

12th June 2020

Elaine Ward
Barnsley Metropolitan Borough Council
1 Westgate
Western Street
Barnsley
S70 2DR

Dear Elaine,

**Rockingham Phases 2 & 3, Modelling of Amended Proposed Roundabout.
Our Ref: 18005**

This letter has been prepared to quantify the impact of increasing the size of the roundabout on the operational efficiency of the proposed roundabout as requested by Barnsley Highways Officers.

Tables 1 and 2 below show the modelling outputs from the original roundabout layout as shown in the Transport Assessment (TA) issued by Mosodi and the revised roundabout layout respectively (see enclosed drawing).

The full outputs are enclosed.

Table 1 – Original Modelling Outputs – as included in Mosodi TA (December 2019)

		AM			PM		
		Queue	Delay	RFC	Queue	Delay	RFC
2029 Design	A6195 South	1.1	2.99	0.54	1.6	3.56	0.61
	New Access	0.0	3.16	0.02	0.1	3.71	0.05
	A6159 North	1.4	3.33	0.59	1.1	2.87	0.52
2029 Design Sensitivity	A6195 South	1.2	3.10	0.55	1.8	3.95	0.65
	New Access	0.0	3.23	0.02	0.1	3.95	0.05
	A6159 North	1.7	3.72	0.63	1.2	2.99	0.54
2029 Design Sensitivity – No Link Road	A6195 South	1.2	3.04	0.54	1.8	3.95	0.65
	New Access	0.0	3.20	0.02	0.1	4.14	0.10
	A6159 North	1.5	3.50	0.61	1.3	3.26	0.57

Table 2 – Revised Modelling Outputs for enclosed JPG Drawing

		AM			PM		
		Queue	Delay	RFC	Queue	Delay	RFC
2029 Design	A6195 South	1.6	4.05	0.61	2.3	5.19	0.70
	New Access	0.0	4.99	0.03	0.1	5.97	0.08
	A6159 North	2.1	4.86	0.68	1.5	3.94	0.60
2029 Design Sensitivity	A6195 South	1.7	4.26	0.63	2.8	6.05	0.74
	New Access	0.0	5.11	0.03	0.1	6.40	0.08
	A6159 North	2.6	5.75	0.73	1.6	4.16	0.62
2029 Design Sensitivity – No Link Road	A6195 South	1.6	4.15	0.62	2.8	6.05	0.74
	New Access	0.0	5.04	0.03	0.2	6.95	0.16
	A6159 North	2.3	5.24	0.70	1.9	4.66	0.66

As is shown in the tables above, it can be seen that the amendments to the scale of the roundabout have resulted in negligible changes in the operational efficiency of the roundabout.

The increase in the diameter has increased the deflection and reduced the entry radius. This results in a very minor worsening of the operation of the roundabout.

However, it should be noted that the junction operates comfortably within desired thresholds with an RFC of under 0.85 (indication that the junction will operate within its predicted capacity) and a negligible impact on geometric delay.

Based on the predicted queue lengths this roundabout clearly has no interaction with any other junctions on the surrounding road network and as such will not materially increase journey times.

To provide comfort that there is no impact on the strategic model we have compared the predicted delays going through the roundabout between the outputs shown in the TA (Table 1) and the revised model (Table 2) with increased scale, please see the enclosed documentation.

As is shown in the summary tables the delay on the A6195 South/North in the 2029 PM Design Sensitivity scenario is 4/3 seconds in Table 1 (TA Model), this increases to 6/4 seconds in the revised design shown in Table 2.

This increase is derived from the 15 minute peak window within the hourly peak, making it the worst case scenario. The addition of a 2 second delay will have no material impact on the operation of the junction and will not increase journey times within the Strategic Road Network.

Elaine Ward – 12th June 2020
Rockingham

The delay is geometric delay due to the slowing of vehicles as they approach the junction and not related to capacity.

I trust the content of this letter and the enclosures provide the comfort that the proposed revised junction will continue to operate comfortable within capacity in the worst case peak hour period.

Yours sincerely

A handwritten signature in black ink, appearing to read 'RM', is positioned below the text 'Yours sincerely'.

Richard Murphy

Encs JPG Drawing
 ARCADY Output taken from December 2019 TA
 ARCADY Output Revised Roundabout

Cc Wayne Lake (BMBC)
 Phil McGrath (BMBC)
 Jo Neville (Harworth)
 Rob Cole (Harworth)
 Chris Davidson (Harworth)
 Katharine Morgan (C & W)
 Robert Redmond (JPG)

DO NOT SCALE

NOTES

REV	DESCRIPTION	DATE	BY
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Project
ROCKINGHAM 2&3
HOYLAND

