Appendix 12.2

Capacity Assessment Output Report

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947

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Filename: Network Model.j9
Path: F:\$Development Planning\Abergelli Power Station, Swansea\Modelling
Report generation date: 30/11/2017 12:31:58

Summary of junction performance

	AM Peak Hour				PM Peak Hour			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	[Lane Simulation] - 2017 Base							
Junction 1 - Arm A	1.3	34.12		D	0.3	5.43		A
Junction 1 - Arm C	0.5	3.10		A	0.7	3.87		A
Junction 1 - Arm D	110.7	813.95		F	0.6	6.04		A
Junction 2 - Arm A	22.1	174.69		F	0.5	3.37		A
Junction 2 - Arm B	208.0	878.20		F	1.0	5.81		A
Junction 2 - Arm C	1.6	6.82		A	4.9	12.90		B
Junction 2 - Arm D	35.5	182.47		F	1.3	7.83		A
Junction 2 - Arm E	58.5	638.48		F	0.3	5.54		A
Junction 3 - Arm A	5.6	45.08		E	23.5	130.04		F
Junction 3 - Arm B	2.3	16.59		C	74.4	359.91		F
Junction 3 - Arm C	16.6	52.87		F	2.9	13.37		B
	[Lane Simulation] - 2022 Do Minimum							
Junction 1 - Arm A	1.6	35.48		E	0.3	5.67		A
Junction 1 - Arm C	0.5	3.12		A	0.9	3.92		A
Junction 1 - Arm D	158.1	1026.88		F	0.7	6.41		A
Junction 2 - Arm A	22.1	176.37		F	0.5	3.38		A
Junction 2 - Arm B	261.6	1038.45		F	1.1	6.33		A
Junction 2 - Arm C	1.8	7.40		A	4.8	13.66		B
Junction 2 - Arm D	59.0	297.89		F	1.6	8.86		A
Junction 2 - Arm E	84.2	874.71		F	0.4	5.71		A
Junction 3 - Arm A	7.3	54.91		F	44.1	229.30		F
Junction 3 - Arm B	3.2	19.39		C	110.3	548.72		F
Junction 3 - Arm C	16.6	52.76		F	3.6	14.40		B
	[Lane Simulation] - 2022 Do Something							
Junction 1 - Arm A	1.8	39.27		E	0.5	6.40		A
Junction 1 - Arm C	0.6	3.16		A	0.9	3.95		A
Junction 1 - Arm D	150.0	954.24		F	0.8	6.37		A
Junction 2 - Arm A	21.9	170.25		F	0.5	3.53		A
Junction 2 - Arm B	255.6	997.37		F	1.3	6.81		A
Junction 2 - Arm C	2.2	8.17		A	5.2	14.41		B
Junction 2 - Arm D	70.5	378.35		F	1.8	9.22		A
Junction 2 - Arm E	89.5	919.66		F	0.5	5.89		A
Junction 3 - Arm A	9.3	67.07		F	45.3	235.07		F
Junction 3 - Arm B	4.0	23.34		C	111.5	557.18		F
Junction 3 - Arm C	16.5	52.54		F	3.7	15.05		C
	[Lane Simulation] - 2022 Do Something + Cumulative Development							
Junction 1 - Arm A	4.0	60.44		F	0.8	7.39		A
Junction 1 - Arm C	0.8	3.29		A	1.1	4.27		A
Junction 1 - Arm D	196.2	1098.13		F	0.8	7.21		A
Junction 2 - Arm A	21.9	160.46		F	0.7	3.71		A
Junction 2 - Arm B	289.6	1106.92		F	2.2	9.49		A
Junction 2 - Arm C	2.2	8.59		A	6.6	18.83		C
Junction 2 - Arm D	139.1	703.20		F	2.9	13.06		B
Junction 2 - Arm E	102.2	1013.28		F	0.4	6.40		A
Junction 3 - Arm A	8.9	65.30		F	55.0	304.44		F
Junction 3 - Arm B	4.1	23.49		C	115.0	580.23		F
Junction 3 - Arm C	16.6	52.43		F	4.2	15.98		C

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.

