

Appendix 59 M1 Junction 15A Opening Year assessment results

Junctions 8
ARCADY 8 - Roundabout Module
Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2018
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
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: M1 Jct 15a (North) B1 and H1 ARCADY Model.arc8

Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP

Report generation date: 16/03/2018 14:24:44

- » **NSTM Traffic Flows - 2021 B1, AM**
- » **NSTM Traffic Flows - 2021 B1, PM**
- » **NSTM Traffic Flows - 2021 H1, AM**
- » **NSTM Traffic Flows - 2021 H1, PM**

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
NSTM Traffic Flows - 2021 B1						
Arm 1	3.76	6.49	0.77	7.04	11.20	0.86
Arm 2	5.77	20.84	0.83	8.09	29.34	0.89
Arm 3	4.13	7.83	0.78	2.45	5.21	0.69
NSTM Traffic Flows - 2021 H1						
Arm 1	2.97	5.48	0.72	6.50	10.54	0.85
Arm 2	4.45	15.72	0.79	6.19	22.61	0.85
Arm 3	3.31	6.59	0.73	2.40	5.05	0.68

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

"D1 - 2021 B1, AM " model duration: 08:00 - 09:30

"D2 - 2021 B1, PM" model duration: 17:00 - 18:30

"D3 - 2021 H1, AM" model duration: 08:00 - 09:30

"D4 - 2021 H1, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 16/03/2018 14:24:39

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 B1, 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 B1, AM	2021 B1	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				9.93	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 S Link	
2	2	M1 Sbdn 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)	I' - 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	✓	1922.00	100.000
2	ONE HOUR	✓	947.00	100.000
3	ONE HOUR	✓	1757.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	350.000	1572.000
	2	569.000	0.000	378.000
	3	1536.000	221.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.18	0.82
	2	0.60	0.00	0.40
	3	0.87	0.13	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.040	1.201
	2	1.409	1.000	1.034
	3	1.242	1.014	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	4.0	20.1
	2	40.9	0.0	3.4
	3	24.2	1.4	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	0.77	6.49	3.76	A	1763.66	2645.49	202.67	4.60	2.25	202.68	4.60
2	0.83	20.84	5.77	C	868.98	1303.48	244.56	11.26	2.72	244.58	11.26
3	0.78	7.83	4.13	A	1612.25	2418.38	213.39	5.29	2.37	213.41	5.29

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	1446.98	361.75	1442.07	1577.93	165.76	0.00	2813.57	2716.60	0.514	0.00	1.23	3.054	A
2	712.95	178.24	708.71	428.37	1179.47	0.00	1531.63	1000.10	0.465	0.00	1.06	5.358	A
3	1322.76	330.69	1317.87	1462.35	425.83	0.00	2618.70	2504.88	0.505	0.00	1.22	3.330	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	1727.84	431.96	1725.25	1888.10	198.33	0.00	2792.42	2716.60	0.619	1.23	1.87	3.931	A
2	851.33	212.83	848.27	512.50	1411.08	0.00	1413.53	1000.10	0.602	1.06	1.82	7.796	A
3	1579.51	394.88	1576.75	1749.67	509.68	0.00	2564.19	2504.88	0.616	1.22	1.91	4.391	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	2116.16	529.04	2108.83	2301.61	242.26	0.00	2763.88	2716.59	0.766	1.87	3.71	6.349	A
2	1042.67	260.67	1028.29	626.28	1724.81	0.00	1253.56	1000.11	0.832	1.82	5.42	18.598	C
3	1934.49	483.62	1926.03	2135.26	617.84	0.00	2493.87	2504.88	0.776	1.91	4.03	7.546	A

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	2116.16	529.04	2115.94	2316.46	243.28	0.00	2763.22	2716.59	0.766	3.71	3.76	6.490	A
2	1042.67	260.67	1041.27	628.59	1730.62	0.00	1250.60	1000.11	0.834	5.42	5.77	20.836	C
3	1934.49	483.62	1934.10	2146.25	625.64	0.00	2488.80	2504.88	0.777	4.03	4.13	7.825	A

