Appendix 47
M1 Junction 15A assessment results

M1 JUNCTION 15A
Existing Junction Model
2021

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

Filename: M1 Jct 15a (North) C1 ARCADY Model.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP
Report generation date: 09/05/2018 13:36:13

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	NSTM Traffic Flows - 2021 C1					
Arm 1	4.66	7.85	0.80	10.33	16.38	0.90
Arm 2	2.63	10.94	0.68	47.97	133.41	1.07
Arm 3	8.91	14.64	0.89	2.44	5.09	0.69

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

"D1 - 2021 C1, AM " model duration: 08:00 - 09:30
"D2 - 2021 C1, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 09/05/2018 13:36:10

File summary

Title	M1 Jct 15a (North)
Location	Northampton
Site Number	
Date	12/06/2017
Version	v1
Status	Preliminary
Identifier	M Tatler
Client	Roxhill
Jobnumber	ADC1475
Enumerator	M Tatler
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

NSTM Traffic Flows - 2021 C1, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2021 C1, AM	2021 C1	AM		ONE HOUR	08:00	09:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (North)	Roundabout	1,2,3				11.27	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 S Link	
2	2	M1 Sbnd Offslip	
3	3	A5123 N	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	7.40	11.10	20.10	19.20	80.00	32.00	
2	7.20	8.50	6.00	18.00	80.00	62.00	
3	8.10	10.00	15.20	18.70	80.00	26.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.650	2921.251
2		(calculated)	(calculated)	0.510	2133.026
3		(calculated)	(calculated)	0.650	2895.546

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

Arm Capacity Adjustments

Arm	Type	Reason	Direct Capacity Adjustment (PCU/hr)	Percentage Capacity Adjustment (%)
1	None			
2	Direct		0.00	
3	None			

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1978.00	100.000
2	ONE HOUR	✓	801.00	100.000
3	ONE HOUR	✓	2084.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	492.000	1486.000
	2	462.000	0.000	339.000
	3	1790.000	294.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.25	0.75
	2	0.58	0.00	0.42
	3	0.86	0.14	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.004	1.232
	2	1.470	1.000	1.071
	3	1.154	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.4	23.2
	2	47.0	0.0	7.1
	3	15.4	0.0	0.0

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)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.80	7.85	4.66	A	1815.05	2722.57	237.48	5.23	2.64	237.50	5.23
2	0.68	10.94	2.63	B	735.01	1102.52	136.80	7.44	1.52	136.81	7.45
3	0.89	14.64	8.91	B	1912.31	2868.47	373.54	7.81	4.15	373.57	7.81

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1489.14	372.29	1483.79	1688.13	220.44	0.00	2778.06	2693.74	0.536	0.00	1.34	3.230	A
2	603.03	150.76	599.88	589.51	1114.72	0.00	1564.64	1101.16	0.385	0.00	0.79	4.723	A
3	1568.94	392.24	1562.57	1368.60	346.00	0.00	2670.60	2482.63	0.587	0.00	1.59	3.649	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1778.18	444.55	1775.11	2019.49	263.64	0.00	2749.99	2693.74	0.647	1.34	2.11	4.292	A
2	720.08	180.02	718.32	705.18	1333.57	0.00	1453.05	1101.16	0.496	0.79	1.23	6.206	A
3	1873.47	468.37	1868.82	1637.58	414.31	0.00	2626.19	2482.63	0.713	1.59	2.76	5.335	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2177.82	544.45	2168.03	2457.10	320.53	0.00	2713.04	2693.74	0.803	2.11	4.55	7.569	A
2	881.92	220.48	876.56	859.80	1628.76	0.00	1302.54	1101.16	0.677	1.23	2.57	10.599	B
3	2294.53	573.63	2272.05	1999.74	505.58	0.00	2566.85	2482.63	0.894	2.76	8.37	12.911	B

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2177.82	544.45	2177.41	2477.51	323.40	0.00	2711.18	2693.74	0.803	4.55	4.66	7.849	A
2	881.92	220.48	881.67	865.00	1635.81	0.00	1298.94	1101.16	0.679	2.57	2.63	10.939	B
3	2294.53	573.63	2292.37	2008.95	508.53	0.00	2564.94	2482.63	0.895	8.37	8.91	14.636	B

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1778.18	444.55	1788.14	2048.36	267.70	0.00	2747.36	2693.74	0.647	4.66	2.17	4.420	A
2	720.08	180.02	725.52	712.48	1343.36	0.00	1448.06	1101.16	0.497	2.63	1.27	6.372	A
3	1873.47	468.37	1897.60	1650.42	418.46	0.00	2623.49	2482.63	0.714	8.91	2.88	5.780	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1489.14	372.29	1492.38	1700.81	222.05	0.00	2777.01	2693.74	0.536	2.17	1.36	3.275	A
2	603.03	150.76	604.90	593.25	1121.17	0.00	1561.35	1101.16	0.386	1.27	0.81	4.788	A
3	1568.94	392.24	1573.96	1377.18	348.90	0.00	2668.72	2482.63	0.588	2.88	1.63	3.729	A

Queueing Delay Results for each time segment

Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	19.48	1.30	3.230	A	A
2	11.47	0.76	4.723	A	A
3	23.09	1.54	3.649	A	A

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	30.57	2.04	4.292	A	A
2	17.87	1.19	6.206	A	A
3	39.50	2.63	5.335	A	A

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	63.31	4.22	7.569	A	A
2	35.98	2.40	10.599	B	B
3	107.95	7.20	12.911	B	B

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	69.25	4.62	7.849	A	A
2	39.13	2.61	10.939	B	B
3	130.44	8.70	14.636	B	B

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	33.97	2.26	4.420	A	A
2	19.94	1.33	6.372	A	A
3	47.37	3.16	5.780	A	A

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	20.90	1.39	3.275	A	A
2	12.42	0.83	4.788	A	A
3	25.18	1.68	3.729	A	A

NSTM Traffic Flows - 2021 C1, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2021 C1, PM	2021 C1	PM		ONE HOUR	17:00	18:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (North)	Roundabout	1,2,3				38.69	E

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 S Link	
2	2	M1 Sbnd Offslip	
3	3	A5123 N	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	7.40	11.10	20.10	19.20	80.00	32.00	
2	7.20	8.50	6.00	18.00	80.00	62.00	
3	8.10	10.00	15.20	18.70	80.00	26.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.650	2921.251
2		(calculated)	(calculated)	0.510	2133.026
3		(calculated)	(calculated)	0.650	2895.546

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

Arm Capacity Adjustments

Arm	Type	Reason	Direct Capacity Adjustment (PCU/hr)	Percentage Capacity Adjustment (%)
1	None			
2	Direct		0.00	
3	None			

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	2167.00	100.000
2	ONE HOUR	✓	1072.00	100.000
3	ONE HOUR	✓	1583.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	338.000	1829.000
	2	547.000	0.000	525.000
	3	1203.000	380.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.16	0.84
	2	0.51	0.00	0.49
	3	0.76	0.24	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.186	1.252
	2	1.004	1.000	1.309
	3	1.119	1.100	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	18.6	25.2
	2	0.4	0.0	30.9
	3	11.9	10.0	0.0

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)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.90	16.38	10.33	C	1988.48	2982.72	428.65	8.62	4.76	428.68	8.62
2	1.07	133.41	47.97	F	983.69	1475.53	1172.31	47.67	13.03	1172.36	47.67
3	0.69	5.09	2.44	A	1452.59	2178.88	141.28	3.89	1.57	141.29	3.89

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1631.43	407.86	1624.18	1311.77	285.20	0.00	2735.99	2523.89	0.596	0.00	1.81	3.994	A
2	807.06	201.76	801.32	538.53	1370.85	0.00	1434.05	1046.85	0.563	0.00	1.44	6.392	A
3	1191.77	297.94	1188.09	1763.28	408.88	0.00	2629.72	2548.27	0.453	0.00	0.92	2.776	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1948.09	487.02	1942.76	1568.42	341.19	0.00	2699.62	2523.89	0.722	1.81	3.15	5.861	A
2	963.71	240.93	956.96	644.21	1639.74	0.00	1296.94	1046.85	0.743	1.44	3.12	11.771	B
3	1423.08	355.77	1421.31	2108.40	488.30	0.00	2578.09	2548.27	0.552	0.92	1.36	3.464	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2385.91	596.48	2359.87	1873.56	417.39	0.00	2650.13	2523.89	0.900	3.15	9.66	14.269	B
2	1180.29	295.07	1082.21	785.47	1991.79	0.00	1117.43	1046.85	1.056	3.12	27.64	64.541	F
3	1742.92	435.73	1738.74	2521.79	552.21	0.00	2536.54	2548.27	0.687	1.36	2.41	5.003	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2385.91	596.48	2383.20	1885.19	418.36	0.00	2649.50	2523.89	0.901	9.66	10.33	16.377	C
2	1180.29	295.07	1098.97	790.08	2011.48	0.00	1107.39	1046.85	1.066	27.64	47.97	133.410	F
3	1742.92	435.73	1742.78	2549.69	560.76	0.00	2530.98	2548.27	0.689	2.41	2.44	5.088	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1948.09	487.02	1976.23	1666.35	342.55	0.00	2698.74	2523.89	0.722	10.33	3.30	6.414	A
2	963.71	240.93	1140.41	650.79	1667.99	0.00	1282.54	1046.85	0.751	47.97	3.80	52.989	F
3	1423.08	355.77	1426.99	2226.49	581.91	0.00	2517.23	2548.27	0.565	2.44	1.46	3.694	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1631.43	407.86	1637.20	1323.80	286.59	0.00	2735.09	2523.89	0.596	3.30	1.85	4.090	A
2	807.06	201.76	816.26	541.96	1381.84	0.00	1428.44	1046.85	0.565	3.80	1.50	6.760	A
3	1191.77	297.94	1193.89	1781.59	416.51	0.00	2624.76	2548.27	0.454	1.46	0.93	2.809	A

Queueing Delay Results for each time segment

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	26.21	1.75	3.994	A	A
2	20.49	1.37	6.392	A	A
3	13.46	0.90	2.776	A	A

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	44.94	3.00	5.861	A	A
2	43.04	2.87	11.771	B	B
3	19.95	1.33	3.464	A	A

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	123.04	8.20	14.269	B	B
2	254.25	16.95	64.541	F	E
3	34.61	2.31	5.003	A	A

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	150.86	10.06	16.377	C	B
2	569.26	37.95	133.410	F	F
3	36.40	2.43	5.088	A	A

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	54.82	3.65	6.414	A	A
2	261.44	17.43	52.989	F	D
3	22.59	1.51	3.694	A	A

Queueing Delay results: (18:15-18:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	28.78	1.92	4.090	A	A
2	23.83	1.59	6.760	A	A
3	14.26	0.95	2.809	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: M1 Jct 15a (South) C1 ARCADY Model.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP
Report generation date: 09/05/2018 13:41:10

Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	NSTM Traffic Flows - 2021 C1					
Arm 1	219.28	378.00	1.19	3.91	7.44	0.80
Arm 2	59.56	84.15	1.04	59.26	84.46	1.04
Arm 3	109.12	676.71	1.42	260.86	1622.50	1.86

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

"D1 - 2021 C1, AM " model duration: 08:00 - 09:30
"D2 - 2021 C1, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 09/05/2018 13:41:08

File summary

Title	M1 Jct 15a (South)
Location	Northampton
Site Number	
Date	12/06/2017
Version	v1
Status	Preliminary
Identifier	M Tatler
Client	Roxhill
Jobnumber	ADC1475
Enumerator	M Tatler
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	Veh	Veh	perHour	s	-Min	perMin

NSTM Traffic Flows - 2021 C1, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2021 C1, AM	2021 C1	AM		ONE HOUR	08:00	09:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (South)	Roundabout	1,2,3				286.02	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 N Link	
2	2	A43 S	
3	3	M1 Nbnd Offslip	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	9.80	9.80	0.00	17.00	92.00	55.00	
2	8.30	10.40	8.80	28.50	92.00	50.00	
3	4.60	5.20	1.00	19.70	92.00	56.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.573	2686.180
2		(calculated)	(calculated)	0.587	2718.056
3		(calculated)	(calculated)	0.382	1323.610

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	2252.00	100.000
2	ONE HOUR	✓	2119.00	100.000
3	ONE HOUR	✓	594.00	100.000

Turning Proportions

Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	2063.000	189.000
	2	1764.000	0.000	355.000
	3	231.000	363.000	0.000

Turning Proportions (Veh) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.92	0.08
	2	0.83	0.00	0.17
	3	0.39	0.61	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.227	1.068
	2	1.180	1.000	1.046
	3	1.130	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	22.7	6.8
	2	18.0	0.0	4.6
	3	13.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
1	1.19	378.00	219.28	F	2066.47	3099.70	9625.70	186.32	106.95	9887.42	191.39
2	1.04	84.15	59.56	F	1944.43	2916.65	1572.89	32.36	17.48	1572.97	32.36
3	1.42	676.71	109.12	F	545.06	817.59	4491.04	329.58	49.90	4605.77	338.00

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1695.42	423.85	1678.93	1491.54	269.04	0.00	2086.20	2081.75	0.813	0.00	4.12	8.524	A
2	1595.30	398.82	1586.04	1807.08	140.91	0.00	2271.86	2253.57	0.702	0.00	2.31	5.183	A
3	447.19	111.80	440.25	406.62	1320.33	0.00	693.84	455.60	0.645	0.00	1.74	13.847	B

Main results: (08:15-08:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2024.49	506.12	1969.23	1776.61	314.16	0.00	2064.88	2081.75	0.980	4.12	17.94	28.075	D
2	1904.94	476.23	1893.99	2118.13	165.27	0.00	2258.68	2253.57	0.843	2.31	5.05	9.590	A
3	533.99	133.50	514.08	482.57	1576.69	0.00	583.94	455.60	0.914	1.74	6.71	42.955	E

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2479.49	619.87	2073.60	2020.19	286.63	0.00	2077.89	2081.76	1.193	17.94	119.41	125.949	F
2	2333.06	583.27	2207.64	2186.21	174.03	0.00	2253.94	2253.57	1.035	5.05	36.40	42.409	E
3	654.00	163.50	469.04	543.88	1837.79	0.00	471.99	455.60	1.386	6.71	52.96	248.071	F

Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2479.49	619.87	2080.03	2044.01	281.13	0.00	2080.49	2081.76	1.192	119.41	219.28	297.691	F
2	2333.06	583.27	2240.45	2186.59	174.57	0.00	2253.65	2253.57	1.035	36.40	59.56	84.147	F
3	654.00	163.50	460.02	549.92	1865.10	0.00	460.29	455.60	1.421	52.96	101.45	595.147	F

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2024.49	506.12	2058.60	1959.07	307.58	0.00	2067.99	2081.75	0.979	219.28	210.75	377.997	F
2	1904.94	476.23	2118.19	2193.42	172.77	0.00	2254.62	2253.57	0.845	59.56	6.24	43.443	E
3	533.99	133.50	503.32	527.64	1763.33	0.00	503.92	455.60	1.060	101.45	109.12	676.707	F

Main results: (09:15-09:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1695.42	423.85	2007.77	1604.66	414.90	0.00	2017.30	2081.75	0.840	210.75	132.66	308.680	F
2	1595.30	398.82	1610.44	2254.17	168.50	0.00	2256.93	2253.57	0.707	6.24	2.46	5.693	A
3	447.19	111.80	678.92	438.30	1340.64	0.00	685.14	455.60	0.653	109.12	51.19	427.855	F

Queueing Delay Results for each time segment

Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	55.85	3.72	8.524	A	A
2	32.84	2.19	5.183	A	A
3	23.68	1.58	13.847	B	B

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	194.56	12.97	28.075	D	C
2	68.66	4.58	9.590	A	A
3	77.19	5.15	42.955	E	D

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1034.22	68.95	125.949	F	F
2	340.12	22.67	42.409	E	D
3	450.43	30.03	248.071	F	F

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	2540.31	169.35	297.691	F	F
2	722.61	48.17	84.147	F	F
3	1158.14	77.21	595.147	F	F

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	3225.18	215.01	377.997	F	F
2	369.09	24.61	43.443	E	D
3	1579.30	105.29	676.707	F	F

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	2575.57	171.70	308.680	F	F
2	39.57	2.64	5.693	A	A
3	1202.30	80.15	427.855	F	F

NSTM Traffic Flows - 2021 C1, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2021 C1, PM	2021 C1	PM		ONE HOUR	17:00	18:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (South)	Roundabout	1,2,3				310.40	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 N Link	
2	2	A43 S	
3	3	M1 Nbnd Offslip	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	9.80	9.80	0.00	17.00	92.00	55.00	
2	8.30	10.40	8.80	28.50	92.00	50.00	
3	4.60	5.20	1.00	19.70	92.00	56.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.573	2686.180
2		(calculated)	(calculated)	0.587	2718.056
3		(calculated)	(calculated)	0.382	1323.610

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1750.00	100.000
2	ONE HOUR	✓	2098.00	100.000
3	ONE HOUR	✓	716.00	100.000

Turning Proportions

Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	1478.000	272.000
	2	1743.000	0.000	355.000
	3	494.000	222.000	0.000

Turning Proportions (Veh) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.84	0.16
	2	0.83	0.00	0.17
	3	0.69	0.31	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.097	1.003
	2	1.168	1.000	1.000
	3	1.255	1.032	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	9.7	0.3
	2	16.8	0.0	0.0
	3	25.5	3.2	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
1	0.80	7.44	3.91	A	1605.83	2408.75	206.51	5.14	2.29	206.53	5.14
2	1.04	84.46	59.26	F	1925.17	2887.75	1533.56	31.86	17.04	1533.63	31.86
3	1.86	1622.50	260.86	F	657.01	985.52	11433.58	696.09	127.04	14263.47	868.38

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1317.49	329.37	1312.63	1663.26	161.06	0.00	2393.67	2408.56	0.550	0.00	1.21	3.315	A
2	1579.49	394.87	1570.63	1269.68	204.02	0.00	2279.84	2191.91	0.693	0.00	2.21	5.015	A
3	539.04	134.76	519.46	469.79	1304.86	0.00	625.60	431.55	0.862	0.00	4.89	29.952	D

Main results: (17:15-17:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1573.21	393.30	1570.50	1919.16	162.11	0.00	2393.10	2408.57	0.657	1.21	1.89	4.361	A
2	1886.06	471.52	1875.85	1488.51	244.10	0.00	2259.15	2191.91	0.835	2.21	4.77	9.153	A
3	643.67	160.92	522.82	561.51	1558.44	0.00	530.26	431.55	1.214	4.89	35.11	162.258	F

Main results: (17:30-17:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1926.79	481.70	1918.95	2114.06	134.46	0.00	2408.21	2408.57	0.800	1.89	3.85	7.243	A
2	2309.95	577.49	2184.49	1755.15	298.26	0.00	2231.19	2191.91	1.035	4.77	36.13	42.341	E
3	788.33	197.08	433.66	667.89	1814.85	0.00	433.87	431.55	1.817	35.11	123.77	680.103	F

Main results: (17:45-18:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1926.79	481.70	1926.53	2134.46	131.32	0.00	2409.93	2408.57	0.800	3.85	3.91	7.435	A
2	2309.95	577.49	2217.46	1758.41	299.44	0.00	2230.58	2191.91	1.036	36.13	59.26	84.463	F
3	788.33	197.08	423.53	674.65	1842.24	0.00	423.57	431.55	1.861	123.77	214.97	1450.629	F

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1573.21	393.30	1581.19	2062.38	142.67	0.00	2403.72	2408.57	0.654	3.91	1.92	4.419	A
2	1886.06	471.52	2100.30	1478.09	245.76	0.00	2258.29	2191.91	0.835	59.26	5.70	39.873	E
3	643.67	160.92	460.13	601.15	1744.91	0.00	460.16	431.55	1.399	214.97	260.86	1622.500	F

Main results: (18:15-18:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1317.49	329.37	1320.16	1748.67	191.06	0.00	2377.27	2408.56	0.554	1.92	1.25	3.415	A
2	1579.49	394.87	1593.07	1306.03	205.19	0.00	2279.24	2191.91	0.693	5.70	2.30	5.348	A
3	539.04	134.76	616.22	474.75	1323.51	0.00	618.59	431.55	0.871	260.86	241.56	1467.844	F

Queueing Delay Results for each time segment

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	17.68	1.18	3.315	A	A
2	31.52	2.10	5.015	A	A
3	58.15	3.88	29.952	D	C

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	27.45	1.83	4.361	A	A
2	65.19	4.35	9.153	A	A
3	306.31	20.42	162.258	F	F

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	53.74	3.58	7.243	A	A
2	336.66	22.44	42.341	E	D
3	1191.73	79.45	680.103	F	F

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	58.32	3.89	7.435	A	A
2	718.30	47.89	84.463	F	F
3	2540.59	169.37	1450.629	F	F

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	30.03	2.00	4.419	A	A
2	345.17	23.01	39.873	E	D
3	3568.70	237.91	1622.500	F	F

Queueing Delay results: (18:15-18:30)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	19.29	1.29	3.415	A	A
2	36.72	2.45	5.348	A	A
3	3768.11	251.21	1467.844	F	F

M1 JUNCTION 15A
Existing Junction Model
2031

Junctions 8

ARCADY 8 - Roundabout Module

Filename: M1 Jct 15a (North) D1 ARCADY Model.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP
Report generation date: 09/05/2018 13:44:48

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	NSTM Traffic Flows - 2031 D1					
Arm 1	5.09	8.55	0.82	12.60	19.22	0.92
Arm 2	11.75	37.01	0.93	17.04	56.15	0.97
Arm 3	7.67	13.54	0.88	2.15	4.75	0.66

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

"D1 - 2031 D1, AM " model duration: 08:00 - 09:30
"D2 - 2031 D1, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 09/05/2018 13:44:46

File summary

Title	M1 Jct 15a (North)
Location	Northampton
Site Number	
Date	12/06/2017
Version	v1
Status	Preliminary
Identifier	M Tatler
Client	Roxhill
Jobnumber	ADC1475
Enumerator	M Tatler
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

NSTM Traffic Flows - 2031 D1, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 D1, AM	2031 D1	AM		ONE HOUR	08:00	09:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (North)	Roundabout	1,2,3				16.74	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 S Link	
2	2	M1 Sbnd Offslip	
3	3	A5123 N	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	7.40	11.10	20.10	19.20	80.00	32.00	
2	7.20	8.50	6.00	18.00	80.00	62.00	
3	8.10	10.00	15.20	18.70	80.00	26.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.650	2921.251
2		(calculated)	(calculated)	0.510	2133.026
3		(calculated)	(calculated)	0.650	2895.546

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

Arm Capacity Adjustments

Arm	Type	Reason	Direct Capacity Adjustment (PCU/hr)	Percentage Capacity Adjustment (%)
1	None			
2	Direct		0.00	
3	None			

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1991.00	100.000
2	ONE HOUR	✓	1110.00	100.000
3	ONE HOUR	✓	1932.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	544.000	1447.000
	2	667.000	0.000	443.000
	3	1589.000	343.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.27	0.73
	2	0.60	0.00	0.40
	3	0.82	0.18	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.013	1.218
	2	1.327	1.000	1.059
	3	1.159	1.006	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	1.3	21.8
	2	32.7	0.0	5.9
	3	15.9	0.6	0.0

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)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.82	8.55	5.09	A	1826.98	2740.46	252.51	5.53	2.81	252.53	5.53
2	0.93	37.01	11.75	E	1018.56	1527.83	408.66	16.05	4.54	408.69	16.05
3	0.88	13.54	7.67	B	1772.84	2659.26	329.08	7.43	3.66	329.11	7.43

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1498.93	374.73	1493.46	1690.43	257.19	0.00	2754.18	2639.36	0.544	0.00	1.37	3.283	A
2	835.67	208.92	830.32	665.25	1085.40	0.00	1579.59	1154.95	0.529	0.00	1.34	5.752	A
3	1454.51	363.63	1448.68	1416.78	498.94	0.00	2571.17	2444.35	0.566	0.00	1.46	3.600	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1789.87	447.47	1786.59	2021.95	307.61	0.00	2721.43	2639.36	0.658	1.37	2.19	4.428	A
2	997.87	249.47	993.34	795.76	1298.44	0.00	1470.96	1154.95	0.678	1.34	2.47	8.999	A
3	1736.83	434.21	1732.67	1694.88	596.90	0.00	2507.48	2444.35	0.693	1.46	2.50	5.215	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2192.13	548.03	2181.03	2450.31	374.34	0.00	2678.09	2639.36	0.819	2.19	4.96	8.180	A
2	1222.13	305.53	1191.76	970.26	1585.11	0.00	1324.79	1154.95	0.923	2.47	10.06	27.913	D
3	2127.17	531.79	2108.52	2060.74	716.13	0.00	2429.97	2444.35	0.875	2.50	7.16	11.998	B

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2192.13	548.03	2191.61	2478.18	377.29	0.00	2676.17	2639.36	0.819	4.96	5.09	8.550	A
2	1222.13	305.53	1215.38	976.10	1592.80	0.00	1320.87	1154.95	0.925	10.06	11.75	37.007	E
3	2127.17	531.79	2125.15	2077.85	730.32	0.00	2420.74	2444.35	0.879	7.16	7.67	13.538	B

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1789.87	447.47	1801.21	2066.46	311.91	0.00	2718.64	2639.36	0.658	5.09	2.26	4.583	A
2	997.87	249.47	1034.23	804.06	1309.07	0.00	1465.55	1154.95	0.681	11.75	2.66	10.864	B
3	1736.83	434.21	1756.90	1721.83	621.47	0.00	2491.51	2444.35	0.697	7.67	2.65	5.677	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1498.93	374.73	1502.39	1705.32	259.05	0.00	2752.98	2639.36	0.544	2.26	1.39	3.333	A
2	835.67	208.92	840.78	669.55	1091.89	0.00	1576.28	1154.95	0.530	2.66	1.38	5.941	A
3	1454.51	363.63	1459.15	1427.45	505.23	0.00	2567.08	2444.35	0.567	2.65	1.49	3.681	A

Queueing Delay Results for each time segment

Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	19.91	1.33	3.283	A	A
2	19.18	1.28	5.752	A	A
3	21.14	1.41	3.600	A	A

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	31.69	2.11	4.428	A	A
2	34.87	2.32	8.999	A	A
3	35.90	2.39	5.215	A	A

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	68.38	4.56	8.180	A	A
2	118.18	7.88	27.913	D	C
3	93.94	6.26	11.998	B	B

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	75.62	5.04	8.550	A	A
2	165.48	11.03	37.007	E	D
3	112.06	7.47	13.538	B	B

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	35.50	2.37	4.583	A	A
2	49.42	3.29	10.864	B	B
3	43.02	2.87	5.677	A	A

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	21.41	1.43	3.333	A	A
2	21.53	1.44	5.941	A	A
3	23.02	1.53	3.681	A	A

NSTM Traffic Flows - 2031 D1, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 D1, PM	2031 D1	PM		ONE HOUR	17:00	18:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (North)	Roundabout	1,2,3				22.68	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 S Link	
2	2	M1 Sbnd Offslip	
3	3	A5123 N	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	7.40	11.10	20.10	19.20	80.00	32.00	
2	7.20	8.50	6.00	18.00	80.00	62.00	
3	8.10	10.00	15.20	18.70	80.00	26.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.650	2921.251
2		(calculated)	(calculated)	0.510	2133.026
3		(calculated)	(calculated)	0.650	2895.546

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

Arm Capacity Adjustments

Arm	Type	Reason	Direct Capacity Adjustment (PCU/hr)	Percentage Capacity Adjustment (%)
1	None			
2	Direct		0.00	
3	None			

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	2271.00	100.000
2	ONE HOUR	✓	1034.00	100.000
3	ONE HOUR	✓	1491.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	565.000	1706.000
	2	573.000	0.000	461.000
	3	1195.000	296.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.25	0.75
	2	0.55	0.00	0.45
	3	0.80	0.20	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.168	1.200
	2	1.028	1.000	1.390
	3	1.108	1.189	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	16.8	20.0
	2	2.8	0.0	39.0
	3	10.8	18.9	0.0