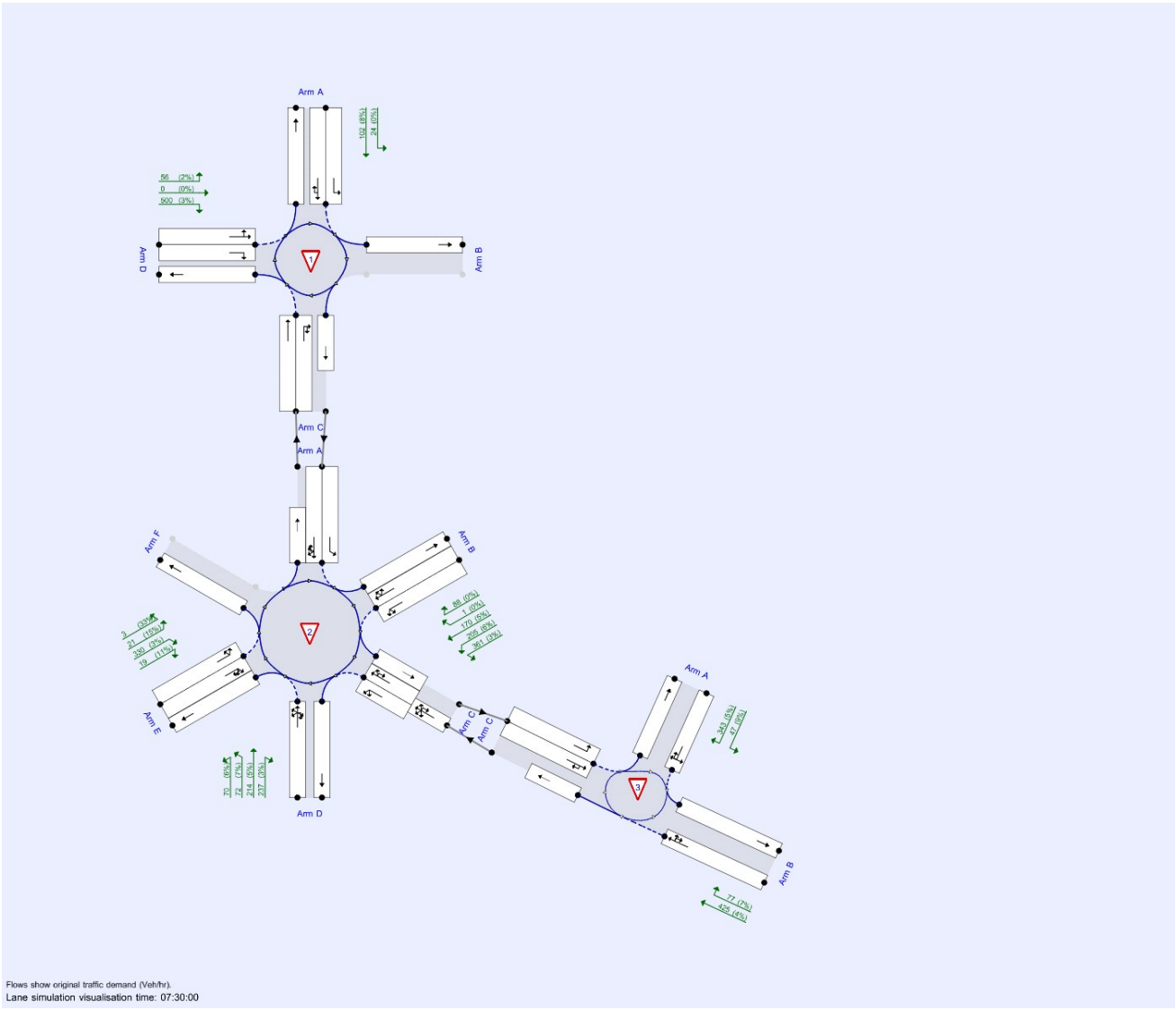
File summary

File Description

Title	M4 Junction 46 and A48/Pant Lasau Road Mini-Roundabout Network
Location	Swansea, Wales
Site number	
Date	30/11/2017
Version	
Status	
Identifier	
Client	Stag Energy
Jobnumber	60542910
Enumerator	EU\Matthew.Davies
Description	Geometric parameters for approach road half-width and entry width have been measured on-site. All other measurements are based on OS mapping.

