

Junctions 9			
ARCADY 9 - Roundabout Module			
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Filename: 2019 A27 - A29 East-PM-Cal.j9

Path: J:\38848 - GH - Wandleys Lane, Fontwell\BRIEF 5501 - Transport\MODELLING\TRANSPORT\JUNCTIONS 9\HE Analysis\East

Report generation date: 09/01/2018 14:51:05

»2019 Opening Year Base, PM

»2019 Opening Year Base + Wandleys, PM

Summary of junction performance

	PM			
	Queue (Veh)	Delay (s)	RFC	LOS
2019 Opening Year Base				
1 - A29 (E)	5.3	24.40	0.85	C
2 - A27 (S)	0.9	3.01	0.48	A
3 - A27 (W)	2.0	3.74	0.67	A
2019 Opening Year Base + Wandleys				
1 - A29 (E)	5.8	26.10	0.87	D
2 - A27 (S)	1.0	3.12	0.49	A
3 - A27 (W)	2.1	3.84	0.68	A

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

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

File summary

File Description

Title	A27-A29 East
Location	
Site number	
Date	19/04/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	I-TRANSPORT\Hotdesk
Description	A27-A29 Eastern roundabout junction - calibrated

Units

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

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2019 Opening Year Base	PM	DIRECT	16:45	17:45	60	15	✓
D2	2019 Opening Year Base + Wandleys	PM	DIRECT	16:45	17:45	60	15	✓

Analysis Set Details

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

2019 Opening Year Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A29 (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Profile Type	D1 - 2019 Opening Year Base, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A27/A29 (E)	Standard Roundabout	1, 2, 3	7.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A29 (E)	
2	A27 (S)	
3	A27 (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A29 (E)	3.50	8.50	50.0	42.0	46.0	20.0	
2 - A27 (S)	8.00	11.20	13.4	34.0	46.0	19.0	
3 - A27 (W)	9.60	9.60	0.0	45.0	46.0	19.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - A29 (E)	Direct	Queue length survey	-300
2 - A27 (S)	None		
3 - A27 (W)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A29 (E)	0.767	2041
2 - A27 (S)	0.923	3147
3 - A27 (W)	0.915	3099

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2019 Opening Year Base	PM	DIRECT	16:45	17:45	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - A29 (E)		DIRECT	✓	100.000
2 - A27 (S)		DIRECT	✓	100.000
3 - A27 (W)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
From	1 - A29 (E)	0	27	776
	2 - A27 (S)	48	29	1021
	3 - A27 (W)	638	1300	6

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
From	1 - A29 (E)	0	15	2
	2 - A27 (S)	4	11	5
	3 - A27 (W)	4	4	17

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A29 (E)	0.85	24.40	5.3	C	803	803
2 - A27 (S)	0.48	3.01	0.9	A	1098	1098
3 - A27 (W)	0.67	3.74	2.0	A	1944	1944

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	803	201	1330	953	0.843	784	683	0.0	4.7	19.619	C
2 - A27 (S)	1098	274	764	2308	0.476	1094	1350	0.0	0.9	2.957	A
3 - A27 (W)	1944	486	77	2906	0.669	1936	1782	0.0	2.0	3.684	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	803	201	1335	949	0.846	801	686	4.7	5.1	23.868	C
2 - A27 (S)	1098	274	780	2294	0.479	1098	1356	0.9	0.9	3.010	A
3 - A27 (W)	1944	486	77	2905	0.669	1944	1801	2.0	2.0	3.744	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	803	201	1335	949	0.846	802	686	5.1	5.2	24.257	C
2 - A27 (S)	1098	274	781	2293	0.479	1098	1356	0.9	0.9	3.012	A
3 - A27 (W)	1944	486	77	2905	0.669	1944	1802	2.0	2.0	3.744	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	803	201	1335	949	0.846	803	686	5.2	5.3	24.401	C
2 - A27 (S)	1098	274	782	2292	0.479	1098	1356	0.9	0.9	3.013	A
3 - A27 (W)	1944	486	77	2905	0.669	1944	1803	2.0	2.0	3.744	A

2019 Opening Year Base + Wandleys, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A29 (E) - 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	Arm order	Junction Delay (s)	Junction LOS
1	A27/A29 (E)	Standard Roundabout	1, 2, 3	8.17	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 period length (min)	Time segment length (min)	Run automatically
D2	2019 Opening Year Base + Wandleys	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - A29 (E)		DIRECT	✓	100.000
2 - A27 (S)		DIRECT	✓	100.000
3 - A27 (W)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

16:45 - 17:00		To			
	From		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
		1 - A29 (E)	0	27	777
		2 - A27 (S)	48	33	1021
		3 - A27 (W)	638	1300	6

Demand (Veh/hr)

17:00 - 17:15		To			
	From		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
		1 - A29 (E)	0	28	684
		2 - A27 (S)	56	28	956
		3 - A27 (W)	572	1228	8

Demand (Veh/hr)

17:15 - 17:30

	To			
		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
From	1 - A29 (E)	0	16	756
	2 - A27 (S)	48	32	1044
	3 - A27 (W)	660	1304	4

Demand (Veh/hr)

17:30 - 17:45

	To			
		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
From	1 - A29 (E)	0	16	820
	2 - A27 (S)	24	32	1048
	3 - A27 (W)	584	1284	8

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
From	1 - A29 (E)	0	15	2
	2 - A27 (S)	4	11	5
	3 - A27 (W)	4	4	17

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A29 (E)	0.87	26.10	5.8	D	781	781
2 - A27 (S)	0.49	3.12	1.0	A	1092	1092
3 - A27 (W)	0.68	3.84	2.1	A	1899	1899

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	804	201	1334	950	0.847	785	683	0.0	4.8	20.009	C
2 - A27 (S)	1102	276	765	2307	0.478	1098	1354	0.0	0.9	2.969	A
3 - A27 (W)	1944	486	81	2902	0.670	1936	1782	0.0	2.0	3.699	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	712	178	1265	1002	0.710	721	629	4.8	2.6	13.155	B
2 - A27 (S)	1040	260	701	2365	0.440	1040	1285	0.9	0.8	2.720	A
3 - A27 (W)	1808	452	84	2898	0.624	1809	1657	2.0	1.7	3.312	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	772	193	1339	947	0.815	766	707	2.6	4.0	19.234	C
2 - A27 (S)	1124	281	754	2317	0.485	1123	1351	0.8	0.9	3.014	A
3 - A27 (W)	1968	492	80	2903	0.678	1966	1798	1.7	2.1	3.837	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - A29 (E)	836	209	1325	958	0.872	829	609	4.0	5.8	26.104	D
2 - A27 (S)	1104	276	821	2256	0.489	1104	1332	0.9	1.0	3.123	A
3 - A27 (W)	1876	469	56	2924	0.642	1877	1869	2.1	1.8	3.442	A