CONSULTING ENGINEERS

For: Chadwicks Group

Proposed Warehouse Extension, Ashfield, Naas Road

Traffic and Transportation Assessment

MAY 2022

MHL & Associates Ltd.
Consulting Engineers

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1 NON TECHNICAL SUMMARY

M.H.L. & Associates Ltd. Consulting Engineers has been engaged by Chadwicks Group to prepare a Traffic and Transportation Assessment (TTA) in support of a Clarification of Additional Information request for a planning permission of a warehouse extension at Naas Road, Dublin.

The site is situated off the N7 Naas Road approximately 800m west of the Red Cow Interchange to the southwest of Dublin City Centre. The site is accessed from an existing left in, left out only priority junction with the N7 Naas Road. The development access road forms the priority junction with the slip lane / bus lane adjacent to the Naas Road mainline.

In accordance with the TII's "Traffic and Transport Assessment Guidelines", the traffic analysis was undertaken for the following scenarios for both the AM and PM peak hours:

- **Base Year (2022)**
- **Opening Year (2024) without Development**
- **Opening Year (2024) with Development**
- **Opening Year +5 (2029) without Development**
- **Opening Year +5 (2029) with Development**
- **Opening Year +15 (2039) without Development**
- **Opening Year +15 (2039) with Development**

This TTA assessment focused on the entrance junction to the Ashfield Industrial Estate, which is a left in, left out priority junction.

As part of this assessment, peak hour traffic flows were recorded by third party traffic counters for the assessed junction, with these traffic counts recorded on the 26/04/2022. These counts been factored up to the modelling year scenarios 2022 through to 2039 with TII expansion factors.

The proposed 869 sq.m development, (716 sq.m new extension and 153 sq.m to be retained) will increase traffic on the adjoining network by 3 No. trips in the morning peak hour and 2 No. trips in the evening peak hour, assuming all traffic generated by the development is new to the network.

The development is modelled to increase traffic %RFC at the Junction with N7 by circa 1% for both morning and evening peaks in the Opening Year of the development, showing the increase is negligible from a junction capacity perspective.

2 EXISTING SITE

The site is situated off the N7 Naas Road approximately 800m west of the Red Cow Interchange to the southwest of Dublin City Centre. The site is accessed from an existing left in, left out only priority junction with the N7 Naas Road. The estate access road forms the priority junction with the slip lane / bus lane adjacent to the Naas Road mainline. This ensures traffic exiting the development site does not have to merge with mainline N7 traffic. This slip lane continues to Exit 1A of the N7 (Newlands Cross) where vehicles can merge with the N7 or travel north/south on the R113.

