

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

Path: T:\Projects\11000 Series Project Numbers\11324\ITB Land North of Walberton\Tech\Junc Models\Arcady\A27-A29 West\Saturn

Report generation date: 16/05/2017 16:58:25

»2031 LP with MIT, PM

»2031 LP with MIT + Dev, PM

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
2031 LP with MIT				
1 - A29 (N)	53.6	92.61	1.04	F
2 - Arundel Road	116.1	2599.50	2.94	F
3 - A29	0.7	5.38	0.42	A
4 - A27 (W)	12.1	15.60	0.93	C
2031 LP with MIT + Dev				
1 - A29 (N)	62.7	105.25	1.06	F
2 - Arundel Road	126.2	2696.43	3.00	F
3 - A29	0.7	5.45	0.42	A
4 - A27 (W)	14.3	18.28	0.94	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.

File summary

File Description

Title	A27-A29 West
Location	
Site number	
Date	16/05/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	I-TRANSPORT\Hotdesk
Description	A27-A29 Western roundabout junction - Calibrated - SATURN

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	PCU	PCU	perHour	s	-Hour	perHour

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	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2031 LP with MIT	PM	2031 Local Plan with Mitigaion (Without Development)	ONE HOUR	16:30	18:00	15	✓
D2	2031 LP with MIT + Dev	PM	2031 Local Plan with Mitigaion + Development	ONE HOUR	16:30	18:00	15	✓

Analysis Set Details

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

2031 LP with MIT, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A27/A29 (W)	Standard Roundabout	1,2,3,4	190.80	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A29 (N)	
2	Arundel Road	
3	A29	
4	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 (N)	7.40	11.30	22.0	42.0	56.0	23.0	
2 - Arundel Road	4.50	6.70	3.9	28.0	56.0	22.0	
3 - A29	3.70	7.70	22.0	19.0	56.0	24.0	
4 - A27 (W)	8.00	11.80	15.0	28.0	56.0	19.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - A29 (N)	Direct	Queue length survey	-260
2 - Arundel Road	None		
3 - A29	None		
4 - A27 (W)	Direct	Queue length survey	320

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A29 (N)	0.853	2886
2 - Arundel Road	0.585	1668
3 - A29	0.624	1922
4 - A27 (W)	0.867	3539

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2031 LP with MIT	PM	2031 Local Plan with Mitigation (Without Development)	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A29 (N)		ONE HOUR	✓	1712	100.000
2 - Arundel Road		ONE HOUR	✓	299	100.000
3 - A29		ONE HOUR	✓	435	100.000
4 - A27 (W)		ONE HOUR	✓	2691	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - A29 (N)	2 - Arundel Road	3 - A29	4 - A27 (W)
From	1 - A29 (N)	0	0	634	1078
	2 - Arundel Road	0	0	7	292
	3 - A29	376	0	0	59
	4 - A27 (W)	1542	362	787	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1 - A29 (N)	2 - Arundel Road	3 - A29	4 - A27 (W)
From	1 - A29 (N)	0	0	0	0
	2 - Arundel Road	0	0	0	0
	3 - A29	0	0	0	0
	4 - A27 (W)	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A29 (N)	1.04	92.61	53.6	F	1571	2356
2 - Arundel Road	2.94	2599.50	116.1	F	274	412
3 - A29	0.42	5.38	0.7	A	399	599
4 - A27 (W)	0.93	15.60	12.1	C	2469	3704

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1289	322	862	2150	0.599	1283	1439	0.0	1.5	4.124	A
2 - Arundel Road	225	56	1874	573	0.393	223	272	0.0	0.6	10.215	B
3 - A29	327	82	1025	1282	0.255	326	1071	0.0	0.3	3.761	A
4 - A27 (W)	2026	506	282	3295	0.615	2020	1069	0.0	1.6	2.809	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1539	385	1031	2006	0.767	1532	1721	1.5	3.2	7.485	A
2 - Arundel Road	269	67	2238	359	0.748	261	325	0.6	2.6	34.326	D
3 - A29	391	98	1220	1161	0.337	390	1280	0.3	0.5	4.669	A
4 - A27 (W)	2419	605	337	3247	0.745	2414	1273	1.6	2.9	4.296	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1885	471	1251	1819	1.036	1772	2092	3.2	31.4	44.660	E
2 - Arundel Road	329	82	2629	131	2.514	130	394	2.6	52.4	808.896	F
3 - A29	479	120	1243	1146	0.418	478	1516	0.5	0.7	5.381	A
4 - A27 (W)	2963	741	413	3181	0.931	2930	1308	2.9	11.1	12.919	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1885	471	1263	1808	1.043	1796	2109	31.4	53.6	92.613	F
2 - Arundel Road	329	82	2662	112	2.945	112	398	52.4	106.7	2599.500	F
3 - A29	479	120	1240	1148	0.417	479	1533	0.7	0.7	5.381	A
4 - A27 (W)	2963	741	414	3181	0.932	2959	1305	11.1	12.1	15.597	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1539	385	1049	1991	0.773	1739	1746	53.6	3.6	26.799	D
2 - Arundel Road	269	67	2457	231	1.161	231	330	106.7	116.1	1251.625	F
3 - A29	391	98	1321	1098	0.356	392	1368	0.7	0.6	5.103	A
4 - A27 (W)	2419	605	339	3246	0.745	2456	1374	12.1	3.0	4.763	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1289	322	867	2146	0.601	1297	1448	3.6	1.5	4.283	A
2 - Arundel Road	225	56	1891	562	0.400	557	273	116.1	33.0	486.076	F
3 - A29	327	82	1361	1072	0.305	328	1088	0.6	0.4	4.838	A
4 - A27 (W)	2026	506	283	3294	0.615	2031	1406	3.0	1.6	2.865	A