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	1727.84	431.96	1735.21	1909.12	199.76	0.00	2791.49	2716.60	0.619	3.76	1.92	4.008	A
2	851.33	212.83	866.73	515.74	1419.23	0.00	1409.38	1000.10	0.604	5.77	1.92	8.386	A
3	1579.51	394.88	1588.11	1765.18	520.77	0.00	2556.98	2504.88	0.618	4.13	1.98	4.526	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	1446.98	361.75	1449.67	1589.31	166.75	0.00	2812.93	2716.60	0.514	1.92	1.25	3.089	A
2	712.95	178.24	716.28	430.74	1185.69	0.00	1528.46	1000.10	0.466	1.92	1.09	5.479	A
3	1322.76	330.69	1325.69	1471.59	430.37	0.00	2615.75	2504.88	0.506	1.98	1.24	3.377	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	17.94	1.20	3.054	A	A
2	15.31	1.02	5.358	A	A
3	17.85	1.19	3.330	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	27.32	1.82	3.931	A	A
2	26.13	1.74	7.796	A	A
3	27.82	1.85	4.391	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	52.35	3.49	6.349	A	A
2	70.31	4.69	18.598	C	B
3	56.35	3.76	7.546	A	A

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	56.11	3.74	6.490	A	A
2	84.43	5.63	20.836	C	C
3	61.36	4.09	7.825	A	A

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	29.83	1.99	4.008	A	A
2	31.49	2.10	8.386	A	A
3	30.88	2.06	4.526	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	19.12	1.27	3.089	A	A
2	16.89	1.13	5.479	A	A
3	19.14	1.28	3.377	A	A

NSTM Traffic Flows - 2021 B1, 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 B1, PM	2021 B1	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				12.95	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A43 S Link	
2	2	M1 Sbdn 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)	I' - 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	✓	2122.00	100.000
2	ONE HOUR	✓	960.00	100.000
3	ONE HOUR	✓	1553.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	436.000	1686.000
	2	561.000	0.000	399.000
	3	1268.000	285.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.21	0.79
	2	0.58	0.00	0.42
	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	1.131	1.216
	2	1.007	1.000	1.424
	3	1.131	1.168	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	13.1	21.6
	2	0.7	0.0	42.4
	3	13.1	16.8	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	0.86	11.20	7.04	B	1947.18	2920.78	325.25	6.68	3.61	325.28	6.68
2	0.89	29.34	8.09	D	880.91	1321.37	300.20	13.63	3.34	300.22	13.63
3	0.69	5.21	2.45	A	1425.06	2137.59	139.65	3.92	1.55	139.66	3.92

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	1597.55	399.39	1591.15	1371.49	213.89	0.00	2782.31	2624.53	0.574	0.00	1.60	3.600	A
2	722.74	180.68	718.46	540.82	1264.23	0.00	1488.41	1069.77	0.486	0.00	1.07	5.336	A
3	1169.18	292.29	1165.54	1562.83	419.85	0.00	2622.59	2489.12	0.446	0.00	0.91	2.803	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	1907.63	476.91	1903.44	1640.79	255.89	0.00	2755.03	2624.53	0.692	1.60	2.65	5.037	A
2	863.02	215.76	859.55	646.98	1512.35	0.00	1361.90	1069.77	0.634	1.07	1.94	8.160	A
3	1396.12	349.03	1394.38	1869.60	502.30	0.00	2568.99	2489.12	0.543	0.91	1.34	3.482	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	2336.37	584.09	2319.85	1998.01	313.01	0.00	2717.93	2624.52	0.860	2.65	6.78	10.419	B
2	1056.98	264.24	1035.99	789.66	1843.20	0.00	1193.20	1069.77	0.886	1.94	7.18	23.677	C
3	1709.88	427.47	1705.60	2273.78	605.41	0.00	2501.95	2489.12	0.683	1.34	2.41	5.115	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	2336.37	584.09	2335.32	2011.53	313.76	0.00	2717.44	2624.52	0.860	6.78	7.04	11.201	B
2	1056.98	264.24	1053.35	793.59	1855.49	0.00	1186.93	1069.77	0.891	7.18	8.09	29.337	D
3	1709.88	427.47	1709.74	2293.29	615.55	0.00	2495.36	2489.12	0.685	2.41	2.45	5.211	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	1907.63	476.91	1924.80	1661.80	257.00	0.00	2754.31	2624.53	0.693	7.04	2.75	5.300	A
2	863.02	215.76	887.09	652.48	1529.32	0.00	1353.24	1069.77	0.638	8.09	2.07	9.291	A
3	1396.12	349.03	1400.40	1898.02	518.39	0.00	2558.52	2489.12	0.546	2.45	1.38	3.548	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	1597.55	399.39	1602.02	1380.72	214.90	0.00	2781.66	2624.53	0.574	2.75	1.63	3.667	A
2	722.74	180.68	726.62	544.06	1272.86	0.00	1484.01	1069.77	0.487	2.07	1.10	5.476	A
3	1169.18	292.29	1171.00	1574.86	424.62	0.00	2619.49	2489.12	0.446	1.38	0.92	2.830	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	23.21	1.55	3.600	A	A
2	15.43	1.03	5.336	A	A
3	13.34	0.89	2.803	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	38.14	2.54	5.037	A	A
2	27.58	1.84	8.160	A	A
3	19.68	1.31	3.482	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	90.70	6.05	10.419	B	B
2	88.31	5.89	23.677	C	C
3	34.70	2.31	5.115	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	104.03	6.94	11.201	B	B
2	115.81	7.72	29.337	D	C
3	36.55	2.44	5.211	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	43.98	2.93	5.300	A	A
2	35.93	2.40	9.291	A	A
3	21.27	1.42	3.548	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	25.20	1.68	3.667	A	A
2	17.13	1.14	5.476	A	A
3	14.10	0.94	2.830	A	A