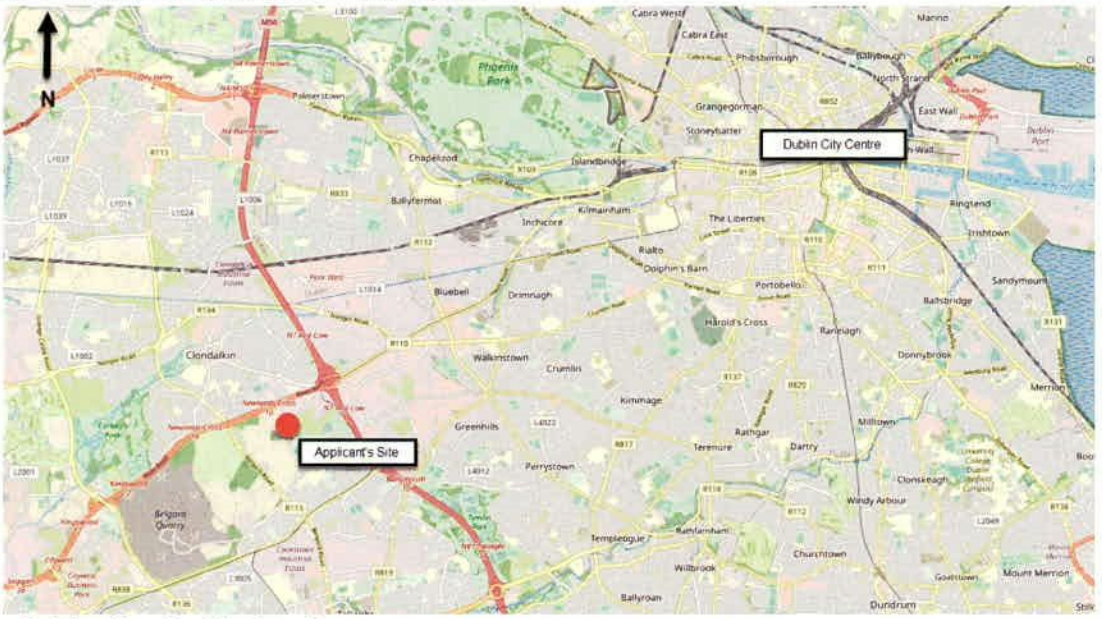

Figure 2.1 Applicant's Site Location

Figure 2.2 Applicant's Site Location. Analysed Junction Noted.

3 PROPOSED DEVELOPMENT

The proposed development is to consist of the retention for 2 bay portal frame, additional floor area to existing industrial unit. Permission for roofing of 2 bay portal frame structure; extension to existing industrial unit; construction of a concrete resurfaced area in main yard; minor internal layout and elevational revisions to existing industrial unit and all associated site works including underground surface water attenuation and related utilities and works.

Figure 3.1 Development Site (Credit: Google)

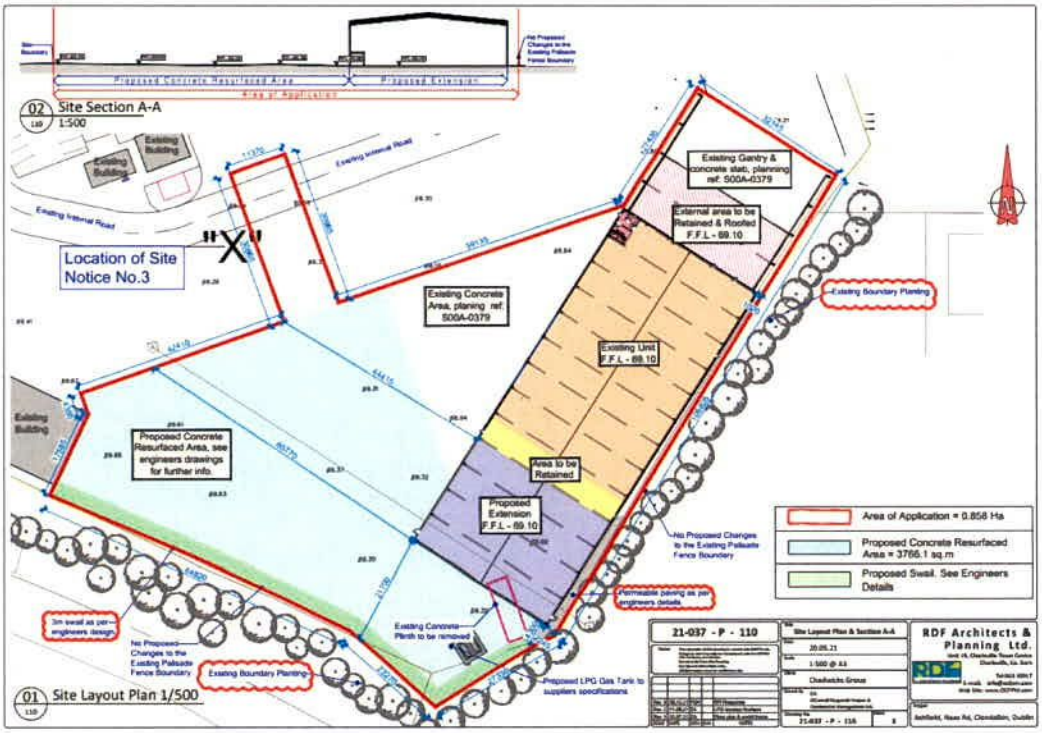

Figure 3.2 Site Layout Map (Credit: RDF Architects and Planning Ltd.)

