Junctions 10

ARCADY 10 - Roundabout Module

Filename: J6.0 Shinfield Relief Road_Arborfield Road.j10
Path: \\Cbh-vfil-001\cbh\Projects\332611392_Wokingham LPU 2024\5500 - Transport\06_Traffic Modelling\07_Local Modelling Update
Report generation date: 17/06/2024 13:12:56

Summary of junction performance

	AM					PM				
	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Set ID	Q (Veh)	Delay (s)	RFC	LOS
	Reference Case									
1 - Eastern Relief Road	D1	0.8	4.69	0.44	A	D2	1.4	6.70	0.59	A
2 - Arborfield Road (E)		2.1	6.73	0.68	A		1.7	5.78	0.63	A
3 - Arborfield Road (W)		0.8	4.80	0.45	A		0.5	3.93	0.32	A
	Scenario 1b									
1 - Eastern Relief Road	D3	1.3	6.48	0.57	A	D4	6.1	21.39	0.87	C
2 - Arborfield Road (E)		5.4	15.01	0.85	C		2.1	7.07	0.68	A
3 - Arborfield Road (W)		2.1	8.98	0.68	A		1.0	5.08	0.49	A

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

File summary

File Description

Title	
Location	
Site number	
Date	28/02/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CORP\hwenman
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		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)
D1	Reference Case	AM	ONE HOUR	07:45	09:15	15
D2	Reference Case	PM	ONE HOUR	16:45	18:15	15
D3	Scenario 1b	AM	ONE HOUR	07:45	09:15	15
D4	Scenario 1b	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	5.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.71	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Eastern Relief Road		
2	Arborfield Road (E)		
3	Arborfield Road (W)		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - Eastern Relief Road	3.59	6.81	10.0	30.1	34.7	20.1		
2 - Arborfield Road (E)	3.65	7.31	18.9	40.0	34.7	32.5		
3 - Arborfield Road (W)	3.73	7.08	24.3	22.5	34.7	23.3		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Eastern Relief Road	0.657	1649
2 - Arborfield Road (E)	0.681	1820
3 - Arborfield Road (W)	0.699	1888

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)
D1	Reference Case	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - Eastern Relief Road		✓	539	100.000
2 - Arborfield Road (E)		✓	1026	100.000
3 - Arborfield Road (W)		✓	553	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	0	425	114
	2 - Arborfield Road (E)	593	0	433
	3 - Arborfield Road (W)	243	310	0

Vehicle Mix

Heavy Vehicle %

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	0	4	4
	2 - Arborfield Road (E)	4	0	4
	3 - Arborfield Road (W)	4	4	4

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
1 - Eastern Relief Road	0.44	4.69	0.8	A
2 - Arborfield Road (E)	0.68	6.73	2.1	A
3 - Arborfield Road (W)	0.45	4.80	0.8	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	406	233	1432	0.283	404	0.4	3.497	A
2 - Arborfield Road (E)	772	85	1691	0.457	769	0.8	3.889	A
3 - Arborfield Road (W)	416	445	1504	0.277	415	0.4	3.300	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	485	278	1402	0.346	484	0.5	3.919	A
2 - Arborfield Road (E)	922	102	1680	0.549	921	1.2	4.733	A
3 - Arborfield Road (W)	497	532	1443	0.345	497	0.5	3.801	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	593	341	1361	0.436	592	0.8	4.677	A
2 - Arborfield Road (E)	1130	125	1664	0.679	1126	2.1	6.649	A
3 - Arborfield Road (W)	609	651	1360	0.448	608	0.8	4.778	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	593	341	1361	0.436	593	0.8	4.690	A
2 - Arborfield Road (E)	1130	126	1664	0.679	1130	2.1	6.732	A
3 - Arborfield Road (W)	609	653	1359	0.448	609	0.8	4.800	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	485	279	1402	0.346	486	0.5	3.933	A
2 - Arborfield Road (E)	922	103	1680	0.549	926	1.2	4.798	A
3 - Arborfield Road (W)	497	535	1441	0.345	498	0.5	3.821	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	406	234	1432	0.283	406	0.4	3.515	A
2 - Arborfield Road (E)	772	86	1691	0.457	774	0.8	3.931	A
3 - Arborfield Road (W)	416	447	1502	0.277	417	0.4	3.317	A

Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	5.75	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.75	A

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)
D2	Reference Case	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - Eastern Relief Road		✓	711	100.000
2 - Arborfield Road (E)		✓	970	100.000
3 - Arborfield Road (W)		✓	383	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	0	632	79
	2 - Arborfield Road (E)	622	0	348
	3 - Arborfield Road (W)	15	368	0

Vehicle Mix

Heavy Vehicle %

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	4	4	3
	2 - Arborfield Road (E)	4	0	4
	3 - Arborfield Road (W)	4	4	4

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
1 - Eastern Relief Road	0.59	6.70	1.4	A
2 - Arborfield Road (E)	0.63	5.78	1.7	A
3 - Arborfield Road (W)	0.32	3.93	0.5	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	535	276	1405	0.381	533	0.6	4.115	A
2 - Arborfield Road (E)	730	59	1710	0.427	727	0.7	3.654	A
3 - Arborfield Road (W)	288	466	1489	0.194	287	0.2	2.992	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	639	331	1369	0.467	638	0.9	4.915	A
2 - Arborfield Road (E)	872	71	1702	0.512	871	1.0	4.326	A
3 - Arborfield Road (W)	344	558	1425	0.242	344	0.3	3.331	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	783	405	1321	0.593	781	1.4	6.637	A
2 - Arborfield Road (E)	1068	87	1691	0.632	1065	1.7	5.729	A
3 - Arborfield Road (W)	422	683	1338	0.315	421	0.5	3.925	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	783	405	1320	0.593	783	1.4	6.697	A
2 - Arborfield Road (E)	1068	87	1691	0.632	1068	1.7	5.778	A
3 - Arborfield Road (W)	422	685	1336	0.316	422	0.5	3.935	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	639	331	1369	0.467	641	0.9	4.963	A
2 - Arborfield Road (E)	872	71	1702	0.512	875	1.1	4.368	A
3 - Arborfield Road (W)	344	561	1423	0.242	345	0.3	3.342	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	535	277	1404	0.381	536	0.6	4.151	A
2 - Arborfield Road (E)	730	60	1709	0.427	732	0.8	3.688	A
3 - Arborfield Road (W)	288	469	1487	0.194	289	0.2	3.003	A

Scenario 1b, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	11.12	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.12	B

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)
D3	Scenario 1b	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - Eastern Relief Road		✓	665	100.000
2 - Arborfield Road (E)		✓	1228	100.000
3 - Arborfield Road (W)		✓	790	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	0	450	215
	2 - Arborfield Road (E)	709	0	519
	3 - Arborfield Road (W)	379	411	0

Vehicle Mix

Heavy Vehicle %

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	0	4	4
	2 - Arborfield Road (E)	4	0	4
	3 - Arborfield Road (W)	4	4	4

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
1 - Eastern Relief Road	0.57	6.48	1.3	A
2 - Arborfield Road (E)	0.85	15.01	5.4	C
3 - Arborfield Road (W)	0.68	8.98	2.1	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	501	308	1383	0.362	498	0.6	4.061	A
2 - Arborfield Road (E)	925	161	1640	0.564	919	1.3	4.963	A
3 - Arborfield Road (W)	595	531	1444	0.412	592	0.7	4.212	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	598	369	1343	0.445	597	0.8	4.820	A
2 - Arborfield Road (E)	1104	193	1618	0.682	1101	2.1	6.913	A
3 - Arborfield Road (W)	710	635	1371	0.518	709	1.1	5.424	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	732	450	1289	0.568	730	1.3	6.417	A
2 - Arborfield Road (E)	1352	236	1589	0.851	1340	5.2	13.810	B
3 - Arborfield Road (W)	870	773	1274	0.683	866	2.1	8.721	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	732	452	1288	0.569	732	1.3	6.478	A
2 - Arborfield Road (E)	1352	237	1588	0.851	1351	5.4	15.013	C
3 - Arborfield Road (W)	870	780	1270	0.685	870	2.1	8.985	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	598	372	1341	0.446	600	0.8	4.871	A
2 - Arborfield Road (E)	1104	194	1617	0.683	1117	2.2	7.369	A
3 - Arborfield Road (W)	710	645	1364	0.521	714	1.1	5.574	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	501	310	1381	0.362	502	0.6	4.098	A
2 - Arborfield Road (E)	925	162	1639	0.564	928	1.3	5.089	A
3 - Arborfield Road (W)	595	536	1441	0.413	596	0.7	4.273	A

Scenario 1b, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	12.05	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.05	B

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)
D4	Scenario 1b	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - Eastern Relief Road		✓	981	100.000
2 - Arborfield Road (E)		✓	969	100.000
3 - Arborfield Road (W)		✓	621	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	0	749	232
	2 - Arborfield Road (E)	549	0	420
	3 - Arborfield Road (W)	148	473	0

Vehicle Mix

Heavy Vehicle %

		To		
		1 - Eastern Relief Road	2 - Arborfield Road (E)	3 - Arborfield Road (W)
From	1 - Eastern Relief Road	4	4	4
	2 - Arborfield Road (E)	4	0	4
	3 - Arborfield Road (W)	4	4	4

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
1 - Eastern Relief Road	0.87	21.39	6.1	C
2 - Arborfield Road (E)	0.68	7.07	2.1	A
3 - Arborfield Road (W)	0.49	5.08	1.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	739	355	1352	0.546	734	1.2	5.780	A
2 - Arborfield Road (E)	730	174	1631	0.447	726	0.8	3.964	A
3 - Arborfield Road (W)	468	411	1527	0.306	466	0.4	3.385	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	882	425	1306	0.675	879	2.0	8.354	A
2 - Arborfield Road (E)	871	208	1608	0.542	870	1.2	4.865	A
3 - Arborfield Road (W)	558	493	1471	0.380	558	0.6	3.940	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	1080	520	1244	0.869	1065	5.7	18.818	C
2 - Arborfield Road (E)	1067	252	1578	0.676	1063	2.0	6.949	A
3 - Arborfield Road (W)	684	602	1394	0.491	682	1.0	5.051	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	1080	521	1243	0.869	1078	6.1	21.390	C
2 - Arborfield Road (E)	1067	255	1576	0.677	1067	2.1	7.066	A
3 - Arborfield Road (W)	684	604	1393	0.491	684	1.0	5.078	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	882	426	1305	0.676	898	2.1	9.164	A
2 - Arborfield Road (E)	871	212	1605	0.543	875	1.2	4.951	A
3 - Arborfield Road (W)	558	496	1469	0.380	560	0.6	3.967	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Eastern Relief Road	739	357	1351	0.547	742	1.2	5.952	A
2 - Arborfield Road (E)	730	176	1630	0.448	731	0.8	4.012	A
3 - Arborfield Road (W)	468	414	1526	0.306	468	0.4	3.406	A

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.1.1.1905

Filename: J7.0 Arborfield Relief Road_A327.j10
Path: \\Cbh-vfil-001\cbh\Projects\332611392_Wokingham LPU 2024\5500 - Transport\06_Traffic Modelling\07_Local Modelling Update
Report generation date: 17/06/2024 13:13:53

Summary of junction performance

	AM					PM				
	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Set ID	Q (Veh)	Delay (s)	RFC	LOS
	Reference Case									
1 - A327	D1	0.9	4.02	0.47	A	D2	1.7	5.73	0.64	A
2 - Reading Road		0.9	6.28	0.47	A		1.3	8.45	0.56	A
3 - Observer Way		0.8	4.62	0.45	A		0.6	4.14	0.37	A

