consulting engineers

NRB

Traffic & Transport Assessment Report

incl.

Independent Stage 1 Road Safety / Quality Audit

***(Appendix G)*,**

DMURS Statement of Consistency

(Appendix H),

&

Preliminary Mobility Management Plan

(Appendix I)

for

Proposed Residential Development.

at

Banshane, Midleton, Co. Cork.

FINAL ISSUE

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Appendices.....

EXECUTIVE SUMMARY

NRB Consulting Engineers Ltd were appointed to address the Traffic/Transport issues associated with a planning application for a Large Scale Residential Housing Development (LRD) on lands at Banshane, Midleton, Co Cork.

The proposed development will consist of 173 No Residential Units and a Creche, as a southern extension to the established Abbey Wood Estate, together with an upgrade to the Abbey Wood / Ballintubber Road Junction. A more detailed development description is included within Section 2.0 of this Report.

This Traffic and Transport Assessment Report (TTA) has been prepared to address the Traffic and Transport issues associated with the proposal, the capacity of the existing road network and the impact of the increased scale of development locally.

An independent Road Safety / Quality Audit (including Pedestrian & Walking), together with the associated designer Feedback form, is included as ***Appendix G.*** A DMURS Review and Statement of Consistency has been prepared and is included as ***Appendix H***. A preliminary Mobility Management Plan has also been prepared and is included as ***Appendix I***.

The TTA Report has been prepared in accordance with TII's Traffic & Transport Assessment Guidelines and addresses the worst-case vehicular traffic impact of the proposal locally. This TTA addresses the adequacy of the existing road network to safely and appropriately accommodate the worst-case vehicular demands with the development fully occupied, taking account of the existing and future traffic demands locally and at the proposed amended main vehicular access. A detailed assessment of the impact upon the adjacent N25 has been included.

Comprehensive classified turning movement surveys of the existing affected roads and junctions were originally carried out during the weekday AM and PM Peak Hours in 2025.

These traffic surveys form the basis of the traffic impact part of the study. The analysis includes the effects of the existing traffic on the local roads and assesses the impact during the traditional peak commuter peaks periods, in accordance with the TII Traffic and Transport Assessment Guidelines.

The TTA confirms that the road network and the upgraded signal controlled junction are more than adequate to accommodate the worst-case traffic associated with the increased scale of development. The assessment also confirms that the construction and full occupation of the

residential housing scheme will have a negligible and unnoticeable impact upon the operation of the adjacent road network and the N25.

Based on the study, it is concluded that there are no adverse traffic/transport capacity, safety or operational issues associated with the construction and occupation of the proposed development, which would prevent a grant of Planning Permission by Cork County Council.

1.0 INTRODUCTION

1.1 This Traffic and Transport Assessment Report (TTA) has been prepared by NRB Consulting Engineers Ltd and addresses the Traffic/ Transportation issues arising from the proposal to construct and occupy a residential development on lands at Banshane, Midleton, Co. Cork.

1.2 The proposed development on zoned lands already benefits a dedicated access in place from Ballintubber Road by way of the previously constructed traffic signal controlled junction, that is to be replaced by a modern junction constructed in accordance with the requirements of the Cycle Design Manual. A site location plan for the site is included below as ***Figure 1.1***.

Figure 1.1 - Site Location

1.3 In describing the Receiving Environment and the Proposed Future Environment, this report addresses the following aspects of the proposed development:

- Relative Small Scale of the development in the context of traffic generation and the already busy road network (Reflected in the Low Traffic Generation of the Development as demonstrated herein),
- Traffic & Transportation impact,

- Proposed access junction by way of an upgraded and improved signal controlled junction onto Ballintubber Road,
- Capacity of the proposed vehicular access arrangement to accommodate the worst-case development traffic flows associated with the 173 Units,
- Pedestrian and cyclist permeability and promotion,
- Capacity of the Existing Road Network, and,
- Adequacy and safety of the existing roads and junctions locally, within the area of influence, including a thorough assessment of impact upon the N25.

1.4 The Recommendations contained within this TTA are based on the following sources of information and industry-standard practices; -

- TII Traffic & Transport Assessment Guidelines (March 2014),
- Design Manual for Urban Roads and Streets,
- Recent 2025 Traffic Survey Data commissioned,
- Relevant Design Guidance,
- Our experience in assessing the impact of Developments of this Nature, and,
- Site Visits and Observations.

1.5 The Report has been prepared in accordance with the requirements of the TII's Traffic & Transport Assessment Guidelines. These are the professional Guidelines used to assess the impact of developments on public roads.

1.6 An independent Road Safety / Quality Audit (including Pedestrian & Walking), together with the associated designer Feedback form, is included as ***Appendix G.*** A DMURS Review and Statement of Consistency has been prepared and is included as ***Appendix H***. A preliminary Mobility Management Plan has also been prepared and is included as ***Appendix I***.

2.0 EXISTING CONDITIONS, VEHICULAR ACCESS JUNCTION DESIGN & DEVELOPMENT PROPOSALS

Existing Conditions

2.1 The partially developed site is bound to the north by Abbey Wood Residential Estate, which itself leads directly to the L3619 Ballintubber Road by way of the established traffic signal controlled junction. It is bound to the west by a similar established residential housing scheme and to the east by the grounds of Gaelscoil Mhainistir Na Corann Primary School. The site is bound to the south by farm buildings and lands in use for agricultural purposes.

2.2 It is intended that vehicular access to the subject site will be via an upgraded signal controlled junction, replacing the established dated existing signals on Ballintubber Road.

2.3 The L3619 Ballintubber Road runs in an E-W orientation at the site, effectively parallel to the N25. It is classified as a Local Road and consists of a 50Km/Hr wide single carriageway road, provided with generous footpaths, verges and off-road cycle paths along both sides. Based on the Traffic Survey, in terms of Link Capacity, Ballintubber Rd at the site can be described as very lightly trafficked, with a weekday AM commuter Peak Hour (8-9am) **2-Way** flow of approximately 363 Passenger Car Units (PCUs or car-equivalents), and a PM Peak Hr (5-6pm) 2-Way flow of 272 PCUs (both measured just east of the traffic signals). In these terms, it is definitely lightly trafficked.

2.4 Annotated Google Images showing the current alignment and facilities on-street on the approaches to the site are included below as ***Figure 2.1*** and ***Figure 2.2*** for ease of reference.

Figure 2.1 – Ballintubber Road, View East (Google)

2.5 Whilst it is obvious that there are busier traffic conditions to the east towards the N25 and Midleton Town Centre, the traffic conditions on Ballintubber Rd are clearly light in nature.

Figure 2.2 – Ballintubber Road, View West (Google)

2.6 The primary site access on Ballintubber Road is located some 200m west of the 40m inscribed circle diameter at-grade 4-arm roundabout that provides access to / from the westbound running carriageway of the N25 Rosslare-Cork National Primary Road. This adjacent roundabout carries significant traffic volumes, particularly during the weekday AM and PM commuter peaks, and also during schools peak periods.

Figure 2.3 – Adjacent Roundabout, View West (Google)

2.7 The adjacent roundabout leads directly to/from the N25 to the north, some 100m distance from the junction. This facilitates access to and from the westbound carriageway of the N25 by way of free flow merge and diverge on/off slip lanes. The N25, eastbound is also accessible from the roundabout by way of the Northern Relief Road and Cork Road, approximately 600m distance from the junction.

2.8 The N25 (or East Cork Parkway) is a national primary route, a 100km/hr national road connecting Rosslare Euro-port with Cork. It consists of a segregated dual carriageway at the site. It is an important feeder route from the east linking to and from Cork City some 25km distance from the subject site. Based on the Traffic Survey, in terms of Link Capacity, the N25 is in reality moderately trafficked, with a weekday AM & PM commuter Peak Hour Flows of approximately 4,000 PCUs (measured just east of the site). To set this flow in context a road of this nature has a link capacity of 3,600 to 4,000 PCUs in each direction. This indicates that the road is at approximately 50% of its link capacity. However, it is acknowledged that the capacity of any road is affected by or determined by the capacity of junctions along its length and that is undoubtedly the case here.

2.9 The **Proposed Development**, as set out on the Architects layout Plans, comprises a Large-Scale Residential Development (LRD). The LRD consists of 173 no. residential units (comprising 74 no. apartments & duplexes: Block E1 – 11 × 2-bed and 6 × 1-bed; Block E2 – 3 × 3-bed, 6 × 2-bed and 3 × 1-bed; Block E3 – 9 × 2-bed and 6 × 1-bed; Duplex D1 – 4 × 2-bed and 4 × 1-bed; Duplex D2 – 5 × 2-bed and 5 × 1-bed; Duplex D3 – 9 × 2-bed and 3 × 1-bed, and 99 no. houses comprising 11 × 4-bed semi-detached, 76 × 3-bed (33 semi-detached, 27 end-of-terrace and 16 mid-terrace), 10 × 2-bed (3 end-of-terrace, 1 terraced and 6 bungalows) and 2 × 1-bed bungalows), a crèche of c.137.5 m^2 gross floor area with capacity for c.20 children, a pumping station, alterations to the junction at Abbey Wood Estate and Ballintubber Road, and all associated car parking (273 spaces), bicycle parking (161 spaces), public open space, landscaping and ancillary site development work.

3.0 TRIP GENERATION, ASSIGNMENT & DISTRIBUTION

3.1 The Trip Rate Information Computer System (TRICS) database is ordinarily used to ascertain vehicular trip generation associated with the use of any particular site. The use of TRICS is specifically recommended within the TII Guidelines for Traffic & Transport Assessment, and it represents industry-standard practice for Traffic & Transport Assessments. In this case the worst-case assessment is based on Irish Residential Housing and Apartment Developments, and on Creche Facilities, from within TRICS.

3.2 A robust and onerous assessment has been undertaken of the impact including on and along the N25 Corridor in order to ensure that we thoroughly assess the impact, in terms of stress testing the access junction and the road capacity impact of the scheme on the important links nearby. The Trip Rates applied for the Proposed Development in this case are as set out below as ***Table 3.1***.

Table 3.1; - TRICS Data Summary, Residential Housing, Apartments & Creche

99 Residential Houses	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Network Period	**Per Hse**	**Dev**	**Per Hse**	**Dev**	
Weekday AM Peak Hr 8-9	0.207	20	0.593	59	79
Weekday PM Peak Hr 5-6	0.525	52	0.318	31	83
24 Hour Day	3.364	333	3.541	351	684
74 Resi Apartments/Duplex	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Network Period	**Per**	**Dev**	**Per**	**Dev**	
Weekday AM Peak Hr 8-9	0.064	5	0.188	14	19
Weekday PM Peak Hr 5-6	0.157	12	0.085	6	18
24 Hour Day	1.093	81	1.164	86	167
150m² GFA Creche	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Network Period	**Per**	**Dev**	**Per**	**Dev**	
Weekday AM Peak Hr 8-9	3.113	11	2.726	10	21
Weekday PM Peak Hr 5-6	2.537	9	3.158	11	20
24 Hour Day	15.014	53	16.763	59	112
TOTAL TRAFFIC GENERATED - WORST CASE*					
Network Period	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Weekday AM Peak Hr 8-9	31		77		108
Weekday PM Peak Hr 5-6	68		43		111
24 Hour Day	440		466		906
**Creche Rate Discounted to Reflect Internal Traffic / Uses*					

3.3 We have included herein as ***Appendix C*** the TRICS data output for Residential Apartments and Childcare facilities upon which the above are based.

Assignment/Distribution - Future Year Traffic

3.4 We have used industry standard hand assignment techniques, with the worst-case traffic as outlined above assigned to the roads based on the observed established traffic patterns – so we have assigned traffic to mirror the established conditions, being an industry-standard approach to assignment.

3.5 The standard methodology applied was to firstly ascertain the base background traffic conditions for both the weekday AM and weekday PM Commuter Peak periods. We then used the TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 to establish selected completion/opening year 2029 and design year 2044 traffic conditions on the local road network. The application of compounded annual traffic growth consistent with the TII Statistical models includes for traffic associated with new unbuilt committed development locally, increases in car ownership locally and changes in driver behaviour.

3.6 It should be noted that any requirement to use different or higher growth factors will also have no implications whatsoever for the conclusions of the study. Calculations of the relevant compound growth factors using TII PE-PAG-02017 are included in ***Table 3.2*** below (based on tabulated 'Central Growth' for Cork County).

Table 3.2 - Traffic Growth Rates, TII Travel Demand Projections Unit 5.3

Year	to Year	Table 6.2:
Surveyed	2029	1.078
2029	2044	1.146

4.0 TRAFFIC IMPACT - TRAFFIC CAPACITY ANALYSIS & CONSTRUCTION TRAFFIC

4.1 Both the Institution of Highways and Transportation (IHT) Guidelines for Traffic Impact Assessment and the TII Traffic and Transport Assessment Guidelines sets out a mechanism for assessment of developments of this nature and determining whether further assessment is indeed required.

4.2 This TII Traffic and Transport Assessment Guidelines requires a **Threshold Assessment** of the impact on the local roads to be provided in order to determine whether further, more detailed modelling and assessment of critical junctions is necessary. This is important in this case as the development is located in proximity to an important National Road, N25. However we are also conscious that roads are built for traffic and the key to sustainable development is to provide for alternative modes of travel, with road capacity often contributing as a demand management measure.

4.3 The professional guidance referenced above sets out specific increases in traffic volume associated with new development, which, if breached, requires further detailed analysis to be undertaken. The recommendation is that, if the expected increase is 5% for networks that are considered heavily trafficked or congested, then further analysis is warranted, with the 5% threshold being considered as significant. In this case, given the proximity to the N25, the 5% threshold has been applied.

4.4 In this regard, it is demonstrated herein that the proposed addition of the construction and occupation of the residential development, with relatively low volumes of traffic added to a busy network to the east of the site, will not result in really noticeable levels of new trips on the local roads.

4.5 Our assessment, included within ***Appendix D***, (Refer Page 3) confirms that the absolute worst case traffic increase at the adjacent network and at the traffic signal controlled access junction (with all traffic considered as "New" and ignoring and linked/shared trips for robustness) is as summarised below as ***Table 4.1***.

Table 4.1; - Threshold Assessment, Worst-Case Impact Weekday AM & PM Peak Hr

Assessed Road or Junction	Traffic Increase %		COMMENT
	AM Pk Hr	PM Pk Hr	
Improved Site Access Signal Junct	NA	NA	Capacity Assessment Incl/undertaken
L6319 / N25 Link Roundabout	5.4%	9.0%	>5% Junction Assessment Included
Cork Rd/N'thn Relief Rd Junct	2.5%	3.4%	<5% No Further Assessment Required
N25, impact upon 2-way flow to East	0.2%	0.3%	<5% No Further Assessment Required
N25, impact upon 2-way flow to West	0.5%	0.2%	<5% No Further Assessment Required
N25 Westbound C'way (East)	0.5%	1.0%	<5% No Further Assessment Required
N25 Westbound C'way (West)	0.8%	0.3%	<5% No Further Assessment Required
N25 Eastbound C'way (East)	0.8%	0.2%	<5% No Further Assessment Required
N25 Eastbound C'way (West)	0.1%	0.2%	<5% No Further Assessment Required

4.6 Whilst there is a proposed western vehicular link to the adjoining estate illustrated and proposed on the site layout plans, we have assigned 100% of the traffic to the signal controlled access and this is considered a robust approach.

4.7 The Threshold assessment summarised above clearly confirms that, beyond the site access and the adjacent roundabout (both of which have been subject to capacity assessment), the impact is less than 5% in all cases.

4.8 In terms of the N25, the additional traffic as a result of the proposed housing is in all cases less than 1% of the existing traffic volumes. These worst-case traffic increases are therefore way below the IHT and TII Recommended level of 5% above which further assessment is warranted, and are clearly unnoticeable in terms of the existing volumes of traffic. To set these increased levels of traffic in context, the day-to-day variation in traffic volume (due to day of week or weather conditions) is accepted as 10%. In this context, in terms of the adjacent N25, increases of in all cases 1% or less will likely go entirely unnoticed as the increases are way below even the accepted day-to-day variation.

4.9 It is clear that the introduction of the proposed sustainable residential development of will have an imperceptible impact upon traffic conditions locally.

Site Vehicular Access - Amended Improved Traffic Signal Controlled Junction

4.10 We have undertaken detailed assessment of the capacity of the improved junction (Refer Appendix A) using industry-standard software LinSig (Linked Signal Design). LinSig is TII approved software that enables the user to predict the capacity, queues and delays at traditional traffic signal-controlled junctions. The outputs from the software present Degrees of Saturation, Practical Reserve Capacity and Queues/Delays as indicators of the operational efficiency of the specific junction type.

4.11 The detailed output of the models are included herein as ***Appendix E***, and is summarised below as ***Table 4.2***; -

Table 4.2; Improved Ballintubber Rd Access - Summary LinSig Results

Modelled Scenario	Degree of Saturation %	PRC %	Total Delay PCUHr
2029 Opening Year AM Peak Hr 8-9	42	116	7
2029 Opening Year PM Peak Hr 5-6	34	163	5
2044 Design Year AM Peak Hr 8-9	47	94	8
2044 Design Year PM Peak Hr 5-6	38	139	7

4.12 The analysis confirms that there is way more than adequate capacity in the junction to accommodate the proposed development, with all Degrees of Saturation way below

90%. It should also be noted that the improved junction represents a very significant improvement in local traffic safety conditions for VRUs, consistent with sustainable policies.

L3619 Ballintubber Rd / N25 Link Roundabout Junction

4.13 We have used the TII-approved software package 'ARCADY' (**A**ssessment of **R**oundabout **I**ntersection **C**apacity and **D**ela**y** software packages (as part of the TRL Package 'Junction 9') to assess the capacity of the adjacent roundabout junction to accommodate the completed development traffic for the selected opening and design years.

4.14 ARCADY produces results based on a ratio of flow to capacity (RFC) and queue length. An RFC greater that 1.00 indicates that a junction is operating at or above capacity, with 0.85 generally considered to be the optimum max RFC value. We have appended the detailed computer simulation model results (ARCADY Outputs) of the junction modelling, and it's ability to accommodate the additional traffic associated with the subject application as ***Appendix F,*** and summarised below as ***Table 4.3***.

Table 4.3; Adjacent Ballintubber Rd Roundabout - Summary ARCADY Results

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2029 Opening Year AM Peak Hr 8-9	3.3	0.77
2029 Opening Year PM Peak Hr 5-6	1.3	0.56
2044 Design Year AM Peak Hr 8-9	7.4	0.89
2044 Design Year PM Peak Hr 5-6	1.7	0.63

4.15 The modelling confirms that the existing junction can accommodate the proposed development without significant changes to the established capacity, with additional traffic on Ballintubber Road west associated with the development having beneficial effects.

4.16 We have demonstrated that the completed, occupied development traffic can be accommodated with a negligible impact. Based on the detailed comprehensive capacity assessment undertaken as set out above we conclude that there are no operational Traffic Safety or Road Capacity issues, affecting the established road network or junctions locally, that would prevent a positive determination of the application by Cork County Council.

5.0 CONCLUSIONS

5.1 NRB Consulting Engineers Ltd were appointed to address the Traffic/Transport issues associated with a planning application for a Large Scale Residential Housing Development (LRD) on lands at Banshane, Midleton, Co Cork.

5.2 This Traffic and Transport Assessment Report (TTA) has been prepared to address the Traffic and Transport issues associated with the proposal, the capacity of the existing road network and the impact of the increased scale of development locally.

5.3 An independent Road Safety / Quality Audit (including Pedestrian & Walking), together with the associated designer Feedback form, is included as ***Appendix G.*** A DMURS Review and Statement of Consistency has been prepared and is included as ***Appendix H***. A preliminary Mobility Management Plan has also been prepared and is included as ***Appendix I***.

5.4 The TTA Report has been prepared in accordance with TII's Traffic & Transport Assessment Guidelines and addresses the worst-case vehicular traffic impact of the proposal locally. This TTA addresses the adequacy of the existing road network to safely and appropriately accommodate the worst-case vehicular demands with the development fully occupied, taking account of the existing and future traffic demands locally and at the proposed amended main vehicular access. A detailed assessment of the impact upon the adjacent N25 has been included.

5.5 Comprehensive classified turning movement surveys of the existing affected roads and junctions were originally carried out during the weekday AM and PM Peak Hours in 2025.

5.6 These traffic surveys form the basis of the traffic impact part of the study. The analysis includes the effects of the existing traffic on the local roads and assesses the impact during the traditional peak commuter peaks periods, in accordance with the TII Traffic and Transport Assessment Guidelines.

5.7 The TTA confirms that the road network and the upgraded signal controlled junction are more than adequate to accommodate the worst-case traffic associated with the increased scale of development. The assessment also confirms that the construction and full occupation of the amended scheme will have a negligible and unnoticeable impact upon the operation of the adjacent road network and the N25.

5.8 Based on the study, it is concluded that there are no adverse traffic/transport capacity, safety or operational issues associated with the construction and occupation of the proposed development, which would prevent a grant of Planning Permission by Cork County Council.

APPENDICES - CONTENT

A	Proposed Development – Layout, TRACKs & Access Arrangement
B	Traffic Survey Data Output
C	TRICS Trip Generation Output - Residential Houses, Apartments & Créche
D	Traffic Surveys, Trip Distribution & Network Traffic Flow Diagrams
E	LinSiG Simulation Model Output – Amended Access Signal Junction
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G	Stage 1 Road Safety Audit and Quality Audit (& Designer Feedback Form)
H	DMURS Statement of Consistency
I	Preliminary Mobility Management Plan

APPENDIX A

Proposed Development
Layout, TRACKs & Access Arrangement

NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.

This drawing is based upon 2025 09 11th Siteplan, received 10/09/25. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

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Client

Project: Midleton LRD, Co. Cork

Title: Proposed Site Layout

Project No.: 25-039

Drawing No.: NRB-TA-001

Drawn: CD

Checked: ER 16/09/25

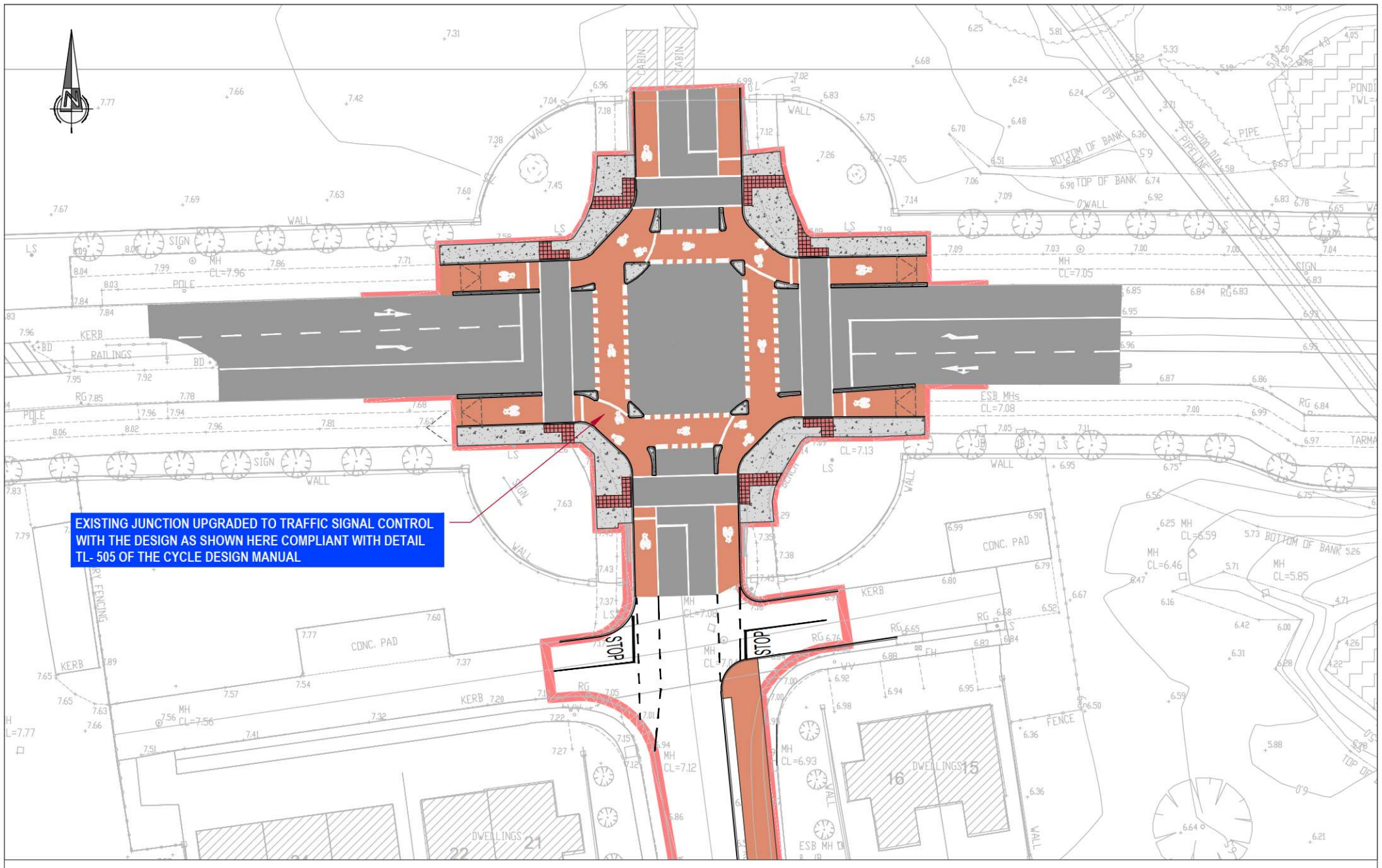
Approved: ER 16/09/25

Date: 16-Sep-25

Scale @ A3: 1:1500

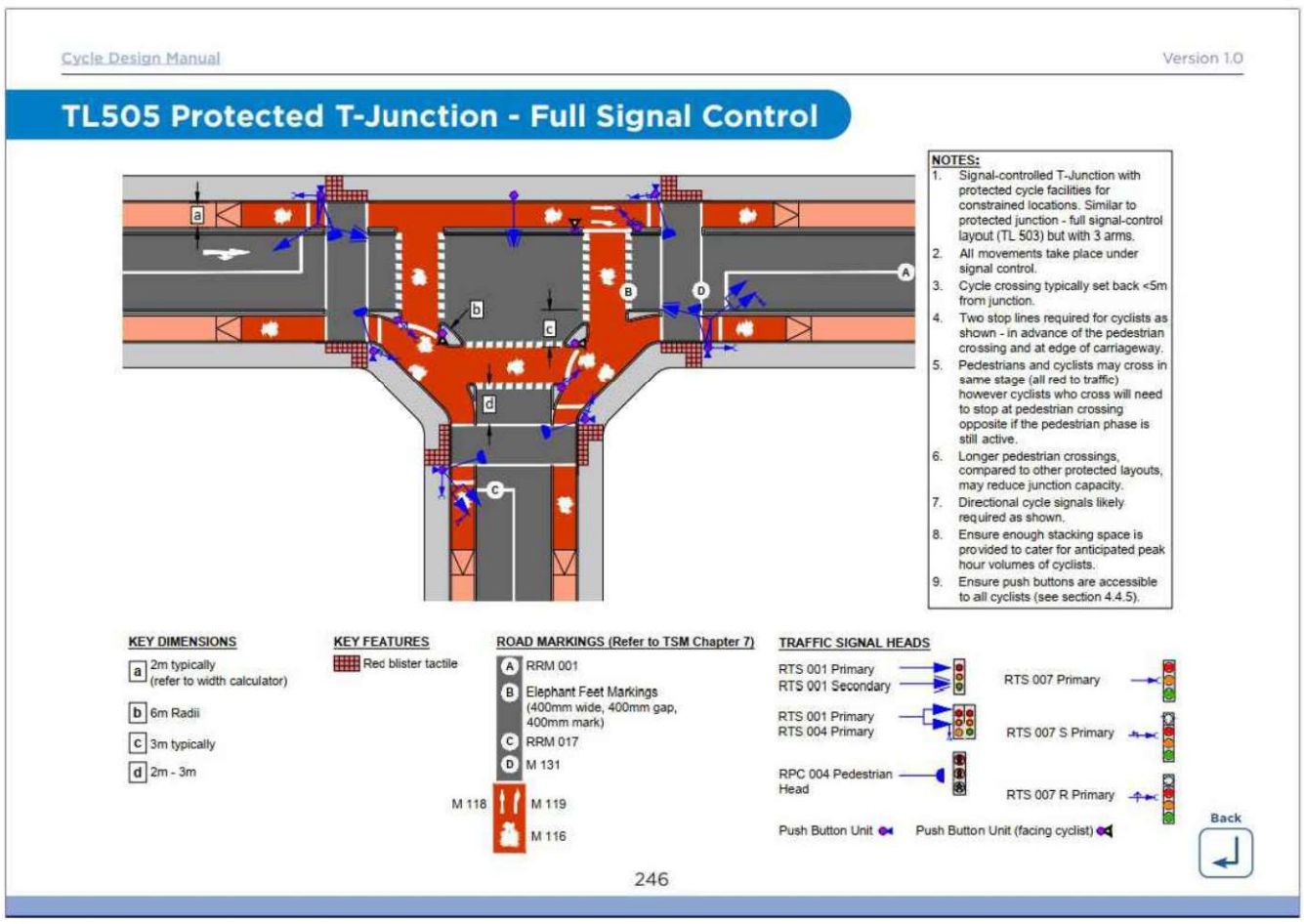
Rev:

Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction



PROPOSED JUCTION DETAIL:

- **Detail TL-505 Protected T-Junction - Full Signal Control (Detail used in conjunction with a four arm junction) as per the Cycle Design Manual.**