4 TRAFFIC

4.1 Traffic Generation

The client has previously stated the following:

There will be no increase in staff generated transport to the site. It is anticipated that **weekly** deliveries and collection of steel for the development will increase from two to three HGV trips. This is a minimal increase of 1 additional trip per week.

1 No. HGV trip per week will have no significant impact on the surrounding road network. However, in order to ensure a robust analysis a 10% increase in HGV movements has been assumed. Assuming 25% HGV movements at the junction this amounts to 3 No. HGV trips during the morning peak and 2 No. trips in the evening peak hour.

	AM PEAK		PM PEAK	
	Arrivals	Departures	Arrivals	Departures
Current Traffic	*65*	*24*	*12*	*65*
25% HGVs	*16*	*6*	*3*	*16*
10% increase in HGVs	*2*	*1*	*0*	*2*
Total Trips Generated	2	1	0	2
	3		2	

Figure 4.1: 10% Increase in HGV Movements

4.2 Site Traffic Counts

Traffic counts conducted on Tuesday 26th of April 2022 were utilised to establish the actual AM & PM Peak traffic hours at the junction for the purposes of this assessment. Traffic counts were undertaken for a 24-hour period to ensure the peak hours were covered. The morning peak hour was found to be between 07:30 and 08:30 and the evening peak was between 17:00 and 18:00. These existing junction traffic counts were growth factored as described in Chapter 5. Based on the traffic counts and considering the recommendation of the Guidelines for Traffic and Transportation Assessments, the peak hours considered in this TTA are reflective of the demand case for the site.

4.3 Traffic Volumes

Traffic counts taken at each of the assessed junctions were used as the basis of the modelling, producing morning and evening O/D Matrices. The traffic flows through each junction are shown in the following figures.