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

File summary

File Description

Title	
Location	
Site number	
Date	11/02/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CORP\dansmith
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
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	Reference Case	AM	ONE HOUR	07:45	09:15	15	✓
D2	Reference Case	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Reference Case, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.79	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.79	A

Arms

Arms

Arm	Name	Description	No give-way line
1	A327		
2	Reading Road		
3	Observer Way		

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - A327	3.73	7.29	13.7	47.7	50.5	33.2		
2 - Reading Road	3.07	4.99	20.8	20.8	50.8	40.4		
3 - Observer Way	3.87	7.09	16.9	35.0	50.1	36.3		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A327	0.620	1747
2 - Reading Road	0.526	1331
3 - Observer Way	0.623	1776

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	Reference Case	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A327		ONE HOUR	✓	736	100.000
2 - Reading Road		ONE HOUR	✓	457	100.000
3 - Observer Way		ONE HOUR	✓	588	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - A327	2 - Reading Road	3 - Observer Way
From	1 - A327	0	326	410
	2 - Reading Road	445	0	12
	3 - Observer Way	581	7	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		1 - A327	2 - Reading Road	3 - Observer Way
From	1 - A327	0	1	3
	2 - Reading Road	1	0	0
	3 - Observer Way	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A327	0.47	4.02	0.9	A	675	1013
2 - Reading Road	0.47	6.28	0.9	A	419	629
3 - Observer Way	0.45	4.62	0.8	A	540	809

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	554	139	5	1708	0.324	552	769	0.0	0.5	3.109	A
2 - Reading Road	344	86	308	1154	0.298	342	250	0.0	0.4	4.429	A
3 - Observer Way	443	111	333	1522	0.291	441	317	0.0	0.4	3.327	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	662	165	6	1707	0.388	661	921	0.5	0.6	3.438	A
2 - Reading Road	411	103	368	1121	0.366	410	299	0.4	0.6	5.060	A
3 - Observer Way	529	132	399	1481	0.357	528	379	0.4	0.6	3.774	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	810	203	8	1707	0.475	809	1127	0.6	0.9	4.007	A
2 - Reading Road	503	126	451	1077	0.467	502	366	0.6	0.9	6.251	A
3 - Observer Way	647	162	489	1427	0.454	646	464	0.6	0.8	4.605	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	810	203	8	1707	0.475	810	1130	0.9	0.9	4.016	A
2 - Reading Road	503	126	451	1076	0.467	503	367	0.9	0.9	6.279	A
3 - Observer Way	647	162	490	1426	0.454	647	465	0.8	0.8	4.622	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	662	165	6	1707	0.388	663	925	0.9	0.6	3.448	A
2 - Reading Road	411	103	369	1121	0.367	412	300	0.9	0.6	5.090	A
3 - Observer Way	529	132	401	1480	0.357	530	380	0.8	0.6	3.793	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	554	139	5	1708	0.324	555	774	0.6	0.5	3.124	A
2 - Reading Road	344	86	309	1153	0.298	345	251	0.6	0.4	4.457	A
3 - Observer Way	443	111	336	1520	0.291	443	318	0.6	0.4	3.343	A

Reference Case, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	6.03	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.03	A

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	Reference Case	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A327		ONE HOUR	✓	1000	100.000
2 - Reading Road		ONE HOUR	✓	502	100.000
3 - Observer Way		ONE HOUR	✓	471	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - A327	2 - Reading Road	3 - Observer Way
From	1 - A327	0	413	587
	2 - Reading Road	501	0	1
	3 - Observer Way	470	1	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		1 - A327	2 - Reading Road	3 - Observer Way
From	1 - A327	0	1	1
	2 - Reading Road	1	0	0
	3 - Observer Way	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A327	0.64	5.73	1.7	A	918	1376
2 - Reading Road	0.56	8.45	1.3	A	461	691
3 - Observer Way	0.37	4.14	0.6	A	432	648

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	753	188	0.75	1730	0.435	750	728	0.0	0.8	3.664	A
2 - Reading Road	378	94	440	1087	0.348	376	310	0.0	0.5	5.048	A
3 - Observer Way	355	89	375	1496	0.237	353	441	0.0	0.3	3.148	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	899	225	0.90	1730	0.520	898	872	0.8	1.1	4.321	A
2 - Reading Road	451	113	527	1041	0.433	450	372	0.5	0.8	6.094	A
3 - Observer Way	423	106	449	1450	0.292	423	528	0.3	0.4	3.501	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	1101	275	1	1729	0.637	1098	1066	1.1	1.7	5.680	A
2 - Reading Road	553	138	645	979	0.564	551	455	0.8	1.3	8.359	A
3 - Observer Way	519	130	550	1389	0.373	518	646	0.4	0.6	4.127	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	1101	275	1	1729	0.637	1101	1069	1.7	1.7	5.727	A
2 - Reading Road	553	138	646	978	0.565	553	456	1.3	1.3	8.452	A
3 - Observer Way	519	130	552	1388	0.374	519	647	0.6	0.6	4.139	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	899	225	0.90	1730	0.520	902	876	1.7	1.1	4.362	A
2 - Reading Road	451	113	529	1040	0.434	453	373	1.3	0.8	6.159	A
3 - Observer Way	423	106	452	1449	0.292	424	530	0.6	0.4	3.515	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	753	188	0.75	1730	0.435	754	732	1.1	0.8	3.696	A
2 - Reading Road	378	94	443	1085	0.348	379	312	0.8	0.5	5.101	A
3 - Observer Way	355	89	378	1494	0.237	355	443	0.4	0.3	3.161	A

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.1.1.1905

Filename: J7.1a Arborfield Relief Road_A327 Mitigation.j10
Path: \\Cbh-vfil-001\cbh\Projects\332611392_Wokingham LPU 2024\5500 - Transport\06_Traffic Modelling\07_Local Modelling Update
Report generation date: 17/06/2024 13:14:29

Summary of junction performance

	AM					PM				
	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Set ID	Q (Veh)	Delay (s)	RFC	LOS
	Scenario 1b									
1 - A327	D1	1.9	7.20	0.65	A	D2	10.3	29.34	0.93	D
4 - Site Access		0.8	5.11	0.45	A		0.3	4.43	0.24	A
2 - Reading Road		4.2	21.64	0.82	C		4.1	21.23	0.82	C
3 - Observer Way		2.7	11.55	0.74	B		1.3	6.48	0.56	A

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

File summary

File Description

Title	
Location	
Site number	
Date	11/02/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CORP\dansmith
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
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	Scenario 1b	AM	ONE HOUR	07:45	09:15	15	✓
D2	Scenario 1b	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Scenario 1b, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 4, 2, 3	11.40	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.40	B

Arms

Arms

Arm	Name	Description	No give-way line
1	A327		
4	Site Access		
2	Reading Road		
3	Observer Way		

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - A327	3.73	7.29	13.7	47.7	60.0	30.0		
4 - Site Access	3.65	7.00	15.0	20.0	60.0	25.0		
2 - Reading Road	3.07	4.99	20.8	20.8	60.0	40.4		
3 - Observer Way	3.87	7.09	16.9	35.0	60.0	36.3		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A327	0.576	1768
4 - Site Access	0.566	1727
2 - Reading Road	0.484	1332
3 - Observer Way	0.570	1777

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	Scenario 1b	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A327		ONE HOUR	✓	861	100.000
4 - Site Access		ONE HOUR	✓	519	100.000
2 - Reading Road		ONE HOUR	✓	658	100.000
3 - Observer Way		ONE HOUR	✓	790	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - A327	4 - Site Access	2 - Reading Road	3 - Observer Way
From	1 - A327	0	156	330	375
	4 - Site Access	254	0	100	165
	2 - Reading Road	484	157	0	17
	3 - Observer Way	490	298	2	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - A327	4 - Site Access	2 - Reading Road	3 - Observer Way
From	1 - A327	0	0	1	4
	4 - Site Access	0	0	0	0
	2 - Reading Road	2	0	0	0
	3 - Observer Way	4	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A327	0.65	7.20	1.9	A	790	1185
4 - Site Access	0.45	5.11	0.8	A	476	714
2 - Reading Road	0.82	21.64	4.2	C	604	906
3 - Observer Way	0.74	11.55	2.7	B	725	1087

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	648	162	342	1538	0.421	645	919	0.0	0.7	4.019	A
4 - Site Access	391	98	530	1420	0.275	389	457	0.0	0.4	3.490	A
2 - Reading Road	495	124	595	1023	0.484	492	324	0.0	0.9	6.727	A
3 - Observer Way	595	149	669	1358	0.438	592	418	0.0	0.8	4.681	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	774	194	410	1500	0.516	773	1101	0.7	1.1	4.940	A
4 - Site Access	467	117	634	1359	0.343	466	548	0.4	0.5	4.030	A
2 - Reading Road	592	148	713	966	0.612	589	388	0.9	1.5	9.484	A
3 - Observer Way	710	178	802	1283	0.554	708	500	0.8	1.2	6.243	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	948	237	499	1450	0.654	945	1341	1.1	1.8	7.084	A
4 - Site Access	571	143	776	1277	0.448	570	668	0.5	0.8	5.088	A
2 - Reading Road	724	181	872	889	0.815	715	474	1.5	3.9	19.686	C
3 - Observer Way	870	217	975	1186	0.734	864	611	1.2	2.6	10.993	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	948	237	503	1447	0.655	948	1351	1.8	1.9	7.204	A
4 - Site Access	571	143	778	1275	0.448	571	672	0.8	0.8	5.115	A
2 - Reading Road	724	181	874	888	0.816	724	476	3.9	4.2	21.644	C
3 - Observer Way	870	217	985	1180	0.737	869	613	2.6	2.7	11.547	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	774	194	415	1497	0.517	777	1116	1.9	1.1	5.026	A
4 - Site Access	467	117	638	1357	0.344	468	554	0.8	0.5	4.054	A
2 - Reading Road	592	148	716	965	0.613	602	390	4.2	1.6	10.185	B
3 - Observer Way	710	178	815	1276	0.557	716	503	2.7	1.3	6.496	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	648	162	345	1536	0.422	650	928	1.1	0.7	4.067	A
4 - Site Access	391	98	533	1417	0.276	391	462	0.5	0.4	3.509	A
2 - Reading Road	495	124	599	1022	0.485	498	326	1.6	1.0	6.913	A
3 - Observer Way	595	149	677	1354	0.439	597	420	1.3	0.8	4.770	A

Scenario 1b, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 4, 2, 3	19.95	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	19.95	C

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	Scenario 1b	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A327		ONE HOUR	✓	1222	100.000
4 - Site Access		ONE HOUR	✓	236	100.000
2 - Reading Road		ONE HOUR	✓	668	100.000
3 - Observer Way		ONE HOUR	✓	650	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - A327	4 - Site Access	2 - Reading Road	3 - Observer Way
From	1 - A327	0	193	421	608
	4 - Site Access	100	0	59	77
	2 - Reading Road	503	165	0	0
	3 - Observer Way	366	282	2	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To			
		1 - A327	4 - Site Access	2 - Reading Road	3 - Observer Way
From	1 - A327	0	0	3	2
	4 - Site Access	0	0	0	0
	2 - Reading Road	1	0	0	0
	3 - Observer Way	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A327	0.93	29.34	10.3	D	1121	1682
4 - Site Access	0.24	4.43	0.3	A	217	325
2 - Reading Road	0.82	21.23	4.1	C	613	919
3 - Observer Way	0.56	6.48	1.3	A	596	895