Drawing Title
SECTION 278
ROUNDAABOUT LAYOUT

INFORMATION ISSUE

Architect
THE HARRIS PARTNERSHIP



www.jpg.group
Leeds London Birmingham 0113 263 1155

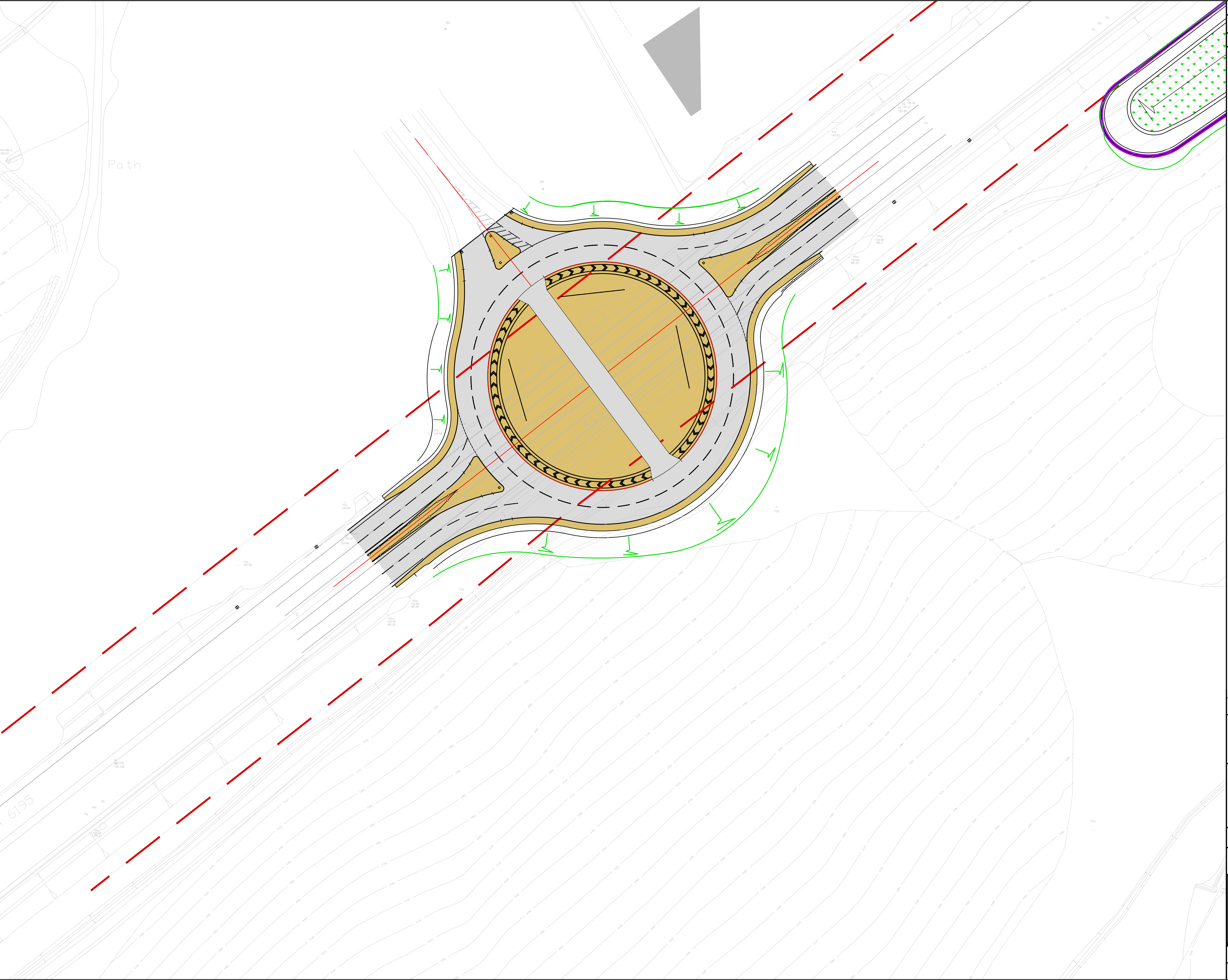
JPG Project Ref	Scale at A1	Date	Checked	Drawn
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4652-2 1:500 04.06.20 RMR RMR

4652-2 - JPG - SK001

S2

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Junctions 9							
ARCADY 9 - Roundabout Module							
Version: 9.5.0.6896 © Copyright TRL Limited, 2018							
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk 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: 191216 New Access.j9

Path: L:\Rockingham - 18005\ANALYSIS\ARCADY\J9files

Report generation date: 16/12/2019 16:31:35

- »2029 Design, AM
- »2029 Design, PM
- »2029 Design Sensitivity, AM
- »2029 Design Sensitivity, PM
- »2029 Design Sensitivity - No Link Road, AM
- »2029 Design Sensitivity - No Link Road, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
2029 Design								
1 - A6195 South	1.1	2.99	0.54	A	1.6	3.56	0.61	A
2 - New Access	0.0	3.16	0.02	A	0.1	3.71	0.05	A
3 - A6195 North	1.4	3.33	0.59	A	1.1	2.87	0.52	A
2029 Design Sensitivity								
1 - A6195 South	1.2	3.10	0.55	A	1.8	3.95	0.65	A
2 - New Access	0.0	3.23	0.02	A	0.1	3.95	0.05	A
3 - A6195 North	1.7	3.72	0.63	A	1.2	2.99	0.54	A
2029 Design Sensitivity - No Link Road								
1 - A6195 South	1.2	3.04	0.54	A	1.8	3.95	0.65	A
2 - New Access	0.0	3.20	0.02	A	0.1	4.14	0.10	A
3 - A6195 North	1.5	3.50	0.61	A	1.3	3.26	0.57	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 Av. delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	10/12/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	KG
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2029 Design	AM	ONE HOUR	07:00	08:30	15	✓
D4	2029 Design	PM	ONE HOUR	16:15	17:45	15	✓
D5	2029 Design Sensitivity	AM	ONE HOUR	07:00	08:30	15	✓
D6	2029 Design Sensitivity	PM	ONE HOUR	16:15	17:45	15	✓
D7	2029 Design Sensitivity - No Link Road	AM	ONE HOUR	07:00	08:30	15	✓
D8	2029 Design Sensitivity - No Link Road	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