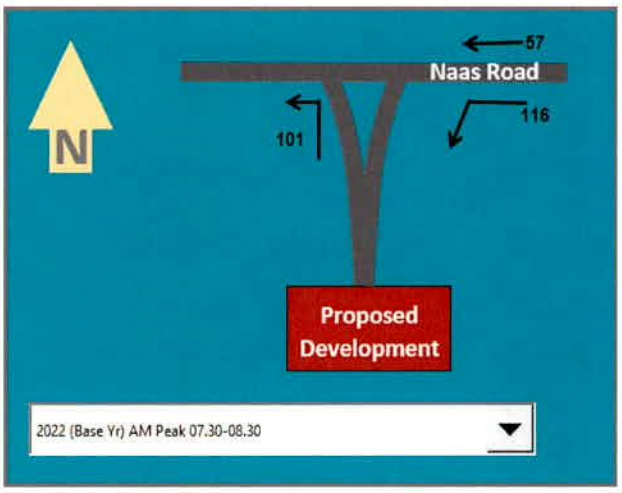

Figure 4.2: 2022 AM Traffic Flows

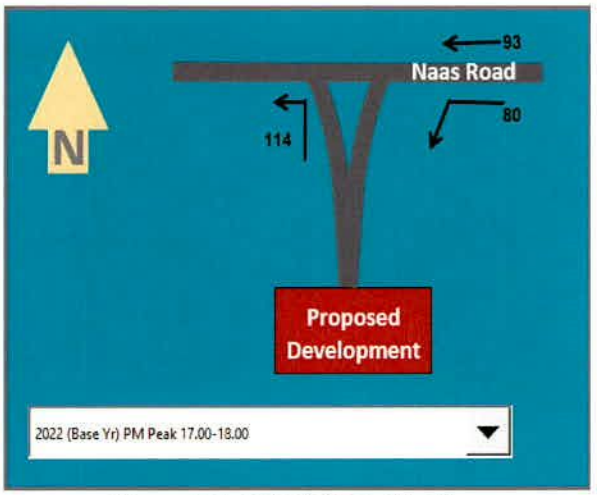

Figure 4.3: 2022 PM Traffic Flows

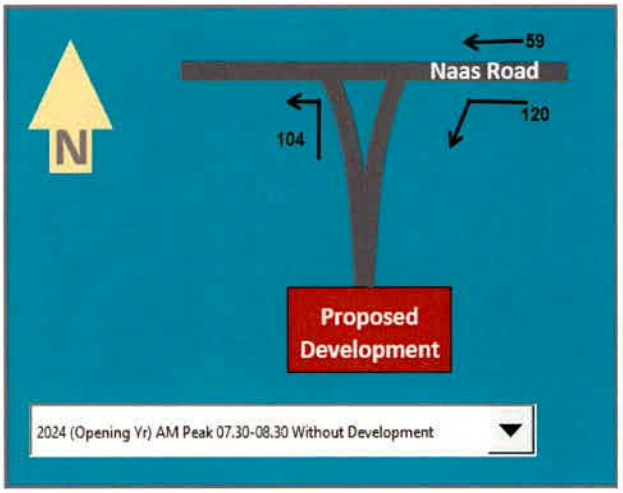

Figure 4.4: 2024 AM Traffic Flows

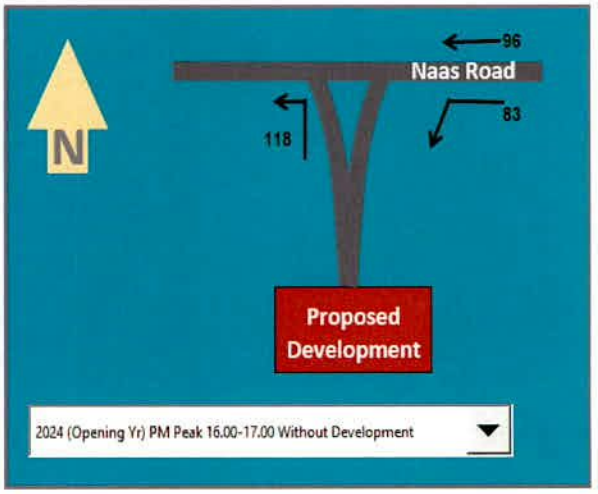

Figure 4.5: 2024 PM Traffic Flows

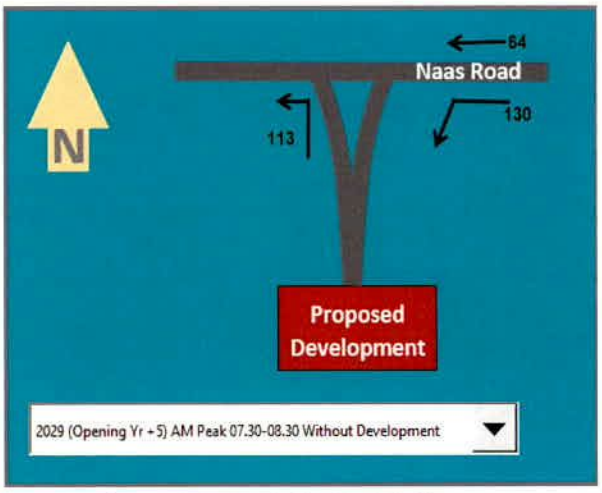

Figure 4.6: 2029 AM Traffic Flows

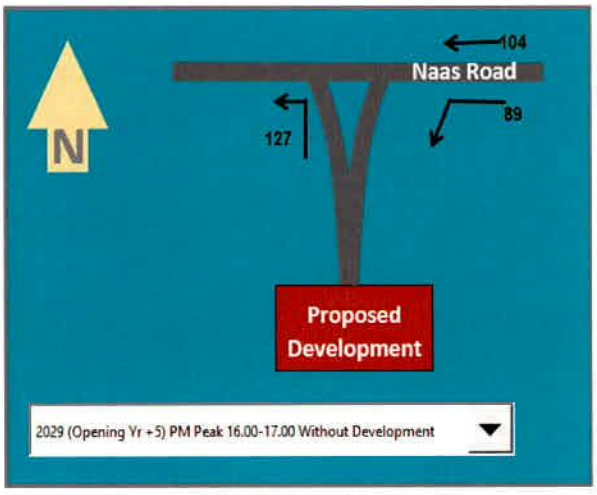

Figure 4.7: 2029 PM Traffic Flows

Figure 4.8: 2039 AM Traffic flows

Figure 4.9: 2039 PM Traffic flows

5 TRAFFIC ASSESSMENT

The base year is taken as 2022 as this was the year the traffic counts were undertaken. It is anticipated that the first year of operation, subject to a positive outcome from the planning process would be 2024. In accordance with the Guidelines for Traffic and Transportation Assessments as published by the TII, a traffic analysis is required to be undertaken for the Opening Year, Opening Year plus five years and Opening Year plus fifteen years.