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	920	230	336	1543	0.596	914	725	0.0	1.5	5.674	A
4 - Site Access	178	44	771	1280	0.139	177	479	0.0	0.2	3.262	A
2 - Reading Road	503	126	588	1035	0.486	499	361	0.0	0.9	6.670	A
3 - Observer Way	489	122	574	1424	0.344	487	513	0.0	0.5	3.836	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	1099	275	403	1505	0.730	1094	869	1.5	2.6	8.651	A
4 - Site Access	212	53	923	1192	0.178	212	574	0.2	0.2	3.672	A
2 - Reading Road	601	150	703	979	0.613	598	432	0.9	1.5	9.391	A
3 - Observer Way	584	146	688	1359	0.430	583	613	0.5	0.7	4.633	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	1345	336	491	1455	0.924	1320	1059	2.6	9.0	23.107	C
4 - Site Access	260	65	1113	1082	0.240	259	697	0.2	0.3	4.376	A
2 - Reading Road	735	184	851	907	0.811	726	522	1.5	3.9	19.032	C
3 - Observer Way	716	179	836	1276	0.561	714	741	0.7	1.3	6.382	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	1345	336	494	1454	0.926	1341	1066	9.0	10.3	29.337	D
4 - Site Access	260	65	1131	1071	0.243	260	704	0.3	0.3	4.435	A
2 - Reading Road	735	184	862	901	0.816	734	529	3.9	4.1	21.233	C
3 - Observer Way	716	179	844	1271	0.563	716	752	1.3	1.3	6.479	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	1099	275	407	1503	0.731	1128	880	10.3	2.8	10.324	B
4 - Site Access	212	53	952	1175	0.181	213	583	0.3	0.2	3.742	A
2 - Reading Road	601	150	721	970	0.619	610	444	4.1	1.7	10.264	B
3 - Observer Way	584	146	700	1352	0.432	586	631	1.3	0.8	4.712	A

18:00 - 18:15

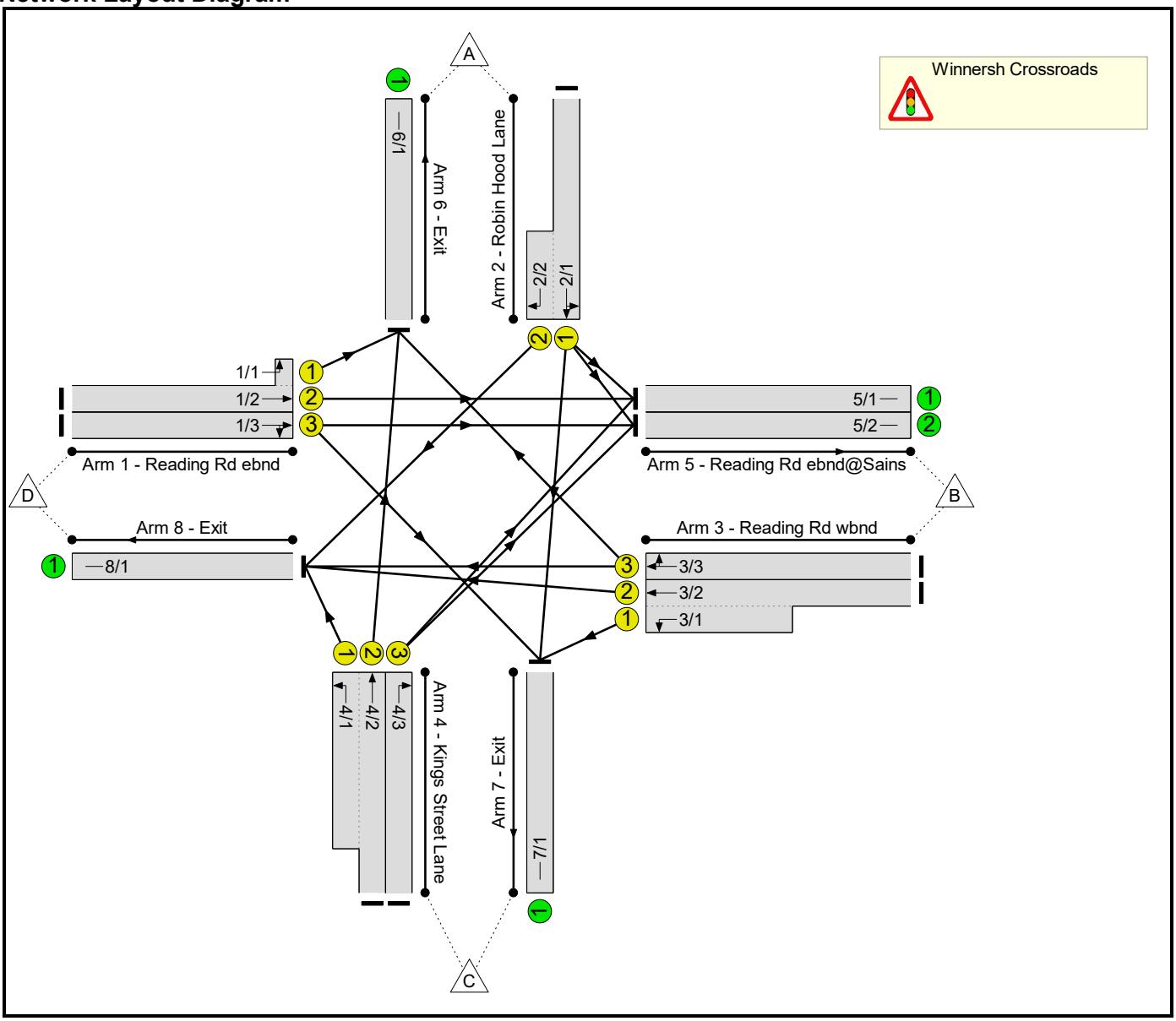
Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A327	920	230	339	1541	0.597	925	732	2.8	1.5	5.894	A
4 - Site Access	178	44	781	1275	0.139	178	484	0.2	0.2	3.282	A
2 - Reading Road	503	126	594	1032	0.487	506	365	1.7	1.0	6.874	A
3 - Observer Way	489	122	581	1420	0.345	490	518	0.8	0.5	3.879	A

Full Input Data And Results

User and Project Details

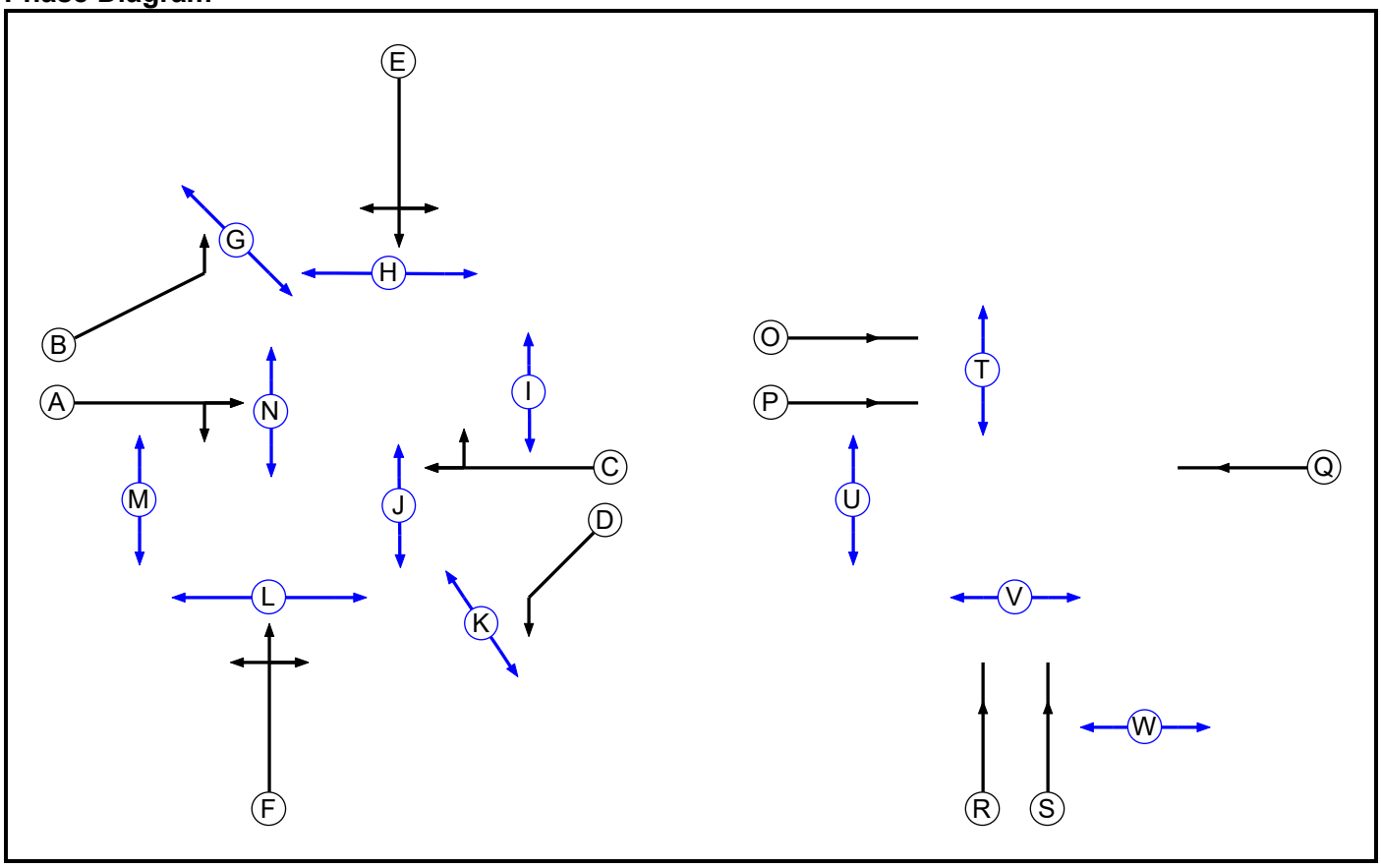
Project:	**A329-Winnersh Crossroads**
Title:	**Junction Study**
Location:	Wokingham
Additional detail:	
File name:	J15 Winnersh Xrds.lsg3x
Author:	Paul Richmond
Company:	Wokingham Highways Alliance
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		6	6
H	Pedestrian		7	7
I	Pedestrian		6	6
J	Pedestrian		6	6
K	Pedestrian		6	6
L	Pedestrian		6	6
M	Pedestrian		6	6
N	Pedestrian		6	6
O	Traffic		7	7
P	Traffic		7	7
Q	Traffic		7	7
R	Traffic		7	7
S	Traffic		7	7
T	Pedestrian		6	6
U	Pedestrian		6	6
V	Pedestrian		6	6
W	Pedestrian		6	6

Full Input Data And Results

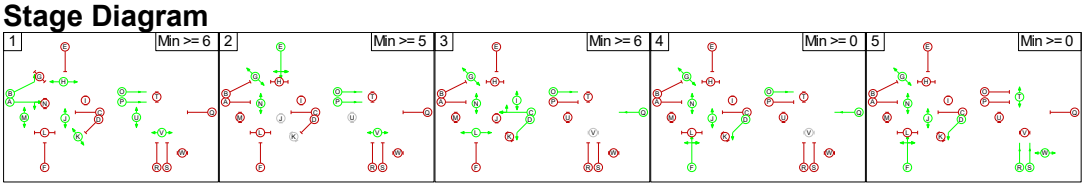
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
A		-	6	9	5	6	-	-	8	-	-	9	-	5	-	-	-	-	-	-	-	-	-
B	-		5	-	-	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	6	7		-	6	6	-	10	-	5	-	-	9	-	-	-	-	-	-	-	-	-	-
D	5	-	-		5	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-
E	5	-	6	8		5	-	5	8	-	-	9	9	-	-	-	-	-	-	-	-	-	-
F	7	7	6	-	5		-	9	9	-	-	5	8	-	-	-	-	-	-	-	-	-	-
G	-	7	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	-	-	8	-	9	8	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I	6	-	-	-	6	5	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
J	-	-	7	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
K	-	-	-	7	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
L	13	-	-	-	13	14	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
M	-	-	6	-	6	6	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-
N	7	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
O	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	5	6	-	-	-
P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		6	-	5	6	-	-	9
Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5		5	5	-	9	-	7
R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5		-	-	8	6	-
S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	5	-		-	-	6	-
T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-		-	-	-
U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-		-	-
V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-		-
W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B H J K M O P U V
2	E G N O P V
3	C D G I L N O Q
4	D F G J N O Q
5	D F G J N R S T W