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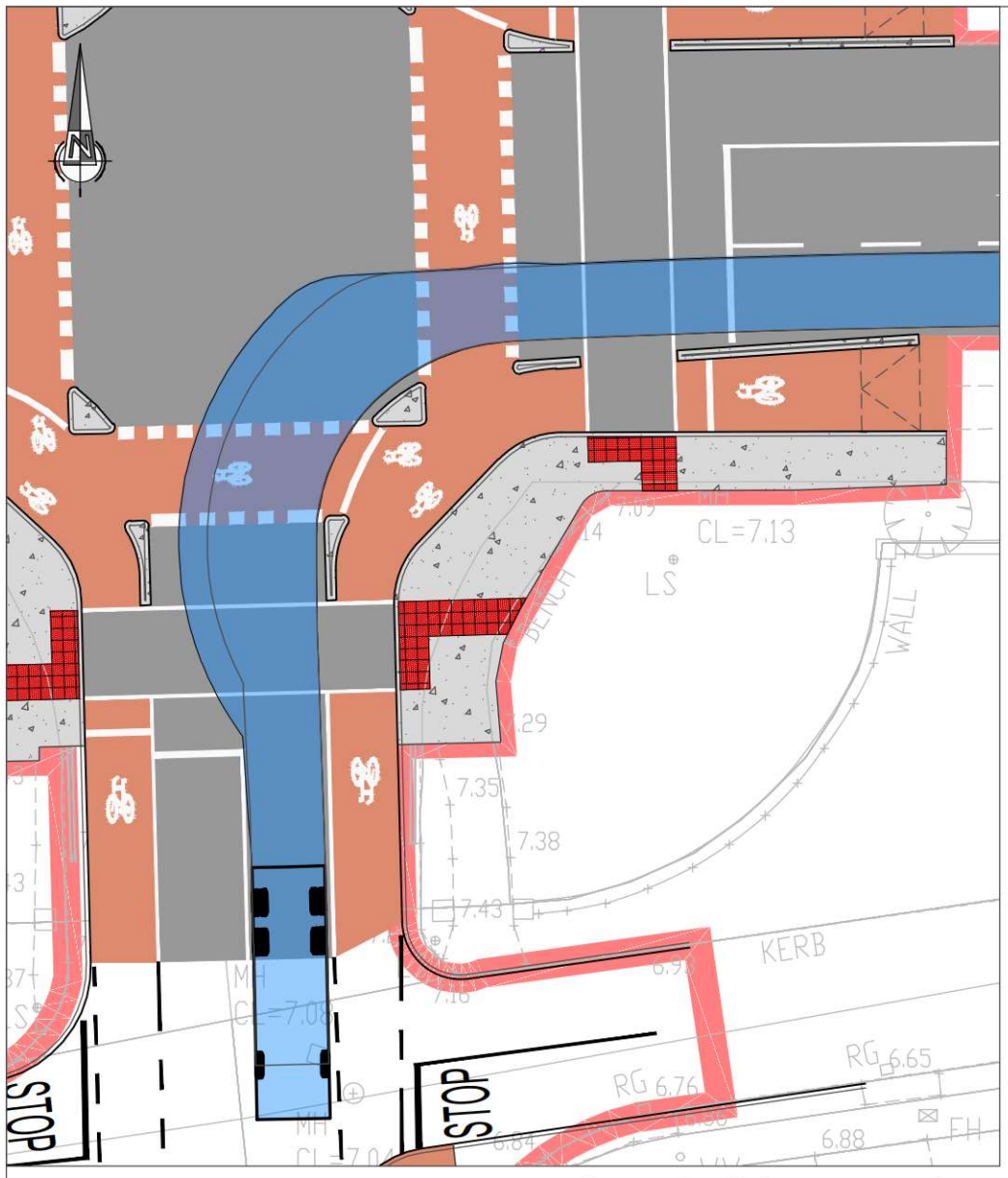
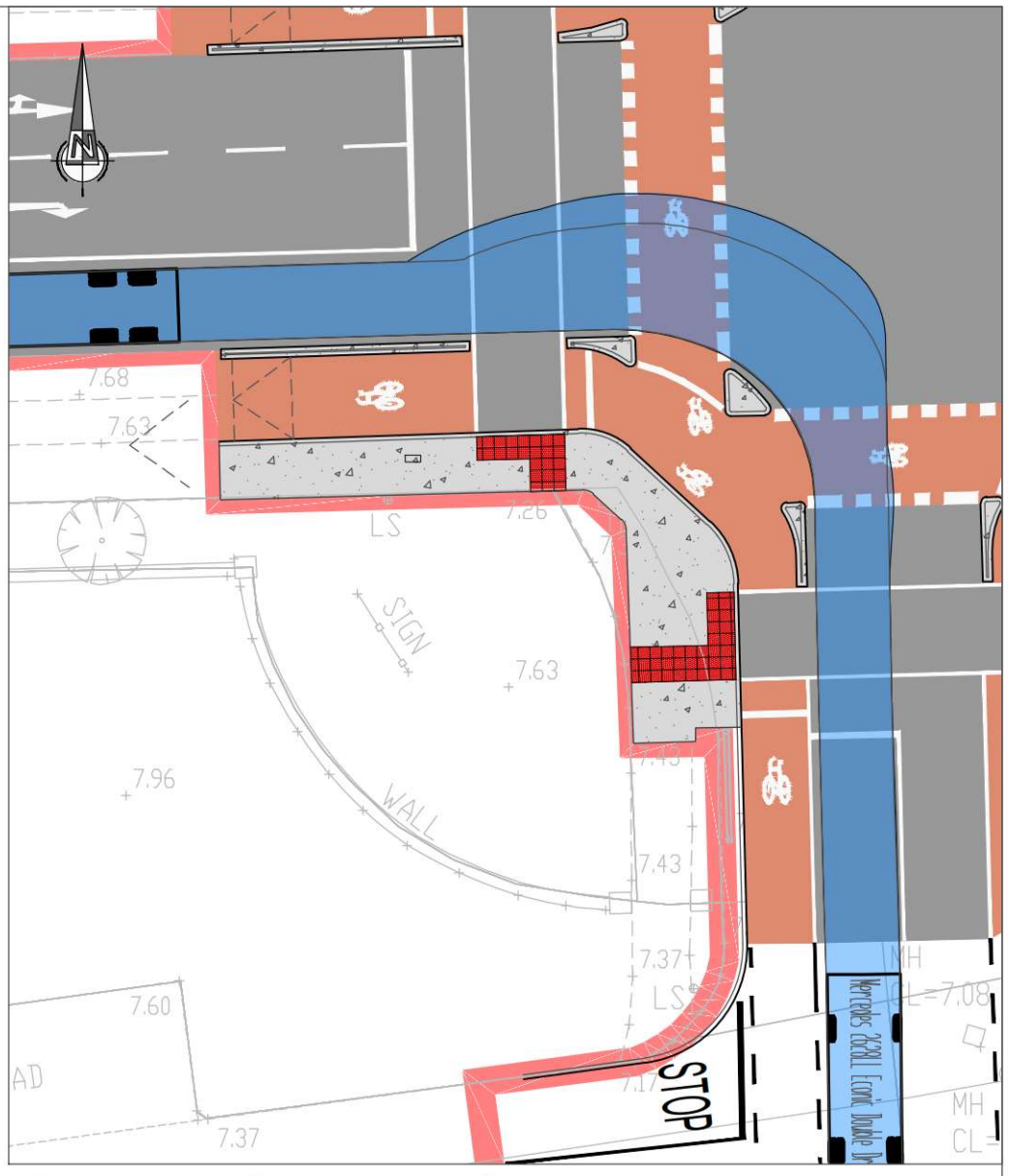
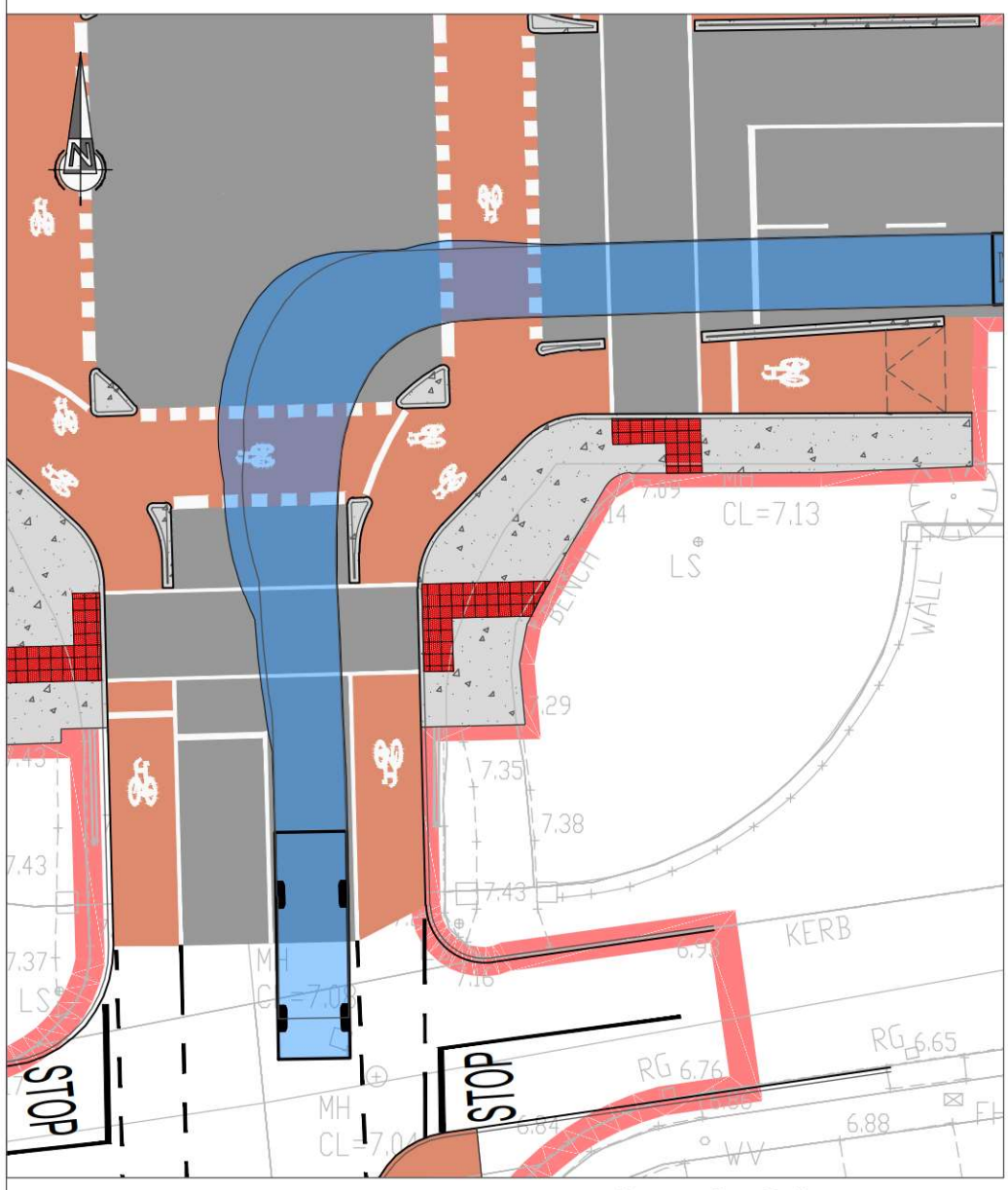
Client		Project No. 25-039	Drawing No. NRB-TA-002
Project	Midleton LRD Co. Cork	Drawn CD / Checked ER 16/09/25	Approved ER 16/09/25
Title	Proposed Junction Upgrade Detail	Date 16-Sep-25	Scale @ A3 1:500 / Rev

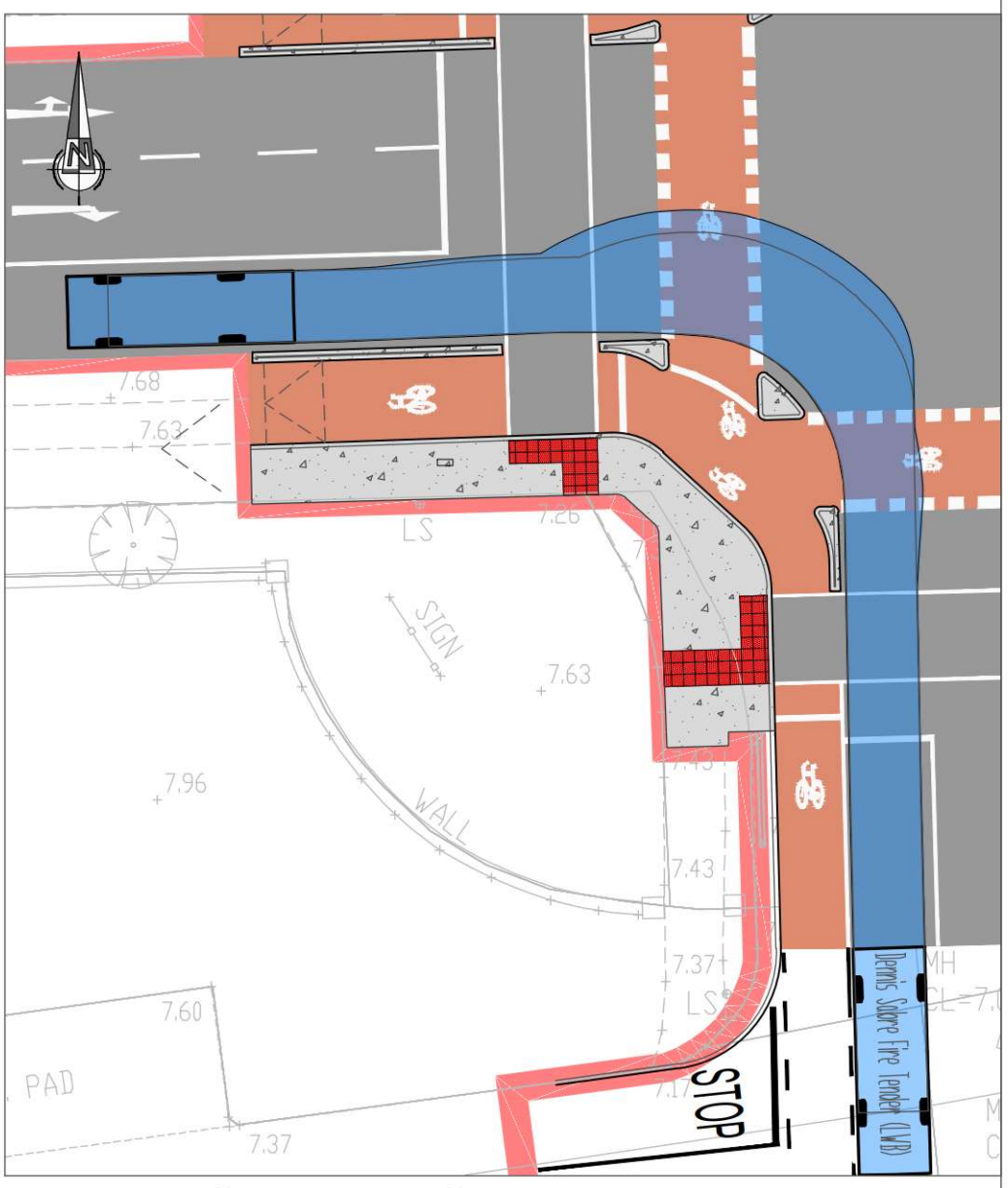
Purpose of Issue: ☐ Draft ☐ Information ☐ Approval ☐ As Built ☐ Tender ☐ Construction





AUTOTRACKS OF A REFUSE VEHICLE ENTERING AND EXITING





AUTOTRACKS OF A FIRE TENDER ENTERING AND EXITING

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Client

Project: Midleton LRD, Co. Cork

Title: Proposed Site Access AutoTRACKs

Project No.: 25-039

Drawing No.: NRB-TA-003

Drawn: PB

Checked: ER 17/09/25

Approved: ER 17/09/25

Date: 17-Sep-25

Scale @ A3: 1:250

Rev:

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction

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Client

Project
Midleton LRD
Co. Cork

Title
Refuse Vehicle
AutoTRACKs - 1 of 2

Project No.: 25-039
Drawing No.: NRB-TA-004
Drawn: PB
Checked: ER 17/09/25
Approved: ER 17/09/25
Date: 17-Sep-25
Scale @ A3: 1:500
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Phone: +353 1 292 1941
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Web: www.nrb.ie
Registered in Ireland No. 491679

Client

Project: Midleton LRD, Co. Cork

Title: Refuse Vehicle AutoTRACKs - 2 of 2

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Project No.	Drawing No.
25-039	NRB-TA-005

Drawn	Checked	Approved
PB	ER 17/09/25	ER 17/09/25

Date	Scale @ A3	Rev
17-Sep-25	1:500	

Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction

NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.
This drawing is based upon 2025 09 11th Siteplan, received 10/09/25. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

NRB Consulting Engineers Ltd
5th Floor
40 Mespil Road
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Client

Project
Midleton LRD
Co. Cork

Title
Fire Tender
AutoTRACKs - 1 of 2

NRB Consulting Engineers Ltd accept no responsibility for any unauthorised amendments to this drawing. Only figured dimensions to be worked to.

Project No.	Drawing No.
25-039	NRB-TA-006

Drawn	Checked	Approved
PB	ER 17/09/25	ER 17/09/25

Date	Scale @ A3	Rev
17-Sep-25	1:500	

Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction

NRB Consulting Engineers Ltd recommend that Road and land ownership boundaries are verified through Legal & Land searches by the Client.
This drawing is based upon 2025 09 11th Siteplan, received 10/09/25. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

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Client

Project: Midleton LRD
Co. Cork

Title: Fire Tender
AutoTRACKs - 2 of 2

Project No.: 25-039

Drawing No.: NRB-TA-007

Drawn: PB

Checked: ER 17/09/25

Approved: ER 17/09/25

Date: 17-Sep-25

Scale @ A3: 1:500

Rev:

Purpose of Issue: ☐ Draft ☐ As Built ☐ Information ☐ Tender ☐ Approval ☐ Construction

APPENDIX B

2025 Traffic Survey Data Output

Site/Movement Labelling

Job number: IDA/25/307	Job Dates: 25/03/2025	Drawing No: IDA/25/307	IDASO Innovative Data Solutions
Client: NRB Consulting Engineers	Job Days: Tuesday	Author: MK	

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 1 DATE: 25th March 2025

LOCATION: Ballintubber Road/Abbey Wood DAY: Tuesday

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	26	2	0	0	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	1	0	24	4	0	0	29	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	50	6	0	0	57	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	36	3	1	1	41	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	1	0	54	2	2	2	61	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	1	0	46	1	1	0	49	49	0	0	1	0	1	0	2	3	0	0	0	1	0	0	1	1
08:45	1	0	37	2	2	0	42	43	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
H/TOT	3	0	173	8	6	3	193	199	0	0	1	0	1	0	2	3	0	0	1	2	0	0	3	3
09:00	0	0	28	3	1	0	32	33	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
09:15	1	0	22	2	1	0	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	15	0	1	0	16	17	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
09:45	1	0	19	4	0	0	24	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	84	9	3	0	98	99	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	0
P/TOT	6	0	307	23	9	3	348	354	0	0	1	0	3	0	4	7	0	0	1	2	0	0	3	3

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	27	4	1	1	33	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	2	0	18	2	2	0	24	24	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:30	1	0	23	1	1	0	26	26	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
16:45	3	0	29	3	0	0	35	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	0	97	10	4	1	118	118	0	0	0	0	1	0	1	2	0	0	1	0	0	0	1	1
17:00	1	0	28	4	0	0	33	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	32	2	1	0	36	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	35	1	0	0	36	36	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:45	0	0	25	3	1	0	29	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	120	10	2	0	134	134	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:00	0	0	17	3	1	0	21	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	1	0	21	3	1	0	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	38	6	2	0	47	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	9	0	255	26	8	1	299	300	0	0	0	0	1	0	1	2	0	0	2	0	0	0	2	2

SITE: Site 1 DATE: 25th March 2025

LOCATION: Ballintubber Road/Abbey Wood DAY: Tuesday

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	1	0	0	0	1	1	0	0	2	2	0	0	4	4	1	0	11	1	0	1	14	14
07:45	0	0	1	0	0	0	1	1	0	0	0	1	0	0	1	1	1	0	15	3	0	1	20	20
H/TOT	0	0	2	0	0	0	2	2	0	0	2	3	0	0	5	5	2	0	26	4	0	2	34	34
08:00	0	0	2	0	0	0	2	2	0	0	3	1	0	0	4	4	0	0	16	1	0	1	18	19
08:15	0	0	2	1	0	0	3	3	0	0	0	0	1	0	1	2	0	0	21	1	2	2	26	30
08:30	0	0	8	0	2	0	10	12	0	0	9	2	0	0	11	11	0	0	29	3	1	0	33	34
08:45	0	0	2	0	0	0	2	2	0	0	2	2	0	0	4	4	1	0	39	2	0	0	42	41
H/TOT	0	0	14	1	2	0	17	19	0	0	14	5	1	0	20	21	1	0	105	7	3	3	119	124
09:00	0	0	3	0	1	0	4	5	0	0	1	0	0	0	1	1	0	0	21	3	1	0	25	26
09:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3	0	11	1	0	0	15	13
09:30	0	0	1	3	0	0	4	4	0	0	2	1	0	0	3	3	0	0	13	3	0	0	16	16
09:45	0	0	2	2	1	0	5	6	0	0	1	1	0	0	2	2	0	0	14	3	0	0	17	17
H/TOT	0	0	7	5	2	0	14	16	0	0	4	2	0	0	6	6	3	0	59	10	1	0	73	72
P/TOT	0	0	23	6	4	0	33	37	0	0	20	10	1	0	31	32	6	0	190	21	4	5	226	230

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	2	4	0	0	6	6	0	0	0	0	0	0	0	0	1	1	22	1	0	1	26	26
16:15	0	0	1	3	0	0	4	4	0	0	0	0	0	0	0	0	0	0	26	3	0	0	29	29
16:30	0	0	3	1	0	0	4	4	0	0	0	0	0	0	0	0	0	0	24	3	0	0	27	27
16:45	0	0	0	2	1	0	3	4	0	0	0	0	0	0	0	0	0	0	35	3	0	0	38	38
H/TOT	0	0	6	10	1	0	17	18	0	0	0	0	0	0	0	0	1	1	107	10	0	1	120	120
17:00	0	0	0	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	29	2	1	0	32	33
17:15	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3	0	0	25	2	1	0	28	29
17:30	0	0	1	1	0	0	2	2	0	0	2	0	0	0	2	2	3	0	26	3	1	0	33	32
17:45	0	0	1	1	0	0	2	2	0	0	1	0	0	0	1	1	0	0	27	3	1	0	31	32
H/TOT	0	0	2	4	0	0	6	6	0	0	4	2	0	0	6	6	3	0	107	10	4	0	124	126
18:00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	1	0	18	1	3	0	23	25
18:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	23	0	1	0	24	25
H/TOT	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3	1	0	41	1	4	0	47	50
P/TOT	0	0	8	14	1	0	23	24	0	0	6	3	0	0	9	9	5	1	255	21	8	1	291	296

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 2 DATE: 25th March 2025

LOCATION: Ballintubber Road/Northern Relief Road/N 25 DAY: Tuesday

	MOVEMENT 1 (A => D)								MOVEMENT 2 (A => C)								MOVEMENT 3 (A => B)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	16	1	0	0	17	17	0	0	10	1	0	0	11	11	0	0	3	0	0	0	3	3
07:45	0	0	14	1	0	0	15	15	1	0	9	3	0	0	13	12	0	0	1	0	0	0	1	1
H/TOT	0	0	30	2	0	0	32	32	1	0	19	4	0	0	24	23	0	0	4	0	0	0	4	4
08:00	0	0	20	1	0	0	21	21	0	0	22	2	1	1	26	28	0	0	0	0	0	0	0	0
08:15	0	0	14	0	1	0	15	16	0	0	39	3	1	2	45	48	1	0	1	0	0	0	2	1
08:30	0	0	16	0	1	0	17	18	0	0	37	1	2	0	40	42	1	0	5	0	0	0	6	5
08:45	0	0	11	0	1	0	12	13	0	0	28	2	1	0	31	32	1	0	6	0	0	0	7	6
H/TOT	0	0	61	1	3	0	65	68	0	0	126	8	5	3	142	150	3	0	12	0	0	0	15	12
09:00	0	0	11	0	1	0	12	13	0	0	17	3	1	0	21	22	0	0	4	0	0	0	4	4
09:15	0	0	9	0	1	0	10	11	1	0	14	2	0	0	17	16	0	0	0	0	0	0	0	0
09:30	0	0	6	0	1	0	7	8	0	0	11	2	0	0	13	13	0	0	0	0	0	0	0	0
09:45	0	0	3	3	0	0	6	6	0	0	18	4	0	0	22	22	0	0	0	0	1	0	1	2
H/TOT	0	0	29	3	3	0	35	38	1	0	60	11	1	0	73	73	0	0	4	0	1	0	5	6
P/TOT	0	0	120	6	6	0	132	138	2	0	205	23	6	3	239	246	3	0	20	0	1	0	24	22

	MOVEMENT 1 (A => D)								MOVEMENT 2 (A => C)								MOVEMENT 3 (A => B)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	9	3	0	0	12	12	0	0	21	5	0	1	27	28	0	0	0	0	0	0	0	0
16:15	0	0	4	2	2	0	8	10	1	0	16	3	1	0	21	21	0	0	0	0	0	0	0	0
16:30	0	0	3	0	0	0	3	3	0	0	21	2	1	0	24	25	2	0	0	0	0	0	2	0
16:45	0	0	7	0	1	0	8	9	0	0	20	5	0	0	25	25	3	0	4	0	0	0	7	5
H/TOT	0	0	23	5	3	0	31	34	1	0	78	15	2	1	97	99	5	0	4	0	0	0	9	5
17:00	0	0	3	2	0	0	5	5	1	0	25	4	0	0	30	29	0	0	0	0	0	0	0	0
17:15	0	0	3	1	0	0	4	4	0	0	26	1	1	0	28	29	1	0	2	0	0	0	3	2
17:30	0	0	5	0	0	0	5	5	0	0	31	2	0	0	33	33	0	0	1	0	0	0	1	1
17:45	0	0	4	1	0	0	5	5	0	0	21	3	1	0	25	26	0	0	0	0	0	0	0	0
H/TOT	0	0	15	4	0	0	19	19	1	0	103	10	2	0	116	117	1	0	3	0	0	0	4	3
18:00	0	0	5	0	0	0	5	5	0	0	11	3	1	0	15	16	0	0	2	0	0	0	2	2
18:15	0	0	6	0	0	0	6	6	0	0	13	3	1	0	17	18	0	0	1	0	0	0	1	1
H/TOT	0	0	11	0	0	0	11	11	0	0	24	6	2	0	32	34	0	0	3	0	0	0	3	3
P/TOT	0	0	49	9	3	0	61	64	2	0	205	31	6	1	245	250	6	0	10	0	0	0	16	11

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 2 DATE: 25th March 2025

LOCATION: Ballintubber Road/Northern Relief Road/N 25 DAY: Tuesday

	MOVEMENT 4 (B => A)								MOVEMENT 5 (B => D)								MOVEMENT 6 (B => C)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	1	0	1	0	0	0	2	1	0	0	10	0	0	0	10	10	0	0	1	1	0	0	2	2
07:45	1	0	2	0	0	0	3	2	0	0	4	0	0	0	4	4	0	0	6	0	0	0	6	6
H/TOT	2	0	3	0	0	0	5	3	0	0	14	0	0	0	14	14	0	0	7	1	0	0	8	8
08:00	0	0	4	0	0	0	4	4	0	0	5	0	0	0	5	5	0	0	10	0	0	0	10	10
08:15	0	0	2	0	0	0	2	2	0	0	5	0	0	0	5	5	0	0	12	0	0	0	12	12
08:30	0	0	3	0	0	0	3	3	0	0	17	0	0	0	17	17	0	0	38	0	0	4	42	46
08:45	1	0	11	0	0	0	12	11	0	0	22	1	0	0	23	23	0	0	65	3	0	0	68	68
H/TOT	1	0	20	0	0	0	21	20	0	0	49	1	0	0	50	50	0	0	125	3	0	4	132	136
09:00	0	0	1	0	0	0	1	1	0	0	9	0	0	0	9	9	1	0	21	2	0	0	24	23
09:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	7	1	0	0	8	8
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
09:45	0	0	1	1	0	0	2	2	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
H/TOT	0	0	2	1	0	0	3	3	0	0	13	0	0	0	13	13	1	0	30	3	0	0	34	33
P/TOT	3	0	25	1	0	0	29	26	0	0	76	1	0	0	77	77	1	0	162	7	0	4	174	177

	MOVEMENT 4 (B => A)								MOVEMENT 5 (B => D)								MOVEMENT 6 (B => C)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	8
16:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	10	2	0	0	12	12
16:30	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	9	1	0	0	10	10
16:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	4	0	0	0	4	4
H/TOT	1	0	1	0	0	0	2	1	0	0	5	0	0	0	5	5	0	0	31	3	0	0	34	34
17:00	0	0	1	0	0	0	1	1	0	0	3	1	1	0	5	6	0	0	7	2	1	0	10	11
17:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	5	0	0	0	5	5
17:30	3	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	6	0	1	0	7	8
17:45	0	0	1	2	0	0	3	3	0	0	2	1	0	0	3	3	0	0	5	0	0	0	5	5
H/TOT	3	0	2	2	0	0	7	5	0	0	8	2	1	0	11	12	0	0	23	2	2	0	27	29
18:00	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	6	0	0	0	6	6
18:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	4	3	0	0	7	7
H/TOT	1	0	0	0	0	0	1	0	0	0	3	0	0	0	3	3	0	0	10	3	0	0	13	13
P/TOT	5	0	3	2	0	0	10	6	0	0	16	2	1	0	19	20	0	0	64	8	2	0	74	76

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 2 DATE: 25th March 2025

LOCATION: Ballintubber Road/Northern Relief Road/N 25 DAY: Tuesday

	MOVEMENT 7 (C => B)								MOVEMENT 8 (C => A)								MOVEMENT 9 (C => D)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	4	1	0	0	5	5	0	0	8	2	0	1	11	12	0	1	131	19	13	2	166	180
07:45	0	0	9	0	0	0	9	9	0	0	9	1	0	1	11	12	0	1	133	19	14	0	167	180
H/TOT	0	0	13	1	0	0	14	14	0	0	17	3	0	2	22	24	0	2	264	38	27	2	333	360
08:00	0	0	15	0	0	0	15	15	0	0	13	2	0	0	15	15	0	2	152	18	5	1	178	183
08:15	0	0	23	0	0	0	23	23	0	0	12	2	1	1	16	18	0	0	139	22	7	0	168	175
08:30	0	0	44	2	0	2	48	50	0	0	22	2	0	0	24	24	0	0	117	13	8	1	139	148
08:45	2	0	45	2	0	0	49	47	0	0	19	4	0	0	23	23	0	1	118	22	11	2	154	166
H/TOT	2	0	127	4	0	2	135	135	0	0	66	10	1	1	78	80	0	3	526	75	31	4	639	672
09:00	0	0	6	1	1	0	8	9	0	0	17	1	1	0	19	20	0	0	104	23	15	1	143	159
09:15	0	0	2	0	0	0	2	2	0	0	10	1	0	0	11	11	0	0	73	14	13	3	103	119
09:30	0	0	3	0	0	0	3	3	0	0	14	3	0	0	17	17	0	0	89	16	10	1	116	127
09:45	0	0	3	0	0	0	3	3	0	0	13	3	0	0	16	16	0	0	89	21	20	0	130	150
H/TOT	0	0	14	1	1	0	16	17	0	0	54	8	1	0	63	64	0	0	355	74	58	5	492	555
P/TOT	2	0	154	6	1	2	165	166	0	0	137	21	2	3	163	168	0	5	1145	187	116	11	1464	1587

	MOVEMENT 7 (C => B)								MOVEMENT 8 (C => A)								MOVEMENT 9 (C => D)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	6	0	0	0	6	6	0	0	24	1	0	1	26	27	0	0	109	19	10	3	141	154
16:15	0	0	13	0	0	0	13	13	0	0	22	3	0	0	25	25	0	0	115	15	5	0	135	140
16:30	0	0	9	0	0	0	9	9	0	0	22	1	0	0	23	23	0	0	106	22	9	2	139	150
16:45	0	0	7	1	0	0	8	8	0	0	25	4	0	0	29	29	0	0	108	12	5	3	128	136
H/TOT	0	0	35	1	0	0	36	36	0	0	93	9	0	1	103	104	0	0	438	68	29	8	543	580
17:00	2	0	4	1	0	0	7	5	0	0	25	1	0	0	26	26	0	1	118	16	8	0	143	150
17:15	0	0	5	0	1	0	6	7	0	0	28	2	0	0	30	30	0	1	93	15	4	2	115	120
17:30	0	0	3	4	0	0	7	7	0	0	21	4	1	0	26	27	0	1	104	17	8	2	132	141
17:45	0	0	6	1	0	0	7	7	0	0	24	0	1	0	25	26	0	0	88	8	4	1	101	106
H/TOT	2	0	18	6	1	0	27	26	0	0	98	7	2	0	107	109	0	3	403	56	24	5	491	517
18:00	0	0	5	1	0	0	6	6	0	0	14	1	0	0	15	15	0	0	105	8	4	0	117	121
18:15	0	0	4	0	0	0	4	4	0	0	21	1	1	0	23	24	0	0	98	10	2	1	111	114
H/TOT	0	0	9	1	0	0	10	10	0	0	35	2	1	0	38	39	0	0	203	18	6	1	228	235
P/TOT	2	0	62	8	1	0	73	72	0	0	226	18	3	1	248	252	0	3	1044	142	59	14	1262	1332

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 2 DATE: 25th March 2025

LOCATION: Ballintubber Road/Northern Relief Road/N 25 DAY: Tuesday

	MOVEMENT 10 (D => C)								MOVEMENT 11 (D => B)								MOVEMENT 12 (D => A)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	15	5	1	0	21	22	0	0	6	0	0	0	6	6	0	0	6	1	0	0	7	7
07:45	0	0	15	4	0	0	19	19	0	0	5	1	0	0	6	6	0	0	4	3	0	0	7	7
H/TOT	0	0	30	9	1	0	40	41	0	0	11	1	0	0	12	12	0	0	10	4	0	0	14	14
08:00	0	0	25	4	1	2	32	35	0	0	5	0	1	0	6	7	0	0	4	0	0	1	5	6
08:15	0	0	38	5	2	0	45	47	0	0	15	0	0	1	16	17	0	0	8	0	2	1	11	14
08:30	0	0	47	4	1	2	54	57	0	0	36	0	0	1	37	38	0	0	24	2	1	0	27	28
08:45	0	0	51	5	1	1	58	60	0	0	40	1	0	0	41	41	0	0	9	0	0	0	9	9
H/TOT	0	0	161	18	5	5	189	199	0	0	96	1	1	2	100	103	0	0	45	2	3	2	52	57
09:00	0	0	30	7	1	2	40	43	0	0	3	0	0	0	3	3	3	0	2	2	0	0	7	5
09:15	0	0	31	3	2	1	37	40	0	0	1	1	0	0	2	2	0	0	1	0	0	0	1	1
09:30	1	0	21	4	2	0	28	29	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4
09:45	0	0	28	3	2	0	33	35	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	1
H/TOT	1	0	110	17	7	3	138	147	0	0	4	2	0	0	6	6	3	0	7	3	0	0	13	11
P/TOT	1	0	301	44	13	8	367	387	0	0	111	4	1	2	118	121	3	0	62	9	3	2	79	82

	MOVEMENT 10 (D => C)								MOVEMENT 11 (D => B)								MOVEMENT 12 (D => A)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	38	6	5	0	49	54	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:15	0	1	26	5	5	1	38	43	0	0	5	0	0	0	5	5	0	0	2	0	0	0	2	2
16:30	0	0	40	10	2	2	54	58	0	0	1	0	1	0	2	3	0	0	6	2	0	0	8	8
16:45	0	0	24	10	3	3	40	46	0	0	1	0	1	0	2	3	0	0	4	0	0	0	4	4
H/TOT	0	1	128	31	15	6	181	201	0	0	7	0	2	0	9	11	0	0	13	2	0	0	15	15
17:00	0	0	31	11	2	0	44	46	0	0	0	0	0	0	0	0	0	0	4	0	1	0	5	6
17:15	0	0	34	5	3	0	42	45	0	0	2	0	0	0	2	2	0	0	4	2	1	0	7	8
17:30	0	0	34	2	2	0	38	40	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
17:45	0	0	48	5	1	0	54	55	0	0	1	0	0	0	1	1	0	0	6	1	0	0	7	7
H/TOT	0	0	147	23	8	0	178	186	0	0	3	0	0	0	3	3	0	0	17	3	2	0	22	24
18:00	0	1	21	5	4	0	31	34	0	0	1	0	0	0	1	1	0	0	2	0	3	0	5	8
18:15	0	0	24	2	2	0	28	30	0	0	2	0	0	0	2	2	0	0	5	0	0	0	5	5
H/TOT	0	1	45	7	6	0	59	64	0	0	3	0	0	0	3	3	0	0	7	0	3	0	10	13
P/TOT	0	2	320	61	29	6	418	451	0	0	13	0	2	0	15	17	0	0	37	5	5	0	47	52

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 3 DATE: 25th March 2025

LOCATION: E Cork Pkwy/N 25 DAY: Tuesday

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	158	21	13	2	195	209
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	152	20	14	0	187	200
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	310	41	27	2	382	409
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	178	18	5	1	204	209
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	154	23	8	0	185	193
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152	11	7	1	171	179
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	147	23	14	2	187	202
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	631	75	34	4	747	783
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	25	14	1	167	182
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	14	16	3	122	141
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	16	11	1	121	133
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	23	19	0	135	154
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	402	78	60	5	545	610
P/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1343	194	121	11	1674	1802

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	23	8	3	153	164
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	16	9	0	146	155
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	23	9	2	146	157
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	12	6	3	136	145
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	467	74	32	8	581	621
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	126	19	9	0	155	163
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	99	16	4	2	122	127
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	109	16	8	2	136	145
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	11	4	1	111	116
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	429	62	25	5	524	551
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107	8	4	0	119	123
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	10	2	1	123	126
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217	18	6	1	242	249
P/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1113	154	63	14	1347	1421

