consulting engineers

NRB

Transportation Assessment Report

Including...

Preliminary Planning Stage Mobility Management Plan

(Appendix G)

&

Independent Stage 1 Road Safety Audit

(Appendix H)

for

Proposed Amendments/New Elements

At

Kilnamanagh Shopping Cntre, Treepark Rd/Mayberry Rd, Kilnamanagh, Dublin 24.

SUBMISSION ISSUE

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EXECUTIVE SUMMARY

NRB Consulting Engineers Ltd were appointed to address the Traffic & Transportation issues associated with a planning application for amendments to Dunnes Stores Shopping Centre, Kilnamanagh.

The proposed Development consists of internal alterations and improvements to reutilise and modernise the existing centre elements, providing a new Gym and Health Centre and also some external amendments to the Car Park and Service Yard. The detail of the proposed development is further outlined within Section 2.0 of this Report.

This Transportation Assessment Report (TA) has been prepared to address the Traffic and Transportation issues associated with the proposal, the capacity of the existing road network and the impact of the development locally, conscious that the proposed amended site uses will generate very low traffic volumes in the context of the established road network in the area. The Report is prepared in accordance with TII's Traffic & Transportation Assessment Guidelines and addresses the worst-case traffic impact of the proposal.

We commissioned and undertook new traffic surveys of the adjacent road network during 2022 when schools were fully opened and at a time when the Covid Pandemic measures were lifted. This traffic survey data formed the basis 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 periods in accordance with Traffic & Transportation Assessment Guidelines.

The Transportation Assessment confirms that the road network and the existing access junction arrangement is more than adequate to accommodate the worst-case small increases in traffic associated with the revised facility. The assessment confirms that the construction and full operation of the new scheme will have a negligible and unnoticeable impact upon the operation of the adjacent road network.

A preliminary Mobility Management Plan is included as ***Appendix G***. The work includes an Independent Stage 1 Road Safety Audit of the revised Layout, and this is included herein as ***Appendix H,*** together with the associated Designer Feedback form.

Based on our study and assessment, we believe that there are no adverse traffic/transportation capacity or operational issues associated with the construction and occupation of the proposed development that would prevent planning permission being granted by South Dublin County Council.

1.0 INTRODUCTION

1.1 This Transportation Assessment (TA) has been prepared by NRB Consulting Engineers Ltd and addresses the Traffic/ Transportation issues associated with a planning application for amendments to Dunnes Stores Shopping Centre, Kilnamanagh, Tallaght.