2029 Design, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	3.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A6195 South	
2	New Access	
3	A6195 North	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - A6195 South	8.30	8.30	0.0	37.0	57.8	25.8	
2 - New Access	6.10	7.50	4.2	43.4	57.8	47.0	
3 - A6195 North	8.30	8.30	0.0	42.3	57.8	24.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A6195 South	0.740	2608
2 - New Access	0.611	1986
3 - A6195 North	0.747	2632

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2029 Design	AM	ONE HOUR	07:00	08:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1259	100.000
2 - New Access		ONE HOUR	✓	20	100.000
3 - A6195 North		ONE HOUR	✓	1399	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	32	1227
	2 - New Access	12	0	8
	3 - A6195 North	1375	24	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.54	2.99	1.1	A	1155	1733
2 - New Access	0.02	3.16	0.0	A	18	28
3 - A6195 North	0.59	3.33	1.4	A	1284	1926

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	948	237	18	2595	0.365	946	1042	0.0	0.6	2.180	A
2 - New Access	15	4	922	1423	0.011	15	42	0.0	0.0	2.556	A
3 - A6195 North	1053	263	9	2625	0.401	1051	928	0.0	0.7	2.282	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1132	283	22	2592	0.437	1131	1246	0.6	0.8	2.462	A
2 - New Access	18	4	1102	1312	0.014	18	50	0.0	0.0	2.780	A
3 - A6195 North	1258	314	11	2624	0.479	1257	1109	0.7	0.9	2.632	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1386	347	26	2589	0.536	1385	1525	0.8	1.1	2.986	A

2 - New Access	22	6	1349	1161	0.019	22	62	0.0	0.0	3.159	A
3 - A6195 North	1540	385	13	2622	0.587	1538	1358	0.9	1.4	3.316	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1386	347	26	2589	0.536	1386	1527	1.1	1.1	2.993	A
2 - New Access	22	6	1351	1160	0.019	22	62	0.0	0.0	3.161	A
3 - A6195 North	1540	385	13	2622	0.587	1540	1360	1.4	1.4	3.326	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1132	283	22	2592	0.437	1133	1249	1.1	0.8	2.469	A
2 - New Access	18	4	1104	1311	0.014	18	50	0.0	0.0	2.786	A
3 - A6195 North	1258	314	11	2624	0.479	1260	1112	1.4	0.9	2.643	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	948	237	18	2595	0.365	949	1045	0.8	0.6	2.187	A
2 - New Access	15	4	925	1421	0.011	15	42	0.0	0.0	2.560	A
3 - A6195 North	1053	263	9	2625	0.401	1054	931	0.9	0.7	2.292	A

2029 Design, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	3.25	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)	Run automatically
D4	2029 Design	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1445	100.000
2 - New Access		ONE HOUR	✓	45	100.000
3 - A6195 North		ONE HOUR	✓	1234	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	10	1435
	2 - New Access	25	0	20
	3 - A6195 North	1227	7	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.61	3.56	1.6	A	1326	1989
2 - New Access	0.05	3.71	0.1	A	41	62
3 - A6195 North	0.52	2.87	1.1	A	1132	1699

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1088	272	5	2604	0.418	1085	940	0.0	0.7	2.366	A
2 - New Access	34	8	1078	1327	0.026	34	13	0.0	0.0	2.782	A
3 - A6195 North	929	232	19	2618	0.355	927	1093	0.0	0.5	2.126	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1299	325	6	2603	0.499	1298	1125	0.7	1.0	2.755	A
2 - New Access	40	10	1289	1198	0.034	40	15	0.0	0.0	3.108	A
3 - A6195 North	1109	277	22	2615	0.424	1109	1307	0.5	0.7	2.388	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1591	398	8	2602	0.611	1589	1377	1.0	1.6	3.544	A
2 - New Access	50	12	1578	1022	0.048	49	19	0.0	0.1	3.702	A
3 - A6195 North	1359	340	27	2612	0.520	1357	1600	0.7	1.1	2.868	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1591	398	8	2602	0.611	1591	1378	1.6	1.6	3.558	A
2 - New Access	50	12	1580	1020	0.049	50	19	0.1	0.1	3.707	A
3 - A6195 North	1359	340	28	2612	0.520	1359	1602	1.1	1.1	2.872	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1299	325	6	2603	0.499	1301	1127	1.6	1.0	2.768	A
2 - New Access	40	10	1292	1196	0.034	41	15	0.1	0.0	3.114	A
3 - A6195 North	1109	277	23	2615	0.424	1111	1310	1.1	0.7	2.394	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1088	272	5	2604	0.418	1089	943	1.0	0.7	2.377	A
2 - New Access	34	8	1081	1325	0.026	34	13	0.0	0.0	2.790	A
3 - A6195 North	929	232	19	2618	0.355	930	1097	0.7	0.6	2.133	A