NSTM Traffic Flows - 2021 H1, 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 H1, AM	2021 H1	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				8.12	A

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)	I' - 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	✓	1789.00	100.000
2	ONE HOUR	✓	956.00	100.000
3	ONE HOUR	✓	1661.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	355.000	1434.000
	2	568.000	0.000	388.000
	3	1425.000	236.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.20	0.80
	2	0.59	0.00	0.41
	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	1.042	1.236
	2	1.391	1.000	1.023
	3	1.250	1.021	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
From		1	2	3
	1	0.0	4.2	23.6
	2	39.1	0.0	2.3
	3	25.0	2.1	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	0.72	5.48	2.97	A	1641.62	2462.43	168.44	4.10	1.87	168.45	4.10
2	0.79	15.72	4.45	C	877.24	1315.86	204.95	9.35	2.28	204.97	9.35
3	0.73	6.59	3.31	A	1524.16	2286.24	179.54	4.71	1.99	179.56	4.71

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	1346.85	336.71	1342.48	1494.29	177.05	0.00	2806.24	2690.86	0.480	0.00	1.09	2.923	A
2	719.73	179.93	715.73	443.44	1076.09	0.00	1584.34	1033.25	0.454	0.00	1.00	5.007	A
3	1250.49	312.62	1246.09	1366.57	425.24	0.00	2619.08	2496.44	0.477	0.00	1.10	3.165	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	1608.27	402.07	1606.18	1788.14	211.83	0.00	2783.65	2690.86	0.578	1.09	1.62	3.638	A
2	859.42	214.86	856.78	530.56	1287.46	0.00	1476.56	1033.25	0.582	1.00	1.66	7.021	A
3	1493.20	373.30	1490.92	1635.19	509.05	0.00	2564.60	2496.43	0.582	1.10	1.67	4.054	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	1969.73	492.43	1964.44	2182.71	258.94	0.00	2753.05	2690.84	0.715	1.62	2.94	5.404	A
2	1052.58	263.14	1042.12	648.76	1574.63	0.00	1330.14	1033.25	0.791	1.66	4.27	14.667	B
3	1828.80	457.20	1822.48	1997.58	619.17	0.00	2493.01	2496.43	0.734	1.67	3.25	6.444	A

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	1969.73	492.43	1969.60	2193.72	259.81	0.00	2752.48	2690.84	0.716	2.94	2.97	5.479	A
2	1052.58	263.14	1051.87	650.65	1578.76	0.00	1328.03	1033.25	0.793	4.27	4.45	15.720	C
3	1828.80	457.20	1828.57	2005.67	624.96	0.00	2489.24	2496.43	0.735	3.25	3.31	6.594	A

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	1608.27	402.07	1613.55	1803.58	213.06	0.00	2782.85	2690.86	0.578	2.97	1.65	3.688	A
2	859.42	214.86	870.30	533.25	1293.37	0.00	1473.55	1033.25	0.583	4.45	1.73	7.368	A
3	1493.20	373.30	1499.57	1646.59	517.08	0.00	2559.38	2496.43	0.583	3.31	1.71	4.140	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	1346.85	336.71	1349.01	1504.17	178.01	0.00	2805.62	2690.86	0.480	1.65	1.11	2.951	A
2	719.73	179.93	722.55	445.70	1081.32	0.00	1581.67	1033.25	0.455	1.73	1.02	5.104	A
3	1250.49	312.62	1252.88	1374.58	429.30	0.00	2616.45	2496.44	0.478	1.71	1.12	3.203	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	16.00	1.07	2.923	A	A
2	14.48	0.97	5.007	A	A
3	16.07	1.07	3.165	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	23.63	1.58	3.638	A	A
2	23.89	1.59	7.021	A	A
3	24.37	1.62	4.054	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	42.03	2.80	5.404	A	A
2	57.31	3.82	14.667	B	B
3	46.09	3.07	6.444	A	A