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)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.92	19.22	12.60	C	2083.91	3125.86	490.12	9.41	5.45	490.16	9.41
2	0.97	56.15	17.04	F	948.82	1423.22	503.67	21.23	5.60	503.71	21.24
3	0.66	4.75	2.15	A	1368.17	2052.25	125.38	3.67	1.39	125.39	3.67

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1709.73	427.43	1702.18	1325.54	222.18	0.00	2776.93	2600.67	0.616	0.00	1.89	3.965	A
2	778.45	194.61	773.37	645.66	1278.69	0.00	1481.03	1136.88	0.526	0.00	1.27	5.874	A
3	1122.50	280.63	1119.15	1623.49	428.57	0.00	2616.92	2485.96	0.429	0.00	0.84	2.694	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2041.58	510.40	2035.70	1585.51	265.79	0.00	2748.60	2600.66	0.743	1.89	3.36	5.968	A
2	929.54	232.39	924.75	772.25	1529.24	0.00	1353.28	1136.88	0.687	1.27	2.47	9.662	A
3	1340.38	335.09	1338.84	1941.54	512.46	0.00	2562.38	2485.96	0.523	0.84	1.22	3.300	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2500.42	625.10	2467.83	1920.86	325.19	0.00	2710.01	2600.66	0.923	3.36	11.50	15.939	C
2	1138.46	284.61	1097.16	939.16	1853.86	0.00	1187.76	1136.88	0.958	2.47	12.79	36.176	E
3	1641.62	410.41	1638.05	2343.02	608.00	0.00	2500.27	2485.96	0.657	1.22	2.12	4.670	A

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2500.42	625.10	2496.03	1937.07	325.88	0.00	2709.57	2600.66	0.923	11.50	12.60	19.216	C
2	1138.46	284.61	1121.45	946.86	1875.04	0.00	1176.96	1136.88	0.967	12.79	17.04	56.154	F
3	1641.62	410.41	1641.49	2375.03	621.46	0.00	2491.52	2485.96	0.659	2.12	2.15	4.755	A

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	2041.58	510.40	2077.85	1623.89	266.80	0.00	2747.94	2600.66	0.743	12.60	3.54	6.733	A
2	929.54	232.39	986.68	783.75	1560.90	0.00	1337.14	1136.88	0.695	17.04	2.76	13.820	B
3	1340.38	335.09	1343.91	2000.80	546.78	0.00	2540.07	2485.96	0.528	2.15	1.26	3.389	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1709.73	427.43	1716.14	1335.57	223.17	0.00	2776.28	2600.67	0.616	3.54	1.93	4.072	A
2	778.45	194.61	784.23	650.13	1289.18	0.00	1475.68	1136.88	0.528	2.76	1.32	6.103	A
3	1122.50	280.63	1124.16	1638.82	434.59	0.00	2613.01	2485.96	0.430	1.26	0.85	2.720	A

Queueing Delay Results for each time segment

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	27.26	1.82	3.965	A	A
2	18.24	1.22	5.874	A	A
3	12.32	0.82	2.694	A	A

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	47.79	3.19	5.968	A	A
2	34.71	2.31	9.662	A	A
3	17.95	1.20	3.300	A	A

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	142.14	9.48	15.939	C	B
2	140.30	9.35	36.176	E	D
3	30.58	2.04	4.670	A	A

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	182.21	12.15	19.216	C	B
2	227.12	15.14	56.154	F	E
3	32.06	2.14	4.755	A	A

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	60.71	4.05	6.733	A	A
2	62.66	4.18	13.820	B	B
3	19.48	1.30	3.389	A	A

Queueing Delay results: (18:15-18:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	30.02	2.00	4.072	A	A
2	20.63	1.38	6.103	A	A
3	12.99	0.87	2.720	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

Filename: M1 Jct 15a (South) D1 ARCADY Model.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP
Report generation date: 09/05/2018 13:48:14

Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	NSTM Traffic Flows - 2031 D1					
Arm 1	210.77	360.40	1.18	3.96	7.45	0.80
Arm 2	26.49	43.56	0.99	22.54	38.00	0.98
Arm 3	148.41	837.73	1.56	301.04	1787.10	2.03

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

"D1 - 2031 D1, AM " model duration: 08:00 - 09:30
"D2 - 2031 D1, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 09/05/2018 13:48:12

File summary

Title	M1 Jct 15a (South)
Location	Northampton
Site Number	
Date	12/06/2017
Version	v1
Status	Preliminary
Identifier	M Tatler
Client	Roxhill
Jobnumber	ADC1475
Enumerator	M Tatler
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	Veh	Veh	perHour	s	-Min	perMin

NSTM Traffic Flows - 2031 D1, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 D1, AM	2031 D1	AM		ONE HOUR	08:00	09:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (South)	Roundabout	1,2,3				293.94	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 N Link	
2	2	A43 S	
3	3	M1 Nbnd Offslip	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	9.80	9.80	0.00	17.00	92.00	55.00	
2	8.30	10.40	8.80	28.50	92.00	50.00	
3	4.60	5.20	1.00	19.70	92.00	56.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.573	2686.180
2		(calculated)	(calculated)	0.587	2718.056
3		(calculated)	(calculated)	0.382	1323.610

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	2256.00	100.000
2	ONE HOUR	✓	2038.00	100.000
3	ONE HOUR	✓	667.00	100.000

Turning Proportions

Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	2030.000	226.000
	2	1688.000	0.000	350.000
	3	303.000	364.000	0.000

Turning Proportions (Veh) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.90	0.10
	2	0.83	0.00	0.17
	3	0.45	0.55	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.216	1.142
	2	1.153	1.000	1.037
	3	1.208	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	21.6	14.2
	2	15.3	0.0	3.7
	3	20.8	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
1	1.18	360.40	210.77	F	2070.14	3105.21	9164.83	177.09	101.83	9367.95	181.01
2	0.99	43.56	26.49	E	1870.10	2805.15	789.99	16.90	8.78	790.05	16.90
3	1.56	837.73	148.41	F	612.05	918.08	6463.57	422.42	71.82	6906.10	451.34

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1698.43	424.61	1682.13	1488.09	268.87	0.00	2095.03	2105.57	0.811	0.00	4.07	8.415	A
2	1534.31	383.58	1526.41	1782.50	168.51	0.00	2299.21	2274.13	0.667	0.00	1.98	4.612	A
3	502.15	125.54	492.69	430.65	1264.27	0.00	700.97	451.94	0.716	0.00	2.37	16.614	C

Main results: (08:15-08:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2028.09	507.02	1975.88	1766.29	306.60	0.00	2077.13	2105.57	0.976	4.07	17.13	27.028	D
2	1832.12	458.03	1824.39	2084.55	197.94	0.00	2281.81	2274.13	0.803	1.98	3.91	7.741	A
3	599.62	149.90	561.83	511.25	1511.07	0.00	601.73	451.94	0.996	2.37	11.81	62.765	F

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2483.90	620.97	2092.95	2024.24	263.17	0.00	2097.73	2105.57	1.184	17.13	114.86	120.336	F
2	2243.88	560.97	2179.46	2146.46	209.67	0.00	2274.88	2274.13	0.986	3.91	20.01	27.515	D
3	734.38	183.59	482.23	583.96	1805.17	0.00	483.47	451.94	1.519	11.81	74.85	342.071	F

Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2483.90	620.97	2100.25	2050.82	256.78	0.00	2100.77	2105.57	1.182	114.86	210.77	284.113	F
2	2243.88	560.97	2217.98	2146.64	210.40	0.00	2274.45	2274.13	0.987	20.01	26.49	43.559	E
3	734.38	183.59	470.53	591.31	1837.07	0.00	470.64	451.94	1.560	74.85	140.81	763.338	F

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	2028.09	507.02	2065.42	1849.44	310.64	0.00	2075.22	2105.57	0.977	210.77	201.44	360.401	F
2	1832.12	458.03	1920.71	2169.15	206.91	0.00	2276.51	2274.13	0.805	26.49	4.34	12.511	B
3	599.62	149.90	569.22	536.77	1590.86	0.00	569.65	451.94	1.053	140.81	148.41	837.728	F

Main results: (09:15-09:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1698.43	424.61	2033.67	1592.01	376.93	0.00	2043.77	2105.57	0.831	201.44	117.63	283.357	F
2	1534.31	383.58	1543.29	2206.88	203.73	0.00	2278.39	2274.13	0.673	4.34	2.10	4.955	A
3	502.15	125.54	690.70	468.77	1278.25	0.00	695.35	451.94	0.722	148.41	101.28	652.093	F

Queueing Delay Results for each time segment

Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	55.28	3.69	8.415	A	A
2	28.27	1.88	4.612	A	A
3	31.43	2.10	16.614	C	B

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	187.87	12.52	27.028	D	C
2	54.41	3.63	7.741	A	A
3	121.57	8.10	62.765	F	E

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	994.48	66.30	120.336	F	F
2	212.55	14.17	27.515	D	C
3	651.16	43.41	342.071	F	F

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	2442.47	162.83	284.113	F	F
2	352.61	23.51	43.559	E	D
3	1617.52	107.83	763.338	F	F

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	3091.64	206.11	360.401	F	F
2	109.19	7.28	12.511	B	B
3	2169.21	144.61	837.728	F	F

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	2393.08	159.54	283.357	F	F
2	32.95	2.20	4.955	A	A
3	1872.67	124.84	652.093	F	F

NSTM Traffic Flows - 2031 D1, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
NSTM Traffic Flows	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 D1, PM	2031 D1	PM		ONE HOUR	17:00	18:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	M1 Jct 15a (South)	Roundabout	1,2,3				344.51	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 N Link	
2	2	A43 S	
3	3	M1 Nbnd Offslip	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

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
1	9.80	9.80	0.00	17.00	92.00	55.00	
2	8.30	10.40	8.80	28.50	92.00	50.00	
3	4.60	5.20	1.00	19.70	92.00	56.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.573	2686.180
2		(calculated)	(calculated)	0.587	2718.056
3		(calculated)	(calculated)	0.382	1323.610

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1768.00	100.000
2	ONE HOUR	✓	2022.00	100.000
3	ONE HOUR	✓	764.00	100.000

Turning Proportions

Turning Counts / Proportions (Veh/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	1555.000	213.000
	2	1696.000	0.000	326.000
	3	575.000	189.000	0.000

Turning Proportions (Veh) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.88	0.12
	2	0.84	0.00	0.16
	3	0.75	0.25	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.091	1.014
	2	1.157	1.000	1.000
	3	1.294	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	9.1	1.4
	2	15.7	0.0	0.0
	3	29.4	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
1	0.80	7.45	3.96	A	1622.35	2433.53	208.44	5.14	2.32	208.46	5.14
2	0.98	38.00	22.54	E	1855.42	2783.13	696.38	15.01	7.74	696.43	15.01
3	2.03	1787.10	301.04	F	701.06	1051.59	13624.49	777.37	151.38	17708.04	1010.36

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1331.05	332.76	1326.16	1682.14	135.30	0.00	2411.54	2430.54	0.552	0.00	1.22	3.302	A
2	1522.26	380.57	1514.72	1301.69	159.77	0.00	2317.81	2247.89	0.657	0.00	1.89	4.441	A
3	575.18	143.79	546.93	403.98	1270.51	0.00	624.37	401.99	0.921	0.00	7.06	38.213	E

Main results: (17:15-17:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1589.40	397.35	1586.68	1917.99	131.20	0.00	2413.71	2430.54	0.658	1.22	1.90	4.339	A
2	1817.73	454.43	1810.78	1526.72	191.15	0.00	2301.31	2247.89	0.790	1.89	3.62	7.237	A
3	686.82	171.71	530.34	483.10	1518.84	0.00	534.57	401.99	1.285	7.06	46.18	209.381	F

Main results: (17:30-17:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1946.61	486.65	1938.65	2140.22	105.28	0.00	2427.45	2430.54	0.802	1.90	3.89	7.249	A
2	2226.26	556.56	2169.74	1810.36	233.56	0.00	2279.03	2247.89	0.977	3.62	17.75	25.149	D
3	841.18	210.29	425.57	583.38	1819.92	0.00	425.69	401.99	1.976	46.18	150.08	846.319	F

Main results: (17:45-18:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1946.61	486.65	1946.35	2163.10	102.50	0.00	2428.92	2430.54	0.801	3.89	3.96	7.448	A
2	2226.26	556.56	2207.11	1814.35	234.49	0.00	2278.54	2247.89	0.977	17.75	22.54	38.003	E
3	841.18	210.29	414.34	590.33	1851.27	0.00	414.36	401.99	2.030	150.08	256.79	1778.379	F

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1589.40	397.35	1597.44	1970.85	126.13	0.00	2416.40	2430.54	0.658	3.96	1.95	4.437	A
2	1817.73	454.43	1892.19	1531.12	192.45	0.00	2300.63	2247.89	0.790	22.54	3.93	10.358	B
3	686.82	171.71	509.85	497.52	1587.12	0.00	509.87	401.99	1.347	256.79	301.04	1787.097	F

Main results: (18:15-18:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
1	1331.05	332.76	1333.83	1748.33	152.79	0.00	2402.27	2430.54	0.554	1.95	1.25	3.377	A
2	1522.26	380.57	1530.20	1325.93	160.69	0.00	2317.32	2247.89	0.657	3.93	1.94	4.618	A
3	575.18	143.79	617.62	407.40	1283.50	0.00	619.67	401.99	0.928	301.04	290.43	1723.910	F

Queueing Delay Results for each time segment

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	17.79	1.19	3.302	A	A
2	27.05	1.80	4.441	A	A
3	78.01	5.20	38.213	E	D

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	27.59	1.84	4.339	A	A
2	50.77	3.38	7.237	A	A
3	403.08	26.87	209.381	F	F

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	54.31	3.62	7.249	A	A
2	193.49	12.90	25.149	D	C
3	1472.08	98.14	846.319	F	F

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	58.99	3.93	7.448	A	A
2	305.72	20.38	38.003	E	D
3	3051.60	203.44	1778.379	F	F

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	30.48	2.03	4.437	A	A
2	88.94	5.93	10.358	B	B
3	4183.74	278.92	1787.097	F	F

Queueing Delay results: (18:15-18:30)