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 3 DATE: 25th March 2025

LOCATION: E Cork Pkwy/N 25 DAY: Tuesday

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	0	0	0	0	0	0	0	0	28	5	1	0	34	35	0	1	423	52	13	0	489	501
07:45	0	0	0	0	0	0	0	0	0	0	24	8	0	0	32	32	0	2	441	39	9	1	492	501
H/TOT	0	0	0	0	0	0	0	0	0	0	52	13	1	0	66	67	0	3	864	91	22	1	981	1002
08:00	0	0	0	0	0	0	0	0	0	0	35	4	2	3	44	49	0	2	439	46	9	5	501	514
08:15	0	0	0	0	0	0	0	0	0	0	60	5	4	2	71	77	0	1	340	32	12	3	388	402
08:30	0	0	0	0	0	0	0	0	0	0	108	6	2	3	119	124	0	0	308	30	17	2	357	376
08:45	0	0	0	0	0	0	0	0	0	0	98	6	1	1	106	108	0	0	298	34	16	2	350	368
H/TOT	0	0	0	0	0	0	0	0	0	0	301	21	9	9	340	358	0	3	1385	142	54	12	1596	1660
09:00	0	0	0	0	0	0	0	0	3	0	36	9	1	2	51	52	0	0	207	34	20	0	261	281
09:15	0	0	0	0	0	0	0	0	0	0	33	4	2	1	40	43	0	0	206	29	21	0	256	277
09:30	0	0	0	0	0	0	0	0	1	0	24	5	2	0	32	33	0	1	191	33	10	0	235	244
09:45	0	0	0	0	0	0	0	0	0	0	28	5	2	0	35	37	0	0	157	27	23	0	207	230
H/TOT	0	0	0	0	0	0	0	0	4	0	121	23	7	3	158	165	0	1	761	123	74	0	959	1032
P/TOT	0	0	0	0	0	0	0	0	4	0	474	57	17	12	564	590	0	7	3010	356	150	13	3536	3694

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	0	0	0	0	0	0	0	0	40	5	5	0	50	55	1	0	155	32	30	0	218	247
16:15	0	0	0	0	0	0	0	0	0	1	33	5	5	1	45	50	0	0	156	31	23	0	210	233
16:30	0	0	0	0	0	0	0	0	0	0	45	13	3	2	63	68	0	0	177	39	18	0	234	252
16:45	0	0	0	0	0	0	0	0	0	0	29	9	4	3	45	52	0	1	189	49	11	1	251	262
H/TOT	0	0	0	0	0	0	0	0	0	1	147	32	17	6	203	225	1	1	677	151	82	1	913	994
17:00	0	0	0	0	0	0	0	0	0	0	35	11	3	0	49	52	0	4	154	46	9	2	215	224
17:15	0	0	0	0	0	0	0	0	0	0	40	7	4	0	51	55	0	0	174	39	14	1	228	243
17:30	0	0	0	0	0	0	0	0	0	0	37	3	2	0	42	44	0	1	151	27	7	0	186	192
17:45	0	0	0	0	0	0	0	0	0	0	55	5	1	0	61	62	0	1	125	12	4	0	142	145
H/TOT	0	0	0	0	0	0	0	0	0	0	167	26	10	0	203	213	0	6	604	124	34	3	771	804
18:00	0	0	0	0	0	0	0	0	0	1	25	5	7	0	38	44	0	0	146	19	8	0	173	181
18:15	0	0	0	0	0	0	0	0	0	0	30	2	2	0	34	36	0	1	171	18	7	0	197	203
H/TOT	0	0	0	0	0	0	0	0	0	1	55	7	9	0	72	80	0	1	317	37	15	0	370	384
P/TOT	0	0	0	0	0	0	0	0	0	2	369	65	36	6	478	518	1	8	1598	312	131	4	2054	2182

SITE: Site 4 DATE: 25th March 2025

LOCATION: E Cork Pkwy/Cork Road DAY: Tuesday

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	1	68	23	9	0	101	109	0	2	146	52	17	0	217	233	0	0	0	0	0	0	0	0
07:45	0	0	102	15	13	0	130	143	1	0	144	43	16	0	204	219	0	0	0	0	0	0	0	0
H/TOT	0	1	170	38	22	0	231	252	1	2	290	95	33	0	421	452	0	0	0	0	0	0	0	0
08:00	0	0	118	15	9	0	142	151	0	0	178	39	22	4	243	269	0	0	0	0	0	0	0	0
08:15	0	1	119	22	12	2	156	169	0	1	220	28	28	2	279	308	0	0	0	0	0	0	0	0
08:30	0	0	146	19	7	2	174	183	0	0	168	30	24	1	223	248	0	0	0	0	0	0	0	0
08:45	0	2	147	27	18	1	195	213	0	0	106	31	26	0	163	189	0	0	0	0	0	0	0	0
H/TOT	0	3	530	83	46	5	667	716	0	1	672	128	100	7	908	1014	0	0	0	0	0	0	0	0
09:00	0	0	93	21	13	3	130	146	1	0	97	27	22	1	148	170	0	0	0	0	0	0	0	0
09:15	0	1	102	18	14	2	137	152	0	1	107	21	21	0	150	170	0	0	0	0	0	0	0	0
09:30	0	0	75	15	8	1	99	108	0	0	105	36	20	1	162	183	0	0	0	0	0	0	0	0
09:45	0	1	90	20	11	1	123	134	0	0	68	23	16	0	107	123	0	0	0	0	0	0	0	0
H/TOT	0	2	360	74	46	7	489	540	1	1	377	107	79	2	567	646	0	0	0	0	0	0	0	0
P/TOT	0	6	1060	195	114	12	1387	1508	2	4	1339	330	212	9	1896	2112	0	0	0	0	0	0	0	0

	MOVEMENT 1 (A => C)								MOVEMENT 2 (A => B)								MOVEMENT 3 (B => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	216	19	8	2	245	255	0	0	314	50	19	2	385	406	0	0	0	0	0	0	0	0
16:15	0	0	196	19	10	1	226	237	0	3	324	50	14	0	391	403	0	0	0	0	0	0	0	0
16:30	0	1	207	20	7	0	235	241	0	1	341	67	20	0	429	448	0	0	0	0	0	0	0	0
16:45	0	1	176	29	11	0	217	227	0	6	344	55	20	0	425	441	0	0	0	0	0	0	0	0
H/TOT	0	2	795	87	36	3	923	960	0	10	1323	222	73	2	1630	1698	0	0	0	0	0	0	0	0
17:00	0	1	211	33	9	3	257	268	0	3	369	57	12	1	442	453	0	0	0	0	0	0	0	0
17:15	0	1	215	16	5	1	238	243	1	1	380	51	5	1	439	444	0	0	0	0	0	0	0	0
17:30	0	0	216	19	6	0	241	247	0	3	363	46	16	1	429	444	0	0	0	0	0	0	0	0
17:45	1	2	203	19	4	0	229	231	0	1	330	43	9	0	383	391	0	0	0	0	0	0	0	0
H/TOT	1	4	845	87	24	4	965	989	1	8	1442	197	42	3	1693	1732	0	0	0	0	0	0	0	0
18:00	0	0	171	13	2	2	188	192	0	4	302	34	4	1	345	348	0	0	0	0	0	0	0	0
18:15	0	0	172	14	4	1	191	196	0	0	295	24	3	0	322	325	0	0	0	0	0	0	0	0
H/TOT	0	0	343	27	6	3	379	388	0	4	597	58	7	1	667	673	0	0	0	0	0	0	0	0
P/TOT	1	6	1983	201	66	10	2267	2337	1	22	3362	477	122	6	3990	4103	0	0	0	0	0	0	0	0

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 4 DATE: 25th March 2025

LOCATION: E Cork Pkwy/Cork Road DAY: Tuesday

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
07:30	0	0	0	0	0	0	0	0	0	0	25	3	0	2	30	32	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	22	2	1	1	26	28	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	47	5	1	3	56	60	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	29	5	1	0	35	36	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	65	5	2	1	73	76	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	66	4	6	2	78	86	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	57	6	5	3	71	79	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	217	20	14	6	257	277	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	42	3	5	1	51	57	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	29	9	1	0	39	40	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	25	5	4	0	34	38	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	19	4	3	1	27	31	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	115	21	13	2	151	166	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0	0	0	379	46	28	11	464	503	0	0	0	0	0	0	0	0

	MOVEMENT 4 (B => C)								MOVEMENT 5 (C => B)								MOVEMENT 6 (C => A)							
TIME	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	0	0	0	0	0	0	0	0	83	8	2	0	93	95	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	76	10	3	0	89	92	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	81	14	2	0	97	99	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	77	10	5	0	92	97	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	317	42	12	0	371	383	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	74	9	2	1	86	89	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	87	10	2	0	99	101	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	76	5	0	0	81	81	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	1	74	8	2	0	85	86	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	311	32	6	1	351	357	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	69	12	2	0	83	85	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	51	10	0	0	61	61	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	120	22	2	0	144	146	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0	0	1	748	96	20	1	866	886	0	0	0	0	0	0	0	0

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 5 DATE: 25th March 2025

LOCATION: Northern Relief Road/Cork Road DAY: Tuesday

	MOVEMENT 1 (A => D)								MOVEMENT 2 (A => C)								MOVEMENT 3 (A => B)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	5	0	1	0	6	7	0	0	68	8	6	0	82	88	0	0	15	0	0	0	15	15
07:45	0	0	2	0	1	0	3	4	0	1	74	11	4	0	90	93	0	0	11	0	0	0	11	11
H/TOT	0	0	7	0	2	0	9	11	0	1	142	19	10	0	172	181	0	0	26	0	0	0	26	26
08:00	0	0	4	2	0	0	6	6	0	1	77	8	2	0	88	89	0	0	15	2	0	0	17	17
08:15	0	0	4	0	0	0	4	4	0	0	88	11	3	1	103	107	0	0	26	2	1	0	29	30
08:30	1	0	3	4	1	0	9	9	2	0	93	6	4	2	107	111	0	0	30	0	2	0	32	34
08:45	0	0	5	2	0	0	7	7	0	0	61	11	3	0	75	78	0	0	18	2	3	2	25	30
H/TOT	1	0	16	8	1	0	26	26	2	1	319	36	12	3	373	385	0	0	89	6	6	2	103	111
09:00	0	0	4	4	1	0	9	10	0	0	64	8	9	1	82	92	0	0	13	0	4	0	17	21
09:15	0	0	7	0	0	0	7	7	0	0	27	9	4	0	40	44	0	0	16	4	1	0	21	22
09:30	0	0	6	3	0	0	9	9	0	0	52	6	6	0	64	70	0	0	10	2	2	0	14	16
09:45	0	0	11	2	0	0	13	13	0	0	35	13	8	0	56	64	0	0	8	3	2	1	14	17
H/TOT	0	0	28	9	1	0	38	39	0	0	178	36	27	1	242	270	0	0	47	9	9	1	66	76
P/TOT	1	0	51	17	4	0	73	76	2	2	639	91	49	4	787	836	0	0	162	15	15	3	195	213

	MOVEMENT 1 (A => D)								MOVEMENT 2 (A => C)								MOVEMENT 3 (A => B)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	5	3	1	0	9	10	0	0	63	9	7	1	80	88	0	0	46	3	4	0	53	57
16:15	0	0	5	1	0	0	6	6	0	0	56	9	2	0	67	69	0	0	36	4	1	0	41	42
16:30	0	0	4	1	2	0	7	9	0	0	53	9	7	0	69	76	0	0	29	4	2	0	35	37
16:45	0	0	5	0	0	0	5	5	0	0	40	9	2	0	51	53	0	0	32	3	2	0	37	39
H/TOT	0	0	19	5	3	0	27	30	0	0	212	36	18	1	267	286	0	0	143	14	9	0	166	175
17:00	0	1	5	1	0	0	7	6	1	1	70	8	5	0	85	89	0	0	33	8	2	1	44	47
17:15	0	0	3	1	0	0	4	4	0	0	42	8	4	1	55	60	0	0	31	8	0	0	39	39
17:30	0	0	5	0	0	0	5	5	0	1	47	15	6	0	69	74	0	0	34	3	0	0	37	37
17:45	0	0	4	0	0	0	4	4	0	0	39	3	4	0	46	50	0	0	38	3	0	0	41	41
H/TOT	0	1	17	2	0	0	20	19	1	2	198	34	19	1	255	273	0	0	136	22	2	1	161	164
18:00	0	0	5	0	0	0	5	5	0	0	45	2	2	0	49	51	0	0	33	5	1	0	39	40
18:15	0	0	13	2	0	0	15	15	0	0	50	4	2	0	56	58	0	0	18	5	0	0	23	23
H/TOT	0	0	18	2	0	0	20	20	0	0	95	6	4	0	105	109	0	0	51	10	1	0	62	63
P/TOT	0	1	54	9	3	0	67	69	1	2	505	76	41	2	627	668	0	0	330	46	12	1	389	402

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 5 DATE: 25th March 2025

LOCATION: Northern Relief Road/Cork Road DAY: Tuesday

	MOVEMENT 4 (B => A)								MOVEMENT 5 (B => D)								MOVEMENT 6 (B => C)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	1	19	4	6	0	30	35	0	0	45	15	2	0	62	64	0	0	10	5	5	0	20	25
07:45	0	0	23	8	2	0	33	35	0	0	57	4	4	0	65	69	0	0	17	3	7	0	27	34
H/TOT	0	1	42	12	8	0	63	70	0	0	102	19	6	0	127	133	0	0	27	8	12	0	47	59
08:00	0	0	36	8	2	0	46	48	0	0	71	4	5	0	80	85	0	0	16	0	2	0	18	20
08:15	0	0	28	9	4	1	42	47	0	1	72	10	2	1	86	88	0	0	12	0	4	0	16	20
08:30	0	0	36	4	6	0	46	52	0	0	86	11	1	1	99	101	0	0	14	2	3	0	19	22
08:45	0	1	50	6	6	1	64	70	0	0	94	12	2	0	108	110	0	0	16	2	6	1	25	32
H/TOT	0	1	150	27	18	2	198	217	0	1	323	37	10	2	373	384	0	0	58	4	15	1	78	94
09:00	0	0	31	7	8	1	47	56	0	0	47	9	1	2	59	62	0	0	13	1	8	0	22	30
09:15	0	0	20	8	5	0	33	38	0	1	78	8	2	0	89	90	0	0	5	1	6	0	12	18
09:30	0	0	20	8	5	0	33	38	0	0	52	8	1	1	62	64	0	0	5	3	2	1	11	14
09:45	0	0	25	8	0	0	33	33	0	1	63	9	2	1	76	78	0	0	11	1	7	0	19	26
H/TOT	0	0	96	31	18	1	146	165	0	2	240	34	6	4	286	294	0	0	34	6	23	1	64	88
P/TOT	0	2	288	70	44	3	407	452	0	3	665	90	22	6	786	811	0	0	119	18	50	2	189	241

	MOVEMENT 4 (B => A)								MOVEMENT 5 (B => D)								MOVEMENT 6 (B => C)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	73	4	6	0	83	89	0	0	129	10	1	2	142	145	0	0	18	0	2	0	20	22
16:15	0	0	56	6	8	0	70	78	0	0	113	14	0	0	127	127	0	0	21	2	1	0	24	25
16:30	0	0	67	7	5	0	79	84	0	1	127	16	1	1	146	147	0	0	18	2	1	1	22	24
16:45	0	0	49	7	5	0	61	66	0	1	107	17	4	0	129	132	0	0	15	5	2	1	23	26
H/TOT	0	0	245	24	24	0	293	317	0	2	476	57	6	3	544	551	0	0	72	9	6	2	89	97
17:00	0	0	83	13	7	1	104	112	0	1	108	18	0	2	129	130	1	0	15	1	2	0	19	20
17:15	0	0	79	8	5	0	92	97	0	1	121	13	1	1	137	138	0	0	18	0	0	0	18	18
17:30	0	0	71	5	3	0	79	82	0	0	116	12	0	0	128	128	0	0	15	5	3	0	23	26
17:45	0	1	84	5	2	0	92	93	1	1	125	15	1	0	143	143	0	0	12	0	0	0	12	12
H/TOT	0	1	317	31	17	1	367	384	1	3	470	58	2	3	537	539	1	0	60	6	5	0	72	76
18:00	0	0	67	3	1	0	71	72	0	0	104	8	0	2	114	116	0	0	9	2	2	0	13	15
18:15	0	0	57	2	3	0	62	65	0	0	100	6	0	1	107	108	0	0	10	1	1	0	12	13
H/TOT	0	0	124	5	4	0	133	137	0	0	204	14	0	3	221	224	0	0	19	3	3	0	25	28
P/TOT	0	1	686	60	45	1	793	838	1	5	1150	129	8	9	1302	1314	1	0	151	18	14	2	186	201

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 5 DATE: 25th March 2025

LOCATION: Northern Relief Road/Cork Road DAY: Tuesday

	MOVEMENT 7 (C => B)								MOVEMENT 8 (C => A)								MOVEMENT 9 (C => D)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	0	2	2	0	0	4	4	0	0	11	4	1	0	16	17	0	0	10	2	0	0	12	12
07:45	0	0	7	2	0	0	9	9	0	0	7	5	0	0	12	12	1	0	12	0	0	0	13	12
H/TOT	0	0	9	4	0	0	13	13	0	0	18	9	1	0	28	29	1	0	22	2	0	0	25	24
08:00	0	0	8	0	1	1	10	12	0	0	18	3	1	1	23	25	0	0	25	3	0	0	28	28
08:15	0	0	24	0	2	1	27	30	0	0	51	4	1	1	57	59	0	0	25	4	0	1	30	31
08:30	0	0	27	1	1	4	33	38	0	0	53	4	2	1	60	63	0	0	24	0	0	1	25	26
08:45	0	0	35	1	0	0	36	36	0	0	62	5	1	0	68	69	0	0	46	4	0	0	50	50
H/TOT	0	0	94	2	4	6	106	116	0	0	184	16	5	3	208	216	0	0	120	11	0	2	133	135
09:00	1	0	18	1	1	0	21	21	0	0	35	4	2	3	44	49	0	0	30	5	0	0	35	35
09:15	0	0	11	1	0	0	12	12	1	0	19	5	2	0	27	28	0	0	25	3	0	0	28	28
09:30	0	0	3	2	1	0	6	7	1	0	15	2	1	1	20	21	0	0	14	2	0	0	16	16
09:45	0	0	9	1	0	0	10	10	0	0	16	2	2	0	20	22	0	0	22	3	0	0	25	25
H/TOT	1	0	41	5	2	0	49	50	2	0	85	13	7	4	111	120	0	0	91	13	0	0	104	104
P/TOT	1	0	144	11	6	6	168	179	2	0	287	38	13	7	347	365	1	0	233	26	0	2	262	263

	MOVEMENT 7 (C => B)								MOVEMENT 8 (C => A)								MOVEMENT 9 (C => D)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	3	3	1	0	7	8	0	0	28	2	4	0	34	38	0	0	29	6	0	1	36	37
16:15	0	0	6	1	1	1	9	11	0	0	28	6	5	0	39	44	0	1	24	4	0	0	29	28
16:30	0	0	14	1	0	2	17	19	1	0	23	11	3	0	38	40	0	0	23	1	0	0	24	24
16:45	0	0	11	3	0	1	15	16	0	0	22	9	2	1	34	37	0	0	25	3	0	0	28	28
H/TOT	0	0	34	8	2	4	48	54	1	0	101	28	14	1	145	159	0	1	101	14	0	1	117	117
17:00	0	0	10	3	0	0	13	13	1	0	23	9	4	1	38	42	0	0	28	3	0	0	31	31
17:15	0	0	14	2	1	0	17	18	0	0	30	4	3	0	37	40	0	0	18	2	0	0	20	20
17:30	0	0	13	0	0	0	13	13	0	0	38	1	3	0	42	45	0	0	25	2	0	0	27	27
17:45	0	0	8	0	1	0	9	10	0	0	31	5	1	0	37	38	0	0	32	4	0	0	36	36
H/TOT	0	0	45	5	2	0	52	54	1	0	122	19	11	1	154	165	0	0	103	11	0	0	114	114
18:00	0	0	6	0	1	0	7	8	0	1	14	3	2	0	20	21	0	0	20	5	0	0	25	25
18:15	0	0	3	3	0	0	6	6	0	0	19	2	3	0	24	27	0	0	21	2	2	0	25	27
H/TOT	0	0	9	3	1	0	13	14	0	1	33	5	5	0	44	48	0	0	41	7	2	0	50	52
P/TOT	0	0	88	16	5	4	113	122	2	1	256	52	30	2	343	372	0	1	245	32	2	1	281	283

25307 - Midleton Counts **MARCH 2025**

MANUAL CLASSIFIED JUNCTION TURNING COUNTS **IDA/25/307**

SITE: Site 5 DATE: 25th March 2025

LOCATION: Northern Relief Road/Cork Road DAY: Tuesday

	MOVEMENT 10 (D => C)								MOVEMENT 11 (D => B)								MOVEMENT 12 (D => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
07:30	0	1	64	12	2	3	82	86	0	0	12	2	0	0	14	14	0	0	0	0	0	0	0	0
07:45	0	0	56	6	2	1	65	68	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0
H/TOT	0	1	120	18	4	4	147	154	0	0	17	2	0	0	19	19	0	0	0	0	0	0	0	0
08:00	0	1	97	12	1	1	112	113	0	0	13	3	0	1	17	18	0	0	0	0	0	0	0	0
08:15	0	0	67	13	1	0	81	82	0	0	20	3	0	3	26	29	0	0	0	0	0	0	0	0
08:30	0	0	96	7	2	1	106	109	0	0	17	3	0	0	20	20	0	0	0	0	0	0	0	0
08:45	0	1	86	15	1	1	104	105	0	0	14	6	2	0	22	24	0	0	0	0	0	0	0	0
H/TOT	0	2	346	47	5	3	403	409	0	0	64	15	2	4	85	91	0	0	0	0	0	0	0	0
09:00	0	0	52	16	2	0	70	72	0	0	11	3	1	0	15	16	0	0	1	0	0	0	1	1
09:15	0	0	48	6	3	3	60	66	0	0	14	4	0	0	18	18	1	0	0	0	0	0	1	0
09:30	0	0	53	10	1	0	64	65	0	0	15	5	1	0	21	22	0	0	0	0	0	0	0	0
09:45	0	0	65	10	4	0	79	83	0	0	10	1	0	0	11	11	0	0	0	0	0	0	0	0
H/TOT	0	0	218	42	10	3	273	286	0	0	50	13	2	0	65	67	1	0	1	0	0	0	2	1
P/TOT	0	3	684	107	19	10	823	849	0	0	131	30	4	4	169	177	1	0	1	0	0	0	2	1

	MOVEMENT 10 (D => C)								MOVEMENT 11 (D => B)								MOVEMENT 12 (D => A)							
TIME	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**	**PCL**	**MCL**	**CAR**	**LGV**	**HGV**	**BUS**	**TOT**	**PCU**
16:00	0	0	64	11	2	3	80	85	0	0	37	1	0	0	38	38	0	0	0	0	0	0	0	0
16:15	0	0	71	7	1	0	79	80	0	0	27	4	0	0	31	31	0	0	0	0	0	0	0	0
16:30	0	0	70	12	1	1	84	86	0	0	45	10	0	0	55	55	0	0	0	0	0	0	0	0
16:45	0	0	77	3	1	2	83	86	0	0	35	4	3	0	42	45	0	0	0	0	0	0	0	0
H/TOT	0	0	282	33	5	6	326	337	0	0	144	19	3	0	166	169	0	0	0	0	0	0	0	0
17:00	0	0	67	9	2	0	78	80	0	0	32	1	0	0	33	33	0	0	0	0	0	0	0	0
17:15	0	1	67	9	1	2	80	82	0	0	41	1	1	0	43	44	0	0	0	0	0	0	0	0
17:30	0	0	70	5	0	1	76	77	0	1	29	2	0	0	32	31	1	0	0	0	0	0	1	0
17:45	0	0	67	7	0	1	75	76	0	0	31	6	1	0	38	39	0	0	0	0	0	0	0	0
H/TOT	0	1	271	30	3	4	309	315	0	1	133	10	2	0	146	147	1	0	0	0	0	0	1	0
18:00	0	0	69	7	0	0	76	76	0	0	29	5	0	0	34	34	0	0	0	0	0	0	0	0
18:15	0	0	64	4	0	1	69	70	0	0	31	2	0	0	33	33	0	0	0	0	0	0	0	0
H/TOT	0	0	133	11	0	1	145	146	0	0	60	7	0	0	67	67	0	0	0	0	0	0	0	0
P/TOT	0	1	686	74	8	11	780	798	0	1	337	36	5	0	379	383	1	0	0	0	0	0	1	0

APPENDIX C

TRICS Trip Generation Output
(Residential Houses, Apartments & Creche)

NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301

Calculation Reference: AUDIT-160301-250207-0212

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

12	CONNAUGHT		
	CS	SLIGO	2 days
	LT	LEITRIM	1 days
	MA	MAYO	1 days
13	MUNSTER		
	TI	TIPPERARY	1 days
14	LEINSTER		
	CC	CARLOW	1 days
	LU	LOUTH	1 days
	WC	WICKLOW	2 days
15	GREATER DUBLIN		
	DL	DUBLIN	2 days
16	ULSTER (REPUBLIC OF IRELAND)		
	CV	CAVAN	2 days
	DN	DONEGAL	3 days
	MG	MONAGHAN	2 days
17	ULSTER (NORTHERN IRELAND)		
	AN	ANTRIM	2 days
	DE	DERRY	2 days
	TY	TYRONE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	23	54	0.083	23	54	0.248	23	54	0.331
08:00 - 09:00	23	54	0.207	23	54	0.593	23	54	0.800
09:00 - 10:00	23	54	0.224	23	54	0.261	23	54	0.485
10:00 - 11:00	23	54	0.195	23	54	0.210	23	54	0.405
11:00 - 12:00	23	54	0.195	23	54	0.230	23	54	0.425
12:00 - 13:00	23	54	0.250	23	54	0.232	23	54	0.482
13:00 - 14:00	23	54	0.265	23	54	0.279	23	54	0.544
14:00 - 15:00	23	54	0.292	23	54	0.302	23	54	0.594
15:00 - 16:00	23	54	0.349	23	54	0.290	23	54	0.639
16:00 - 17:00	23	54	0.393	23	54	0.265	23	54	0.658
17:00 - 18:00	23	54	0.525	23	54	0.318	23	54	0.843
18:00 - 19:00	23	54	0.386	23	54	0.313	23	54	0.699
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.364			3.541			6.905

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

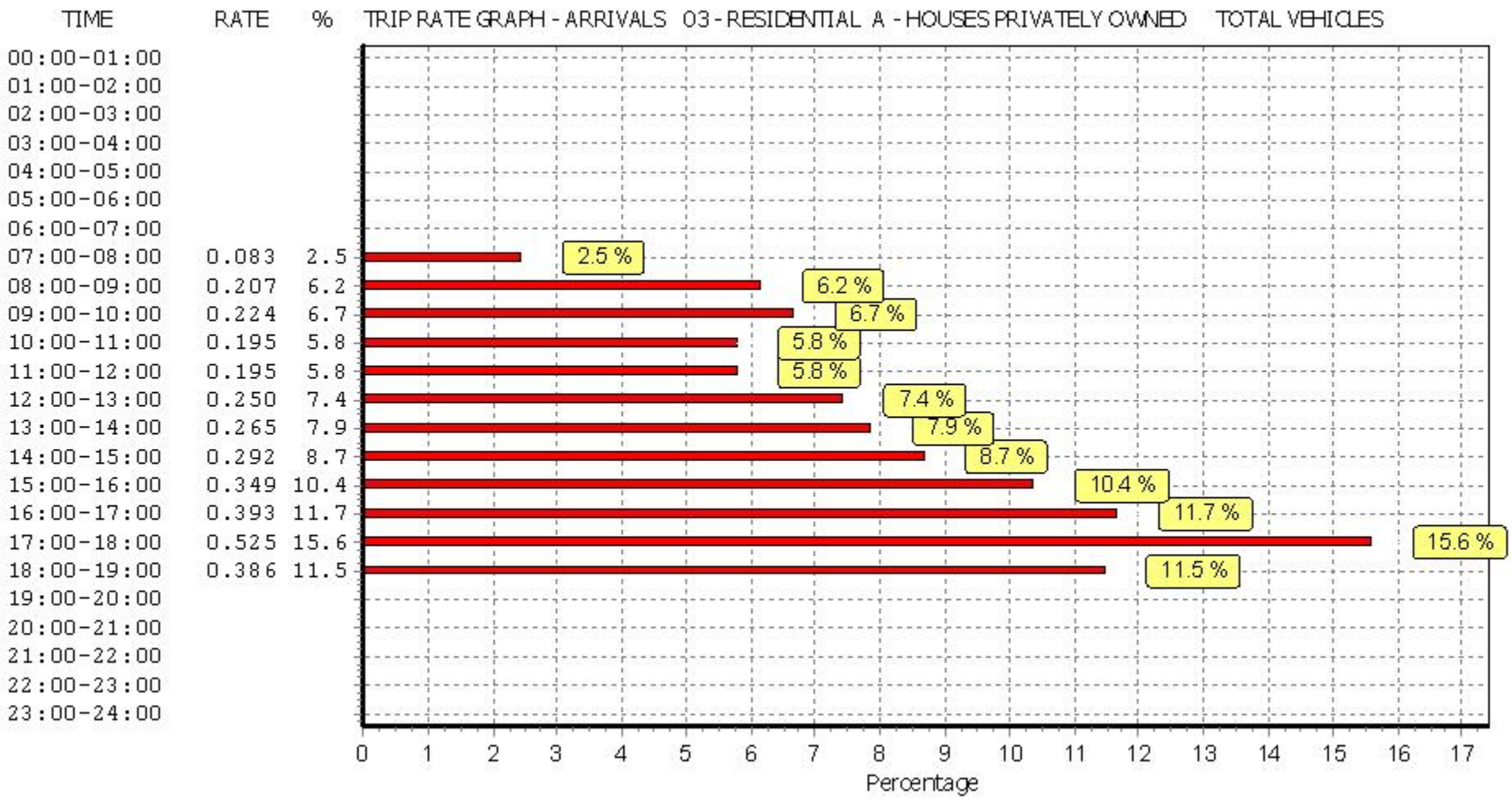
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	6 - 151 (units:)
Survey date date range:	01/01/16 - 07/06/24
Number of weekdays (Monday-Friday):	23
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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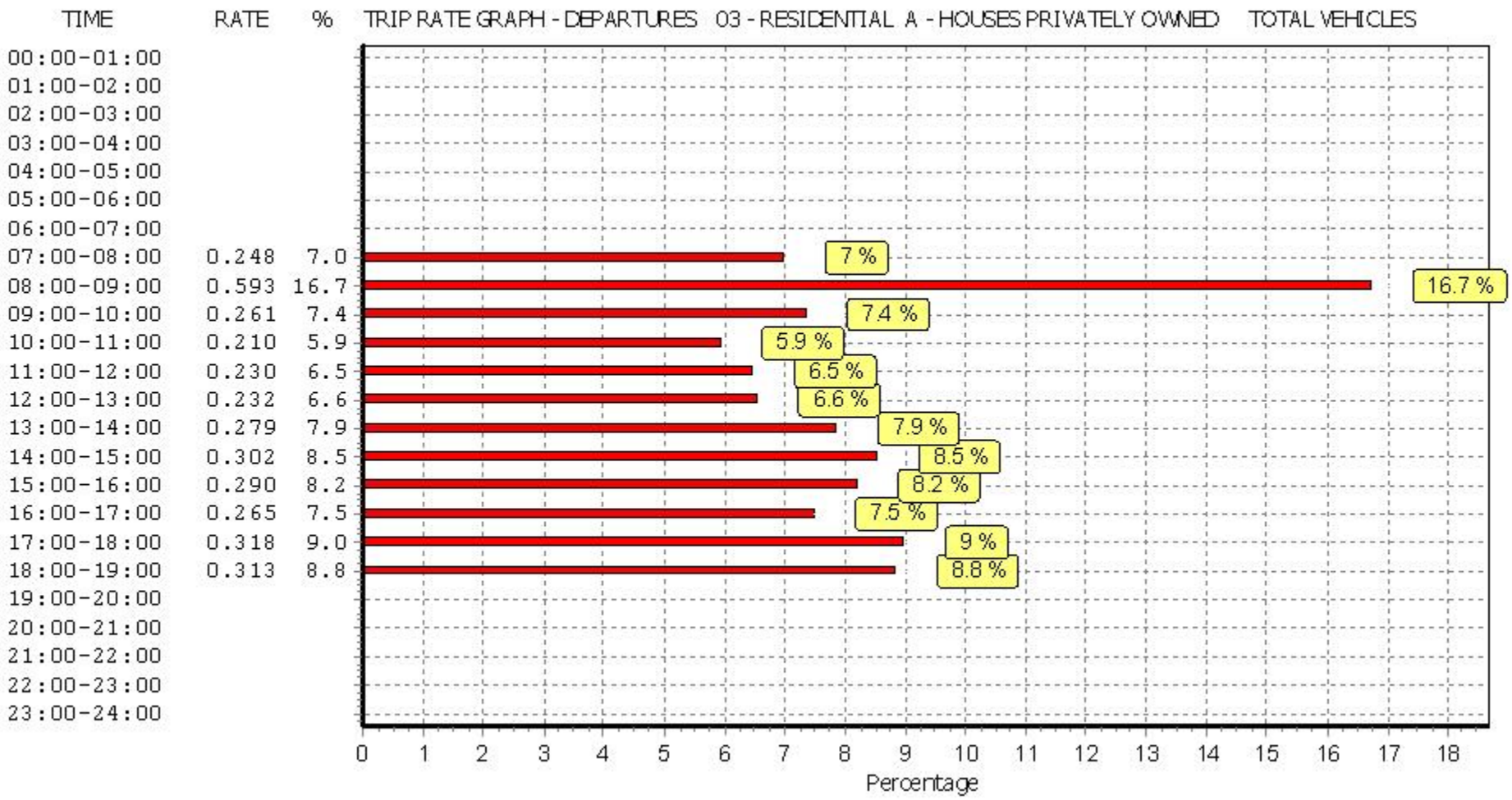

