Junctions 10

ARCADY 10 - Roundabout Module

Filename: JUNCTION 1 - Lane Sim AM Validated.j10
Path: J:\48559 Crawley Transport Study\Transport\Working Documents\Junction Modelling\Junction Models\JUNCTION 1
Report generation date: 26/04/2021 15:47:12

Summary of junction performance

	AM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	[Lane Simulation] - Base 2015				
Arm A	D1	4.1	13.16		B
Arm B		3.6	11.03		B
Arm C		51.4	91.09		F
Arm D		40.3	132.87		F
	[Lane Simulation] - 2035 Ref				
Arm A	D3	4.6	14.89		B
Arm B		4.1	13.65		B
Arm C		139.5	230.55		F
Arm D		43.3	158.99		F
	[Lane Simulation] - 2035 Scenario 2				
Arm A	D5	4.1	13.34		B
Arm B		4.9	15.34		C
Arm C		140.8	231.29		F
Arm D		95.7	385.17		F
	[Lane Simulation] - 2035 Scenario 3				
Arm A	D7	4.7	14.07		B
Arm B		11.6	33.01		D
Arm C		181.2	344.32		F
Arm D		63.5			

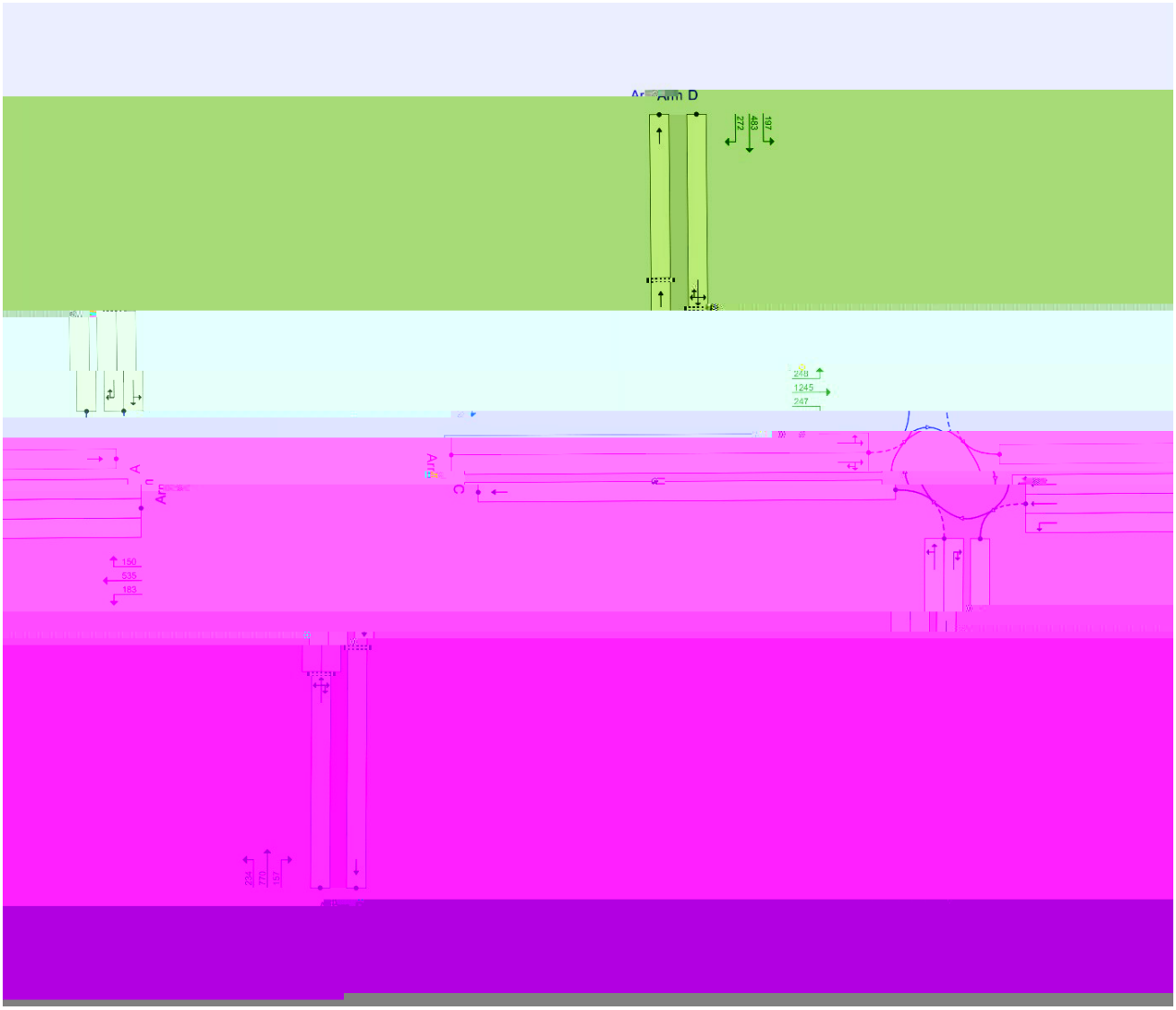
File summary

File Description

Title	Ifield Roundabout - Base
Location	Crewley
Site number	1
Date	31/03/2021
Version	V1
Status	(new file)
Identifier	001
Client	
Jobnumber	48559
Enumerator	CORP\rycox
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.