Stage Diagram



Full Input Data And Results

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	4	4
1	2	B	Losing	4	4
1	2	M	Losing	3	3
3	4	C	Losing	8	8
3	4	I	Losing	9	9
5	1	D	Losing	2	2

Prohibited Stage Change

From Stage	To Stage					
		1	2	3	4	5
	1		9	9	9	9
	2	9		9	8	9
	3	13	13		14	14
	4	9	5	9		7
	5	9	7	9	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Winnersh Crossroads
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Winnersh Crossroads

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 (Reading Rd ebnd)	U	B	2	3	1.0	User	1680	-	-	-	-	-
1/2 (Reading Rd ebnd)	U	A	2	3	60.0	User	1680	-	-	-	-	-
1/3 (Reading Rd ebnd)	U	A	2	3	60.0	User	2400	-	-	-	-	-
2/1 (Robin Hood Lane)	U	E	2	4	60.0	Geom	-	2.61	0.00	Y	Arm 5 Left	12.00
											Arm 7 Ahead	Inf
2/2 (Robin Hood Lane)	U	E	2	3	5.0	Geom	-	2.54	0.00	Y	Arm 8 Right	12.00
3/1 (Reading Rd wbnd)	U	D	2	3	8.3	Geom	-	5.00	0.00	Y	Arm 7 Left	10.00
3/2 (Reading Rd wbnd)	U	C	2	3	13.0	Geom	-	2.95	0.00	Y	Arm 8 Ahead	Inf
3/3 (Reading Rd wbnd)	U	C	2	3	13.0	Geom	-	2.84	0.00	Y	Arm 6 Right	11.00
											Arm 8 Ahead	Inf
4/1 (Kings Street Lane)	U	F	2	5	12.2	Geom	-	2.75	0.00	Y	Arm 8 Left	16.00
4/2 (Kings Street Lane)	U	F	2	4	60.0	Geom	-	2.89	0.00	Y	Arm 6 Ahead	Inf
4/3 (Kings Street Lane)	U	F	2	3	12.2	Geom	-	3.03	0.00	Y	Arm 5 Right	12.00
5/1 (Reading Rd ebnd@Sains)	U		2	3	14.8	Geom	-	2.87	0.00	Y		
5/2 (Reading Rd ebnd@Sains)	U		2	3	14.8	Geom	-	3.05	0.00	Y		
6/1 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Reference Case AM'	08:00	09:00	01:00	
2: 'Reference Case PM'	17:00	18:00	01:00	
3: 'Scenario 1b AM'	08:00	09:00	01:00	
4: 'Scenario 1b PM'	17:00	18:00	01:00	

Scenario 1: 'Reference Case AM' (FG1: 'Reference Case AM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	136	168	80	384
	B	79	0	0	396	475
	C	236	7	0	127	370
	D	70	309	87	0	466
	Tot.	385	452	255	603	1695

Traffic Lane Flows

Lane	Scenario 1: Reference Case AM
Junction: Winnersh Crossroads	
1/1 (short)	70
1/2 (with short)	189(In) 119(Out)
1/3	277
2/1 (with short)	384(In) 304(Out)
2/2 (short)	80
3/1 (short)	0
3/2 (with short)	246(In) 246(Out)
3/3	229
4/1 (short)	127
4/2 (with short)	363(In) 236(Out)
4/3	7
5/1	155
5/2	297
6/1	385
7/1	255
8/1	603

Full Input Data And Results

Lane Saturation Flows

Junction: Winnersh Crossroads								
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 (Reading Rd ebnd Lane 1)	This lane uses a directly entered Saturation Flow						1680	1680
1/2 (Reading Rd ebnd Lane 2)	This lane uses a directly entered Saturation Flow						1680	1680
1/3 (Reading Rd ebnd Lane 3)	This lane uses a directly entered Saturation Flow						2400	2400
2/1 (Robin Hood Lane)	2.61	0.00	Y	Arm 5 Left	12.00	44.7 %	1777	1777
				Arm 7 Ahead	Inf	55.3 %		
2/2 (Robin Hood Lane)	2.54	0.00	Y	Arm 8 Right	12.00	100.0 %	1661	1661
3/1 (Reading Rd wbnd)	5.00	0.00	Y	Arm 7 Left	10.00	0.0 %	2115	2115
3/2 (Reading Rd wbnd)	2.95	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1910	1910
3/3 (Reading Rd wbnd)	2.84	0.00	Y	Arm 6 Right	11.00	34.5 %	1814	1814
				Arm 8 Ahead	Inf	65.5 %		
4/1 (Kings Street Lane)	2.75	0.00	Y	Arm 8 Left	16.00	100.0 %	1728	1728
4/2 (Kings Street Lane)	2.89	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1904	1904
4/3 (Kings Street Lane)	3.03	0.00	Y	Arm 5 Right	12.00	100.0 %	1705	1705
5/1 (Reading Rd ebnd@Sains)	2.87	0.00	Y				1902	1902
5/2 (Reading Rd ebnd@Sains)	3.05	0.00	Y				1920	1920
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'Reference Case PM' (FG2: 'Reference Case PM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	198	184	97	479
	B	19	0	0	328	347
	C	326	21	0	114	461
	D	1	462	130	0	593
	Tot.	346	681	314	539	1880

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: Reference Case PM
Junction: Winnersh Crossroads	
1/1 (short)	1
1/2 (with short)	218(In) 217(Out)
1/3	375
2/1 (with short)	479(In) 382(Out)
2/2 (short)	97
3/1 (short)	0
3/2 (with short)	177(In) 177(Out)
3/3	170
4/1 (short)	114
4/2 (with short)	440(In) 326(Out)
4/3	21
5/1	250
5/2	431
6/1	346
7/1	314
8/1	539

Full Input Data And Results

Lane Saturation Flows

Junction: Winnersh Crossroads								
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 (Reading Rd ebnd Lane 1)	This lane uses a directly entered Saturation Flow						1680	1680
1/2 (Reading Rd ebnd Lane 2)	This lane uses a directly entered Saturation Flow						1680	1680
1/3 (Reading Rd ebnd Lane 3)	This lane uses a directly entered Saturation Flow						2400	2400
2/1 (Robin Hood Lane)	2.61	0.00	Y	Arm 5 Left	12.00	51.8 %	1762	1762
				Arm 7 Ahead	Inf	48.2 %		
2/2 (Robin Hood Lane)	2.54	0.00	Y	Arm 8 Right	12.00	100.0 %	1661	1661
3/1 (Reading Rd wbnd)	5.00	0.00	Y	Arm 7 Left	10.00	0.0 %	2115	2115
3/2 (Reading Rd wbnd)	2.95	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1910	1910
3/3 (Reading Rd wbnd)	2.84	0.00	Y	Arm 6 Right	11.00	11.2 %	1870	1870
				Arm 8 Ahead	Inf	88.8 %		
4/1 (Kings Street Lane)	2.75	0.00	Y	Arm 8 Left	16.00	100.0 %	1728	1728
4/2 (Kings Street Lane)	2.89	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1904	1904
4/3 (Kings Street Lane)	3.03	0.00	Y	Arm 5 Right	12.00	100.0 %	1705	1705
5/1 (Reading Rd ebnd@Sains)	2.87	0.00	Y				1902	1902
5/2 (Reading Rd ebnd@Sains)	3.05	0.00	Y				1920	1920
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'Scenario 1b AM' (FG3: 'Scenario 1b AM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	137	202	103	442
	B	143	0	0	480	623
	C	264	8	0	155	427
	D	81	415	92	0	588
	Tot.	488	560	294	738	2080

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: Scenario 1b AM
Junction: Winnersh Crossroads	
1/1 (short)	81
1/2 (with short)	245(In) 164(Out)
1/3	343
2/1 (with short)	442(In) 339(Out)
2/2 (short)	103
3/1 (short)	0
3/2 (with short)	324(In) 324(Out)
3/3	299
4/1 (short)	155
4/2 (with short)	419(In) 264(Out)
4/3	8
5/1	196
5/2	364
6/1	488
7/1	294
8/1	738

Full Input Data And Results

Lane Saturation Flows

Junction: Winnersh Crossroads								
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 (Reading Rd ebnd Lane 1)	This lane uses a directly entered Saturation Flow						1680	1680
1/2 (Reading Rd ebnd Lane 2)	This lane uses a directly entered Saturation Flow						1680	1680
1/3 (Reading Rd ebnd Lane 3)	This lane uses a directly entered Saturation Flow						2400	2400
2/1 (Robin Hood Lane)	2.61	0.00	Y	Arm 5 Left	12.00	40.4 %	1786	1786
				Arm 7 Ahead	Inf	59.6 %		
2/2 (Robin Hood Lane)	2.54	0.00	Y	Arm 8 Right	12.00	100.0 %	1661	1661
3/1 (Reading Rd wbnd)	5.00	0.00	Y	Arm 7 Left	10.00	0.0 %	2115	2115
3/2 (Reading Rd wbnd)	2.95	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1910	1910
3/3 (Reading Rd wbnd)	2.84	0.00	Y	Arm 6 Right	11.00	47.8 %	1783	1783
				Arm 8 Ahead	Inf	52.2 %		
4/1 (Kings Street Lane)	2.75	0.00	Y	Arm 8 Left	16.00	100.0 %	1728	1728
4/2 (Kings Street Lane)	2.89	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1904	1904
4/3 (Kings Street Lane)	3.03	0.00	Y	Arm 5 Right	12.00	100.0 %	1705	1705
5/1 (Reading Rd ebnd@Sains)	2.87	0.00	Y				1902	1902
5/2 (Reading Rd ebnd@Sains)	3.05	0.00	Y				1920	1920
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'Scenario 1b PM' (FG4: 'Scenario 1b PM', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	208	248	89	545
	B	25	0	0	382	407
	C	377	4	0	133	514
	D	2	514	112	0	628
	Tot.	404	726	360	604	2094

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: Scenario 1b PM
Junction: Winnersh Crossroads	
1/1 (short)	2
1/2 (with short)	234(In) 232(Out)
1/3	394
2/1 (with short)	545(In) 456(Out)
2/2 (short)	89
3/1 (short)	0
3/2 (with short)	207(In) 207(Out)
3/3	200
4/1 (short)	133
4/2 (with short)	510(In) 377(Out)
4/3	4
5/1	269
5/2	457
6/1	404
7/1	360
8/1	604