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1238323674	486	251.32

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	2017 Base	AM Peak Hour	ONE HOUR	07:30	09:00	15	✓
D2	2017 Base	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓
D3	2022 Do Minimum	AM Peak Hour	ONE HOUR	07:30	09:00	15	✓
D4	2022 Do Minimum	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓
D5	2022 Do Something	AM Peak Hour	ONE HOUR	07:30	09:00	15	✓
D6	2022 Do Something	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓
D7	2022 Do Something + Cumulative Development	AM Peak Hour	ONE HOUR	07:30	09:00	15	✓
D8	2022 Do Something + Cumulative Development	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

2017 Base, AM Peak Hour

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.
Last Run	Lane Simulation	Junction 1 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - 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	Junction 2 - Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 3 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 3	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	367.03	F
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	379.00	F
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	42.78	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Junction	Arm	Name	Description
1	A	B4489	
	B	M4 EB On-Slip	
	C	A48 Internal	
	D	M4 EB Off-Slip	
2	A	A48 Internal	
	B	M4 WB Off-Slip	
	C	A48 Southeast	
	D	B4489 South	
	E	A48 Southwest	
	F	M4 WB On-Slip	
3	A	Pant Lasau Road	
	B	A48 Southeast	
	C	A48 Northwest	

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	A	7.30	7.30	0.0	20.0	60.0	43.0	
	B							✓
	C	7.30	7.30	0.0	38.0	60.0	0.0	
	D	7.30	7.30	0.0	30.0	60.0	49.0	
2	A	6.90	9.85	10.0	19.0	97.0	46.0	
	B	7.45	7.45	0.0	27.0	97.0	32.0	
	C	4.00	8.35	15.0	40.0	97.0	31.0	
	D	3.85	6.05	10.5	19.0	97.0	45.0	
	E	6.45	8.10	5.0	20.0	97.0	38.0	
	F							✓

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
3	A	5.00	3.20	7.80	4.0	11.00	8.00	0.0	✓
	B	4.50	3.50	4.70	1.0	17.00	18.00	0.0	✓
	C	6.30	6.30	7.50	3.0	12.00	9.00	0.0	✓

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	868	20.00
	B	603	33.00
	C	0	50.00
	D	546	12.00
2	A	586	41.00
	B	1193	41.00
	C	576	26.00
	D	883	22.00
	E	965	22.00
	F	902	21.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1	A	1.114	2737
	B		
	C	1.558	3256
	D	1.185	2819
2	A	1.029	3048
	B	0.896	2775
	C	0.938	2614
	D	0.736	2095
	E	0.896	2735
	F		
3	A	0.525	819
	B	0.619	1069
	C	0.626	1384

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
	D	Evenly split	10.00
	E	Evenly split	10.00
	F	Evenly split	10.00
3	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00

Lanes

Junction	Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	A	1 [Give-way line]	1	B		Infinity	0	99999
			2	A, C		Infinity	0	99999
	C	1 [Give-way line]	1	A	✓	21.00	0	99999
			2	B, C	✓	21.00	0	99999
	D	1 [Give-way line]	1	A, B		Infinity	0	99999
			2	C		Infinity	0	99999
2	A	1 [Give-way line]	1	C	✓	23.00	0	99999
			2	A, D, E, F	✓	23.00	0	99999
	B	1 [Give-way line]	1	C, D		Infinity	0	99999
			2	A, E, F		Infinity	0	99999
	C	1 [Give-way line]	1	D, E	✓	3.00	0	99999
			2	A, C, F	✓	3.00	0	99999
		2	1	(A, C, D, E, F)	✓	10.00		
	D	1 [Give-way line]	1	A, C, D, E, F		Infinity	0	99999
	E	1 [Give-way line]	1	A, F		Infinity	0	99999
			2	C, D, E		Infinity	0	99999
3	A	1 [Give-way line]	1	A, B, C		Infinity	0	99999
	B	1 [Give-way line]	1	A, B, C		Infinity	0	99999
	C	1 [Give-way line]	1	A	✓	13.00	0	99999
			2	B, C	✓	13.00	0	99999