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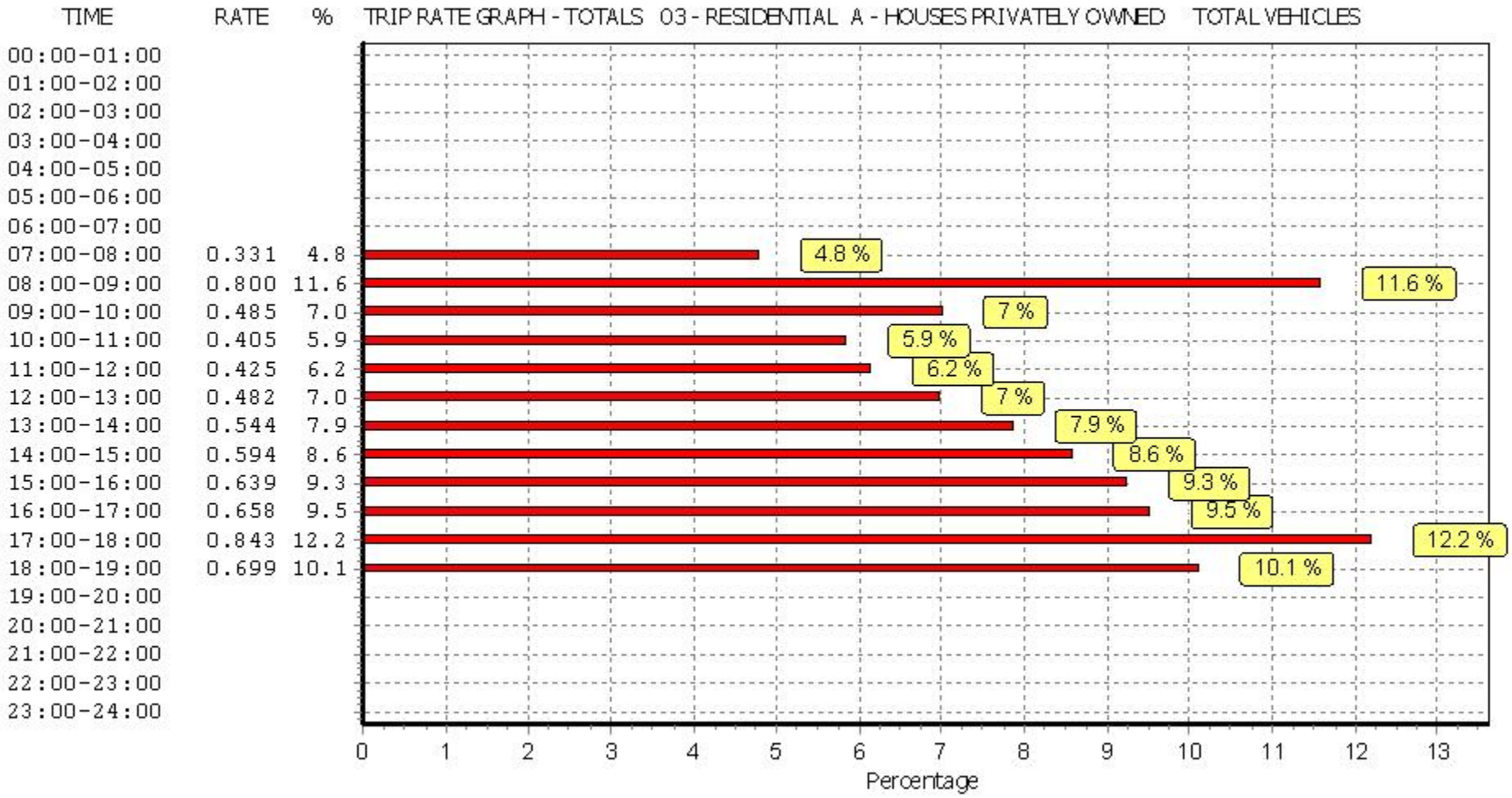

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	23	54	0.002	23	54	0.005	23	54	0.007
08:00 - 09:00	23	54	0.001	23	54	0.009	23	54	0.010
09:00 - 10:00	23	54	0.001	23	54	0.002	23	54	0.003
10:00 - 11:00	23	54	0.001	23	54	0.000	23	54	0.001
11:00 - 12:00	23	54	0.003	23	54	0.002	23	54	0.005
12:00 - 13:00	23	54	0.002	23	54	0.001	23	54	0.003
13:00 - 14:00	23	54	0.006	23	54	0.004	23	54	0.010
14:00 - 15:00	23	54	0.002	23	54	0.001	23	54	0.003
15:00 - 16:00	23	54	0.002	23	54	0.005	23	54	0.007
16:00 - 17:00	23	54	0.003	23	54	0.003	23	54	0.006
17:00 - 18:00	23	54	0.006	23	54	0.004	23	54	0.010
18:00 - 19:00	23	54	0.007	23	54	0.006	23	54	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.036			0.042			0.078

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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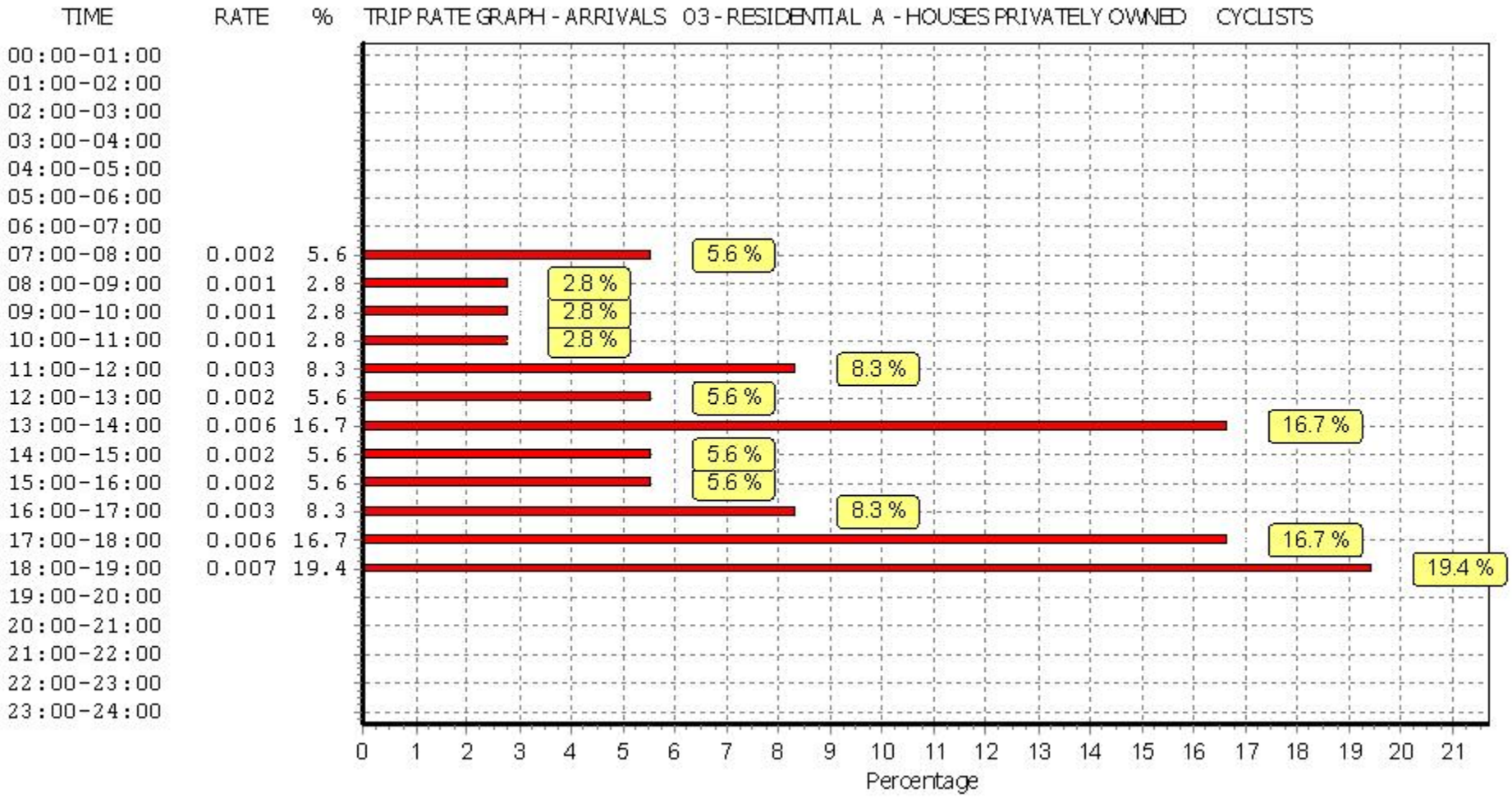

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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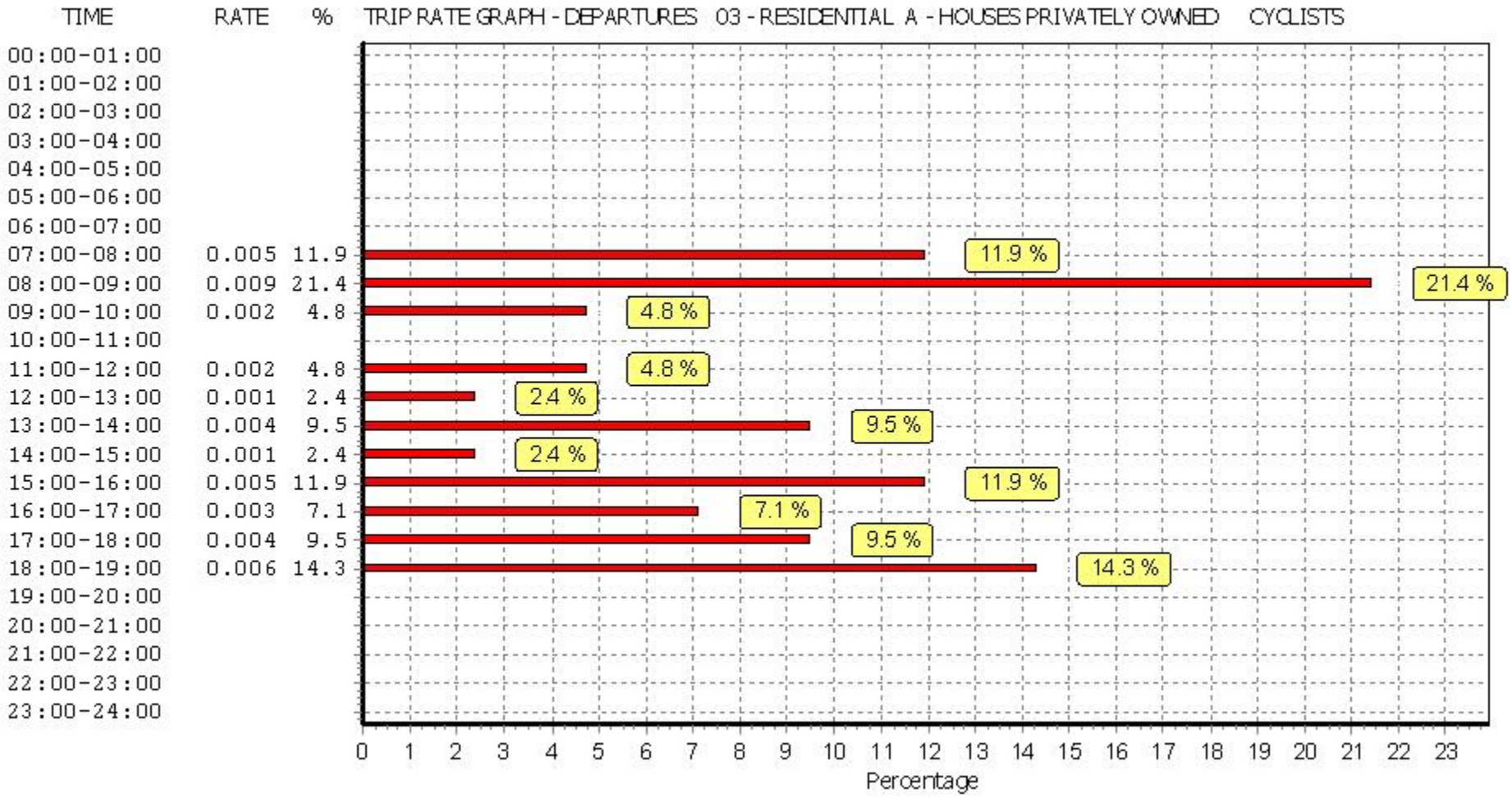

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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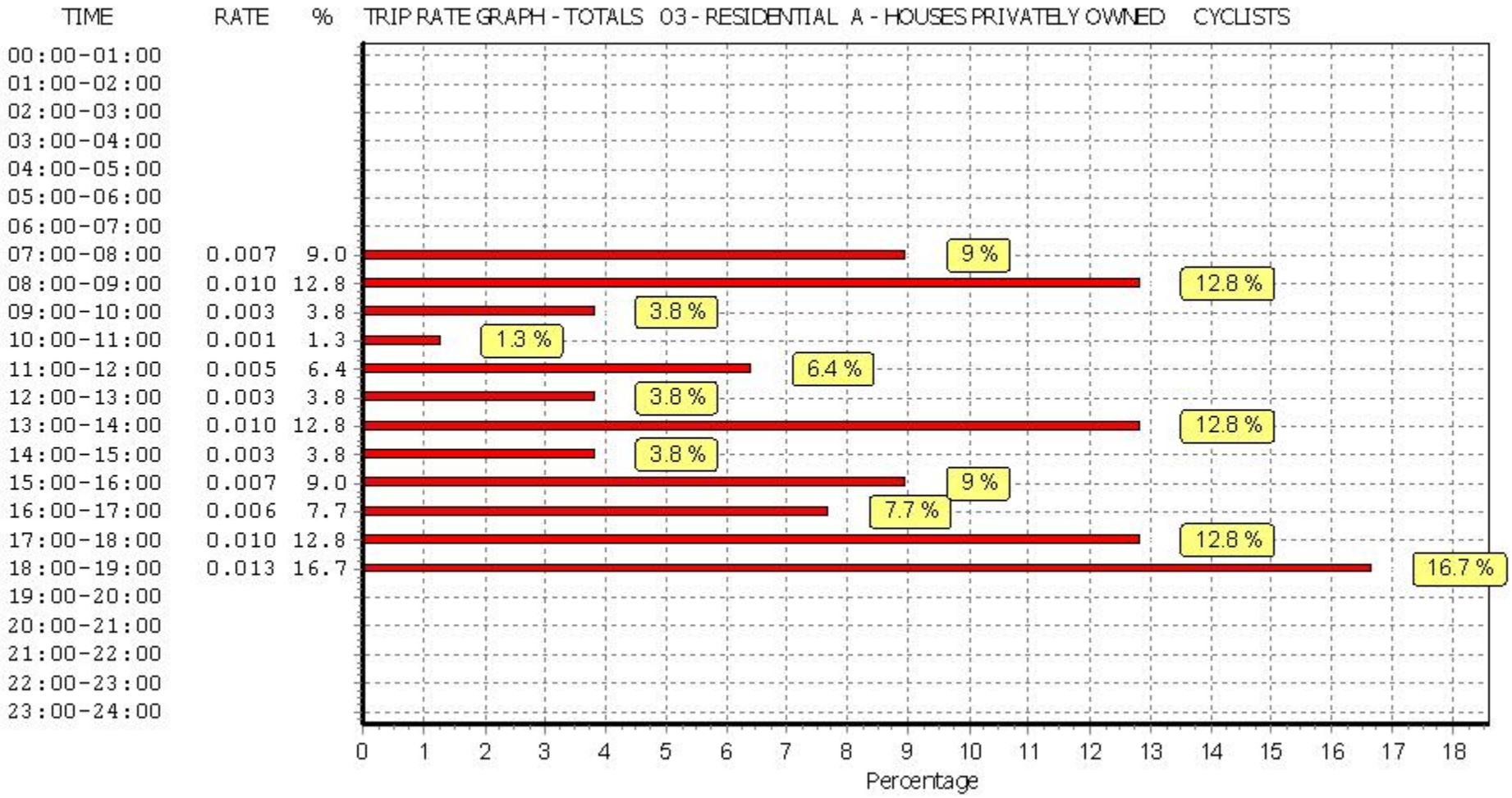

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	BH	BRIGHTON & HOVE	1 days
	CT	CENTRAL BEDFORDSHIRE	3 days
	HF	HERTFORDSHIRE	4 days
	PO	PORTSMOUTH	1 days
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	DV	DEVON	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	1 days
	SF	SUFFOLK	2 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
	LE	LEICESTERSHIRE	1 days
	NG	NOTTINGHAM	2 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	BY	BARNSLEY	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	3 days
09	NORTH		
	TW	TYNE & WEAR	1 days
10	WALES		
	CO	CONWY	1 days
11	SCOTLAND		
	HI	HIGHLAND	1 days
	SR	STIRLING	1 days
12	CONNAUGHT		
	MA	MAYO	1 days
14	LEINSTER		
	LU	LOUTH	1 days
	WX	WEXFORD	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	3 days

This section displays the number of survey days per TRICS® sub-region in the selected set

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	36	70	0.036	36	70	0.152	36	70	0.188
08:00 - 09:00	36	70	0.064	36	70	0.188	36	70	0.252
09:00 - 10:00	36	70	0.078	36	70	0.081	36	70	0.159
10:00 - 11:00	36	70	0.064	36	70	0.082	36	70	0.146
11:00 - 12:00	36	70	0.065	36	70	0.081	36	70	0.146
12:00 - 13:00	36	70	0.085	36	70	0.086	36	70	0.171
13:00 - 14:00	36	70	0.078	36	70	0.084	36	70	0.162
14:00 - 15:00	36	70	0.080	36	70	0.082	36	70	0.162
15:00 - 16:00	36	70	0.113	36	70	0.075	36	70	0.188
16:00 - 17:00	36	70	0.123	36	70	0.078	36	70	0.201
17:00 - 18:00	36	70	0.157	36	70	0.085	36	70	0.242
18:00 - 19:00	36	70	0.150	36	70	0.090	36	70	0.240
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.093			1.164			2.257

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	9 - 332 (units:)
Survey date date range:	01/01/16 - 19/06/23
Number of weekdays (Monday-Friday):	36
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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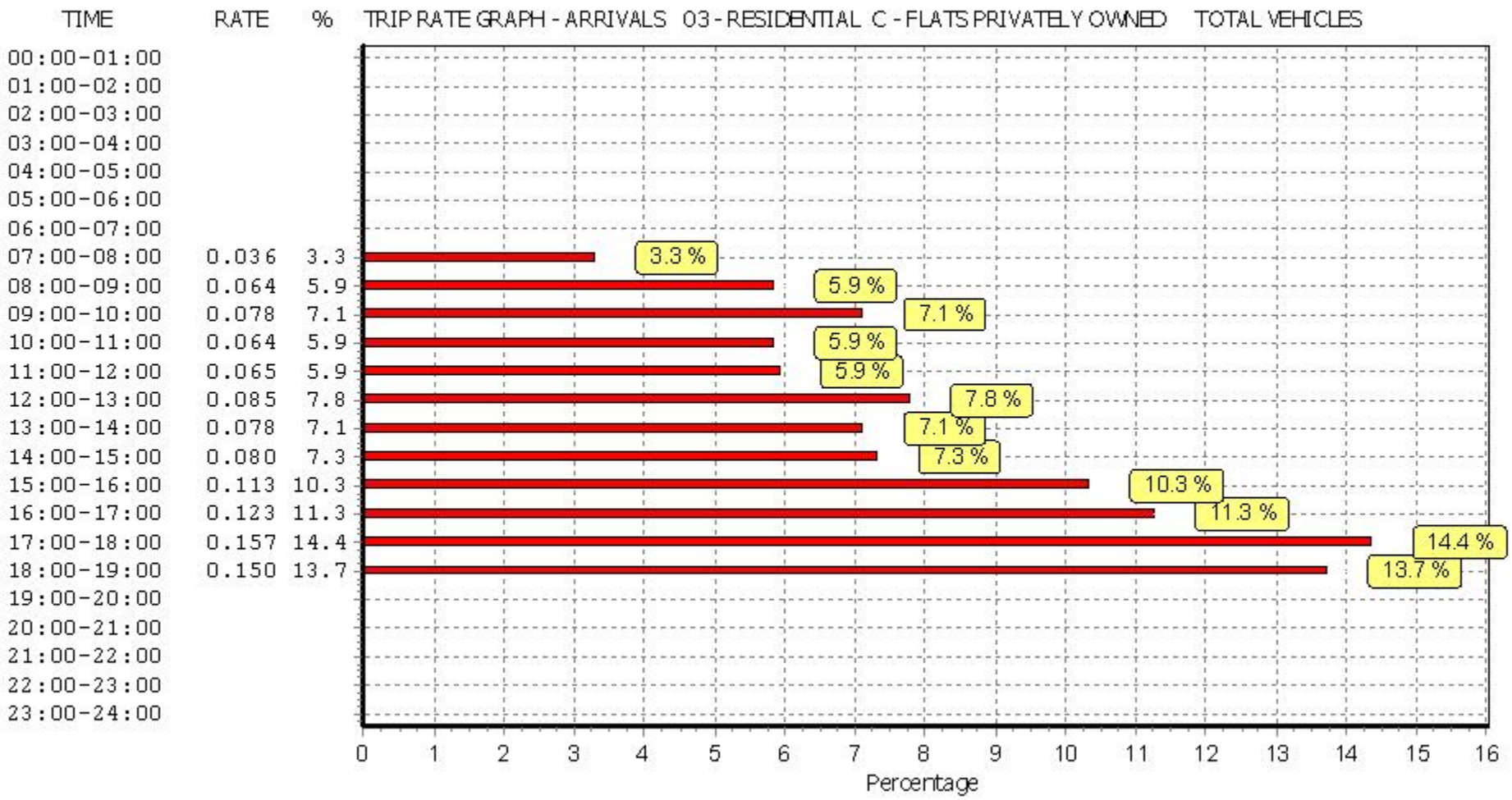
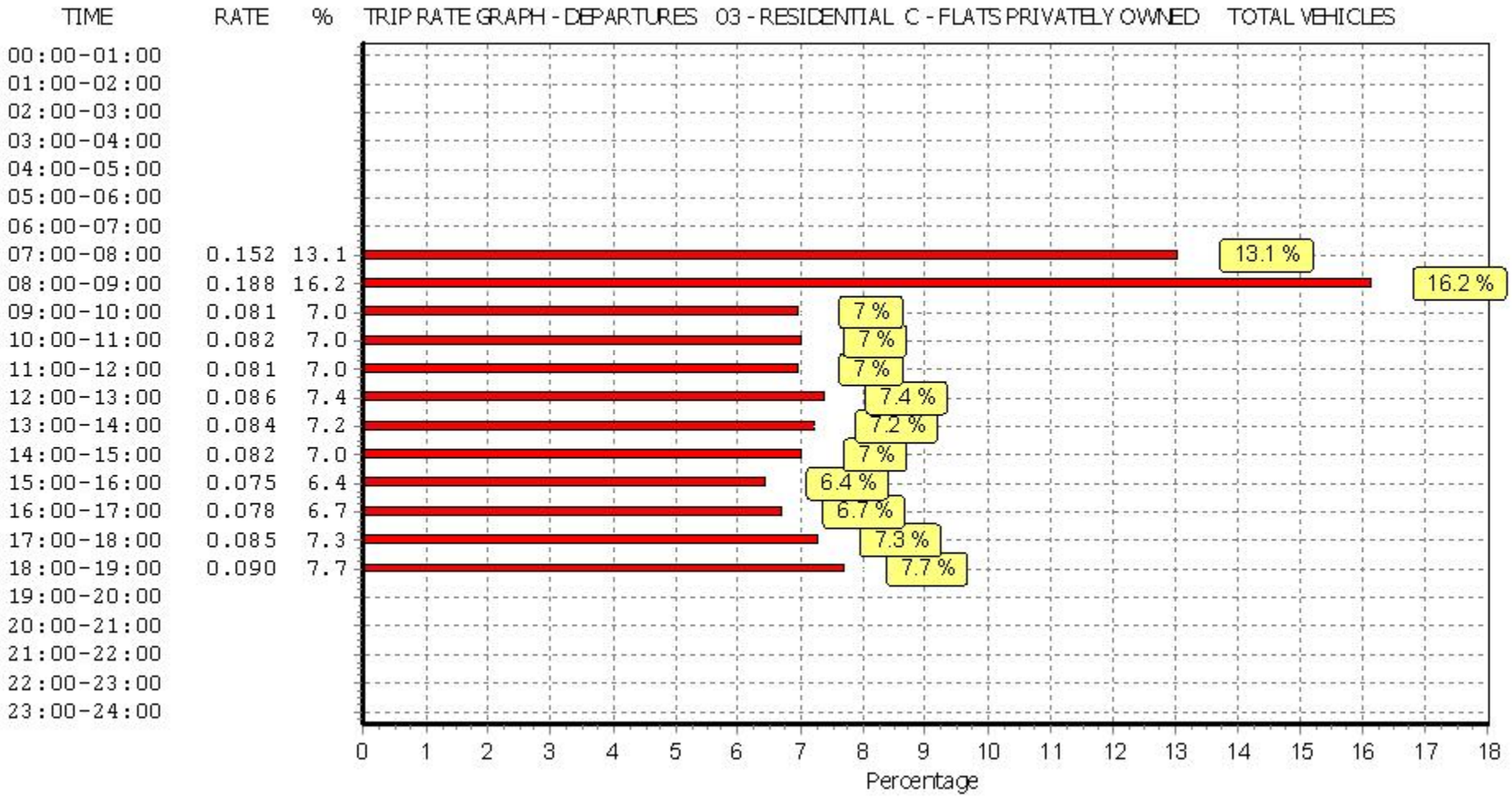


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301



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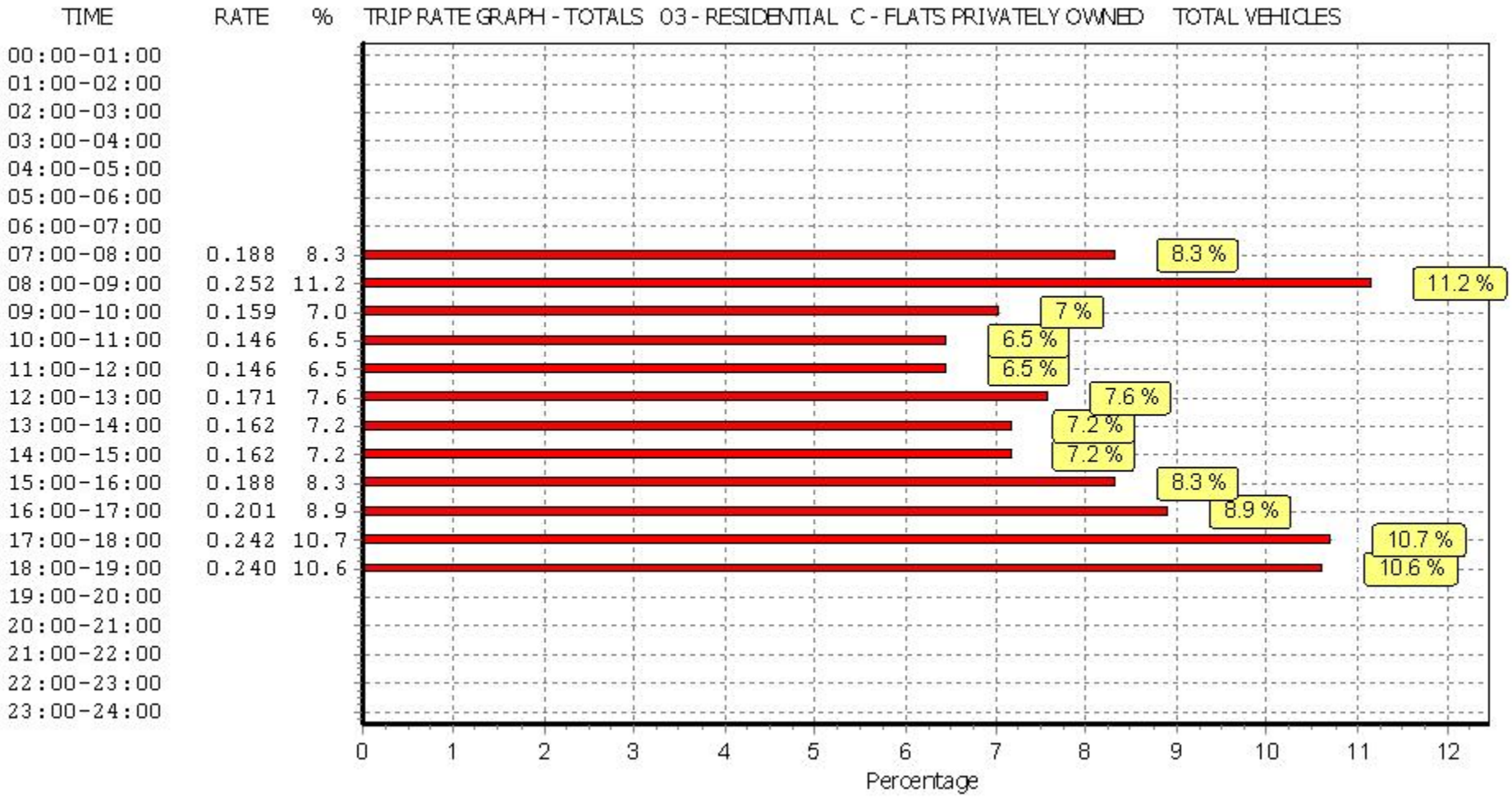

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Calculation Reference: AUDIT-160301-240509-0543

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : D - NURSERY
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	BH	BRIGHTON & HOVE	1 days
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	BA	BATH & NORTH EAST SOMERSET	1 days
	BR	BRISTOL CITY	1 days
	SD	SWINDON	1 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
	LN	LINCOLNSHIRE	1 days
	NN	NORTH NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	WK	WARWICKSHIRE	1 days
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	DR	DONCASTER	1 days
	NY	NORTH YORKSHIRE	1 days
09	NORTH		
	TV	TEES VALLEY	1 days
	TW	TYNE & WEAR	1 days
10	WALES		
	MM	MONMOUTHSHIRE	1 days
	NW	NEWPORT	1 days
	RC	RHONDDA CYNON TAFF	1 days
11	SCOTLAND		
	DU	DUNDEE CITY	1 days
12	CONNAUGHT		
	RO	ROSCOMMON	1 days
16	ULSTER (REPUBLIC OF IRELAND)		
	MG	MONAGHAN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	420	0.159	3	420	0.000	3	420	0.159
07:00 - 08:00	20	556	2.267	20	556	1.161	20	556	3.428
08:00 - 09:00	20	556	3.113	20	556	2.726	20	556	5.839
09:00 - 10:00	20	556	1.206	20	556	1.116	20	556	2.322
10:00 - 11:00	20	556	0.396	20	556	0.270	20	556	0.666
11:00 - 12:00	20	556	0.468	20	556	0.351	20	556	0.819
12:00 - 13:00	20	556	1.080	20	556	1.188	20	556	2.268
13:00 - 14:00	20	556	0.828	20	556	1.215	20	556	2.043
14:00 - 15:00	20	556	0.414	20	556	0.423	20	556	0.837
15:00 - 16:00	20	556	0.801	20	556	0.711	20	556	1.512
16:00 - 17:00	20	556	1.377	20	556	1.529	20	556	2.906
17:00 - 18:00	20	556	2.537	20	556	3.158	20	556	5.695
18:00 - 19:00	19	577	0.146	19	577	0.693	19	577	0.839
19:00 - 20:00	1	450	0.222	1	450	2.222	1	450	2.444
20:00 - 21:00	1	450	0.000	1	450	0.000	1	450	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			15.014			16.763			31.777

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	150 - 1250 (units: sqm)
Survey date date range:	01/01/16 - 02/05/23
Number of weekdays (Monday-Friday):	20
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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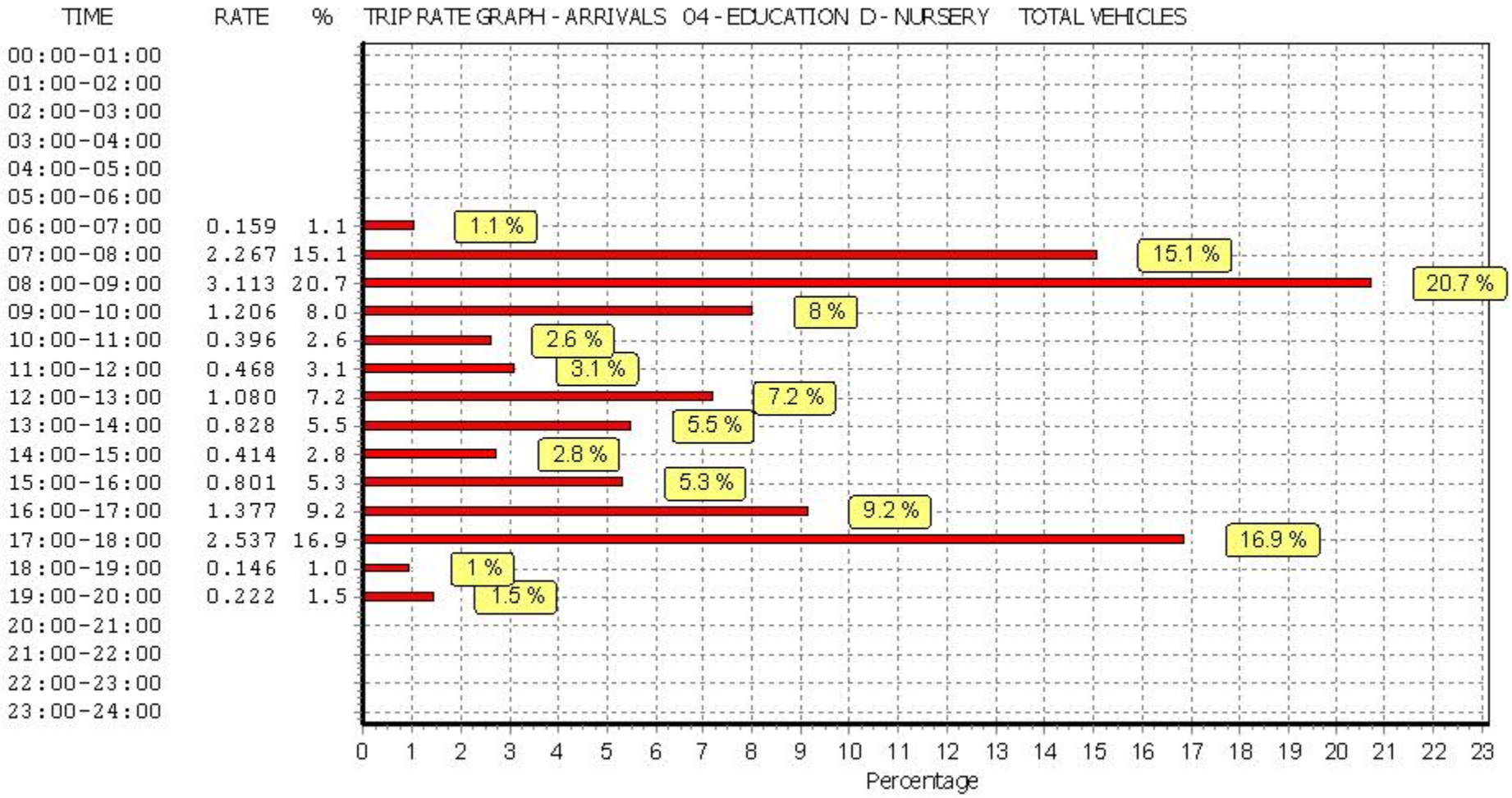