1.2 A site location plan for the site is included below as ***Figure 1.1.***

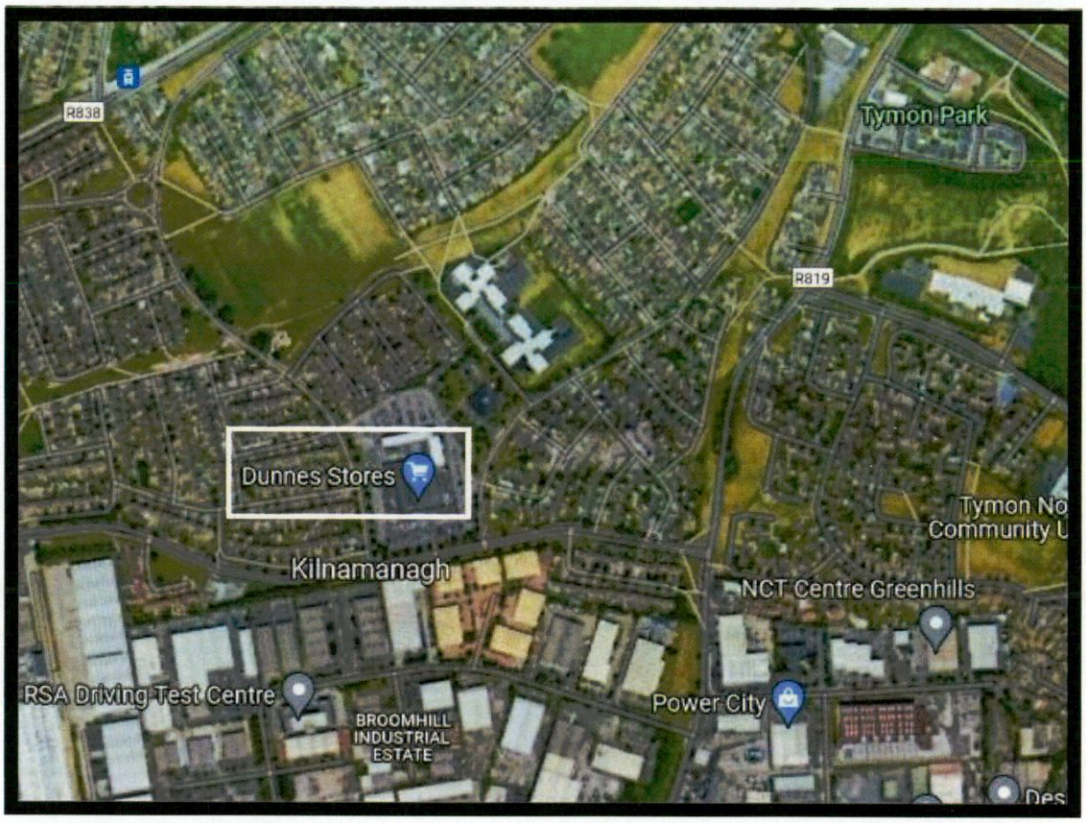


Figure 1.1 - Site Location

1.3 The full development description is included in Section 2. The application presents an opportunity to improve the access, servicing and circulation and some amendments of these elements are proposed, as set out on the annotated plans. Permeable vehicular access via the established existing priority junctions onto Treepark Rd West and Treepark Rd East is being maintained, with an improved pedestrian and cyclist approach from Mayberry Rd.

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

- Relatively small scale of the development in the context of the local road network (Reflected in the very Low Traffic Generation of the Development),

- Location of the development on the site, being a long-established retail destination serving the local area,
- Traffic & Transportation impact,
- Capacity and Safety of the established vehicular access junctions,
- Capacity of the Existing Road Network,
- Adequacy and safety of the existing roads and junctions locally, within the area of influence.
- Impact upon the adjacent affected junctions locally.

1.5 A review of the Road Safety Authority (RSA) online collision database indicates that there are no untoward significant accidents on the affected stretches of road network surrounding the site, save for one pedestrian accident which occurred at the Mayberry Road/Treepark Rd West junction in 2014 (as illustrated and highlighted below). An extract from the RSA on-line collisions record is included as ***Figure 1.2***.