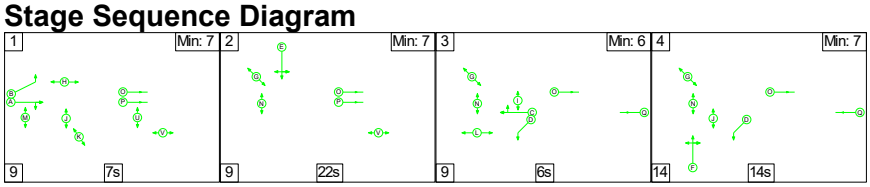
Full Input Data And Results

Lane Saturation Flows

Junction: Winnersh Crossroads								
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 (Reading Rd ebnd Lane 1)	This lane uses a directly entered Saturation Flow						1680	1680
1/2 (Reading Rd ebnd Lane 2)	This lane uses a directly entered Saturation Flow						1680	1680
1/3 (Reading Rd ebnd Lane 3)	This lane uses a directly entered Saturation Flow						2400	2400
2/1 (Robin Hood Lane)	2.61	0.00	Y	Arm 5 Left Arm 7 Ahead	12.00 Inf	45.6 % 54.4 %	1775	1775
2/2 (Robin Hood Lane)	2.54	0.00	Y	Arm 8 Right	12.00	100.0 %	1661	1661
3/1 (Reading Rd wbnd)	5.00	0.00	Y	Arm 7 Left	10.00	0.0 %	2115	2115
3/2 (Reading Rd wbnd)	2.95	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1910	1910
3/3 (Reading Rd wbnd)	2.84	0.00	Y	Arm 6 Right Arm 8 Ahead	11.00 Inf	12.5 % 87.5 %	1867	1867
4/1 (Kings Street Lane)	2.75	0.00	Y	Arm 8 Left	16.00	100.0 %	1728	1728
4/2 (Kings Street Lane)	2.89	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1904	1904
4/3 (Kings Street Lane)	3.03	0.00	Y	Arm 5 Right	12.00	100.0 %	1705	1705
5/1 (Reading Rd ebnd@Sains)	2.87	0.00	Y				1902	1902
5/2 (Reading Rd ebnd@Sains)	3.05	0.00	Y				1920	1920
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'Reference Case AM' (FG1: 'Reference Case AM', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

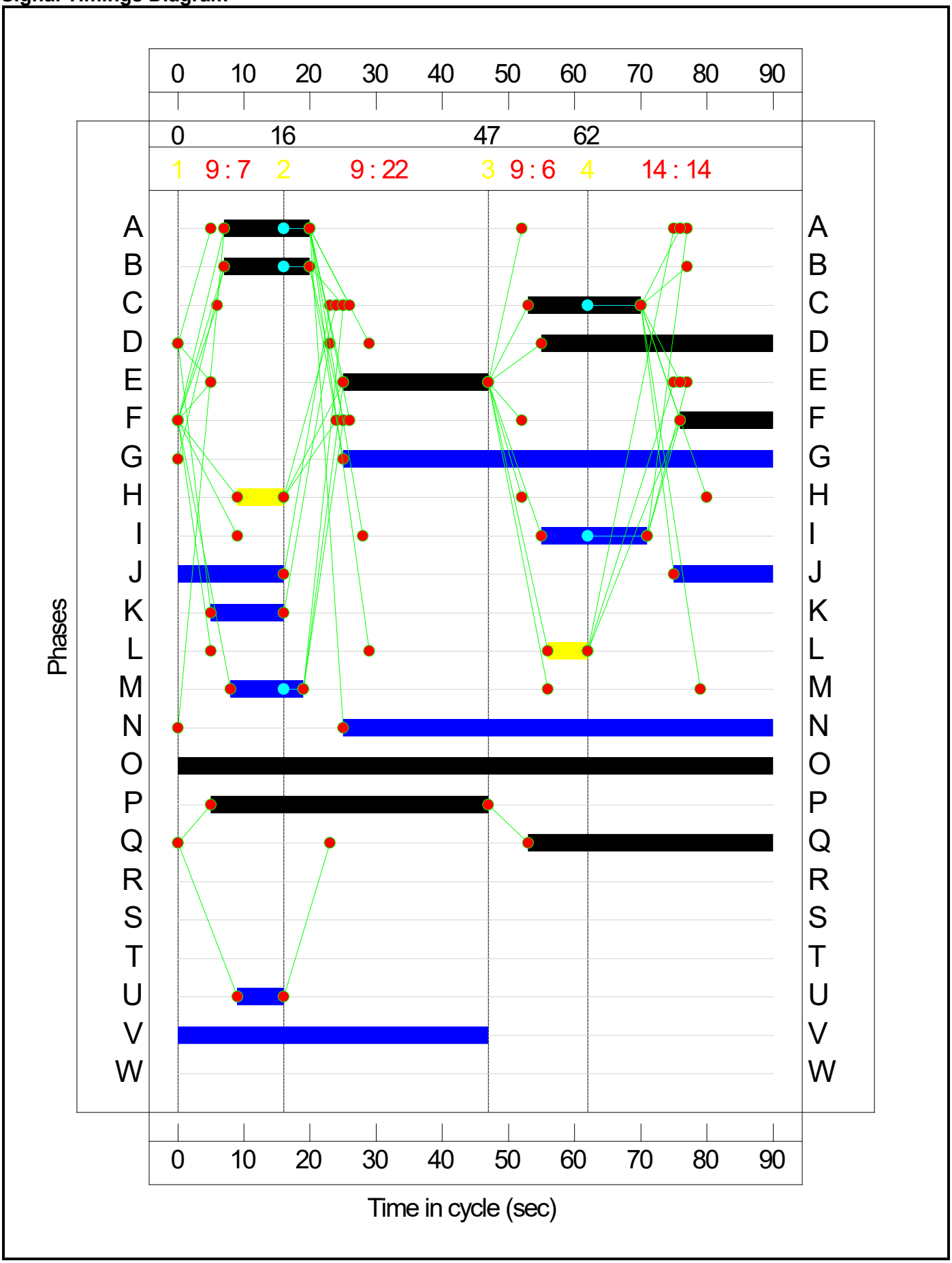


Stage Timings

Stage	1	2	3	4
Duration	7	22	6	14
Change Point	0	16	47	62

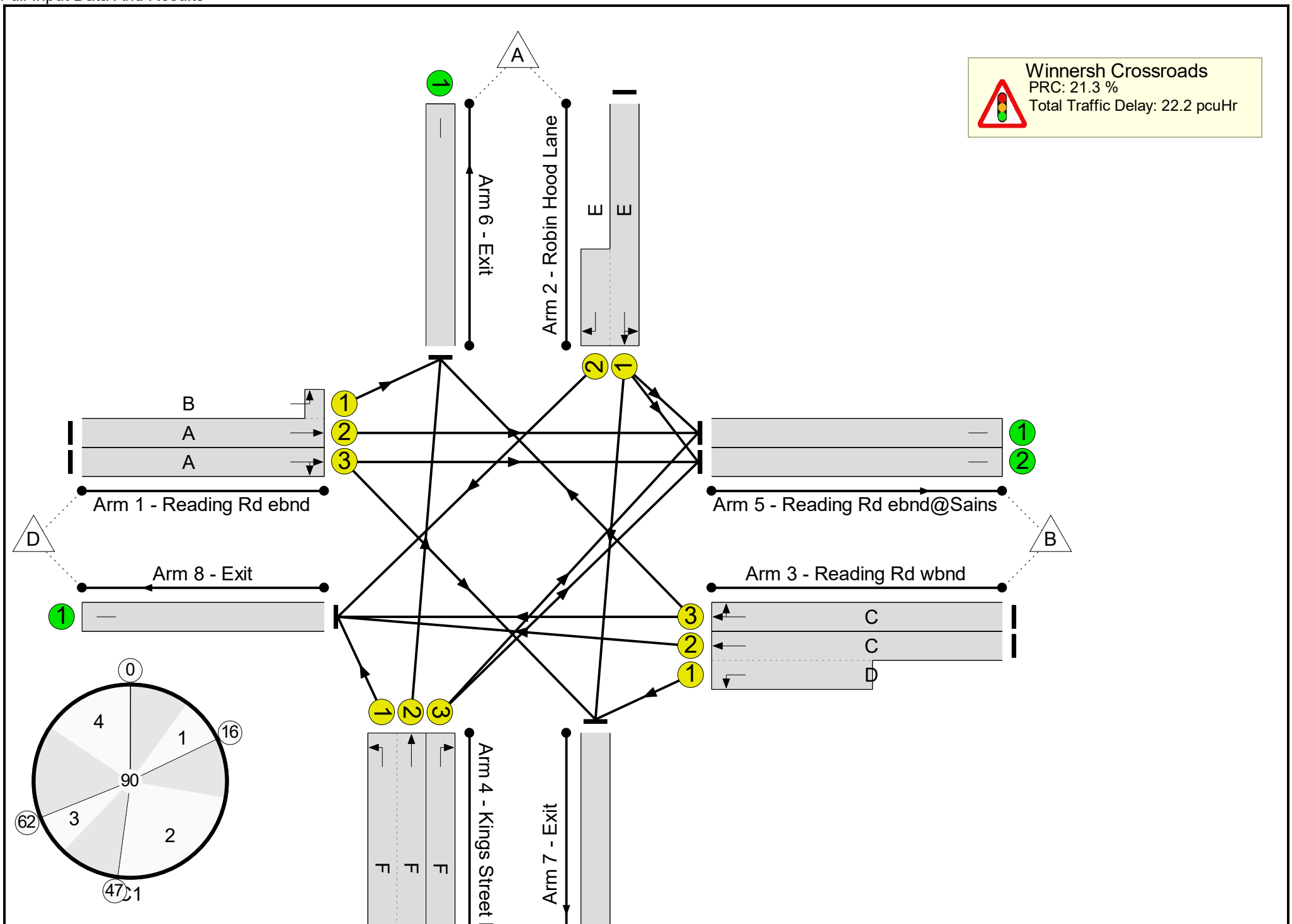
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


Winnersh Crossroads
PRC: 21.3 %
Total Traffic Delay: 22.2 pcuHr
A
Arm 6 - Exit
Arm 2 - Robin Hood Lane
E
E
B
A
A
Arm 1 - Reading Rd ebnd
Arm 5 - Reading Rd ebnd@Sains
D
B
Arm 8 - Exit
Arm 3 - Reading Rd wbnd
C
C
D
F
F
F
Arm 4 - Kings Street
Arm 7 - Exit
0
4
1
16
90
62
3
2
47
1

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction Study	-	-	**N/A**	-	-		-	-	-	-	-	-	**74.2%**
Winnersh Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**74.2%**
1/2+1/1	Reading Rd ebnd Ahead Left	U	N/A	N/A	A B		1	13	-	189	1680:1680	288	65.7%
1/3	Reading Rd ebnd Ahead Right	U	N/A	N/A	A		1	13	-	277	2400	373	74.2%
2/1+2/2	Robin Hood Lane Left Ahead Right	U	N/A	N/A	E		1	22	-	384	1777:1661	525	73.1%
3/2+3/1	Reading Rd wbnd Left Ahead	U	N/A	N/A	C D		1	17:35	-	246	1910:2115	382	64.4%
3/3	Reading Rd wbnd Right Ahead	U	N/A	N/A	C		1	17	-	229	1814	363	63.1%
4/2+4/1	Kings Street Lane Ahead Left	U	N/A	N/A	F		1	14	-	363	1904:1728	521	69.7%
4/3	Kings Street Lane Right	U	N/A	N/A	F		1	14	-	7	1705	284	2.5%
5/1	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	155	1902	1902	8.1%
5/2	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	297	1920	1920	15.5%
6/1	Exit	U	N/A	N/A	-		-	-	-	385	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%