Base 2015, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Crossings	Arm D - Pedestrian crossing	Lane Simulation: Pedestrian crossing properties specify gap between crossing and junction entry as 12, but actual storage on lanes is 9.
Warning	Geometry	Arm B - Roundabout Geometry	

Junction Network

Junctions

Junction Network

Arms

Arms

Roundabout Geometry

Pelican/Puffin Crossings

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage		80.00
B	Percentage		170.00
C	Percentage		109.00
D	Percentage		153.00

Lane Simulation: Arm options

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

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Has obstruction	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A	Entry	1	1	B		Infinity			0	99999	
			2	C							

Entry Lane slope and intercept

Summary of Entry Lane allowed movements

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

Traffic Demand

Demand Set Details

Demand overview (Traffic)

Demand overview (Pedestrians)

Origin-Destination Data

Vehicle Mix

Results

08:45 - 09:00

09:00 - 09:15

Lane Results

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

08:00 - 08:15

Arm	Side	Lane level	Lane	

08:15 - 08:30

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	137		632	0.216	137	140	0.4	0.3	8.065	A
			2											

08:45 - 09:00

Lane movements: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	

08:00 - 08:15

Arm	Side	Lane level	

08:15 - 08:30

Arm	Side	Lane level	

08:30 - 08:45

Arm	Side	Lane level	Lane	To Arm	

08:45 - 09:00

09:00 - 09:15

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	

2035 Ref, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Crossings	Arm D - Pedestrian crossing	

Junction Network

Junctions

Junction Network

Traffic Demand

Demand Set Details

Demand overview (Traffic)

Demand overview (Pedestrians)

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	49	138	535	184
	B	157	3	212	607
	C	1249	247	0	

Vehicle Mix

Results

Results Summary for whole modelled period

Main Results for each time segment

07:45 - 08:00

08:00 - 08:15

08:15 - 08:30

Arm	Total

08:30 - 08:45

08:45 - 09:00

09:00 - 09:15

Lane Results

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	151		644	0.234	151	150	0.2	0.4	7.939	A
			2	C	366									

08:30 - 08:45

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	

09:00 - 09:15

08:00 - 08:15

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	

08:15 - 08:30

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (PCU/hr)	Capacity (PCU/hr)	RFC	

08:30 - 08:45

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Ent7q														

08:45 - 09:00

Arm	Side	Lane level	

09:00 - 09:15

Arm	Side	Lane

2035 Scenario 2, AM

Data Errors and Warnings

Severity	Area	Item	

Junction Network

Junctions

Junction Network

Traffic Demand

Demand Set Details

Demand overview (Traffic)

Demand overview (Pedestrians)

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	55	154	535	150
	B	169	3	235	646
	C	1203	247	0	288
	D	239	463	272	2

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	8	7	28	9
	B	4	0	4	6
	C	4	3	0	4
	D	6	0	4	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	13.34	4.1	B	823	1234
B	15.34	4.9	C	968	1452
C	231.29	140.8	F	1589	2383
D	385.17	95.7	F	898	1346

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	667	167	679		669	669	1238	0.0	1.5	8.136	A
B	785	196	728	4.52	787	797	652	0.0	1.1	4.761	A
C	1293	323	682		1300	1294	783	0.0	2.8	8.017	A
D	735	184	1221	4.52	734	731	816	0.0	1.9	9.786	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	814	203	832		813	799	1486	1.5	2.3	9.934	A
B	950	238	890	5.39	949	940	781	1.1	1.8	6.192	A
C	106667 0										

08:15

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

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A														

08:00 - 08:15

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	170									

08:30 - 08:45

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	139		649							

09:00 - 09:15

Lane movements: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	117	29	1098	703	0.166	117	116	0.0	0.2	6.484	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			2	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	230	57	1098	701	0.328	231	231	0.0	0.5	8.079	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			3	A	40	10	1098	702	0.057	40	41	0.0	0.2	9.507	A
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	167	42	1098	701	0.238	168	171	0.0	0.4	8.059	

08:30 - 08:45

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)

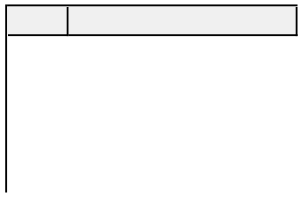
08:45 - 09:00

Arm	Side	Lane level	

09:00 - 09:15

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Dela8.3

Demand (PCU/hr)



Vehicle Mix

Results

Results Summary for whole modelled period

Main Results for each time segment

07:45 - 08:00

08:00 - 08:15

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Throughput (PCU/hr)	Average throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	

08:30 - 08:45

08:45 - 09:00

09:00 - 09:15

Lane Results

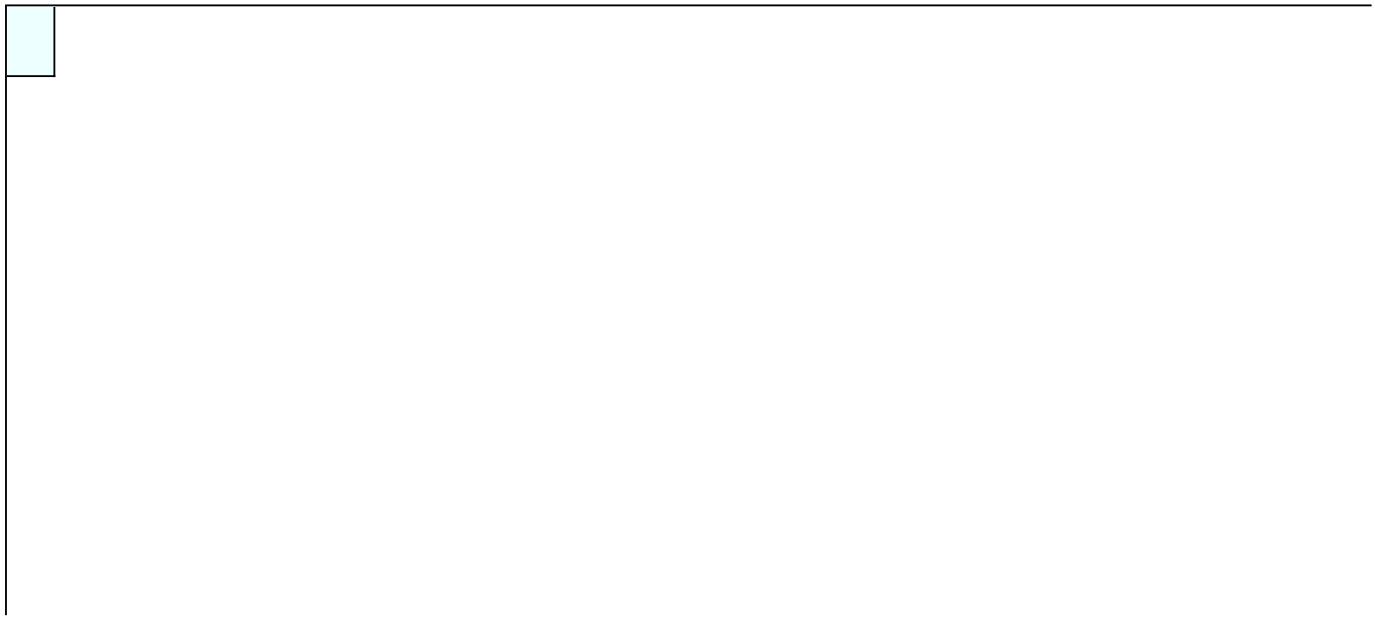
Lane Level notation: Lane Level 1 is always closest to the junction.

