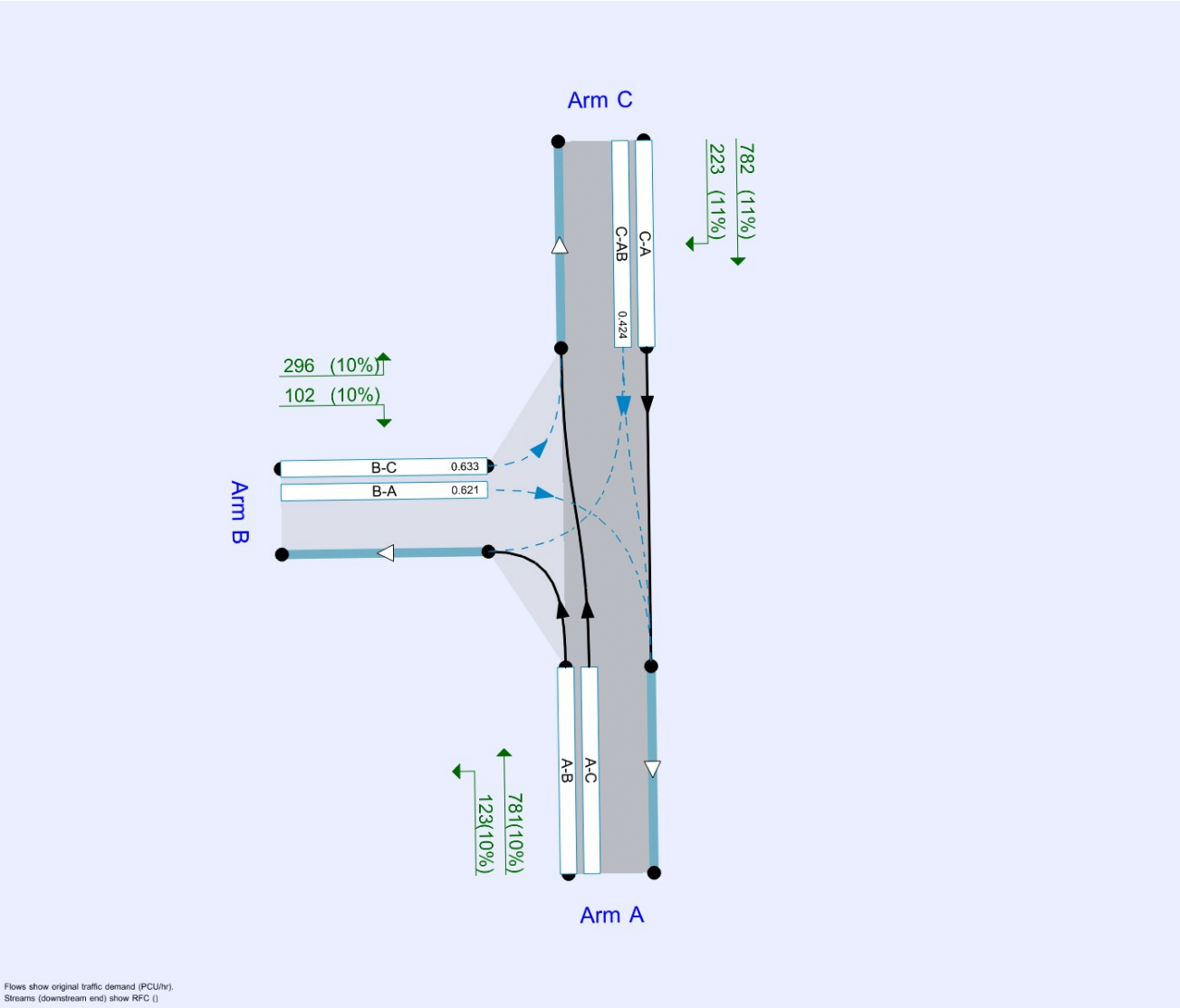
File summary

File Description

Title	A128 - Tilbury Road / Station Road
Location	Brentwood
Site number	27
Date	24/05/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	PBA\jchodorowski
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	FLAT	08:00	09:00	60	15	✓
D2	2017 Baseline	PM	FLAT	17:00	18:00	60	15	✓
D3	2033 Reference Case	AM	FLAT	08:00	09:00	60	15	✓
D4	2033 Reference Case	PM	FLAT	17:00	18:00	60	15	✓
D5	2033 Local Plan Growth	AM	FLAT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth	PM	FLAT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	4.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A128 Tilbury Road S		Major
B	Station Road		Minor
C	A128 Tilbury Road N		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.10		✓	3.10	250.0	✓	22.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	8.00	4.90	4.50	4.40		2.00	250	250