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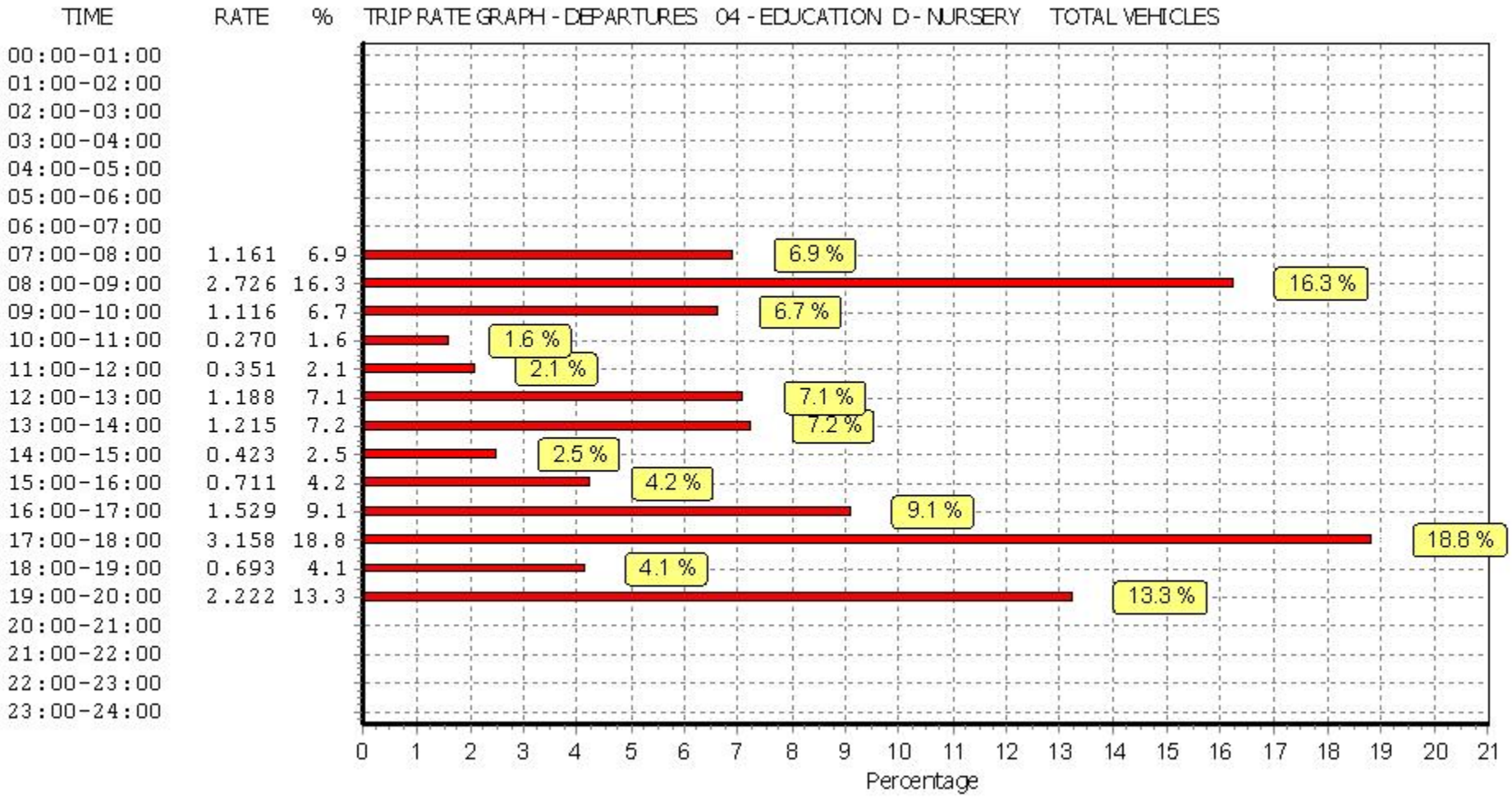
NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301



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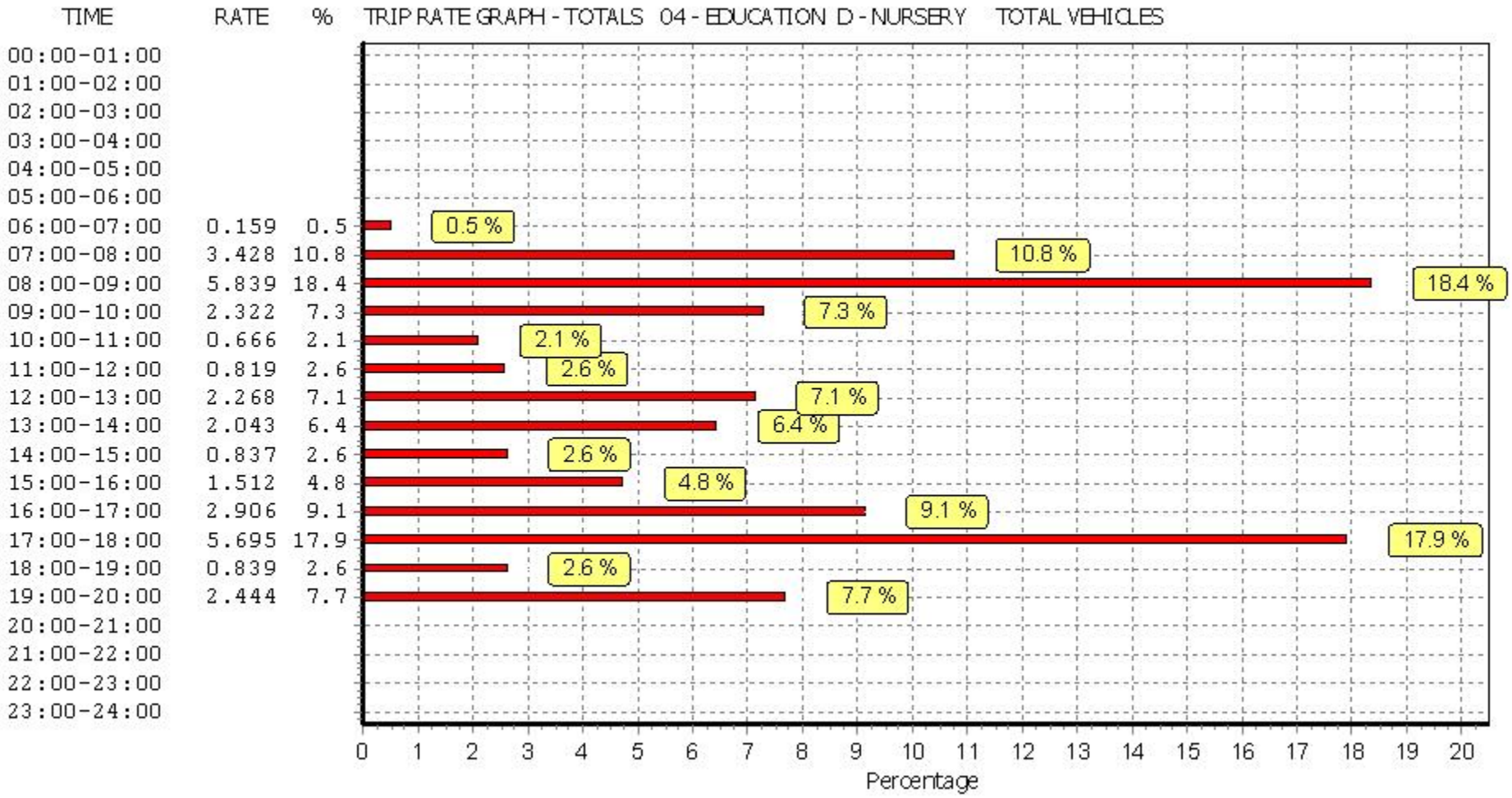

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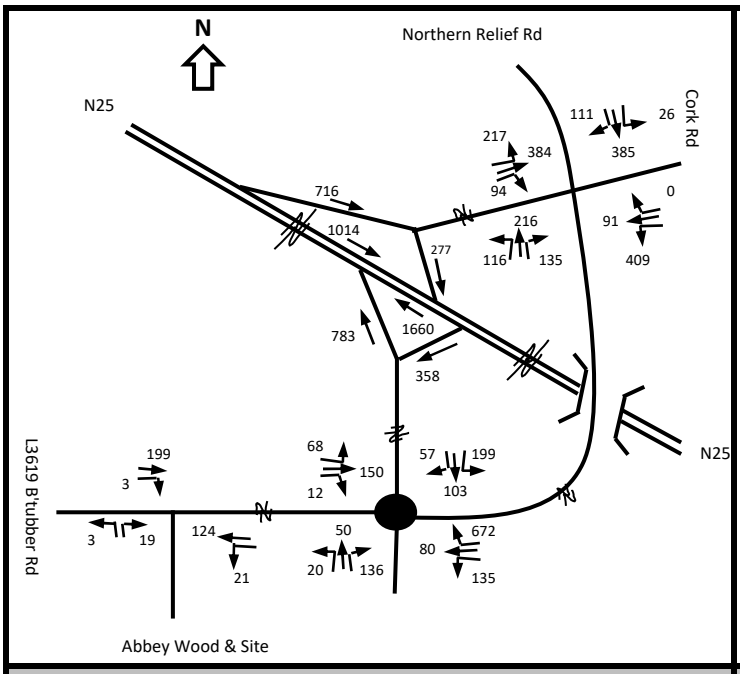
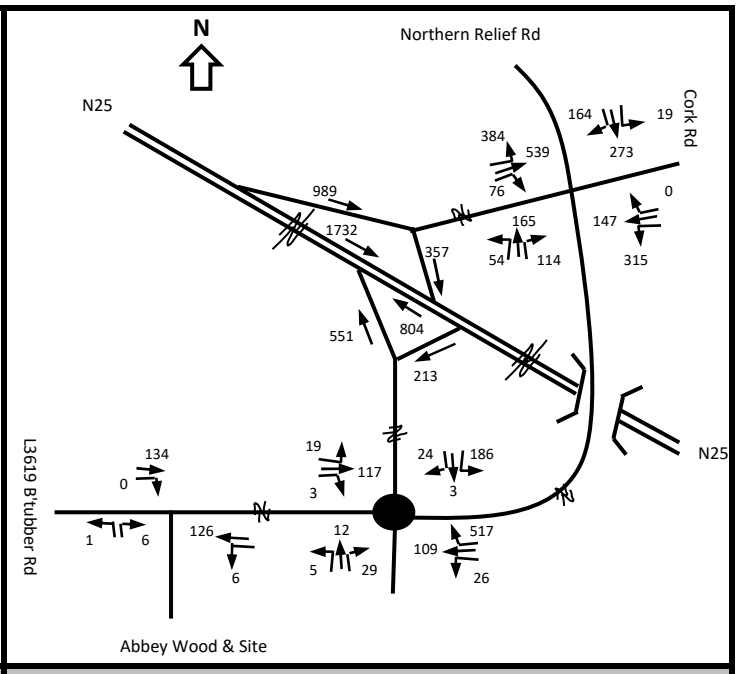
APPENDIX D

Traffic Surveys, Trip Distribution & Network Traffic Flow Diagrams



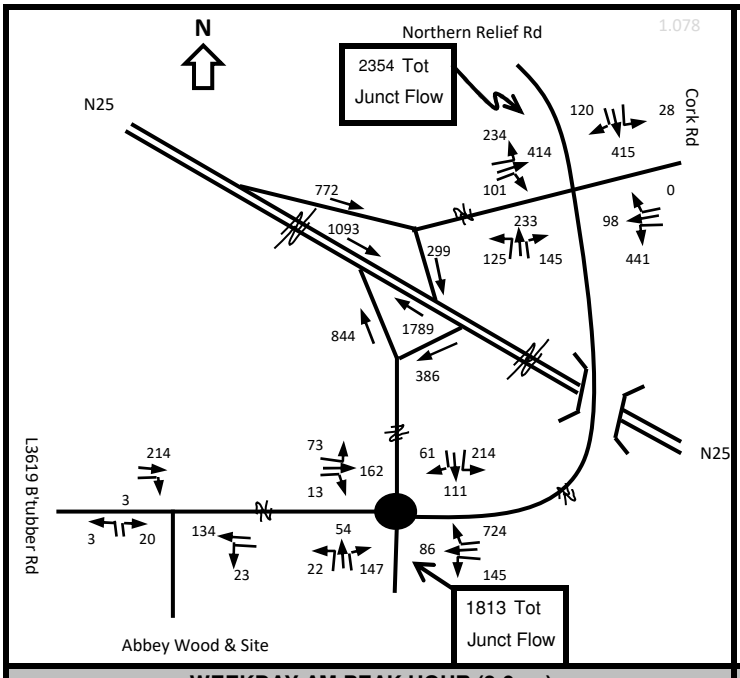
WEEKDAY AM PEAK HOUR (8-9am)



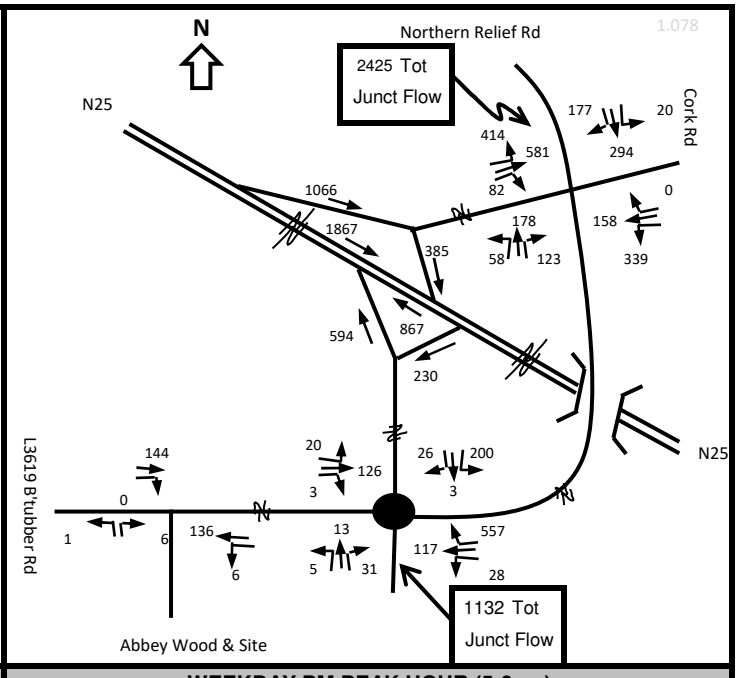
WEEKDAY PM PEAK HOUR (5-6pm)

EXISTING AS SURVEYED TRAFFIC CONDITIONS 2025 (REFER APPENDIX B)

TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections 2021, Table 6.2: Central Growth Rates: Annual Growth Factors Cork Co)	Survey to 2029 = 1.078 2029 to 2044 = 1.146

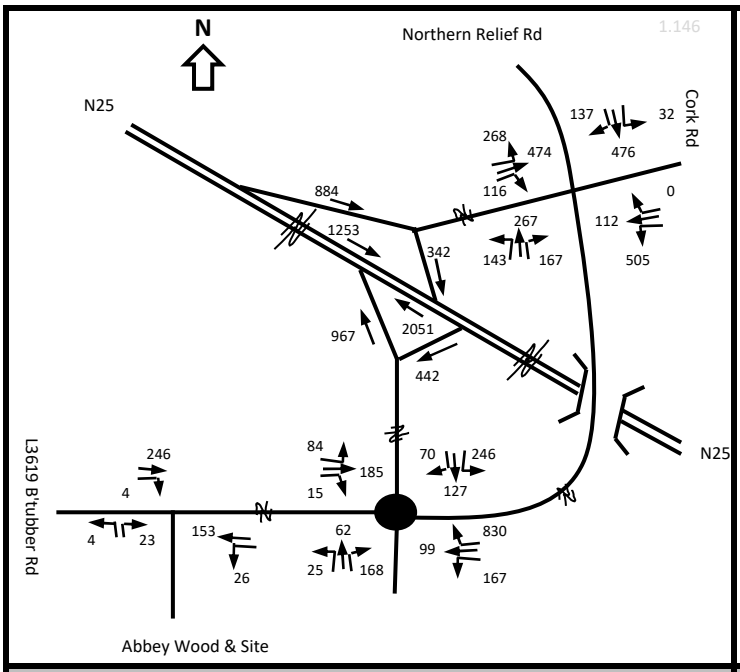


WEEKDAY AM PEAK HOUR (8-9am)

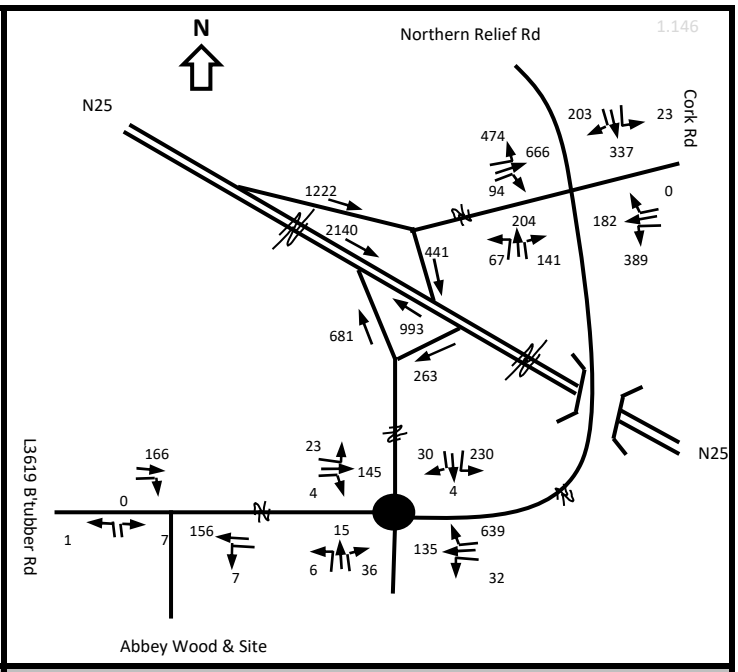


WEEKDAY PM PEAK HOUR (5-6pm)

SELECTED OPENING YEAR 2029 TRAFFIC CONDITIONS - NO SITE DEV - TII ANNUAL TRAFFIC GROWTH APPLIED



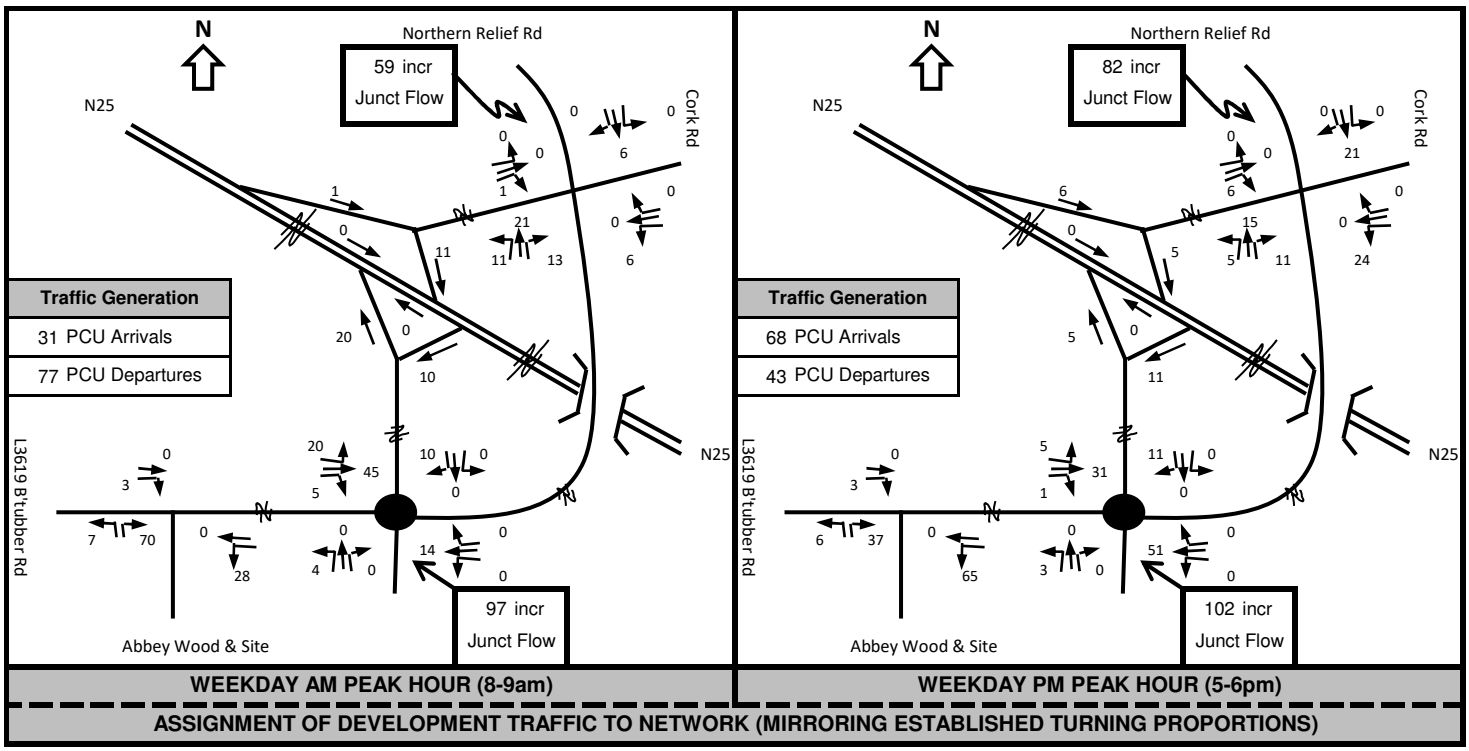
WEEKDAY AM PEAK HOUR (8-9am)

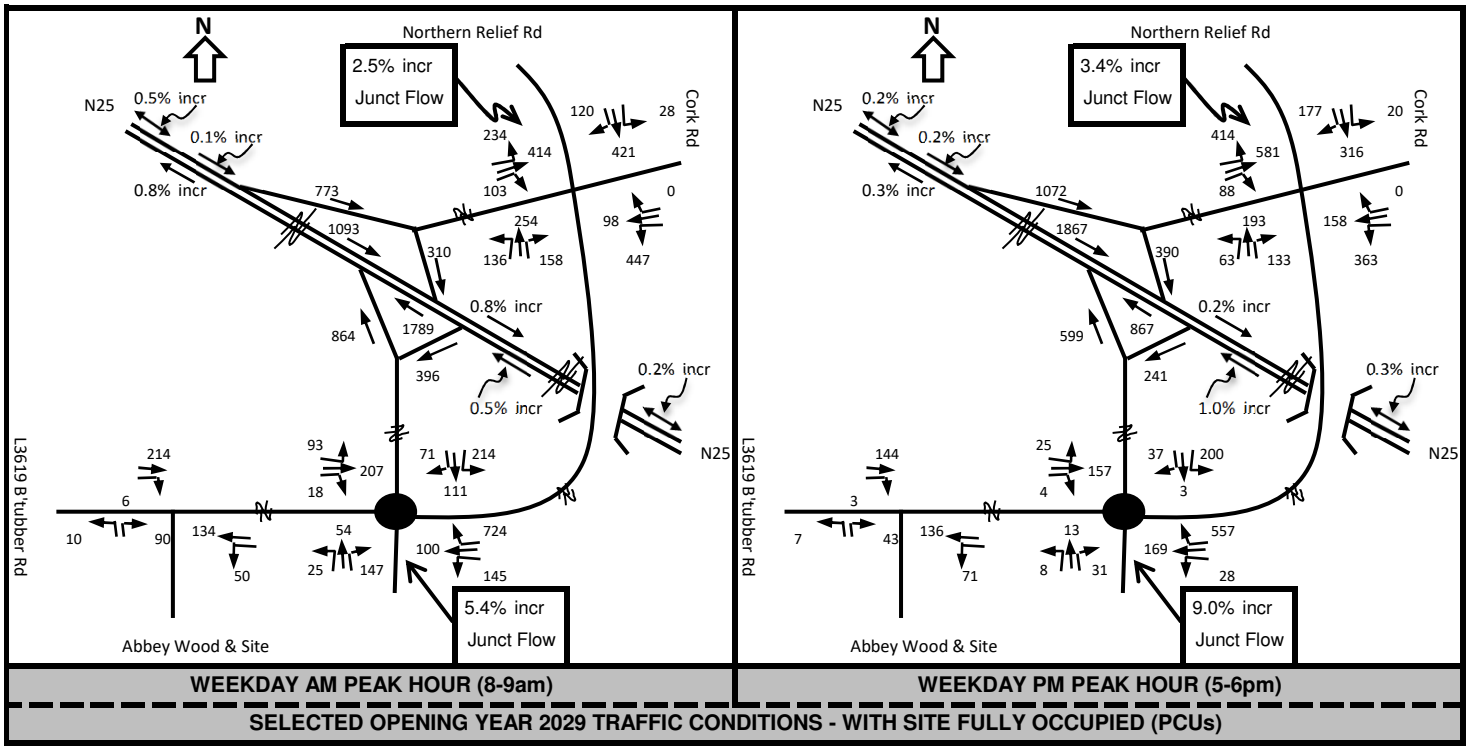


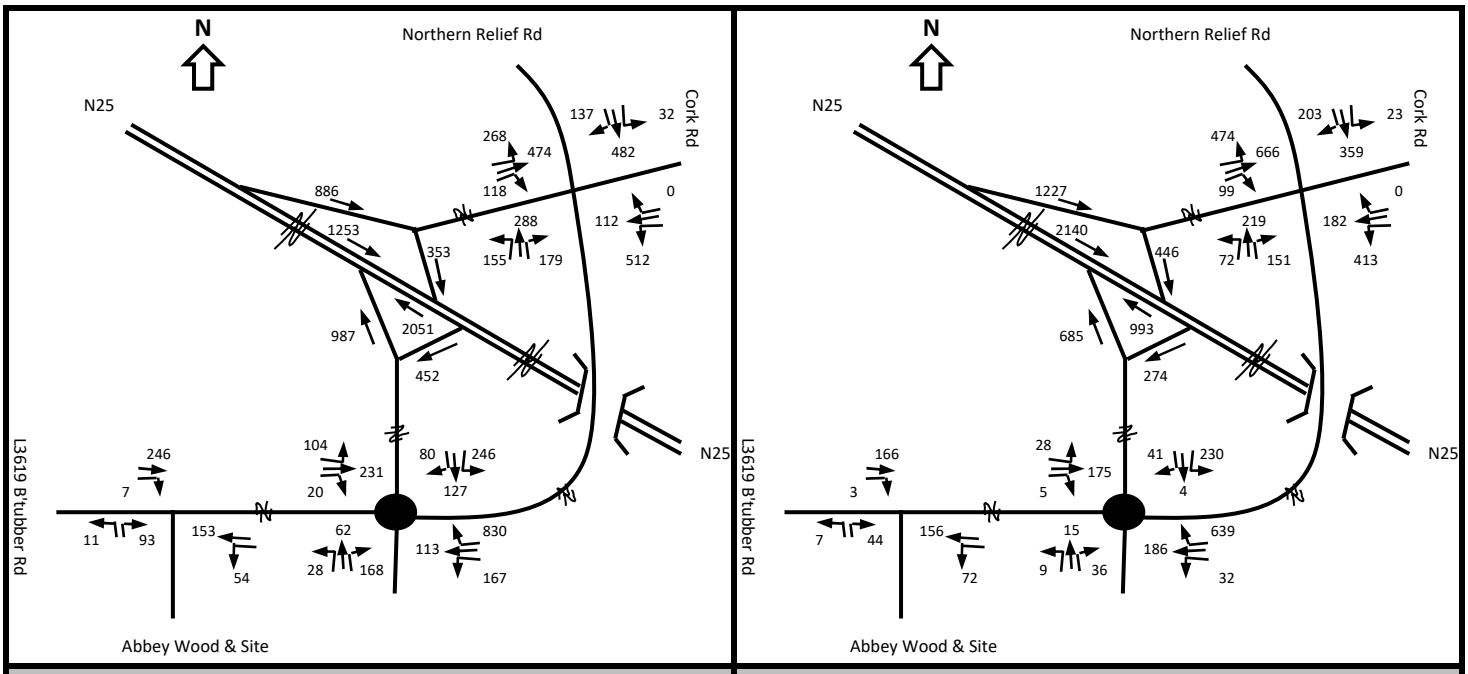
WEEKDAY PM PEAK HOUR (5-6pm)

ASSOCIATED DESIGN YEAR 2044 TRAFFIC CONDITIONS - NO SITE DEV - TII ANNUAL TRAFFIC GROWTH APPLIED

TRICS TRAFFIC GENERATION CALCULATIONS (REFER APPENDIX B)					
99 Residential Houses	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Network Period	**Per Hse**	**Dev**	**Per Hse**	**Dev**	
Weekday AM Peak Hr 8-9	0.207	20	0.593	59	79
Weekday PM Peak Hr 5-6	0.525	52	0.318	31	83
24 Hour Day	3.364	333	3.541	351	684
74 Resi Apts/Dplx	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Network Period	**Per**	**Dev**	**Per**	**Dev**	
Weekday AM Peak Hr 8-9	0.064	5	0.188	14	19
Weekday PM Peak Hr 5-6	0.157	12	0.085	6	18
24 Hour Day	1.093	81	1.164	86	167
350 m2 GFA Creche	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Network Period	**Per**	**Dev**	**Per**	**Dev**	
Weekday AM Peak Hr 8-9	3.113	11	2.726	10	21
Weekday PM Peak Hr 5-6	2.537	9	3.158	11	20
24 Hour Day	15.014	53	16.763	59	112
TOTAL TRAFFIC GENERATED - WORST CASE*					
Network Period	**Arrivals (PCU)**		**Departs (PCU)**		**2-Way**
Weekday AM Peak Hr 8-9	31		77		108
Weekday PM Peak Hr 5-6	68		43		111
24 Hour Day	440		466		906
**Creche Rate Discounted to Reflect Internal Traffic / Uses*					


N
Northern Relief Rd
59 incr
Junct Flow
N25
Cork Rd
Traffic Generation
31 PCU Arrivals
77 PCU Departures
L3619 B'tubber Rd
N25
97 incr
Junct Flow
Abbey Wood & Site
WEEKDAY AM PEAK HOUR (8-9am)
N
Northern Relief Rd
82 incr
Junct Flow
N25
Cork Rd
Traffic Generation
68 PCU Arrivals
43 PCU Departures
L3619 B'tubber Rd
N25
102 incr
Junct Flow
Abbey Wood & Site
WEEKDAY PM PEAK HOUR (5-6pm)
ASSIGNMENT OF DEVELOPMENT TRAFFIC TO NETWORK (MIRRORING ESTABLISHED TURNING PROPORTIONS)


N
Northern Relief Rd
2.5% incr
Junct Flow
N25
0.5% incr
0.1% incr
0.8% incr
Cork Rd
0.8% incr
0.5% incr
0.2% incr
N25
L3619 B'tubber Rd
5.4% incr
Junct Flow
Abbey Wood & Site
WEEKDAY AM PEAK HOUR (8-9am)
N
Northern Relief Rd
3.4% incr
Junct Flow
N25
0.2% incr
0.2% incr
0.3% incr
Cork Rd
0.2% incr
1.0% incr
0.3% incr
N25
L3619 B'tubber Rd
9.0% incr
Junct Flow
Abbey Wood & Site
WEEKDAY PM PEAK HOUR (5-6pm)
SELECTED OPENING YEAR 2029 TRAFFIC CONDITIONS - WITH SITE FULLY OCCUPIED (PCUs)



WEEKDAY AM PEAK HOUR (8-9am) | **WEEKDAY PM PEAK HOUR (5-6pm)**

ASSOCIATED DESIGN YEAR 2044 TRAFFIC CONDITIONS - WITH SITE FULLY OCCUPIED (PCUs)

APPENDIX E

LiNSiG Simulation Model Output
Amended Traffic Signal Controlled Junction

Ballintubber Road - Summary LiNSiG Results in Order as included herein
(Robust & Worst Case - with Proposed Development)

Modelled Scenario	Network Saturation %	PRC %	Total Delay PCUHr
2029 Opening Year AM Peak Hr 8-9	42	116	7
2029 Opening Year PM Peak Hr 5-6	34	163	5
2044 Design Year AM Peak Hr 8-9	47	94	8
2044 Design Year PM Peak Hr 5-6	38	139	7

The Results comfirm that the Proposed Junction is more than adequate to support the proposed development, with the DoS in all cases less than 90%. This is particularly the case in circumstances where sustainable policies will have an increasing effect in reducing car based traffic at peak commuter hours.