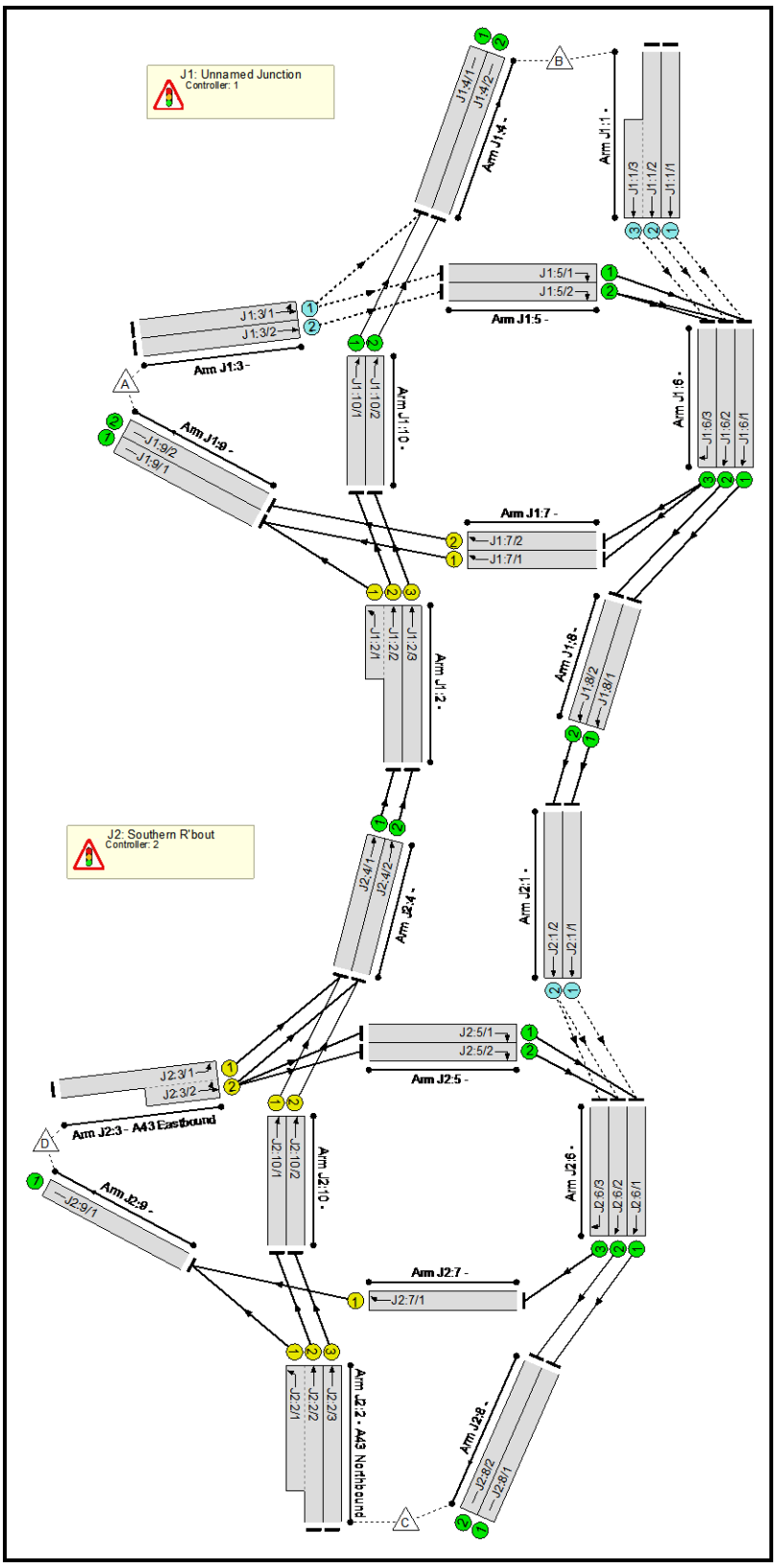
Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	19.29	1.29	3.377	A	A
2	30.40	2.03	4.618	A	A
3	4435.99	295.73	1723.910	F	F

M1 JUNCTION 15A
Mitigation Model
2021
2031

User and Project Details

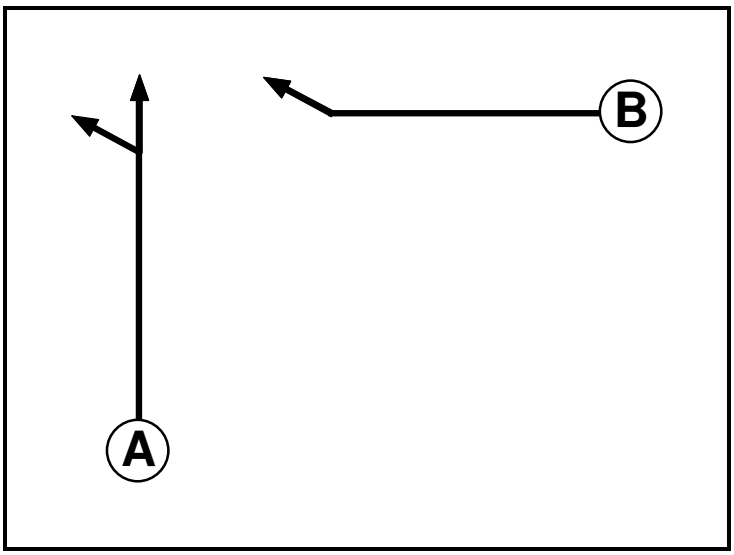
Project:	**Northampton Gateway SRFI**
Title:	**M1 Junction 15a Proposed Mitigation**
File name:	180221 M1 J15a Mitigation.lsg3x
Author:	Mark Higgins
Company:	ADC Infrastructure
Address:	Western House, Nottingham

Network Layout Diagram



C1

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7

Phase Intergreens Matrix

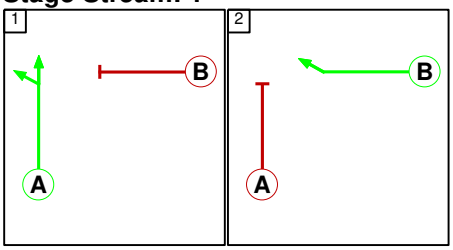
	Starting Phase		
Terminating Phase		A	B
	A		6
	B	6	

Phases in Stage

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

Stage Diagram

Stage Stream: 1



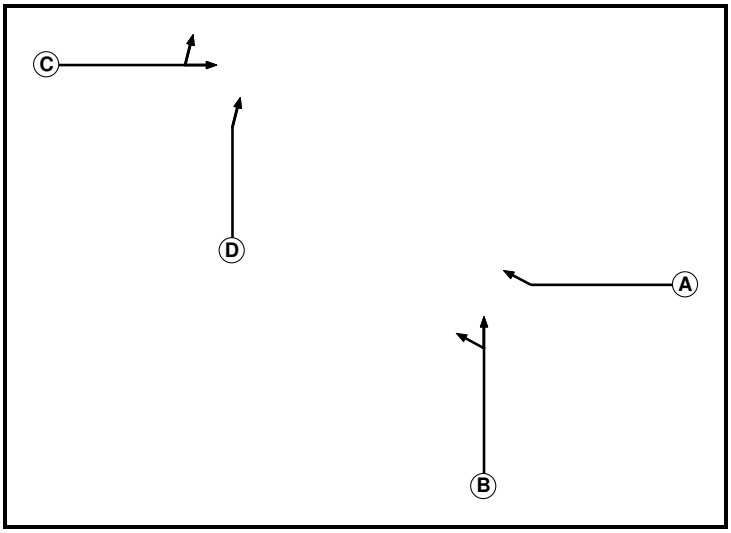
Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		6
	2	6	

C2

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7

Phase Intergreens Matrix

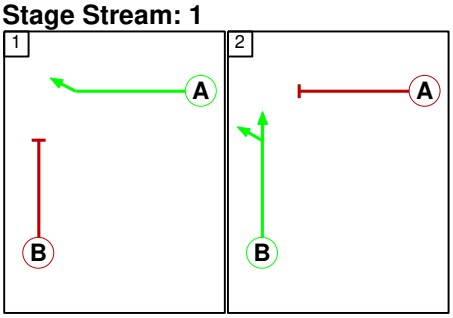
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

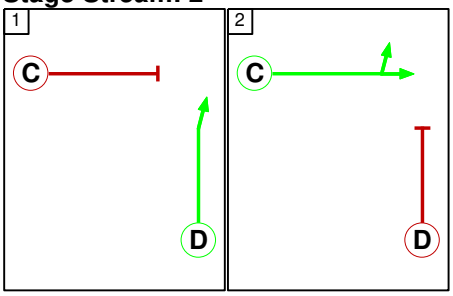
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	D
2	2	C

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Give-Way Lane Input Data

Junction: J1: Unnamed Junction											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
J1:1/1	J1:6/1 (Ahead)	1100	0	J1:5/1	0.30	All	-	-	-	-	-
				J1:5/2	0.30	All					
J1:1/2	J1:6/2 (Ahead)	1100	0	J1:5/1	0.30	All	-	-	-	-	-
				J1:5/2	0.30	All					
J1:1/3	J1:6/3 (Ahead)	1100	0	J1:5/1	0.30	All	-	-	-	-	-
				J1:5/2	0.30	All					
J1:3/1	J1:4/1 (Left)	1274	0	J1:10/1	0.29	All	-	-	-	-	-
				J1:10/2	0.29	All					
	J1:5/1 (Ahead)	1274	0	J1:10/1	0.29	All					
				J1:10/2	0.29	All					
J1:3/2	J1:5/2 (Ahead)	1274	0	J1:10/1	0.29	All	-	-	-	-	-
				J1:10/2	0.29	All					

Junction: J2: Southern R'bout											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
J2:1/1	J2:6/1 (Ahead)	1343	0	J2:5/1	0.29	All	-	-	-	-	-
				J2:5/2	0.29	All					
J2:1/2	J2:6/2 (Ahead)	1343	0	J2:5/1	0.29	All	-	-	-	-	-
				J2:5/2	0.29	All					
	J2:6/3 (Ahead)	1343	0	J2:5/1	0.29	All					
				J2:5/2	0.29	All					

Lane Input Data

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	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:1/2	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:1/3	O		2	3	8.0	Inf	-	-	-	-	-	-
J1:2/1	U	A	2	3	6.0	User	1900	-	-	-	-	-
J1:2/2	U	A	2	3	24.3	User	1900	-	-	-	-	-
J1:2/3	U	A	2	3	24.3	User	1900	-	-	-	-	-
J1:3/1	O		2	3	60.0	User	1800	-	-	-	-	-
J1:3/2	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:4/1	U		2	3	3.0	Inf	-	-	-	-	-	-
J1:4/2	U		2	3	3.0	Inf	-	-	-	-	-	-
J1:5/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:5/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:6/1	U		2	3	16.5	Inf	-	-	-	-	-	-
J1:6/2	U		2	3	16.5	Inf	-	-	-	-	-	-
J1:6/3	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:7/1	U	B	2	3	4.3	User	1900	-	-	-	-	-
J1:7/2	U	B	2	3	4.3	User	1900	-	-	-	-	-
J1:8/1	U		2	3	3.0	Inf	-	-	-	-	-	-
J1:8/2	U		2	3	3.0	Inf	-	-	-	-	-	-
J1:9/1	U		2	3	3.0	Inf	-	-	-	-	-	-
J1:9/2	U		2	3	3.0	Inf	-	-	-	-	-	-
J1:10/1	U		2	3	12.2	Inf	-	-	-	-	-	-
J1:10/2	U		2	3	12.2	Inf	-	-	-	-	-	-

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	O		2	3	24.3	Inf	-	-	-	-	-	-
J2:1/2	O		2	3	24.3	Inf	-	-	-	-	-	-
J2:2/1 (A43 Northbound)	U	B	2	3	12.0	User	1900	-	-	-	-	-
J2:2/2 (A43 Northbound)	U	B	2	3	60.0	User	1900	-	-	-	-	-
J2:2/3 (A43 Northbound)	U	B	2	3	60.0	User	1900	-	-	-	-	-
J2:3/1 (A43 Eastbound)	U	C	2	3	60.0	User	1900	-	-	-	-	-
J2:3/2 (A43 Eastbound)	U	C	2	3	6.0	User	1900	-	-	-	-	-
J2:4/1	U		2	3	3.0	Inf	-	-	-	-	-	-
J2:4/2	U		2	3	3.0	Inf	-	-	-	-	-	-
J2:5/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J2:5/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J2:6/1	U		2	3	16.5	Inf	-	-	-	-	-	-
J2:6/2	U		2	3	16.5	Inf	-	-	-	-	-	-
J2:6/3	U		2	3	16.5	Inf	-	-	-	-	-	-
J2:7/1	U	A	2	3	4.3	User	1900	-	-	-	-	-
J2:8/1	U		2	3	3.0	Inf	-	-	-	-	-	-
J2:8/2	U		2	3	3.0	Inf	-	-	-	-	-	-
J2:9/1	U		2	3	3.0	Inf	-	-	-	-	-	-
J2:10/1	U	D	2	3	12.2	User	1900	-	-	-	-	-
J2:10/2	U	D	2	3	12.2	User	1900	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 J1d Dev AM'	08:00	09:00	01:00	
2: '2031 J1d Dev PM'	17:00	18:00	01:00	
3: '2021 I1 Dev AM'	08:00	09:00	01:00	
4: '2021 I1 Dev PM'	17:00	18:00	01:00	

Scenario 1: '2031 J1d Dev AM' (FG1: '2031 J1d Dev AM', Plan 1: '2031 AM Peak J1a')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	381	703	0	1084
	B	199	0	1555	307	2061
	C	405	1100	0	387	1892
	D	55	330	382	0	767
	Tot.	659	1811	2640	694	5804

Traffic Lane Flows

Lane	Scenario 1: 2031 J1d Dev AM
Junction: J1: Unnamed Junction	
J1:1/1	933
J1:1/2 (with short)	1128(In) 929(Out)
J1:1/3 (short)	199
J1:2/1 (short)	460
J1:2/2 (with short)	1021(In) 561(Out)
J1:2/3	869
J1:3/1	726
J1:3/2	358
J1:4/1	942
J1:4/2	869
J1:5/1	345
J1:5/2	358
J1:6/1	1278
J1:6/2	1287
J1:6/3	199
J1:7/1	99
J1:7/2	100
J1:8/1	1278
J1:8/2	1287
J1:9/1	559
J1:9/2	100
J1:10/1	561
J1:10/2	869
Junction: J2: Southern R'bout	
J2:1/1	1278
J2:1/2	1287
J2:2/1 (short)	387
J2:2/2 (with short)	1146(In) 759(Out)
J2:2/3	746
J2:3/1 (with short)	767(In) 262(Out)
J2:3/2 (short)	505
J2:4/1	1021
J2:4/2	869
J2:5/1	191
J2:5/2	191
J2:6/1	1469
J2:6/2	1171