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	657	0.114	0.288	0.181	0.412
1	B-C	854	0.125	0.315	-	-
1	C-B	789	0.291	0.291	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	FLAT	08:00	09:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	1007	100.000
B		FLAT	✓	243	100.000
C		FLAT	✓	892	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	192	815
	B	73	0	170
	C	623	269	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.34	12.22	0.6	B	170	170
B-A	0.42	39.78	0.8	E	73	73
C-AB	0.54	17.59	1.3	C	269	269
C-A					623	623
A-B					192	192
A-C					815	815

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	170	43	501	0.339	168	0.0	0.6	11.814	B
B-A	73	18	174	0.418	70	0.0	0.7	37.011	E
C-AB	269	67	496	0.542	264	0.0	1.3	16.882	C
C-A	623	156			623				
A-B	192	48			192				
A-C	815	204			815				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	170	43	495	0.344	170	0.6	0.6	12.196	B
B-A	73	18	172	0.423	73	0.7	0.8	39.634	E
C-AB	269	67	496	0.542	269	1.3	1.3	17.575	C
C-A	623	156			623				
A-B	192	48			192				
A-C	815	204			815				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	170	43	494	0.344	170	0.6	0.6	12.209	B
B-A	73	18	172	0.423	73	0.8	0.8	39.747	E
C-AB	269	67	496	0.542	269	1.3	1.3	17.589	C
C-A	623	156			623				
A-B	192	48			192				
A-C	815	204			815				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	170	43	494	0.344	170	0.6	0.6	12.215	B
B-A	73	18	172	0.423	73	0.8	0.8	39.785	E
C-AB	269	67	496	0.542	269	1.3	1.3	17.594	C
C-A	623	156			623				
A-B	192	48			192				
A-C	815	204			815				

2017 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	7.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	FLAT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	904	100.000
B		FLAT	✓	398	100.000
C		FLAT	✓	1005	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	123	781
	B	102	0	296
	C	782	223	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.66	26.08	2.1	D	296	296
B-A	0.64	67.38	1.8	F	102	102
C-AB	0.42	13.19	0.8	B	223	223
C-A					782	782
A-B					123	123
A-C					781	781

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	296	74	468	0.633	289	0.0	1.8	21.361	C
B-A	102	26	164	0.621	96	0.0	1.5	54.116	F
C-AB	223	56	526	0.424	220	0.0	0.8	12.923	B
C-A	782	196			782				
A-B	123	31			123				
A-C	781	195			781				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	296	74	450	0.658	295	1.8	2.0	25.318	D
B-A	102	26	160	0.636	101	1.5	1.7	65.337	F
C-AB	223	56	526	0.424	223	0.8	0.8	13.183	B
C-A	782	196			782				
A-B	123	31			123				
A-C	781	195			781				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	296	74	448	0.661	296	2.0	2.1	25.882	D
B-A	102	26	160	0.637	102	1.7	1.8	66.833	F
C-AB	223	56	526	0.424	223	0.8	0.8	13.186	B
C-A	782	196			782				
A-B	123	31			123				
A-C	781	195			781				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	296	74	447	0.662	296	2.1	2.1	26.075	D
B-A	102	26	160	0.638	102	1.8	1.8	67.384	F
C-AB	223	56	526	0.424	223	0.8	0.8	13.188	B
C-A	782	196			782				
A-B	123	31			123				
A-C	781	195			781				

2033 Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	6.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2033 Reference Case	AM	FLAT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	1136	100.000
B		FLAT	✓	248	100.000
C		FLAT	✓	953	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	198	938
	B	74	0	174
	C	671	282	0

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

08:15 - 08:30

Heavy Vehicle Percentages

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

08:30 - 08:45

Heavy Vehicle Percentages

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

08:45 - 09:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.44	17.89	0.8	C	174	174
B-A	0.61	81.92	1.6	F	74	74
C-AB	0.62	23.07	1.7	C	282	282
C-A					671	671
A-B					198	198
A-C					938	938