Entry Lane slope and intercept

Junction	Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	A	1 [Give-way line]	1	0.557	1368
			2	0.557	1368
	C	1 [Give-way line]	1	0.779	1628
			2	0.779	1628
	D	1 [Give-way line]	1	0.592	1409
			2	0.592	1409
2	A	1 [Give-way line]	1	0.514	1524
			2	0.514	1524
	B	1 [Give-way line]	1	0.448	1388
			2	0.448	1388
	C	1 [Give-way line]	1	0.469	1307
			2	0.469	1307
	D	1 [Give-way line]	1	0.736	2095
	E	1 [Give-way line]	1	0.448	1367
			2	0.448	1367
3	A	1 [Give-way line]	1	0.525	819
	B	1 [Give-way line]	1	0.619	1069
	C	1 [Give-way line]	1	0.313	692
			2	0.313	692

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm			
				A	B	C	D
1	A	1 [Give-way line]	1		✓		
			2	✓		✓	
	C	1 [Give-way line]	1	✓			
			2		✓	✓	
	D	1 [Give-way line]	1	✓	✓		
			2			✓	

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm					
				A	B	C	D	E	F
2	A	1 [Give-way line]	1			✓			
			2	✓			✓	✓	✓
	B	1 [Give-way line]	1			✓	✓		
			2	✓				✓	✓
	C	1 [Give-way line]	1				✓	✓	
			2	✓		✓			✓
		2	1	✓		✓	✓	✓	✓
	D	1 [Give-way line]	1	✓		✓	✓	✓	✓
	E	1 [Give-way line]	1	✓					✓
			2			✓	✓	✓	

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm		
				A	B	C
3	A	1 [Give-way line]	1	✓	✓	✓
	B	1 [Give-way line]	1	✓	✓	✓
	C	1 [Give-way line]	1	✓		
			2		✓	✓

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	2017 Base	AM Peak Hour	ONE HOUR	07:30	09:00	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 (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	126	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	556	100.000
2	A	✓				
	B		ONE HOUR	✓	825	100.000
	C	✓				
	D		ONE HOUR	✓	593	100.000
	E		ONE HOUR	✓	373	100.000
	F					
3	A		ONE HOUR	✓	390	100.000
	B		ONE HOUR	✓	502	100.000
	C	✓				

Origin-Destination Data

Junction 1

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	24	102	0
	B	0	0	0	0
	C	178	367	0	0
	D	56	0	500	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	514	80	10	2
	B	88	0	361	205	170	1
	C	231	0	0	151	261	120
	D	214	0	237	0	70	72
	E	21	0	330	19	0	3
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

From \ To	A	B	C
A	0	47	343
B	77	0	425
C	819	618	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	A	B	C	D
A	0	0	8	0
B	0	0	0	0
C	5	5	0	0
D	2	0	3	0

Junction 2

Heavy Vehicle Percentages

From \ To	A	B	C	D	E	F
A	0	0	4	3	10	0
B	0	0	3	6	5	0
C	8	0	0	5	2	3
D	5	0	3	0	6	7
E	15	0	3	11	0	33
F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

From \ To	A	B	C
A	0	9	5
B	7	0	4
C	2	5	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	34.12	1.3	D	116	174
	B					
	C	3.10	0.5	A	507	760
	D	813.95	110.7	F	511	766
2	A	174.69	22.1	F	474	711
	B	878.20	208.0	F	760	1139
	C	6.82	1.6	A	704	1056
	D	182.47	35.5	F	542	813
	E	638.48	58.5	F	342	512
	F					
3	A	45.08	5.6	E	358	537
	B	16.59	2.3	C	461	691
	C	52.87	16.6	F	1126	1689

