

Junctions 9				
ARCADY 9 - Roundabout Module				
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Filename: A27-A29 West-AM-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 16:09:05

»2031 LP with MIT, AM

»2031 LP with MIT + Dev, AM

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
2031 LP with MIT				
1 - A29 (N)	2.0	3.92	0.66	A
2 - Arundel Road	2.1	15.18	0.68	C
3 - A29	2.7	19.96	0.74	C
4 - A27 (W)	1.8	3.55	0.64	A
2031 LP with MIT + Dev				
1 - A29 (N)	2.1	4.12	0.68	A
2 - Arundel Road	2.3	17.01	0.70	C
3 - A29	3.2	23.24	0.77	C
4 - A27 (W)	1.8	3.61	0.65	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 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	AM	2031 Local Plan with Mitigaion (Without Development)	ONE HOUR	07:00	08:30	15	✓
D2	2031 LP with MIT + Dev	AM	2031 Local Plan with Mitigaion + Development	ONE HOUR	07:00	08:30	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, AM

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	6.77	A

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)	None		
2 - Arundel Road	Direct	Queue length survey	320
3 - A29	Direct	Queue length survey	68
4 - A27 (W)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A29 (N)	0.853	3146
2 - Arundel Road	0.585	1988
3 - A29	0.624	1990
4 - A27 (W)	0.867	3219

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	AM	2031 Local Plan with Mitigation (Without Development)	ONE HOUR	07:00	08:30	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	✓	1651	100.000
2 - Arundel Road		ONE HOUR	✓	455	100.000
3 - A29		ONE HOUR	✓	466	100.000
4 - A27 (W)		ONE HOUR	✓	1634	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	214	1437
	2 - Arundel Road	0	0	2	453
	3 - A29	428	0	0	38
	4 - A27 (W)	1198	144	292	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)	0.66	3.92	2.0	A	1515	2272
2 - Arundel Road	0.68	15.18	2.1	C	418	626
3 - A29	0.74	19.96	2.7	C	428	641
4 - A27 (W)	0.64	3.55	1.8	A	1499	2249

Main Results for each time segment

07:00 - 07:15

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)	1243	311	327	2866	0.434	1240	1220	0.0	0.8	2.210	A
2 - Arundel Road	343	86	1459	1135	0.302	341	108	0.0	0.4	4.525	A
3 - A29	351	88	1419	1105	0.318	349	382	0.0	0.5	4.752	A
4 - A27 (W)	1230	308	321	2942	0.418	1227	1447	0.0	0.7	2.096	A

07:15 - 07:30

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)	1484	371	392	2812	0.528	1483	1460	0.8	1.1	2.707	A
2 - Arundel Road	409	102	1745	968	0.423	408	129	0.4	0.7	6.418	A
3 - A29	419	105	1697	931	0.450	418	456	0.5	0.8	6.992	A
4 - A27 (W)	1469	367	383	2887	0.509	1468	1731	0.7	1.0	2.534	A

07:30 - 07:45

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)	1818	454	479	2737	0.664	1814	1782	1.1	2.0	3.889	A
2 - Arundel Road	501	125	2135	739	0.677	496	158	0.7	2.0	14.485	B
3 - A29	513	128	2073	696	0.737	506	558	0.8	2.6	18.268	C
4 - A27 (W)	1799	450	465	2817	0.639	1796	2114	1.0	1.7	3.517	A

07:45 - 08:00

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)	1818	454	480	2736	0.664	1818	1790	2.0	2.0	3.919	A
2 - Arundel Road	501	125	2139	737	0.680	501	159	2.0	2.1	15.181	C
3 - A29	513	128	2081	692	0.742	512	559	2.6	2.7	19.964	C
4 - A27 (W)	1799	450	471	2811	0.640	1799	2122	1.7	1.8	3.555	A

08:00 - 08:15

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)	1484	371	393	2811	0.528	1488	1471	2.0	1.1	2.727	A
2 - Arundel Road	409	102	1751	964	0.424	414	130	2.1	0.7	6.603	A
3 - A29	419	105	1707	924	0.453	427	458	2.7	0.8	7.338	A
4 - A27 (W)	1469	367	392	2880	0.510	1472	1742	1.8	1.0	2.561	A

