

Junctions 9	
ARCADY 9 - Roundabout Module	
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»2018 Baseline, AM
»2018 Baseline, IP
»2018 Baseline, PM
»2026 Reference Case, AM
»2026 Reference Case, IP
»2026 Reference Case, PM
»2026 Test Case, AM
»2026 Test Case, IP
»2026 Test Case, PM

Summary of junction performance

	AM				IP				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
[Lane Simulation] - 2018 Baseline												
Junction 1 - Arm A	3.3	9.19		A	3.6	9.84		A	6.5	14.24		B
Junction 1 - Arm B	0.0	4.79		A	0.0	5.11		A	0.1	6.61		A
Junction 1 - Arm C	1.9	6.36		A	1.2	5.60		A	1.7	6.79		A
Junction 1 - Arm D	0.8	6.01		A	1.3	6.73		A	2.1	9.24		A
Junction 2 - Arm A	0.9	4.33		A	0.9	4.53		A	1.4	4.68		A
Junction 2 - Arm B	1.3	4.42		A	0.6	3.63		A	0.9	3.86		A
Junction 2 - Arm C	0.2	5.32		A	0.3	3.87		A	0.3	4.51		A
[Lane Simulation] - 2026 Reference Case												
Junction 1 - Arm A	5.6	12.89		B	8.3	20.36		C	29.9	52.96		F
Junction 1 - Arm B	0.0	5.66		A	0.1	8.50		A	0.1	12.29		B
Junction 1 - Arm C	3.2	8.89		A	2.1	8.03		A	3.1	9.91		A
Junction 1 - Arm D	1.3	7.45		A	4.9	16.05		C	6.9	24.90		C
Junction 2 - Arm A	1.2	4.75		A	1.6	5.17		A	1.8	5.41		A
Junction 2 - Arm B	1.6	5.03		A	0.7	3.93		A	1.1	4.21		A
Junction 2 - Arm C	0.2	5.85		A	0.5	4.68		A	0.5	5.28		A
[Lane Simulation] - 2026 Test Case												
Junction 1 - Arm A	7.5	17.10		C	46.0	84.54		F	76.2	121.58		F
Junction 1 - Arm B	0.1	6.15		A	0.1	12.41		B	0.1	13.30		B
Junction 1 - Arm C	3.8	10.63		B	2.8	11.00		B	3.7	11.86		B
Junction 1 - Arm D	1.3	8.34		A	37.6	87.16		F	21.8	68.37		F
Junction 2 - Arm A	1.3	4.72		A	1.8	5.61		A	1.7	5.43		A
Junction 2 - Arm B	1.9	5.13		A	1.0	4.19		A	1.2	4.33		A
Junction 2 - Arm C	0.3	6.31		A	0.6	5.21		A	0.6	5.55		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. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	North & South Airport Access Roundabouts
Location	Bristol
Site number	1/2
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	43321
Enumerator	PBA\proose
Description	

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			1530085205	101	13.19

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
D1	2018 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D2	2018 Baseline	IP	ONE HOUR	12:45	14:15	15	✓
D3	2018 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D4	2026 Reference Case	AM	ONE HOUR	07:45	09:15	15	✓
D5	2026 Reference Case	IP	ONE HOUR	12:45	14:15	15	✓
D6	2026 Reference Case	PM	ONE HOUR	16:45	18:15	15	✓
D7	2026 Test Case	AM	ONE HOUR	07:45	09:15	15	✓
D8	2026 Test Case	IP	ONE HOUR	12:45	14:15	15	✓
D9	2026 Test Case	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2018 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Junction 1 - Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	7.61	A
2	untitled	Standard Roundabout		A, B, C	4.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
1	A	A38 North	
	B	Easirent Car Hire Access	
	C	A38 South	
	D	Bristol Airport Access	
2	A	A38 North	
	B	A38 South	
	C	Bristol Airport Access	

Roundabout Geometry

Junction	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	A	6.20	9.90	13.0	5.7	48.0	37.0	
	B	3.90	5.60	13.3	16.6	48.0	24.0	
	C	4.08	7.70	92.6	30.0	48.0	28.0	
	D	7.40	9.50	11.3	20.0	48.0	47.0	
2	A	4.30	7.10	87.9	40.1	40.0	19.0	
	B	5.00	7.90	36.3	50.0	40.0	18.0	
	C	4.50	5.30	4.0	23.0	40.0	24.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1	A	0.651	2103
	B	0.594	1564
	C	0.732	2263
	D	0.750	2485
2	A	0.761	2203
	B	0.798	2372
	C	0.621	1552

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

Lane Simulation: Arm options

Junction	Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00
	D	Evenly split	10.00
2	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00

Lanes

Junction	Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
1	A	Entry	1	1	B, C	✓	3.00		0	99999	
				2	C, D	✓	3.00		0	99999	
				3	A, D	✓	3.00		0	99999	
		Exit	1	1	(B, C)	✓	17.00				
				2	(A, C, D)	✓	17.00				
				3	((A, B, C, D))		Infinity				
	B	Entry	1	1	B, A, C, D		Infinity		0	99999	
		Exit	1	1			Infinity				
	C	Entry	1	1	A, D	✓	14.00		0	99999	
				2	B, A, C	✓	14.00		0	99999	
		Exit	1	1	(A, B, C, D)	✓	3.00				
				1		✓	3.00				
	D	Entry	1	1	B, A, C		Infinity		0	99999	
		Exit	1	1	C, D		Infinity		0	99999	
2	A	Entry	1	1	B	✓	12.00		0	99999	
				2	B, C, A	✓	12.00		0	99999	
		Exit	1	1	(B, C, A)	✓	3.00				
				1		✓	3.00				
	B	Entry	1	1	C, A	✓	8.00		0	99999	
				2	B, A	✓	8.00		0	99999	
		Exit	1	1	(B, C, A)		Infinity				
				1			Infinity				
	C	Entry	1	1	B, C, A		Infinity		0	99999	
		Exit	1	1			Infinity				

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Entry Lane slope and intercept

Junction	Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	A	Entry	1	1	0.217	701
				2	0.217	701
				3	0.217	701
	B	Entry	1	1	0.594	1584
	C	Entry	1	1	0.368	1131
				2	0.368	1131
	D	Entry	1	1	0.375	1243
				2	0.375	1243
2	A	Entry	1	1	0.381	1101
				2	0.381	1101
	B	Entry	1	1	0.399	1188
				2	0.399	1188
	C	Entry	1	1	0.621	1552
				1	0.621	1552

Summary of Entry Lane allowed movements

Junction	Arm	Lane Level	Lane	Destination arm			
				A	B	C	D
1	A	1	1		✓	✓	
			2			✓	✓
			3	✓			✓
		2	1		✓	✓	
			2	✓		✓	✓
			3	✓	✓	✓	✓
	B	1	1	✓	✓	✓	✓
	C	1	1	✓			✓
			2	✓	✓	✓	
		2	1	✓	✓	✓	✓
	D	1	1	✓	✓	✓	
			2			✓	✓

Summary of Entry Lane allowed movements

Junction	Arm	Lane Level	Lane	Destination arm		
				B	C	A
2	B	1	1		✓	✓
			2	✓		✓
		2	1	✓	✓	✓
	C	1	1	✓	✓	✓
	A	1	1	✓		
			2	✓	✓	✓
		2	1	✓	✓	✓

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
D1	2018 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Simple (vertical queueing)	Normal	0	100.00	
2	A	1	C	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1035	100.000
	B		ONE HOUR	✓	12	100.000
	C	✓				
	D		ONE HOUR	✓	283	100.000
2	A	✓				
	B		ONE HOUR	✓	902	100.000
	C		ONE HOUR	✓	73	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To			
		A	B	C	D
From	A	201	4	558	272
	B	2	0	4	6
	C	766	1	0	151
	D	166	5	111	1

Demand (PCU/hr)

Junction 2

		To		
		A	B	C
From	A	0	553	118
	B	845	1	56
	C	69	4	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