2017 Base, PM Peak Hour

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.
Last Run	Lane Simulation	Junction 3 - 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	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	4.68	A
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	8.77	A
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	177.12	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Mini Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	1027	20.00
	B	400	33.00
	C	0	50.00
	D	768	12.00
2	A	290	41.00
	B	692	41.00
	C	555	26.00
	D	1290	22.00
	E	1143	22.00
	F	855	21.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

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	2017 Base	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	167	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	320	100.000
2	A	✓				
	B		ONE HOUR	✓	573	100.000
	C	✓				
	D		ONE HOUR	✓	556	100.000
	E		ONE HOUR	✓	192	100.000
	F					
3	A		ONE HOUR	✓	547	100.000
	B		ONE HOUR	✓	763	100.000
	C	✓				

Origin-Destination Data

Demand (Veh/hr)

Junction 1

		To			
		A	B	C	D
From	A	0	76	91	0
	B	0	0	0	0
	C	50	718	0	0
	D	11	0	309	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	261	114	4	23
	B	22	0	184	223	141	3
	C	399	0	0	143	472	226
	D	249	0	135	0	86	86
	E	30	0	129	26	0	7
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	34	513
	B	35	0	728
	C	315	355	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	7	0
	B	0	0	0	0
	C	17	2	0	0
	D	0	0	2	0

Junction 2

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	0	0	2	5	0	0
	B	0	0	2	4	4	0
	C	3	0	0	2	2	1
	D	2	0	3	0	5	6
	E	14	0	0	4	0	0
	F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	1
	B	3	0	3
	C	2	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	5.43	0.3	A	155	233
	B					
	C	3.87	0.7	A	639	958
	D	6.04	0.6	A	295	443
2	A	3.37	0.5	A	371	556
	B	5.81	1.0	A	525	788
	C	12.90	4.9	B	1123	1684
	D	7.83	1.3	A	513	769
	E	5.54	0.3	A	176	264
	F					
3	A	130.04	23.5	F	502	752
	B	359.91	74.4	F	705	1057
	C	13.37	2.9	B	652	977

2022 Do Minimum, AM Peak Hour

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.
Last Run	Lane Simulation	Junction 1 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - 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	Junction 2 - Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 3 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 3	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	462.87	F
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	476.81	F
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	45.02	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms
[same as above]

Roundabout Geometry
[same as above]

Mini Roundabout Geometry
[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	921	20.00
	B	639	33.00
	C	0	50.00
	D	579	12.00
2	A	622	41.00
	B	1265	41.00
	C	611	26.00
	D	937	22.00
	E	1023	22.00
	F	957	21.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

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	2022 Do Minimum	AM Peak Hour	ONE HOUR	07:30	09:00	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 (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	133	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	590	100.000
2	A	✓				
	B		ONE HOUR	✓	876	100.000
	C	✓				
	D		ONE HOUR	✓	630	100.000
	E		ONE HOUR	✓	395	100.000
	F					
3	A		ONE HOUR	✓	413	100.000
	B		ONE HOUR	✓	533	100.000
	C	✓				

Origin-Destination Data

Junction 1

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	25	108	0
	B	0	0	0	0
	C	189	390	0	0
	D	59	0	531	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	545	85	11	2
	B	93	0	383	218	181	1
	C	245	0	0	160	277	127
	D	227	0	252	0	74	77
	E	22	0	350	20	0	3
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	50	363
	B	82	0	451
	C	869	656	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	8	0
	B	0	0	0	0
	C	5	5	0	0
	D	2	0	3	0

Junction 2

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	0	0	4	3	10	0
	B	0	0	3	6	5	0
	C	8	0	0	5	2	3
	D	5	0	3	0	6	7
	E	15	0	3	11	0	33
	F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	9	5
	B	7	0	4
	C	2	5	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	35.48	1.6	E	122	184
	B					
	C	3.12	0.5	A	532	798
	D	1026.88	158.1	F	539	808
2	A	176.37	22.1	F	470	704
	B	1038.45	261.6	F	805	1207
	C	7.40	1.8	A	741	1112
	D	297.89	59.0	F	577	866
	E	874.71	84.2	F	360	540
	F					
3	A	54.91	7.3	F	378	567
	B	19.39	3.2	C	485	728
	C	52.76	16.6	F	1130	1695