2029 Design Sensitivity, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	3.43	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)	Run automatically
D5	2029 Design Sensitivity	AM	ONE HOUR	07:00	08:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1297	100.000
2 - New Access		ONE HOUR	✓	20	100.000
3 - A6195 North		ONE HOUR	✓	1503	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	32	1265
	2 - New Access	12	0	8
	3 - A6195 North	1479	24	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.55	3.10	1.2	A	1190	1785
2 - New Access	0.02	3.23	0.0	A	18	28
3 - A6195 North	0.63	3.72	1.7	A	1379	2069

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	976	244	18	2595	0.376	974	1120	0.0	0.6	2.219	A
2 - New Access	15	4	950	1405	0.011	15	42	0.0	0.0	2.588	A
3 - A6195 North	1132	283	9	2625	0.431	1129	956	0.0	0.8	2.400	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1166	291	22	2592	0.450	1165	1339	0.6	0.8	2.521	A
2 - New Access	18	4	1136	1291	0.014	18	50	0.0	0.0	2.826	A
3 - A6195 North	1351	338	11	2624	0.515	1350	1144	0.8	1.1	2.823	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1428	357	26	2589	0.552	1426	1639	0.8	1.2	3.094	A
2 - New Access	22	6	1391	1136	0.019	22	62	0.0	0.0	3.231	A
3 - A6195 North	1655	414	13	2622	0.631	1652	1400	1.1	1.7	3.702	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1428	357	26	2589	0.552	1428	1642	1.2	1.2	3.101	A
2 - New Access	22	6	1393	1135	0.019	22	62	0.0	0.0	3.234	A
3 - A6195 North	1655	414	13	2622	0.631	1655	1402	1.7	1.7	3.720	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1166	291	22	2592	0.450	1168	1343	1.2	0.8	2.529	A
2 - New Access	18	4	1139	1290	0.014	18	50	0.0	0.0	2.831	A
3 - A6195 North	1351	338	11	2624	0.515	1354	1146	1.7	1.1	2.838	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	976	244	18	2595	0.376	977	1124	0.8	0.6	2.228	A
2 - New Access	15	4	953	1403	0.011	15	42	0.0	0.0	2.594	A
3 - A6195 North	1132	283	9	2625	0.431	1133	959	1.1	0.8	2.413	A

2029 Design Sensitivity, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	3.52	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)	Run automatically
D6	2029 Design Sensitivity	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1535	100.000
2 - New Access		ONE HOUR	✓	45	100.000
3 - A6195 North		ONE HOUR	✓	1278	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	10	1525
	2 - New Access	25	0	20
	3 - A6195 North	1271	7	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.65	3.95	1.8	A	1409	2113
2 - New Access	0.05	3.95	0.1	A	41	62
3 - A6195 North	0.54	2.99	1.2	A	1173	1759

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1156	289	5	2604	0.444	1152	973	0.0	0.8	2.475	A
2 - New Access	34	8	1145	1286	0.026	34	13	0.0	0.0	2.874	A
3 - A6195 North	962	241	19	2618	0.368	960	1160	0.0	0.6	2.168	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1380	345	6	2603	0.530	1379	1164	0.8	1.1	2.937	A
2 - New Access	40	10	1370	1149	0.035	40	15	0.0	0.0	3.247	A
3 - A6195 North	1149	287	22	2615	0.439	1148	1388	0.6	0.8	2.452	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1690	423	8	2602	0.649	1687	1425	1.1	1.8	3.922	A
2 - New Access	50	12	1676	962	0.052	49	19	0.0	0.1	3.947	A
3 - A6195 North	1407	352	27	2612	0.539	1406	1698	0.8	1.2	2.981	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1690	423	8	2602	0.649	1690	1427	1.8	1.8	3.945	A
2 - New Access	50	12	1679	960	0.052	50	19	0.1	0.1	3.954	A
3 - A6195 North	1407	352	28	2612	0.539	1407	1701	1.2	1.2	2.988	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1380	345	6	2603	0.530	1383	1167	1.8	1.1	2.955	A
2 - New Access	40	10	1374	1146	0.035	41	15	0.1	0.0	3.257	A
3 - A6195 North	1149	287	23	2615	0.439	1150	1392	1.2	0.8	2.459	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1156	289	5	2604	0.444	1157	977	1.1	0.8	2.489	A
2 - New Access	34	8	1149	1283	0.026	34	13	0.0	0.0	2.882	A
3 - A6195 North	962	241	19	2618	0.368	963	1165	0.8	0.6	2.175	A

2029 Design Sensitivity - No Link Road, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	3.29	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)	Run automatically
D7	2029 Design Sensitivity - No Link Road	AM	ONE HOUR	07:00	08:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1277	100.000
2 - New Access		ONE HOUR	✓	20	100.000
3 - A6195 North		ONE HOUR	✓	1448	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	32	1245
	2 - New Access	12	0	8
	3 - A6195 North	1424	24	0