The TII publication "Project Appraisal Guidelines for National Routes Unit 5.3 – Travel Demand Projections" was used to calculate growth factors for the road network traffic. Figure 6.1 below shows the calculated growth factors:

			Cars/LGV	HGV	Combined
Count %			75%	25%	
2022	to	2024	1.027	1.048	**1.032**
2022	to	2029	1.098	1.178	**1.118**
2022	to	2039	1.147	1.376	**1.204**

NRA Project Appraisal Guidelines- 5.5 forecasting
Appendix 3 - Guidance on traffic modelling

Figure 5.1 Future Projected Growth Rates

The effects of traffic growth on the existing network plus the additional traffic generated by the proposed development, have been compiled to build junction diagrams of the existing junction.

6 TRAFFIC MODELLING

6.1 Junctions 9 Analysis

In order to assess the capacity of the junction with Naas Road, traffic models of the priority junction were produced using the Picady traffic modelling software.

The output movements from the models are based on the assigned junction arms. The arms are designated A to C for the T Junction, as shown below.

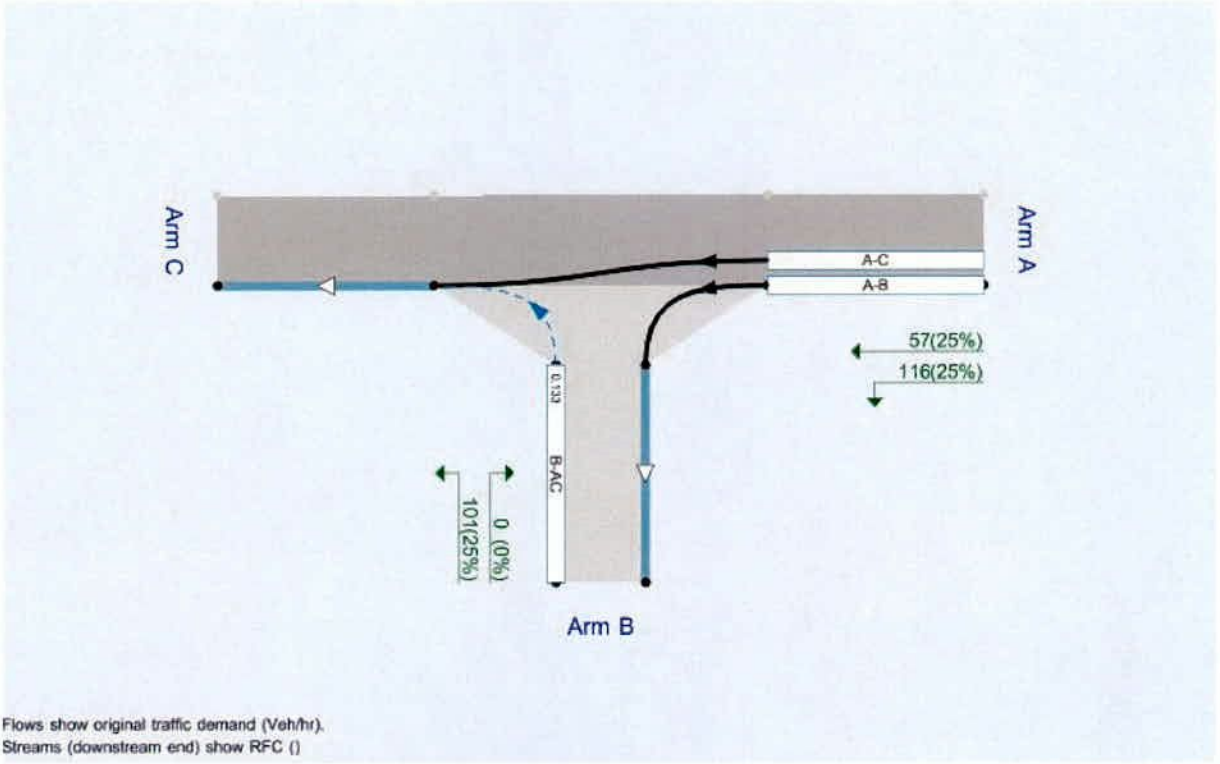

Figure 6.1: Junction 1 – Ashfield Industrial Estate Access Junction
(Arm A – Naas Rd E, Arm B – Development Entrance, Arm C – Naas Rd W.

The output result sheets from the traffic modelling software consist of tables of demand flow, capacities, queues, and delays for each 15-minute time segment of the peak hour analysis.

The Arcady output table contains information on maximum queue length, delay, and Ratio of Flow to Capacity (RFC). The RFC provides the basis for judging the acceptability of junction design and the capacity of existing junctions. Generally, an RFC of 0.85 or less is considered acceptable during the peak period. An RFC of this value indicates that at peak times the junction is at 85% of its operational capacity and therefore has a practical reserve capacity at a junction required to cater for periods of unusually high traffic flow, such as bank holiday weekends, etc. The degree of saturation of a junction is a measure of the capacity of the junction. A junction with an RFC of 0.85 would be considered to be operating at a degree of saturation of 100%.