2022 Do Minimum, PM Peak Hour

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.
Last Run	Lane Simulation	Junction 3 - 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	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	4.85	A
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	9.34	A
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	275.70	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Mini Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	1088	20.00
	B	424	33.00
	C	0	50.00
	D	813	12.00
2	A	308	41.00
	B	733	41.00
	C	588	26.00
	D	1366	22.00
	E	1210	22.00
	F	905	21.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

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	2022 Do Minimum	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	177	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	339	100.000
2	A	✓				
	B		ONE HOUR	✓	606	100.000
	C	✓				
	D		ONE HOUR	✓	589	100.000
	E		ONE HOUR	✓	204	100.000
	F					
3	A		ONE HOUR	✓	579	100.000
	B		ONE HOUR	✓	809	100.000
	C	✓				

Origin-Destination Data

Demand (Veh/hr)

Junction 1

		To			
		A	B	C	D
From	A	0	81	96	0
	B	0	0	0	0
	C	53	761	0	0
	D	12	0	327	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	277	120	4	24
	B	23	0	195	236	149	3
	C	422	0	0	151	500	240
	D	264	0	143	0	91	91
	E	32	0	137	27	0	8
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	36	543
	B	37	0	772
	C	334	376	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	7	0
	B	0	0	0	0
	C	17	2	0	0
	D	0	0	2	0

Junction 2

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	0	0	2	5	0	0
	B	0	0	2	4	4	0
	C	3	0	0	2	2	1
	D	2	0	3	0	5	6
	E	14	0	0	4	0	0
	F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	1
	B	3	0	3
	C	2	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	5.67	0.3	A	164	247
	B					
	C	3.92	0.9	A	662	993
	D	6.41	0.7	A	312	469
2	A	3.38	0.5	A	390	585
	B	6.33	1.1	A	554	831
	C	13.66	4.8	B	1152	1727
	D	8.86	1.6	A	540	811
	E	5.71	0.4	A	190	284
	F					
3	A	229.30	44.1	F	531	796
	B	548.72	110.3	F	742	1113
	C	14.40	3.6	B	689	1033

2022 Do Something, AM Peak Hour

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.
Last Run	Lane Simulation	Junction 1 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - 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	Junction 2 - Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 3 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 3	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 82% of the total flow for the roundabout for one or more time segments]
Warning	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	415.48	F
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	484.17	F
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	48.13	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms
[same as above]

Roundabout Geometry
[same as above]

Mini Roundabout Geometry
[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	921	20.00
	B	647	33.00
	C	0	50.00
	D	635	12.00
2	A	622	41.00
	B	1273	41.00
	C	633	26.00
	D	980	22.00
	E	1085	22.00
	F	1012	21.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2022 Do Something	AM Peak Hour	ONE HOUR	07:30	09:00	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 (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	149	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	613	100.000
2	A	✓				
	B		ONE HOUR	✓	891	100.000
	C	✓				
	D		ONE HOUR	✓	648	100.000
	E		ONE HOUR	✓	397	100.000
	F					
3	A		ONE HOUR	✓	422	100.000
	B		ONE HOUR	✓	544	100.000
	C	✓				

Origin-Destination Data

Junction 1

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	33	116	0
	B	0	0	0	0
	C	245	390	0	0
	D	82	0	531	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	545	85	11	10
	B	108	0	383	218	181	1
	C	265	0	0	160	277	127
	D	245	0	252	0	74	77
	E	24	0	350	20	0	3
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	50	372
	B	82	0	462
	C	869	656	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	23	14	0
	B	0	0	0	0
	C	7	5	0	0
	D	11	0	3	0