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	

08:30 - 08:45

08:45 - 09:00



09:00 - 09:15

08:00 - 08:15

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	165	41	1098	659	0.250	164	166	0.3	0.4	8.150	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			2	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	280	70	1098	663	0.422	281	281	0.5	0.9	9.313	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			3	A	47	12	1098	658	0.072	47	44	0.1	0.2	11.852	B
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	195	49	1098	663	0.294	198	198	0.4	0.6	9.438	A
				D	140	35	1098	663	0.211	139	133	0.4	0.5	12.117	

08:15 - 08:30

Arm	Side	Lane level	Lane	

08:30 - 08:45

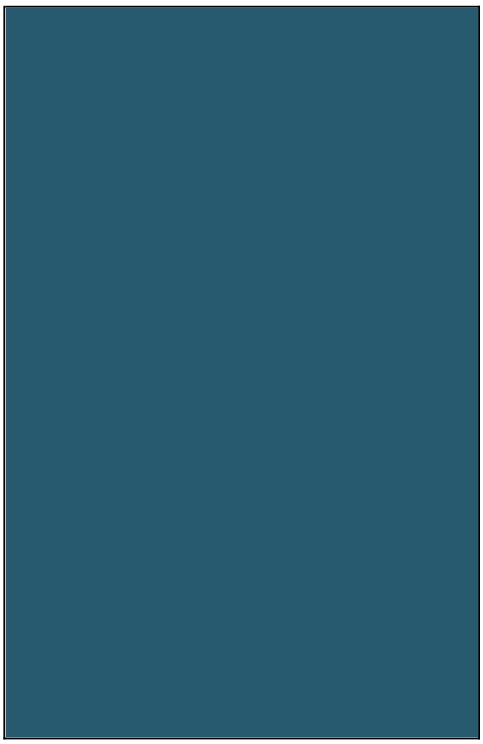
Arm	Side	Lane level

Junctions 10

ARCADY 10 - Roundabout Module

Filename: JUNCTION 1 - Lane Sim PM Validated.j10
Path: J:\48559 Crawley Transport Study\Transport\Working Documents\Junction Modelling\Junction Models\JUNCTION 1
Report generation date: 26/04/2021 16:43:11

Summary of junction performance



File summary

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

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	ü			210524198	139	143.58

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	Base 2015	PM	ONE HOUR	16:45	18:15	15	ü
D3	2035 Ref	PM	ONE HOUR	16:45	18:15	15	ü
D5	2035 Scenario 2	PM	ONE HOUR	16:45	18:15	15	ü
D7	2035 Scenario 3	PM	ONE HOUR	16:45	18:15	15	ü

Analysis Set Details

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

Summary of Entry Lane allowed movements

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

[redacted]

t length (min)	Run automatically
.5	ü

[redacted]

Heavy Vehicle Percentages

	To
From	

Results

Results Summary for whole modelled period

Main Results for each time segment

16:45 - 17:00

17:00 - 17:15

17:15 - 17:30

17:30 - 17:45

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	1345	336	780		1431	1498	797	52.4	14.9	67.429	F
B	863	216	1406	5.39	892	939	836	18.2	3.9	31.331	

18:00 - 18:15

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

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)

17:15 - 17:30

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	

17:45 - 18:00

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	205		727	0.282	204	204	0.5	0.5	6.982	A
			2	C	426		727	0.585	426	450	6.8	1.2	13.958	B
			3	A, C, D	503		727	0.692	506					