The following summary junction performance tables for J1 describes the RFC, Delay and Queue values for both morning and evening peaks for all design scenarios.

	AM						PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	2022											
Stream B-AC	D1	0.2	7.97	0.20	A	246 % [Stream B-AC]	D2	0.3	8.36	0.23	A	202 % [Stream B-AC]
Stream C-AB		0.0	0.00	0.00	A			0.0	0.00	0.00	A	
	2024 Without Development											
Stream B-AC	D3	0.3	8.05	0.20	A	236 % [Stream B-AC]	D9	0.3	8.47	0.23	A	192 % [Stream B-AC]
Stream C-AB		0.0	0.00	0.00	A			0.0	0.00	0.00	A	
	2024 With Development											
Stream B-AC	D4	0.3	8.07	0.21	A	233 % [Stream B-AC]	D10	0.3	8.52	0.24	A	188 % [Stream B-AC]
Stream C-AB		0.0	0.00	0.00	A			0.0	0.00	0.00	A	
	2029 Without Development											
Stream B-AC	D5	0.3	8.28	0.22	A	209 % [Stream B-AC]	D11	0.3	8.75	0.25	A	171 % [Stream B-AC]
Stream C-AB		0.0	0.00	0.00	A			0.0	0.00	0.00	A	
	2029 With Development											
Stream B-AC	D6	0.3	8.31	0.22	A	207 % [Stream B-AC]	D12	0.3	8.80	0.26	A	167 % [Stream B-AC]
Stream C-AB		0.0	0.00	0.00	A			0.0	0.00	0.00	A	
	2039 Without Development											
Stream B-AC	D7	0.3	8.53	0.24	A	187 % [Stream B-AC]	D13	0.4	9.06	0.28	A	151 % [Stream B-AC]
Stream C-AB		0.0	0.00	0.00	A			0.0	0.00	0.00	A	
	2039 With Development											
Stream B-AC	D8	0.3	8.56	0.24	A	184 % [Stream B-AC]	D14	**0.4**	**9.12**	**0.28**	**A**	**148 % [Stream B-AC]**
Stream C-AB		0.0	0.00	0.00	A			**0.0**	**0.00**	**0.00**	**A**	

Table 6.1: Junction 1 Summary Table

Junction 1 – Ashfield Industrial Estate Access Junction

A maximum RFC of 28% occurs in the PM peak for the 2039 with development scenario. This occurs on Arm B. The maximum RFC in the AM peak for the 2039 with development scenario is 24%. There is a maximum increase of 1% in RFC at the junction as a result of the proposed development. All arms of the junction are operating well below capacity up to and including the 2039 with development scenario.