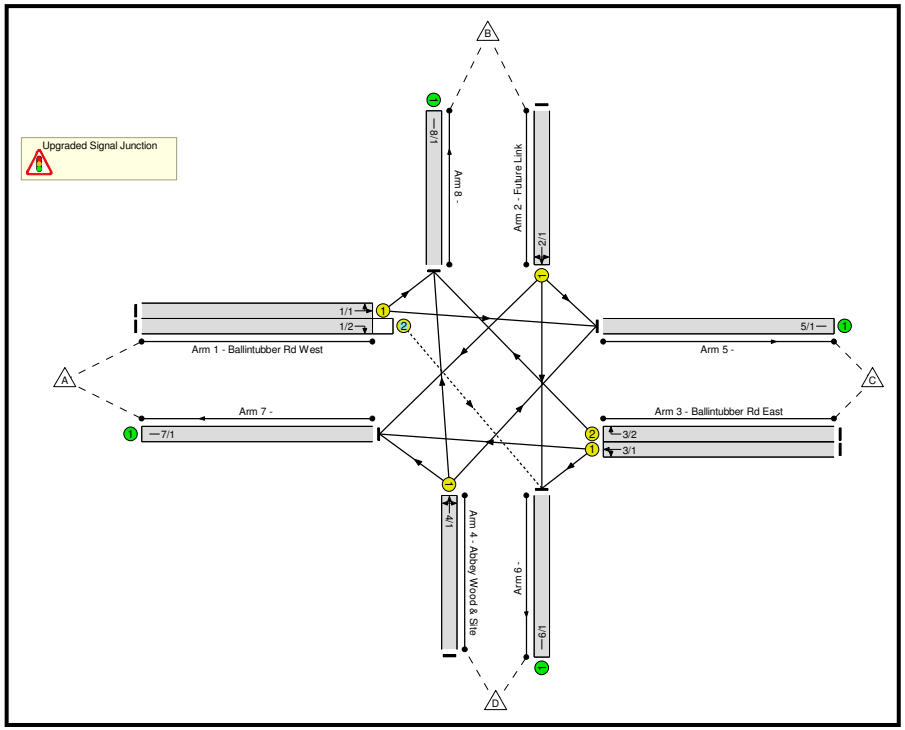
NB *Any Small Changes to Selected Opening Year 2029 or Design Year 2044 will have no significant implications in terms of the conclusions of the Study, due to the low background Network Traffic Growth*

Upgraded Traffic Signal Controlled Junction - Full Input Data And Results

User and Project Details

Project:	**Midleton LRD**
Title:	**Traffic and Transport Assessment**
Location:	25039 / Calcs
File name:	Main Access Junction.lsg3x
Author:	ER
Company:	NRB Consulting Engineers Ltd
Address:	5th Floor, 40 Mespil Road, Dublin 4.
Notes:	

Network Layout Diagram



Network Results Scenario 1: 'AM Base 2029'

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**41.6%**
Upgraded Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**41.6%**
1/1	Ballintubber Rd West Ahead Left	U	N/A	N/A	A		1	32	-	219	1915	527	41.6%
1/2	Ballintubber Rd West Right	O	N/A	N/A	A		1	32	-	6	1915	527	1.1%
2/1	Future Link Left Ahead Right	U	N/A	N/A	B		1	7	-	15	1915	128	11.7%
3/1	Ballintubber Rd East Left Ahead	U	N/A	N/A	C		1	27	-	184	1915	447	41.2%
3/2	Ballintubber Rd East Right	U	N/A	N/A	C		1	27	-	5	1940	453	1.1%
4/1	Abbey Wood & Site Right Left Ahead	U	N/A	N/A	D		1	15	-	105	1915	255	41.1%
5/1		U	N/A	N/A	-		-	-	-	309	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	61	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	149	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	15	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**6**	**0**	**5.9**	**1.1**	**0.0**	**7.0**	**-**	**-**	**-**	**-**
Junction	**-**	**-**	**0**	**6**	**0**	**5.9**	**1.1**	**0.0**	**7.0**	**-**	**-**	**-**	**-**
1/1	219	219	-	-	-	2.2	0.4	-	2.5	41.5	6.0	0.4	6.3
1/2	6	6	0	6	0	0.1	0.0	0.0	0.1	35.4	0.1	0.0	0.2
2/1	15	15	-	-	-	0.2	0.1	-	0.3	68.7	0.5	0.1	0.5
3/1	184	184	-	-	-	2.0	0.3	-	2.3	45.9	5.2	0.3	5.5
3/2	5	5	-	-	-	0.0	0.0	-	0.1	39.7	0.1	0.0	0.1
4/1	105	105	-	-	-	1.4	0.3	-	1.7	59.6	3.2	0.3	3.6
5/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	61	61	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	15	15	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 116.4 Total Delay for Signalled Lanes (pcuHr): 7.00 Cycle Time (s): 120
PRC Over All Lanes (%): 116.4 Total Delay Over All Lanes(pcuHr): 7.00

Network Results Scenario 2: 'PM Base 2029'

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**34.1%**
Upgraded Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**34.1%**
1/1	Ballintubber Rd West Ahead Left	U	N/A	N/A	A		1	27	-	149	1915	447	33.3%
1/2	Ballintubber Rd West Right	O	N/A	N/A	A		1	27	-	3	1915	447	0.7%
2/1	Future Link Left Ahead Right	U	N/A	N/A	B		1	7	-	15	1915	128	11.7%
3/1	Ballintubber Rd East Left Ahead	U	N/A	N/A	C		1	37	-	207	1915	606	34.1%
3/2	Ballintubber Rd East Right	U	N/A	N/A	C		1	37	-	5	1940	614	0.8%
4/1	Abbey Wood & Site Right Left Ahead	U	N/A	N/A	D		1	10	-	55	1915	176	31.3%
5/1		U	N/A	N/A	-		-	-	-	192	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	79	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	148	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	15	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**3**	**0**	**4.5**	**0.8**	**0.0**	**5.3**	**-**	**-**	**-**	**-**
Upgraded Signal Junction	**-**	**-**	**0**	**3**	**0**	**4.5**	**0.8**	**0.0**	**5.3**	**-**	**-**	**-**	**-**
1/1	149	149	-	-	-	1.6	0.2	-	1.8	44.3	4.1	0.2	4.3
1/2	3	3	0	3	0	0.0	0.0	0.0	0.0	39.7	0.1	0.0	0.1
2/1	15	15	-	-	-	0.2	0.1	-	0.3	68.7	0.5	0.1	0.5
3/1	207	207	-	-	-	1.8	0.3	-	2.1	35.9	5.2	0.3	5.5
3/2	5	5	-	-	-	0.0	0.0	-	0.0	31.3	0.1	0.0	0.1
4/1	55	55	-	-	-	0.8	0.2	-	1.0	65.9	1.7	0.2	1.9
5/1	192	192	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	79	79	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	15	15	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 163.7 Total Delay for Signalled Lanes (pcuHr): 5.27 Cycle Time (s): 120
PRC Over All Lanes (%): 163.7 Total Delay Over All Lanes(pcuHr): 5.27

Network Results Scenario 3: 'AM Base 2044'

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**46.3%**
Upgraded Signal Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**46.3%**
1/1	Ballintubber Rd West Ahead Left	U	N/A	N/A	A		1	33	-	251	1915	543	46.3%
1/2	Ballintubber Rd West Right	O	N/A	N/A	A		1	33	-	7	1915	543	1.3%
2/1	Future Link Left Ahead Right	U	N/A	N/A	B		1	7	-	15	1915	128	11.7%
3/1	Ballintubber Rd East Left Ahead	U	N/A	N/A	C		1	27	-	207	1915	447	46.3%
3/2	Ballintubber Rd East Right	U	N/A	N/A	C		1	27	-	5	1940	453	1.1%
4/1	Abbey Wood & Site Right Left Ahead	U	N/A	N/A	D		1	14	-	109	1915	239	45.5%
5/1		U	N/A	N/A	-		-	-	-	344	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	66	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	169	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	15	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**7**	**0**	**6.6**	**1.4**	**0.0**	**7.9**	**-**	**-**	**-**	**-**
Upgraded Signal Junction	**-**	**-**	**0**	**7**	**0**	**6.6**	**1.4**	**0.0**	**7.9**	**-**	**-**	**-**	**-**
1/1	251	251	-	-	-	2.5	0.4	-	2.9	41.6	6.8	0.4	7.3
1/2	7	7	0	7	0	0.1	0.0	0.0	0.1	34.5	0.2	0.0	0.2
2/1	15	15	-	-	-	0.2	0.1	-	0.3	68.7	0.5	0.1	0.5
3/1	207	207	-	-	-	2.3	0.4	-	2.7	47.0	5.9	0.4	6.4
3/2	5	5	-	-	-	0.0	0.0	-	0.1	39.7	0.1	0.0	0.1
4/1	109	109	-	-	-	1.5	0.4	-	1.9	62.4	3.4	0.4	3.8
5/1	344	344	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	66	66	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	169	169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	15	15	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 94.3 Total Delay for Signalled Lanes (pcuHr): 7.90 Cycle Time (s): 120
PRC Over All Lanes (%): 94.3 Total Delay Over All Lanes(pcuHr): 7.90

Network Results Scenario 4: 'PM Base 2044'

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**37.6%**
Upgraded Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**37.6%**
1/1	Ballintubber Rd West Ahead Left	U	N/A	N/A	A		1	28	-	171	1915	463	36.9%
1/2	Ballintubber Rd West Right	O	N/A	N/A	A		1	28	-	3	1915	463	0.6%
2/1	Future Link Left Ahead Right	U	N/A	N/A	B		1	7	-	15	1915	128	11.7%
3/1	Ballintubber Rd East Left Ahead	U	N/A	N/A	C		1	37	-	228	1915	606	37.6%
3/2	Ballintubber Rd East Right	U	N/A	N/A	C		1	37	-	5	1940	614	0.8%
4/1	Abbey Wood & Site Right Left Ahead	U	N/A	N/A	D		1	9	-	56	1915	160	35.1%
5/1		U	N/A	N/A	-		-	-	-	215	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	80	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	168	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	15	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**3**	**0**	**4.9**	**0.9**	**0.0**	**5.8**	**-**	**-**	**-**	**-**
Upgraded Signal Junction	**-**	**-**	**0**	**3**	**0**	**4.9**	**0.9**	**0.0**	**5.8**	**-**	**-**	**-**	**-**
1/1	171	171	-	-	-	1.8	0.3	-	2.1	44.0	4.7	0.3	5.0
1/2	3	3	0	3	0	0.0	0.0	0.0	0.0	38.8	0.1	0.0	0.1
2/1	15	15	-	-	-	0.2	0.1	-	0.3	68.7	0.5	0.1	0.5
3/1	228	228	-	-	-	2.0	0.3	-	2.3	36.6	5.9	0.3	6.2
3/2	5	5	-	-	-	0.0	0.0	-	0.0	31.3	0.1	0.0	0.1
4/1	56	56	-	-	-	0.8	0.3	-	1.1	69.3	1.8	0.3	2.0
5/1	215	215	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	168	168	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	15	15	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 139.4 Total Delay for Signalled Lanes (pcuHr): 5.85 Cycle Time (s): 120
PRC Over All Lanes (%): 139.4 Total Delay Over All Lanes(pcuHr): 5.85

APPENDIX F

Junctions9 ARCADY Model Output
Adjacent Existing L3619 Roundabout Junction

Capacity Assessment With Subject Development Open/Occupied
Existing Roundabout Controlled Junction

WITH COMPLETED DEVELOPMENT TRAFFIC INCLUDED		
Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2029 Opening Year AM Peak Hr 8-9	3.3	0.77
2029 Opening Year PM Peak Hr 5-6	1.3	0.56
2044 Design Year AM Peak Hr 8-9	7.4	0.89
2044 Design Year PM Peak Hr 5-6	1.7	0.63

All Results Above are below 100% and are below the recommended RFC of 0.85 (85% Capacity) up to the end of the design horizon- whilst the traffic flows are appreciable at peak times at the school, nonetheless there are no capacity problems anticipated at the Junction in terms of capacity or excessive vehicle Queues

NB - Any Small Changes to Selected Opening Year 2029 or Design Year 2044, or indeed significantly higher traffic volumes experienced, as deductable from the positive results presented, will clearly have no significant implications in terms of the conclusions of the Study.

Junctions 9

ARCADY 9 - Roundabout Module

Filename: 2029 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2025\25-039 Midleton LRD\Calculations\Roundabout Capacity
Report generation date: 16/09/2025 14:22:52

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2029									
Arm 1	D1	3.3	11.44	0.77	B	D2	1.3	5.54	0.56	A
Arm 2		0.5	7.09	0.32	A		0.1	4.62	0.07	A
Arm 3		0.3	3.33	0.24	A		0.1	2.42	0.12	A
Arm 4		0.5	4.55	0.35	A		0.2	3.35	0.19	A

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	
Location	
Site number	
Date	16/09/2025
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	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue 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	2029	AM	ONE HOUR	07:45	09:15	15
D2	2029	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ballintubber Rd - N25 Rounabt	Standard Roundabout		1, 2, 3, 4	8.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Ballintubber Rd East	
2	Gael Scoil	
3	Ballintubber Rd East	
4	To / From N25	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	5.20	20.0	15.0	40.0	14.0	
2	3.50	4.40	15.0	15.0	40.0	14.0	
3	6.00	7.50	12.0	15.0	40.0	14.0	
4	3.00	5.40	20.0	15.0	40.0	14.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.618	1523
2	0.582	1340
3	0.759	2227
4	0.612	1491

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

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	2029	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	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	969	100.000
2		✓	226	100.000
3		✓	318	100.000
4		✓	396	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	145	100	724
	2	147	0	25	54
	3	207	18	0	93
	4	214	111	71	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	2	2	2
	2	2	0	2	2
	3	2	2	0	2
	4	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.77	11.44	3.3	B
2	0.32	7.09	0.5	A
3	0.24	3.33	0.3	A
4	0.35	4.55	0.5	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	730	150	1430	0.510	725	1.0	5.181	A
2	170	670	950	0.179	169	0.2	4.699	A
3	239	692	1701	0.141	239	0.2	2.509	A
4	298	279	1320	0.226	297	0.3	3.574	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	871	180	1412	0.617	869	1.6	6.734	A
2	203	803	873	0.233	203	0.3	5.478	A
3	286	830	1597	0.179	286	0.2	2.799	A
4	356	334	1286	0.277	356	0.4	3.929	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1067	220	1387	0.769	1060	3.2	11.028	B
2	249	980	770	0.323	248	0.5	7.031	A
3	350	1013	1458	0.240	350	0.3	3.313	A
4	436	409	1240	0.351	435	0.5	4.540	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1067	220	1387	0.769	1067	3.3	11.436	B
2	249	985	767	0.325	249	0.5	7.090	A
3	350	1018	1454	0.241	350	0.3	3.325	A
4	436	410	1240	0.352	436	0.5	4.550	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	871	180	1412	0.617	878	1.7	6.958	A
2	203	810	868	0.234	204	0.3	5.530	A
3	286	837	1591	0.180	286	0.2	2.815	A
4	356	335	1286	0.277	357	0.4	3.942	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	730	151	1430	0.510	732	1.1	5.279	A
2	170	676	947	0.180	171	0.2	4.735	A
3	239	698	1697	0.141	240	0.2	2.522	A
4	298	280	1319	0.226	299	0.3	3.588	A

2029, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ballintubber Rd - N25 Rounabt	Standard Roundabout		1, 2, 3, 4	4.60	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	2029	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	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	754	100.000
2		✓	52	100.000
3		✓	186	100.000
4		✓	240	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	169	557
	2	31	0	8	13
	3	157	4	0	25
	4	200	3	37	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	2	2	2
	2	2	0	2	2
	3	2	2	0	2
	4	2	2	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.56	5.54	1.3	A
2	0.07	4.62	0.1	A
3	0.12	2.42	0.1	A
4	0.19	3.35	0.2	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	568	33	1503	0.378	565	0.6	3.907	A
2	39	572	1007	0.039	39	0.0	3.792	A
3	140	451	1885	0.074	140	0.1	2.104	A
4	181	144	1402	0.129	180	0.2	3.002	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	678	40	1498	0.452	677	0.8	4.465	A
2	47	685	941	0.050	47	0.1	4.104	A
3	167	540	1817	0.092	167	0.1	2.225	A
4	216	173	1385	0.156	216	0.2	3.139	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	830	48	1493	0.556	828	1.3	5.511	A
2	57	838	852	0.067	57	0.1	4.619	A
3	205	660	1725	0.119	205	0.1	2.414	A
4	264	211	1361	0.194	264	0.2	3.345	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	830	48	1493	0.556	830	1.3	5.539	A
2	57	840	851	0.067	57	0.1	4.625	A
3	205	662	1725	0.119	205	0.1	2.415	A
4	264	211	1361	0.194	264	0.2	3.346	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	678	40	1498	0.452	680	0.9	4.492	A
2	47	688	940	0.050	47	0.1	4.112	A
3	167	542	1816	0.092	167	0.1	2.229	A
4	216	173	1385	0.156	216	0.2	3.141	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	568	33	1502	0.378	569	0.6	3.937	A
2	39	575	1005	0.039	39	0.0	3.800	A
3	140	453	1883	0.074	140	0.1	2.106	A
4	181	145	1402	0.129	181	0.2	3.006	A

Junctions 9

ARCADY 9 - Roundabout Module

Filename: 2044 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2025\25-039 Midleton LRD\Calculations\Roundabout Capacity
Report generation date: 16/09/2025 14:27:56

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2044									
Arm 1	D1	7.6	23.80	0.89	C	D2	1.7	6.71	0.63	A
Arm 2		0.7	9.14	0.41	A		0.1	5.11	0.08	A
Arm 3		0.4	3.78	0.28	A		0.2	2.58	0.14	A
Arm 4		0.7	5.07	0.41	A		0.3	3.52	0.22	A

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	
Location	
Site number	
Date	16/09/2025
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	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue 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	2044	AM	ONE HOUR	07:45	09:15	15
D2	2044	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2044, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ballintubber Rd - N25 Rounabt	Standard Roundabout		1, 2, 3, 4	14.99	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Ballintubber Rd East	
2	Gael Scoil	
3	Ballintubber Rd East	
4	To / From N25	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	5.20	20.0	15.0	40.0	14.0	
2	3.50	4.40	15.0	15.0	40.0	14.0	
3	6.00	7.50	12.0	15.0	40.0	14.0	
4	3.00	5.40	20.0	15.0	40.0	14.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.618	1523
2	0.582	1340
3	0.759	2227
4	0.612	1491

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

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	2044	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	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1110	100.000
2		✓	258	100.000
3		✓	337	100.000
4		✓	453	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	167	113	830
	2	168	0	28	62
	3	213	20	0	104
	4	246	127	80	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	2	2	2
	2	2	0	2	2
	3	2	2	0	2
	4	2	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.89	23.80	7.6	C
2	0.41	9.14	0.7	A
3	0.28	3.78	0.4	A
4	0.41	5.07	0.7	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	836	170	1418	0.589	830	1.4	6.190	A
2	194	765	895	0.217	193	0.3	5.225	A
3	254	793	1625	0.156	253	0.2	2.675	A
4	341	301	1307	0.261	340	0.4	3.779	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	998	204	1397	0.714	994	2.5	9.015	A
2	232	916	807	0.287	231	0.4	6.376	A
3	303	949	1506	0.201	303	0.3	3.051	A
4	407	360	1270	0.321	407	0.5	4.235	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1222	250	1369	0.893	1204	7.0	20.347	C
2	284	1111	694	0.410	283	0.7	8.917	A
3	371	1152	1352	0.274	371	0.4	3.739	A
4	499	440	1221	0.408	498	0.7	5.052	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1222	250	1368	0.893	1220	7.6	23.804	C
2	284	1124	686	0.414	284	0.7	9.139	A
3	371	1165	1342	0.276	371	0.4	3.779	A
4	499	441	1221	0.409	499	0.7	5.069	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	998	204	1396	0.715	1018	2.6	10.174	B
2	232	937	795	0.292	233	0.4	6.552	A
3	303	969	1491	0.203	303	0.3	3.094	A
4	407	362	1269	0.321	408	0.5	4.253	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	836	171	1417	0.590	840	1.5	6.417	A
2	194	774	889	0.218	195	0.3	5.292	A
3	254	802	1618	0.157	254	0.2	2.694	A
4	341	302	1306	0.261	342	0.4	3.799	A

2044, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ballintubber Rd - N25 Rounabt	Standard Roundabout		1, 2, 3, 4	5.41	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	2044	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	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	857	100.000
2		✓	60	100.000
3		✓	206	100.000
4		✓	275	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	32	186	639
	2	36	0	9	15
	3	175	3	0	28
	4	230	4	41	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	2	2	2
	2	2	0	2	2
	3	2	2	0	2
	4	2	2	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.63	6.71	1.7	A
2	0.08	5.11	0.1	A
3	0.14	2.58	0.2	A
4	0.22	3.52	0.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	645	36	1501	0.430	642	0.8	4.264	A
2	45	649	962	0.047	45	0.1	4.002	A
3	155	517	1834	0.085	155	0.1	2.186	A
4	207	161	1392	0.149	206	0.2	3.094	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	770	43	1496	0.515	769	1.1	5.042	A
2	54	777	888	0.061	54	0.1	4.404	A
3	185	619	1757	0.105	185	0.1	2.336	A
4	247	192	1373	0.180	247	0.2	3.260	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	944	53	1490	0.633	941	1.7	6.652	A
2	66	951	787	0.084	66	0.1	5.096	A
3	227	758	1652	0.137	227	0.2	2.576	A
4	303	235	1347	0.225	302	0.3	3.516	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	944	53	1490	0.633	944	1.7	6.713	A
2	66	953	785	0.084	66	0.1	5.106	A
3	227	760	1650	0.137	227	0.2	2.579	A
4	303	236	1346	0.225	303	0.3	3.517	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	770	43	1496	0.515	773	1.1	5.095	A
2	54	781	885	0.061	54	0.1	4.417	A
3	185	622	1754	0.106	185	0.1	2.340	A
4	247	193	1373	0.180	247	0.2	3.263	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	645	36	1501	0.430	646	0.8	4.307	A
2	45	653	960	0.047	45	0.1	4.016	A
3	155	520	1832	0.085	155	0.1	2.191	A
4	207	161	1392	0.149	207	0.2	3.099	A

APPENDIX G

Stage 1 Independent Road Safety / Quality Audit
(& Designer Feedback Form)

Title: **Stage 1 Road Safety Audit and**

DMURS Quality Audit,

For;

Proposed Large Residential Development, Baneshane, Midleton, Co. Cork.

Client: **NRB Consulting Engineers**

Date: **October 2025**

Report reference: **2847R01**

VERSION: **FINAL (10-3-2026)**

Prepared By:

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CONTENTS SHEET

Contents

1.0 Introduction

This report was prepared in response to a request from Mr. Eoin Reynolds, NRB Consulting Engineers Ltd, for a Stage 1 Road Safety Audit and a DMURS Quality Audit for a proposed large residential development (LRD) at Baneshane, Midleton, Co. Cork.

The Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

TII Auditor Approval no. NB 168446

Team Member: **Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI

TII Auditor Approval no. OO1291756

The Audits involved the examination of drawings and other material provided and a site visit by both audit team members, together, on the 6th of October 2025. The weather at the time of the site visit was dry and the road surface was also dry.

The Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated May 2025.

The Quality Audit has been carried out in accordance with the guidance in the Design Manual for Urban Roads and Streets (DMURS), produced by Department of Transport Tourism and Sport in March 2013 and as updated in June 2019 including Advice Notes. The Quality Audit is composed of a number of distinct audits which include an Accessibility Audit, a Walking Audit and a Cycling Audit (i.e. aspects of a Quality Audit carried out independent of the Design Team.

Many issues raised in the Road Safety Audit would also be raised in the various aspects of the Quality Audit, however to avoid repetition items that are common to more than the Road Safety Audit have been included in a table at the start of Section 3.0 of this report.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria. The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

If any of the recommendations within these audits are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

The information supplied to the Audit Team is listed in **Appendix A.** The feedback form is contained in **Appendix B.** A plan drawing showing the problem locations is contained in **Appendix C**.

2.0 Background

It is proposed to construct an LRD of 173 no. residential units and a creche as a southern extension to the Abbey Wood Estate along with an upgrade of the Abbey Wood/Ballintubber Road (L3619) junction.

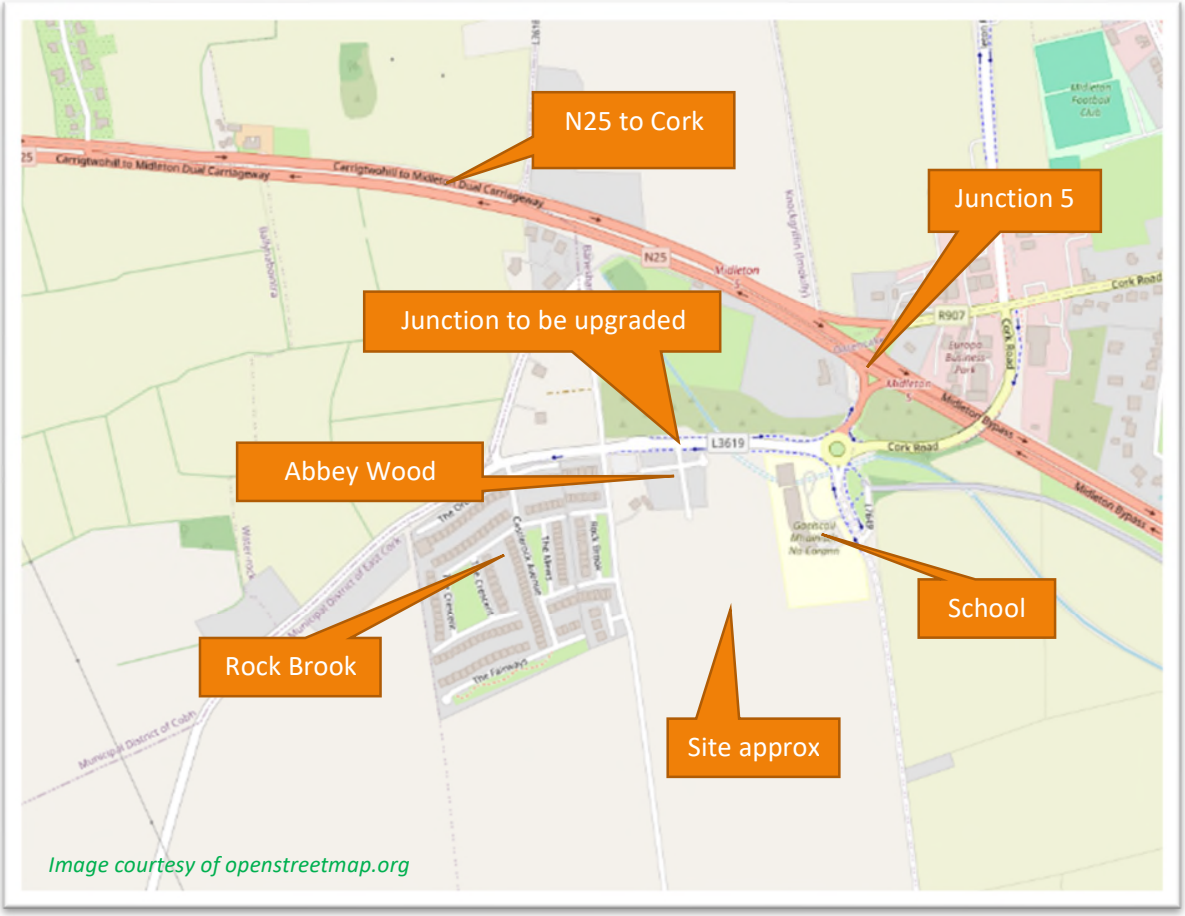
The site is bound to the east by Gaelscoil Mhainistir Na Corann Primary School.

Vehicular access will be from the upgraded junction on Ballintubber Road and by means of a new junction into the Rock Brook development to the west.

It is proposed to provide 273 car parking spaces and 161 bicycle parking spaces.

Two potential future extension connections to the internal road network are shown on the drawings.

The site location is provided below.



3.0 Issues Common to More Audits than RSA

Below is a summary table of problems raised in the Road Safety Audit that would also be raised in the Quality Audit however are not repeated for clarity and brevity.

Problem Reference	Road Safety Audit	Access Audit	Walking Audit	Cycling Audit
4.1	✓	✓	✓	✓
4.2	✓	✓	✓	✓
4.3	✓			✓
4.4	✓	✓	✓	
4.5	✓			✓
4.6	✓	✓	✓	✓

4.0 Items Raised in This Stage 1 Road Safety Audit.

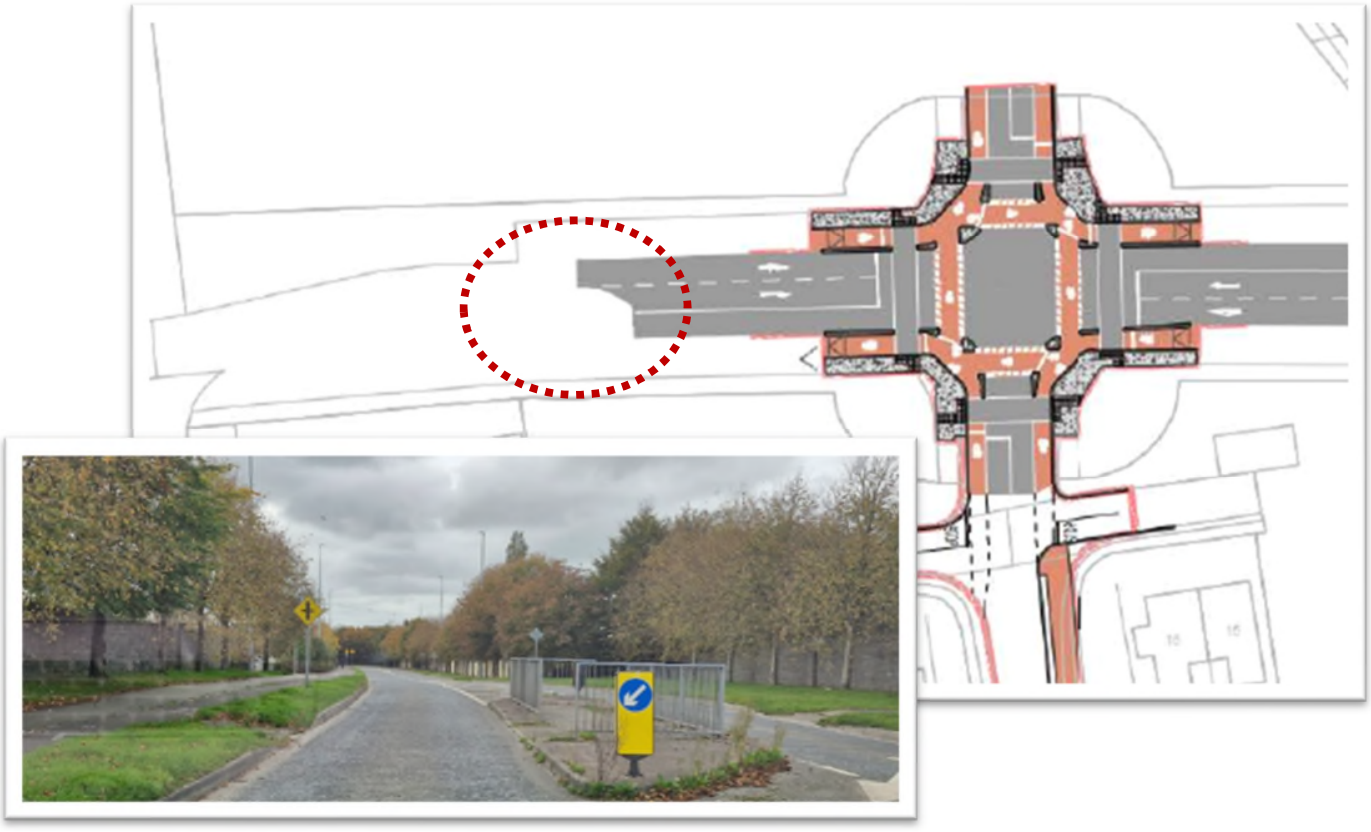
4.1 Problem

LOCATION

Drawing NRB-TA-001, Ballintubber Road.

PROBLEM

There is an existing staggered uncontrolled pedestrian crossing to the west of the new signalised junction. It is unclear if this crossing is to be retained or removed. The new junction will provide a higher level of protection and priority to crossing pedestrians and cyclists that the uncontrolled crossing.



RECOMMENDATION

It is recommended that the need for the uncontrolled crossing be assessed and if it is not required that it be removed. A solid island could be retained to help define the bifurcation of the right turning lane into Abbey Wood and the proposed development. A crossing facility for cyclists may be required from Rock Brook or a section of two-way cycle track from Rock Brook to the proposed junction.

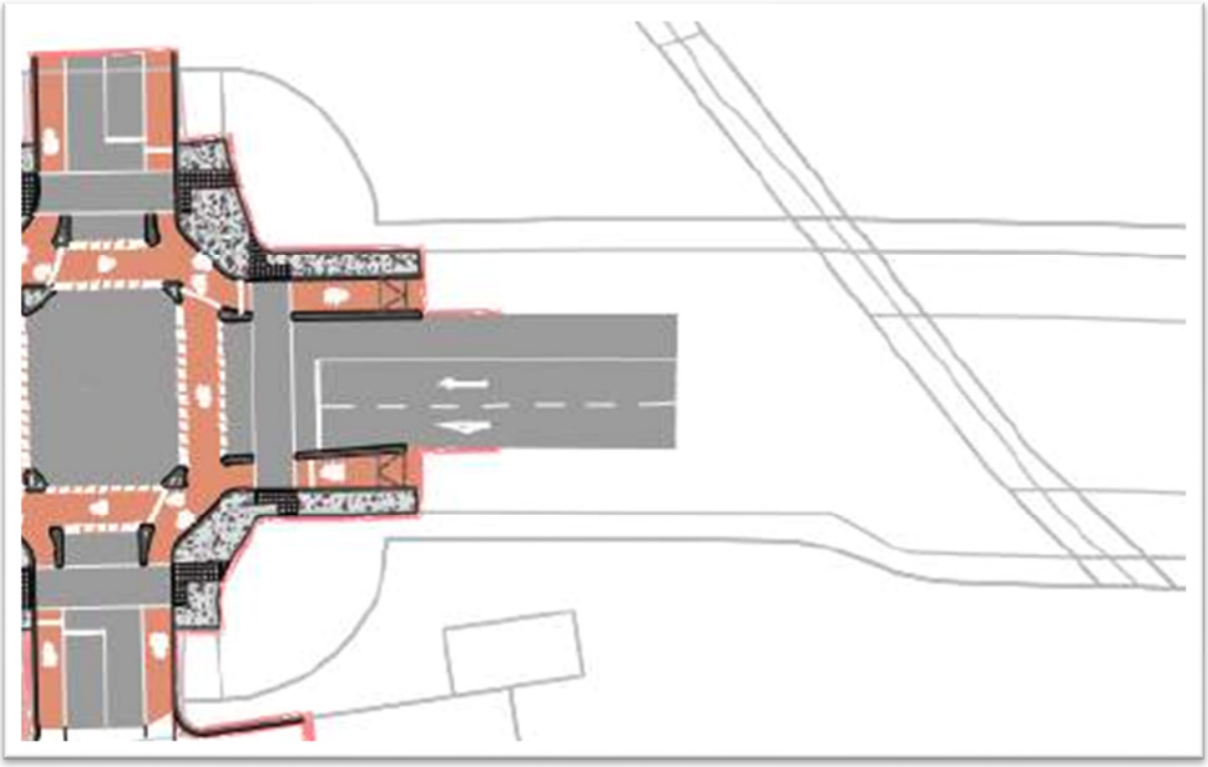
4.2 Problem

LOCATION

Drawing NRB-TA-001, Ballintubber Road.

PROBLEM

There is an existing staggered uncontrolled pedestrian crossing to the east of the new signalised junction. It is unclear if this crossing is to be retained or removed. The new junction will provide a higher level of protection and priority to crossing pedestrians and cyclists that the uncontrolled crossing.