Lane movements: Main Results for each time segment

16:45 - 17:00

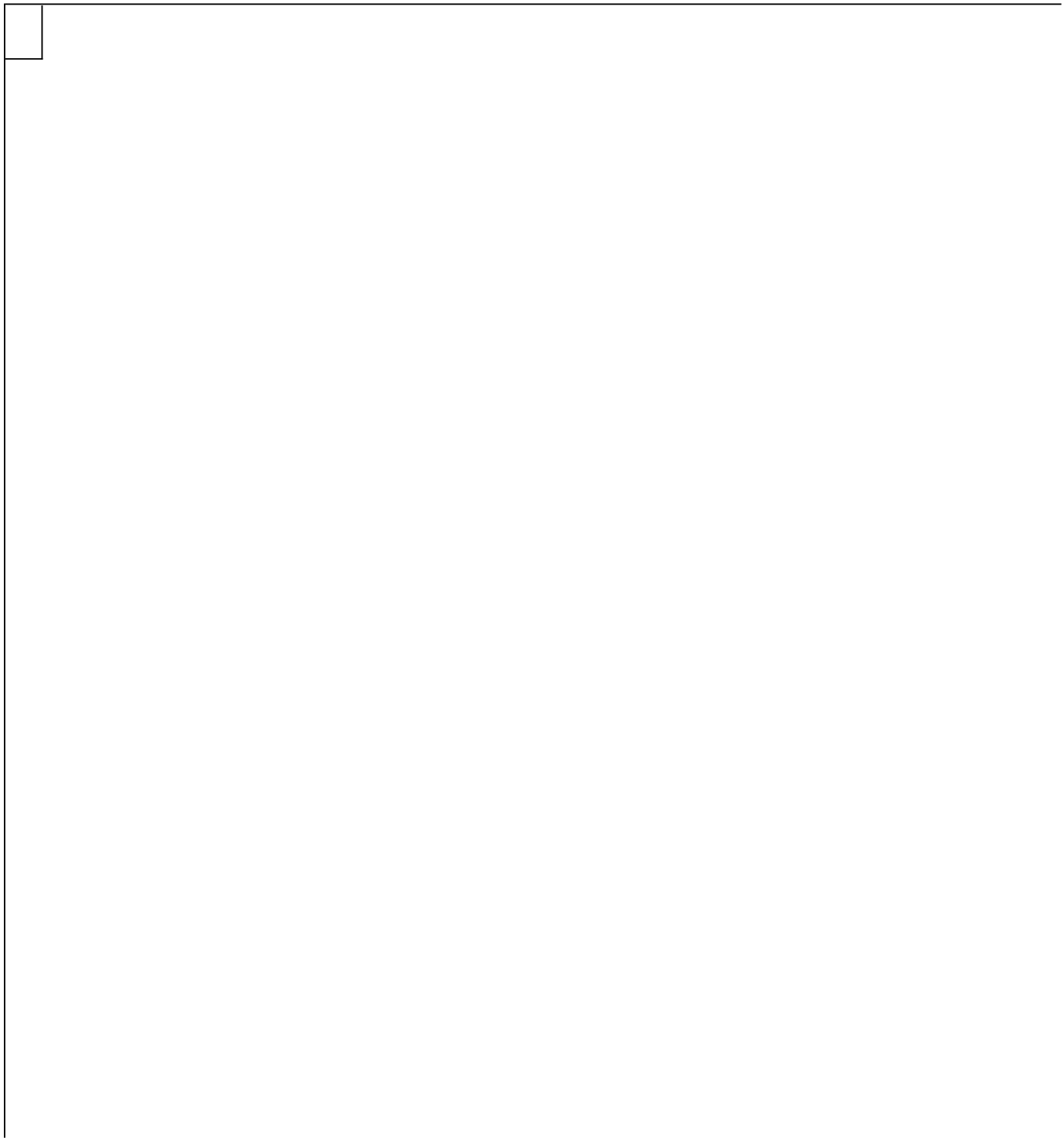
17:00 - 17:15

17:15 - 17:30

17:30 - 17:45

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	

17:45 - 18:00



18:00 - 18:15

Arm	

2035 Ref, PM

Data Errors and Warnings

Junction Network

Junctions

Junction Network

Traffic Demand

Demand Set Details

Demand overview (Traffic)

Demand overview (Pedestrians)

Origin-

Vehicle Mix

Results

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals

17:30 - 17:45

17:45 - 18:00

18:00 - 18:15

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	302		627	0.481	300					

17:30 - 17:45

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	245		688	0.357	245	244	0.9	0.6	8.718	A
			2	C	679		688	0.987	686	674	106.4	106.6	560.056	F
			3	A, C, D	684		688	0.994						

18:00 - 18:15

17:00 - 17:15

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	234	59	1098	683	0.343	236	238	0.4	0.6	8.245	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	
			2	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	0	0	0	0	0.000	0			0.0	0.000	A
				C	673	168	1098	683	0.985	650	630	2.5		43.455	E
				D	0	0	0								

17:30 - 17:45

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	292	73	1098	632	0.462	293	294	1.0	0.9	11.496	B
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			2	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	827	207	1098	627	1.319	630	629	58.0	106.4	466.042	F
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			3	A	78	19	1098	628	0.124	61	59	5.6	10.2	474.861	F
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	302	76	1098	630	0.480	228	230	22.0	38.4	469.423	F
				D	452	113	1098	626	0.723	342	341	32.5	59.7	477.349	F
B	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	428	107	1152	1059	0.405	426	430	2.2	2.3	18.389	C
				D	599	150	1152	1058	0.567	600	600	3.1	3.1	18.342	C
			2	A	76	19	1152	1058	0.071	75	76	0.1	0.1	3.652	A
				B	1	0.26	265	248	0.004	1	1	0.0	0.0	3.181	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
		2	1	A	78	20									

17:45 - 18:00

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	245	61	1098	687	0.357	245	244	0.9	0.6	8.718	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	202	50	1098	720	0.280	204	199	0.6	0.3	7.090	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A

2035 Scenario 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Lane Simulation	Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Crossings	Arm D - Pedestrian crossing	Lane Simulation: Pedestrian crossing properties specify gap between crossing and junction entry as 12, but actual storage on lanes is 9.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Info	Lane Simulation	A1 -	

Junction Network

Junctions

Junction Network

Traffic Demand

Demand Set Details

Demand overview (Traffic)

Demand overview (Pedestrians)

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	69	268	995	427
	B	70	2		

Vehicle Mix

Results

Results Summary for whole modelled period

Main Results for each time segment

16:45 - 17:00

17:00 - 17:15

Lane Results

17:15 - 17:30

Arm	Side	

17:30 - 17:45

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	

18:00 - 18:15

Lane movements: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction

17:00 - 17:15

Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (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
A	Entry	1	1												

2035 Scenario 3, PM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Lane Simulation	Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Crossings	Arm D - Pedestrian crossing	Lane Simulation: Pedestrian crossing properties specify gap between crossing and junction entry as 12, but actual storage on lanes is 9.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Info	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. For detailed information on this mode, please see the User Guide.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ifield Roadabout	Standard Roundabout		A, B, C, D	362.84	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	362.84	F

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	2035 Scenario 3	PM	ONE HOUR	16:45	18:15	15	ü

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
ü	ü		

Demand overview (Traffic)

Demand overview (Pedestrians)

Origin-Destination Data

Vehicle Mix

Results

Results Summary for whole modelled period

Main Results for each time segment

16:45 - 17:00

17:00 - 17:15

[redacted]

B	1255	314	1501	6.61	1147	1142	1152	51.5	80.5	212.450	F
C	1387	347	1185		1355	1338	1453	22.1	33.1	76.877	F
D	1020	255	1067	6.61	1025	1019	1506	10.4	11.8	40.538	E

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	1716	429	907		1559						

18:00 - 18:15

[redacted]

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B	296		604	0.490	298	297	0.5	1.0	12.010	B
			2	C	892		604	1.477	604	616	22.2	91.4	335.159	F
			3	A, C, D	878		604	1.454	594	611	26.6	95.1	361.854	F
	Exit	1	1		916				916	898	0.0	0.0	0.000	A
B	Entry	1	1	C, D	1060		1082	0.979	1058	1025	4.5	5.8	19.851	C
			2	A, B	67		1082	0.062	68	71	0.1	0.0	3.799	A
		2												

