

Junctions 8				
ARCADY 8 - Roundabout Module				
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Report generation date: 23/08/2024 05:47:14

« (Default Analysis Set) - Scenario 1, PM

- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Pedestrian Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
A1 - Scenario 1				
Arm A	11.11	60.12	0.95	F
Arm B	11.30	70.04	0.95	F
Arm C	6.87	54.40	0.90	F

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

"D1 - Scenario 1, PM" model duration: 17:00 - 18:30

"D2 - Scenario 2, AM" model duration: 08:00 - 09:30

Run using Junctions 8.0.6.541 at 23/08/2024 05:47:14

File summary

Title	(untitled)
Location	
Site Number	
Date	04/07/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Marie.Feuvrier
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - Scenario 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm B - Zebra Details	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm C - Zebra Details	Pedestrian crossing uses default flow of 0. Is this correct?

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relations
Scenario 1, PM	Scenario 1	PM		ONE HOUR	17:00	18:30	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	A,B,C	61.94	F

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
A	A	(untitled)	
B	B	(untitled)	
C	C	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00

Mini Roundabout Geometry

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
A	3.20	3.20	4.80	2.70	15.40	15.70	0.00	
B	3.20	3.00	5.00	1.90	13.00	10.00	0.00	
C	3.20	3.20	4.00	1.30	12.70	9.60	0.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	Zebra
C	Zebra

Zebra Crossings

Arm	Space between crossing and junction entry (PCU)	Vehicles queuing on exit (PCU)	Central Refuge	Crossing Data Type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
B	1.00	50.00		Distance	9.00	6.43				
C	1.00	20.00		Distance	7.00	5.00				

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.609	900.180
B		(calculated)	(calculated)	0.531	776.916
C		(calculated)	(calculated)	0.531	721.102

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	643.50	100.000
B	ONE HOUR	✓	559.00	100.000
C	ONE HOUR	✓	444.50	100.000

Pedestrian Flows

General Flows Data

Arm	Profile Type	Average Pedestrian Flow (Ped/hr)
A	-	-
B	ONE HOUR	0.00
C	ONE HOUR	0.00

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

	To			
		A	B	C
From	A	0.000	417.000	226.500
	B	307.000	0.000	252.000
	C	218.000	226.500	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

	To			
		A	B	C
From	A	0.00	0.65	0.35
	B	0.55	0.00	0.45
	C	0.49	0.51	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

From	To			
		A	B	C
	A	1.000	1.040	1.010
	B	1.020	1.000	1.010
	C	1.000	1.010	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

From	To			
		A	B	C
	A	0.0	4.0	1.0
	B	2.0	0.0	1.0
	C	0.0	1.0	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)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.95	60.12	11.11	F	590.49	885.73	408.05	27.64	4.53	408.15	27.65
B	0.95	70.04	11.30	F	512.95	769.42	413.09	32.21	4.59	413.21	32.22
C	0.90	54.40	6.87	F	407.88	611.82	280.84	27.54	3.12	280.93	27.55

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	484.46	121.12	478.30	389.45	168.02	0.00	797.88	734.31	0.607	0.00	1.54	11.387	B
B	420.84	105.21	414.67	477.97	168.35	0.00	687.56	639.73	0.612	0.00	1.54	13.119	B
C	334.64	83.66	329.74	355.29	227.74	0.00	600.25	534.67	0.558	0.00	1.23	13.153	B

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	578.49	144.62	573.49	467.40	201.77	0.00	777.34	734.31	0.744	1.54	2.79	17.733	C
B	502.53	125.63	497.46	573.40	201.86	0.00	669.77	639.73	0.750	1.54	2.81	20.602	C
C	399.60	99.90	395.97	426.12	273.20	0.00	576.13	534.67	0.694	1.23	2.13	19.677	C

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	708.51	177.13	683.94	557.48	241.90	0.00	752.90	734.31	0.941	2.79	8.93	43.105	E
B	615.47	153.87	591.15	685.10	240.73	0.00	649.14	639.73	0.948	2.81	8.89	49.287	E
C	489.40	122.35	474.73	507.23	324.66	0.00	548.82	534.67	0.892	2.13	5.80	42.185	E

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	708.51	177.13	699.80	570.64	247.20	0.00	749.68	734.31	0.945	8.93	11.11	60.121	F
B	615.47	153.87	605.84	700.68	246.32	0.00	646.18	639.73	0.952	8.89	11.30	70.042	F
C	489.40	122.35	485.12	519.43	332.72	0.00	544.54	534.67	0.899	5.80	6.87	54.399	F

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	578.49	144.62	609.49	497.42	212.31	0.00	770.92	734.31	0.750	11.11	3.36	26.372	D
B	502.53	125.63	533.65	607.27	214.53	0.00	663.05	639.73	0.758	11.30	3.52	33.027	D
C	399.60	99.90	416.65	455.10	293.08	0.00	565.58	534.67	0.707	6.87	2.61	26.542	D

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	484.46	121.12	491.27	401.80	173.13	0.00	794.77	734.31	0.610	3.36	1.66	12.469	B
B	420.84	105.21	428.19	491.49	172.92	0.00	685.13	639.73	0.614	3.52	1.68	14.608	B
C	334.64	83.66	339.77	365.95	235.16	0.00	596.31	534.67	0.561	2.61	1.33	14.369	B

Queueing Delay Results for each time segment

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	21.35	1.42	11.387	B	B
B	21.21	1.41	13.119	B	B
C	16.95	1.13	13.153	B	B

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	38.08	2.54	17.733	C	B
B	38.02	2.53	20.602	C	C
C	29.26	1.95	19.677	C	B

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	102.05	6.80	43.105	E	D
B	100.39	6.69	49.287	E	D
C	69.62	4.64	42.185	E	D

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	152.21	10.15	60.121	F	E
B	153.24	10.22	70.042	F	E
C	96.27	6.42	54.399	F	D

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	67.57	4.50	26.372	D	C
B	72.83	4.86	33.027	D	C
C	47.33	3.16	26.542	D	C

Queueing Delay results: (18:15-18:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	26.78	1.79	12.469	B	B
B	27.39	1.83	14.608	B	B
C	21.42	1.43	14.369	B	B