

## APPENDIX 2.2

# TRAFFIC MODELLING - NORTHERN COMPACT ROUNDABOUT LAYOUT - REPORT

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Junctions 9
ARCADY 9 - Roundabout Module
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**Filename:** Compact roundabout layout.j9  
**Path:** C:\Users\304919\Box\PB8301 Haverhill\PB8301 Team\PB8301 Technical Data\Calcs\Internal Junction Testing\Northern Junction Options  
**Report generation date:** 21/03/2019 11:55:02

- »2500 Dwellings, AM
- »2500 Dwellings, PM
- »900 Dwellings, AM
- »900 Dwellings, PM

**Summary of junction performance**

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
<b>2500 Dwellings</b>								
Arm 1	1.7	9.55	0.63	A	0.8	6.02	0.43	A
Arm 2	0.6	6.24	0.38	A	3.3	17.18	0.77	C
Arm 3	0.3	5.89	0.23	A	0.2	6.64	0.17	A
<b>900 Dwellings</b>								
Arm 1	0.2	4.29	0.18	A	0.2	4.15	0.16	A
Arm 2	0.2	4.61	0.16	A	0.4	5.47	0.28	A
Arm 3	0.3	5.04	0.21	A	0.1	4.68	0.13	A

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

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

**File summary**

**File Description**

<b>Title</b>	Haverhill Northern Roundabout
<b>Location</b>	
<b>Site number</b>	
<b>Date</b>	20/03/2019
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	CORPORATEROOT\304919
<b>Description</b>	

### 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

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
✓		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2500 Dwellings	AM	ONE HOUR	07:45	09:15	15
D2	2500 Dwellings	PM	ONE HOUR	16:45	18:15	15
D3	900 Dwellings	AM	ONE HOUR	07:45	09:15	15
D4	900 Dwellings	PM	ONE HOUR	16:45	18:15	15

### Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

# 2500 Dwellings, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern Junction	Standard Roundabout		1, 2, 3	7.99	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	South	
2	North	
3	East	

### 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	3.10	4.40	3.9	20.3	22.0	39.3	
2	3.10	4.30	3.5	10.0	22.0	59.0	
3	2.80	3.40	3.2	25.5	22.0	30.9	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.529	1094
2	0.461	946
3	0.515	969

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2500 Dwellings	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	592	100.000
2		✓	324	100.000
3		✓	173	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To		
	1	2	3
1	0	566	26
2	277	0	47
3	61	112	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	1	2	3
1	0	0	5
2	0	0	0
3	5	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS
1	0.63	9.55	1.7	2.6	A
2	0.38	6.24	0.6	2.6	A
3	0.23	5.89	0.3	1.4	A

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	446	84	1050	0.425	443	0.7	5.913	A
2	244	19	937	0.260	243	0.3	5.170	A
3	130	207	862	0.151	130	0.2	4.992	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	532	101	1041	0.511	531	1.0	7.054	A
2	291	23	936	0.311	291	0.4	5.580	A
3	156	249	841	0.185	155	0.2	5.338	A

**08:15 - 08:30**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	652	123	1029	0.633	649	1.7	9.428	A
2	357	29	933	0.382	356	0.6	6.232	A
3	190	304	812	0.234	190	0.3	5.882	A

**08:30 - 08:45**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	652	123	1029	0.633	652	1.7	9.554	A
2	357	29	933	0.382	357	0.6	6.245	A
3	190	305	812	0.235	190	0.3	5.889	A

**08:45 - 09:00**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	532	101	1041	0.511	535	1.1	7.165	A
2	291	23	935	0.311	292	0.5	5.601	A
3	156	250	841	0.185	156	0.2	5.350	A

**09:00 - 09:15**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	446	84	1050	0.425	447	0.7	5.998	A
2	244	20	937	0.260	244	0.4	5.198	A
3	130	209	862	0.151	130	0.2	5.008	A

**Queue Variation Results for each time segment**

**07:45 - 08:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.73	0.55	1.00	1.40	1.45			N/A	N/A
2	0.35	0.00	0.00	0.35	0.35			N/A	N/A
3	0.18	0.00	0.00	0.18	0.18			N/A	N/A

**08:00 - 08:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.03	0.09	0.94	1.72	2.09			N/A	N/A
2	0.45	0.00	0.00	0.45	0.45			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A