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	44.33	2.96	5.479	A	A
2	65.70	4.38	15.720	C	B
3	49.26	3.28	6.594	A	A

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	25.49	1.70	3.688	A	A
2	27.73	1.85	7.368	A	A
3	26.62	1.77	4.140	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	16.96	1.13	2.951	A	A
2	15.85	1.06	5.104	A	A
3	17.12	1.14	3.203	A	A

NSTM Traffic Flows - 2021 H1, 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 H1, PM	2021 H1	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				11.15	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)	I' - 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	✓	2075.00	100.000
2	ONE HOUR	✓	943.00	100.000
3	ONE HOUR	✓	1566.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	438.000	1637.000
	2	513.000	0.000	430.000
	3	1241.000	325.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.21	0.79
	2	0.54	0.00	0.46
	3	0.79	0.21	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.105	1.219
	2	1.002	1.000	1.381
	3	1.127	1.142	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	10.5	21.9
	2	0.2	0.0	38.1
	3	12.7	14.2	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	0.85	10.54	6.50	B	1904.06	2856.08	305.48	6.42	3.39	305.51	6.42
2	0.85	22.61	6.19	C	865.31	1297.97	250.14	11.56	2.78	250.16	11.56
3	0.68	5.05	2.40	A	1436.99	2155.48	137.48	3.83	1.53	137.49	3.83

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	1562.17	390.54	1556.02	1315.44	243.93	0.00	2762.80	2583.06	0.565	0.00	1.54	3.542	A
2	709.94	177.48	705.90	572.38	1227.57	0.00	1507.10	1093.97	0.471	0.00	1.01	5.121	A
3	1178.97	294.74	1175.35	1549.45	384.02	0.00	2645.89	2508.64	0.446	0.00	0.90	2.759	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	1865.38	466.35	1861.43	1573.81	291.82	0.00	2731.69	2583.06	0.683	1.54	2.53	4.912	A
2	847.74	211.93	844.69	684.74	1468.51	0.00	1384.25	1093.97	0.612	1.01	1.77	7.599	A
3	1407.80	351.95	1406.11	1853.68	459.52	0.00	2596.80	2508.64	0.542	0.90	1.33	3.412	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	2284.62	571.15	2269.60	1919.34	356.97	0.00	2689.37	2583.06	0.850	2.53	6.28	9.893	A
2	1038.26	259.57	1022.54	836.05	1790.52	0.00	1220.06	1093.97	0.851	1.77	5.70	19.510	C
3	1724.20	431.05	1720.04	2256.79	556.27	0.00	2533.90	2508.64	0.680	1.33	2.37	4.972	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	2284.62	571.15	2283.75	1930.02	357.81	0.00	2688.83	2583.06	0.850	6.28	6.50	10.541	B
2	1038.26	259.57	1036.30	839.87	1801.69	0.00	1214.36	1093.97	0.855	5.70	6.19	22.612	C
3	1724.20	431.05	1724.07	2274.23	563.76	0.00	2529.03	2508.64	0.682	2.37	2.40	5.052	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	1865.38	466.35	1880.91	1589.50	293.03	0.00	2730.90	2583.06	0.683	6.50	2.62	5.141	A
2	847.74	211.93	865.00	690.06	1483.88	0.00	1376.41	1093.97	0.616	6.19	1.88	8.323	A
3	1407.80	351.95	1411.96	1878.31	470.57	0.00	2589.62	2508.64	0.544	2.40	1.36	3.468	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	1562.17	390.54	1566.36	1323.74	245.04	0.00	2762.07	2583.06	0.566	2.62	1.57	3.603	A
2	709.94	177.48	713.31	575.68	1235.73	0.00	1502.94	1093.97	0.472	1.88	1.04	5.243	A
3	1178.97	294.74	1180.74	1560.99	388.04	0.00	2643.27	2508.64	0.446	1.36	0.91	2.786	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	22.34	1.49	3.542	A	A
2	14.58	0.97	5.121	A	A
3	13.25	0.88	2.759	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	36.44	2.43	4.912	A	A
2	25.36	1.69	7.599	A	A
3	19.46	1.30	3.412	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	84.68	5.65	9.893	A	A
2	72.92	4.86	19.510	C	B
3	34.07	2.27	4.972	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	96.16	6.41	10.541	B	B
2	89.98	6.00	22.612	C	C
3	35.79	2.39	5.052	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	41.67	2.78	5.141	A	A
2	31.21	2.08	8.323	A	A
3	20.93	1.40	3.468	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	24.19	1.61	3.603	A	A
2	16.09	1.07	5.243	A	A
3	13.99	0.93	2.786	A	A