J2:6/3	307
J2:7/1	307
J2:8/1	1469
J2:8/2	1171
J2:9/1	694
J2:10/1	759
J2:10/2	746

Lane Saturation Flows

Junction: J1: Unnamed Junction								
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	Infinite Saturation Flow						Inf	Inf
J1:1/2	Infinite Saturation Flow						Inf	Inf
J1:1/3	Infinite Saturation Flow						Inf	Inf
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1	This lane uses a directly entered Saturation Flow						1800	1800
J1:3/2	Infinite Saturation Flow						Inf	Inf
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:6/3	Infinite Saturation Flow						Inf	Inf
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:9/2	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Southern R'bout								
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	Infinite Saturation Flow						Inf	Inf
J2:1/2	Infinite Saturation Flow						Inf	Inf
J2:2/1 (A43 Northbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2 (A43 Northbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3 (A43 Northbound Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A43 Eastbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/2 (A43 Eastbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:6/3	Infinite Saturation Flow						Inf	Inf
J2:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/1	Infinite Saturation Flow						Inf	Inf
J2:8/2	Infinite Saturation Flow						Inf	Inf
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:10/2	This lane uses a directly entered Saturation Flow						1900	1900

Scenario 2: '2031 J1d Dev PM' (FG2: '2031 J1d Dev PM', Plan 1: '2031 AM Peak J1a')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	474	443	0	917
	B	238	0	1068	182	1488
	C	440	1147	0	396	1983
	D	238	619	155	0	1012
	Tot.	916	2240	1666	578	5400

Traffic Lane Flows

Lane	Scenario 2: 2031 J1d Dev PM
Junction: J1: Unnamed Junction	
J1:1/1	670
J1:1/2 (with short)	818(In) 580(Out)
J1:1/3 (short)	238
J1:2/1 (short)	678
J1:2/2 (with short)	1373(In) 695(Out)
J1:2/3	1071
J1:3/1	514
J1:3/2	403
J1:4/1	1169
J1:4/2	1071
J1:5/1	40
J1:5/2	403
J1:6/1	710
J1:6/2	983
J1:6/3	238
J1:7/1	119
J1:7/2	119
J1:8/1	710
J1:8/2	983
J1:9/1	797
J1:9/2	119
J1:10/1	695
J1:10/2	1071
Junction: J2: Southern R'bout	
J2:1/1	710
J2:1/2	983
J2:2/1 (short)	396
J2:2/2 (with short)	1189(In) 793(Out)
J2:2/3	794
J2:3/1 (with short)	1012(In) 580(Out)
J2:3/2 (short)	432
J2:4/1	1373
J2:4/2	1071
J2:5/1	77
J2:5/2	78
J2:6/1	787
J2:6/2	879

J2:6/3	182
J2:7/1	182
J2:8/1	787
J2:8/2	879
J2:9/1	578
J2:10/1	793
J2:10/2	794

Lane Saturation Flows

Junction: J1: Unnamed Junction								
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	Infinite Saturation Flow						Inf	Inf
J1:1/2	Infinite Saturation Flow						Inf	Inf
J1:1/3	Infinite Saturation Flow						Inf	Inf
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1	This lane uses a directly entered Saturation Flow						1800	1800
J1:3/2	Infinite Saturation Flow						Inf	Inf
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:6/3	Infinite Saturation Flow						Inf	Inf
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:9/2	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Southern R'bout								
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	Infinite Saturation Flow						Inf	Inf
J2:1/2	Infinite Saturation Flow						Inf	Inf
J2:2/1 (A43 Northbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2 (A43 Northbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3 (A43 Northbound Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A43 Eastbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/2 (A43 Eastbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:6/3	Infinite Saturation Flow						Inf	Inf
J2:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/1	Infinite Saturation Flow						Inf	Inf
J2:8/2	Infinite Saturation Flow						Inf	Inf
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:10/2	This lane uses a directly entered Saturation Flow						1900	1900

Scenario 3: '2021 I1 Dev AM' (FG3: '2021 I1 Dev AM', Plan 1: '2031 AM Peak J1a')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	346	484	0	830
	B	199	0	1864	247	2310
	C	409	1251	0	477	2137
	D	18	287	409	0	714
	Tot.	626	1884	2757	724	5991

Traffic Lane Flows

Lane	Scenario 3: 2021 I1 Dev AM
Junction: J1: Unnamed Junction	
J1:1/1	1056
J1:1/2 (with short)	1254(In) 1055(Out)
J1:1/3 (short)	199
J1:2/1 (short)	427
J1:2/2 (with short)	1034(In) 607(Out)
J1:2/3	931
J1:3/1	583
J1:3/2	247
J1:4/1	953
J1:4/2	931
J1:5/1	237
J1:5/2	247
J1:6/1	1293
J1:6/2	1302
J1:6/3	199
J1:7/1	99
J1:7/2	100
J1:8/1	1293
J1:8/2	1302
J1:9/1	526
J1:9/2	100
J1:10/1	607
J1:10/2	931
Junction: J2: Southern R'bout	
J2:1/1	1293
J2:1/2	1302
J2:2/1 (short)	477
J2:2/2 (with short)	1305(In) 828(Out)
J2:2/3	832
J2:3/1 (with short)	714(In) 206(Out)
J2:3/2 (short)	508
J2:4/1	1034
J2:4/2	931
J2:5/1	204
J2:5/2	205
J2:6/1	1497
J2:6/2	1260

J2:6/3	247
J2:7/1	247
J2:8/1	1497
J2:8/2	1260
J2:9/1	724
J2:10/1	828
J2:10/2	832

Lane Saturation Flows

Junction: J1: Unnamed Junction								
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	Infinite Saturation Flow						Inf	Inf
J1:1/2	Infinite Saturation Flow						Inf	Inf
J1:1/3	Infinite Saturation Flow						Inf	Inf
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1	This lane uses a directly entered Saturation Flow						1800	1800
J1:3/2	Infinite Saturation Flow						Inf	Inf
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:6/3	Infinite Saturation Flow						Inf	Inf
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:9/2	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Southern R'bout								
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	Infinite Saturation Flow						Inf	Inf
J2:1/2	Infinite Saturation Flow						Inf	Inf
J2:2/1 (A43 Northbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2 (A43 Northbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3 (A43 Northbound Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A43 Eastbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/2 (A43 Eastbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:6/3	Infinite Saturation Flow						Inf	Inf
J2:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/1	Infinite Saturation Flow						Inf	Inf
J2:8/2	Infinite Saturation Flow						Inf	Inf
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:10/2	This lane uses a directly entered Saturation Flow						1900	1900

Scenario 4: '2021 I1 Dev PM' (FG4: '2021 I1 Dev PM', Plan 1: '2031 AM Peak J1a')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	578	531	0	1109
	B	297	0	1098	247	1642
	C	336	1291	0	484	2111
	D	172	604	141	0	917
	Tot.	805	2473	1770	731	5779

Traffic Lane Flows

Lane	Scenario 4: 2021 I1 Dev PM
Junction: J1: Unnamed Junction	
J1:1/1	754
J1:1/2 (with short)	888(In) 591(Out)
J1:1/3 (short)	297
J1:2/1 (short)	508
J1:2/2 (with short)	1297(In) 789(Out)
J1:2/3	1106
J1:3/1	592
J1:3/2	517
J1:4/1	1367
J1:4/2	1106
J1:5/1	14
J1:5/2	517
J1:6/1	768
J1:6/2	1108
J1:6/3	297
J1:7/1	148
J1:7/2	149
J1:8/1	768
J1:8/2	1108
J1:9/1	656
J1:9/2	149
J1:10/1	789
J1:10/2	1106
Junction: J2: Southern R'bout	
J2:1/1	768
J2:1/2	1108
J2:2/1 (short)	484
J2:2/2 (with short)	1294(In) 810(Out)
J2:2/3	817
J2:3/1 (with short)	917(In) 487(Out)
J2:3/2 (short)	430
J2:4/1	1297
J2:4/2	1106
J2:5/1	70
J2:5/2	71
J2:6/1	838
J2:6/2	932

J2:6/3	247
J2:7/1	247
J2:8/1	838
J2:8/2	932
J2:9/1	731
J2:10/1	810
J2:10/2	817

Lane Saturation Flows

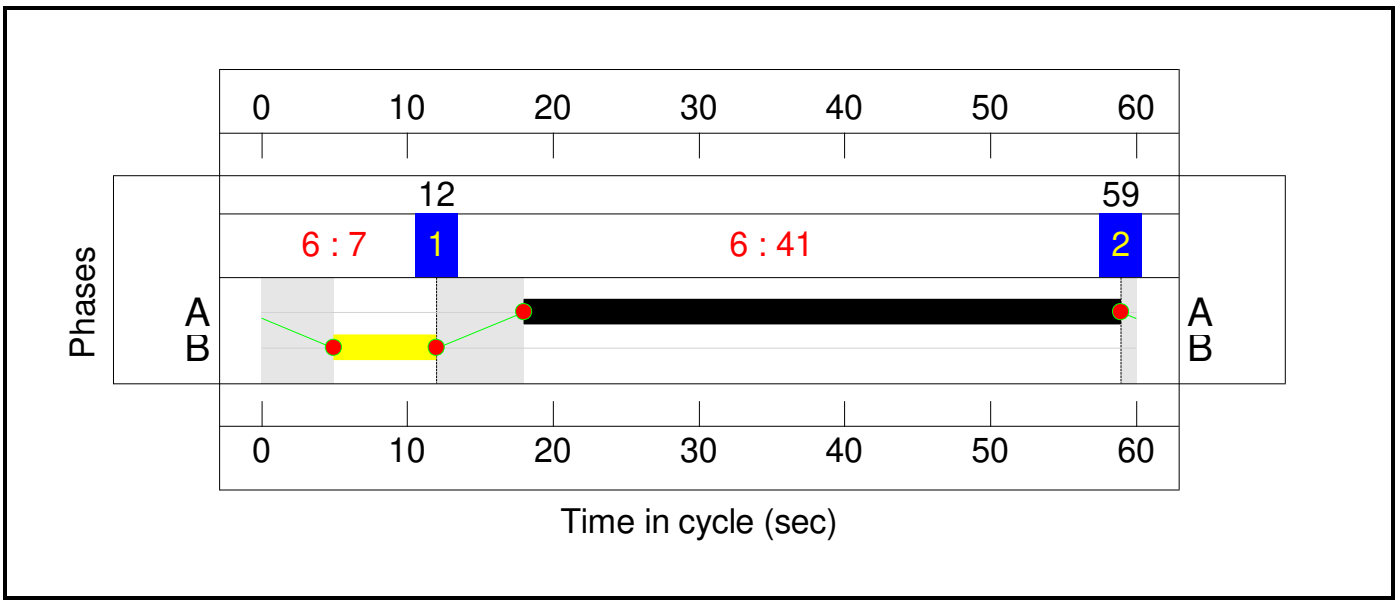
Junction: J1: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1	Infinite Saturation Flow						Inf	Inf
J1:1/2	Infinite Saturation Flow						Inf	Inf
J1:1/3	Infinite Saturation Flow						Inf	Inf
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1	This lane uses a directly entered Saturation Flow						1800	1800
J1:3/2	Infinite Saturation Flow						Inf	Inf
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:6/3	Infinite Saturation Flow						Inf	Inf
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:9/2	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Southern R'bout								
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	Infinite Saturation Flow						Inf	Inf
J2:1/2	Infinite Saturation Flow						Inf	Inf
J2:2/1 (A43 Northbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2 (A43 Northbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3 (A43 Northbound Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A43 Eastbound Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/2 (A43 Eastbound Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:6/3	Infinite Saturation Flow						Inf	Inf
J2:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/1	Infinite Saturation Flow						Inf	Inf
J2:8/2	Infinite Saturation Flow						Inf	Inf
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:10/2	This lane uses a directly entered Saturation Flow						1900	1900

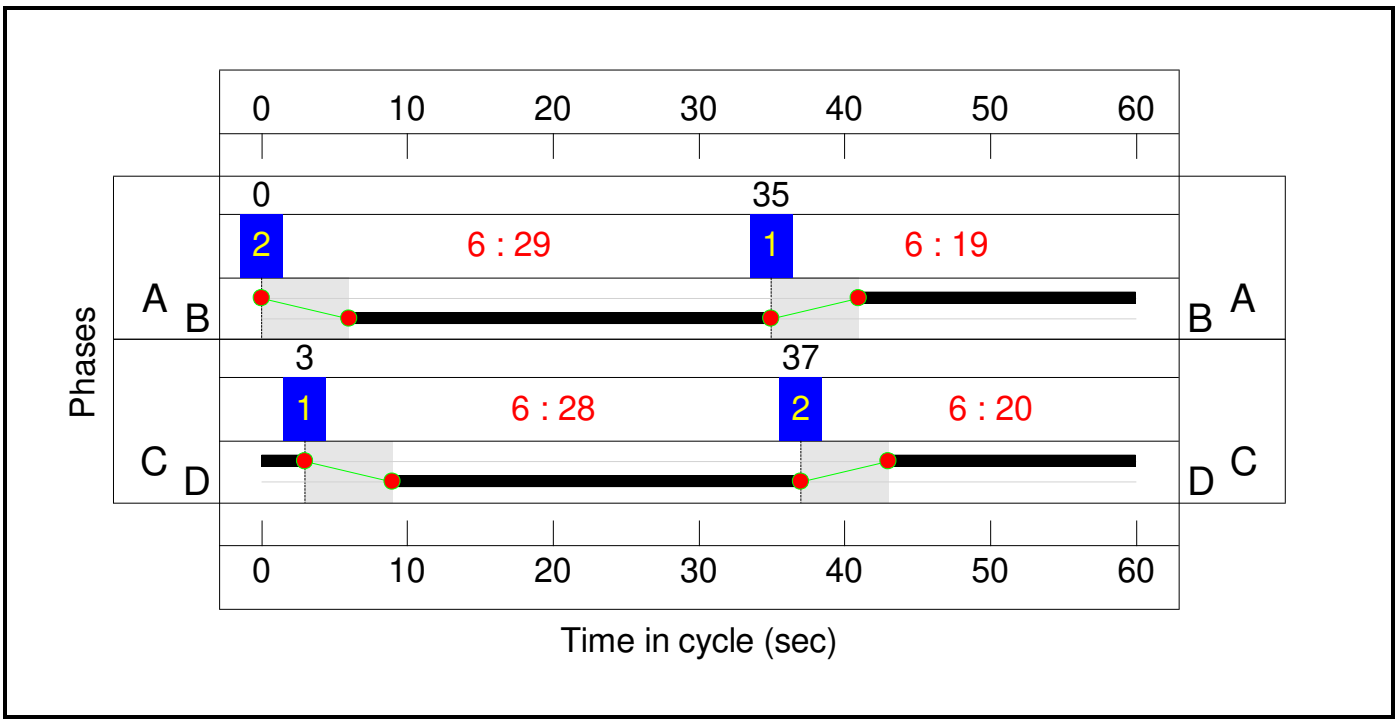
Signal Timings Diagram

Scenario 1: '2031 J1d Dev AM' (FG1: '2031 J1d Dev AM', Plan 1: '2031 AM Peak J1a')