08:15 - 08:30

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)	1243	311	329	2865	0.434	1244	1226	1.1	0.8	2.224	A
2 - Arundel Road	343	86	1464	1132	0.303	344	109	0.7	0.4	4.577	A
3 - A29	351	88	1425	1100	0.319	352	383	0.8	0.5	4.821	A
4 - A27 (W)	1230	308	324	2939	0.419	1231	1454	1.0	0.7	2.111	A

2031 LP with MIT + Dev, AM

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	7.40	A

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	AM	2031 Local Plan with Mitigation + Development	ONE HOUR	07:00	08:30	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	✓	1691	100.000
2 - Arundel Road		ONE HOUR	✓	455	100.000
3 - A29		ONE HOUR	✓	468	100.000
4 - A27 (W)		ONE HOUR	✓	1647	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	219	1472
	2 - Arundel Road	0	0	2	453
	3 - A29	430	0	0	38
	4 - A27 (W)	1211	144	292	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)	0.68	4.12	2.1	A	1552	2328
2 - Arundel Road	0.70	17.01	2.3	C	418	626
3 - A29	0.77	23.24	3.2	C	429	644
4 - A27 (W)	0.65	3.61	1.8	A	1511	2267

Main Results for each time segment

07:00 - 07:15

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)	1273	318	327	2866	0.444	1270	1232	0.0	0.8	2.250	A
2 - Arundel Road	343	86	1489	1117	0.307	341	108	0.0	0.4	4.626	A
3 - A29	352	88	1445	1088	0.324	350	385	0.0	0.5	4.866	A
4 - A27 (W)	1240	310	322	2940	0.422	1237	1473	0.0	0.7	2.110	A

07:15 - 07:30

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)	1520	380	392	2812	0.541	1519	1473	0.8	1.2	2.782	A
2 - Arundel Road	409	102	1781	947	0.432	408	129	0.4	0.8	6.666	A
3 - A29	421	105	1728	912	0.462	419	461	0.5	0.8	7.290	A
4 - A27 (W)	1481	370	385	2886	0.513	1479	1762	0.7	1.0	2.557	A

07:30 - 07:45

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)	1862	465	479	2737	0.680	1858	1797	1.2	2.1	4.079	A
2 - Arundel Road	501	125	2179	714	0.702	495	158	0.8	2.2	16.041	C
3 - A29	515	129	2110	673	0.766	507	564	0.8	3.0	20.704	C
4 - A27 (W)	1813	453	466	2816	0.644	1810	2152	1.0	1.8	3.570	A

07:45 - 08:00

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)	1862	465	480	2736	0.680	1862	1806	2.1	2.1	4.116	A
2 - Arundel Road	501	125	2183	711	0.704	501	159	2.2	2.3	17.009	C
3 - A29	515	129	2119	668	0.772	514	565	3.0	3.2	23.237	C
4 - A27 (W)	1813	453	473	2810	0.645	1813	2161	1.8	1.8	3.612	A

08:00 - 08:15

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)	1520	380	393	2811	0.541	1524	1486	2.1	1.2	2.807	A
2 - Arundel Road	409	102	1787	943	0.434	415	130	2.3	0.8	6.895	A
3 - A29	421	105	1740	904	0.465	430	462	3.2	0.9	7.733	A
4 - A27 (W)	1481	370	395	2877	0.515	1484	1775	1.8	1.1	2.590	A

08:15 - 08:30

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)	1273	318	329	2865	0.444	1275	1238	1.2	0.8	2.264	A
2 - Arundel Road	343	86	1495	1114	0.307	344	109	0.8	0.4	4.681	A
3 - A29	352	88	1452	1084	0.325	354	387	0.9	0.5	4.944	A
4 - A27 (W)	1240	310	325	2938	0.422	1241	1481	1.1	0.7	2.123	A