

Appendix 52  
A508/Roade Bypass southern roundabout  
assessment results

<h1>Junctions 8</h1>
<h2>ARCADY 8 - Roundabout Module</h2>
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Filename: A508-Road Bypass South Roundabout.arc8

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

Report generation date: 15/03/2018 19:50:24

» 2031 Traffic Flows - 2031 J1d development case, AM

» 2031 Traffic Flows - 2031 J1d development case, PM

### Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
<b>2031 Traffic Flows - 2031 J1d development case</b>						
<b>Arm 1</b>	4.02	9.38	0.80	2.73	7.38	0.73
<b>Arm 2</b>	0.41	7.15	0.29	0.38	6.01	0.28
<b>Arm 3</b>	1.77	5.24	0.64	2.38	6.03	0.71

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

"D1 - 2031 J1d development case, AM" model duration: 07:45 - 09:15

"D2 - 2031 J1d development case, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 15/03/2018 19:50:21

### File summary

<b>Title</b>	Road Bypass (southern roundabout)
<b>Location</b>	Northampton
<b>Site Number</b>	
<b>Date</b>	21/08/2017
<b>Version</b>	
<b>Status</b>	Preliminary
<b>Identifier</b>	M Tatler
<b>Client</b>	Roxhill (Junction 15) Ltd
<b>Jobnumber</b>	ADC1475
<b>Enumerator</b>	ADCteam
<b>Description</b>	

### 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

# 2031 Traffic Flows - 2031 J1d development case, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

## 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
2031 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	R
2031 J1d development case, AM	2031 J1d development case	AM		ONE HOUR	07:45	09:15	90	15				✓		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	A508/Roade Bypass (N)	Roundabout	1,2,3				7.52	A

## Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

# Arms

## Arms

Arm	Arm	Name	Description
1	1	A508 N	
2	2	Roade	
3	3	A508 S	

## 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	3.65	9.00	58.00	20.00	80.00	47.00	
2	3.00	6.00	19.00	20.00	80.00	41.00	
3	3.65	9.00	57.00	20.00	80.00	44.00	

## 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)	0.535	2218.487
2		(calculated)	(calculated)	0.428	1455.134
3		(calculated)	(calculated)	0.540	2238.287

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	✓	1431.00	100.000
2	ONE HOUR	✓	187.00	100.000
3	ONE HOUR	✓	1111.00	100.000

# Turning Proportions

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

		To		
		1	2	3
From	1	0.000	30.000	1401.000
	2	30.000	0.000	157.000
	3	1095.000	16.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.02	0.98
	2	0.16	0.00	0.84
	3	0.99	0.01	0.00

## Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.000	1.131
	2	1.000	1.000	1.000
	3	1.165	1.000	1.000

### Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.0	13.1
	2	0.0	0.0	0.0
	3	16.5	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	9.38	4.02	A	1313.11	1969.67	208.14	6.34	2.31	208.16	6.34
2	0.29	7.15	0.41	A	171.59	257.39	24.64	5.74	0.27	24.64	5.74
3	0.64	5.24	1.77	A	1019.48	1529.21	107.88	4.23	1.20	107.89	4.23

### Main Results for each time segment

#### Main results: (07:45-08:00)

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	1077.34	269.33	1072.50	843.81	12.00	0.00	1960.61	1953.43	0.549	0.00	1.21	4.032	A
2	140.78	35.20	140.09	34.49	1050.02	0.00	947.15	529.91	0.149	0.00	0.17	4.457	A
3	836.42	209.11	833.34	1167.64	22.47	0.00	1914.76	1885.69	0.437	0.00	0.77	3.319	A

**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	1286.44	321.61	1283.75	1010.08	14.37	0.00	1959.49	1953.43	0.657	1.21	1.88	5.306	A
2	168.11	42.03	167.82	41.28	1256.84	0.00	847.09	529.91	0.198	0.17	0.25	5.297	A
3	998.77	249.69	997.52	1397.74	26.92	0.00	1912.69	1885.69	0.522	0.77	1.08	3.928	A