Full Input Data And Results

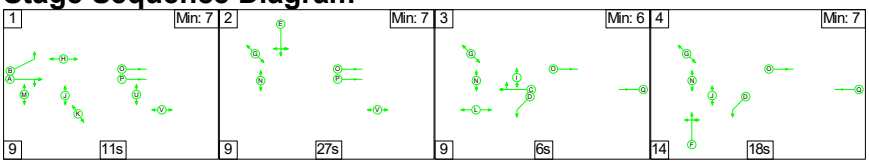
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction Study	**-**	**-**	**0**	**0**	**0**	**15.5**	**6.7**	**0.0**	**22.2**	**-**	**-**	**-**	**-**
Winnersh Crossroads	**-**	**-**	**0**	**0**	**0**	**15.5**	**6.7**	**0.0**	**22.2**	**-**	**-**	**-**	**-**
1/2+1/1	189	189	-	-	-	1.8	0.9	-	2.8	53.0	3.8	0.9	4.8
1/3	277	277	-	-	-	2.8	1.4	-	4.2	54.4	6.5	1.4	7.9
2/1+2/2	384	384	-	-	-	3.1	1.3	-	4.4	41.5	7.2	1.3	8.6
3/2+3/1	246	246	-	-	-	2.3	0.9	-	3.2	46.1	5.6	0.9	6.5
3/3	229	229	-	-	-	2.1	0.8	-	2.9	46.3	5.2	0.8	6.1
4/2+4/1	363	363	-	-	-	3.4	1.1	-	4.5	45.0	5.5	1.1	6.6
4/3	7	7	-	-	-	0.1	0.0	-	0.1	38.2	0.1	0.0	0.2
5/1	155	155	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
5/2	297	297	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
6/1	385	385	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	255	255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 21.3 Total Delay for Signalled Lanes (pcuHr): 22.10 Cycle Time (s): 90
PRC Over All Lanes (%): 21.3 Total Delay Over All Lanes(pcuHr): 22.24

Full Input Data And Results

Scenario 2: 'Reference Case PM' (FG2: 'Reference Case PM', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

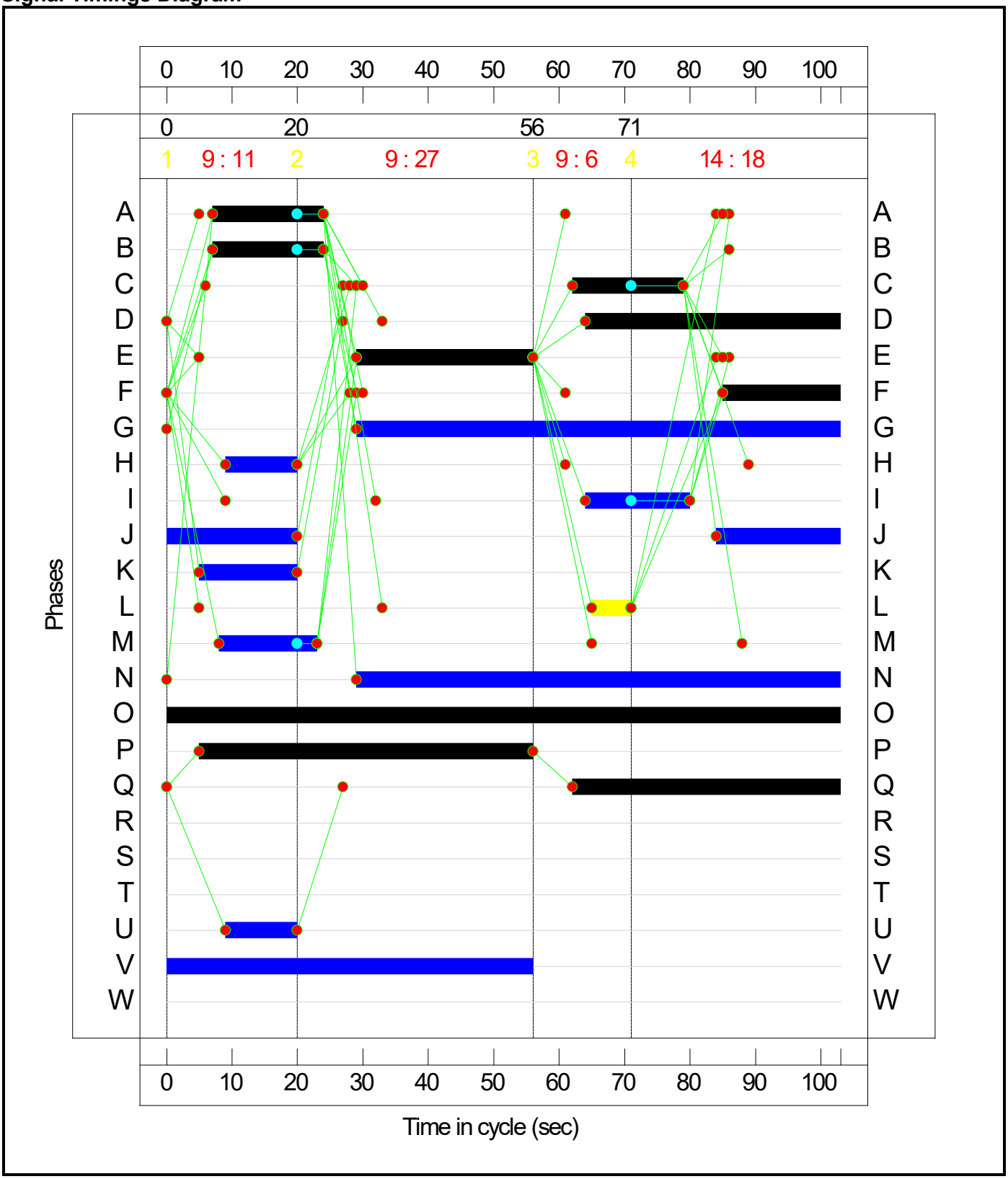


Stage Timings

Stage	1	2	3	4
Duration	11	27	6	18
Change Point	0	20	56	71

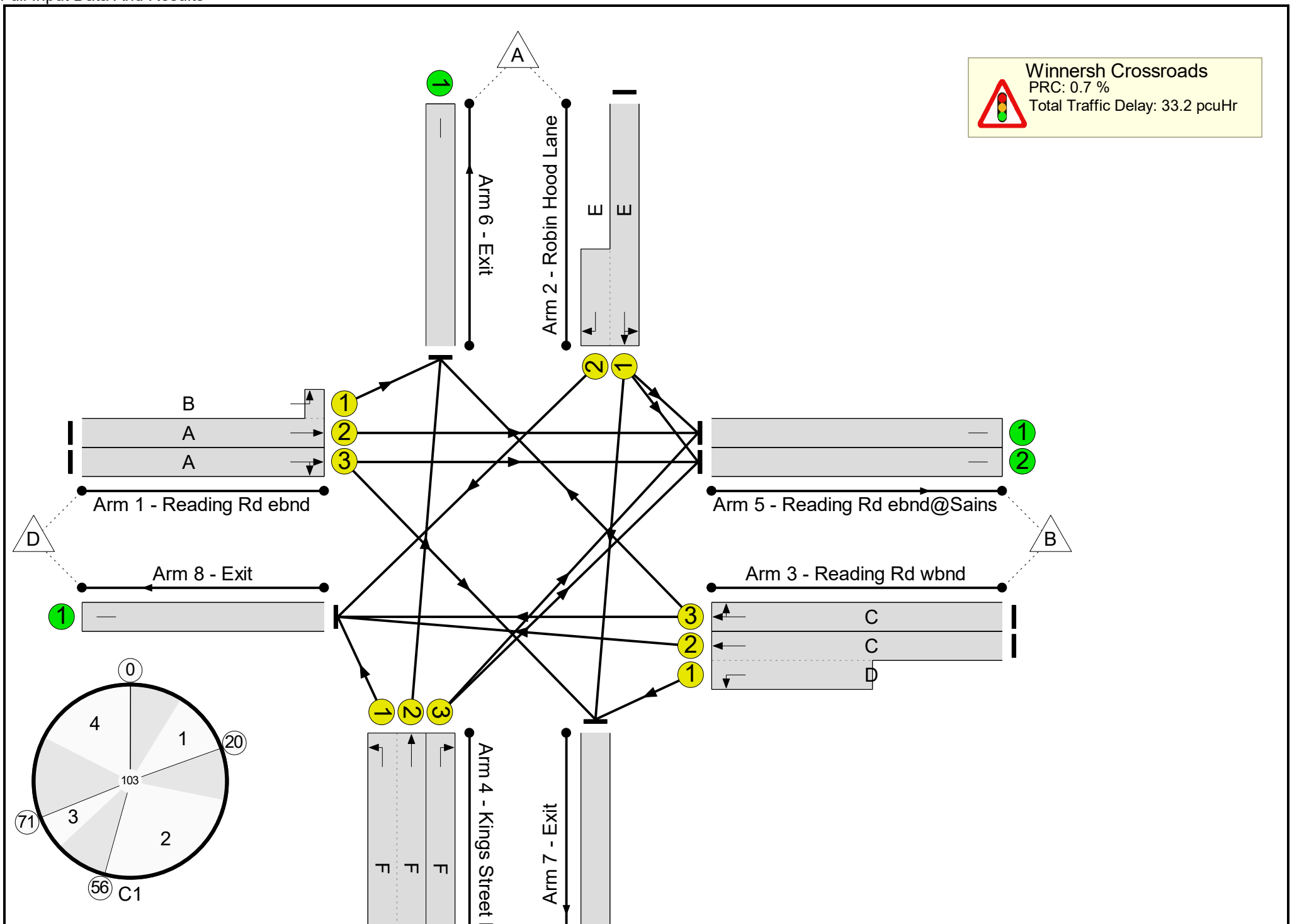
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


Winnersh Crossroads
PRC: 0.7 %
Total Traffic Delay: 33.2 pcuHr
A
B
D
Arm 6 - Exit
Arm 2 - Robin Hood Lane
Arm 1 - Reading Rd ebnd
Arm 5 - Reading Rd ebnd@Sains
Arm 8 - Exit
Arm 3 - Reading Rd wbnd
Arm 4 - Kings Street
Arm 7 - Exit
E
E
B
A
A
C
C
D
F
F
F
0
1
20
2
3
71
4
103
56
C1

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction Study	-	-	**N/A**	-	-		-	-	-	-	-	-	**89.4%**
Winnersh Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**89.4%**
1/2+1/1	Reading Rd ebnd Ahead Left	U	N/A	N/A	A B		1	17	-	218	1680:1680	295	73.9%
1/3	Reading Rd ebnd Ahead Right	U	N/A	N/A	A		1	17	-	375	2400	419	89.4%
2/1+2/2	Robin Hood Lane Left Ahead Right	U	N/A	N/A	E		1	27	-	479	1762:1661	540	88.7%
3/2+3/1	Reading Rd wbnd Left Ahead	U	N/A	N/A	C D		1	17:39	-	177	1910:2115	334	53.0%
3/3	Reading Rd wbnd Right Ahead	U	N/A	N/A	C		1	17	-	170	1870	327	52.0%
4/2+4/1	Kings Street Lane Ahead Left	U	N/A	N/A	F		1	18	-	440	1904:1728	499	88.2%
4/3	Kings Street Lane Right	U	N/A	N/A	F		1	18	-	21	1705	315	6.7%
5/1	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	250	1902	1902	13.1%
5/2	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	431	1920	1920	22.4%
6/1	Exit	U	N/A	N/A	-		-	-	-	346	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	539	Inf	Inf	0.0%

Full Input Data And Results

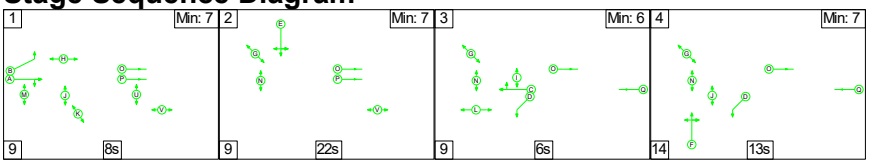
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction Study	**-**	**-**	**0**	**0**	**0**	**20.0**	**13.2**	**0.0**	**33.2**	**-**	**-**	**-**	**-**
Winnersh Crossroads	**-**	**-**	**0**	**0**	**0**	**20.0**	**13.2**	**0.0**	**33.2**	**-**	**-**	**-**	**-**
1/2+1/1	218	218	-	-	-	2.4	1.4	-	3.8	62.9	5.9	1.4	7.2
1/3	375	375	-	-	-	4.3	3.6	-	8.0	76.4	10.4	3.6	14.0
2/1+2/2	479	479	-	-	-	4.6	3.5	-	8.1	60.8	11.8	3.5	15.3
3/2+3/1	177	177	-	-	-	1.9	0.6	-	2.5	50.1	4.6	0.6	5.1
3/3	170	170	-	-	-	1.8	0.5	-	2.4	50.0	4.4	0.5	4.9
4/2+4/1	440	440	-	-	-	4.8	3.3	-	8.1	66.4	9.1	3.3	12.4
4/3	21	21	-	-	-	0.2	0.0	-	0.2	40.8	0.5	0.0	0.5
5/1	250	250	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
5/2	431	431	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
6/1	346	346	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	539	539	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 0.7 Total Delay for Signalled Lanes (pcuHr): 33.02 Cycle Time (s): 103
PRC Over All Lanes (%): 0.7 Total Delay Over All Lanes(pcuHr): 33.24