		To			
		A	B	C	D
From	A	2	0	5	6
	B	0	0	0	0
	C	4	0	0	13
	D	10	0	14	0

Heavy Vehicle Percentages

Junction 2

		To		
		A	B	C
From	A	0	5	12
	B	4	0	0
	C	27	33	0

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	9.19	3.3	A	950	1425
	B	4.79	0.0	A	10	15
	C	6.36	1.9	A	842	1263
	D	6.01	0.8	A	262	393
2	A	4.33	0.9	A	616	924
	B	4.42	1.3	A	830	1245
	C	5.32	0.2	A	69	103

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	789	197	92	785	774	882	0.0	1.7	7.039	A
	B	8	2	889	8	10	8	0.0	0.0	3.292	A
	C	694	173	368	691	680	509	0.0	1.0	4.701	A
	D	224	56	731	223	220	328	0.0	0.4	4.678	A
2	A	503	126	5	502	504	694	0.0	0.5	3.850	A
	B	684	171	91	686	677	417	0.0	0.6	3.701	A
	C	56	14	644	56	57	132	0.0	0.1	4.053	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	930	233	107	935	931	1017	1.7	2.0	7.898	A
	B	10	3	1032	10	10	10	0.0	0.0	4.001	A
	C	829	207	431	831	829	612	1.0	1.2	5.182	A
	D	256	64	886	257	253	395	0.4	0.4	4.999	A
2	A	611	153	5	612	609	830	0.5	0.6	4.049	A
	B	812	203	109	810	813	509	0.6	1.0	3.912	A
	C	71	18	764	71	68	154	0.1	0.1	4.448	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1141	285	131	1135	1133	1253	2.0	3.3	9.192	A
	B	12	3	1255	12	12	12	0.0	0.0	4.789	A
	C	1006	252	533	1005	1000	734	1.2	1.9	6.304	A
	D	318	80	1067	317	310	471	0.4	0.8	5.852	A
2	A	734	184	4	734	730	1004	0.6	0.9	4.306	A
	B	989	247	126	991	991	612	1.0	0.9	4.389	A
	C	82	20	926	82	80	191	0.1	0.1	5.294	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1141	285	127	1141	1146	1254	3.3	2.8	9.144	A
	B	13	3	1259	14	14	10	0.0	0.0	4.498	A
	C	1004	251	533	1009	1004	740	1.9	1.5	6.361	A
	D	314	78	1068	314	313	474	0.8	0.6	6.015	A
2	A	741	185	6	740	736	1000	0.9	0.9	4.330	A
	B	990	248	134	988	993	612	0.9	1.3	4.424	A
	C	80	20	926	80	79	196	0.1	0.2	5.320	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	924	231	104	925	931	1017	2.8	1.8	7.979	A
	B	10	2	1020	10	11	8	0.0	0.0	3.914	A
	C	829	207	423	825	819	607	1.5	1.2	5.301	A
	D	239	60	880	240	257	367	0.6	0.3	5.117	A
2	A	604	151	5	606	608	834	0.9	0.6	4.080	A
	B	815	204	106	818	808	504	1.3	0.9	4.002	A
	C	72	18	767	72	67	158	0.2	0.1	4.738	A

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	773	193	94	773	782	862	1.8	1.8	6.990	A
	B	9	2	860	8	9	7	0.0	0.0	3.763	A
	C	691	173	362	691	694	506	1.2	0.9	4.746	A
	D	223	56	735	220	219	318	0.3	0.3	4.719	A
2	A	502	125	4	502	510	694	0.6	0.6	3.822	A
	B	688	172	84	691	691	422	0.9	0.6	3.799	A
	C	51	13	647	51	52	128	0.1	0.1	4.280	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	239	681	0.351	237	232	0.0	0.6	6.593	A
				2	C, D	291	681	0.428	291	287	0.0	0.6	6.804	A
				3	A, D	257	681	0.378	257	256	0.0	0.5	7.387	A
			2	1	(B, C)	216			216	215	0.0	0.0	0.030	A
				2	(A, C, D)	572			572	566	0.0	0.0	0.132	A
			3	1	((A, B, C, D))	789			789	781	0.0	0.0	0.000	A
		Exit	1	1		862			862	845	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	8	1048	0.007	8	10	0.0	0.0	3.292	A
		Exit	1	1		8			8	8	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	374	997	0.376	374	371	0.0	0.5	4.931	A
				2	B, A, C	319	997	0.320	317	309	0.0	0.5	4.431	A
		Exit	1	1	(A, B, C, D)	694			694	684	0.0	0.0	0.000	A
				1		509			509	508	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	174	969	0.179	172	170	0.0	0.4	4.822	A
				2	C, D	50	969	0.052	51	50	0.0	0.1	4.174	A
		Exit	1	1		328			328	324	0.0	0.0	0.000	A
2	A	Entry	1	1	B	217	1099	0.197	216	218	0.0	0.2	3.688	A
				2	B, C, A	286	1099	0.280	286	286	0.0	0.3	3.977	A
			2	1	(B, C, A)	503			503	506	0.0	0.0	0.000	A
		Exit	1	1		694			694	686	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	358	1150	0.311	359	352	0.0	0.3	3.752	A
				2	B, A	326	1150	0.284	327	325	0.0	0.3	3.646	A
			2	1	(B, C, A)	684			684	679	0.0	0.0	0.000	A
		Exit	1	1		417			417	420	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	56	1153	0.049	56	57	0.0	0.1	4.053	A
		Exit	1	1		132			132	131	0.0	0.0	0.000	A

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	288	678	0.422	287	284	0.6	0.6	7.157	A
				2	C, D	341	678	0.503	343	344	0.6	0.7	7.458	A
				3	A, D	305	678	0.450	306	303	0.5	0.7	8.258	A
			2	1	(B, C)	271			271	267	0.0	0.0	0.122	A
				2	(A, C, D)	660			661	665	0.0	0.0	0.328	A
			3	1	((A, B, C, D))	930			930	932	0.0	0.0	0.000	A
		Exit	1	1		1017			1017	1020	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	10	951	0.011	10	10	0.0	0.0	4.001	A
		Exit	1	1		10			10	8	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	445	974	0.457	446	447	0.5	0.7	5.475	A
				2	B, A, C	384	974	0.394	385	381	0.5	0.5	4.846	A
			2	1	(A, B, C, D)	829			829	829	0.0	0.0	0.000	A
		Exit	1	1		612			612	612	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	198	918	0.216	200	193	0.4	0.3	5.115	A
				2	C, D	57	918	0.062	57	60	0.1	0.1	4.619	A
		Exit	1	1		395			395	382	0.0	0.0	0.000	A
2	A	Entry	1	1	B	267	1099	0.243	267	268	0.2	0.2	3.868	A
				2	B, C, A	344	1099	0.313	345	342	0.3	0.4	4.193	A
			2	1	(B, C, A)	611			611	610	0.0	0.0	0.000	A
		Exit	1	1		830			830	830	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	422	1143	0.370	421	419	0.3	0.5	3.952	A
				2	B, A	390	1143	0.341	388	394	0.3	0.5	3.869	A
			2	1	(B, C, A)	812			812	815	0.0	0.0	0.000	A
		Exit	1	1		509			509	504	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	71	1078	0.066	71	68	0.1	0.1	4.448	A
		Exit	1	1		154			154	156	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	348	672	0.517	347	347	0.6	0.9	7.992	A
				2	C, D	411	672	0.611	409	410	0.7	1.1	8.459	A
				3	A, D	383	672	0.569	380	377	0.7	1.0	9.007	A
			2	1	(B, C)	333			333	330	0.0	0.0	0.268	A
				2	(A, C, D)	808			809	808	0.0	0.2	0.857	A
			3	1	((A, B, C, D))	1141			1141	1139	0.0	0.0	0.000	A
		Exit	1	1		1253			1253	1236	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	12	819	0.015	12	12	0.0	0.0	4.789	A
		Exit	1	1		12			12	11	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	532	936	0.568	531	532	0.7	1.0	6.617	A
				2	B, A, C	474	936	0.506	474	467	0.5	0.8	5.958	A
			2	1	(A, B, C, D)	1006			1006	1003	0.0	0.0	0.000	A
		Exit	1	1		734			734	734	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	242	842	0.287	239	236	0.3	0.7	6.101	A
				2	C, D	77	842	0.091	77	73	0.1	0.2	5.031	A
		Exit	1	1		471			471	474	0.0	0.0	0.000	A
2	A	Entry	1	1	B	335	1100	0.305	336	328	0.2	0.3	4.087	A
				2	B, C, A	399	1100	0.363	397	402	0.4	0.5	4.487	A
			2	1	(B, C, A)	734			734	731	0.0	0.0	0.000	A
		Exit	1	1		1004			1004	1005	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	510	1136	0.449	513	512	0.5	0.4	4.423	A
				2	B, A	479	1136	0.422	478	479	0.5	0.5	4.311	A
			2	1	(B, C, A)	989			989	990	0.0	0.0	0.000	A
		Exit	1	1		612			612	608	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	82	978	0.084	82	80	0.1	0.1	5.294	A
		Exit	1	1		191			191	189	0.0	0.0	0.000	A