**08:15 - 08:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.68	0.03	0.27	1.68	2.64			N/A	N/A
2	0.61	0.03	0.25	0.61	0.61			N/A	N/A
3	0.31	0.03	0.26	0.47	0.49			N/A	N/A

**08:30 - 08:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.71	0.03	0.27	1.71	1.81			N/A	N/A
2	0.62	0.03	0.29	1.05	2.63			N/A	N/A
3	0.31	0.03	0.32	1.08	1.37			N/A	N/A

**08:45 - 09:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.06	0.09	0.95	1.80	2.32			N/A	N/A
2	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A

**09:00 - 09:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.75	0.05	0.55	1.32	1.83			N/A	N/A
2	0.35	0.00	0.00	0.35	0.35			N/A	N/A
3	0.18	0.00	0.00	0.18	0.18			N/A	N/A

# 2500 Dwellings, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern Junction	Standard Roundabout		1, 2, 3	12.27	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2500 Dwellings	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	411	100.000
2		✓	643	100.000
3		✓	105	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	351	60
	2	534	0	109
	3	37	68	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	5
	2	0	0	0
	3	5	0	0



## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS
1	0.43	6.02	0.8	2.5	A
2	0.77	17.18	3.3	16.1	C
3	0.17	6.64	0.2	0.5	A

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	309	51	1067	0.290	308	0.4	4.763	A
2	484	45	926	0.523	480	1.1	8.001	A
3	79	398	764	0.103	79	0.1	5.339	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	369	61	1062	0.348	369	0.5	5.228	A
2	578	54	921	0.627	576	1.6	10.345	B
3	94	478	723	0.131	94	0.2	5.823	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	453	75	1055	0.429	452	0.7	6.002	A
2	708	66	916	0.773	702	3.2	16.354	C
3	116	583	669	0.173	115	0.2	6.610	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	453	75	1055	0.429	453	0.8	6.019	A
2	708	66	916	0.773	708	3.3	17.180	C
3	116	588	667	0.173	116	0.2	6.645	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	369	61	1062	0.348	370	0.5	5.248	A
2	578	54	921	0.627	584	1.7	10.863	B
3	94	485	719	0.131	95	0.2	5.865	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	309	51	1067	0.290	310	0.4	4.792	A
2	484	45	925	0.523	487	1.1	8.249	A
3	79	404	761	0.104	79	0.1	5.370	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.41	0.00	0.00	0.41	0.41			N/A	N/A
2	1.08	0.55	1.00	1.40	1.45			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A

#### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.53	0.53	1.01	1.41	1.46			N/A	N/A
2	1.64	0.07	1.03	3.69	5.16			N/A	N/A
3	0.15	0.00	0.00	0.15	0.15			N/A	N/A

#### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.75	0.03	0.26	0.75	0.75			N/A	N/A
2	3.16	0.03	0.32	4.95	16.12			N/A	N/A
3	0.21	0.03	0.26	0.47	0.49			N/A	N/A

#### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.75	0.03	0.28	0.75	2.53			N/A	N/A
2	3.27	0.03	0.29	3.27	10.46			N/A	N/A
3	0.21	0.03	0.26	0.48	0.50			N/A	N/A

#### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.54	1.01	1.41	1.46			N/A	N/A
2	1.73	0.05	0.51	4.51	6.98			N/A	N/A
3	0.15	0.00	0.00	0.15	0.15			N/A	N/A

#### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.41	0.00	0.00	0.41	0.41			N/A	N/A
2	1.12	0.04	0.38	2.82	4.99			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A

# 900 Dwellings, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern Junction	Standard Roundabout		1, 2, 3	4.65	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	900 Dwellings	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	167	100.000
2		✓	139	100.000
3		✓	173	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	141	26
	2	92	0	47
	3	61	112	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	5
	2	0	0	0
	3	5	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS
1	0.18	4.29	0.2	0.5	A
2	0.16	4.61	0.2	0.5	A
3	0.21	5.04	0.3	1.2	A