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	174	44	413	0.421	171	0.0	0.8	16.154	C
B-A	74	19	123	0.601	68	0.0	1.4	67.432	F
C-AB	282	71	458	0.615	275	0.0	1.7	21.131	C
C-A	671	168			671				
A-B	198	50			198				
A-C	938	235			938				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	174	44	392	0.444	174	0.8	0.8	17.891	C
B-A	74	19	121	0.614	73	1.4	1.5	81.915	F
C-AB	282	71	459	0.615	282	1.7	1.7	23.070	C
C-A	671	168			671				
A-B	198	50			198				
A-C	938	235			938				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	174	44	392	0.443	174	0.8	0.8	16.503	C
B-A	74	19	121	0.613	74	1.5	1.6	76.636	F
C-AB	282	71	458	0.615	282	1.7	1.7	20.520	C
C-A	671	168			671				
A-B	198	50			198				
A-C	938	235			938				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	174	44	393	0.443	174	0.8	0.8	16.467	C
B-A	74	19	121	0.612	74	1.6	1.6	76.469	F
C-AB	282	71	458	0.615	282	1.7	1.6	20.450	C
C-A	671	168			671				
A-B	198	50			198				
A-C	938	235			938				

2033 Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	36.53	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2033 Reference Case	PM	FLAT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	959	100.000
B		FLAT	✓	414	100.000
C		FLAT	✓	1123	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	125	834
	B	108	0	306
	C	893	230	0

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

17:15 - 17:30

Heavy Vehicle Percentages

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

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.00	194.41	15.7	F	306	306
B-A	0.94	263.40	7.3	F	108	108
C-AB	0.45	14.09	0.9	B	230	230
C-A					893	893
A-B					125	125
A-C					834	834

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	306	77	351	0.872	286	0.0	4.9	51.849	F
B-A	108	27	120	0.903	93	0.0	3.8	116.817	F
C-AB	230	58	510	0.451	226	0.0	0.9	13.929	B
C-A	893	223			893				
A-B	125	31			125				
A-C	834	209			834				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	306	77	306	0.998	279	4.9	11.6	129.471	F
B-A	108	27	116	0.931	101	3.8	5.7	204.231	F
C-AB	230	58	510	0.451	230	0.9	0.9	14.092	B
C-A	893	223			893				
A-B	125	31			125				
A-C	834	209			834				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	306	77	310	0.986	297	11.6	13.7	170.434	F
B-A	108	27	115	0.939	104	5.7	6.6	239.479	F
C-AB	230	58	510	0.451	230	0.9	0.8	12.879	B
C-A	893	223			893				
A-B	125	31			125				
A-C	834	209			834				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	306	77	309	0.991	298	13.7	15.7	194.406	F
B-A	108	27	115	0.940	105	6.6	7.3	263.398	F
C-AB	230	58	510	0.451	230	0.8	0.8	12.863	B
C-A	893	223			893				
A-B	125	31			125				
A-C	834	209			834				

2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	26.73	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	FLAT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	1194	100.000
B		FLAT	✓	311	100.000
C		FLAT	✓	981	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	189	1005
	B	78	0	233
	C	709	272	0

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

08:15 - 08:30

Heavy Vehicle Percentages

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

08:30 - 08:45

Heavy Vehicle Percentages

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

08:45 - 09:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.97	170.76	10.3	F	233	233
B-A	0.89	258.26	5.1	F	78	78
C-AB	0.62	24.00	1.7	C	272	272
C-A					709	709
A-B					189	189
A-C					1005	1005

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	318	0.733	223	0.0	2.6	38.356	E
B-A	78	20	93	0.836	67	0.0	2.8	123.465	F
C-AB	272	68	442	0.616	265	0.0	1.7	21.932	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	240	0.970	211	2.6	8.1	118.150	F
B-A	78	20	88	0.886	73	2.8	4.1	209.547	F
C-AB	272	68	442	0.616	272	1.7	1.7	23.995	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	245	0.950	228	8.1	9.3	154.072	F
B-A	78	20	87	0.894	76	4.1	4.7	240.023	F
C-AB	272	68	442	0.616	272	1.7	1.7	21.356	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	244	0.956	229	9.3	10.3	170.762	F
B-A	78	20	87	0.893	76	4.7	5.1	258.257	F
C-AB	272	68	442	0.616	272	1.7	1.6	21.283	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	119.23	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	FLAT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	1001	100.000
B		FLAT	✓	422	100.000
C		FLAT	✓	1226	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	126	875
	B	100	0	322
	C	958	268	0

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

17:15 - 17:30

Heavy Vehicle Percentages

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

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.22	724.58	59.7	F	322	322
B-A	1.16	778.52	19.1	F	100	100
C-AB	0.54	17.44	1.3	C	268	268
C-A					958	958
A-B					126	126
A-C					875	875