Junctions 8
ARCADY 8 - Roundabout Module
Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2018
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
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: M1 Jct 15a (South) B1 and H1 ARCADY Model.arc8

Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP

Report generation date: 16/03/2018 15:13:27

- » **NSTM Traffic Flows - 2021 B1, AM**
- » **NSTM Traffic Flows - 2021 B1, PM**
- » **NSTM Traffic Flows - 2021 H1, AM**
- » **NSTM Traffic Flows - 2021 H1, PM**

Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
NSTM Traffic Flows - 2021 B1						
Arm 1	172.84	301.47	1.16	5.26	9.66	0.84
Arm 2	22.63	42.05	0.98	9.09	16.88	0.91
Arm 3	196.86	1065.28	1.61	310.52	1673.54	1.94
NSTM Traffic Flows - 2021 H1						
Arm 1	144.41	250.00	1.14	4.01	7.68	0.80
Arm 2	27.67	49.65	0.99	8.50	15.63	0.90
Arm 3	158.76	806.74	1.51	299.58	1611.81	1.91

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

"D1 - 2021 B1, AM " model duration: 08:00 - 09:30

"D2 - 2021 B1, PM" model duration: 17:00 - 18:30

"D3 - 2021 H1, AM" model duration: 08:00 - 09:30

"D4 - 2021 H1, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 16/03/2018 15:13:22

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 B1, 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 B1, AM	2021 B1	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				318.11	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 Nbrnd 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)	I' - 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	✓	2085.00	100.000
2	ONE HOUR	✓	1826.00	100.000
3	ONE HOUR	✓	773.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	1666.000	419.000
	2	1461.000	0.000	365.000
	3	441.000	332.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.80	0.20
	2	0.80	0.00	0.20
	3	0.57	0.43	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.288	1.298
	2	1.216	1.000	1.019
	3	1.183	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	28.8	29.8
	2	21.6	0.0	1.9
	3	18.3	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	1.16	301.47	172.84	F	1913.23	2869.85	7085.72	148.14	78.73	7147.31	149.43
2	0.98	42.05	22.63	E	1675.57	2513.36	701.18	16.74	7.79	701.25	16.74
3	1.61	1065.28	196.86	F	709.32	1063.98	8688.15	489.94	96.53	9734.48	548.95

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	1569.70	392.42	1554.85	1418.39	244.21	0.00	1973.76	1985.23	0.795	0.00	3.71	8.322	A
2	1374.71	343.68	1367.33	1486.59	312.46	0.00	2107.89	2051.93	0.652	0.00	1.85	4.815	A
3	581.96	145.49	568.59	585.78	1094.01	0.00	738.71	508.50	0.788	0.00	3.34	19.852	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	1874.37	468.59	1836.59	1665.16	269.18	0.00	1962.66	1985.22	0.955	3.71	13.16	23.508	C
2	1641.54	410.38	1634.26	1736.70	369.08	0.00	2071.25	2051.93	0.793	1.85	3.66	8.104	A
3	694.91	173.73	626.75	695.76	1307.59	0.00	648.95	508.50	1.071	3.34	20.38	86.788	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	2295.63	573.91	1972.03	1872.53	232.12	0.00	1979.13	1985.23	1.160	13.16	94.06	105.457	F
2	2010.47	502.62	1954.99	1807.86	396.30	0.00	2053.64	2051.93	0.979	3.66	17.53	27.451	D
3	851.09	212.77	540.46	787.08	1564.21	0.00	541.10	508.50	1.573	20.38	98.04	410.884	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	2295.63	573.91	1980.48	1894.20	227.30	0.00	1981.28	1985.23	1.159	94.06	172.84	247.856	F
2	2010.47	502.62	1990.08	1809.78	398.00	0.00	2052.54	2051.93	0.980	17.53	22.63	42.048	E
3	851.09	212.77	529.22	795.80	1592.28	0.00	529.30	508.50	1.608	98.04	178.51	872.400	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	1874.37	468.59	1952.36	1727.08	266.94	0.00	1963.66	1985.22	0.955	172.84	153.34	301.474	F
2	1641.54	410.38	1715.39	1826.96	392.35	0.00	2056.20	2051.93	0.798	22.63	4.17	12.692	B
3	694.91	173.73	621.52	735.24	1372.49	0.00	621.67	508.50	1.118	178.51	196.86	1065.278	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	1569.70	392.42	1930.43	1522.99	313.39	0.00	1943.02	1985.23	0.808	153.34	63.16	203.602	F
2	1374.71	343.68	1383.21	1855.87	387.94	0.00	2059.05	2051.93	0.668	4.17	2.04	5.391	A
3	581.96	145.49	729.66	664.43	1106.72	0.00	733.37	508.50	0.794	196.86	159.93	880.858	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	50.62	3.37	8.322	A	A
2	26.42	1.76	4.815	A	A
3	42.86	2.86	19.852	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	152.12	10.14	23.508	C	C
2	51.03	3.40	8.104	A	A
3	191.21	12.75	86.788	F	F