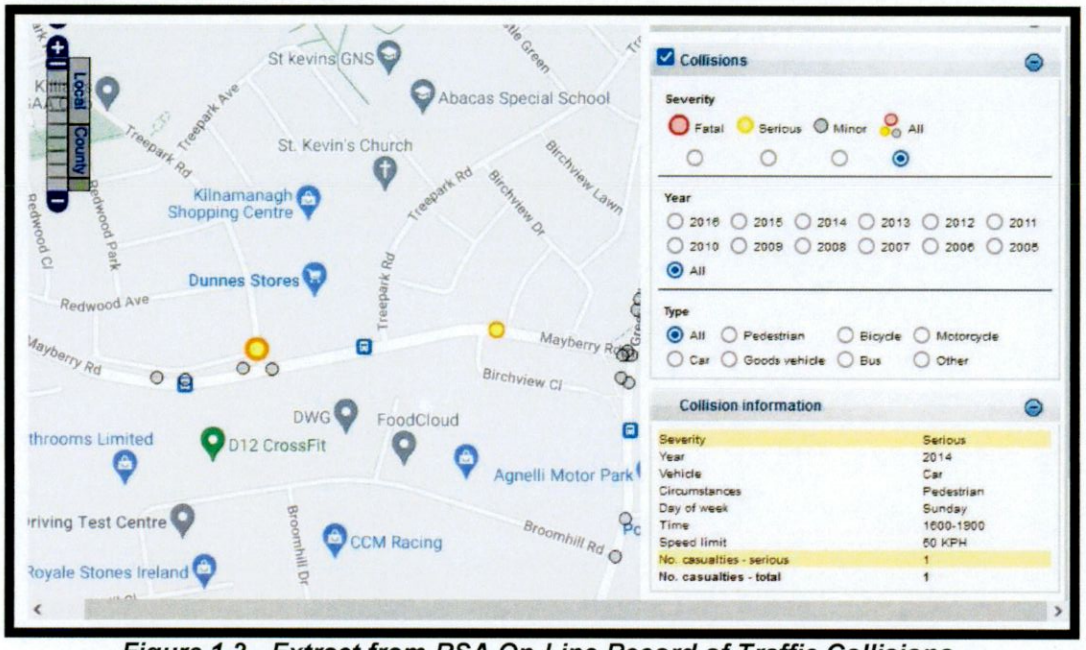


Figure 1.2 - Extract from RSA On-Line Record of Traffic Collisions

1.6 The Recommendations contained within this Transportation Assessment are based on the following sources of information and industry-standard practices:

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

1.7 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.

1.8 A preliminary Mobility Management Plan is included as ***Appendix G***. The work includes an Independent Stage 1 Road Safety Audit of the revised Layout, and this is included herein as ***Appendix H,*** together with the associated Designer Feedback form.

2.0 DEVELOPMENT PROPOSALS & EXISTING CONDITIONS

2.1 The proposed development seeks an extension, change of use and alterations to Kilnamanagh Shopping Centre, comprising;

(a) A two storey extension is proposed along the centre's eastern elevation (Total Gross Floor Area (GFA) increase of 2,336m^2),

(b) The change of use of the first-floor retail area (last used by Dunnes Stores as textile sales space) which will be extended and subdivided to provide for two new non-retail, service units. Unit No.1 will extend to c.1,411m^2 for use as a health centre and Unit No. 2 will extend to 790m^2 for use as a gym,

(c) Removal of condition 3 of PA Ref: SD06a/0095 to allow for the increased net sales area. This will allow for the increase in net comparison sales space at ground floor level.

(d) New entrance ramp and steps at the north of the extension,

(e) The southern lobby entrance into Dunnes Stores will be demolished and replaced with a new glazed lobby entrance. New walkway/canopy generally on the north and south elevations,

(f) A new ramped access next to existing pedestrian entrance steps on Mayberry Rd.,

(g) Reconfigure existing entrance to Treepark Road including revised parking layout generally around the east side of the building to allow for an adjusted, one-way, system around the centre,

(h) Car parking as a result of the extension reduces from 473 spaces to 396 spaces. Four electric vehicle parking spaces. Covered cycle parking is being provided.

(i) A new enclosed service yard wall and gates to existing service area on the west side of the centre,

(j) New signage (including illumination) is proposed to elevations including two Totem signs,

(k) Recladding on elevations,

(l) Additional landscaping treatment generally around the east side of the centre arising from the amendments to the car park,

(m) Landscaping works and all drainage works including SUDS measures.

(n) All other ancillary works to facilitate the development,

Car Parking

2.2 In terms of Car Parking provision, the Shopping Centre, when originally built was subject to **Minimum** Car Parking Standards, guidance which has now changed to a **Maximum** provision, in accordance with principles of sustainability.

2.3 There are currently a total of 473 No Car Parking spaces provided at the Shopping Centre, with zero EV spaces provided. Based on our observation and DS experience, the car park has a maximum usage of 60-70% occupancy during the busiest weekday trading times. It is proposed to reduce the car parking to 396 No Car Parking spaces including the provision of 4 No EV spaces, with a safer circulation and a more user friendly layout in place, **being a net reduction of 77 spaces**. This is considered to represent a sustainable approach to car parking provision at the Centre.

Bicycle Parking

2.4 There are Zero bicycle parking spaces currently provided at the site. It is proposed to provide a total of 30 secure covered bicycle parking spaces, in 2 areas within the site.

2.5 An image extracted from the Layout Plans, showing the development in the context of the site and the adjoining roads, is reproduced below as ***Figure 2.1*** with more detailed plans included as ***Appendix A***.