**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	1575.57	393.89	1567.39	1235.91	17.58	0.00	1957.97	1953.43	0.805	1.88	3.92	9.031	A
2	205.89	51.47	205.27	50.44	1534.53	0.00	712.75	529.91	0.289	0.25	0.40	7.085	A
3	1223.24	305.81	1220.56	1706.87	32.93	0.00	1909.90	1885.69	0.640	1.08	1.75	5.201	A

**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	1575.57	393.89	1575.19	1238.59	17.62	0.00	1957.95	1953.43	0.805	3.92	4.02	9.379	A
2	205.89	51.47	205.87	50.64	1542.17	0.00	709.06	529.91	0.290	0.40	0.41	7.153	A
3	1223.24	305.81	1223.18	1715.01	33.03	0.00	1909.86	1885.69	0.640	1.75	1.77	5.242	A

**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	1286.44	321.61	1294.73	1014.07	14.42	0.00	1959.47	1953.43	0.657	4.02	1.94	5.483	A
2	168.11	42.03	168.73	41.57	1267.59	0.00	841.89	529.91	0.200	0.41	0.25	5.352	A
3	998.77	249.69	1001.43	1409.25	27.07	0.00	1912.63	1885.69	0.522	1.77	1.10	3.962	A

**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	1077.34	269.33	1080.18	848.27	12.06	0.00	1960.58	1953.43	0.550	1.94	1.23	4.103	A
2	140.78	35.20	141.08	34.71	1057.53	0.00	943.51	529.91	0.149	0.25	0.18	4.489	A
3	836.42	209.11	837.71	1175.98	22.63	0.00	1914.69	1885.69	0.437	1.10	0.78	3.345	A

**Queueing Delay Results for each time segment**
**Queueing Delay results: (07:45-08:00)**

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	17.50	1.17	4.032	A	A
2	2.54	0.17	4.457	A	A
3	11.27	0.75	3.319	A	A

**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	27.15	1.81	5.306	A	A
2	3.61	0.24	5.297	A	A
3	15.87	1.06	3.928	A	A

**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	54.15	3.61	9.031	A	A
2	5.85	0.39	7.085	A	A
3	25.34	1.69	5.201	A	A

**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	59.69	3.98	9.379	A	A
2	6.07	0.40	7.153	A	A
3	26.43	1.76	5.242	A	A

**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	30.62	2.04	5.483	A	A
2	3.87	0.26	5.352	A	A
3	17.01	1.13	3.962	A	A

**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	19.03	1.27	4.103	A	A
2	2.70	0.18	4.489	A	A
3	11.95	0.80	3.345	A	A

## 2031 Traffic Flows - 2031 J1d development case, PM

**Data Errors and Warnings**

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

**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
2031 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	R
2031 J1d development case, PM	2031 J1d development case	PM		ONE HOUR	16:45	18:15	90	15				✓		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	A508/Road Bypass (N)	Roundabout	1,2,3				6.65	A

## Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

# Arms

## Arms

Arm	Arm	Name	Description
1	1	A508 N	
2	2	Road B	
3	3	A508 S	

## 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	3.65	9.00	58.00	20.00	80.00	47.00	
2	3.00	6.00	19.00	20.00	80.00	41.00	
3	3.65	9.00	57.00	20.00	80.00	44.00	

## 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)	0.535	2218.487
2		(calculated)	(calculated)	0.428	1455.134
3		(calculated)	(calculated)	0.540	2238.287

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	✓	1225.00	100.000
2	ONE HOUR	✓	207.00	100.000
3	ONE HOUR	✓	1301.00	100.000

# Turning Proportions

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

		To		
		1	2	3
From	1	0.000	30.000	1195.000
	2	30.000	0.000	177.000
	3	1007.000	294.000	0.000