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	810.79	54.05	105.457	F	F
2	189.76	12.65	27.451	D	C
3	888.74	59.25	410.884	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	2002.01	133.47	247.856	F	F
2	304.71	20.31	42.048	E	D
3	2074.16	138.28	872.400	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	2446.39	163.09	301.474	F	F
2	97.08	6.47	12.692	B	B
3	2815.26	187.68	1065.278	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	1623.79	108.25	203.602	F	F
2	32.18	2.15	5.391	A	A
3	2675.92	178.39	880.858	F	F

NSTM Traffic Flows - 2021 B1, 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 B1, PM	2021 B1	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				335.10	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 Nbdn 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)	I' - 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	✓	1829.00	100.000
2	ONE HOUR	✓	1854.00	100.000
3	ONE HOUR	✓	835.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	1620.000	209.000
	2	1532.000	0.000	322.000
	3	590.000	245.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.89	0.11
	2	0.83	0.00	0.17
	3	0.71	0.29	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.102	1.010
	2	1.181	1.000	1.000
	3	1.246	1.049	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	10.2	1.0
	2	18.1	0.0	0.0
	3	24.6	4.9	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	0.84	9.66	5.26	A	1678.32	2517.48	258.78	6.17	2.88	258.80	6.17
2	0.91	16.88	9.09	C	1701.27	2551.90	372.41	8.76	4.14	372.44	8.76
3	1.94	1673.54	310.52	F	766.21	1149.31	14164.09	739.44	157.38	18152.36	947.65

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	1376.96	344.24	1371.44	1571.20	175.64	0.00	2364.24	2393.61	0.582	0.00	1.38	3.605	A
2	1395.79	348.95	1389.58	1390.37	156.71	0.00	2283.68	2223.49	0.611	0.00	1.55	4.000	A
3	628.63	157.16	598.60	398.05	1148.23	0.00	678.34	416.91	0.927	0.00	7.51	36.955	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	1644.23	411.06	1640.80	1789.21	172.65	0.00	2365.89	2393.61	0.695	1.38	2.24	4.941	A
2	1666.71	416.68	1662.10	1625.96	187.49	0.00	2267.81	2223.49	0.735	1.55	2.71	5.899	A
3	750.65	187.66	588.42	476.16	1373.42	0.00	592.90	416.91	1.266	7.51	48.06	195.476	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	2013.76	503.44	2002.24	2007.77	141.16	0.00	2383.24	2393.61	0.845	2.24	5.12	9.179	A
2	2041.30	510.32	2018.39	1914.61	228.80	0.00	2246.53	2223.49	0.909	2.71	8.44	14.513	B
3	919.35	229.84	481.08	579.35	1667.83	0.00	481.21	416.91	1.911	48.06	157.63	781.467	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	2013.76	503.44	2013.18	2020.11	139.32	0.00	2384.25	2393.61	0.845	5.12	5.26	9.659	A
2	2041.30	510.32	2038.70	1922.46	230.05	0.00	2245.89	2223.49	0.909	8.44	9.09	16.876	C
3	919.35	229.84	474.82	584.12	1684.61	0.00	474.84	416.91	1.936	157.63	268.76	1625.996	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	1644.23	411.06	1656.02	1810.22	171.24	0.00	2366.67	2393.61	0.695	5.26	2.32	5.148	A
2	1666.71	416.68	1691.67	1638.02	189.23	0.00	2266.92	2223.49	0.735	9.09	2.85	6.516	A
3	750.65	187.66	583.60	483.04	1397.86	0.00	583.63	416.91	1.286	268.76	310.52	1673.544	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	1376.96	344.24	1380.53	1632.81	197.36	0.00	2352.27	2393.61	0.585	2.32	1.43	3.717	A
2	1395.79	348.95	1400.82	1420.15	157.75	0.00	2283.14	2223.49	0.611	2.85	1.59	4.102	A
3	628.63	157.16	672.65	401.05	1157.52	0.00	674.81	416.91	0.932	310.52	299.52	1632.588	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	20.04	1.34	3.605	A	A
2	22.44	1.50	4.000	A	A
3	82.70	5.51	36.955	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	32.27	2.15	4.941	A	A
2	38.61	2.57	5.899	A	A
3	420.70	28.05	195.476	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	69.61	4.64	9.179	A	A
2	106.64	7.11	14.513	B	B
3	1542.78	102.85	781.467	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	78.09	5.21	9.659	A	A
2	132.31	8.82	16.876	C	B
3	3197.94	213.20	1625.996	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	36.75	2.45	5.148	A	A
2	47.70	3.18	6.516	A	A
3	4344.64	289.64	1673.544	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	22.03	1.47	3.717	A	A
2	24.71	1.65	4.102	A	A
3	4575.32	305.02	1632.588	F	F