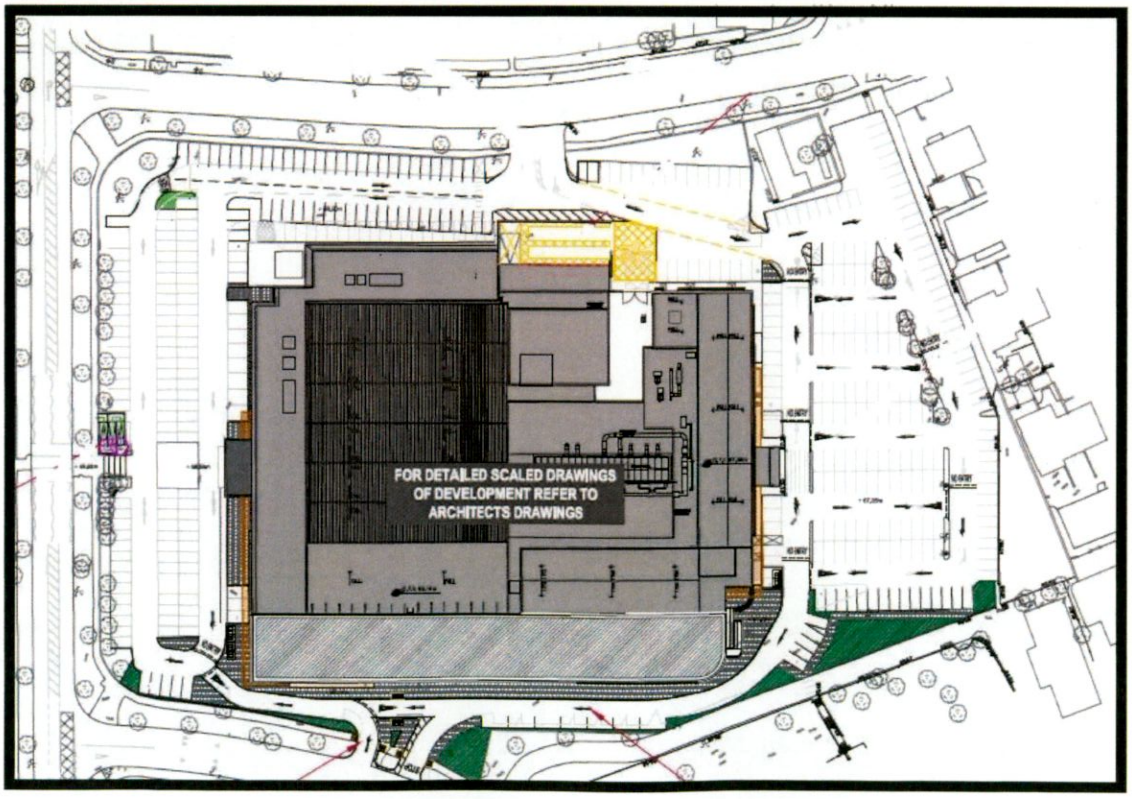


Figure 2.1 – Extract Architects GF Layout Plan

Existing Conditions

2.6 The long-established Shopping Centre is bound to the north by established residential housing, and St Kevin's Church. It is bound directly to the west by Treepark Rd West and to the east by Treepark Rd East. It is bound to the south by Mayberry Road.

2.7 Mayberry Road (L3018) is an established single carriageway residential street, provided with footpaths and verges on both sides. It runs generally in an E-W orientation and is a local distributor for residential traffic, linking Greenhills Rd and Belgard Rd. It carries a weekday AM Peak Hour 2-way flow of approximately 1,064 PCUs and a weekday PM Peak Hour 2-Way flow of approximately 967 PCUs, measured immediately west of the Treepark Rd East junction. In these terms, it can be considered as moderately trafficked.

2.8 Treepark Rd West and Treepark Rd East, some 100m distant, meet Mayberry Road in the form of simple priority-controlled T Junctions. The Treepark Rd East junction benefits from a full standard dedicated right turn lane for intended right turners from Mayberry Rd. The Treepark Rd West junction has a widened nearside lane on Mayberry Rd for intended right turners, facilitating internal passing at slow speed for through traffic, maintaining safe westbound traffic progression. Both Treepark Road East and Treepark Road West are single carriageway streets with footpaths provided.