08:30 - 08:45

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	352	673	0.522	351	348	0.9	0.8	8.202	A
				2	C, D	413	673	0.613	411	415	1.1	1.0	8.336	A
				3	A, D	378	673	0.561	380	383	1.0	0.8	8.947	A
			2	1	(B, C)	333			334	332	0.0	0.0	0.279	A
				2	(A, C, D)	808			809	812	0.2	0.2	0.794	A
			3	1	((A, B, C, D))	1141			1141	1144	0.0	0.0	0.000	A
		Exit	1	1		1254			1254	1249	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	13	816	0.016	14	14	0.0	0.0	4.498	A
		Exit	1	1		10			10	10	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	540	936	0.577	542	537	1.0	0.9	6.635	A
				2	B, A, C	464	936	0.496	467	467	0.8	0.6	6.055	A
			2	1	(A, B, C, D)	1004			1004	1002	0.0	0.0	0.000	A
		Exit	1	1		740			740	739	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	240	842	0.284	239	238	0.7	0.5	6.271	A
				2	C, D	74	842	0.088	75	75	0.2	0.1	5.172	A
		Exit	1	1		474			474	479	0.0	0.0	0.000	A
2	A	Entry	1	1	B	330	1099	0.300	330	329	0.3	0.3	4.074	A
				2	B, C, A	411	1099	0.374	410	406	0.5	0.5	4.542	A
			2	1	(B, C, A)	741			741	736	0.0	0.0	0.000	A
		Exit	1	1		1000			1000	1003	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	513	1133	0.453	511	509	0.4	0.8	4.530	A
				2	B, A	478	1133	0.422	477	484	0.5	0.6	4.312	A
			2	1	(B, C, A)	990			990	995	0.0	0.0	0.000	A
		Exit	1	1		612			612	611	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	80	978	0.082	80	79	0.1	0.2	5.320	A
		Exit	1	1		196			196	193	0.0	0.0	0.000	A

08:45 - 08:59

08:45 - 09:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	285	679	0.420	285	281	0.8	0.5	7.360	A
				2	C, D	340	679	0.501	339	342	1.0	0.7	7.413	A
				3	A, D	300	679	0.442	301	308	0.8	0.6	8.155	A
			2	1	(B, C)	267			267	262	0.0	0.0	0.077	A
				2	(A, C, D)	657			658	666	0.2	0.0	0.441	A
			3	1	((A, B, C, D))	924			924	927	0.0	0.0	0.000	A
		Exit	1	1		1017			1017	1019	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	10	958	0.010	10	11	0.0	0.0	3.914	A
		Exit	1	1		8			8	9	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	449	977	0.459	447	443	0.9	0.6	5.557	A
				2	B, A, C	381	977	0.390	378	376	0.6	0.6	5.008	A
			2	1	(A, B, C, D)	829			829	818	0.0	0.0	0.000	A
		Exit	1	1		607			607	609	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	181	912	0.199	182	197	0.5	0.3	5.345	A
				2	C, D	58	912	0.063	58	61	0.1	0.0	4.357	A
		Exit	1	1		367			367	382	0.0	0.0	0.000	A
2	A	Entry	1	1	B	261	1100	0.237	261	269	0.3	0.2	3.917	A
				2	B, C, A	343	1100	0.312	344	339	0.5	0.3	4.212	A
			2	1	(B, C, A)	604			604	607	0.0	0.0	0.000	A
		Exit	1	1		834			834	820	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	421	1144	0.368	423	422	0.8	0.4	4.015	A
				2	B, A	394	1144	0.345	395	387	0.6	0.5	3.987	A
			2	1	(B, C, A)	815			815	807	0.0	0.0	0.000	A
		Exit	1	1		504			504	507	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	72	1076	0.067	72	67	0.2	0.1	4.738	A
		Exit	1	1		158			158	157	0.0	0.0	0.000	A

08:45 - 09:00

09:00 - 09:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	227	681	0.333	226	231	0.5	0.4	6.681	A
				2	C, D	287	681	0.422	287	291	0.7	0.7	6.733	A
				3	A, D	259	681	0.380	260	260	0.6	0.7	7.237	A
			2	1	(B, C)	214			214	218	0.0	0.0	0.025	A
				2	(A, C, D)	559			559	564	0.0	0.0	0.135	A
			3	1	((A, B, C, D))	773			773	782	0.0	0.0	0.000	A
		Exit	1	1		862			862	865	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	9	1053	0.008	8	9	0.0	0.0	3.763	A
		Exit	1	1		7			7	7	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	376	999	0.376	376	377	0.6	0.5	4.901	A
				2	B, A, C	316	999	0.316	315	316	0.6	0.4	4.564	A
			2	1	(A, B, C, D)	691			691	692	0.0	0.0	0.000	A
		Exit	1	1		506			506	513	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	173	967	0.179	171	169	0.3	0.2	4.793	A
				2	C, D	50	967	0.052	49	49	0.0	0.1	4.455	A
		Exit	1	1		318			318	318	0.0	0.0	0.000	A
2	A	Entry	1	1	B	220	1100	0.200	220	222	0.2	0.3	3.708	A
				2	B, C, A	282	1100	0.256	282	288	0.3	0.3	3.912	A
			2	1	(B, C, A)	502			502	510	0.0	0.0	0.000	A
		Exit	1	1		694			694	693	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	380	1153	0.313	362	380	0.4	0.3	3.792	A
				2	B, A	328	1153	0.285	330	330	0.5	0.2	3.807	A
			2	1	(B, C, A)	688			688	689	0.0	0.0	0.000	A
		Exit	1	1		422			422	426	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	51	1151	0.044	51	52	0.1	0.1	4.260	A
		Exit	1	1		128			128	133	0.0	0.0	0.000	A

2018 Baseline, IP

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Junction 1 - Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked roundabouts	Junction 2	U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	7.81	A
2	untitled	Standard Roundabout		A, B, C	4.13	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
D2	2018 Baseline	IP	ONE HOUR	12:45	14:15	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Simple (vertical queueing)	Normal	0	100.00	
2	A	1	C	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1022	100.000
	B		ONE HOUR	✓	14	100.000
	C	✓				
	D		ONE HOUR	✓	670	100.000
2	A	✓				
	B		ONE HOUR	✓	465	100.000
	C		ONE HOUR	✓	210	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To			
		A	B	C	D
From	A	138	10	477	399
	B	4	0	0	10
	C	430	4	0	184
	D	438	3	227	2

Demand (PCU/hr)

Junction 2

		To		
		A	B	C
From	A	2	582	128
	B	440	0	25
	C	156	54	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

		To			
		A	B	C	D
From	A	0	0	5	5
	B	0	0	0	0
	C	5	0	0	15
	D	4	0	11	0

Heavy Vehicle Percentages

Junction 2

		To		
		A	B	C
From	A	0	5	19
	B	6	0	0
	C	13	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	9.84	3.6	A	938	1407
	B	5.11	0.0	A	12	19
	C	5.60	1.2	A	550	828
	D	6.73	1.3	A	617	925
2	A	4.53	0.9	A	647	971
	B	3.63	0.6	A	427	641
	C	3.87	0.3	A	193	290