RECOMMENDATION

It is recommended that the need for the uncontrolled crossing be assessed and if it is not required that it be removed. A solid island could be retained to help define the bifurcation of the right turning lane into the undeveloped lands to the north.

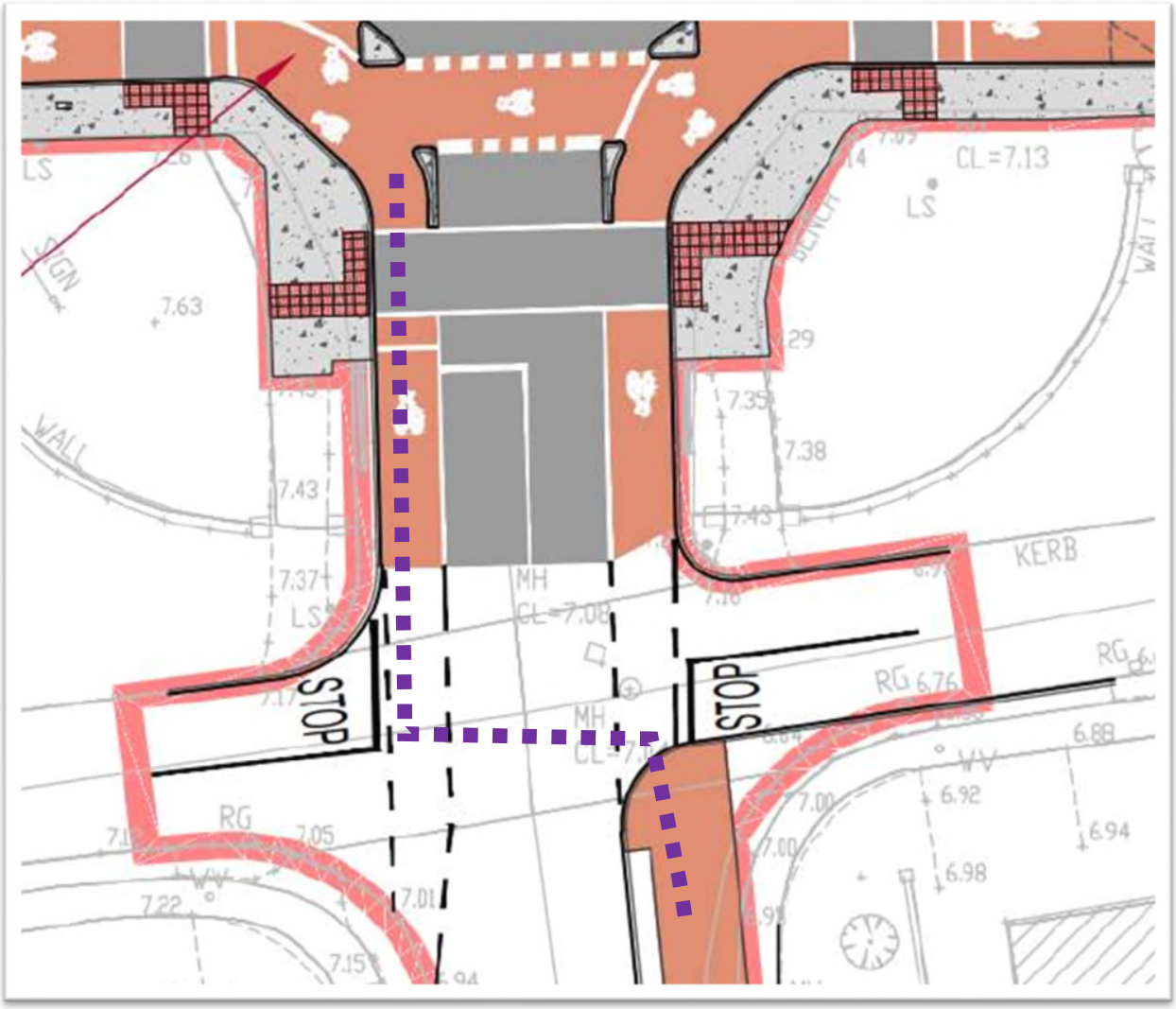
4.3 Problem

LOCATION

Drawing NRB-TA-001, Two- way cycle track.

PROBLEM

The main two-way cycle track terminates at the first side road in Abbey Wood and two short sections of single way cycle track are provided thereafter. Cyclists will have to cross the carriageway if travelling northbound which would increase the risk of collisions with vehicular traffic.



RECOMMENDATION

It is recommended that the two-way cycle track be extended to the signalised junction.

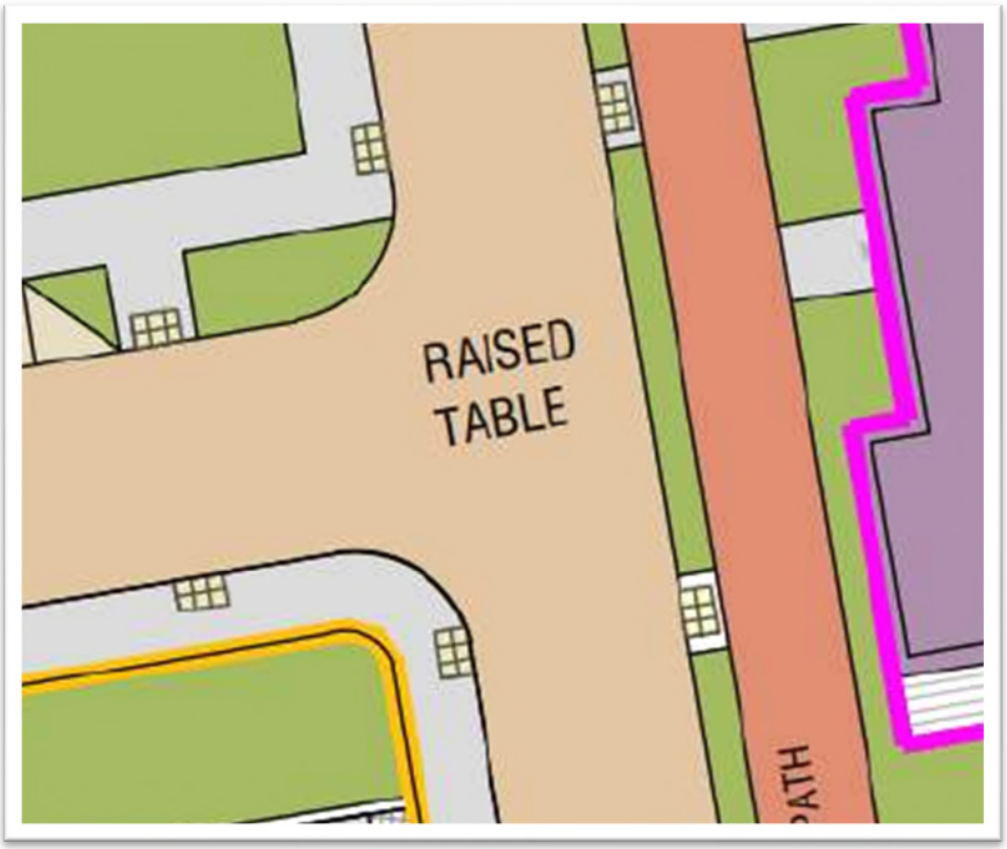
4.4 Problem

LOCATION

Drawing NRB-TA-004, Raised Tables.

PROBLEM

There is a risk that vehicle wheels will overrun the corner radii and put pedestrian at risk or crack the tactile paving if there is not a sufficient kerb upstand at the raised tables. There is also a risk that blind or partially sighted pedestrian may inadvertently enter the carriageway if there are areas of level surface between the footpath and the raised tables outside the areas with tactile paving.



Example only

RECOMMENDATION

It is recommended that a suitable height kerb upstand be provide at the raised tables apart from the areas where tactile paving is provided where it should be flush.

4.5 Problem

LOCATION

Drawing NRB-TA-001, Rock Brook junction.

PROBLEM

It is unclear if sufficient visibility to the right and left can be achieved by drivers exiting the proposed junction into Rock Brook. A lack of visibility could lead to collisions with oncoming vehicles.

RECOMMENDATION

It is recommended that suitable visibility be provided.

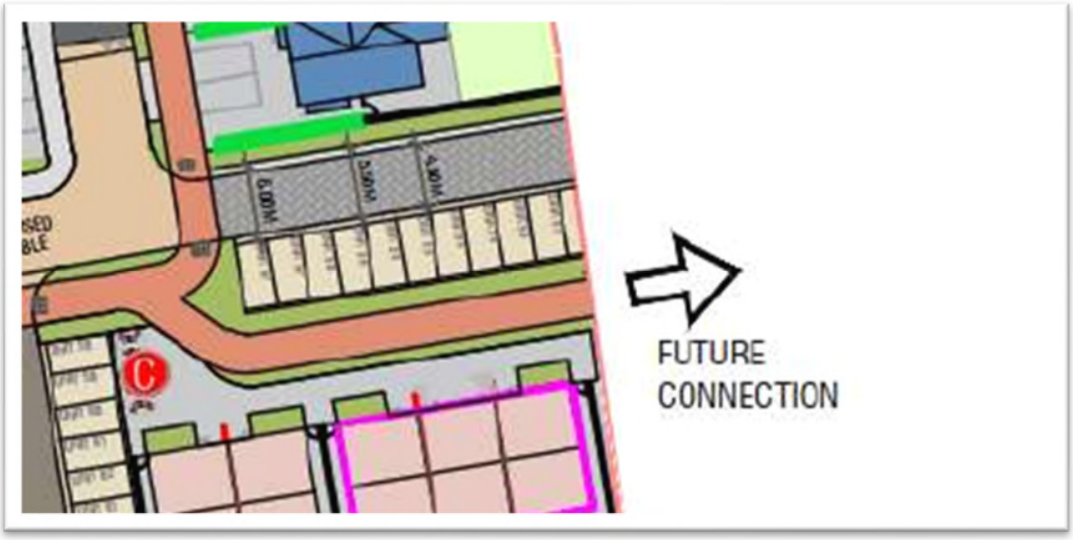
4.6 Problem

LOCATION

Drawing NRB-TA-001, Home Zone 1,2 &4.

PROBLEM

There is a risk that the home zones will be extended in the future and will become link streets rather than cul-de-sac home zones. This could lead to higher traffic volumes and through traffic travelling at higher speeds that would be unsuitable for home zones.



Example only

RECOMMENDATION

It is recommended that if the carriageways are intended to be extended in the future that they be segregated streets rather than home zones.

5.0 Items Raised in This Stage 1 Quality Audit – Accessibility Audit.

5.1 Issue

LOCATION

Drawing NRB-TA-001, Throughout the scheme.

ISSUE

There are limited connections for pedestrians or cyclists to the adjoining developments on the east and west. This leads to a lack of permeability as recommended by DMURS.

RECOMMENDATION

It is recommended that provision be made for additional connections to the adjoining developments where future desire lines may occur.

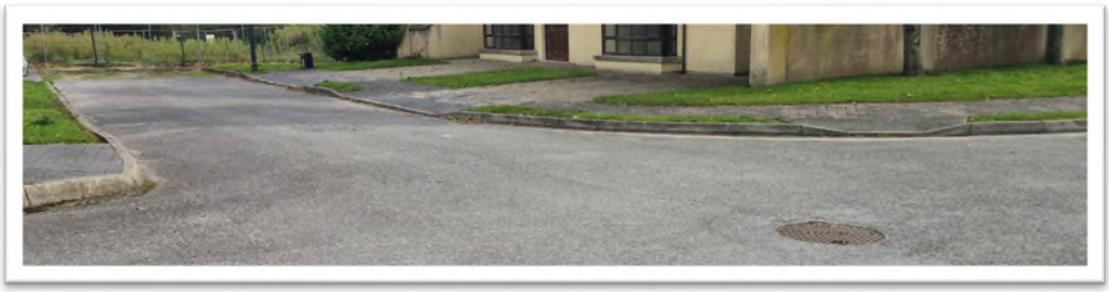
5.2 Issue

LOCATION

Drawing NRB-TA-001.

ISSUE

The existing footpath on the western side of Abbey Wood does not have fully dropped kerbs at the pedestrian crossing points and does not have tactile paving. This may make it inaccessible for blind or partially sighted pedestrians.



RECOMMENDATION

It is recommended that suitable dropped kerbs and tactile paving be provided.

5.3 Issue

LOCATION

Drawing NRB-TA-004.

ISSUE

It may only be indicative at this stage, however tactile paving is shown on the shared use path over a short width. This may lead to certain areas where blind or partially sighted pedestrians may inadvertently enter the carriageway.

Example only

RECOMMENDATION

It is recommended that the tactile paving be provided over the entire width of the path and that the width of the path not be decreased at the crossing points.

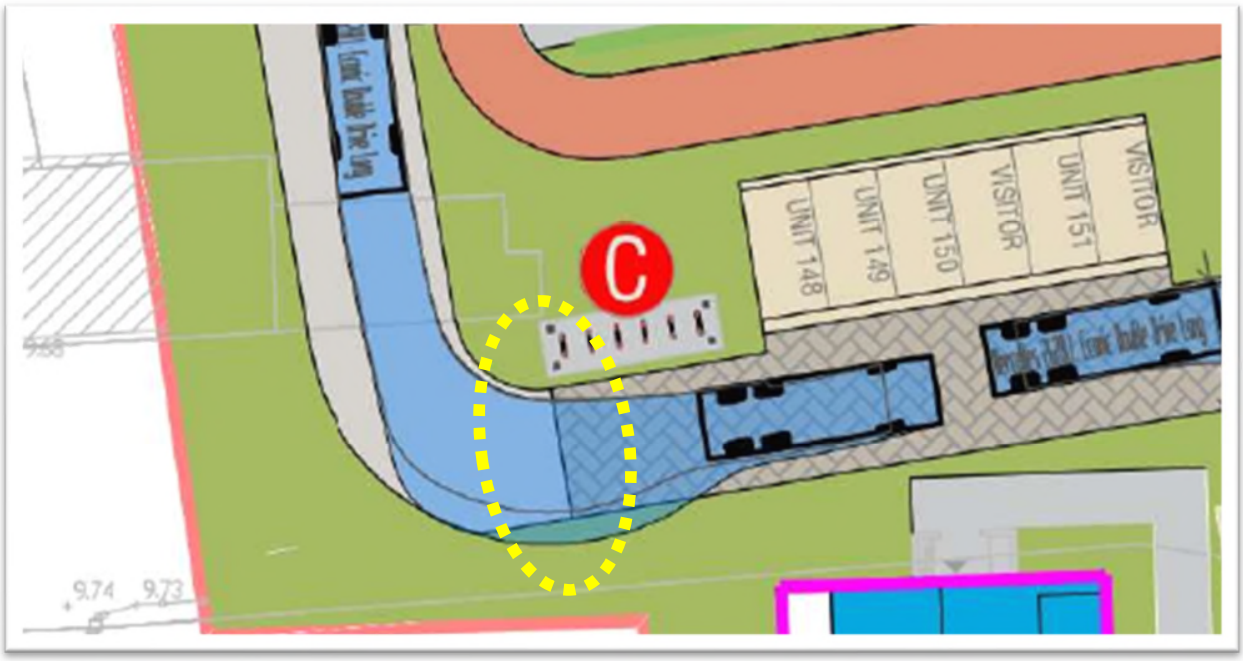
5.4 Issue

LOCATION

Drawing NRB-TA-005, Home Zone 4.

ISSUE

There does not appear to be any transition between the segregated use carriageway and the homezone surface at Home Zone 4. Neither drivers or vulnerable road users including blind or partially sighted pedestrians may realise they are entering an area shared by all.



RECOMMENDATION

It is recommended that a raised area be provided in the Homezone that can be detected by all to highlight the presence of a shared use area.

6.0 Items Raised in This Stage 1 Quality Audit – Walking Audit.

6.1 Issue

LOCATION

Drawing NRB-TA-001.

ISSUE

The existing footpath on the western side of Abbey Wood is narrow. This footpath will have to cater for pedestrians from Abbey Wood and the new development and may not be wide enough to cater for such volumes.

RECOMMENDATION

It is recommended that the footpath be widened.

6.2 Issue

LOCATION

Drawing NRB-TA-005, Home Zone 4

ISSUE

There is no footpath link to Home Zone 4 from the shared use path matching the desire lines to the building or the bicycle storage area.

RECOMMENDATION

It is recommended that paths be provided to match the desire lines.

6.3 Issue

LOCATION

Drawing NRB-TA-001, Home Zone 3

ISSUE

There is no footpath link to Home Zone 3 from the shared use path matching the desire line.

RECOMMENDATION

It is recommended that a link path be provided to match the desire line.

6.4 Issue

LOCATION

Drawing NRB-TA-001, Rock Brook.

ISSUE

There will be desire lines for pedestrians to cross the Rock Brook carriageway to access the new development, especially the creche.

RECOMMENDATION

It is recommended that crossings be provided to match the desire lines and that a continuous footpath without a pinch point be provided on the southern side.

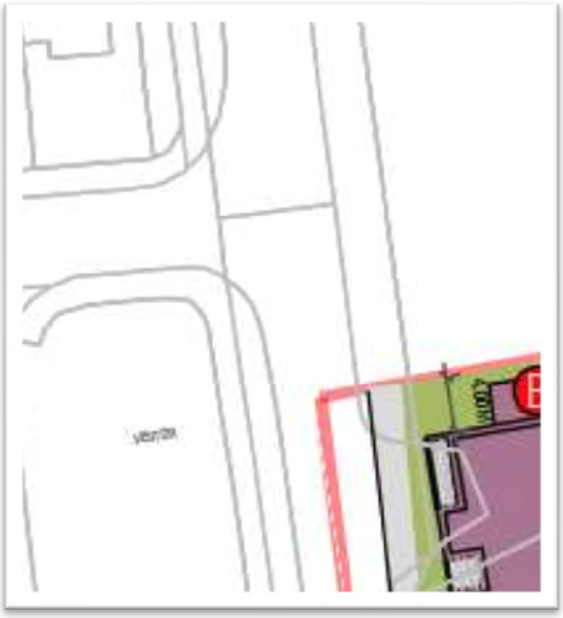
6.5 Issue

LOCATION

Drawing NRB-TA-001, Rock Brook.

ISSUE

The proposed footpath along the eastern side of the Rock Brook access road does not connect with an existing footpath and is shown where the existing public lighting columns exist.



RECOMMENDATION

It is recommended that the footpath be continued north to the Ballintubber Road and that the lighting columns be relocated out of the path.

7.0 Items Raised in This Stage 1 Quality Audit – Cycling Audit.

7.1 Problem

LOCATION

Drawing NRB-TA-002. Signalised Junction.

ISSUE

There may need to be additional land made available to tie in the cycle tracks at the new junction with the existing cycle tracks which are to the rear of the grassed verges on Ballintubber Road.

Example only

RECOMMENDATION

It is recommended that a suitable taper be provided.

7.2 Problem

LOCATION

Drawing NRB-TA-004. Shared use path adjacent to apartment block.

ISSUE

There is a 90 degree bend in the shared use path. This may lead to cyclists taking a diagonal route across the green area or colliding with pedestrians.

RECOMMENDATION

It is recommended that a gentle curve be provided.

8.0 Audit Statements.

Road Safety Audit Statement

We certify that we have examined the information provided and the site. The examination has been carried out with the sole purpose of identifying any features of the design which could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Quality Audit Statement

We certify that we have carried out this audit in accordance with DMURS for those areas independent of the Design team.

Norman Bruton **Signed:** _____

(Audit Team Leader) **Dated:** __10-3-2026_____

Owen O'Reilly **Signed:** _____

(Audit Team Member) **Dated:** 10-3-2026_____

Appendix A

List of Material Supplied for this Road Safety Audit and Quality Audit;

- Drawing NRB-TA-001
- Drawing NRB-TA-002
- Drawing NRB-TA-003
- Drawing NRB-TA-004
- Drawing NRB-TA-005
- Drawing NRB-TA-006
- Drawing NRB-TA-007

For Information

Traffic & Transport Assessment Report, NRB (September 2025)

Appendix B

Feedback Forms (Road Safety Audit & Quality Audit)

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: LRD Midleton

Stage: 1 Road Safety Audit
Date Audit (Site Visit) Completed: 6-10-2025

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
4.1	Yes	Yes – can and will be addressed at detailed design stage, and agreed with CCC in the event of a grant of planning		
4.2	Yes	Yes – can and will be addressed at detailed design stage, and agreed with CCC in the event of a grant of planning		
4.3	Yes	Yes – can and will be addressed at detailed design stage, and agreed with CCC in the event of a grant of planning		
4.4	Yes	Yes – can and will be addressed at detailed design stage, a std detail		
4.5	Yes	Yes – boundary will be maintained and a DMURS compliant sightline delivered		
4.6	Yes	Yes – can be addressed in any future planning application on these lands		

Signed…… **Date** 9 Mar 2026.
Design Team Leader

Signed…… **Date**……10-3-2026…
Audit Team Leader

Signed…… **Date** 9 Mar 2026.
'PP' Employer
Signed 'PP' with the Permission/Consent of Employer

QUALITY AUDIT : LRD MIDLETON

Quality Audit- Stage 1 (Planning Stage)
Date Audit (site visit) 6-10-2025

Paragraph No. in Quality Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
5.1	Yes	Yes – can be agreed with CCC in the event of a grant of planning		
5.2	Yes	Yes – can be agreed with CCC and retro-fitted in the event of a grant of planning		
5.3	Yes	Yes – Tactiles will accord with Guidelines		
5.4	Yes	Yes – this will be defined and raised		
6.1	Yes	Yes – the path width can be discussed with CCC and widened as required in the event of a grant of planning		
6.2	Yes	Yes – the path can be extended here at detailed des Stg in the event of a grant of planning		
6.3	Yes	Yes – the path can be linked here at detailed des Stg in the event of a grant of planning		
6.4	Yes	Yes – can be agreed with CCC at detailed design stage and retro-fitted in the event of a grant of planning		
6.5	Yes	Yes – footpath extension can be agreed with CCC		
7.1	Yes	Yes		
7.2	Yes	Yes – the alignment will be adjusted at detailed des Stg in the event of a grant of planning		

Signed……. **Date** 9 Mar 2026.
Design Team Leader

Signed……. **Date**…10-3-2026……
Audit Team Leader

Signed……. **Date** 9 Mar 2026.
'PP' Employer
Signed 'PP' with the Permission/Consent of Employer

Appendix C

Problem Location Plan.


7.1 example
4.1
4.2
4.3
5.2
6.1
6.5
4.4 example
4.5
7.2
4.6 example
6.4
5.1 example
6.3
5.3 example
6.2
5.4
PUBLIC OPEN SPACE
POCKET PARK
CRECHE
HOME ZONE 3 "THE GREEN"
HOME ZONE 4
FUTURE CONNECTION
Rock Brook
Orchard Cottages
Bán Sheáin
Baneshane

APPENDIX H

DMURS Review & Statement of Consistency

consulting engineers

NRB

DMURS Statement of Consistency

(Appendix H)

for

Proposed Residential Development.

at

Banshane, Midleton, Co. Cork

FINAL ISSUE

5th Floor, 40 Mespil Road, Dublin 4, D04 C2N4.
Tel: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie

Registered in Ireland No. 491679

1.0 INTRODUCTION

1.1 It is NRB's opinion that the proposed residential development is consistent with both the principles and guidance outlined within the *Design Manual for Urban Roads and Streets* (DMURS) 2013 as amended in 2019. The scheme proposals are the outcome of an integrated design approach by the entire Design Team, to address the integration of the residential development into this area. This approach sought to implement a sustainable community connected by well-designed links, layout and accesses - which combined deliver attractive, convenient and safe access in addition to promoting modal shift and viable alternatives to car based journeys.

1.2 The following section discusses design features which are incorporated within the proposed residential scheme with the objective of delivering a design that is consistent with the principles of DMURS.

2.0 DESIGN ATTRIBUTES

2.1 The proposed layout strategy seeks to maximise connectivity between key local destinations through the provision of a high level of **permeability and legibility** for all journeys, particularly for sustainable forms of travel (cycling and walking). The proposed residential housing and apartment development delivers greater mode & route choices along direct, attractive and safe linkages to local amenities and schools/service destinations.

2.2 High Quality Connections link the development and the local roads and public transport services are provided. The external perimeter setting itself been designed to deliver a hierarchy which provides safe access within / across the proposed new residential community. The external perimeter design serves to link the site & community with the established and proposed local network. Safe well -designed routes are provided for pedestrians and for cyclists, with easy access to the local roads and onwards to Midleton.

2.3 As part of the development, the movement function is designed to respect the different levels of motorised traffic whilst optimising access to/from alternative and sustainable transport and catering for higher number of pedestrians & cyclists. In parallel, the adopted design philosophy has sought to consider the context / place status of the scheme in terms of level of connectivity provided, the quality of the proposed design, the

level of pedestrian / cyclists activity and vulnerable users requirements, whilst also identifying appropriate ‘transition’ solutions particularly internally and at the main intersection at Ballintubber Road by way of the Cycle Design Manual Compliant Traffic Signal Controlled Junction.

2.4 The layout of the proposed development seeks to maximise permeability and enhances legibility, and the design of appropriately sized blocks actively contributes to a highly permeable and accessible community for both pedestrians and cyclists.

2.5 The proposed layout seeks to successfully create an appropriate balance between the functional requirements of different network users whilst enhancing the 'sense of place'. Design attributes of the proposed layout which contribute to achieving this ***DMURS objective*** include:

a) Internal traffic calmed shared streets and dedicated facilities linking to the traffic signals on Ballintubber Rd,

b) With the landscaped plans for the site it offers a well-connected and permeable network to link to the footpaths and cycle networks passing to and through the site.

c) The main access junction is proposed as a narrow single carriageway, with a single lane approach to the traffic signals, to help reduce vehicle speeds.

d) Vehicular traffic internally will be naturally calmed through the geometric features incorporated into the design, within the residential areas.

e) Footpaths no less than 1.8m (generally 2.0m or wider) will be provided throughout the scheme with connections and tie-ins to existing external pedestrian networks.

f) The design deliberately seeks to specify minimal signage and line markings on the internal layout, with such treatments used sensitively throughout and predominately at key nodes and ‘transition’ areas.

g) Appropriate clear unobstructed visibility splays, as per DMURS requirements, are provided at the site access junctions to the external road network, and internally within the site.

h) Well designed and frequent pedestrian crossing facilities will be provided along key travel desire lines throughout the scheme, consistent with DMURS, with flush kerbing provided throughout.

i) With the objective of encouraging low vehicle speeds and maximising pedestrian safety and convenience, corner radii will be 3m where swept path analysis permits and are further reduced radii where feasible in line with DMURS guidance.

j) In the event of any upstand kerbs are required, heights will be typically 60mm in accordance with the objectives of DMURS.

k) Within the development, where dedicated cycle links are not being provided, as required, cyclists can share the carriageway with other street users as per the National Cycle Manual guidance for such situations and best practice for residential streets of this nature.

l) Any required street signage and road markings will be in accordance with the Department of Transport Traffic Signs Manual, and the location and form will be agreed in advance with CCC.

APPENDIX I

Preliminary Mobility Management Plan
(aka Travel Plan)

consulting engineers

NRB

Planning Stage Residential Travel Plan

(Mobility Management Plan)

(Appendix I)

For

Proposed Residential Development.

at

Banshane, Midleton, Co. Cork.

FINAL ISSUE

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Contents

1.0 INTRODUCTION

1.1 NRB Consulting Engineers have been commissioned to prepare a Residential Travel Plan for a Large Scale Residential Housing Development (LRD) on lands at Banshane, Midleton, Co Cork.

1.2 This report explains the applicant's commitment to the promotion of more sustainable and cost effective travel habits among the end occupiers/residents of the scheme. In this case, sustainable travel is supported by the controlled provision of car parking for the development, the proximity to public transport (bus and rail) and generous cycle parking provision.

What is a Travel Plan?

1.3 Originally and elsewhere called Mobility Management Plans (MMPs), they originated in the United States and the Netherlands in the late 1980s. In the US, employers over a certain size (generally over 100 employees) were required to implement 'Trip Reduction Plans' in order to reduce single-occupancy car commuting trips, and to increase car occupancy.

1.4 A MMP or Travel Plan (TP) consists of a package of measures put in place by an organisation to encourage and support more sustainable travel patterns among staff and other visitors. Such a plan usually concentrates on staff commuting patterns. In essence, a TP is useful not only to reduce the attractiveness of private car use, but also for the ability to promote and support the use of more sustainable transport modes such as walking, cycling, shared transport and mass transit such as buses and trains.

1.5 **It should be recognised that a Travel Plan/Mobility Management Plan prepared at planning application stage, when the development is un-built and unoccupied, can only highlight the current and proposed Alternative Transport initiatives in place at the site, and set out the applicant's commitment to the promotion of sustainable transport measures. A working MMP will contain details of current Mode of Travel proportions of users, and will contain targets of modal split to allow measurement of same over time.**

Aims and Objectives of this Travel Plan

1.6 The package generally includes measures to promote and improve the attractiveness of using public transport, cycling, walking, car sharing, flexible working or a combination of these as alternatives to single-occupancy car journeys to work. An MMP can consider all travel associated with the residential or work site, including business travel, fleet management, customer access and deliveries. It should be considered as a dynamic process where a package of measures and campaigns are identified, piloted and monitored on an on-going basis.

1.7 The changes which are being sought as part of any plan may be as simple as car sharing one-day per week, or walking on Wednesdays, or taking the bus on days which do not conflict with other commitments, leisure or work activities.

1.8 It is envisaged that once in place, the Travel Plan will enable the following benefits to be realised for the Development:

- Reduced car parking demand and reduced congestion on the local road network due to lower demand for private transport and/or more efficient use of private motor vehicles,
- Improved safety for cyclists and pedestrians,
- Direct financial savings for those taking part in the developed initiatives, through higher than average vehicle occupancy rates,
- A reduction in car parking and car set-down demand, resulting in improved operational efficiency and safety for all,
- Improved social networking between all those participating in the shared initiatives,
- Improved environmental consideration and performance,
- Improved public image for the development, which sets an example to the broader community and may lead to residents making better travel decisions in the future,
- Improved health and well-being for those using active non-car transport modes,
- Regular liaison with the Local Authority and public transport providers to maintain, improve, and support transportation services to and from the site,
- Improved attractiveness of the development to prospective residents,
- Optimal levels of safety for all residents, staff and visitors.

Methodology

1.9 As part of this Travel Plan, reference has been made to the following documents:

- Your Step By Step Guide To Travel Plans (NTA);
- Achieving Effective Workplace Travel Plans (NTA);
- Traffic and Transport Assessment Guidelines (TII);
- Traffic Management Guidelines (DoELG);
- Mobility Management Plans – DTO Advice Note (DTO);
- The Route to Sustainable Commuting (DTO);
- Smarter Travel: A Sustainable Transport Future (DOT); and
- Permeability Best Practice Guide (NTA).

1.10 Consultation with key stakeholders is an essential part of any Travel plan. As discussed below, as part of the operational phase of this development, a Travel Plan Coordinator Role will be appointed from within the Management Company responsible for the development. Following on, once occupied and open, residents and staff will be asked to complete detailed questionnaires on essential data in relation to their existing travel patterns. This information will be used to inform the ongoing implementation, monitoring and review of the plan for this development.

1.11 This information has been used herein as the basis for the assessment, conclusions and recommendations.

2.0 ACCESS TO THE SITE - BY MODE

2.1 The proposed development will consist of 173 No Residential Units and a Creche, as a southern extension to the established Abbey Wood Estate, together with an upgrade to the Abbey Wood / Ballintubber Road Junction (and all associated site works). A site location plan is included below as ***Figure 2.1***

Figure 2.1 - Site Location (Google)

2.2 For primarily a Residential Development, it is essential for the successful Travel Planning to concentrate on journeys associated with work and school commuting patterns. These are the groups which can most practically be encouraged to use modes of transport other than the car. And any staff movements associated with the ancillary creche will focus on commuting mode of travel.

2.3 It should be noted that, being located within close distance to Midleton with ever improving alternative travel modes (in particular the Railway Station), this contributes to sustainable living. There are employment opportunities, retail and leisure all located within reasonable proximity – in addition to being with easy reach of Cork City by train. The measures and initiatives below are relevant and assist in addressing the transportation demands of the proposed scheme.

2.4 It is essential for successful Travel Planning to concentrate on journeys associated with work commuting patterns. These are the groups which can most practically be encouraged to use modes of transport other than the car.

Rail & Bus

2.5 The development site is located 2.3km from the nearest railway station (Midleton Station) which is served by Irish Rail (Iarnród Éireann). Midleton Station is accessible via a short 6min drive, A significant number of passengers travelling to and from Midleton Railway Station are dropped off or collected by car. While this is not the most sustainable form of access in planning terms, it remains a practical option given Ireland's wet climate, particularly during periods of heavy rain.

2.6 Using the station as a central pick-up and drop-off point can also reduce the overall volume of car journeys by facilitating carpooling and limiting longer, individual trips into Cork City or preferably a 9min cycle from the proposed site. ***Figure 2.2*** below shows the proximity to Midleton Station.