2.9 Treepark Rd West carries a weekday AM Peak Hour 2-way flow of approximately 502 PCUs and a weekday PM Peak Hour 2-Way flow of approximately 497 PCUs, measured immediately north of the Mayberry Rd junction. In these terms, it can be considered as lightly trafficked. Treepark Rd East carries a weekday AM Peak Hour 2-way flow of approximately 524 PCUs and a weekday PM Peak Hour 2-Way flow of approximately 587 PCUs, measured immediately north of the Mayberry Rd junction. In these terms, it can also be considered as lightly trafficked. It is noteworthy that the traffic flows on Treepark Rd East and West are balanced, with shopping centre related traffic using both approaches and exits in equal proportions.

2.10 The Site Access junctions onto Treepark Rd East and West take the form of simple priority T Junctions, and based on observation, operate without issues arising in terms of capacity or safety. Images showing the Junctions are included below as ***Figure 2.2*** and ***Figure 2.3***.

Figure 2.2 – Treepark Rd West & Existing Site Access

Figure 2.3 – Treepark Rd East & Existing Site Access

2.11 To set the local traffic flows in context, urban roads of the nature of the adjacent streets have a theoretical free flow link capacity of approximately 1,000 to 1,200 PCUs per-direction per-hour.

2.12 In this regard, they can be considered to be lightly to moderately trafficked in comparison with the link carrying capacity. However, it is accepted that the capacity of any road is generally limited by the capacity of road junctions along its length, particularly in urban areas.

2.13 The site is served by a dedicated controlled pedestrian crossing of Mayberry Road, located in the centre of the frontage, and this provides for a safe approach for pedestrians. An image showing the Mayberry Rd Pedestrian crossing is included below as **Figure 2.4**.

Figure 2.4 – Mayberry Rd & Existing Controlled Pedestrian crossing

3.0 VEHICULAR 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. This represents industry standard practice for Transportation Assessments in Ireland, and is the recommended method contained within the TII Guidelines. In this case the worst-case assessment has been undertaken based on an assessment of the alterations and the proposed uses within the site, applying the relevant TRICS data as appropriate.

3.2 We have assessed the Trip Rates for Comparison Retail, for Health Centres and for Gym/Fitness Centres and the output is included herein as ***Appendix C***. This has been undertaken using the most recent licensed version of TRICS. The use of these Trip Rates represents industry-standard practice.

3.3 A robust and onerous assessment has been undertaken of the impact in the network emanating from the site. The junctions included within the assessment are as set out in an image included below as ***Figure 3.1.***

Figure 3.1 – Network Junctions Included in Assessment

3.4 The quantification of traffic generated, and the associated network assessment is undertaken in accordance with the Guidelines in the context of the demonstrably low levels of traffic generated by the proposed development, taking account of the alterations in site content.

3.5 The resulting TRICS Trip Rates applied for the Development in this case are as set out below as ***Table 3.1.*** The associated TRICS data output is included within ***Appendix C.***

Table 3.1: TRICS Data Summary, Proposed Development Elements & Alterations

Addition of New Comparison Floorspace					
1678 m² GFA Comp	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Vehicular Traffic Generated**
Network Hour	**/100m2**	**Dev**	**/100m2**	**Dev**	
Weekday AM Peak Hr 8-9	0.220	4	0.042	1	4
Weekday PM Peak Hr 5-6	0.669	11	0.686	12	23
Removal of Existing Textile/Comparison Floorspace					
1504 m² Textiles	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Vehicular Traffic Generated**
Network Hour	**/100m2**	**Dev**	**/100m2**	**Dev**	
Weekday AM Peak Hr 8-9	0.220	-3	0.042	-1	-4
Weekday PM Peak Hr 5-6	0.669	-10	0.686	-10	-20
Addition of Proposed New Health Centre at 1st Floor					
790 m² Medical Cnt	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Vehicular Traffic Generated**
Network Hour	**/100m2**	**Dev**	**/100m2**	**Dev**	
Weekday AM Peak Hr 8-9	0.514	4	0.051	1	5
Weekday PM Peak Hr 5-6	0.334	3	0.386	3	6
Addition of Proposed New Gym/Fitness at 1st Floor					
1411 m² Gym	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Vehicular Traffic Generated**
Network Hour	**/100m2**	**Dev**	**/100m2**	**Dev**	
Weekday AM Peak Hr 8-9	0.853	12	0.586	9	21
Weekday PM Peak Hr 5-6	1.606	23	1.062	15	38

COMBINATION OF ABOVE ELEMENTS – NET "NEW" TRAFFIC GENERATED (PCUs)			
Network Hour	**Arrivals**	**Departures**	**Total 2-Way**
Weekday AM Peak Hr 8-9	16	10	26
Weekday PM Peak Hr 5-6	26	19	45

Assignment/Distribution - Future Year Traffic

3.6 We have used hand assignment techniques based on the observed movements, with the worst-case traffic assigned to the roads based on the observed established traffic patterns, being the industry standard methodology.