Main Results for each time segment

12:45 - 13:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	788	196	173	788	789	741	0.0	1.7	7.358	A
	B	11	3	947	11	13	12	0.0	0.0	3.507	A
	C	443	111	428	444	451	531	0.0	0.5	4.501	A
	D	491	123	423	491	506	449	0.0	0.7	4.760	A
2	A	532	133	41	530	532	442	0.0	0.7	4.074	A
	B	342	85	95	344	350	476	0.0	0.2	3.465	A
	C	155	39	327	155	160	112	0.0	0.2	3.286	A

13:00 - 13:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	916	229	209	919	915	905	1.7	1.8	8.037	A
	B	14	3	1112	14	13	16	0.0	0.0	4.119	A
	C	551	138	494	551	537	631	0.5	0.8	5.080	A
	D	593	148	520	594	594	524	0.7	0.8	5.444	A
2	A	631	158	53	632	636	547	0.7	0.7	4.208	A
	B	423	106	115	422	418	570	0.2	0.4	3.577	A
	C	199	50	403	197	189	134	0.2	0.3	3.563	A

13:15 - 13:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1119	280	259	1113	1124	1107	1.8	3.6	9.453	A
	B	15	4	1357	15	15	15	0.0	0.0	4.875	A
	C	668	167	593	672	655	778	0.8	1.0	5.603	A
	D	744	186	622	745	731	644	0.8	1.3	6.654	A
2	A	779	195	62	783	774	663	0.7	0.9	4.531	A
	B	516	129	137	519	508	709	0.4	0.4	3.598	A
	C	235	59	490	235	234	166	0.3	0.3	3.855	A

13:30 - 13:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1121	280	259	1112	1120	1101	3.6	3.5	9.837	A
	B	13	3	1351	14	14	20	0.0	0.0	5.111	A
	C	660	165	607	658	656	758	1.0	1.2	5.547	A
	D	744	186	614	747	741	652	1.3	1.2	6.734	A
2	A	766	191	58	768	777	658	0.9	0.9	4.471	A
	B	519	130	149	516	509	676	0.4	0.6	3.628	A
	C	222	55	492	223	232	173	0.3	0.2	3.867	A

13:45 - 14:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	926	231	213	927	927	895	3.5	2.2	8.367	A
	B	12	3	1126	12	15	14	0.0	0.0	4.095	A
	C	543	136	499	539	542	639	1.2	1.0	5.126	A
	D	611	153	498	610	604	541	1.2	1.0	5.580	A
2	A	637	159	53	636	633	543	0.9	0.8	4.117	A
	B	424	106	117	423	420	572	0.6	0.5	3.572	A
	C	190	48	407	189	188	134	0.2	0.2	3.653	A

14:00 - 14:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	762	191	188	763	768	743	2.2	1.6	7.010	A
	B	9	2	938	9	10	13	0.0	0.0	3.555	A
	C	438	110	412	441	455	535	1.0	0.4	4.639	A
	D	518	130	413	518	511	440	1.0	0.8	4.935	A
2	A	540	135	44	540	535	435	0.8	0.6	4.058	A
	B	341	85	95	340	350	489	0.5	0.4	3.430	A
	C	159	40	322	158	159	114	0.2	0.3	3.283	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

12:45 - 13:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	214	663	0.322	212	213	0.0	0.5	6.936	A
				2	C, D	305	663	0.459	304	294	0.0	0.7	7.089	A
				3	A, D	268	663	0.405	270	262	0.0	0.4	7.656	A
			2	1	(B, C)	196			196	193	0.0	0.0	0.033	A
				2	(A, C, D)	590			590	583	0.0	0.0	0.152	A
			3	1	((A, B, C, D))	786			786	775	0.0	0.0	0.000	A
	B	Exit	1	1		741			741	754	0.0	0.0	0.000	A
		Entry	1	1	B, A, C, D	11	1002	0.011	11	13	0.0	0.0	3.507	A
	C	Exit	1	1		12			12	13	0.0	0.0	0.000	A
		Entry	1	1	A, D	267	975	0.274	268	272	0.0	0.3	4.795	A
				2	B, A, C	175	975	0.180	176	179	0.0	0.1	4.072	A
		Exit	1	1	(A, B, C, D)	443			443	453	0.0	0.0	0.000	A
				1		531			531	533	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	385	1084	0.355	384	395	0.0	0.6	4.983	A
		Exit		2	C, D	106	1084	0.098	107	111	0.0	0.1	3.915	A
	Exit	1	1	1		449			449	438	0.0	0.0	0.000	A
				1										
2	A	Entry	1	1	B	232	1086	0.213	231	231	0.0	0.3	3.843	A
				2	B, C, A	301	1086	0.277	300	301	0.0	0.5	4.257	A
		Exit	1	1	(B, C, A)	532			532	535	0.0	0.0	0.000	A
				1		442			442	453	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	178	1148	0.155	179	182	0.0	0.1	3.465	A
				2	B, A	163	1148	0.142	165	168	0.0	0.1	3.465	A
		Exit	1	1	(B, C, A)	342			342	351	0.0	0.0	0.000	A
				1		476			476	473	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	155	1349	0.115	155	160	0.0	0.2	3.266	A
		Exit	1	1		112			112	116	0.0	0.0	0.000	A

13:00 - 13:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	262	656	0.399	263	262	0.5	0.5	7.526	A
				2	C, D	346	656	0.527	346	345	0.7	0.6	7.815	A
				3	A, D	309	656	0.471	309	309	0.4	0.7	8.128	A
			2	1	(B, C)	225			225	227	0.0	0.0	0.061	A
				2	(A, C, D)	691			691	689	0.0	0.0	0.241	A
			3	1	((A, B, C, D))	916			916	916	0.0	0.0	0.000	A
		Exit	1	1		905			905	887	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	14	904	0.015	14	13	0.0	0.0	4.119	A
		Exit	1	1		16			16	15	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	328	951	0.345	328	321	0.3	0.5	5.472	A
				2	B, A, C	223	951	0.235	223	216	0.1	0.3	4.527	A
			2	1	(A, B, C, D)	551			551	538	0.0	0.0	0.000	A
		Exit	1	1		631			631	637	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	456	1048	0.435	458	458	0.6	0.7	5.856	A
				2	C, D	136	1048	0.130	136	137	0.1	0.1	3.999	A
		Exit	1	1		524			524	520	0.0	0.0	0.000	A
2	A	Entry	1	1	B	288	1081	0.267	288	283	0.3	0.4	3.900	A
				2	B, C, A	342	1081	0.317	343	354	0.5	0.4	4.465	A
			2	1	(B, C, A)	631			631	636	0.0	0.0	0.000	A
		Exit	1	1		547			547	537	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	212	1140	0.186	213	213	0.1	0.2	3.600	A
				2	B, A	211	1140	0.185	209	205	0.1	0.3	3.552	A
			2	1	(B, C, A)	423			423	418	0.0	0.0	0.000	A
		Exit	1	1		570			570	568	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	199	1302	0.153	197	189	0.2	0.3	3.563	A
		Exit	1	1		134			134	138	0.0	0.0	0.000	A

13:15 - 13:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	322	645	0.499	322	324	0.5	0.9	8.264	A
				2	C, D	417	645	0.647	414	417	0.6	1.3	8.949	A
				3	A, D	377	645	0.585	376	383	0.7	1.0	9.259	A
			2	1	(B, C)	292			292	292	0.0	0.1	0.275	A
				2	(A, C, D)	827			824	838	0.0	0.3	0.696	A
			3	1	((A, B, C, D))	1119			1119	1131	0.0	0.0	0.000	A
		Exit	1	1		1107			1107	1088	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	15	758	0.019	15	15	0.0	0.0	4.875	A
		Exit	1	1		15			15	18	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	394	914	0.431	400	386	0.5	0.6	6.064	A
				2	B, A, C	274	914	0.299	272	269	0.3	0.4	4.969	A
			2	1	(A, B, C, D)	668			668	655	0.0	0.0	0.000	A
		Exit	1	1		778			778	773	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	558	1010	0.553	559	553	0.7	1.1	7.337	A
				2	C, D	185	1010	0.184	186	179	0.1	0.2	4.411	A
		Exit	1	1		644			644	645	0.0	0.0	0.000	A
2	A	Entry	1	1	B	354	1078	0.329	356	351	0.4	0.4	4.256	A
				2	B, C, A	425	1078	0.394	427	422	0.4	0.5	4.769	A
			2	1	(B, C, A)	779			779	774	0.0	0.0	0.000	A
		Exit	1	1		663			663	653	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	271	1131	0.240	274	265	0.2	0.2	3.634	A
				2	B, A	245	1131	0.216	246	243	0.3	0.2	3.558	A
			2	1	(B, C, A)	516			516	508	0.0	0.0	0.000	A
		Exit	1	1		709			709	702	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	235	1248	0.188	235	234	0.3	0.3	3.855	A
		Exit	1	1		166			166	161	0.0	0.0	0.000	A