2031 LP with MIT + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A27/A29 (W)	Standard Roundabout	1,2,3,4	200.37	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2031 LP with MIT + Dev	PM	2031 Local Plan with Mitigation + Development	ONE HOUR	16:30	18:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A29 (N)		ONE HOUR	✓	1734	100.000
2 - Arundel Road		ONE HOUR	✓	299	100.000
3 - A29		ONE HOUR	✓	439	100.000
4 - A27 (W)		ONE HOUR	✓	2723	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - A29 (N)	2 - Arundel Road	3 - A29	4 - A27 (W)
From	1 - A29 (N)	0	0	637	1097
	2 - Arundel Road	0	0	7	292
	3 - A29	380	0	0	59
	4 - A27 (W)	1574	362	787	0

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		1 - A29 (N)	2 - Arundel Road	3 - A29	4 - A27 (W)
	1 - A29 (N)	0	0	0	0
	2 - Arundel Road	0	0	0	0
	3 - A29	0	0	0	0
	4 - A27 (W)	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A29 (N)	1.06	105.25	62.7	F	1591	2387
2 - Arundel Road	3.00	2696.43	126.2	F	274	412
3 - A29	0.42	5.45	0.7	A	403	604
4 - A27 (W)	0.94	18.28	14.3	C	2499	3748

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1305	326	862	2150	0.607	1299	1466	0.0	1.5	4.201	A
2 - Arundel Road	225	56	1890	563	0.400	222	272	0.0	0.7	10.496	B
3 - A29	331	83	1039	1273	0.260	329	1073	0.0	0.3	3.808	A
4 - A27 (W)	2050	513	285	3292	0.623	2043	1084	0.0	1.6	2.867	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1559	390	1031	2007	0.777	1552	1753	1.5	3.4	7.788	A
2 - Arundel Road	269	67	2257	348	0.772	260	325	0.7	2.8	37.767	E
3 - A29	395	99	1235	1151	0.343	394	1282	0.3	0.5	4.752	A
4 - A27 (W)	2448	612	341	3244	0.755	2442	1288	1.6	3.0	4.461	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1909	477	1248	1821	1.049	1781	2128	3.4	35.5	48.754	E
2 - Arundel Road	329	82	2636	127	2.593	126	393	2.8	53.6	854.046	F
3 - A29	483	121	1250	1142	0.423	483	1512	0.5	0.7	5.452	A
4 - A27 (W)	2998	750	418	3177	0.944	2959	1314	3.0	12.8	14.447	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1909	477	1263	1809	1.056	1800	2148	35.5	62.7	105.253	F
2 - Arundel Road	329	82	2665	110	2.999	110	398	53.6	108.5	2696.430	F
3 - A29	483	121	1246	1144	0.422	483	1529	0.7	0.7	5.446	A
4 - A27 (W)	2998	750	418	3177	0.944	2992	1311	12.8	14.3	18.276	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1559	390	1052	1988	0.784	1794	1783	62.7	3.9	39.004	E
2 - Arundel Road	269	67	2514	198	1.358	198	331	108.5	126.2	1351.523	F
3 - A29	395	99	1328	1093	0.361	395	1384	0.7	0.6	5.163	A
4 - A27 (W)	2448	612	342	3243	0.755	2493	1381	14.3	3.1	5.080	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - A29 (N)	1305	326	868	2146	0.608	1315	1475	3.9	1.6	4.380	A
2 - Arundel Road	225	56	1909	552	0.408	547	273	126.2	45.6	568.773	F
3 - A29	331	83	1366	1069	0.309	331	1090	0.6	0.5	4.879	A
4 - A27 (W)	2050	513	286	3291	0.623	2056	1411	3.1	1.7	2.930	A