Vehicle Mix

HV %s

		To		
		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	0	0

From	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.54	3.04	1.2	A	1172	1758
2 - New Access	0.02	3.20	0.0	A	18	28
3 - A6195 North	0.61	3.50	1.5	A	1329	1993

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	961	240	18	2595	0.371	959	1078	0.0	0.6	2.198	A
2 - New Access	15	4	935	1414	0.011	15	42	0.0	0.0	2.571	A
3 - A6195 North	1090	273	9	2625	0.415	1087	941	0.0	0.7	2.337	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1148	287	22	2592	0.443	1147	1290	0.6	0.8	2.490	A
2 - New Access	18	4	1118	1302	0.014	18	50	0.0	0.0	2.802	A
3 - A6195 North	1302	325	11	2624	0.496	1301	1126	0.7	1.0	2.717	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1406	352	26	2589	0.543	1404	1579	0.8	1.2	3.036	A
2 - New Access	22	6	1369	1149	0.019	22	62	0.0	0.0	3.193	A
3 - A6195 North	1594	399	13	2622	0.608	1592	1378	1.0	1.5	3.487	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1406	352	26	2589	0.543	1406	1581	1.2	1.2	3.043	A
2 - New Access	22	6	1371	1148	0.019	22	62	0.0	0.0	3.195	A
3 - A6195 North	1594	399	13	2622	0.608	1594	1380	1.5	1.5	3.501	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1148	287	22	2592	0.443	1150	1293	1.2	0.8	2.497	A
2 - New Access	18	4	1121	1301	0.014	18	50	0.0	0.0	2.805	A
3 - A6195 North	1302	325	11	2624	0.496	1304	1128	1.5	1.0	2.733	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	961	240	18	2595	0.371	962	1082	0.8	0.6	2.206	A

2 - New Access	15	4	938	1413	0.011	15	42	0.0	0.0	2.575	A
3 - A6195 North	1090	273	9	2625	0.415	1091	944	1.0	0.7	2.349	A

2029 Design Sensitivity - No Link Road, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	3.64	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)	Run automatically
D8	2029 Design Sensitivity - No Link Road	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1530	100.000
2 - New Access		ONE HOUR	✓	92	100.000
3 - A6195 North		ONE HOUR	✓	1348	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	20	1510
	2 - New Access	52	0	40
	3 - A6195 North	1333	15	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
1 - A6195 South		0	0	0

From	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.65	3.95	1.8	A	1404	2106
2 - New Access	0.10	4.14	0.1	A	84	127
3 - A6195 North	0.57	3.26	1.3	A	1237	1855

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1152	288	11	2600	0.443	1149	1040	0.0	0.8	2.476	A
2 - New Access	69	17	1134	1293	0.054	69	26	0.0	0.1	2.940	A
3 - A6195 North	1015	254	39	2603	0.390	1012	1164	0.0	0.6	2.259	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1375	344	13	2598	0.529	1374	1244	0.8	1.1	2.939	A
2 - New Access	83	21	1356	1157	0.071	83	31	0.1	0.1	3.349	A
3 - A6195 North	1212	303	47	2597	0.467	1211	1392	0.6	0.9	2.596	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1685	421	16	2596	0.649	1682	1523	1.1	1.8	3.927	A
2 - New Access	101	25	1660	972	0.104	101	38	0.1	0.1	4.136	A
3 - A6195 North	1484	371	57	2589	0.573	1482	1704	0.9	1.3	3.246	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1685	421	17	2596	0.649	1685	1525	1.8	1.8	3.950	A
2 - New Access	101	25	1662	970	0.104	101	39	0.1	0.1	4.144	A
3 - A6195 North	1484	371	57	2589	0.573	1484	1707	1.3	1.3	3.256	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1375	344	14	2598	0.529	1378	1247	1.8	1.1	2.959	A
2 - New Access	83	21	1360	1155	0.072	83	32	0.1	0.1	3.361	A
3 - A6195 North	1212	303	47	2597	0.467	1214	1396	1.3	0.9	2.605	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1152	288	11	2600	0.443	1153	1044	1.1	0.8	2.490	A

2 - New Access	69	17	1138	1290	0.054	69	26	0.1	0.1	2.950	A
3 - A6195 North	1015	254	39	2603	0.390	1016	1168	0.9	0.6	2.271	A

Junctions 9							
ARCADY 9 - Roundabout Module							
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Filename: 200611 Single Lane Entry Rdbt.j9

Path: L:\Rockingham - 18005\ANALYSIS\ARCADY\Ph 3 Site Access Roundabout

Report generation date: 11/06/2020 17:42:05

- »2029 Design, AM
- »2029 Design, PM
- »2029 Design Sensitivity, AM
- »2029 Design Sensitivity, PM
- »2029 Design Sensitivity - No Link Road, AM
- »2029 Design Sensitivity - No Link Road, PM