17:30 - 17:45

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination

18:00 - 18:15

Lane movements: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	To Arm	Total Demand [

17:00 - 17:15

Arm	Side	Lane level	Lane	To Arm	

18:00 - 18:15

Arm	

Junctions 10

ARCADY 10 - Roundabout Module

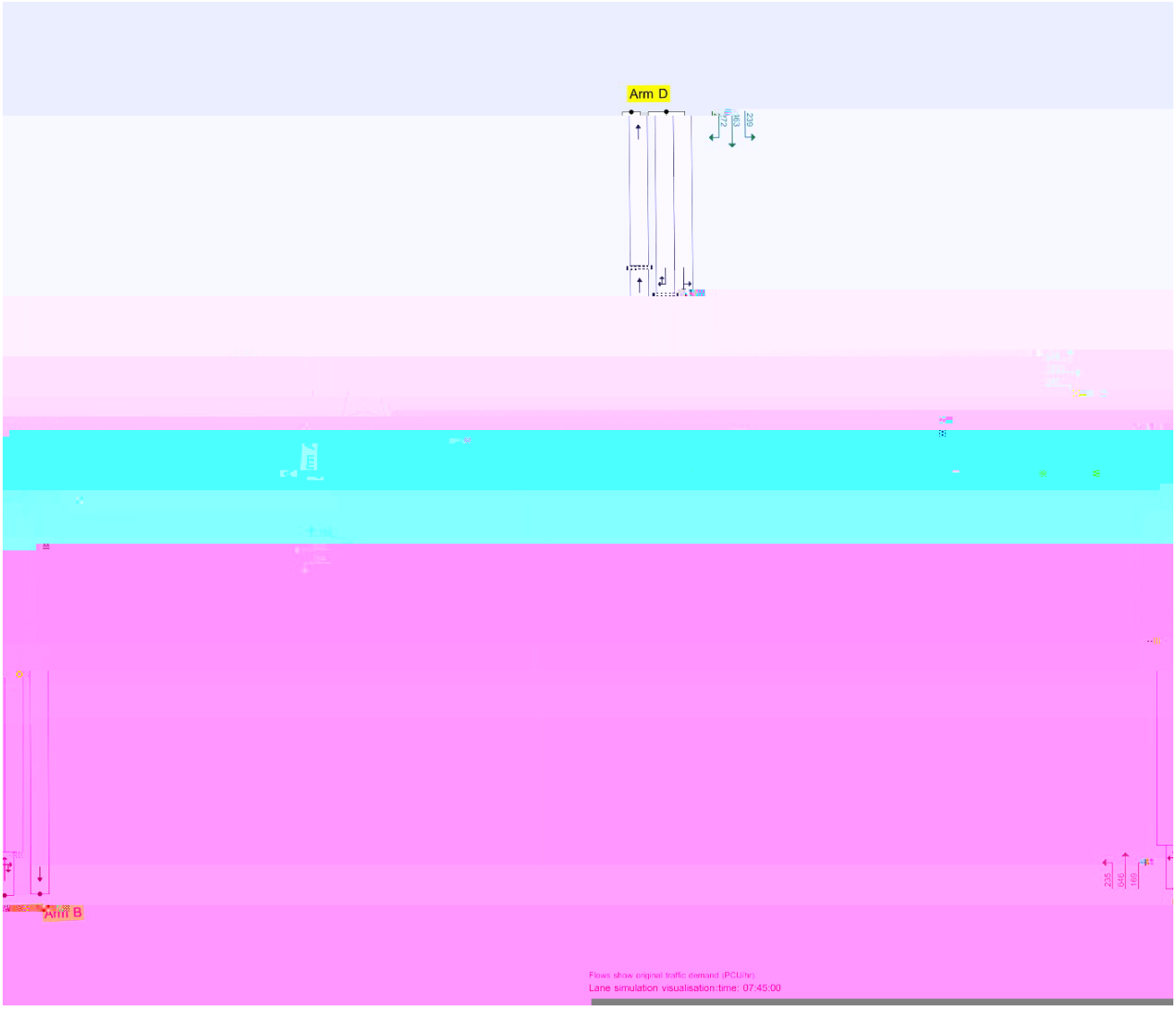
Filename: JUNCTION 1 - Lane Sim AM Mitigation 2.j10
Path: J:\48559 Crawley Transport Study\Transport\Working Documents\Junction Modelling\Junction Models\JUNCTION 1
Report generation date: 29/04/2021 10:33:16

Summary of junction performance

	AM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	[Lane Simulation] - 2035 Scenario 2				
Arm A	D5	3.8	13.09		B
Arm B		3.4	9.00		A
Arm C		81.3	132.99		F
Arm D		8.1	28.27		D
	[Lane Simulation] - 2035 Scenario 3				
Arm A	D7	4.5	13.56		B
Arm B		5.3	13.70		B
Arm C					

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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

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

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	Base 2015	AM	ONE HOUR	07:45	09:15	15	ü
D3	2035 Ref	AM	ONE HOUR	07:45	09:15	15	ü
D5	2035 Scenario 2	AM	ONE HOUR	07:45	09:15	15	ü
D7	2035 Scenario 3	AM	ONE HOUR	07:45	09:15	15	ü

Analysis Set Details

ID	Use Lane Simulation	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	ü	ü	ü	D5, D7	100.000	100.000

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.978	3294
B	0.815	2386
C	0.918	3003
D	0.895	2694