Junction 2

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	0	0	4	3	10	77
	B	7	0	3	6	5	0
	C	7	0	0	5	2	3
	D	4	0	3	0	6	7
	E	14	0	3	11	0	33
	F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	9	5
	B	7	0	4
	C	2	5	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	39.27	1.8	E	136	205
	B					
	C	3.16	0.6	A	585	877
	D	954.24	150.0	F	559	839
2	A	170.25	21.9	F	485	727
	B	997.37	255.6	F	818	1227
	C	8.17	2.2	A	765	1147
	D	378.35	70.5	F	596	894
	E	919.66	89.5	F	364	547
	F					
3	A	67.07	9.3	F	388	582
	B	23.34	4.0	C	498	747
	C	52.54	16.5	F	1129	1693

2022 Do Something, PM Peak Hour

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.
Last Run	Lane Simulation	Junction 3 - 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	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	5.06	A
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	9.74	A
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	278.15	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Mini Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	1088	20.00
	B	465	33.00
	C	0	50.00
	D	821	12.00
2	A	308	41.00
	B	775	41.00
	C	615	26.00
	D	1383	22.00
	E	1227	22.00
	F	913	21.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2022 Do Something	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	255	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	347	100.000
2	A	✓				
	B		ONE HOUR	✓	613	100.000
	C	✓				
	D		ONE HOUR	✓	589	100.000
	E		ONE HOUR	✓	204	100.000
	F					
3	A		ONE HOUR	✓	579	100.000
	B		ONE HOUR	✓	809	100.000
	C	✓				

Origin-Destination Data

Demand (Veh/hr)

Junction 1

		To			
		A	B	C	D
From	A	0	117	138	0
	B	0	0	0	0
	C	60	761	0	0
	D	20	0	327	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	299	130	5	34
	B	30	0	195	236	149	3
	C	422	0	0	151	500	240
	D	264	0	143	0	91	91
	E	32	0	137	27	0	8
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	36	543
	B	37	0	772
	C	344	388	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	6	10	0
	B	0	0	0	0
	C	27	2	0	0
	D	38	0	2	0

Junction 2

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	0	0	2	4	0	22
	B	25	0	2	4	4	0
	C	3	0	0	2	2	1
	D	2	0	3	0	5	6
	E	14	0	0	4	0	0
	F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	1
	B	3	0	3
	C	2	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	6.40	0.5	A	235	352
	B					
	C	3.95	0.9	A	667	1001
	D	6.37	0.8	A	316	475
2	A	3.53	0.5	A	426	639
	B	6.81	1.3	A	563	844
	C	14.41	5.2	B	1152	1729
	D	9.22	1.8	A	541	811
	E	5.89	0.5	A	187	280
	F					
3	A	235.07	45.3	F	531	797
	B	557.18	111.5	F	741	1111
	C	15.05	3.7	C	707	1061

2022 Do Something + Cumulative Development, AM Peak Hour

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.
Last Run	Lane Simulation	Junction 1 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - 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	Junction 2 - Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 3 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Mini-roundabout	Junction 3	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms B and C have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	447.64	F
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	595.35	F
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	47.71	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms
[same as above]

Roundabout Geometry
[same as above]

Mini Roundabout Geometry
[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	1024	20.00
	B	709	33.00
	C	0	50.00
	D	749	12.00
2	A	657	41.00
	B	1370	41.00
	C	705	26.00
	D	996	22.00
	E	1232	22.00
	F	1142	21.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

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	2022 Do Something + Cumulative Development	AM Peak Hour	ONE HOUR	07:30	09:00	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 (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	214	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	632	100.000
2	A	✓				
	B		ONE HOUR	✓	939	100.000
	C	✓				
	D		ONE HOUR	✓	789	100.000
	E		ONE HOUR	✓	412	100.000
	F					
3	A		ONE HOUR	✓	428	100.000
	B		ONE HOUR	✓	552	100.000
	C	✓				

Origin-Destination Data

Junction 1

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	47	167	0
	B	0	0	0	0
	C	268	481	0	0
	D	90	0	542	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	588	104	12	10
	B	116	0	383	258	181	1
	C	273	0	0	166	277	127
	D	344	0	272	0	83	90
	E	24	0	362	23	0	3
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	50	378
	B	82	0	470
	C	912	688	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	10	0
	B	0	0	0	0
	C	7	4	0	0
	D	10	0	4	0