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
2029 Design								
1 - A6195 South	1.6	4.05	0.61	A	2.3	5.19	0.70	A
2 - New Access	0.0	4.99	0.03	A	0.1	5.97	0.08	A
3 - A6195 North	2.1	4.86	0.68	A	1.5	3.94	0.60	A
2029 Design Sensitivity								
1 - A6195 South	1.7	4.26	0.63	A	2.8	6.05	0.74	A
2 - New Access	0.0	5.11	0.03	A	0.1	6.40	0.08	A
3 - A6195 North	2.6	5.75	0.73	A	1.6	4.16	0.62	A
2029 Design Sensitivity - No Link Road								
1 - A6195 South	1.6	4.15	0.62	A	2.8	6.05	0.74	A
2 - New Access	0.0	5.04	0.03	A	0.2	6.95	0.16	A
3 - A6195 North	2.3	5.24	0.70	A	1.9	4.66	0.66	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 Av. delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	11/06/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SJP
Description	Updated to reflect single lane approach and BC Comments

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2029 Design	AM	ONE HOUR	07:00	08:30	15	✓
D4	2029 Design	PM	ONE HOUR	16:15	17:45	15	✓
D5	2029 Design Sensitivity	AM	ONE HOUR	07:00	08:30	15	✓
D6	2029 Design Sensitivity	PM	ONE HOUR	16:15	17:45	15	✓
D7	2029 Design Sensitivity - No Link Road	AM	ONE HOUR	07:00	08:30	15	✓
D8	2029 Design Sensitivity - No Link Road	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

2029 Design, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A6195 South	
2	New Access	
3	A6195 North	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - A6195 South	7.50	7.50	0.0	20.0	88.0	28.0	
2 - New Access	3.65	5.36	2.7	30.0	88.0	33.0	
3 - A6195 North	7.50	7.50	0.0	20.0	88.0	28.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A6195 South	0.544	2288
2 - New Access	0.400	1285
3 - A6195 North	0.544	2288

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2029 Design	AM	ONE HOUR	07:00	08:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1259	100.000
2 - New Access		ONE HOUR	✓	20	100.000
3 - A6195 North		ONE HOUR	✓	1399	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	32	1227
	2 - New Access	12	0	8
	3 - A6195 North	1375	24	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.61	4.05	1.6	A	1155	1733
2 - New Access	0.03	4.99	0.0	A	18	28
3 - A6195 North	0.68	4.86	2.1	A	1284	1926

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	948	237	18	2278	0.416	945	1041	0.0	0.7	2.694	A
2 - New Access	15	4	921	916	0.016	15	42	0.0	0.0	3.996	A
3 - A6195 North	1053	263	9	2283	0.461	1050	927	0.0	0.9	2.909	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1132	283	22	2277	0.497	1131	1245	0.7	1.0	3.139	A
2 - New Access	18	4	1102	843	0.021	18	50	0.0	0.0	4.361	A
3 - A6195 North	1258	314	11	2282	0.551	1256	1109	0.9	1.2	3.503	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1386	347	26	2274	0.610	1384	1524	1.0	1.5	4.034	A

2 - New Access	22	6	1349	745	0.030	22	62	0.0	0.0	4.982	A
3 - A6195 North	1540	385	13	2281	0.675	1537	1358	1.2	2.0	4.817	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1386	347	26	2274	0.610	1386	1527	1.5	1.6	4.055	A
2 - New Access	22	6	1351	744	0.030	22	62	0.0	0.0	4.988	A
3 - A6195 North	1540	385	13	2281	0.675	1540	1360	2.0	2.1	4.859	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1132	283	22	2277	0.497	1134	1250	1.6	1.0	3.158	A
2 - New Access	18	4	1105	842	0.021	18	50	0.0	0.0	4.370	A
3 - A6195 North	1258	314	11	2282	0.551	1261	1112	2.1	1.2	3.537	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	948	237	18	2278	0.416	949	1046	1.0	0.7	2.711	A
2 - New Access	15	4	925	914	0.016	15	42	0.0	0.0	4.004	A
3 - A6195 North	1053	263	9	2283	0.461	1055	931	1.2	0.9	2.933	A

2029 Design, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.64	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)	Run automatically
D4	2029 Design	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1445	100.000
2 - New Access		ONE HOUR	✓	45	100.000
3 - A6195 North		ONE HOUR	✓	1234	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	10	1435
	2 - New Access	25	0	20
	3 - A6195 North	1227	7	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.70	5.19	2.3	A	1326	1989
2 - New Access	0.08	5.97	0.1	A	41	62
3 - A6195 North	0.60	3.94	1.5	A	1132	1699

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1088	272	5	2285	0.476	1084	940	0.0	0.9	2.989	A
2 - New Access	34	8	1077	853	0.040	34	13	0.0	0.0	4.390	A
3 - A6195 North	929	232	19	2278	0.408	926	1092	0.0	0.7	2.657	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1299	325	6	2285	0.569	1297	1124	0.9	1.3	3.639	A
2 - New Access	40	10	1288	769	0.053	40	15	0.0	0.1	4.943	A
3 - A6195 North	1109	277	22	2276	0.487	1108	1306	0.7	0.9	3.080	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1591	398	8	2284	0.697	1587	1376	1.3	2.3	5.138	A
2 - New Access	50	12	1576	653	0.076	49	19	0.1	0.1	5.960	A
3 - A6195 North	1359	340	27	2273	0.598	1357	1598	0.9	1.5	3.918	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1591	398	8	2284	0.697	1591	1378	2.3	2.3	5.191	A
2 - New Access	50	12	1580	652	0.076	50	19	0.1	0.1	5.975	A
3 - A6195 North	1359	340	28	2273	0.598	1359	1602	1.5	1.5	3.935	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1299	325	6	2285	0.569	1303	1128	2.3	1.3	3.681	A
2 - New Access	40	10	1294	767	0.053	41	15	0.1	0.1	4.959	A
3 - A6195 North	1109	277	23	2276	0.487	1111	1312	1.5	1.0	3.096	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1088	272	5	2285	0.476	1090	944	1.3	0.9	3.013	A
2 - New Access	34	8	1082	851	0.040	34	13	0.1	0.0	4.405	A
3 - A6195 North	929	232	19	2278	0.408	930	1097	1.0	0.7	2.672	A