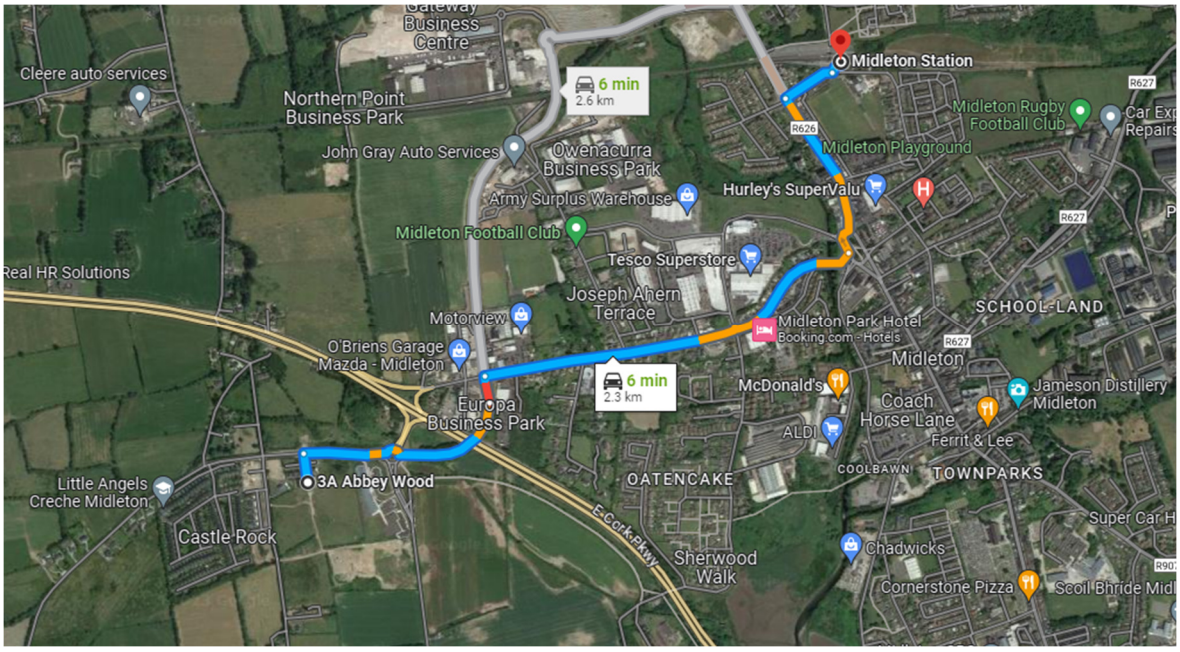

Figure 2.2 – Proximity to Midleton Railway Station (Google)

2.7 Accessibility to the proposed site is complemented by the close proximity of an existing bus service operating locally, with the nearest bus stop located just 160m (**2 minutes' walk**) away from the entrance to the site. The routes serving this stop are:

- Bus Éireann Route 240: Cork to Ballycotton via Midleton
- Bus Éireann Route 241: Cork to Whitegate/Trabolgan via Midleton

2.8 The approximate walking distance to the Bus Stop is as indicated in ***Figure 2.3*** below.

Figure 2.3 – Approx Walking Distance to Bus Stops (Google)

Cycling / Pedestrians

2.9 The existing cycle network was surveyed as part of the Cork Cycle Network Plan. Pedestrian footpaths follow the same route. The existing facilities at the time of that survey are shown following.

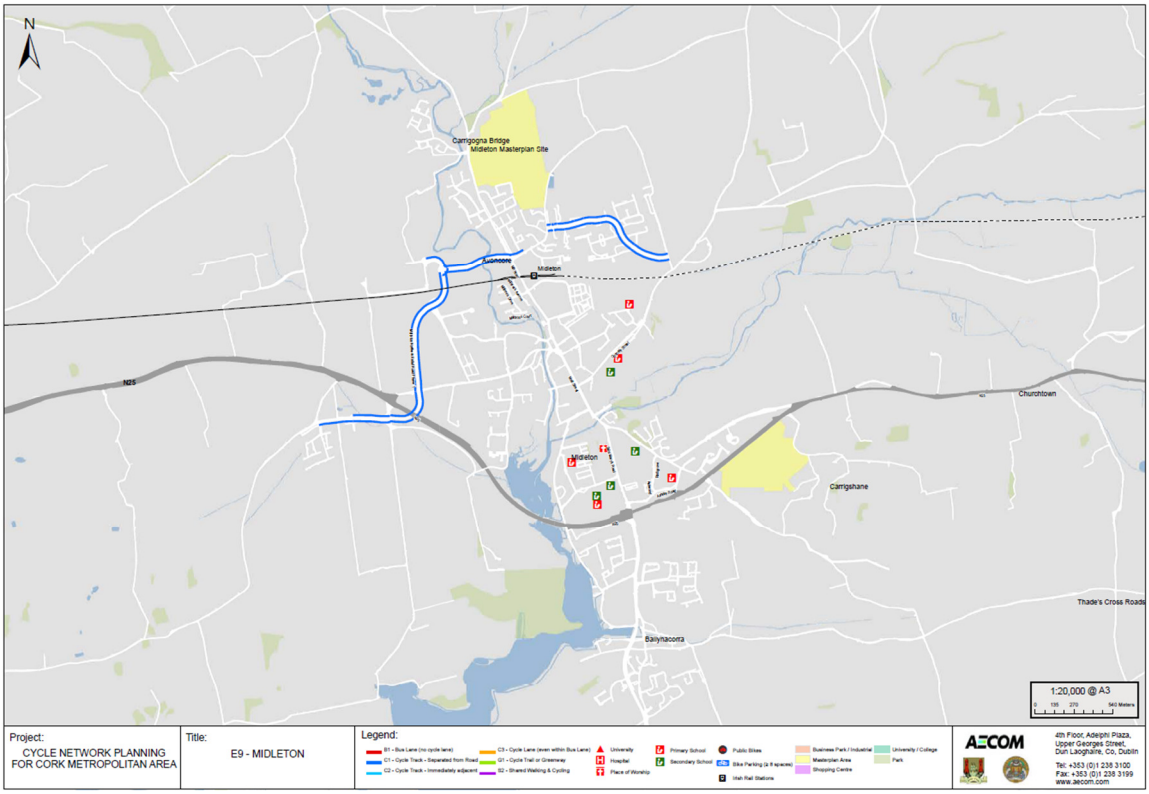

Figure 2.4 – Existing Cycle Network (Cork Cycle Network Plan)

2.10 The most relevant piece of infrastructure is the cycle route along Northern Relief Road that serves the business and industrial parks on the periphery of the town. This piece of infrastructure directly links the proposed development site with the Gateway Business Centre, Northern Business Park, and Midleton Station.

2.11 Furthermore, indicative isochrone maps were prepared and provided to us showing the areas reachable within a 10-min, 20-min, and 30-minute cycle or walk from the development site. These are shown below.

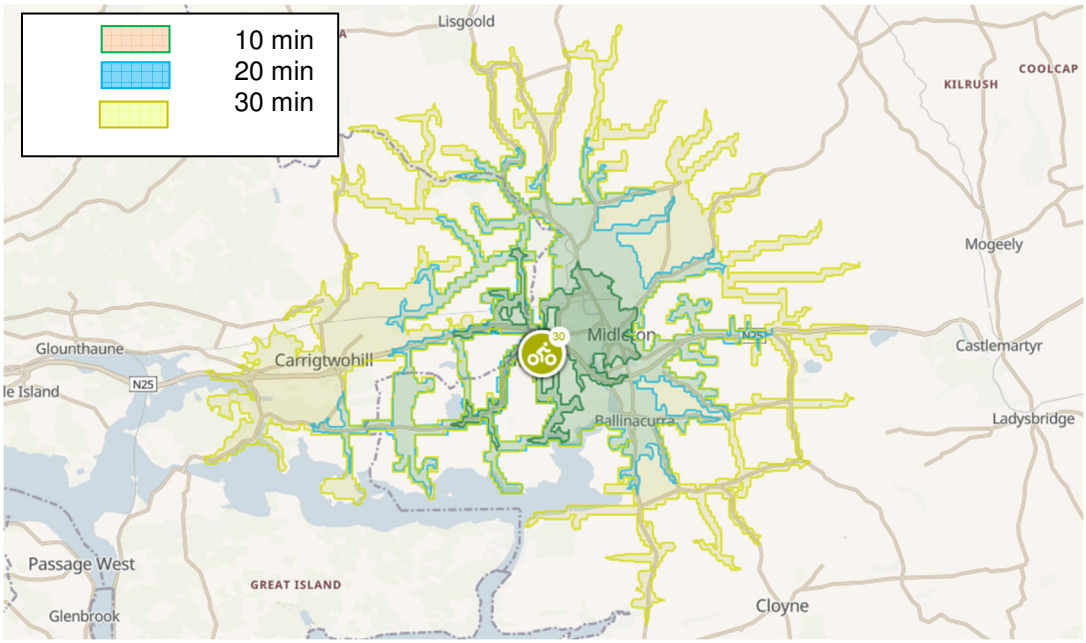

Figure 2.5 – Cycling Isochrone Map

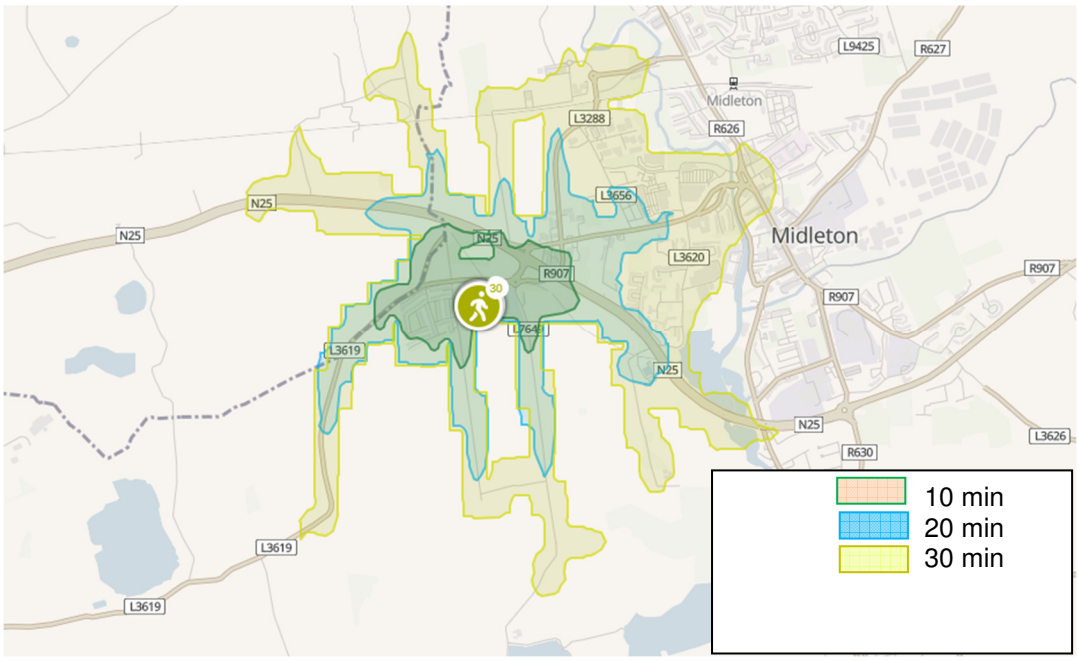

Figure 2.6 – Walking Isochrone Map

2.12 The Cork Metropolitan Area Transport Strategy 2040 (CMATS) details proposed upgrades to the existing infrastructure in the area. These proposals are discussed below for each type of infrastructure.

2.13 The proposal in CMATS for the rail network includes an upgrade to the line from a single track to a double track between Midleton Station and Glounthaune, which will enable higher frequency trips from Midleton to the surrounding areas. Although the Midleton Station is not within practical walking distance from the development site, it does provide options for inter-city/town travel from the station which is within cycling and driving distance, which will reduce the need for private car trips between towns.

2.14 Furthermore, the Water Rock future development will feature a new railway station which will be closer and more accessible from the site when compared to the Midleton station. This is illustrated in Figure 2.7 below.

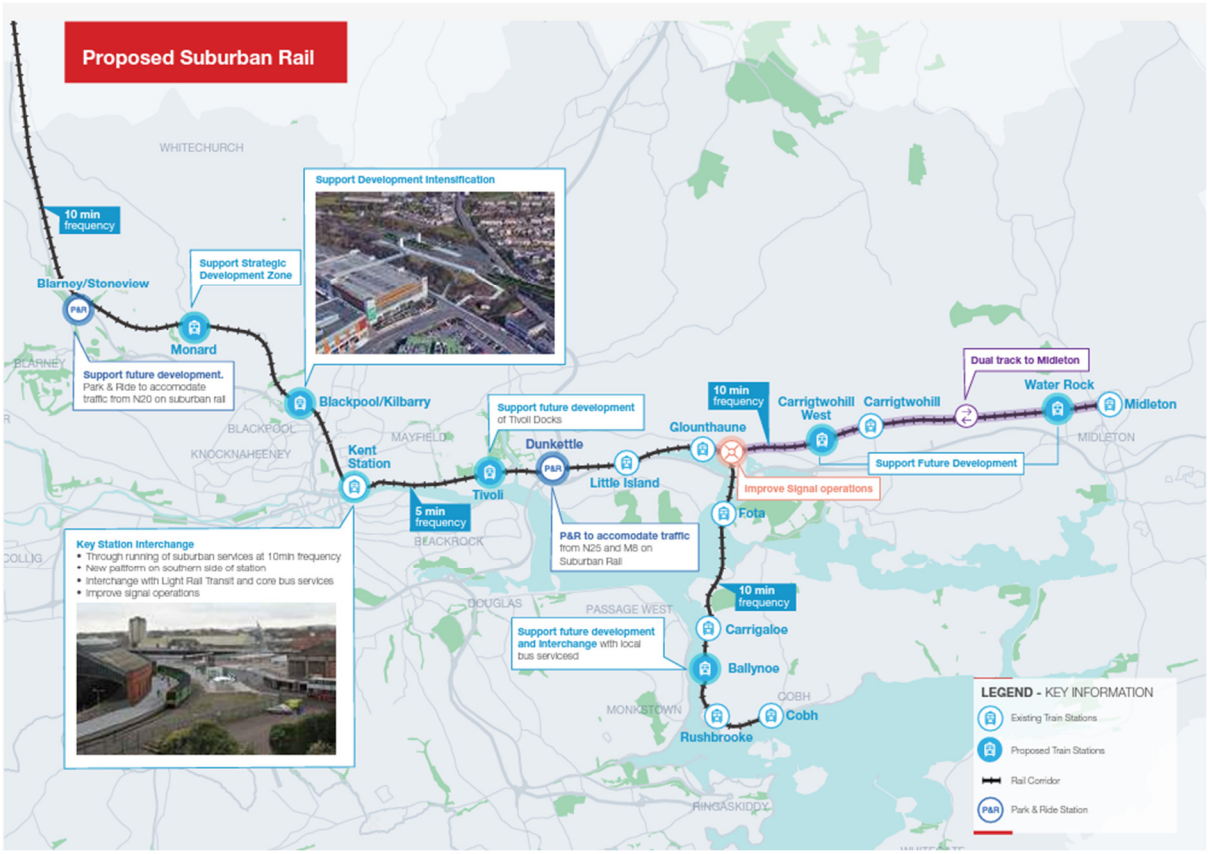

Figure 2.7 – Suburban Rail Network Plan

Figure 2.8: Location of rail stations relative to the site

2.15 There are proposed upgrades for bus infrastructure in the area. The Cork Metropolitan Cycle Network Plan 2017 sets out extensive proposals for future cycle network improvements in Midleton. This will increase the overall accessibility to Midleton as well as provide cycle (and pedestrian) access to the Water Rock future development, including the proposed Water Rock rail station. These proposals are highlighted in the following extract from the associated mapping.

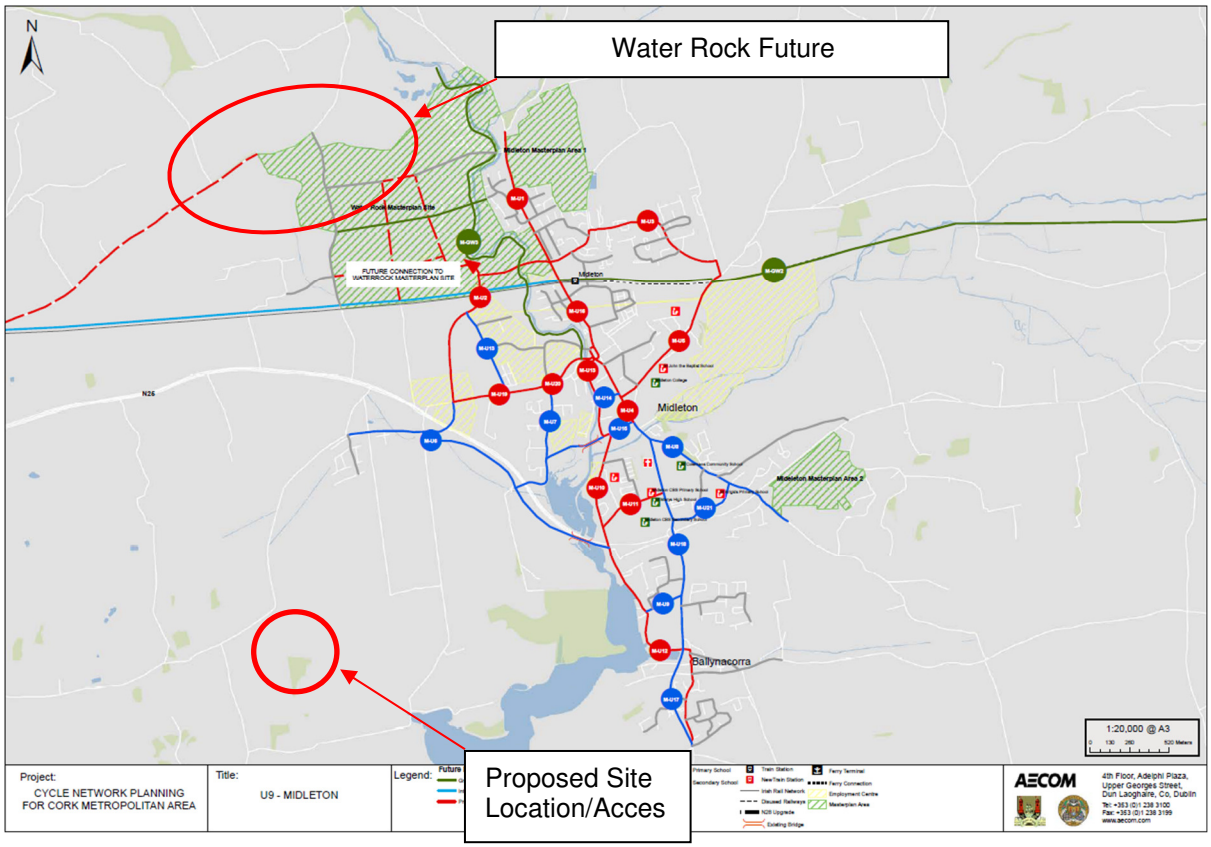

Figure 2.9: Proposed Future cycle network map

2.16 The Cork Cycle Network Plan is the National Transport Authority's plan for a regional cycle network. The Cycle Network Plan aims to ensure that cycling is supported and enhanced in order to achieve strategic objectives and reach national goals for cycle usage. ***Figure 2.9*** above illustrates the proposed cycle network plan for the local area. This network will greatly benefit the accessibility of the site for cyclists with Primary Route and a secondary route easily accessible.

2.17 The provision of modern improved infrastructure makes the site accessible and permeable for all Residents. The key to cycle accessibility is convenient safe links, with secure and carefully sited cycle parking. Cycling is ideal for shorter journeys.

2.18 For journeys greater than 8km, it is generally recognised that a modal shift to cycling could be achievable for some, but not all, and options such as public transport and car sharing should be considered. Journeys up to 8km could be undertaken by bicycle and journeys up to 3-4km could be undertaken by walking or cycling.

Accessibility by Taxi

2.19 In terms of taxis, mobile phones and App Technology (e.g., 'Free Now') allow taxis to be ordered on a demand-basis without any requirement for formal taxi ranks or dedicated taxi holding areas.

Car Sharing

2.20 The option of car sharing will be explored and highlighted to Residents.

Residents Communication

2.21 Prior to moving in, the Management Company will issue welcome packs to all residents. These packs include details of the development and how it is run, advice on moving in, public transport information, useful local information, the restricted availability of on-site parking and can require confirmation of a time-slot to move in. The preparation of this information ensures residents are familiar with the operation of the development before moving in.

2.22 In terms of number of transport alternatives easily available to Residents, it is considered that the proposed development is very highly sustainable in terms of public and alternative transport accessibility. The proximity of the development to existing public transport services means that all residents will have viable alternatives to the private car for accessing the site and will not be reliant upon the car as a primary mode of travel.

2.23 Public transport maps and timetables can be provided in prominent locations on site and the information will be kept up to date by the appointed Travel Plan Coordinator, a role for the Management Company.

2.24 With this in mind, the main focus of this Preliminary Travel Plan will be to promote and support the use of alternative modes to the private car.

3.0 COLLECTION OF BASELINE INFORMATION

Possible Travel Pattern Questionnaires

3.1 Once occupied, and when the Travel Plan Coordinator is appointed, the occupiers of the proposed development will be encouraged to regularly monitor the Travel Plan initiatives in order to maximise on their success.

3.2 Shortly after occupation of the new development, a detailed travel-questionnaire will be compiled and distributed to residents for completion. The aim of the travel questionnaire will be to establish travel patterns between work and home and school among other travel demands. The information gathered from this survey will be used to inform the further development of the Travel Plan.

3.3 The Baseline Survey information will also allow the Travel Plan Coordinator for the development to set realistic modal-split targets for the development.

3.4 It is anticipated that, given the urban location and good transport links at this development, combined with the reduced levels of car parking on site, there will be a high percentage of use via public and alternative transport. The Travel Plan will need to maintain this positive modal split and improve it, where possible. It is informative to note that "Smarter Travel: A Sustainable Transport Future" (DOT) Objective was to achieve a reduced work related commuting by car modal share of 65% to 45%.

4.0 THE TRAVEL PLAN

4.1 The successful implementation of a Travel Plan will ensure that, in-so-far-as-possible, the impacts of this traffic are reduced and minimised where practical, while providing a number of environmental and economic advantages detailed below.

4.2 The following sub-sections detail the available initiatives which will serve to better manage travel demand, and therefore the traffic impact of work-related journeys, focused on the movement of residents during peak times.

Walking

Walking - Key Information	
Approx Zone of Influence	3.5km
Percentage of Residents travelling in area of influence	TBC in each survey when occupied
Percentage of Residents interested in Walking	TBC in each survey when occupied

Table 4.1: Key Information: Walking

4.3 There are many local, global, and personal benefits to walking, a few of which are listed following:

- **W** - Wake Up! - Studies have shown that people who walk are more awake and find it easier to concentrate.
- **A** - Always one step ahead - Walking makes people more aware of road safety issues and helps them develop stronger personal safety skills.
- **L** - Less congestion - If you leave the car at home and walk, there are fewer cars on the road which makes it safer for those who walk and cycle.
- **K** - Kinder to the environment - By leaving the car at home you are reducing the amount of CO 2 produced and helping to reduce the effects of climate change and air pollution.
- **I** - Interpersonal skills - Walking can be a great way to meet other walkers, share the experience, and develop personal skills.
- **N** - New adventures - Walking is a great way to learn about your local environment and community. It's also a fun way to learn about the weather, landscape, and local ecosystems.
- **G** - Get fit and stay active - Walking helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.

4.4 Most adults will consider walking a maximum of 3.5 km (Approx 30/40 minutes). Residents working within a 3.5 km radius of the site will be encouraged to walk as often as their schedule permits.

4.5 The following initiatives and incentives can be used to encourage walking:

- Take part in a 'Pedometer Challenge' which is organised through the Irish Heart Foundation or Smarter Travel Workplaces;
- Organise special events such as a 'Walk to work/school on Wednesdays' where participants are rewarded for their participation;
- Keep umbrellas in public areas on a deposit system for use when raining;
- Display Smarter Travel Workplaces Accessibility Walking maps on notice boards areas so residents can plan journeys;
- Organise lunch time or afternoon walks as part of a health and well-being programme;
- Highlight the direct savings gained due to reduced use of private vehicles.

Cycling

Cycling – Key Information	
Approx. zone of influence	10km
Percentage of Residents travelling in area of influence	TBC in each survey when occupied
Percentage of Residents interested in cycling	TBC in each survey when occupied

Table 4.2: Key Information: Cycling

4.6 Research suggests that cycling is a viable mode of transport for people who live up to 10 km from work or school.

4.7 Cycling is a great way to travel. It helps foster independence, raises awareness of road safety, and helps the environment.

4.8 Some positive aspects of cycling are listed following:

- **C** - Cycling is fun! - Cycling is a great form of transport but it's also a great recreational activity. Cycling is a skill that stays with you for life and it's a fantastic way to explore your local community;
- **Y** - You save time and money - cycling reduces the need to travel by car thus reducing fuel costs and freeing up road space for more cyclists;
- **C** - Confidence building - travelling as an independent cyclist can give people

increased confidence proving beneficial in all aspects of life;

- **L** - Less congestion - If you leave the car at home and cycle there are fewer cars on the road which makes it safer for those who cycle and walk;
- **I** - Interpersonal skills - Cycling can be a great way to meet other cyclists and share the experience;
- **N** - New adventures - Cycling is a great way to learn about your local environment and community. It helps people to understand where they live and how their actions affect their local environment;
- **G** - Get fit and stay active - cycling helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.

4.9 The provision of enhanced and attractive cycle parking facilities at the site will clearly play a critical role in promoting journeys by bicycle.

4.10 The following initiatives and incentives can be used to encourage cycling:

- New cycle parking installed within the development, secure and well lit;
- Publicise cycle parking availability by way of signage and on notice boards;
- Display maps on notice boards areas so people can plan journeys;
- The development can provide free cycle accessories (panniers, lights, visi-vests, helmets) in periodic draws for cyclists,
- The Travel Plan Coordinator can organise cycle training sessions on site on the rules of the road and the specific risks associated with the locality;
- The Travel Plan Coordinator can invite bike suppliers on site for a 'Green Day' or 'Green Week' so that people can try bikes before buying;
- The Travel Plan Coordinator can set up a Bicycle User Group (BUG) to promote cycling;
- The Travel Plan Coordinator can highlight the direct savings gained due to reduced use of private vehicles;
- The Travel Plan Coordinator can encourage residents to take part in National Bike Week, see www.bikeweek.ie.

Public Transport

Public Transport – Key Information	
Approx. zone of influence	All Residents
Percentage of Residents travelling in area of influence	100%
Percentage of Residents using Public Transport	TBC in each survey when occupied

Table 4.3: Key Information: Public Transport

4.11 There are many benefits to taking public transport, some of which include:

- Personal Opportunities – Public transportation provides personal mobility and freedom;
- Saving fuel – Every full standard bus can take more than 50 cars off the road, resulting in fuel savings from reduced congestion;
- Reducing congestion – The more people who travel on public transport, especially during peak periods, the less people travelling by private car;
- Saving money – Taking public transport is a lot cheaper than travelling by car and saves the cost of buying, maintaining and running a vehicle;
- Reducing fuel consumption – A full standard bus uses significantly less fuel per passenger than the average car;
- Reducing carbon footprint – Public transport is at least twice as energy efficient as private cars. Buses produce less than half the CO2 emissions per passenger kilometre compared to cars and a full bus produces 377 times less carbon monoxide than a full car;
- Get fit and stay active - Walking to public transport helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.
- Less stress – Using public transport can be less stressful than driving yourself, allowing you to relax, read, or listen to music.

4.12 The following initiatives and incentives can be used to encourage people to take public transport:

- Publicise Employee Tax Saver Commuter tickets, which offer savings to employers in PSRI per ticket sold and significant savings to employees in marginal tax rate and levies on the price of their ticket;
- Encourage public transport use for travel by promoting smart cards, advertising the availability of these tickets to residents;
- Publicise the availability of Real Time Information. Real Time Information shows when your bus is due to arrive at your bus stop so you can plan your journey more accurately;
- Provide maps of local bus routes and the nearest bus stops and the length of time it takes to walk to them;

Go-Car/Car Sharing

Car Sharing – Key Information	
Approx. zone of influence	All Residents
Percentage of Residents travelling in area of influence	100%
Percentage of Residents Car Sharing	TBC in each survey when occupied

Table 4.4: Key Information - Go-Car/Car Sharing

4.13 Every day thousands of commuters drive to work or to school on the same routes to the same destinations, at the same time as their colleagues. By car sharing just once a week, a commuter's fuel costs can be reduced by 20%, and in a similar fashion, the demand for work place parking can be reduced by 20%. If every single-occupancy driver carried another driver, there would be 50% less cars on the road at peak times.

4.14 Although use of the car to get to work or to school is essential for some people, car sharing schemes such as GoCar (which are active in Dublin) have the potential to deliver a significant reduction in private vehicle trips by promoting higher than average occupancy rates for each vehicle.

4.15 Car sharing often happens informally, however some participants often prefer a formal scheme such as a GoCar facility which will normally generate a higher take-up for car sharing, and more efficiency in terms of increased occupancy rates.

4.16 Encouraging more residents to share car journeys to work rather than driving alone as well as encouraging more to set up and take part in car sharing/pooling would prove a very effective means of reducing daily car trips to and from the site.

4.17 The following initiatives and incentives can be used to encourage car sharing:

- Provide Go Cars at the Development,
- Draw up a car-sharing policy for how the scheme will operate,
- Highlight to drivers that they do not have to share with a person that doesn't suit them – allow choice based on gender, route, smoking or non-smoking;
- Clarify the financial implications of the scheme – those accepting a lift could contribute towards fuel costs.
- Use existing online databases for car sharing. For example, the development could set up its own private car sharing site using www.carsharing.ie.

4.18 Other travel planning measures such as the use of technology, flexible working arrangements and video conferencing facilities will and are used as part of this development to minimise travel requirements and allow people to use alternative means of transport.

Action Plan Summary Table

4.19 The Summary Action Plan is described in the Table below. Modal Split Targets will be determined following on from the first survey shortly after full occupation, typically within the first six months. This will be part of the role of the Travel Plan Coordinator. This will show existing travel patterns with realistic targets set to improve the modal split of Residents.

	Initiative	Impact on Delivery	Difficulty Delivering	Current Modal Split	Target MS
Residents Initiatives	Walking	Medium	Low	TBC	TBC
	Cycling	Medium	Medium	TBC	TBC
	Public Transport	High	Low	TBC	TBC
	Other	Medium	Medium	TBC	TBC
	Car - Sharing	Medium	Medium	TBC	TBC
	Cars - 1 Passenger Only	High - Negative	High	TBC	TBC
Promoting the TP	Marketing the Plan	High	Low	Driven By TP Coordinator	
	Measuring Success	High	Medium	Annual Surveys	

Action Plan Summary Table

5.0 IMPLEMENTING THE PLAN

Background

5.1 Setting realistic targets and a sustained approach to the promotion of the Travel Plan is important if the measures are to be successful. The objectives and benefits of the Plan will be made clear and broadcast during the full lifecycle of the Plan.

5.2 The implementation of a successful Travel plan will require the upfront investment of resources. As well as reviewing objectives and initiatives regularly, it is equally important to measure results. This provides an indication of any Plan's success, and ensures that the targets remain realistic.

The Travel Plan Coordinator

5.3 The key objective of this Travel Plan is to ensure that the traffic impacts and car usage associated with the operation of development are minimised. Achieving this objective will result in a wide array of benefits for the development and its stakeholders.

5.4 To ensure the plan is effective it is essential for a Travel Plan Coordinator to be appointed for the Development upon occupation.

5.5 The nominated person and their contact details will be provided to the Planning Authority upon occupation of the development.

5.6 It is envisaged that the Coordinator will work closely with residents to enthusiastically promote and market the Travel Plan. As Residents will be the focus of the plan; their involvement must be sought from the outset.

5.7 To support the Travel Plan Coordinator's efforts, the Operator must ensure that they have sufficient time to carry out their duties. In addition, it is essential that the powers of decision making are bestowed upon him/her, along with a suitable budget and programme for implementation.

Promoting the Travel Plan

5.8 Active promotion and marketing is needed if the Travel Plan is to have a positive impact on stakeholder travel patterns to and from the site.

5.9 All marketing initiatives should be focused on areas where there is willingness to change. Such information has been extracted from the questionnaires and has been described in Section 3 of this Plan.

- **Identify the Aim** – e.g. to reduce low occupancy car commuting, school, and business travel and to promote active travel, public transport and alternatives to travelling by car.
- **Brand the Plan** – as part of communicating the Travel Plan, visually brand all work relating to it with a consistent look, slogan, identity or logo.
- **Identify the Target Audience** – 'segment the audience' (e.g. shift workers, school travel, sedentary workers, people travelling long/ short distances, mode used, members of a walking club or green team) so you can target the message and events towards these different groups.

5.10 As part of the marketing process, the Travel Plan coordinator can personalise a plan for the Development, drawing attention to the benefits of participation and support for its implementation.

5.11 The Coordinator can identify communication tools and networks used by the different audiences in the development, and use these to communicate about travel.

5.13 Promotional material regardless of its quality is only as good as its distribution network; material incentives assist greatly in introducing people to alternative modes of commuting.

5.14 The Coordinator can promote positive messages associated with a plan, for example, reduced tax/PRSI payments, getting fit and active, reducing congestion, reducing CO2 emissions and so on, and encourage people to start small – changing one day per week for example, to explore their options.

5.15 Marketing drives which feature individual residents who have reduced their car use can carry a strong message. This will serve to raise not only the profile of the Plan, but also send a clear message in relation to the Residents commitment to the Plan.

6.0 CONCLUSIONS

6.1 The development forming the subject of this application accords with the principles of sustainable development, being located within an established serviced residential neighbourhood within clear and easy access to alternative modes of travel. With controlled allocated car parking provided this also acts as a travel demand management measure. The Operator, once the development is occupied, will utilise pragmatic measures that encourage safe and viable alternatives to the private car for accessing the development.

6.2 Good Travel Planning is not a one-off event, it is instead an on-going iterative process requiring continued effort. This report assists these efforts by forming an outline framework and providing guidance for its success. Monitoring and reviewing the initiatives set out within the plan will form a far greater part of the working Travel Plan itself.

6.3 The key to the Plans success will be the appointment of a ***Travel Plan Coordinator*** for the development, once occupied. They will be vested with total responsibility for implementing the plan. They should be granted the authority and time to execute the Plan, and be provided with sufficient resources to realise the Plans success.

6.4 As Residents are the focus of the plan; their involvement should be sought from the outset following occupation. To this end, the Plan Coordinator should be assisted and supported by the Operator and Residents. This will serve to spread the work load, and also give the Residents a valuable input into the operation of the Plan.

6.5 Successful Travel Plans require marketing **and** regular review. The measures set out in the Action Plan Summary Table (Chapter 4) should form the basis of a sound, realistic Plan and should be clearly set out and be fully transparent to all users.

6.6 Residents also have an essential responsibility in terms of co-operating with, and taking an active part in the plan. They are, after all, the plan's primary focus.

6.7 It is recommended that the working Travel Plan be set in motion following full residential occupation. The plan should evolve and develop with the development, taking into account changing Residents and their travel preferences and needs.

6.8 Annual reviews of the Plan should include a full stakeholder survey, providing valuable information for target setting and marketing target groups. It is emphasised that failing to meet initial targets should not be seen as failure, as the preliminary 12 to 18 months of the plan should be viewed as a calibration exercise for target setting.