C1



C2


0
10
20
30
40
50
60
0
35
2
6 : 29
1
6 : 19
A
B
B
A
3
37
1
6 : 28
2
6 : 20
C
D
D
C
Phases
Time in cycle (sec)

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: M1 Junction 15a Proposed Mitigation	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.0%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.0%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	933	Inf	889	105.0%
1/2+1/3	Ahead	O	N/A	N/A	-		-	-	-	1128	Inf : Inf	889+190	104.5 : 104.5%
2/2+2/1	Left Ahead	U	1:1	N/A	C1:A		1	41	-	1021	1900:1900	899+737	62.4 : 62.4%
2/3	Ahead	U	1:1	N/A	C1:A		1	41	-	869	1900	1330	65.3%
3/1	Left Ahead	O	N/A	N/A	-		-	-	-	726	1800	859	84.5%
3/2	Ahead	O	N/A	N/A	-		-	-	-	358	Inf	859	41.7%
4/1		U	N/A	N/A	-		-	-	-	942	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	869	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	345	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	358	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1278	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1287	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	199	Inf	Inf	0.0%
7/1	Ahead	U	1:1	N/A	C1:B		1	7	-	99	1900	253	39.1%
7/2	Ahead	U	1:1	N/A	C1:B		1	7	-	100	1900	253	39.5%
8/1	Ahead	U	N/A	N/A	-		-	-	-	1278	Inf	Inf	0.0%
8/2	Ahead	U	N/A	N/A	-		-	-	-	1287	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	559	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	100	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	561	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	869	Inf	Inf	0.0%
J2: Southern R'bout	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.2%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	1278	Inf	1232	100.2%

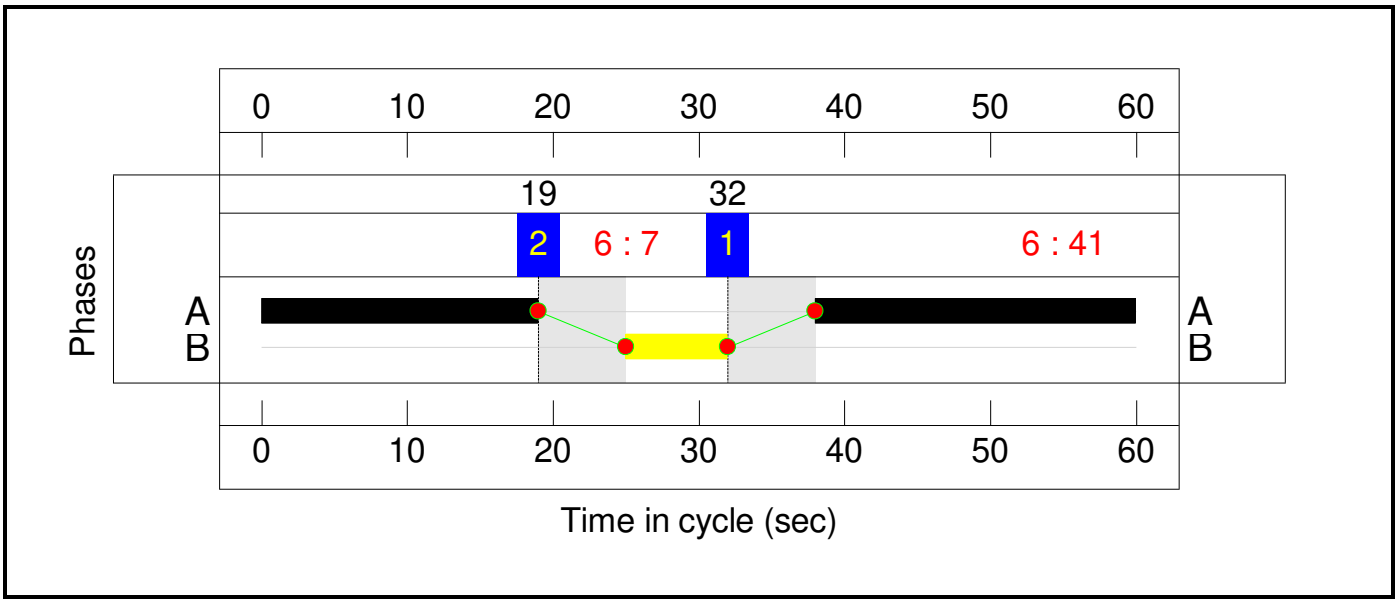
1/2	Ahead	O	N/A	N/A	-		-	-	-	1287	Inf	1232	101.2%
2/2+2/1	A43 Northbound Left Ahead	U	2:1	N/A	C2:B		1	29	-	1146	1900:1900	867+442	87.6 : 87.6%
2/3	A43 Northbound Ahead	U	2:1	N/A	C2:B		1	29	-	746	1900	950	78.5%
3/1+3/2	A43 Eastbound Left Ahead	U	2:2	N/A	C2:C		1	20	-	767	1900:1900	295+568	88.8 : 88.8%
4/1	Ahead	U	N/A	N/A	-		-	-	-	1021	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	869	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	191	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	191	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1469	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1171	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	307	Inf	Inf	0.0%
7/1	Ahead	U	2:1	N/A	C2:A		1	19	-	307	1900	633	45.8%
8/1		U	N/A	N/A	-		-	-	-	1469	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	1171	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	694	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	28	-	759	1900	918	82.6%
10/2	Ahead	U	2:2	N/A	C2:D		1	28	-	746	1900	918	81.2%

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: M1 Junction 15a Proposed Mitigation	**-**	**-**	**6613**	**0**	**0**	**19.7**	**121.7**	**0.0**	**141.4**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**4149**	**0**	**0**	**6.2**	**68.2**	**0.0**	**74.4**	**-**	**-**	**-**	**-**
1/1	933	889	889	0	0	2.0	29.9	-	31.8	122.8	46.7	29.9	76.5
1/2+1/3	1128	1088	2176	0	0	1.8	32.9	-	34.7	110.8	46.5	32.9	79.4
2/2+2/1	1021	1021	-	-	-	0.2	0.8	-	1.0	3.6	1.0	0.8	1.8
2/3	869	869	-	-	-	0.3	0.9	-	1.2	5.1	1.8	0.9	2.7
3/1	726	726	726	0	0	0.6	2.6	-	3.3	16.2	9.1	2.6	11.7
3/2	358	358	358	0	0	0.0	0.4	-	0.4	3.6	0.3	0.4	0.7
4/1	942	942	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	869	869	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	345	345	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	358	358	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1234	1234	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1247	1247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	199	199	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	99	99	-	-	-	0.7	0.3	-	1.0	35.4	1.5	0.3	1.8
7/2	100	100	-	-	-	0.7	0.3	-	1.0	35.5	1.5	0.3	1.8
8/1	1234	1234	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1247	1247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	100	100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	869	869	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Southern R'bout	**-**	**-**	**2464**	**0**	**0**	**13.4**	**53.5**	**0.0**	**67.0**	**-**	**-**	**-**	**-**
1/1	1234	1232	1232	0	0	0.5	18.0	-	18.5	54.1	44.0	18.0	62.1
1/2	1247	1232	1232	0	0	1.2	21.8	-	22.9	66.2	44.7	21.8	66.5

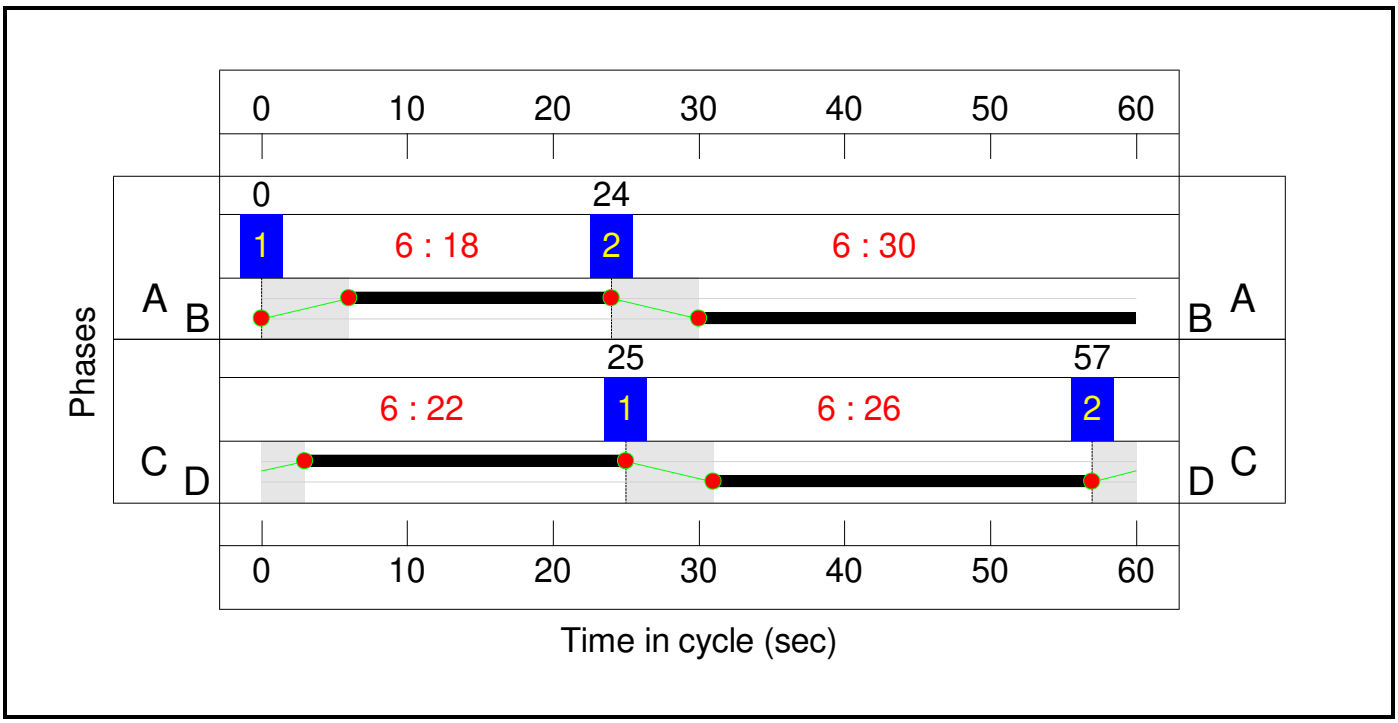
2/2+2/1	1146	1146	-	-	-	3.6	3.4	-	7.0	22.1	10.3	3.4	13.7
2/3	746	746	-	-	-	2.6	1.8	-	4.4	21.0	10.2	1.8	12.0
3/1+3/2	767	767	-	-	-	3.6	3.7	-	7.2	34.0	8.4	3.7	12.1
4/1	1021	1021	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	869	869	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	191	191	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	191	191	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1423	1423	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1133	1133	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	290	290	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	290	290	-	-	-	1.2	0.4	-	1.6	19.6	3.8	0.4	4.2
8/1	1423	1423	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1133	1133	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	677	677	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	759	759	-	-	-	0.4	2.3	-	2.7	13.0	0.8	2.3	3.2
10/2	746	746	-	-	-	0.4	2.1	-	2.5	12.2	0.8	2.1	2.9

C1	Stream: 1 PRC for Signalled Lanes (%):	37.7	Total Delay for Signalled Lanes (pcuHr):	4.23	Cycle Time (s): 60
C2	Stream: 1 PRC for Signalled Lanes (%):	2.8	Total Delay for Signalled Lanes (pcuHr):	12.97	Cycle Time (s): 60
C2	Stream: 2 PRC for Signalled Lanes (%):	1.3	Total Delay for Signalled Lanes (pcuHr):	12.51	Cycle Time (s): 60
	PRC Over All Lanes (%):	-16.6	Total Delay Over All Lanes(pcuHr):	141.36	

Signal Timings Diagram
Scenario 2: '2031 J1d Dev PM' (FG2: '2031 J1d Dev PM', Plan 1: '2031 AM Peak J1a')
C1



C2



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: M1 Junction 15a Proposed Mitigation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**100.4%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.0%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	670	Inf	967	69.3%
1/2+1/3	Ahead	O	N/A	N/A	-		-	-	-	818	Inf : Inf	967+397	60.0 : 60.0%
2/2+2/1	Left Ahead	U	1:1	N/A	C1:A		1	41	-	1373	1900:1900	857+836	81.0 : 81.0%
2/3	Ahead	U	1:1	N/A	C1:A		1	41	-	1071	1900	1330	80.4%
3/1	Left Ahead	O	N/A	N/A	-		-	-	-	514	1800	762	67.4%
3/2	Ahead	O	N/A	N/A	-		-	-	-	403	Inf	762	52.9%
4/1		U	N/A	N/A	-		-	-	-	1169	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	1071	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	40	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	403	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	710	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	983	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	238	Inf	Inf	0.0%
7/1	Ahead	U	1:1	N/A	C1:B		1	7	-	119	1900	253	47.0%
7/2	Ahead	U	1:1	N/A	C1:B		1	7	-	119	1900	253	47.0%
8/1	Ahead	U	N/A	N/A	-		-	-	-	710	Inf	Inf	0.0%
8/2	Ahead	U	N/A	N/A	-		-	-	-	983	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	797	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	119	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	695	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	1071	Inf	Inf	0.0%
J2: Southern R'bout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**100.4%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	710	Inf	1298	54.7%