13:30 - 13:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	318	645	0.494	315	323	0.9	0.9	8.437	A
				2	C, D	420	645	0.651	417	418	1.3	1.3	9.078	A
				3	A, D	382	645	0.593	380	379	1.0	1.0	9.784	A
			2	1	(B, C)	284			283	288	0.1	0.0	0.310	A
				2	(A, C, D)	837			837	832	0.3	0.2	0.832	A
			3	1	((A, B, C, D))	1121			1121	1119	0.0	0.0	0.000	A
		Exit	1	1		1101			1101	1088	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	13	761	0.017	14	14	0.0	0.0	5.111	A
		Exit	1	1		20			20	20	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	387	909	0.425	385	387	0.6	0.7	6.084	A
				2	B, A, C	273	909	0.300	273	269	0.4	0.5	4.807	A
			2	1	(A, B, C, D)	660			660	656	0.0	0.0	0.000	A
		Exit	1	1		758			758	773	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	564	1012	0.557	567	559	1.1	1.0	7.444	A
				2	C, D	180	1012	0.178	180	182	0.2	0.2	4.422	A
		Exit	1	1		652			652	649	0.0	0.0	0.000	A
2	A	Entry	1	1	B	342	1079	0.317	341	347	0.4	0.4	4.201	A
				2	B, C, A	425	1079	0.393	427	430	0.5	0.5	4.698	A
			2	1	(B, C, A)	766			766	777	0.0	0.0	0.000	A
		Exit	1	1		658			658	655	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	265	1127	0.235	263	261	0.2	0.3	3.662	A
				2	B, A	254	1127	0.226	253	248	0.2	0.3	3.592	A
			2	1	(B, C, A)	519			519	510	0.0	0.0	0.000	A
		Exit	1	1		676			676	696	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	222	1247	0.178	223	232	0.3	0.2	3.867	A
		Exit	1	1		173			173	166	0.0	0.0	0.000	A

13:45 - 14:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	257	655	0.392	257	260	0.9	0.6	7.589	A
				2	C, D	357	655	0.545	358	355	1.3	0.8	7.931	A
				3	A, D	313	655	0.478	312	312	1.0	0.7	8.588	A
			2	1	(B, C)	228			228	228	0.0	0.0	0.118	A
				2	(A, C, D)	698			698	695	0.2	0.1	0.384	A
			3	1	((A, B, C, D))	926			926	922	0.0	0.0	0.000	A
		Exit	1	1		895			895	903	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	12	895	0.014	12	15	0.0	0.0	4.095	A
		Exit	1	1		14			14	14	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	328	949	0.346	325	325	0.7	0.8	5.528	A
				2	B, A, C	215	949	0.226	214	217	0.5	0.3	4.543	A
			2	1	(A, B, C, D)	543			543	541	0.0	0.0	0.000	A
		Exit	1	1		639			639	633	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	472	1056	0.447	472	470	1.0	0.7	5.956	A
				2	C, D	139	1056	0.131	137	135	0.2	0.2	4.199	A
		Exit	1	1		541			541	539	0.0	0.0	0.000	A
2	A	Entry	1	1	B	283	1081	0.262	282	278	0.4	0.4	3.958	A
				2	B, C, A	353	1081	0.327	354	355	0.5	0.4	4.246	A
			2	1	(B, C, A)	637			637	632	0.0	0.0	0.000	A
		Exit	1	1		543			543	539	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	217	1139	0.191	218	218	0.3	0.2	3.576	A
				2	B, A	206	1139	0.181	206	202	0.3	0.3	3.568	A
			2	1	(B, C, A)	424			424	419	0.0	0.0	0.000	A
		Exit	1	1		572			572	567	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	190	1300	0.146	189	188	0.2	0.2	3.653	A
		Exit	1	1		134			134	135	0.0	0.0	0.000	A

14:00 - 14:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	209	660	0.317	209	208	0.6	0.4	6.560	A
				2	C, D	300	660	0.455	302	298	0.8	0.6	6.901	A
				3	A, D	253	660	0.384	252	262	0.7	0.6	7.296	A
			2	1	(B, C)	184			184	184	0.0	0.0	0.020	A
				2	(A, C, D)	578			578	582	0.1	0.0	0.082	A
			3	1	((A, B, C, D))	762			762	766	0.0	0.0	0.000	A
		Exit	1	1		743			743	753	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	9	1007	0.009	9	10	0.0	0.0	3.555	A
		Exit	1	1		13			13	13	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	271	981	0.277	274	279	0.8	0.2	4.915	A
				2	B, A, C	167	981	0.170	167	176	0.3	0.2	4.224	A
			2	1	(A, B, C, D)	438			438	452	0.0	0.0	0.000	A
		Exit	1	1		535			535	530	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	402	1088	0.370	402	397	0.7	0.7	5.175	A
				2	C, D	116	1088	0.107	116	114	0.2	0.1	4.048	A
		Exit	1	1		440			440	449	0.0	0.0	0.000	A
2	A	Entry	1	1	B	237	1085	0.218	237	232	0.4	0.3	3.892	A
				2	B, C, A	302	1085	0.279	303	303	0.4	0.3	4.190	A
			2	1	(B, C, A)	540			540	534	0.0	0.0	0.000	A
		Exit	1	1		435			435	450	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	175	1148	0.153	175	183	0.2	0.2	3.480	A
				2	B, A	166	1148	0.144	165	168	0.3	0.2	3.374	A
			2	1	(B, C, A)	341			341	350	0.0	0.0	0.000	A
		Exit	1	1		489			489	479	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	159	1353	0.118	158	159	0.2	0.3	3.283	A
		Exit	1	1		114			114	116	0.0	0.0	0.000	A

2018 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Junction 1 - Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Linked roundabouts	Junction 2	U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	10.95	B
2	untitled	Standard Roundabout		A, B, C	4.34	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
D3	2018 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Simple (vertical queueing)	Normal	0	100.00	
2	A	1	C	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1371	100.000
	B		ONE HOUR	✓	20	100.000
	C	✓				
	D		ONE HOUR	✓	644	100.000
2	A	✓				
	B		ONE HOUR	✓	692	100.000
	C		ONE HOUR	✓	182	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To			
		A	B	C	D
From	A	154	8	716	495
	B	2	0	1	17
	C	663	2	0	133
	D	476	4	163	1

Demand (PCU/hr)

Junction 2

		To		
		A	B	C
From	A	2	786	88
	B	672	0	20
	C	130	52	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

		To			
		A	B	C	D
From	A	1	0	1	2
	B	0	0	0	0
	C	3	0	0	13
	D	2	0	10	0

Heavy Vehicle Percentages

Junction 2

		To		
		A	B	C
From	A	0	1	19
	B	4	0	6
	C	11	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	14.24	6.5	B	1255	1882
	B	6.61	0.1	A	18	27
	C	6.79	1.7	A	732	1098
	D	9.24	2.1	A	590	885
2	A	4.68	1.4	A	806	1210
	B	3.86	0.9	A	632	947
	C	4.51	0.3	A	169	253