Junction 2

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	0	0	4	4	9	76
	B	9	0	3	5	5	0
	C	7	0	0	5	2	3
	D	4	0	3	0	5	8
	E	13	0	2	9	0	33
	F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	9	5
	B	7	0	4
	C	2	4	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	60.44	4.0	F	196	293
	B					
	C	3.29	0.8	A	666	999
	D	1098.13	196.2	F	579	868
2	A	160.46	21.9	F	508	762
	B	1106.92	289.6	F	858	1287
	C	8.59	2.2	A	775	1162
	D	703.20	139.1	F	724	1086
	E	1013.28	102.2	F	379	569
	F					
3	A	65.30	8.9	F	393	589
	B	23.49	4.1	C	505	758
	C	52.43	16.6	F	1134	1701

2022 Do Something + Cumulative Development, PM Peak Hour

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.
Last Run	Lane Simulation	Junction 3 - 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	Junction 3 - 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	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm A	Linked arm: Junction 2 Arm A has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 3 - Arm C	Linked arm: Junction 3 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Large Roundabout	Junction 1 - Arm C - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M4 J46 Northern Dumbell Roundabout	Large Roundabout	A, B, C, D	5.69	A
2	M4 J46 Southern Dumbell Roundabout	Large Roundabout	A, B, C, D, E, F	12.55	B
3	A48/Pant Lasau Road Mini-Roundabout	Mini-roundabout	A, B, C	300.73	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Mini Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	A	1185	20.00
	B	515	33.00
	C	0	50.00
	D	903	12.00
2	A	335	41.00
	B	852	41.00
	C	770	26.00
	D	1410	22.00
	E	1348	22.00
	F	1006	21.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2022 Do Something + Cumulative Development	PM Peak Hour	ONE HOUR	16:15	17:45	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	C	2	A	Queue limited	Normal	0	100.00	21.00
2	A	1	C	Queue limited	Normal	0	100.00	23.00
	C	3	C	Queue limited	Normal	0	100.00	13.00
3	C	2	C	Queue limited	Normal	0	100.00	13.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	319	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	364	100.000
2	A	✓				
	B		ONE HOUR	✓	728	100.000
	C	✓				
	D		ONE HOUR	✓	713	100.000
	E		ONE HOUR	✓	215	100.000
	F					
3	A		ONE HOUR	✓	579	100.000
	B		ONE HOUR	✓	809	100.000
	C	✓				

Origin-Destination Data

Junction 1

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	148	171	0
	B	0	0	0	0
	C	62	841	0	0
	D	20	0	344	0

Junction 2

Demand (Veh/hr)

		To					
		A	B	C	D	E	F
From	A	0	0	319	155	5	38
	B	32	0	195	349	149	3
	C	422	0	0	176	520	240
	D	344	0	159	0	102	108
	E	32	0	137	38	0	8
	F	0	0	0	0	0	0

Junction 3

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	36	543
	B	37	0	772
	C	344	388	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	7	8	0
	B	0	0	0	0
	C	29	2	0	0
	D	38	0	2	0

Junction 2

Heavy Vehicle Percentages

		To					
		A	B	C	D	E	F
From	A	0	0	2	4	0	21
	B	29	0	2	3	4	0
	C	3	0	0	2	2	1
	D	2	0	3	0	4	6
	E	14	0	0	3	0	0
	F	0	0	0	0	0	0

Junction 3

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	3	1
	B	3	0	3
	C	2	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	A	7.39	0.8	A	293	440
	B					
	C	4.27	1.1	A	726	1089
	D	7.21	0.8	A	333	500
2	A	3.71	0.7	A	473	709
	B	9.49	2.2	A	662	994
	C	18.83	6.6	C	1145	1717
	D	13.06	2.9	B	651	977
	E	6.40	0.4	A	196	294
	F					
3	A	304.44	55.0	F	532	798
	B	580.23	115.0	F	741	1111
	C	15.98	4.2	C	742	1112