NSTM Traffic Flows - 2021 H1, 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 H1, AM	2021 H1	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				250.16	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 Nband 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)	I' - 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	✓	1993.00	100.000
2	ONE HOUR	✓	1846.00	100.000
3	ONE HOUR	✓	751.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	1573.000	420.000
	2	1489.000	0.000	357.000
	3	300.000	451.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.79	0.21
	2	0.81	0.00	0.19
	3	0.40	0.60	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.298	1.262
	2	1.217	1.000	1.022
	3	1.103	1.007	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	29.8	26.2
	2	21.7	0.0	2.2
	3	10.3	0.7	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	1.14	250.00	144.41	F	1828.82	2743.22	5598.01	122.44	62.20	5610.29	122.71
2	0.99	49.65	27.67	E	1693.92	2540.88	810.33	19.13	9.00	810.39	19.14
3	1.51	806.74	158.76	F	689.13	1033.69	6909.49	401.06	76.77	7385.36	428.68

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	1500.44	375.11	1487.08	1336.59	333.35	0.00	1932.51	1938.71	0.776	0.00	3.34	7.863	A
2	1389.76	347.44	1382.15	1507.05	313.38	0.00	2108.13	2048.39	0.659	0.00	1.90	4.909	A
3	565.39	141.35	555.10	580.68	1114.85	0.00	770.77	531.97	0.734	0.00	2.57	16.014	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	1791.67	447.92	1761.65	1585.38	380.45	0.00	1911.43	1938.71	0.937	3.34	10.84	20.773	C
2	1659.51	414.88	1651.74	1770.86	371.25	0.00	2071.81	2048.39	0.801	1.90	3.85	8.415	A
3	675.13	168.78	633.53	690.68	1332.31	0.00	674.14	531.97	1.001	2.57	12.98	60.493	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	2194.34	548.58	1921.25	1810.08	336.24	0.00	1931.21	1938.72	1.136	10.84	79.12	92.442	F
2	2032.48	508.12	1966.76	1852.62	404.88	0.00	2050.70	2048.39	0.991	3.85	20.28	30.455	D
3	826.87	206.72	559.91	785.23	1586.41	0.00	561.23	531.97	1.473	12.98	79.71	314.327	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	2194.34	548.58	1933.15	1834.55	329.17	0.00	1934.38	1938.72	1.134	79.12	144.41	213.965	F
2	2032.48	508.12	2002.93	1854.93	407.39	0.00	2049.13	2048.39	0.992	20.28	27.67	49.649	E
3	826.87	206.72	548.13	794.73	1615.58	0.00	548.26	531.97	1.508	79.71	149.40	711.713	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	1791.67	447.92	1897.18	1668.17	382.96	0.00	1910.31	1938.71	0.938	144.41	118.04	249.998	F
2	1659.51	414.88	1752.31	1880.33	399.81	0.00	2053.89	2048.39	0.808	27.67	4.47	15.323	C
3	675.13	168.78	637.70	738.69	1413.43	0.00	638.09	531.97	1.058	149.40	158.76	806.743	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	1500.44	375.11	1861.71	1432.13	456.34	0.00	1877.48	1938.71	0.799	118.04	27.72	143.875	F
2	1389.76	347.44	1399.18	1925.71	392.33	0.00	2058.58	2048.39	0.675	4.47	2.12	5.536	A
3	565.39	141.35	759.88	662.92	1128.59	0.00	764.67	531.97	0.739	158.76	110.13	638.167	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	45.91	3.06	7.863	A	A
2	27.21	1.81	4.909	A	A
3	34.15	2.28	16.014	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	129.87	8.66	20.773	C	C
2	53.38	3.56	8.415	A	A
3	132.71	8.85	60.493	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	683.80	45.59	92.442	F	F
2	212.26	14.15	30.455	D	C
3	696.42	46.43	314.327	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	1676.89	111.79	213.965	F	F
2	363.47	24.23	49.649	E	D
3	1718.38	114.56	711.713	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	1968.38	131.23	249.998	F	F
2	120.57	8.04	15.323	C	B
3	2311.17	154.08	806.743	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	1093.17	72.88	143.875	F	F
2	33.43	2.23	5.536	A	A
3	2016.67	134.44	638.167	F	F