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

		To		
		1	2	3
From	1	0.00	0.02	0.98
	2	0.14	0.00	0.86
	3	0.77	0.23	0.00

# Vehicle Mix

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

		To		
		1	2	3
From	1	1.000	1.003	1.117
	2	1.000	1.000	1.000
	3	1.122	1.000	1.000

### Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.3	11.7
	2	0.0	0.0	0.0
	3	12.2	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	0.73	7.38	2.73	A	1124.08	1686.12	150.90	5.37	1.68	150.92	5.37
2	0.28	6.01	0.38	A	189.95	284.92	23.93	5.04	0.27	23.94	5.04
3	0.71	6.03	2.38	A	1193.82	1790.73	137.73	4.61	1.53	137.75	4.62

### Main Results for each time segment

#### Main results: (16:45-17:00)

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	922.24	230.56	918.44	777.75	220.51	0.00	1885.16	1773.96	0.489	0.00	0.95	3.711	A
2	155.84	38.96	155.13	243.00	895.95	0.00	1027.05	628.30	0.152	0.00	0.18	4.125	A
3	979.46	244.87	975.77	1028.60	22.48	0.00	2034.06	2000.20	0.482	0.00	0.92	3.391	A

#### 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	1101.25	275.31	1099.35	930.90	263.92	0.00	1864.31	1773.96	0.591	0.95	1.43	4.695	A
2	186.09	46.52	185.82	290.84	1072.43	0.00	942.73	628.30	0.197	0.18	0.24	4.755	A
3	1169.57	292.39	1167.89	1231.32	26.93	0.00	2031.86	2000.20	0.576	0.92	1.34	4.158	A

#### 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	1348.75	337.19	1343.70	1138.56	322.79	0.00	1836.03	1773.96	0.735	1.43	2.69	7.236	A
2	227.91	56.98	227.39	355.70	1310.79	0.00	828.84	628.30	0.275	0.24	0.38	5.980	A
3	1432.43	358.11	1428.40	1505.22	32.95	0.00	2028.89	2000.20	0.706	1.34	2.35	5.954	A

**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	1348.75	337.19	1348.59	1141.68	323.68	0.00	1835.60	1773.96	0.735	2.69	2.73	7.384	A
2	227.91	56.98	227.90	356.70	1315.56	0.00	826.56	628.30	0.276	0.38	0.38	6.012	A
3	1432.43	358.11	1432.33	1510.43	33.03	0.00	2028.85	2000.20	0.706	2.35	2.38	6.032	A

**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	1101.25	275.31	1106.31	935.43	265.21	0.00	1863.69	1773.96	0.591	2.73	1.46	4.784	A
2	186.09	46.52	186.61	292.30	1079.22	0.00	939.49	628.30	0.198	0.38	0.25	4.786	A
3	1169.57	292.39	1173.59	1238.78	27.04	0.00	2031.81	2000.20	0.576	2.38	1.37	4.213	A

**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	922.24	230.56	924.23	782.10	221.73	0.00	1884.57	1773.96	0.489	1.46	0.97	3.755	A
2	155.84	38.96	156.11	244.37	901.60	0.00	1024.35	628.30	0.152	0.25	0.18	4.148	A
3	979.46	244.87	981.20	1035.09	22.63	0.00	2033.99	2000.20	0.482	1.37	0.94	3.424	A

**Queueing Delay Results for each time segment**
**Queueing Delay results: (16:45-17:00)**

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	13.83	0.92	3.711	A	A
2	2.61	0.17	4.125	A	A
3	13.45	0.90	3.391	A	A

**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	20.74	1.38	4.695	A	A
2	3.60	0.24	4.755	A	A
3	19.59	1.31	4.158	A	A

**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	38.00	2.53	7.236	A	A
2	5.50	0.37	5.980	A	A
3	33.60	2.24	5.954	A	A

**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	40.69	2.71	7.384	A	A
2	5.67	0.38	6.012	A	A
3	35.48	2.37	6.032	A	A

**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	22.78	1.52	4.784	A	A
2	3.81	0.25	4.786	A	A
3	21.26	1.42	4.213	A	A

**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	14.86	0.99	3.755	A	A
2	2.75	0.18	4.148	A	A
3	14.35	0.96	3.424	A	A