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	278	1.158	260	0.0	15.6	134.485	F
B-A	100	25	86	1.158	74	0.0	6.5	213.468	F
C-AB	268	67	498	0.538	263	0.0	1.2	16.697	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	264	1.221	244	15.6	35.0	383.543	F
B-A	100	25	87	1.155	79	6.5	11.8	466.850	F
C-AB	268	67	498	0.538	268	1.2	1.3	17.439	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	273	1.181	272	35.0	47.6	566.753	F
B-A	100	25	87	1.150	85	11.8	15.5	629.570	F
C-AB	268	67	498	0.538	268	1.3	1.2	15.719	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	274	1.174	274	47.6	59.7	724.582	F
B-A	100	25	87	1.153	86	15.5	19.1	778.515	F
C-AB	268	67	498	0.538	268	1.2	1.2	15.685	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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Filename: 28085_27_J9_SSM Mit.j9
Path: J:\28085 Brentwood 2018\Junction Modelling\1. Junction Models\PICADY\Junctions 9
Report generation date: 25/10/2018 14:08:09

»2033 Local Plan Growth, AM
»2033 Local Plan Growth, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2033 Local Plan Growth							
Stream B-C	1.3	21.02	0.55	C	3.2	37.41	0.76	E
Stream B-A	2.0	100.82	0.68	F	4.7	180.22	0.86	F
Stream C-AB	1.7	24.00	0.62	C	1.3	17.44	0.54	C