NSTM Traffic Flows - 2021 H1, 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 H1, PM	2021 H1	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				322.93	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 Nbdn 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)	I' - 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	✓	1736.00	100.000
2	ONE HOUR	✓	1866.00	100.000
3	ONE HOUR	✓	827.00	100.000

Turning Proportions

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

		To		
		1	2	3
From	1	0.000	1573.000	163.000
	2	1549.000	0.000	317.000
	3	526.000	301.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.91	0.09
	2	0.83	0.00	0.17
	3	0.64	0.36	0.00

Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.092	1.025
	2	1.176	1.000	1.000
	3	1.249	1.043	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	9.2	2.5
	2	17.6	0.0	0.0
	3	24.9	4.3	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	7.68	4.01	A	1592.98	2389.47	211.42	5.31	2.35	211.44	5.31
2	0.90	15.63	8.50	C	1712.28	2568.41	356.62	8.33	3.96	356.65	8.33
3	1.91	1611.81	299.58	F	758.87	1138.31	13631.73	718.53	151.46	17235.34	908.47

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	1306.95	326.74	1302.00	1539.83	216.75	0.00	2354.74	2391.51	0.555	0.00	1.24	3.405	A
2	1404.82	351.21	1398.67	1396.51	122.25	0.00	2307.44	2253.79	0.609	0.00	1.54	3.935	A
3	622.61	155.65	595.53	359.86	1161.06	0.00	683.49	412.09	0.911	0.00	6.77	34.295	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	1560.63	390.16	1557.83	1764.79	215.15	0.00	2355.63	2391.51	0.663	1.24	1.94	4.496	A
2	1677.50	419.37	1673.03	1626.71	146.27	0.00	2294.84	2253.79	0.731	1.54	2.66	5.748	A
3	743.46	185.86	591.12	430.49	1388.81	0.00	596.41	412.09	1.247	6.77	44.85	181.959	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	1911.37	477.84	1903.36	1994.40	175.40	0.00	2377.51	2391.51	0.804	1.94	3.94	7.467	A
2	2054.51	513.63	2033.30	1900.05	178.71	0.00	2277.83	2253.79	0.902	2.66	7.96	13.673	B
3	910.55	227.64	481.93	524.14	1687.88	0.00	482.07	412.09	1.889	44.85	152.01	747.941	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	1911.37	477.84	1911.09	2006.44	173.25	0.00	2378.70	2391.51	0.804	3.94	4.01	7.685	A
2	2054.51	513.63	2052.34	1904.90	179.44	0.00	2277.45	2253.79	0.902	7.96	8.50	15.627	C
3	910.55	227.64	476.00	528.10	1703.69	0.00	476.02	412.09	1.913	152.01	260.65	1570.095	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	1560.63	390.16	1568.70	1785.30	213.91	0.00	2356.31	2391.51	0.662	4.01	1.99	4.616	A
2	1677.50	419.37	1700.35	1635.31	147.29	0.00	2294.31	2253.79	0.731	8.50	2.78	6.285	A
3	743.46	185.86	587.71	436.15	1411.49	0.00	587.74	412.09	1.265	260.65	299.58	1611.812	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	1306.95	326.74	1309.80	1601.25	246.67	0.00	2338.26	2391.51	0.559	1.99	1.28	3.509	A
2	1404.82	351.21	1409.66	1433.49	122.98	0.00	2307.06	2253.79	0.609	2.78	1.57	4.034	A
3	622.61	155.65	677.74	362.46	1170.19	0.00	680.00	412.09	0.916	299.58	285.80	1554.870	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	17.99	1.20	3.405	A	A
2	22.24	1.48	3.935	A	A
3	76.31	5.09	34.295	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	28.04	1.87	4.496	A	A
2	37.93	2.53	5.748	A	A
3	391.80	26.12	181.959	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	54.85	3.66	7.467	A	A
2	101.67	6.78	13.673	B	B
3	1476.58	98.44	747.941	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	59.70	3.98	7.685	A	A
2	124.16	8.28	15.627	C	B
3	3094.93	206.33	1570.095	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	31.16	2.08	4.616	A	A
2	46.19	3.08	6.285	A	A
3	4201.73	280.12	1611.812	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	19.69	1.31	3.509	A	A
2	24.43	1.63	4.034	A	A
3	4390.39	292.69	1554.870	F	F