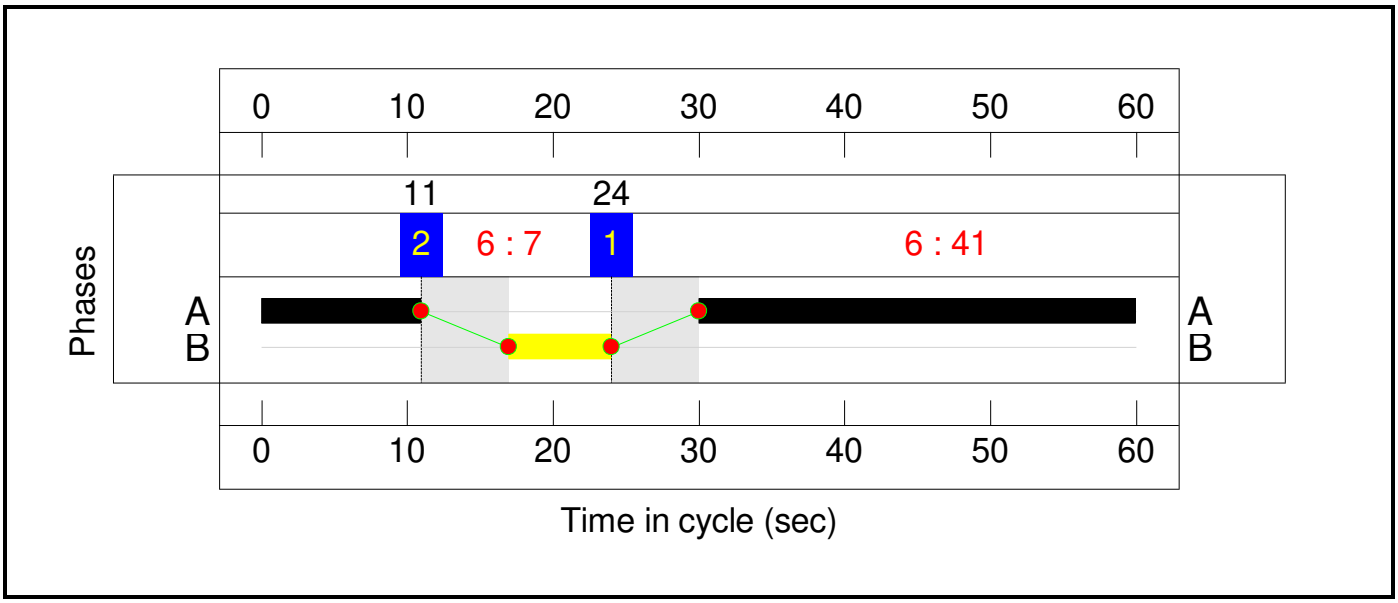
1/2	Ahead	O	N/A	N/A	-		-	-	-	983	Inf	1298	75.7%
2/2+2/1	A43 Northbound Left Ahead	U	2:1	N/A	C2:B		1	30	-	1189	1900:1900	889+444	89.2 : 89.2%
2/3	A43 Northbound Ahead	U	2:1	N/A	C2:B		1	30	-	794	1900	982	80.9%
3/1+3/2	A43 Eastbound Left Ahead	U	2:2	N/A	C2:C		1	22	-	1012	1900:1900	578+430	100.4 : 100.4%
4/1	Ahead	U	N/A	N/A	-		-	-	-	1373	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	1071	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	77	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	787	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	879	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	182	Inf	Inf	0.0%
7/1	Ahead	U	2:1	N/A	C2:A		1	18	-	182	1900	602	30.2%
8/1		U	N/A	N/A	-		-	-	-	787	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	879	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	578	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	26	-	793	1900	855	92.7%
10/2	Ahead	U	2:2	N/A	C2:D		1	26	-	794	1900	855	92.9%

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: M1 Junction 15a Proposed Mitigation	**-**	**-**	**4916**	**0**	**0**	**18.1**	**44.7**	**0.0**	**62.8**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**3223**	**0**	**0**	**4.2**	**8.5**	**0.0**	**12.7**	**-**	**-**	**-**	**-**
1/1	670	670	670	0	0	0.0	1.1	-	1.1	6.0	0.0	1.1	1.1
1/2+1/3	818	818	1636	0	0	0.0	0.7	-	0.7	3.3	0.0	0.7	0.7
2/2+2/1	1371	1371	-	-	-	1.5	2.1	-	3.6	9.5	4.7	2.1	6.8
2/3	1070	1070	-	-	-	0.6	2.0	-	2.6	8.7	4.6	2.0	6.6
3/1	514	514	514	0	0	0.4	1.0	-	1.4	10.1	5.0	1.0	6.0
3/2	403	403	403	0	0	0.1	0.6	-	0.7	6.3	3.4	0.6	3.9
4/1	1168	1168	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	1070	1070	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	40	40	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	403	403	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	983	983	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	238	238	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	119	119	-	-	-	0.8	0.4	-	1.2	37.4	1.8	0.4	2.3
7/2	119	119	-	-	-	0.8	0.4	-	1.2	37.4	1.8	0.4	2.3
8/1	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	983	983	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	796	796	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	119	119	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	694	694	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	1070	1070	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Southern R'bout	**-**	**-**	**1693**	**0**	**0**	**13.8**	**36.2**	**0.0**	**50.1**	**-**	**-**	**-**	**-**
1/1	710	710	710	0	0	0.0	0.6	-	0.6	3.1	0.0	0.6	0.6
1/2	983	983	983	0	0	0.0	1.5	-	1.5	5.7	0.0	1.5	1.5

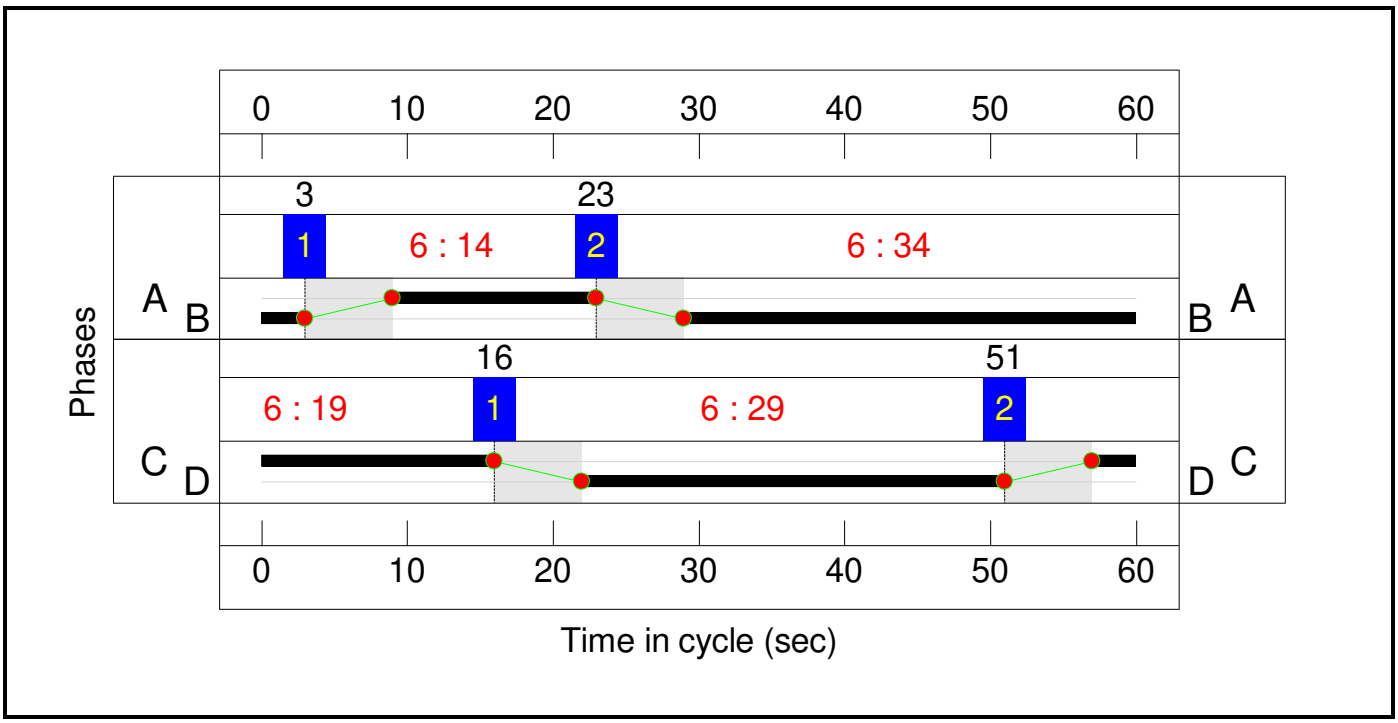
2/2+2/1	1189	1189	-	-	-	3.6	3.9	-	7.5	22.8	10.8	3.9	14.7
2/3	794	794	-	-	-	2.7	2.1	-	4.7	21.4	10.8	2.1	12.9
3/1+3/2	1012	1008	-	-	-	4.8	16.9	-	21.7	77.1	12.5	16.9	29.4
4/1	1371	1371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	1070	1070	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	77	77	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	78	78	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	787	787	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	182	182	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	182	182	-	-	-	0.8	0.2	-	1.0	19.8	2.3	0.2	2.5
8/1	787	787	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	578	578	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	793	793	-	-	-	1.0	5.4	-	6.4	29.3	2.0	5.4	7.4
10/2	794	794	-	-	-	1.0	5.5	-	6.5	29.6	2.0	5.5	7.5

C1	Stream: 1	PRC for Signalled Lanes (%):	11.1	Total Delay for Signalled Lanes (pcuHr):	8.69	Cycle Time (s): 60
C2	Stream: 1	PRC for Signalled Lanes (%):	0.9	Total Delay for Signalled Lanes (pcuHr):	13.27	Cycle Time (s): 60
C2	Stream: 2	PRC for Signalled Lanes (%):	-11.5	Total Delay for Signalled Lanes (pcuHr):	34.64	Cycle Time (s): 60
		PRC Over All Lanes (%):	-11.5	Total Delay Over All Lanes(pcuHr):	62.76	

Signal Timings Diagram
Scenario 3: '2021 I1 Dev AM' (FG3: '2021 I1 Dev AM', Plan 1: '2031 AM Peak J1a')
C1



C2



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: M1 Junction 15a Proposed Mitigation	-	-	**N/A**	-	-		-	-	-	-	-	-	**110.6%**
J1: Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**110.6%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	1056	Inf	955	110.6%
1/2+1/3	Ahead	O	N/A	N/A	-		-	-	-	1254	Inf : Inf	955+180	110.5 : 110.5%
2/2+2/1	Left Ahead	U	1:1	N/A	C1:A		1	41	-	1034	1900:1900	936+659	64.8 : 64.8%
2/3	Ahead	U	1:1	N/A	C1:A		1	41	-	931	1900	1330	70.0%
3/1	Left Ahead	O	N/A	N/A	-		-	-	-	583	1800	828	70.4%
3/2	Ahead	O	N/A	N/A	-		-	-	-	247	Inf	828	29.8%
4/1		U	N/A	N/A	-		-	-	-	953	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	931	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	237	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1293	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1302	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	199	Inf	Inf	0.0%
7/1	Ahead	U	1:1	N/A	C1:B		1	7	-	99	1900	253	39.1%
7/2	Ahead	U	1:1	N/A	C1:B		1	7	-	100	1900	253	39.5%
8/1	Ahead	U	N/A	N/A	-		-	-	-	1293	Inf	Inf	0.0%
8/2	Ahead	U	N/A	N/A	-		-	-	-	1302	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	526	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	100	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	607	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	931	Inf	Inf	0.0%
J2: Southern R'bout	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.2%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	1293	Inf	1224	97.3%

1/2	Ahead	O	N/A	N/A	-		-	-	-	1302	Inf	1224	98.2%
2/2+2/1	A43 Northbound Left Ahead	U	2:1	N/A	C2:B		1	34	-	1305	1900:1900	961+554	86.2 : 86.2%
2/3	A43 Northbound Ahead	U	2:1	N/A	C2:B		1	34	-	832	1900	1108	75.1%
3/1+3/2	A43 Eastbound Left Ahead	U	2:2	N/A	C2:C		1	19	-	714	1900:1900	228+563	90.3 : 90.3%
4/1	Ahead	U	N/A	N/A	-		-	-	-	1034	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	931	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	204	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	205	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1497	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%
7/1	Ahead	U	2:1	N/A	C2:A		1	14	-	247	1900	475	47.1%
8/1		U	N/A	N/A	-		-	-	-	1497	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	724	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	29	-	828	1900	950	87.2%
10/2	Ahead	U	2:2	N/A	C2:D		1	29	-	832	1900	950	87.6%