3.7 The standard methodology applied was to firstly ascertain the base background traffic conditions for both the weekday AM and weekday PM Commuter Peak periods. To this end we commissioned and undertook a 2022 Traffic Survey of the existing affected roads and junctions in order to establish base background traffic conditions.

3.8 Details of the traffic surveys are included as ***Appendix B*** and are reproduced as commuter peak hour Stick Diagrams as ***Appendix D.***

3.9 We then used the TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 (Travel Demand Projections, Table 6.1: Central Growth Rates: Annual Growth Factors), to establish projected occupation/opening year 2024 and design year 2039 traffic conditions 15 years following opening on the local road network.

3.10 The worst-case traffic based on the content of ***Table 3.1*** above was then applied in order to establish Opening Year and Design Year Traffic Conditions with the proposed development in place and fully occupied. This is all included in the calculations included herein as ***Appendix D***.

3.11 It should be noted that we have selected an opening year of 2024 as being reasonable and appropriate. However, in our experience, varying the opening year and design year by 1-3 years, if required for whatever reason, would have no significant impact upon the conclusions of the study. In addition, given the favourable results reported in this study, if required to apply higher background traffic conditions for any reason we would not anticipate any changes whatsoever to the conclusions.

3.12 Traffic growth factors for future year assessments were calculated from data obtained in the TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 which provides the recommended method of predicting future year traffic growth on Roads. Calculations of the relevant growth factors are included in ***Table 3.2*** below (based on tabulated 'Central Growth' for Dublin Metropolitan). 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.

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

Year	to Year	Table 6.1:
Surveyed	2024	1.032
2024	2039	1.165

3.13 The resulting Traffic Flow Projections and Figures within ***Appendix D*** allowed the assessment of impact of the development to be undertaken.

4.0 TRAFFIC IMPACT - THRESHOLD ASSESSMENT/TRAFFIC CAPACITY ANALYSIS

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

4.2 The professional guidance referenced above sets out specific increases in traffic volume associated with new development, which, if breached, requires further, more detailed analysis and assessment 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. The Threshold is set at **10%** for uncongested networks. In this case, for robustness, the 5% threshold has been selected and applied.

4.3 In this regard, it is demonstrated herein that the proposed opening and operation of the entire amended development, with very low volumes of vehicular traffic added to the local road network, will not result in any significant or noticeable level of new trips on the local roads, with all anticipated traffic increases beyond the Site Access junctions (and indeed at the access junctions) expected to be **well below** the Industry-Standard level of 5% for "congested networks" above which further assessment is required.

4.4 Our assessment, included within ***Appendix D*** (Refer Page 4 of Appendix D) confirms that the absolute worst case traffic increase on the adjacent road network junctions are as summarised below as ***Table 4.1***.

Table 4.1: Threshold Assessment, Worst-Case Impact - AM & PM Peak Hours

Assessed Road or Junction	Traffic Increase %		COMMENT
	AM Pk Hr	PM Pk Hr	
Site Access Junctions	NA	NA	Capacity Assessment Included
Mayberry/Belgard Rd Junction	0.4%	0.4%	<5% No Further Assessment Required
Treepark Rd W/Mayberry Rd Junc	0.8%	1.3%	<5% No Further Assessment Required
Treepark Rd E/Mayberry Rd Junc	0.9%	1.9%	<5% No Further Assessment Required
Mayberry/Greenhills Rd Junction	0.4%	1.0%	<5% No Further Assessment Required

4.5 The Threshold assessment clearly confirms that, beyond the Site Access Junctions, the worst-case traffic increases are in all cases imperceptible AND significantly below the IHT and TII recommended level of 5% for 'congested networks' above which further assessment is warranted.