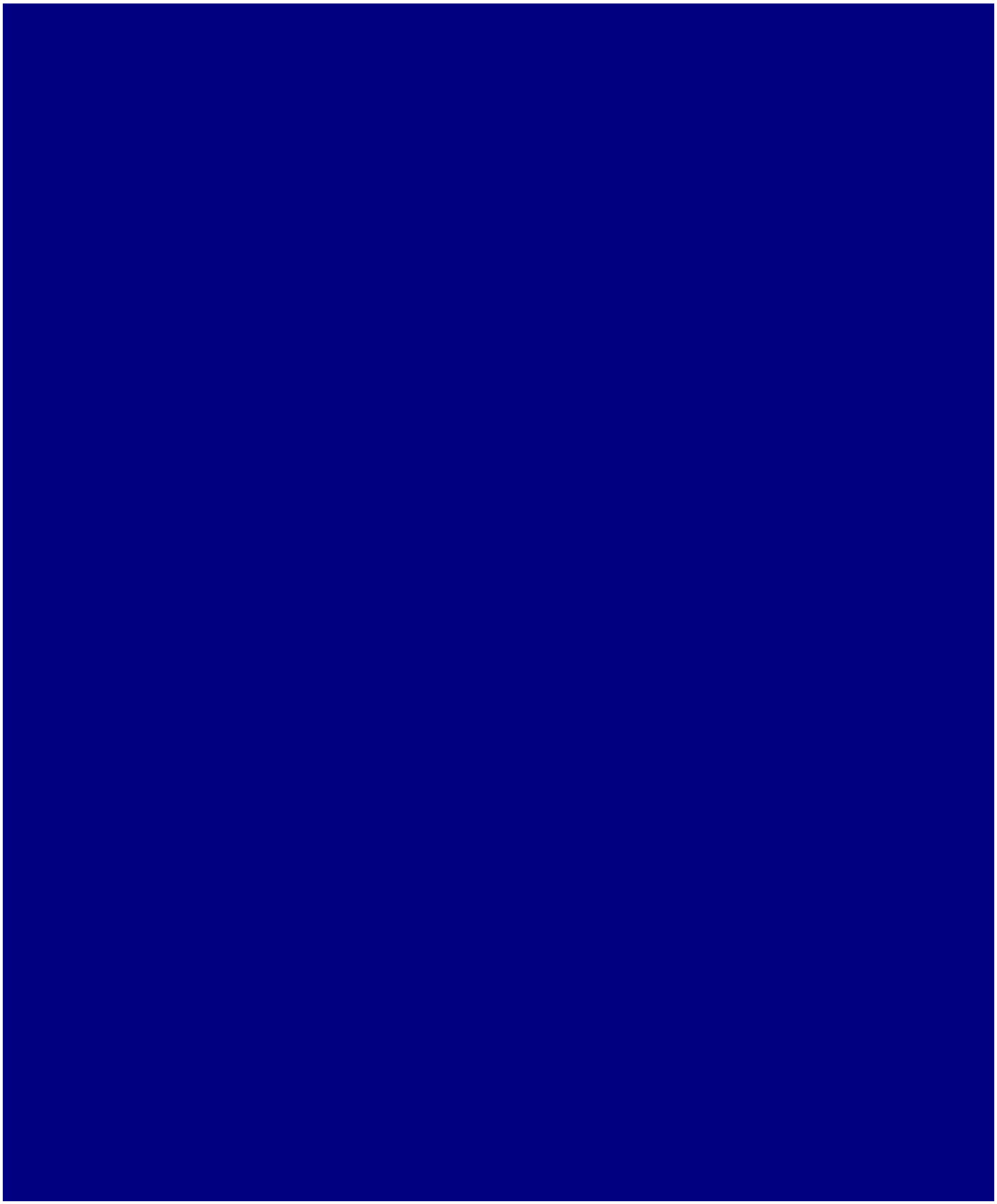
The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	

Lane Simulation: Arm options

Lanes



08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	

08:15 - 08:30

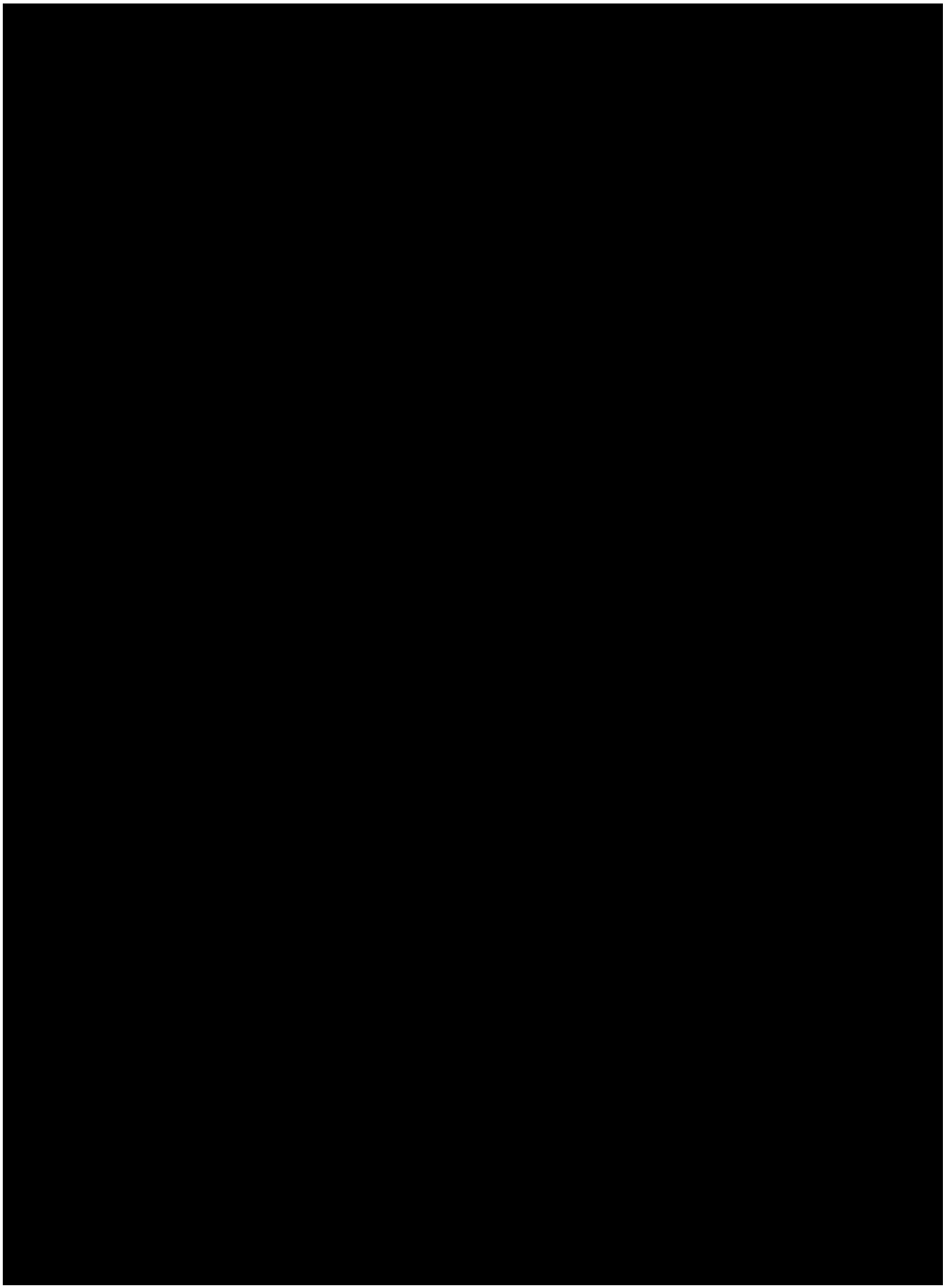
08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B, C	416		620	0.671	417	415	1.6	1.7	14.730	B
			2	C	345		620	0.557	345	344	1.4	1.3	13.006	B
			3	A, D	225		620	0.362	222	223	0.7	0.9	10.392	B
	Exit	1	1		1763				1763	1748	0.0	0.0	0.000	A
B	[redacted]													