2029 Design Sensitivity, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	5.06	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)	Run automatically
D5	2029 Design Sensitivity	AM	ONE HOUR	07:00	08:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1297	100.000
2 - New Access		ONE HOUR	✓	20	100.000
3 - A6195 North		ONE HOUR	✓	1503	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	32	1265
	2 - New Access	12	0	8
	3 - A6195 North	1479	24	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.63	4.26	1.7	A	1190	1785
2 - New Access	0.03	5.11	0.0	A	18	28
3 - A6195 North	0.73	5.75	2.6	A	1379	2069

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	976	244	18	2278	0.429	973	1119	0.0	0.7	2.753	A
2 - New Access	15	4	949	904	0.017	15	42	0.0	0.0	4.047	A
3 - A6195 North	1132	283	9	2283	0.496	1128	955	0.0	1.0	3.105	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1166	291	22	2277	0.512	1165	1339	0.7	1.0	3.235	A
2 - New Access	18	4	1136	830	0.022	18	50	0.0	0.0	4.434	A
3 - A6195 North	1351	338	11	2282	0.592	1349	1143	1.0	1.4	3.850	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1428	357	26	2274	0.628	1426	1637	1.0	1.7	4.230	A
2 - New Access	22	6	1390	728	0.030	22	62	0.0	0.0	5.099	A
3 - A6195 North	1655	414	13	2281	0.725	1650	1399	1.4	2.6	5.664	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1428	357	26	2274	0.628	1428	1642	1.7	1.7	4.255	A
2 - New Access	22	6	1393	727	0.030	22	62	0.0	0.0	5.106	A
3 - A6195 North	1655	414	13	2281	0.725	1655	1402	2.6	2.6	5.745	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1166	291	22	2276	0.512	1168	1345	1.7	1.1	3.258	A
2 - New Access	18	4	1140	828	0.022	18	50	0.0	0.0	4.442	A
3 - A6195 North	1351	338	11	2282	0.592	1356	1147	2.6	1.5	3.903	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	976	244	18	2278	0.429	978	1124	1.1	0.8	2.769	A
2 - New Access	15	4	954	903	0.017	15	42	0.0	0.0	4.055	A
3 - A6195 North	1132	283	9	2283	0.496	1133	960	1.5	1.0	3.135	A

2029 Design Sensitivity, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	5.21	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)	Run automatically
D6	2029 Design Sensitivity	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1535	100.000
2 - New Access		ONE HOUR	✓	45	100.000
3 - A6195 North		ONE HOUR	✓	1278	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	10	1525
	2 - New Access	25	0	20
	3 - A6195 North	1271	7	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	0	0
	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.74	6.05	2.8	A	1409	2113
2 - New Access	0.08	6.40	0.1	A	41	62
3 - A6195 North	0.62	4.16	1.6	A	1173	1759

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1156	289	5	2285	0.506	1152	973	0.0	1.0	3.163	A
2 - New Access	34	8	1144	826	0.041	34	13	0.0	0.0	4.539	A
3 - A6195 North	962	241	19	2278	0.422	959	1159	0.0	0.7	2.724	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1380	345	6	2285	0.604	1378	1164	1.0	1.5	3.960	A
2 - New Access	40	10	1369	736	0.055	40	15	0.0	0.1	5.172	A
3 - A6195 North	1149	287	22	2276	0.505	1148	1387	0.7	1.0	3.188	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1690	423	8	2284	0.740	1685	1424	1.5	2.8	5.957	A
2 - New Access	50	12	1674	614	0.081	49	19	0.1	0.1	6.371	A
3 - A6195 North	1407	352	27	2273	0.619	1405	1696	1.0	1.6	4.132	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1690	423	8	2284	0.740	1690	1427	2.8	2.8	6.055	A
2 - New Access	50	12	1679	612	0.081	50	19	0.1	0.1	6.396	A
3 - A6195 North	1407	352	28	2273	0.619	1407	1701	1.6	1.6	4.155	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1380	345	6	2285	0.604	1385	1167	2.8	1.5	4.024	A
2 - New Access	40	10	1376	734	0.055	41	15	0.1	0.1	5.196	A
3 - A6195 North	1149	287	23	2276	0.505	1151	1394	1.6	1.0	3.206	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1156	289	5	2285	0.506	1158	977	1.5	1.0	3.197	A
2 - New Access	34	8	1150	824	0.041	34	13	0.1	0.0	4.556	A
3 - A6195 North	962	241	19	2278	0.422	963	1165	1.0	0.7	2.742	A