6.2 Cumulative Impact

The overall impact of this proposed development on the assessed junction is to increase traffic %RFC by a maximum of 1% for both the AM and PM peak hours. The proposed development will have no significant impact on the operation of this junction, and it will continue to operate below capacity up to and including the 2039 with development scenario. It is also acknowledged the vehicles exiting the development must continue to the Exit 1A junction (Newlands Cross) of the N7 and the R113. This junction has not been assessed as part of this report however, as the traffic generated by the development is minimal it is thought that there will be no significant impact on the operation of this junction either.

7 SUMMARY CONCLUSION

In accordance with the TII's "Traffic and Transport Assessment Guidelines", the traffic analysis was undertaken for the following scenarios for both the AM and PM peak hours:

- **Base Year (2022)**
- **Opening Year (2024) without Development**
- **Opening Year (2024) with Development**
- **Opening Year +5 (2029) without Development**
- **Opening Year +5 (2029) with Development**
- **Opening Year +15 (2039) without Development**
- **Opening Year +15 (2039) with Development**

In summary, the TTA assessment focused on 1no. traffic junctions for this application.

- **The Ashfield Industrial Estate Access Junction**

The traffic modelling analysis carried out for these design year scenarios shows that:

- The junction is operating well below capacity during the opening year of the development (2024) for both morning and evening peaks respectively.
- The junction reaches a maximum RFC of 28% in the 2039 with development scenario morning peak. This is below the 85% threshold for unsignalized junctions.
- The % increase in RFC between "without development" and "with development" scenarios is at a maximum of 1% during the 2029 PM scenario.

Comparing the analysis of the traffic models, the proposed development will have a minor impact on this junction from a capacity point-of-view.

8 REFERENCES

- TII. Traffic and Transport Assessment Guidelines, PE-PDV-02045
- National Roads Authority (2014) Traffic and Transport Assessment Guidelines
- Institution of Highways & Transportation (1994) Guidelines for Traffic Impact Assessment IHT, London
- National Roads Authority (2000) Road Geometry Handbook NRA, Dublin
- National Roads Authority Design Manual for Roads and Bridges NRA, Dublin
- Design Manual for Urban Roads and Streets
- Transport for Ireland (Oct 2016) Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts
- Transport for Ireland 2017. Geometric Design of Junctions, DN-GEO-03060
- National Disability Authority (NDA) guidelines – Towards Best Practice in Provision of Transport Services
- TII approved junction simulation modelling program, Junctions 9
- Traffic Surveys: Traffinomics Limited
- PCU (passenger carrying units) factors, Transport in The Urban Environment, The Institution of highways and Transportation.
- Google Maps
- Openstreetmaps

9 APPENDIX

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10 ASSESSED JUNCTION

10.1 Junction J1

Figure 10.1 Industrial Estate Entrance Junction (Credit: Google)

Figure 10.2 Westbound (Credit: Google)

11 TRAFFIC COUNT DATA

Count sheet data available on request.

12 JUNCTION MODELLING RESULTS

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Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Naas Road Junction.j9
Path: N:\TIA\22047TT Chadwicks Nass Rd\DOC01 TTA\Traffic Data\05. Traffic Models
Report generation date: 13/05/2022 15:43:40

»2022, AM
»2022, PM
»2024 Without Development, AM
»2024 With Development, AM
»2029 Without Development, AM
»2029 With Development, AM
»2039 Without Development, AM
»2039 With Development, AM
»2024 Without Development, PM
»2024 With Development, PM
»2029 Without Development, PM
»2029 With Development, PM
»2039 Without Development, PM
»2039 With Development, PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	2022											
Stream B-AC	D1	0.2	7.97	0.20	A	246 %	D2	0.3	8.36	0.23	A	202 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2024 Without Development											
Stream B-AC	D3	0.3	8.05	0.20	A	236 %	D9	0.3	8.47	0.23	A	192 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2024 With Development											
Stream B-AC	D4	0.3	8.07	0.21	A	233 %	D10	0.3	8.52	0.24	A	188 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2029 Without Development											
Stream B-AC	D5	0.3	8.28	0.22	A	209 %	D11	0.3	8.75	0.25	A	171 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2029 With Development											
Stream B-AC	D6	0.3	8.31	0.22	A	207 %	D12	0.3	8.80	0.26	A	167 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2039 Without Development											
Stream B-AC	D7	0.3	8.53	0.24	A	187 %	D13	0.4	9.06	0.28	A	151 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2039 With Development											
Stream B-AC	D8	0.3	8.56	0.24	A	184 %	D14	0.4	9.12	0.28	A	148 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Chadwicks Yard Upgrade
Location	Naas Road Dublin
Site number	
Date	02/03/2022
Version	
Status	(new file)
Identifier	
Client	Chadwicks
Jobnumber	22047TT
Enumerator	COB
Description	