08:45 - 09:00

		2		D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			2	A	126	31	-	-	-	126	127	0.0	0.0	0.195	A
				B	2	0.52	-	-	-	2	2	0.0	0.0	0.460	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	486	122	-	-	-	487	489	0.0	0.0	0.184	A
		3	1	A	126	31	-								

08:00 - 08:15



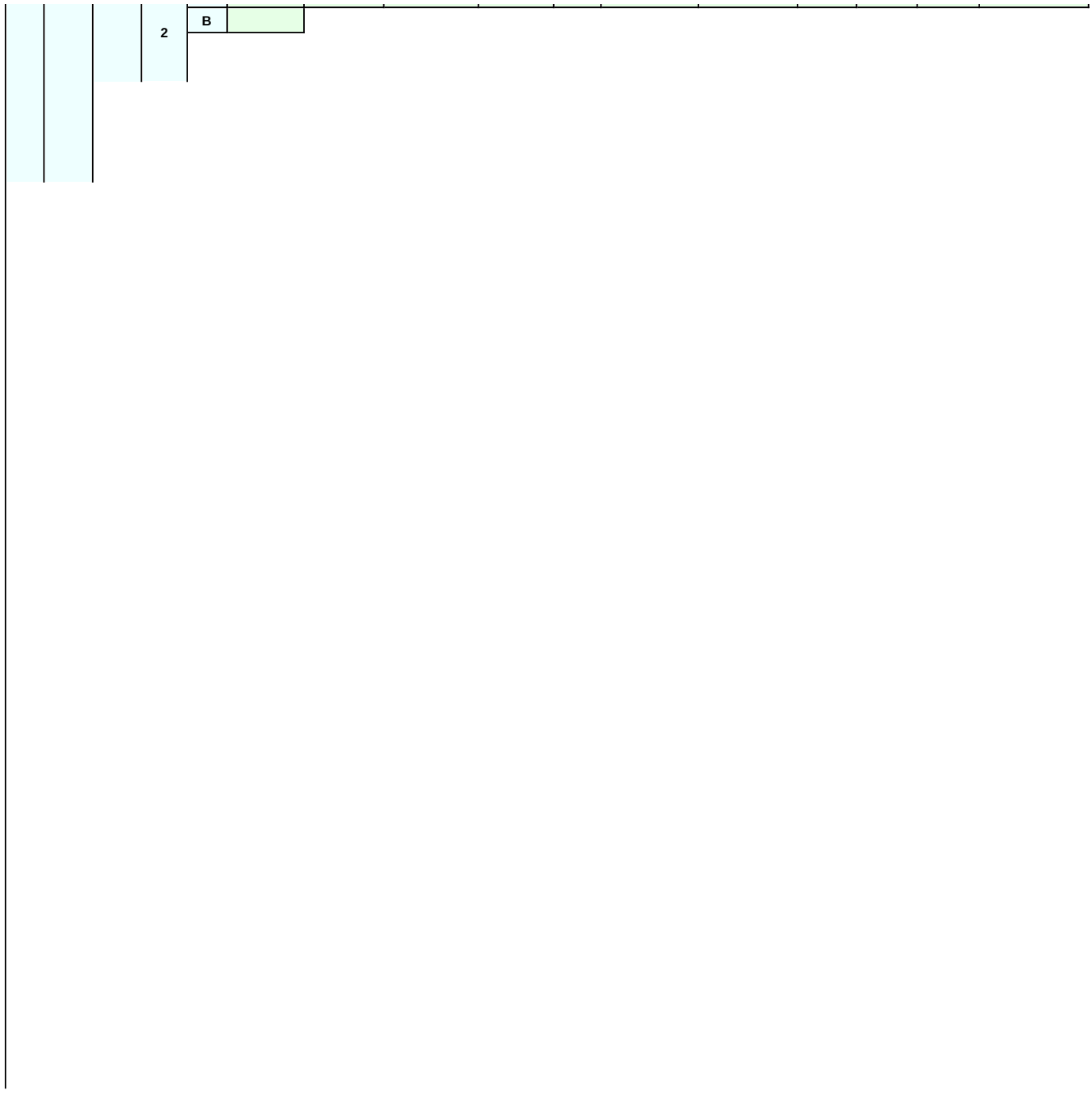
				D	2	0.47	-	

08:15 - 08:30

D	Entry	1	1	B	509	127	1347	905	0.563	508	498	0.9	1.8	

08:30 - 08:45

08:45 -



09:00 - 09:15

				D	2	0.47	-	-	-	2	2	0.0	0.0	0.000	A

2035 Scenario 3, AM

Data Errors and Warnings

Vehicle Mix

Results

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	1020	255	987		1012	1006	1621	2.4	4.5	13.561	B
B	1287	322	1066	6.61	1284	1270	960	1.7	4.7	11.525	B
C	1923	481	1171		1639	1657	1144	7.4	70.8	85.249	F
D	1054	263	1608	6.61	1046	1036	1257	2.0	4.8	14.378	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	1013	253	981								

08:45 - 09:00

09:00 - 09:15

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

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A														

08:00 - 08:15

Arm	Side	

08:15 - 08:30

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B, C	439		623	0.705	435	433	2.2	2.0		

08:45 - 09:00

08:00 - 08:15

08:45 - 09:00

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.0.1499

Filename: JUNCTION 1 - Lane Sim PM Mitigation 2.j10
Path: J:\48559 Crawley Transport Study\Transport\Working Documents\Junction Modelling\Junction Models\JUNCTION 1
Report generation date: 29/04/2021 10:37:59

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	

The junction diagram reflects the last run of Junctions.