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1019	255	127	1018	1018	988	0.0	2.2	7.854	A
	B	16	4	1135	16	17	11	0.0	0.0	3.954	A
	C	608	152	499	607	598	652	0.0	1.0	4.841	A
	D	485	121	612	483	488	493	0.0	0.8	5.494	A
2	A	651	163	37	652	652	609	0.0	0.7	3.881	A
	B	525	131	67	524	519	623	0.0	0.5	3.532	A
	C	137	34	508	137	139	82	0.0	0.1	3.580	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1228	307	155	1231	1231	1185	2.2	3.3	9.698	A
	B	17	4	1377	17	18	9	0.0	0.0	4.880	A
	C	733	183	600	731	726	793	1.0	1.3	5.343	A
	D	589	147	753	588	578	578	0.8	1.1	6.575	A
2	A	794	199	47	794	791	735	0.7	0.9	4.191	A
	B	630	157	88	632	630	754	0.5	0.5	3.602	A
	C	165	41	618	165	163	102	0.1	0.2	3.829	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1509	377	183	1508	1491	1426	3.3	5.7	13.463	B
	B	22	5	1678	22	21	12	0.0	0.0	6.205	A
	C	889	222	744	892	884	956	1.3	1.7	6.787	A
	D	708	177	908	701	710	728	1.1	2.1	8.753	A
2	A	959	240	61	958	955	888	0.9	1.2	4.615	A
	B	763	191	98	763	763	920	0.5	0.8	3.856	A
	C	206	52	743	206	203	118	0.2	0.3	4.394	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1509	377	188	1500	1509	1418	5.7	6.5	14.242	B
	B	22	6	1675	22	22	13	0.0	0.1	6.610	A
	C	870	218	731	872	878	966	1.7	1.4	6.534	A
	D	712	178	896	710	718	706	2.1	1.9	9.240	A
2	A	966	242	60	965	977	873	1.2	1.4	4.683	A
	B	753	188	94	750	756	930	0.8	0.9	3.836	A
	C	204	51	730	204	202	115	0.3	0.3	4.507	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1227	307	149	1229	1245	1152	6.5	3.3	10.116	B
	B	17	4	1370	17	19	8	0.1	0.1	5.212	A
	C	702	176	596	703	714	791	1.4	1.2	5.531	A
	D	571	143	730	571	578	589	1.9	1.0	6.689	A
2	A	791	198	47	789	799	707	1.4	1.1	4.267	A
	B	612	153	77	611	619	759	0.9	0.6	3.629	A
	C	159	40	594	159	163	93	0.3	0.1	3.917	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1037	259	128	1045	1044	962	3.3	1.9	7.806	A
	B	15	4	1164	15	16	9	0.1	0.0	4.445	A
	C	591	148	506	590	599	673	1.2	0.8	4.828	A
	D	475	119	616	474	490	480	1.0	0.8	5.638	A
2	A	676	169	43	675	671	594	1.1	0.8	4.016	A
	B	507	127	68	507	513	650	0.6	0.5	3.412	A
	C	140	35	495	141	139	79	0.1	0.1	3.612	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	310	673	0.460	310	309	0.0	0.6	7.458	A
				2	C, D	389	673	0.578	390	389	0.0	0.8	7.693	A
				3	A, D	320	673	0.476	317	320	0.0	0.8	7.837	A
			2	1	(B, C)	279			279	280	0.0	0.0	0.117	A
				2	(A, C, D)	740			741	746	0.0	0.0	0.211	A
			3	1	((A, B, C, D))	1019			1019	1027	0.0	0.0	0.000	A
		Exit	1	1		968			968	972	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	16	890	0.018	16	17	0.0	0.0	3.954	A
		Exit	1	1		11			11	9	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	338	949	0.356	337	329	0.0	0.5	5.097	A
				2	B, A, C	270	949	0.285	270	269	0.0	0.4	4.536	A
		Exit	1	1	(A, B, C, D)	608			608	602	0.0	0.0	0.000	A
				1		652			652	655	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	403	1013	0.398	402	404	0.0	0.7	5.771	A
				2	C, D	82	1013	0.081	81	81	0.0	0.1	4.008	A
		Exit	1	1		493			493	483	0.0	0.0	0.000	A
2	A	Entry	1	1	B	305	1087	0.281	306	306	0.0	0.3	3.788	A
				2	B, C, A	346	1087	0.318	346	346	0.0	0.4	3.966	A
			2	1	(B, C, A)	651			651	655	0.0	0.0	0.000	A
		Exit	1	1		609			609	604	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	268	1159	0.231	268	264	0.0	0.2	3.593	A
				2	B, A	257	1159	0.222	256	255	0.0	0.3	3.468	A
			2	1	(B, C, A)	525			525	521	0.0	0.0	0.000	A
		Exit	1	1		623			623	625	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	137	1237	0.111	137	139	0.0	0.1	3.560	A
		Exit	1	1		82			82	81	0.0	0.0	0.000	A

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	379	667	0.568	379	381	0.6	1.0	8.705	A
				2	C, D	458	667	0.686	459	461	0.8	1.1	9.211	A
				3	A, D	392	667	0.588	392	388	0.8	1.0	9.037	A
			2	1	(B, C)	349			349	346	0.0	0.0	0.475	A
				2	(A, C, D)	879			880	889	0.0	0.2	0.785	A
			3	1	((A, B, C, D))	1228			1228	1235	0.0	0.0	0.000	A
		Exit	1	1		1185			1185	1171	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	17	746	0.023	17	18	0.0	0.0	4.880	A
		Exit	1	1		9			9	10	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	398	912	0.437	398	393	0.5	0.7	5.544	A
				2	B, A, C	334	912	0.367	335	332	0.4	0.5	5.112	A
			2	1	(A, B, C, D)	733			733	727	0.0	0.0	0.000	A
		Exit	1	1		793			793	792	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	482	960	0.501	481	473	0.7	0.9	7.015	A
				2	C, D	108	960	0.112	107	105	0.1	0.2	4.429	A
		Exit	1	1		578			578	580	0.0	0.0	0.000	A
2	A	Entry	1	1	B	371	1083	0.342	371	373	0.3	0.4	4.036	A
				2	B, C, A	424	1083	0.391	423	418	0.4	0.5	4.333	A
			2	1	(B, C, A)	794			794	792	0.0	0.0	0.000	A
		Exit	1	1		735			735	732	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	320	1151	0.278	321	321	0.2	0.3	3.620	A
				2	B, A	310	1151	0.269	311	309	0.3	0.3	3.585	A
			2	1	(B, C, A)	630			630	630	0.0	0.0	0.000	A
		Exit	1	1		754			754	754	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	165	1169	0.141	165	163	0.1	0.2	3.829	A
		Exit	1	1		102			102	99	0.0	0.0	0.000	A

17:00 - 17:15

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	488	881	0.734	485	472	1.0	1.5	10.400	B
				2	C, D	540	881	0.816	540	539	1.1	1.7	11.091	B
				3	A, D	481	881	0.728	483	480	1.0	1.3	10.982	B
			2	1	(B, C)	470			469	465	0.0	0.2	1.858	A
				2	(A, C, D)	1039			1037	1031	0.2	0.9	2.988	A
			3	1	((A, B, C, D))	1509			1509	1501	0.0	0.0	0.002	A
		Exit	1	1		1426			1426	1423	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	22	587	0.039	22	21	0.0	0.0	6.205	A
		Exit	1	1		12			12	12	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	475	859	0.552	479	475	0.7	0.9	7.084	A
				2	B, A, C	414	859	0.482	414	409	0.5	0.7	6.453	A
			2	1	(A, B, C, D)	889			889	886	0.0	0.0	0.000	A
		Exit	1	1		956			956	955	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	572	902	0.634	566	571	0.9	1.8	9.651	A
				2	C, D	136	902	0.151	135	139	0.2	0.3	4.770	A
		Exit	1	1		728			728	715	0.0	0.0	0.000	A
2	A	Entry	1	1	B	453	1078	0.420	453	455	0.4	0.6	4.477	A
				2	B, C, A	506	1078	0.469	504	500	0.5	0.7	4.744	A
			2	1	(B, C, A)	959			959	956	0.0	0.0	0.000	A
		Exit	1	1		888			888	887	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	392	1147	0.342	391	391	0.3	0.5	3.841	A
				2	B, A	371	1147	0.324	372	372	0.3	0.4	3.872	A
			2	1	(B, C, A)	763			763	764	0.0	0.0	0.000	A
		Exit	1	1		920			920	914	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	206	1091	0.189	206	203	0.2	0.3	4.394	A
		Exit	1	1		118			118	119	0.0	0.0	0.000	A

