NRB consulting engineers

APPENDIX E

Junction9 PiCADY Output
(Site Access T-Junction)

Capacity Assessment With Subject Development Open and Occupied
Priority Controlled Site Access Junction

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2024 Opening Year AM Peak Hr	<1	0.09
2024 Opening Year PM Peak Hr	<1	0.07
2039 Design Year AM Peak Hr	<1	0.1
2039 Design Year PM Peak Hr	<1	0.07

All Results Above are WAY below the recommended RFC of 0.85 (85% Capacity) and therefore no problems whatsoever are anticipated at the Junction in terms of Capacity or excessive vehicle Queues. The Model output demonstrates very low RFCs, signifying high reserve capacity available.

NB - Any Small Changes to Selected Opening Year 2024 or Design Year 2039, or indeed significantly higher traffic volumes experienced, as clearly deductable from the positive results presented, will clearly have no significant implications in terms of the conclusions of the Study. The Excess Capacity in the Junction is such that the modelled RFCs are practically immeasurable.

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

Filename: 2024 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2022\22-088 LV Hotel Ir Drucker\Calculations\Hotel Access Capacity
Report generation date: 22/11/2022 13:37:16

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2024							
Stream B-AC	0.1	7.62	0.09	A	0.1	7.65	0.07	A
Stream C-AB	0.0	6.19	0.01	A	0.0	6.36	0.02	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	22/11/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		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 segment length (min)
D1	2024	AM	ONE HOUR	07:45	09:15	15
D2	2024	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	2.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	M Hall Rd East		Major
B	Hotel Access		Minor
C	M Hall Rd W		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			50.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519	0.094	0.239	0.150	0.341
1	B-C	655	0.100	0.254	-	-
1	C-B	603	0.234	0.234	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	57	100.000
B		✓	45	100.000
C		✓	48	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	32
	B	36	0	9
	C	41	7	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.09	7.62	0.1	A
C-AB	0.01	6.19	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	528	0.064	34	0.1	7.281	A
C-AB	5	593	0.009	5	0.0	6.122	A
C-A	31			31			
A-B	19			19			
A-C	24			24			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	40	525	0.077	40	0.1	7.424	A
C-AB	6	591	0.011	6	0.0	6.152	A
C-A	37			37			
A-B	22			22			
A-C	29			29			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	50	522	0.095	49	0.1	7.623	A
C-AB	8	589	0.013	8	0.0	6.194	A
C-A	45			45			
A-B	28			28			
A-C	35			35			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	50	522	0.095	50	0.1	7.624	A
C-AB	8	589	0.013	8	0.0	6.194	A
C-A	45			45			
A-B	28			28			
A-C	35			35			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	40	525	0.077	41	0.1	7.430	A
C-AB	6	591	0.011	6	0.0	6.152	A
C-A	37			37			
A-B	22			22			
A-C	29			29			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	528	0.064	34	0.1	7.289	A
C-AB	5	593	0.009	5	0.0	6.123	A
C-A	31			31			
A-B	19			19			
A-C	24			24			

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	1.40	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 segment length (min)
D2	2024	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	112	100.000
B		✓	31	100.000
C		✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	81
	B	25	0	6
	C	54	8	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.07	7.65	0.1	A
C-AB	0.02	6.36	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	23	516	0.045	23	0.0	7.301	A
C-AB	6	584	0.010	6	0.0	6.231	A
C-A	41			41			
A-B	23			23			
A-C	61			61			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	28	511	0.054	28	0.1	7.443	A
C-AB	7	580	0.012	7	0.0	6.284	A
C-A	49			49			
A-B	28			28			
A-C	73			73			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	505	0.068	34	0.1	7.645	A
C-AB	9	575	0.015	9	0.0	6.357	A
C-A	59			59			
A-B	34			34			
A-C	89			89			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	505	0.068	34	0.1	7.645	A
C-AB	9	575	0.015	9	0.0	6.357	A
C-A	59			59			
A-B	34			34			
A-C	89			89			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	28	511	0.054	28	0.1	7.448	A
C-AB	7	580	0.012	7	0.0	6.284	A
C-A	49			49			
A-B	28			28			
A-C	73			73			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	23	516	0.045	23	0.0	7.305	A
C-AB	6	584	0.010	6	0.0	6.232	A
C-A	41			41			
A-B	23			23			
A-C	61			61			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

Filename: 2039 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2022\22-088 LV Hotel Ir Drucker\Calculations\Hotel Access Capacity
Report generation date: 22/11/2022 13:42:02

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2039							
Stream B-AC	0.1	7.66	0.10	A	0.1	7.72	0.07	A
Stream C-AB	0.0	6.21	0.01	A	0.0	6.39	0.02	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	22/11/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		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 segment length (min)
D1	2039	AM	ONE HOUR	07:45	09:15	15
D2	2039	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	2.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	M Hall Rd East		Major
B	Hotel Access		Minor
C	M Hall Rd W		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			50.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519	0.094	0.239	0.150	0.341
1	B-C	655	0.100	0.254	-	-
1	C-B	603	0.234	0.234	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2039	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	62	100.000
B		✓	45	100.000
C		✓	54	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	37
	B	36	0	9
	C	47	7	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.10	7.66	0.1	A
C-AB	0.01	6.21	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	526	0.064	34	0.1	7.303	A
C-AB	5	592	0.009	5	0.0	6.131	A
C-A	35			35			
A-B	19			19			
A-C	28			28			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	40	523	0.077	40	0.1	7.452	A
C-AB	6	590	0.011	6	0.0	6.163	A
C-A	42			42			
A-B	22			22			
A-C	33			33			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	50	519	0.095	49	0.1	7.659	A
C-AB	8	588	0.013	8	0.0	6.206	A
C-A	52			52			
A-B	28			28			
A-C	41			41			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	50	519	0.095	50	0.1	7.659	A
C-AB	8	588	0.013	8	0.0	6.206	A
C-A	52			52			
A-B	28			28			
A-C	41			41			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	40	523	0.077	41	0.1	7.458	A
C-AB	6	590	0.011	6	0.0	6.165	A
C-A	42			42			
A-B	22			22			
A-C	33			33			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	34	526	0.064	34	0.1	7.311	A
C-AB	5	592	0.009	5	0.0	6.134	A
C-A	35			35			
A-B	19			19			
A-C	28			28			