Analysis Options

Lane Simulation options

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	Base 2015	PM	ONE HOUR	16:45	18:15	15	ü
D3	2035 Ref	PM	ONE HOUR	16:45	18:15	15	ü
D5	2035 Scenario 2	PM	ONE HOUR	16:45	18:15	15	ü
D7	2035 Scenario 3	PM	ONE HOUR	16:45	18:15	15	ü

Analysis Set Details

ID	Use Lane Simulation	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	ü	ü	ü	D5,D7	100.000	100.000

2035 Scenario 2, PM

Data Errors and Warnings

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.978	3294
B	0.815	2386
C	0.918	3003
D	0.895	2694

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage		82.00
B	Percentage		195.00
D	Percentage		125.00

Lane Simulation: Arm options

Lanes

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B	[ONEHOUR]	6.00
C		
D	[ONEHOUR]	6.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	69	268	995	427
	B	70	2	400	605
	C	585	260	2	449
	D	153	537	252	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	3	2	3	4
	B	0	0	3	3
	C	11	4	0	7
	D	5	4	1	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	166.85	101.5	F	1612	2418
B	19.68	6.7	C	987	1481
C	22.45	8.9	C	1186	1779
D	10.25	3.3	B	865	1297

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	1333	333	731		1326	1311	651	0.0	4.4	10.704	B
B	816	204	1294	4.52	815	805	794	0.0	1.2	4.484	A
C	967	242	830		968	966	1244	0.0	2.4	8.330	A
D	698	175	723	4.52	698	706	1117	0.0	0.9	4.582	A

17:00 - 17:15

17:15 - 17:30

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

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B, C	508		705	0.720	505	501	0.0	1.8	11.158	B
			2	C	445		705	0.631	443	439	0.0	1.4	9.853	A
			3	A, D	381		705	0.540	378	372	0.0	1.2	11.098	B
	Exit	1	1		651				651					

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B, C	585		665	0.880	588	578	1.8	3.6	21.032	C
			2	C	531		665	0.798	534	529	1.4	3.0	19.396	

17:15 - 17:30

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	

17:45 - 18:00

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput

Lane movements: Main Results for each time segment

16:45 - 17:00

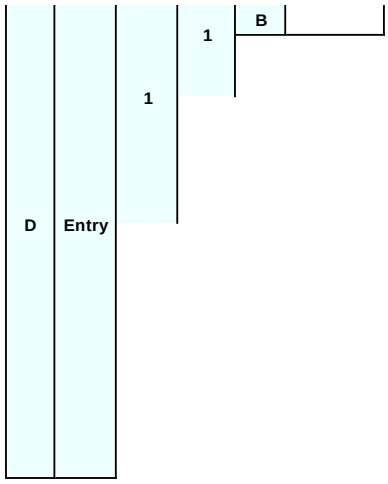
		2		D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			2	A	54	14	-	-	-	54	55	0.0	0.0	0.114	A
				B	1	0.27	-	-	-	1	2	0.0	0.0	0.181	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	455	114	-	-	-	455	454	0.0	0.0	0.154	A
		3	1	A	54	14	-	-	-	54	55	0.0	0.0	0.000	A
				B	1	0.27	-	-	-	1	2	0.0	0.0	0.000	A
				C	306	76	-	-	-	306	299	0.0	0.0	0.000	A
				D	455	114	-	-	-	455	454	0.0	0.0	0.000	A
C	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	338	84	1001								

17:00 - 17:15

				D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

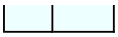
Arm	Side	Lane level	Lane	To Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Simulation max flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	A											



17:30 - 17:45

17:45 - 18:00

18:00 - 18:15



2035 Scenario 3, PM

Data Errors and Warnings

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	69	268	979	576
	B	70	2	399	665
	C	585	286	2	373
	D	153	487	294	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	3	2	3	4
	B	0	0	3	3
	C	11	4	0	7

Results

Results Summary for whole modelled period

Main Results for each time segment

16:45 - 17:00

17:00 - 17:15

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/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
A	2073	518	1106		1811	1801	948	14.7	85.2	105.799	F
B	1265	316	1840	6.61	1205	1194	1107	2.9	18.1	34.909	D
C	1376	344	1319		1367	1347	1716	3.9	9.8	21.774	C
D	1019	255	1086		1024	1021	1636	1.5	2.3	8.317	A

17:30 - 17:45

17:45 - 18:00

18:00 - 18:15

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

Arm	Side	Lane level	Lane	Destination

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Average throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	Entry	1	1	B, C	579		655	0.884	574	572	1.8	4.2	21.984	C
			2	C	546		655	0.834	538	531	1.4	3.8	19.871	C
			3	A, D	575		655	0.878	571	558	2.7			

17:15 - 17:30

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms

17:45 - 18:00

		2		D	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
			2	A	53	13	-	-	-	53	53	0.0	0.0	0.171	A
				B	1	0.34	-	-	-	1	2	0.0	0.0	0.171	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				D	499	125	-	-	-	498	500	0.0	0.0	0.195	A
		3	1	A	53	13	-	-	-	53	53	0.0	0.0	0.000	A
				B	1	0.34	-	-	-	1	2	0.0	0.0	0.000	A
				C	299	75	-	-	-	299	298	0.0	0.0	0.000	A
				D	499	125	-	-	-	499	500	0.0	0.0	0.000	A
C	Entry	1	1	A	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				B	0	0	0	0	0.000	0	0	0.0	0.0	0.000	A
				C	0	0	0	0	0.000	0	0	0.0	0.0	0.000	

17:00 - 17:15

			3	B	0	0	0	

17:15 - 17:30