Continued on next page

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	477	660	0.723	477	483	1.5	1.5	10.532	B
				2	C, D	546	660	0.827	545	549	1.7	1.8	11.214	B
				3	A, D	481	660	0.729	478	477	1.3	1.7	11.241	B
			2	1	(B, C)	482			481	484	0.2	0.2	1.988	A
				2	(A, C, D)	1028			1022	1027	0.9	1.3	3.802	A
			3	1	((A, B, C, D))	1509			1509	1512	0.0	0.0	0.008	A
		Exit	1	1		1418			1418	1427	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	22	569	0.039	22	22	0.0	0.1	6.610	A
		Exit	1	1		13			13	12	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	464	864	0.537	464	468	0.9	0.8	6.862	A
				2	B, A, C	407	864	0.471	407	410	0.7	0.6	6.169	A
			2	1	(A, B, C, D)	870			870	877	0.0	0.0	0.000	A
		Exit	1	1		966			966	978	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	573	906	0.632	571	576	1.8	1.7	10.222	B
				2	C, D	139	906	0.153	139	142	0.3	0.1	4.943	A
		Exit	1	1		706			706	710	0.0	0.0	0.000	A
2	A	Entry	1	1	B	462	1079	0.428	461	466	0.6	0.6	4.531	A
				2	B, C, A	505	1079	0.468	505	511	0.7	0.7	4.825	A
			2	1	(B, C, A)	966			966	978	0.0	0.0	0.000	A
		Exit	1	1		873			873	880	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	381	1148	0.332	380	383	0.5	0.4	3.866	A
				2	B, A	372	1148	0.324	371	373	0.4	0.4	3.805	A
			2	1	(B, C, A)	753			753	756	0.0	0.0	0.000	A
		Exit	1	1		930			930	936	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	204	1100	0.185	204	202	0.3	0.3	4.507	A
		Exit	1	1		115			115	118	0.0	0.0	0.000	A

17:45 - 17:59

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	382	669	0.571	383	384	1.5	0.9	9.034	A
				2	C, D	453	669	0.677	453	469	1.8	1.1	9.163	A
				3	A, D	393	669	0.588	393	392	1.7	1.0	9.213	A
		2	1	1	(B, C)	348			348	351	0.2	0.1	0.710	A
				2	(A, C, D)	879			880	886	1.3	0.3	1.116	A
		3	1	1	((A, B, C, D))	1227			1227	1232	0.0	0.0	0.005	A
		Exit	1	1		1152			1152	1163	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	17	751	0.023	17	19	0.1	0.1	5.212	A
		Exit	1	1		8			8	10	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	377	913	0.412	377	385	0.8	0.7	5.859	A
				2	B, A, C	326	913	0.357	325	329	0.6	0.6	5.156	A
		2	1	1	(A, B, C, D)	702			702	714	0.0	0.0	0.000	A
				1		791			791	798	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	471	969	0.486	471	476	1.7	0.9	7.137	A
				2	C, D	100	969	0.103	100	102	0.1	0.1	4.463	A
		Exit	1	1		569			569	585	0.0	0.0	0.000	A
2	A	Entry	1	1	B	380	1084	0.350	378	378	0.6	0.5	4.090	A
				2	B, C, A	412	1084	0.380	411	421	0.7	0.6	4.431	A
		2	1	1	(B, C, A)	791			791	798	0.0	0.0	0.000	A
				1		707			707	718	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	308	1155	0.267	307	313	0.4	0.3	3.620	A
				2	B, A	304	1155	0.263	303	305	0.4	0.3	3.639	A
		2	1	1	(B, C, A)	612			612	618	0.0	0.0	0.000	A
				1		759			759	764	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	159	1184	0.134	159	163	0.3	0.1	3.917	A
		Exit	1	1		93			93	98	0.0	0.0	0.000	A

Source: TrafficLab

18:00 - 18:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	315	673	0.468	318	316	0.9	0.5	7.461	A
				2	C, D	397	673	0.590	400	398	1.1	0.8	7.665	A
				3	A, D	325	673	0.483	326	330	1.0	0.6	7.712	A
			2	1	(B, C)	280			281	280	0.1	0.0	0.141	A
				2	(A, C, D)	757			757	760	0.3	0.0	0.221	A
			3	1	((A, B, C, D))	1037			1037	1038	0.0	0.0	0.000	A
		Exit	1	1		962			962	979	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	15	873	0.017	15	16	0.1	0.0	4.445	A
		Exit	1	1		9			9	10	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	320	946	0.338	318	326	0.7	0.5	5.041	A
				2	B, A, C	271	946	0.286	272	273	0.6	0.3	4.582	A
			2	1	(A, B, C, D)	591			591	597	0.0	0.0	0.000	A
		Exit	1	1		673			673	668	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	394	1011	0.390	394	406	0.9	0.7	5.926	A
				2	C, D	81	1011	0.080	80	83	0.1	0.1	4.144	A
		Exit	1	1		480			480	491	0.0	0.0	0.000	A
2	A	Entry	1	1	B	314	1085	0.289	314	312	0.5	0.3	3.922	A
				2	B, C, A	363	1085	0.334	361	359	0.6	0.5	4.100	A
			2	1	(B, C, A)	676			676	670	0.0	0.0	0.000	A
		Exit	1	1		594			594	600	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	258	1159	0.223	258	261	0.3	0.3	3.504	A
				2	B, A	248	1159	0.214	249	253	0.3	0.2	3.316	A
			2	1	(B, C, A)	507			507	513	0.0	0.0	0.000	A
		Exit	1	1		650			650	644	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	140	1245	0.113	141	139	0.1	0.1	3.612	A
		Exit	1	1		79			79	80	0.0	0.0	0.000	A

2026 Reference Case, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Junction 1 - Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction 2 - Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C, D	10.52	B
2	untitled	Standard Roundabout		A, B, C	4.95	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	2026 Reference Case	AM	ONE HOUR	07:45	09:15	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Simple (vertical queueing)	Normal	0	100.00	
2	A	1	C	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1267	100.000
	B		ONE HOUR	✓	14	100.000
	C	✓				
	D		ONE HOUR	✓	380	100.000
2	A	✓				
	B		ONE HOUR	✓	1054	100.000
	C		ONE HOUR	✓	91	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To			
		A	B	C	D
From	A	229	5	649	384
	B	2	0	5	7
	C	881	1	0	193
	D	235	6	138	1

Demand (PCU/hr)

Junction 2

		To		
		A	B	C
From	A	0	644	147
	B	985	1	68
	C	85	6	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

		To			
		A	B	C	D
From	A	2	0	5	6
	B	0	0	0	0
	C	4	0	0	13
	D	10	0	14	0

Heavy Vehicle Percentages

Junction 2

		To		
		A	B	C
From	A	0	5	12
	B	4	0	0
	C	27	33	0

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	12.89	5.6	B	1161	1741
	B	5.66	0.0	A	12	19
	C	8.89	3.2	A	988	1482
	D	7.45	1.3	A	351	527
2	A	4.75	1.2	A	725	1088
	B	5.03	1.6	A	974	1461
	C	5.85	0.2	A	82	122