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	126	84	1050	0.120	125	0.1	3.919	A
2	105	19	937	0.112	104	0.1	4.318	A
3	130	69	934	0.140	130	0.2	4.549	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	150	101	1041	0.144	150	0.2	4.070	A
2	125	23	936	0.134	125	0.2	4.440	A
3	156	83	927	0.168	155	0.2	4.746	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	184	123	1029	0.179	184	0.2	4.288	A
2	153	29	933	0.164	153	0.2	4.612	A
3	190	101	917	0.208	190	0.3	5.036	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	184	123	1029	0.179	184	0.2	4.290	A
2	153	29	933	0.164	153	0.2	4.614	A
3	190	101	917	0.208	190	0.3	5.039	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	150	101	1041	0.144	150	0.2	4.072	A
2	125	23	936	0.134	125	0.2	4.444	A
3	156	83	927	0.168	156	0.2	4.751	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	126	84	1050	0.120	126	0.1	3.928	A
2	105	20	937	0.112	105	0.1	4.324	A
3	130	69	933	0.140	130	0.2	4.560	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.14	0.00	0.00	0.14	0.14			N/A	N/A
2	0.13	0.00	0.00	0.13	0.13			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.17	0.00	0.00	0.17	0.17			N/A	N/A
2	0.15	0.00	0.00	0.15	0.15			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.22	0.03	0.26	0.46	0.49			N/A	N/A
2	0.20	0.03	0.25	0.46	0.48			N/A	N/A
3	0.26	0.03	0.26	0.46	0.49			N/A	N/A

#### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.22	0.03	0.26	0.47	0.50			N/A	N/A
2	0.20	0.03	0.25	0.46	0.48			N/A	N/A
3	0.27	0.03	0.30	0.84	1.20			N/A	N/A

#### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.17	0.00	0.00	0.17	0.17			N/A	N/A
2	0.16	0.00	0.00	0.16	0.16			N/A	N/A
3	0.21	0.00	0.00	0.21	0.21			N/A	N/A

#### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.14	0.00	0.00	0.14	0.14			N/A	N/A
2	0.13	0.00	0.00	0.13	0.13			N/A	N/A
3	0.17	0.00	0.00	0.17	0.17			N/A	N/A

# 900 Dwellings, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern Junction	Standard Roundabout		1, 2, 3	4.89	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	900 Dwellings	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	156	100.000
2		✓	234	100.000
3		✓	105	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	96	60
	2	125	0	109
	3	37	68	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	5
	2	0	0	0
	3	5	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS
1	0.16	4.15	0.2	0.5	A
2	0.28	5.47	0.4	1.5	A
3	0.13	4.68	0.1	0.5	A

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	117	51	1067	0.110	117	0.1	3.857	A
2	176	45	926	0.190	175	0.2	4.792	A
3	79	94	921	0.086	79	0.1	4.345	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	140	61	1062	0.132	140	0.2	3.978	A
2	210	54	921	0.228	210	0.3	5.060	A
3	94	112	911	0.104	94	0.1	4.481	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	172	75	1055	0.163	172	0.2	4.151	A
2	258	66	916	0.281	257	0.4	5.464	A
3	116	137	898	0.129	115	0.1	4.677	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	172	75	1055	0.163	172	0.2	4.153	A
2	258	66	916	0.281	258	0.4	5.468	A
3	116	138	898	0.129	116	0.1	4.677	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	140	61	1062	0.132	140	0.2	3.980	A
2	210	54	921	0.228	211	0.3	5.067	A
3	94	113	911	0.104	95	0.1	4.483	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	117	51	1067	0.110	118	0.1	3.862	A
2	176	45	925	0.190	176	0.2	4.807	A
3	79	94	921	0.086	79	0.1	4.351	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2	0.23	0.00	0.00	0.23	0.23			N/A	N/A
3	0.09	0.00	0.00	0.09	0.09			N/A	N/A

#### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.15	0.00	0.00	0.15	0.15			N/A	N/A
2	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A

#### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.20	0.03	0.26	0.47	0.49			N/A	N/A
2	0.39	0.03	0.25	0.46	0.48			N/A	N/A
3	0.15	0.03	0.26	0.47	0.50			N/A	N/A

#### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.20	0.03	0.26	0.46	0.49			N/A	N/A
2	0.39	0.03	0.31	1.28	1.51			N/A	N/A
3	0.15	0.03	0.25	0.46	0.48			N/A	N/A

#### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.16	0.00	0.00	0.16	0.16			N/A	N/A
2	0.30	0.00	0.00	0.30	0.30			N/A	N/A
3	0.12	0.00	0.00	0.12	0.12			N/A	N/A

#### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.13	0.00	0.00	0.13	0.13			N/A	N/A
2	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3	0.10	0.00	0.00	0.10	0.10			N/A	N/A