2029 Design Sensitivity - No Link Road, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	4.73	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)	Run automatically
D7	2029 Design Sensitivity - No Link Road	AM	ONE HOUR	07:00	08:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1277	100.000
2 - New Access		ONE HOUR	✓	20	100.000
3 - A6195 North		ONE HOUR	✓	1448	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	32	1245
	2 - New Access	12	0	8
	3 - A6195 North	1424	24	0

Vehicle Mix

HV %s

		To		
		1 - A6195 South	2 - New Access	3 - A6195 North
	1 - A6195 South	0	0	0

From	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.62	4.15	1.6	A	1172	1758
2 - New Access	0.03	5.04	0.0	A	18	28
3 - A6195 North	0.70	5.24	2.3	A	1329	1993

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	961	240	18	2278	0.422	958	1077	0.0	0.7	2.722	A
2 - New Access	15	4	934	910	0.017	15	42	0.0	0.0	4.020	A
3 - A6195 North	1090	273	9	2283	0.477	1086	940	0.0	0.9	2.999	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1148	287	22	2277	0.504	1147	1289	0.7	1.0	3.184	A
2 - New Access	18	4	1118	837	0.021	18	50	0.0	0.0	4.395	A
3 - A6195 North	1302	325	11	2282	0.570	1300	1125	0.9	1.3	3.658	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1406	352	26	2274	0.618	1404	1577	1.0	1.6	4.126	A
2 - New Access	22	6	1368	737	0.030	22	62	0.0	0.0	5.037	A
3 - A6195 North	1594	399	13	2281	0.699	1590	1377	1.3	2.3	5.183	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1406	352	26	2274	0.618	1406	1581	1.6	1.6	4.147	A
2 - New Access	22	6	1371	736	0.030	22	62	0.0	0.0	5.043	A
3 - A6195 North	1594	399	13	2281	0.699	1594	1380	2.3	2.3	5.239	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1148	287	22	2277	0.504	1150	1295	1.6	1.0	3.202	A
2 - New Access	18	4	1122	836	0.022	18	50	0.0	0.0	4.403	A
3 - A6195 North	1302	325	11	2282	0.570	1306	1129	2.3	1.3	3.698	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	961	240	18	2278	0.422	963	1083	1.0	0.7	2.737	A

2 - New Access	15	4	938	909	0.017	15	42	0.0	0.0	4.029	A
3 - A6195 North	1090	273	9	2283	0.477	1092	944	1.3	0.9	3.024	A

2029 Design Sensitivity - No Link Road, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	5.44	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)	Run automatically
D8	2029 Design Sensitivity - No Link Road	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - A6195 South		ONE HOUR	✓	1530	100.000
2 - New Access		ONE HOUR	✓	92	100.000
3 - A6195 North		ONE HOUR	✓	1348	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
From	1 - A6195 South	0	20	1510
	2 - New Access	52	0	40
	3 - A6195 North	1333	15	0

Vehicle Mix

HV %s

	To			
		1 - A6195 South	2 - New Access	3 - A6195 North
1 - A6195 South		0	0	0

From	2 - New Access	0	0	0
	3 - A6195 North	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A6195 South	0.74	6.05	2.8	A	1404	2106
2 - New Access	0.16	6.95	0.2	A	84	127
3 - A6195 North	0.66	4.66	1.9	A	1237	1855

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1152	288	11	2282	0.505	1148	1039	0.0	1.0	3.161	A
2 - New Access	69	17	1133	831	0.083	69	26	0.0	0.1	4.721	A
3 - A6195 North	1015	254	39	2267	0.448	1012	1163	0.0	0.8	2.860	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1375	344	13	2281	0.603	1373	1244	1.0	1.5	3.958	A
2 - New Access	83	21	1356	742	0.111	83	31	0.1	0.1	5.459	A
3 - A6195 North	1212	303	47	2263	0.536	1210	1391	0.8	1.1	3.416	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1685	421	16	2279	0.739	1680	1522	1.5	2.8	5.953	A
2 - New Access	101	25	1658	621	0.163	101	38	0.1	0.2	6.922	A
3 - A6195 North	1484	371	57	2257	0.658	1481	1701	1.1	1.9	4.621	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1685	421	17	2279	0.739	1684	1525	2.8	2.8	6.047	A
2 - New Access	101	25	1662	619	0.164	101	39	0.2	0.2	6.954	A
3 - A6195 North	1484	371	57	2257	0.658	1484	1706	1.9	1.9	4.656	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1375	344	14	2281	0.603	1380	1248	2.8	1.5	4.021	A
2 - New Access	83	21	1362	739	0.112	83	32	0.2	0.1	5.491	A
3 - A6195 North	1212	303	47	2263	0.536	1215	1399	1.9	1.2	3.446	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A6195 South	1152	288	11	2282	0.505	1154	1044	1.5	1.0	3.198	A

2 - New Access	69	17	1139	829	0.084	69	26	0.1	0.1	4.744	A
3 - A6195 North	1015	254	39	2267	0.448	1016	1169	1.2	0.8	2.880	A