

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

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

Report generation date: 07/07/2017 14:26:26

»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 (E)	51.7	196.76	1.12	F
2 - A27 (S)	3.6	6.89	0.79	A
3 - A27 (W)	4.1	8.32	0.81	A
2031 LP with MIT + Dev				
1 - A29 (E)	61.1	231.94	1.15	F
2 - A27 (S)	4.0	7.47	0.81	A
3 - A27 (W)	4.4	8.92	0.82	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 - 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 Mitigaiton (Without Development)	ONE HOUR	07:00	08:30	15	✓
D2	2031 LP with MIT + Dev	AM	2031 Local Plan with Mitigaiton + 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	Geometry	1 - A29 (E) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
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 (E)	Standard Roundabout	1,2,3	42.70	E

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	-492
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	1849
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	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 (E)		ONE HOUR	✓	770	100.000
2 - A27 (S)		ONE HOUR	✓	1752	100.000
3 - A27 (W)		ONE HOUR	✓	1626	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
	1 - A29 (E)	0	0	770
	2 - A27 (S)	660	211	881
	3 - A27 (W)	544	1082	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
	1 - A29 (E)	0	0	0
	2 - A27 (S)	0	0	0
	3 - A27 (W)	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 (E)	1.12	196.76	51.7	F	707	1060
2 - A27 (S)	0.79	6.89	3.6	A	1608	2411
3 - A27 (W)	0.81	8.32	4.1	A	1492	2238

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 (E)	580	145	970	1105	0.524	575	904	0.0	1.1	6.740	A
2 - A27 (S)	1319	330	575	2616	0.504	1315	970	0.0	1.0	2.759	A
3 - A27 (W)	1224	306	654	2501	0.490	1220	1237	0.0	1.0	2.804	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 (E)	692	173	1160	960	0.721	687	1081	1.1	2.5	12.931	B
2 - A27 (S)	1575	394	687	2513	0.627	1572	1160	1.0	1.7	3.814	A
3 - A27 (W)	1462	365	782	2383	0.613	1459	1477	1.0	1.6	3.886	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 (E)	848	212	1416	763	1.110	744	1320	2.5	28.5	89.760	F
2 - A27 (S)	1929	482	744	2461	0.784	1922	1416	1.7	3.5	6.586	A
3 - A27 (W)	1790	448	955	2224	0.805	1781	1710	1.6	3.9	7.948	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 (E)	848	212	1423	758	1.118	755	1325	28.5	51.7	196.760	F
2 - A27 (S)	1929	482	755	2450	0.787	1929	1423	3.5	3.6	6.886	A
3 - A27 (W)	1790	448	959	2221	0.806	1790	1725	3.9	4.1	8.323	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 (E)	692	173	1170	953	0.727	886	1088	51.7	3.1	94.026	F
2 - A27 (S)	1575	394	886	2329	0.676	1581	1170	3.6	2.1	4.850	A
3 - A27 (W)	1462	365	786	2379	0.614	1472	1681	4.1	1.6	4.008	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 (E)	580	145	976	1101	0.526	588	909	3.1	1.1	7.114	A
2 - A27 (S)	1319	330	588	2605	0.506	1323	976	2.1	1.0	2.820	A
3 - A27 (W)	1224	306	658	2497	0.490	1227	1253	1.6	1.0	2.842	A

2031 LP with MIT + Dev, AM

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	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 (E)	Standard Roundabout	1,2,3	49.07	E

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 (E)		ONE HOUR	✓	771	100.000
2 - A27 (S)		ONE HOUR	✓	1806	100.000
3 - A27 (W)		ONE HOUR	✓	1640	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
From	1 - A29 (E)	0	1	770
	2 - A27 (S)	664	221	921
	3 - A27 (W)	544	1096	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		1 - A29 (E)	2 - A27 (S)	3 - A27 (W)
	1 - A29 (E)	0	0	0
	2 - A27 (S)	0	0	0
	3 - A27 (W)	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 (E)	1.15	231.94	61.1	F	707	1061
2 - A27 (S)	0.81	7.47	4.0	A	1657	2486
3 - A27 (W)	0.82	8.92	4.4	A	1505	2257

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 (E)	580	145	988	1092	0.532	576	907	0.0	1.1	6.923	A
2 - A27 (S)	1360	340	575	2616	0.520	1355	989	0.0	1.1	2.846	A
3 - A27 (W)	1235	309	664	2491	0.496	1231	1266	0.0	1.0	2.849	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 (E)	693	173	1182	943	0.735	687	1084	1.1	2.6	13.740	B
2 - A27 (S)	1624	406	686	2514	0.646	1621	1183	1.1	1.8	4.017	A
3 - A27 (W)	1474	369	794	2372	0.622	1472	1513	1.0	1.6	3.988	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 (E)	849	212	1442	744	1.141	728	1323	2.6	32.8	102.473	F
2 - A27 (S)	1988	497	727	2476	0.803	1980	1443	1.8	3.9	7.134	A
3 - A27 (W)	1806	451	970	2211	0.817	1795	1737	1.6	4.2	8.456	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 (E)	849	212	1450	738	1.150	736	1330	32.8	61.1	231.937	F
2 - A27 (S)	1988	497	735	2469	0.805	1988	1451	3.9	4.0	7.467	A
3 - A27 (W)	1806	451	974	2207	0.818	1805	1749	4.2	4.4	8.924	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 (E)	693	173	1192	936	0.741	919	1092	61.1	4.5	135.001	F
2 - A27 (S)	1624	406	918	2300	0.706	1630	1193	4.0	2.4	5.425	A
3 - A27 (W)	1474	369	799	2368	0.623	1485	1749	4.4	1.7	4.127	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 (E)	580	145	994	1087	0.534	594	912	4.5	1.2	7.486	A
2 - A27 (S)	1360	340	593	2600	0.523	1365	995	2.4	1.1	2.929	A
3 - A27 (W)	1235	309	669	2487	0.497	1237	1289	1.7	1.0	2.889	A