Full Input Data And Results

Scenario 3: 'Scenario 1b AM' (FG3: 'Scenario 1b AM', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

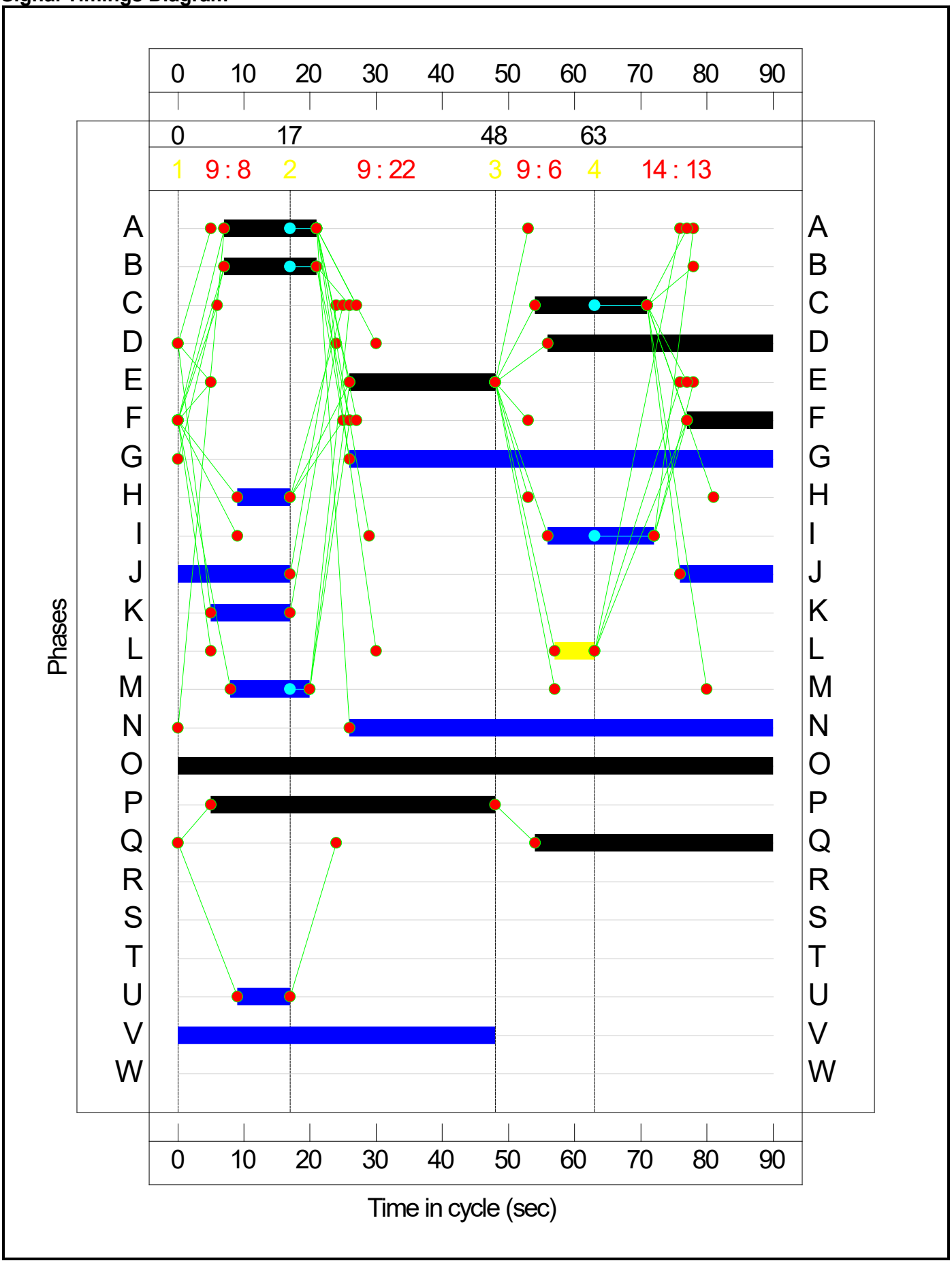


Stage Timings

Stage	1	2	3	4
Duration	8	22	6	13
Change Point	0	17	48	63

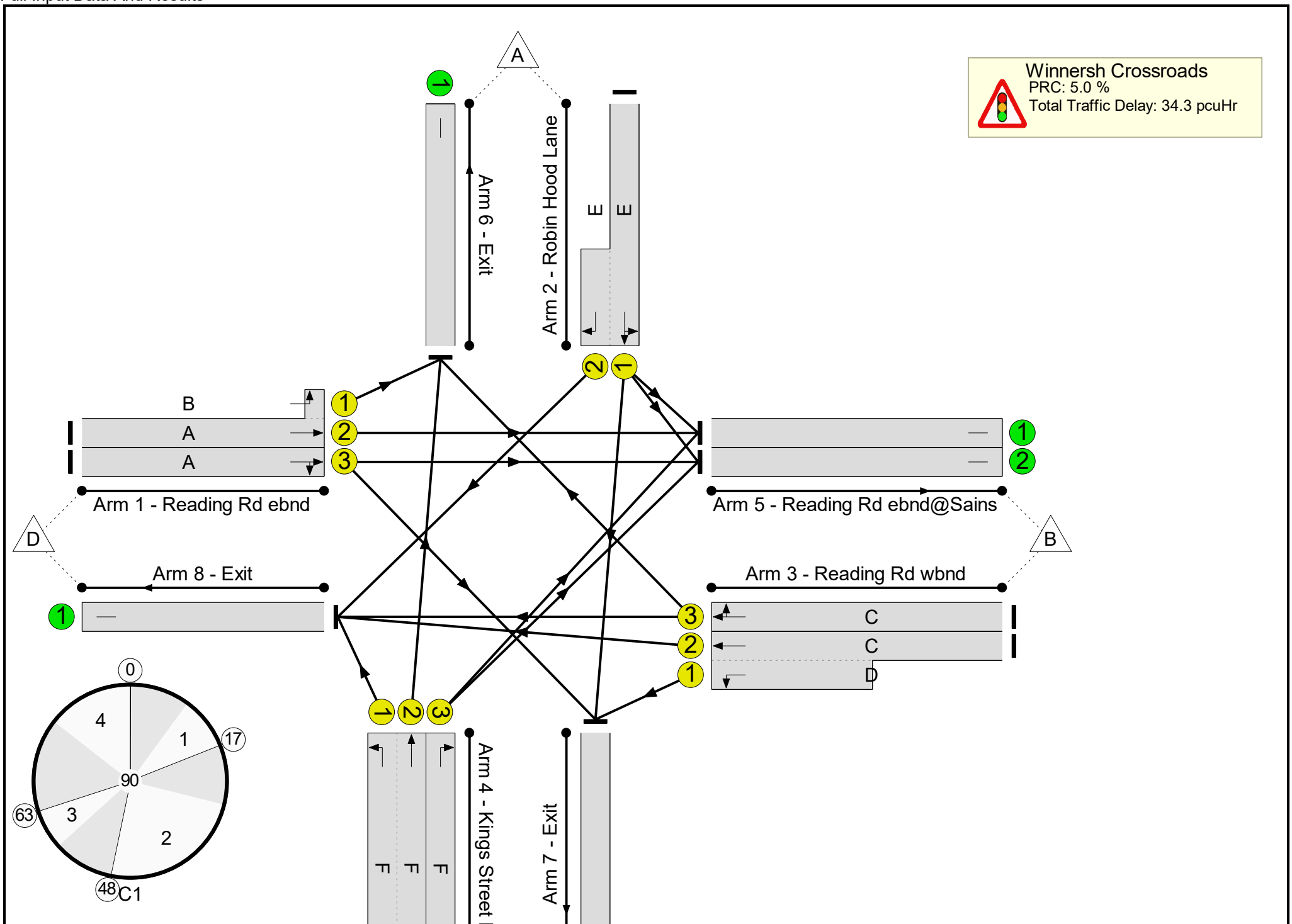
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


Winnersh Crossroads
PRC: 5.0 %
Total Traffic Delay: 34.3 pcuHr
A
B
D
Arm 1 - Reading Rd ebnd
Arm 2 - Robin Hood Lane
Arm 3 - Reading Rd wbnd
Arm 4 - Kings Street
Arm 5 - Reading Rd ebnd@Sains
Arm 6 - Exit
Arm 7 - Exit
Arm 8 - Exit
0
4
1
17
90
63
3
2
48
C1

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction Study	-	-	**N/A**	-	-		-	-	-	-	-	-	**85.8%**
Winnersh Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**85.8%**
1/2+1/1	Reading Rd ebnd Ahead Left	U	N/A	N/A	A B		1	14	-	245	1680:1680	302	81.0%
1/3	Reading Rd ebnd Ahead Right	U	N/A	N/A	A		1	14	-	343	2400	400	85.8%
2/1+2/2	Robin Hood Lane Left Ahead Right	U	N/A	N/A	E		1	22	-	442	1786:1661	534	82.8%
3/2+3/1	Reading Rd wbnd Left Ahead	U	N/A	N/A	C D		1	17:34	-	324	1910:2115	382	84.8%
3/3	Reading Rd wbnd Right Ahead	U	N/A	N/A	C		1	17	-	299	1783	357	83.8%
4/2+4/1	Kings Street Lane Ahead Left	U	N/A	N/A	F		1	13	-	419	1904:1728	504	83.2%
4/3	Kings Street Lane Right	U	N/A	N/A	F		1	13	-	8	1705	265	3.0%
5/1	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	196	1902	1902	10.3%
5/2	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	364	1920	1920	19.0%
6/1	Exit	U	N/A	N/A	-		-	-	-	488	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	294	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	738	Inf	Inf	0.0%

Full Input Data And Results

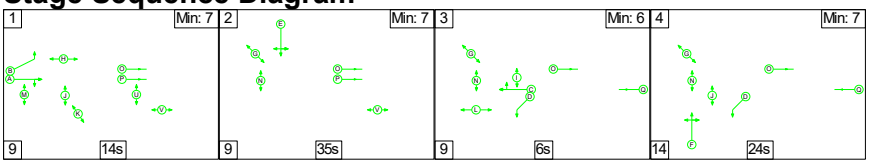
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction Study	**-**	**-**	**0**	**0**	**0**	**19.7**	**14.5**	**0.0**	**34.3**	**-**	**-**	**-**	**-**
Winnersh Crossroads	**-**	**-**	**0**	**0**	**0**	**19.7**	**14.5**	**0.0**	**34.3**	**-**	**-**	**-**	**-**
1/2+1/1	245	245	-	-	-	2.4	2.0	-	4.4	64.9	5.4	2.0	7.4
1/3	343	343	-	-	-	3.5	2.7	-	6.2	65.3	8.3	2.7	11.0
2/1+2/2	442	442	-	-	-	3.7	2.3	-	6.0	48.6	8.7	2.3	11.0
3/2+3/1	324	324	-	-	-	3.1	2.6	-	5.7	63.2	7.7	2.6	10.3
3/3	299	299	-	-	-	2.9	2.4	-	5.3	63.5	7.1	2.4	9.5
4/2+4/1	419	419	-	-	-	4.1	2.3	-	6.4	55.4	6.4	2.3	8.7
4/3	8	8	-	-	-	0.1	0.0	-	0.1	39.5	0.2	0.0	0.2
5/1	196	196	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
5/2	364	364	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
6/1	488	488	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	294	294	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	738	738	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 5.0 Total Delay for Signalled Lanes (pcuHr): 34.09 Cycle Time (s): 90
PRC Over All Lanes (%): 5.0 Total Delay Over All Lanes(pcuHr): 34.26