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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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	2022	AM	ONE HOUR	08:00	09:30	15
D2	2022	PM	ONE HOUR	17:00	18:30	15
D3	2024 Without Development	AM	ONE HOUR	08:00	09:30	15
D4	2024 With Development	AM	ONE HOUR	08:00	09:30	15
D5	2029 Without Development	AM	ONE HOUR	08:00	09:30	15
D6	2029 With Development	AM	ONE HOUR	08:00	09:30	15
D7	2039 Without Development	AM	ONE HOUR	08:00	09:30	15
D8	2039 With Development	AM	ONE HOUR	08:00	09:30	15
D9	2024 Without Development	PM	ONE HOUR	17:00	18:30	15
D10	2024 With Development	PM	ONE HOUR	17:00	18:30	15
D11	2029 Without Development	PM	ONE HOUR	17:00	18:30	15
D12	2029 With Development	PM	ONE HOUR	17:00	18:30	15
D13	2039 Without Development	PM	ONE HOUR	17:00	18:30	15
D14	2039 With Development	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Ashfield Industrial Estate Access	T-Junction	One-way from A to C		2.94	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	246	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	Naas Road E		Major
B	Ashfield Industrial Estate		Minor
C	Naas Road 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	3.00				✓	

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	4.25	10	60

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	574	0.105	0.264	0.166	0.377
B-C	745	0.114	0.288	-	-
C-B	615	0.238	0.238	-	-

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	2022	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	173	100.000
B		✓	101	100.000
C		✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	116	57
	B	0	0	101
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	25	25
	B	0	25	25
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.20	7.97	0.2	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	573	0.133	75	0.2	7.222	A
C-AB	0	1151	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	87			87			
A-C	43			43			

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	91	569	0.160	91	0.2	7.525	A
C-AB	0	1136	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	104			104			
A-C	51			51			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	563	0.198	111	0.2	7.961	A
C-AB	0	1116	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	128			128			
A-C	63			63			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	563	0.198	111	0.2	7.969	A
C-AB	0	1116	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	128			128			
A-C	63			63			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	91	569	0.160	91	0.2	7.535	A
C-AB	0	1136	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	104			104			
A-C	51			51			

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	573	0.133	76	0.2	7.243	A
C-AB	0	1151	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	87			87			
A-C	43			43			

2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Ashfield Industrial Estate Access	T-Junction	One-way from A to C		3.32	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	202	Stream B-AC

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	2022	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	173	100.000
B		✓	114	100.000
C		✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	80	93
	B	0	0	114
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	25	25
	B	0	25	25
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.23	8.36	0.3	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	86	569	0.151	85	0.2	7.436	A
C-AB	0	1151	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	60			60			
A-C	70			70			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	102	563	0.182	102	0.2	7.803	A
C-AB	0	1136	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	72			72			
A-C	84			84			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	126	556	0.226	125	0.3	8.352	A
C-AB	0	1116	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	88			88			
A-C	102			102			

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	126	556	0.226	126	0.3	8.361	A
C-AB	0	1116	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	88			88			
A-C	102			102			

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	102	563	0.182	103	0.2	7.822	A
C-AB	0	1136	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	72			72			
A-C	84			84			

18:15 - 18:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	86	569	0.151	86	0.2	7.462	A
C-AB	0	1151	0.000	0	0.0	0.000	A
C-A	0			0			
A-B	60			60			
A-C	70			70			