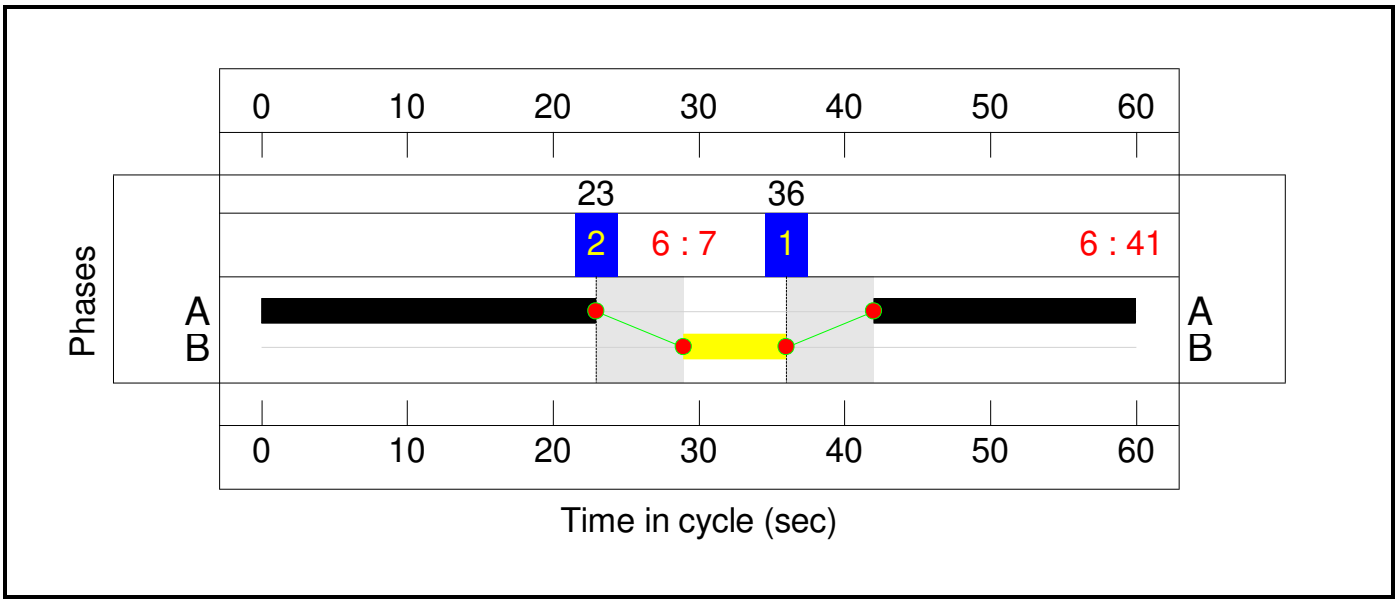
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: M1 Junction 15a Proposed Mitigation	**-**	**-**	**6485**	**0**	**0**	**25.8**	**163.3**	**0.0**	**189.2**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**4092**	**0**	**0**	**10.4**	**124.1**	**0.0**	**134.5**	**-**	**-**	**-**	**-**
1/1	1056	955	955	0	0	4.2	55.5	-	59.7	203.5	52.8	55.5	108.3
1/2+1/3	1254	1154	2307	0	0	4.2	64.5	-	68.7	197.3	52.8	64.5	117.3
2/2+2/1	1034	1034	-	-	-	0.2	0.9	-	1.2	4.0	1.2	0.9	2.1
2/3	931	931	-	-	-	0.3	1.2	-	1.4	5.5	1.2	1.2	2.4
3/1	583	583	583	0	0	0.2	1.2	-	1.4	8.4	3.2	1.2	4.4
3/2	247	247	247	0	0	0.0	0.2	-	0.2	3.1	0.1	0.2	0.3
4/1	953	953	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	931	931	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	237	237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	247	247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1192	1192	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1202	1202	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	199	199	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	99	99	-	-	-	0.7	0.3	-	1.0	35.4	1.5	0.3	1.8
7/2	100	100	-	-	-	0.7	0.3	-	1.0	35.5	1.5	0.3	1.8
8/1	1192	1192	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1202	1202	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	526	526	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	100	100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	607	607	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	931	931	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Southern R'bout	**-**	**-**	**2393**	**0**	**0**	**15.4**	**39.2**	**0.0**	**54.6**	**-**	**-**	**-**	**-**
1/1	1192	1192	1192	0	0	0.5	10.9	-	11.5	34.6	16.3	10.9	27.3
1/2	1202	1202	1202	0	0	0.6	12.6	-	13.2	39.5	17.1	12.6	29.6

2/2+2/1	1305	1305	-	-	-	3.0	3.0	-	6.1	16.7	10.1	3.0	13.1
2/3	832	832	-	-	-	2.1	1.5	-	3.6	15.7	10.2	1.5	11.7
3/1+3/2	714	714	-	-	-	3.5	4.2	-	7.7	38.7	8.7	4.2	12.9
4/1	1034	1034	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	931	931	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	204	204	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	205	205	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1396	1396	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1183	1183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	223	223	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	223	223	-	-	-	1.2	0.4	-	1.7	27.2	3.3	0.4	3.7
8/1	1396	1396	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1183	1183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	700	700	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	828	828	-	-	-	2.1	3.2	-	5.4	23.4	4.8	3.2	8.1
10/2	832	832	-	-	-	2.2	3.3	-	5.5	23.9	4.9	3.3	8.2

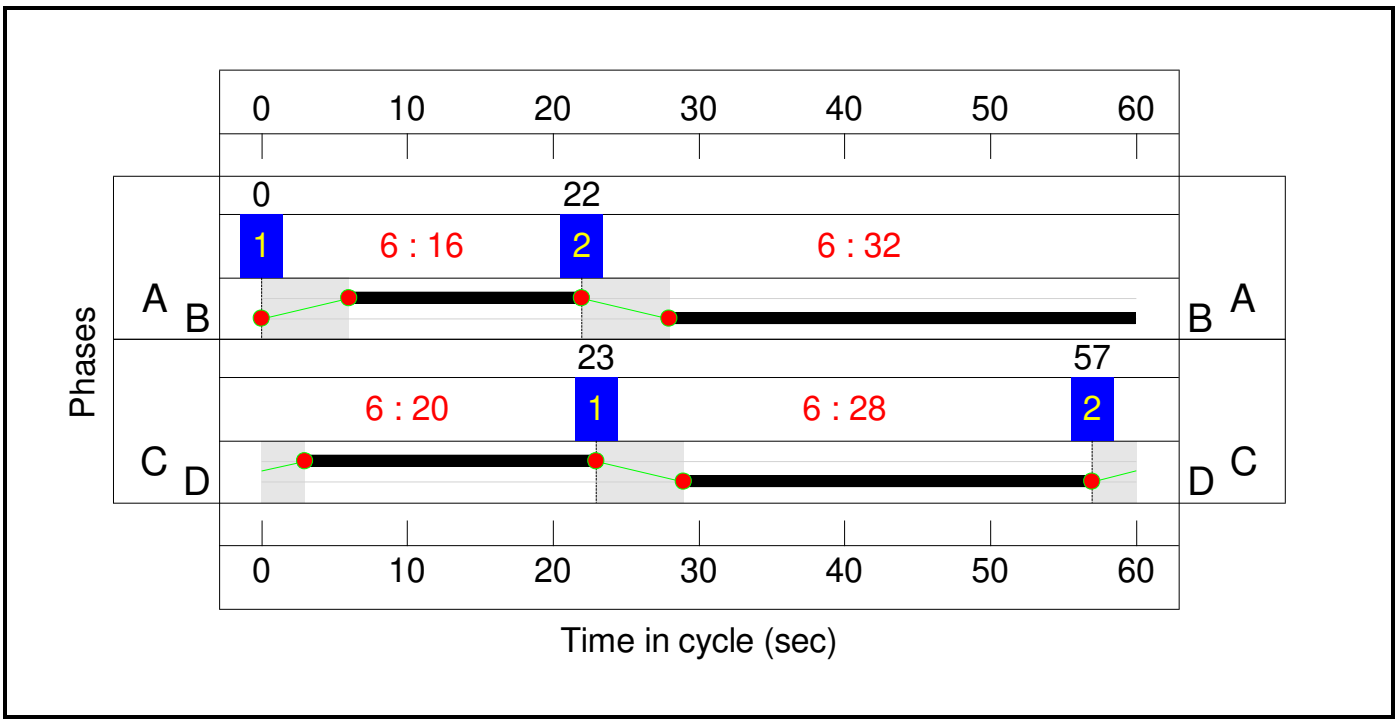
C1	Stream: 1	PRC for Signalled Lanes (%):	28.6	Total Delay for Signalled Lanes (pcuHr):	4.55
C2	Stream: 1	PRC for Signalled Lanes (%):	4.5	Total Delay for Signalled Lanes (pcuHr):	11.39
C2	Stream: 2	PRC for Signalled Lanes (%):	-0.3	Total Delay for Signalled Lanes (pcuHr):	18.57
		PRC Over All Lanes (%):	-22.9	Total Delay Over All Lanes(pcuHr):	189.15

Cycle Time (s):	60
Cycle Time (s):	60
Cycle Time (s):	60

Signal Timings Diagram
Scenario 4: '2021 I1 Dev PM' (FG4: '2021 I1 Dev PM', Plan 1: '2031 AM Peak J1a')
C1



C2



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: M1 Junction 15a Proposed Mitigation	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.2%**
J1: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.2%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	754	Inf	941	80.2%
1/2+1/3	Ahead	O	N/A	N/A	-		-	-	-	888	Inf : Inf	941+473	62.8 : 62.8%
2/2+2/1	Left Ahead	U	1:1	N/A	C1:A		1	41	-	1297	1900:1900	957+616	82.4 : 82.4%
2/3	Ahead	U	1:1	N/A	C1:A		1	41	-	1106	1900	1330	83.2%
3/1	Left Ahead	O	N/A	N/A	-		-	-	-	592	1800	724	81.8%
3/2	Ahead	O	N/A	N/A	-		-	-	-	517	Inf	724	71.4%
4/1		U	N/A	N/A	-		-	-	-	1367	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	1106	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	14	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	517	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	768	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1108	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	297	Inf	Inf	0.0%
7/1	Ahead	U	1:1	N/A	C1:B		1	7	-	148	1900	253	58.4%
7/2	Ahead	U	1:1	N/A	C1:B		1	7	-	149	1900	253	58.8%
8/1	Ahead	U	N/A	N/A	-		-	-	-	768	Inf	Inf	0.0%
8/2	Ahead	U	N/A	N/A	-		-	-	-	1108	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	656	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	149	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	789	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	1106	Inf	Inf	0.0%
J2: Southern R'bout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.2%**
1/1	Ahead	O	N/A	N/A	-		-	-	-	768	Inf	1302	59.0%

1/2	Ahead	O	N/A	N/A	-		-	-	-	1108	Inf	1302	85.1%
2/2+2/1	A43 Northbound Left Ahead	U	2:1	N/A	C2:B		1	32	-	1294	1900:1900	918+549	88.2 : 88.2%
2/3	A43 Northbound Ahead	U	2:1	N/A	C2:B		1	32	-	817	1900	1045	78.2%
3/1+3/2	A43 Eastbound Left Ahead	U	2:2	N/A	C2:C		1	20	-	917	1900:1900	528+466	92.2 : 92.2%
4/1	Ahead	U	N/A	N/A	-		-	-	-	1297	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	1106	Inf	Inf	0.0%
5/1	Right	U	N/A	N/A	-		-	-	-	70	Inf	Inf	0.0%
5/2	Right	U	N/A	N/A	-		-	-	-	71	Inf	Inf	0.0%
6/1	Ahead	U	N/A	N/A	-		-	-	-	838	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	932	Inf	Inf	0.0%
6/3	Right	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%
7/1	Ahead	U	2:1	N/A	C2:A		1	16	-	247	1900	538	45.9%
8/1		U	N/A	N/A	-		-	-	-	838	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	932	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	731	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	28	-	810	1900	918	88.2%
10/2	Ahead	U	2:2	N/A	C2:D		1	28	-	817	1900	918	89.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: M1 Junction 15a Proposed Mitigation	**-**	**-**	**5515**	**0**	**0**	**18.9**	**34.1**	**0.0**	**53.0**	**-**	**-**	**-**	**-**
J1: Unnamed Junction	**-**	**-**	**3639**	**0**	**0**	**5.5**	**12.3**	**0.0**	**17.8**	**-**	**-**	**-**	**-**
1/1	754	754	754	0	0	0.0	2.0	-	2.0	9.5	0.8	2.0	2.8
1/2+1/3	888	888	1776	0	0	0.0	0.8	-	0.8	3.4	0.0	0.8	0.8
2/2+2/1	1297	1297	-	-	-	0.9	2.3	-	3.2	8.9	4.9	2.3	7.2
2/3	1106	1106	-	-	-	1.1	2.4	-	3.5	11.3	14.9	2.4	17.3
3/1	592	592	592	0	0	0.9	2.2	-	3.1	18.8	7.9	2.2	10.1
3/2	517	517	517	0	0	0.6	1.2	-	1.8	12.5	6.2	1.2	7.4
4/1	1367	1367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	1106	1106	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	14	14	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	517	517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	768	768	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1108	1108	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	297	297	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	148	148	-	-	-	1.0	0.7	-	1.7	41.3	2.3	0.7	3.0
7/2	149	149	-	-	-	1.0	0.7	-	1.7	41.5	2.3	0.7	3.0
8/1	768	768	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1108	1108	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	656	656	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	789	789	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	1106	1106	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Southern R'bout	**-**	**-**	**1876**	**0**	**0**	**13.4**	**21.8**	**0.0**	**35.2**	**-**	**-**	**-**	**-**
1/1	768	768	768	0	0	0.0	0.7	-	0.7	3.4	0.0	0.7	0.7
1/2	1108	1108	1108	0	0	0.1	2.8	-	2.8	9.3	4.9	2.8	7.7

2/2+2/1	1294	1294	-	-	-	3.5	3.6	-	7.1	19.7	10.6	3.6	14.2
2/3	817	817	-	-	-	2.4	1.8	-	4.2	18.4	10.7	1.8	12.4
3/1+3/2	917	917	-	-	-	4.3	5.2	-	9.5	37.4	8.8	5.2	14.0
4/1	1297	1297	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	1106	1106	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	70	70	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	71	71	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	838	838	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	932	932	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	247	247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	247	247	-	-	-	1.2	0.4	-	1.6	23.7	3.4	0.4	3.8
8/1	838	838	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	932	932	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	731	731	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	810	810	-	-	-	1.0	3.5	-	4.5	19.9	2.0	3.5	5.5
10/2	817	817	-	-	-	1.0	3.8	-	4.7	20.8	2.0	3.8	5.8

C1	Stream: 1	PRC for Signalled Lanes (%):	8.2	Total Delay for Signalled Lanes (pcuHr):	10.11	Cycle Time (s): 60
C2	Stream: 1	PRC for Signalled Lanes (%):	2.0	Total Delay for Signalled Lanes (pcuHr):	12.88	Cycle Time (s): 60
C2	Stream: 2	PRC for Signalled Lanes (%):	-2.4	Total Delay for Signalled Lanes (pcuHr):	18.72	Cycle Time (s): 60
		PRC Over All Lanes (%):	-2.4	Total Delay Over All Lanes(pcuHr):	52.99	