Full Input Data And Results

Scenario 4: 'Scenario 1b PM' (FG4: 'Scenario 1b PM', Plan 1: 'Staging Plan No. 1')

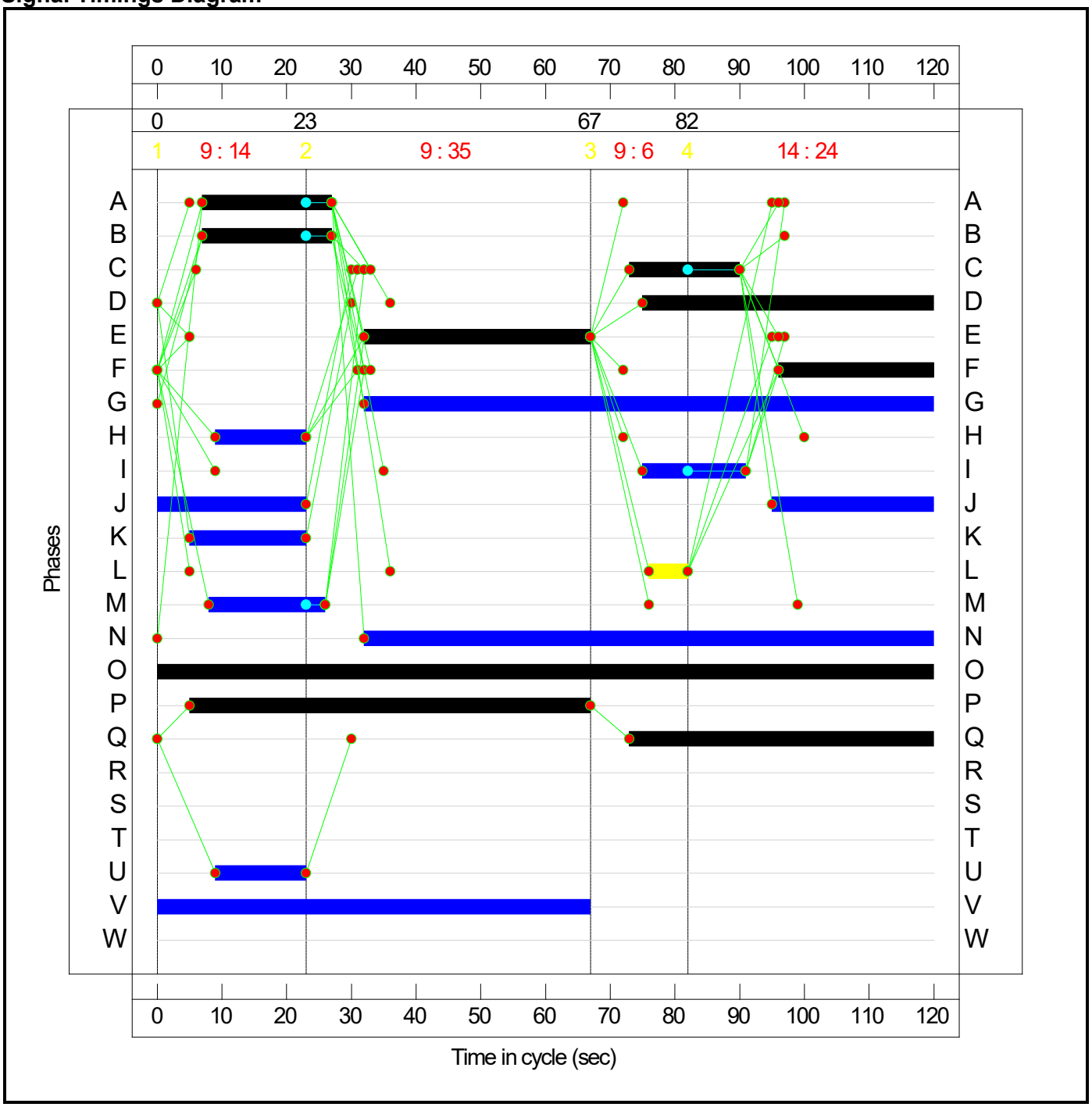
Stage Sequence Diagram



Stage Timings

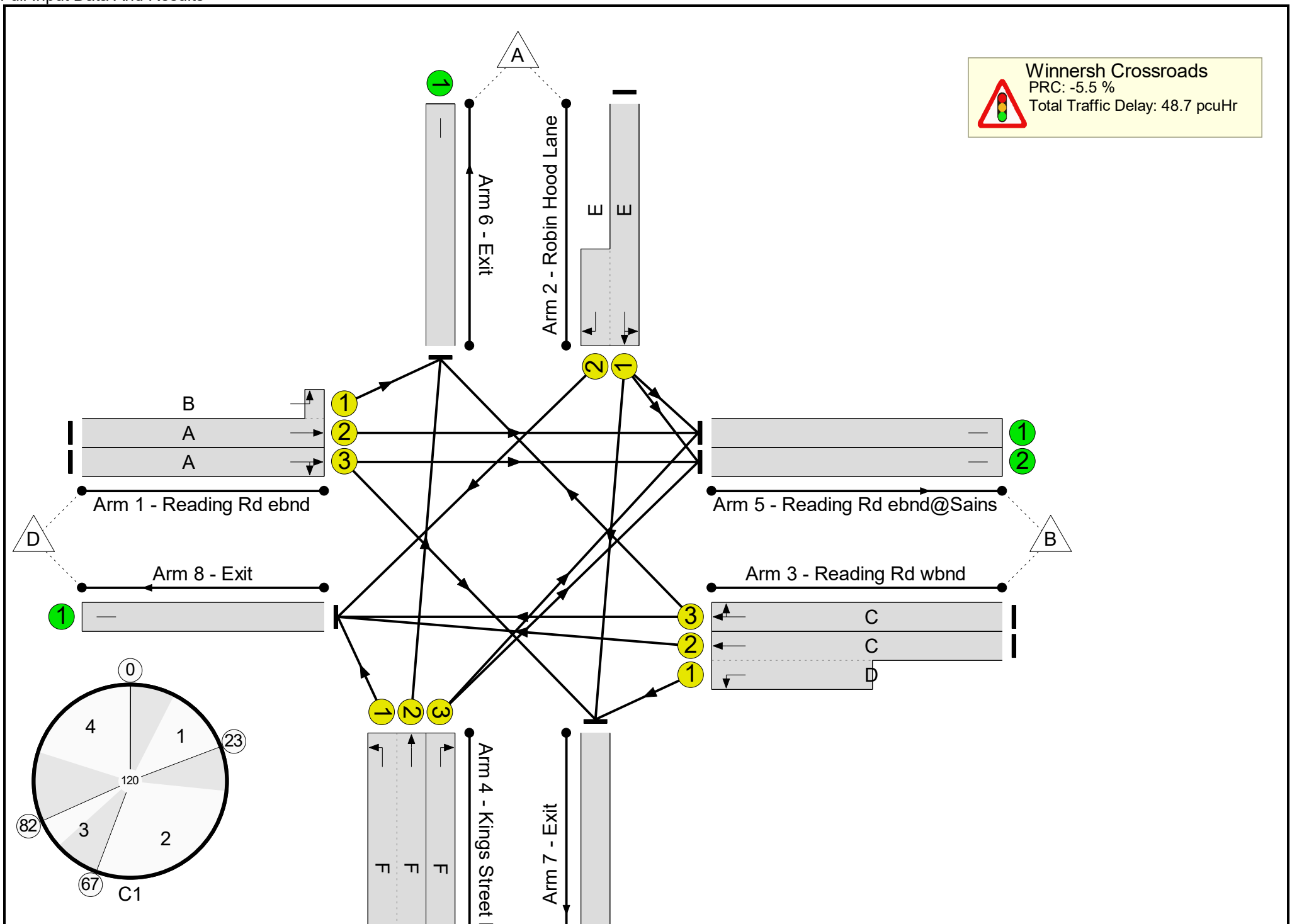
Stage	1	2	3	4
Duration	14	35	6	24
Change Point	0	23	67	82

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


Winnersh Crossroads
PRC: -5.5 %
Total Traffic Delay: 48.7 pcuHr
A
B
D
Arm 1 - Reading Rd ebnd
Arm 2 - Robin Hood Lane
Arm 3 - Reading Rd wbnd
Arm 4 - Kings Street
Arm 5 - Reading Rd ebnd@Sains
Arm 6 - Exit
Arm 7 - Exit
Arm 8 - Exit
C1
120

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction Study	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.9%**
Winnersh Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.9%**
1/2+1/1	Reading Rd ebnd Ahead Left	U	N/A	N/A	A B		1	20	-	234	1680:1680	296	79.0%
1/3	Reading Rd ebnd Ahead Right	U	N/A	N/A	A		1	20	-	394	2400	420	93.8%
2/1+2/2	Robin Hood Lane Left Ahead Right	U	N/A	N/A	E		1	35	-	545	1775:1661	574	94.9%
3/2+3/1	Reading Rd wbnd Left Ahead	U	N/A	N/A	C D		1	17:45	-	207	1910:2115	286	72.3%
3/3	Reading Rd wbnd Right Ahead	U	N/A	N/A	C		1	17	-	200	1867	280	71.4%
4/2+4/1	Kings Street Lane Ahead Left	U	N/A	N/A	F		1	24	-	510	1904:1728	539	94.6%
4/3	Kings Street Lane Right	U	N/A	N/A	F		1	24	-	4	1705	355	1.1%
5/1	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	269	1902	1902	14.1%
5/2	Reading Rd ebnd@Sains	U	N/A	N/A	-		-	-	-	457	1920	1920	23.8%
6/1	Exit	U	N/A	N/A	-		-	-	-	404	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	360	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction Study	**-**	**-**	**0**	**0**	**0**	**26.2**	**22.5**	**0.0**	**48.7**	**-**	**-**	**-**	**-**
Winnersh Crossroads	**-**	**-**	**0**	**0**	**0**	**26.2**	**22.5**	**0.0**	**48.7**	**-**	**-**	**-**	**-**
1/2+1/1	234	234	-	-	-	3.1	1.8	-	4.9	74.7	7.4	1.8	9.2
1/3	394	394	-	-	-	5.3	5.4	-	10.7	97.9	12.9	5.4	18.3
2/1+2/2	545	545	-	-	-	6.0	6.5	-	12.5	82.5	16.7	6.5	23.2
3/2+3/1	207	207	-	-	-	2.8	1.3	-	4.1	70.6	6.6	1.3	7.8
3/3	200	200	-	-	-	2.7	1.2	-	3.9	70.4	6.3	1.2	7.5
4/2+4/1	510	510	-	-	-	6.3	6.2	-	12.4	87.6	12.3	6.2	18.5
4/3	4	4	-	-	-	0.0	0.0	-	0.0	43.1	0.1	0.0	0.1
5/1	269	269	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
5/2	457	457	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
6/1	404	404	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	360	360	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -5.5 Total Delay for Signalled Lanes (pcuHr): 48.47 Cycle Time (s): 120
PRC Over All Lanes (%): -5.5 Total Delay Over All Lanes(pcuHr): 48.71