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

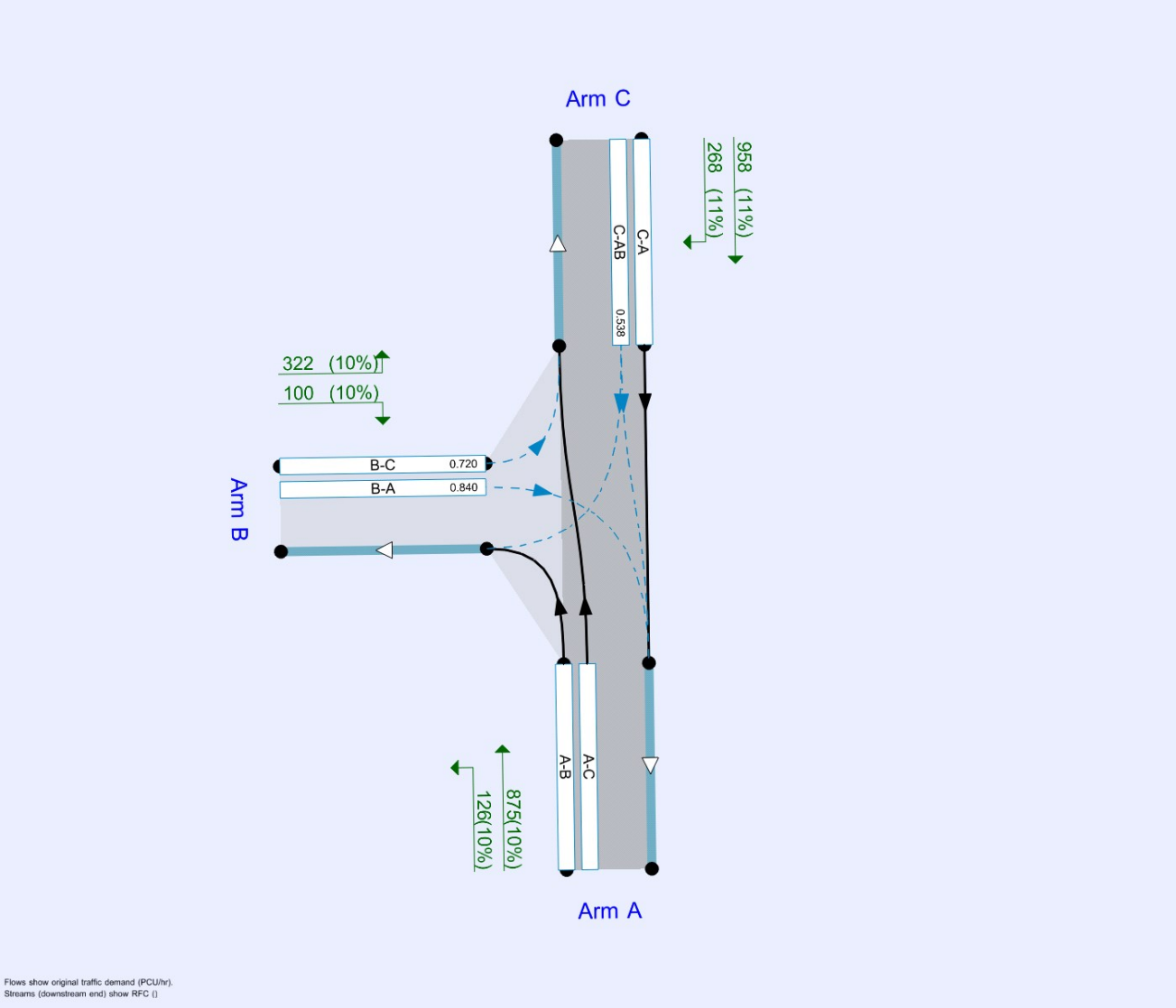
File summary

File Description

Title	A128 - Tilbury Road / Station Road
Location	Brentwood
Site number	27
Date	24/05/2018
Version	
Status	For Information
Identifier	
Client	
Jobnumber	28085
Enumerator	PBA\jchodorowski
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2017 Baseline	AM	FLAT	08:00	09:00	60	15	✓
D2	2017 Baseline	PM	FLAT	17:00	18:00	60	15	✓
D3	2033 Reference Case	AM	FLAT	08:00	09:00	60	15	✓
D4	2033 Reference Case	PM	FLAT	17:00	18:00	60	15	✓
D5	2033 Local Plan Growth	AM	FLAT	08:00	09:00	60	15	✓
D6	2033 Local Plan Growth	PM	FLAT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D5,D6	100.000	100.000

2033 Local Plan Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	7.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A128 Tilbury Road S		Major
B	Station Road		Minor
C	A128 Tilbury Road N		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.10		✓	3.10	250.0	✓	22.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	4.00	3.50	250	250

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	732	0.127	0.321	0.202	0.458
1	B-C	860	0.125	0.317	-	-
1	C-B	789	0.291	0.291	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Local Plan Growth	AM	FLAT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	1194	100.000
B		FLAT	✓	311	100.000
C		FLAT	✓	981	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	189	1005
	B	78	0	233
	C	709	272	0

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

08:15 - 08:30

Heavy Vehicle Percentages

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

08:30 - 08:45

Heavy Vehicle Percentages

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

08:45 - 09:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.55	21.02	1.3	C	233	233
B-A	0.68	100.82	2.0	F	78	78
C-AB	0.62	24.00	1.7	C	272	272
C-A					709	709
A-B					189	189
A-C					1005	1005

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	431	0.540	228	0.0	1.2	19.043	C
B-A	78	20	118	0.663	71	0.0	1.7	77.384	F
C-AB	272	68	442	0.616	265	0.0	1.7	21.932	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	422	0.553	233	1.2	1.3	21.020	C
B-A	78	20	115	0.680	77	1.7	2.0	100.818	F
C-AB	272	68	442	0.616	272	1.7	1.7	23.995	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	420	0.555	233	1.3	1.3	19.291	C
B-A	78	20	115	0.681	78	2.0	2.0	96.636	F
C-AB	272	68	442	0.616	272	1.7	1.7	21.356	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	233	58	420	0.555	233	1.3	1.3	19.259	C
B-A	78	20	115	0.680	78	2.0	2.0	96.679	F
C-AB	272	68	442	0.616	272	1.7	1.6	21.285	C
C-A	709	177			709				
A-B	189	47			189				
A-C	1005	251			1005				

2033 Local Plan Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	13.12	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Local Plan Growth	PM	FLAT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		FLAT	✓	1001	100.000
B		FLAT	✓	422	100.000
C		FLAT	✓	1226	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	126	875
	B	100	0	322
	C	958	268	0

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	11	11	11

17:15 - 17:30

Heavy Vehicle Percentages

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

17:30 - 17:45

Heavy Vehicle Percentages

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

17:45 - 18:00

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.76	37.41	3.2	E	322	322
B-A	0.86	180.22	4.7	F	100	100
C-AB	0.54	17.44	1.3	C	268	268
C-A					958	958
A-B					126	126
A-C					875	875

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	447	0.720	312	0.0	2.5	27.523	D
B-A	100	25	119	0.840	88	0.0	3.1	104.579	F
C-AB	268	67	498	0.538	263	0.0	1.2	16.697	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	430	0.749	319	2.5	3.2	37.413	E
B-A	100	25	117	0.857	96	3.1	4.2	164.188	F
C-AB	268	67	498	0.538	268	1.2	1.3	17.439	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	425	0.758	322	3.2	3.2	35.078	E
B-A	100	25	117	0.857	99	4.2	4.5	174.184	F
C-AB	268	67	498	0.538	268	1.3	1.2	15.720	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	322	81	425	0.758	322	3.2	3.2	35.107	E
B-A	100	25	117	0.856	99	4.5	4.7	180.221	F
C-AB	268	67	498	0.538	268	1.2	1.2	15.685	C
C-A	958	239			958				
A-B	126	32			126				
A-C	875	219			875				