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	946	236	109	948	942	1006	0.0	2.2	7.868	A
	B	11	3	1046	11	12	11	0.0	0.0	4.114	A
	C	796	199	466	794	791	591	0.0	1.2	5.238	A
	D	288	72	828	286	292	432	0.0	0.6	5.232	A
2	A	593	148	6	594	593	791	0.0	0.8	3.979	A
	B	783	196	116	781	780	485	0.0	1.0	3.951	A
	C	67	17	731	66	70	166	0.0	0.1	4.740	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1144	286	132	1145	1135	1210	2.2	2.8	9.566	A
	B	11	3	1267	11	12	10	0.0	0.0	4.031	A
	C	957	239	565	953	960	713	1.2	1.9	6.308	A
	D	341	85	999	342	340	519	0.6	0.5	5.677	A
2	A	703	176	8	703	701	955	0.8	1.0	4.203	A
	B	948	237	132	945	946	579	1.0	1.3	4.295	A
	C	78	20	884	78	86	192	0.1	0.1	5.009	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1420	355	161	1419	1392	1492	2.8	5.6	12.888	B
	B	15	4	1569	15	15	12	0.0	0.0	5.635	A
	C	1192	298	698	1189	1174	886	1.9	3.2	8.767	A
	D	422	105	1236	417	412	651	0.5	1.3	7.423	A
2	A	882	221	9	885	869	1187	1.0	1.1	4.607	A
	B	1169	292	168	1171	1164	726	1.3	1.6	5.029	A
	C	100	25	1096	100	96	243	0.1	0.2	5.729	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1381	345	160	1383	1401	1491	5.6	5.0	12.865	B
	B	15	4	1529	15	16	14	0.0	0.0	5.656	A
	C	1198	299	675	1191	1172	869	3.2	3.2	8.889	A
	D	428	107	1223	428	418	642	1.3	1.0	7.448	A
2	A	869	217	7	869	885	1195	1.1	1.2	4.749	A
	B	1181	295	166	1182	1154	710	1.6	1.4	4.990	A
	C	102	26	1100	102	100	248	0.2	0.2	5.852	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	1142	286	130	1135	1144	1220	5.0	3.2	9.107	A
	B	12	3	1254	12	12	11	0.0	0.0	4.361	A
	C	990	247	553	990	983	712	3.2	1.9	6.600	A
	D	333	83	1014	336	336	529	1.0	0.5	6.185	A
2	A	711	178	6	710	711	988	1.2	0.8	4.140	A
	B	977	244	130	979	963	585	1.4	1.1	4.486	A
	C	79	20	916	79	80	194	0.2	0.1	5.099	A

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	931	233	115	935	947	1009	3.2	2.0	8.084	A
	B	12	3	1041	12	12	8	0.0	0.0	3.857	A
	C	796	199	458	797	804	595	1.9	1.1	5.304	A
	D	294	74	828	296	292	428	0.5	0.3	5.291	A
2	A	593	148	5	595	597	799	0.8	0.7	4.080	A
	B	788	197	118	789	790	482	1.1	0.7	3.955	A
	C	64	16	738	65	68	169	0.1	0.1	4.224	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	279	677	0.411	280	278	0.0	0.7	7.155	A
				2	C, D	346	677	0.510	346	348	0.0	0.8	7.546	A
				3	A, D	321	677	0.474	322	316	0.0	0.7	7.920	A
			2	1	(B, C)	253			253	257	0.0	0.0	0.095	A
				2	(A, C, D)	692			692	693	0.0	0.1	0.388	A
			3	1	((A, B, C, D))	946			946	951	0.0	0.0	0.000	A
		Exit	1	1		1006			1006	1000	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	11	943	0.011	11	12	0.0	0.0	4.114	A
		Exit	1	1		11			11	10	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	439	961	0.457	438	432	0.0	0.8	5.529	A
				2	B, A, C	357	961	0.372	357	360	0.0	0.4	4.897	A
		Exit	1	1	(A, B, C, D)	796			796	796	0.0	0.0	0.000	A
				1		591			591	596	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	232	932	0.249	230	234	0.0	0.5	5.445	A
				2	C, D	56	932	0.060	56	58	0.0	0.1	4.363	A
		Exit	1	1		432			432	432	0.0	0.0	0.000	A
2	A	Entry	1	1	B	256	1099	0.233	257	259	0.0	0.3	3.832	A
				2	B, C, A	338	1099	0.307	338	334	0.0	0.5	4.095	A
			2	1	(B, C, A)	593			593	596	0.0	0.0	0.000	A
		Exit	1	1		791			791	797	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	404	1140	0.354	403	403	0.0	0.6	3.939	A
				2	B, A	379	1140	0.332	378	377	0.0	0.4	3.963	A
			2	1	(B, C, A)	783			783	785	0.0	0.0	0.000	A
		Exit	1	1		485			485	489	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	67	1099	0.061	66	70	0.0	0.1	4.740	A
		Exit	1	1		166			166	158	0.0	0.0	0.000	A

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	336	672	0.500	334	335	0.7	0.8	8.135	A
				2	C, D	418	672	0.622	418	414	0.8	0.9	8.626	A
				3	A, D	392	672	0.584	394	385	0.7	0.9	9.315	A
			2	1	(B, C)	318			319	314	0.0	0.0	0.364	A
				2	(A, C, D)	826			827	823	0.1	0.2	1.032	A
			3	1	((A, B, C, D))	1144			1144	1137	0.0	0.0	0.000	A
		Exit	1	1		1210			1210	1205	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	11	812	0.014	11	12	0.0	0.0	4.031	A
		Exit	1	1		10			10	11	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	516	925	0.558	514	519	0.8	1.2	6.548	A
				2	B, A, C	440	925	0.476	440	441	0.4	0.8	6.034	A
			2	1	(A, B, C, D)	957			957	963	0.0	0.0	0.000	A
		Exit	1	1		713			713	707	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	264	868	0.305	265	263	0.5	0.4	5.923	A
				2	C, D	76	868	0.088	77	77	0.1	0.1	4.808	A
		Exit	1	1		519			519	524	0.0	0.0	0.000	A
2	A	Entry	1	1	B	312	1098	0.284	312	312	0.3	0.4	3.976	A
				2	B, C, A	391	1098	0.356	391	389	0.5	0.6	4.390	A
			2	1	(B, C, A)	703			703	702	0.0	0.0	0.000	A
		Exit	1	1		955			955	962	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	495	1134	0.437	494	490	0.6	0.6	4.364	A
				2	B, A	454	1134	0.400	451	456	0.4	0.6	4.220	A
			2	1	(B, C, A)	948			948	947	0.0	0.0	0.000	A
		Exit	1	1		579			579	578	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	78	1003	0.078	78	86	0.1	0.1	5.009	A
		Exit	1	1		192			192	193	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	A	Entry	1	1	B, C	441	666	0.662	441	428	0.8	1.2	9.762	A
				2	C, D	492	666	0.739	494	491	0.9	1.6	10.436	B
				3	A, D	487	666	0.732	485	472	0.9	1.7	10.833	B
			2	1	(B, C)	441			441	431	0.0	0.2	1.058	A
				2	(A, C, D)	980			980	969	0.2	1.0	3.096	A
			3	1	((A, B, C, D))	1420			1421	1403	0.0	0.0	0.043	A
		Exit	1	1		1492			1492	1474	0.0	0.0	0.000	A
	B	Entry	1	1	B, A, C, D	15	632	0.024	15	15	0.0	0.0	5.635	A
		Exit	1	1		12			12	12	0.0	0.0	0.000	A
	C	Entry	1	1	A, D	627	876	0.716	626	617	1.2	1.7	9.209	A
				2	B, A, C	565	876	0.645	563	557	0.8	1.4	8.289	A
			2	1	(A, B, C, D)	1192			1192	1179	0.0	0.0	0.000	A
		Exit	1	1		886			886	872	0.0	0.0	0.000	A
	D	Entry	1	1	B, A, C	321	779	0.412	317	313	0.4	1.1	8.003	A
				2	C, D	101	779	0.129	100	99	0.1	0.2	5.510	A
		Exit	1	1		651			651	636	0.0	0.0	0.000	A
2	A	Entry	1	1	B	398	1098	0.362	399	393	0.4	0.5	4.320	A
				2	B, C, A	485	1098	0.441	486	476	0.6	0.7	4.850	A
			2	1	(B, C, A)	882			882	870	0.0	0.0	0.000	A
		Exit	1	1		1187			1187	1178	0.0	0.0	0.000	A
	B	Entry	1	1	C, A	603	1119	0.539	603	600	0.6	0.8	5.050	A
				2	B, A	566	1119	0.506	567	564	0.6	0.8	5.005	A
			2	1	(B, C, A)	1169			1169	1166	0.0	0.0	0.000	A
		Exit	1	1		726			726	713	0.0	0.0	0.000	A
	C	Entry	1	1	B, C, A	100	872	0.114	100	96	0.1	0.2	5.729	A
		Exit	1	1		243			243	239	0.0	0.0	0.000	A