4.6 To set these low 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 being 10%, so, in this context alone, increases of in all cases less than c2% in Traffic on the local road links as demonstrated will go entirely unnoticed.

4.7 It is clear that the introduction of the proposed development will have an absolutely negligible & unnoticeable impact upon vehicular traffic conditions locally. Notwithstanding the above we have undertaken detailed capacity modelling of the established existing site accesses, with the results summarised below.

4.8 We have used the TII-approved software package 'Junctions 9' PiCADY' (**P**riority **I**ntersection **C**apacity **A**nd **D**elay) software package (as part of the TRL Package 'Junction 9') to assess the capacity of the existing site access junctions. PiCADY 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 considered to be the optimum RFC value. We have appended the detailed computer simulation model results for the proposed site accesses in ***Appendix E & Appendix F.***

JUNCTION CAPACITY ANALYSIS

4.9 A summary of the results is included below as ***Table 4.2 & Table 4.3.***

Table 4.2 - PiCADY Summary Results, Treepark Rd West Site Access T-Junction

Modelled Scenario	*Period Mean Max Q (PCUs)*	*Period Max RFC*
2024 Opening Year AM Peak Hr	0.2	0.11
2024 Opening Year PM Peak Hr	0.3	0.25
2039 Design Year AM Peak Hr	0.2	0.16
2039 Design Year PM Peak Hr	0.4	0.3

Table 4.3 - PiCADY Summary Results, Treepark Rd East Site Access T-Junction

Modelled Scenario	*Period Mean Max Q (PCUs)*	*Period Max RFC*
2024 Opening Year AM Peak Hr	0.3	0.22
2024 Opening Year PM Peak Hr	0.7	0.43
2039 Design Year AM Peak Hr	0.4	0.27
2039 Design Year PM Peak Hr	1	0.51

4.10 The results of the modelling above clearly show that the established existing site accesses will have significantly more than adequate capacity to accommodate the very small increases in traffic associated with the development. All of the RFCs are way below the theoretical optimum capacity of 0.85 and no significant queuing is anticipated. These results are unsurprising given the lightly to moderately trafficked nature of the local roads.

5.0 CONCLUSIONS

5.1 This Transportation Assessment Report assesses the traffic and transportation impact associated with a planning application for amendments to Dunnes Stores Shopping Centre, Kilnamanagh (Refer to Section 2.0 herein for full details).

5.2 This Report has been prepared in accordance with the TII Traffic & Transport Assessment Guidelines and is based on industry-standard Trip Generation Rates established using the most up to date version of the TRICS Database.

5.3 The impact of the development traffic on the local roads has been modelled and assessed, based on a traffic survey/vehicle turning movement survey during normal school period. Appropriate traffic growth factors have been applied to establish selected opening year and design year traffic conditions.

5.4 A preliminary Mobility Management Plan is included as ***Appendix G***. The work includes an Independent Stage 1 Road Safety Audit of the revised Layout, and this is included herein as ***Appendix H,*** together with the associated Designer Feedback form.

5.5 This report demonstrates that the proposed Development will have an absolutely negligible impact upon the established local traffic conditions and can easily be accommodated on the road network without any capacity concerns arising.

5.6 The assessment confirms that the existing established access junctions are of more than adequate capacity to accommodate the worst-case traffic associated with the proposed development during the selected year of opening and the design year 15 years following opening.

5.7 It is considered that there are no significant Operational Traffic Safety or Road Capacity issues that prevent a positive determination of the application by South Dublin County Council.

APPENDICES - CONTENT

A	Proposed Development – Site Layout Plans/TRACKs
B	2022 Traffic Survey Output Data
C	TRICS Output Data – Non Food Retail, Medical Centre & Gym
D	Traffic Calculations, Trip Distribution, Network Traffic Flow Diagrams & Projections Based on 2022 Traffic Surveys
E	PiCADY Capacity Modelling – Western Site Access Junction
F	PiCADY Capacity Modelling – Eastern Site Access Junction
G	Preliminary Mobility Management Plan/Travel Plan
H	Stage 1 Independent Road Safety/Quality Audit & Designer Feedback

NRB consulting engineers

APPENDIX A

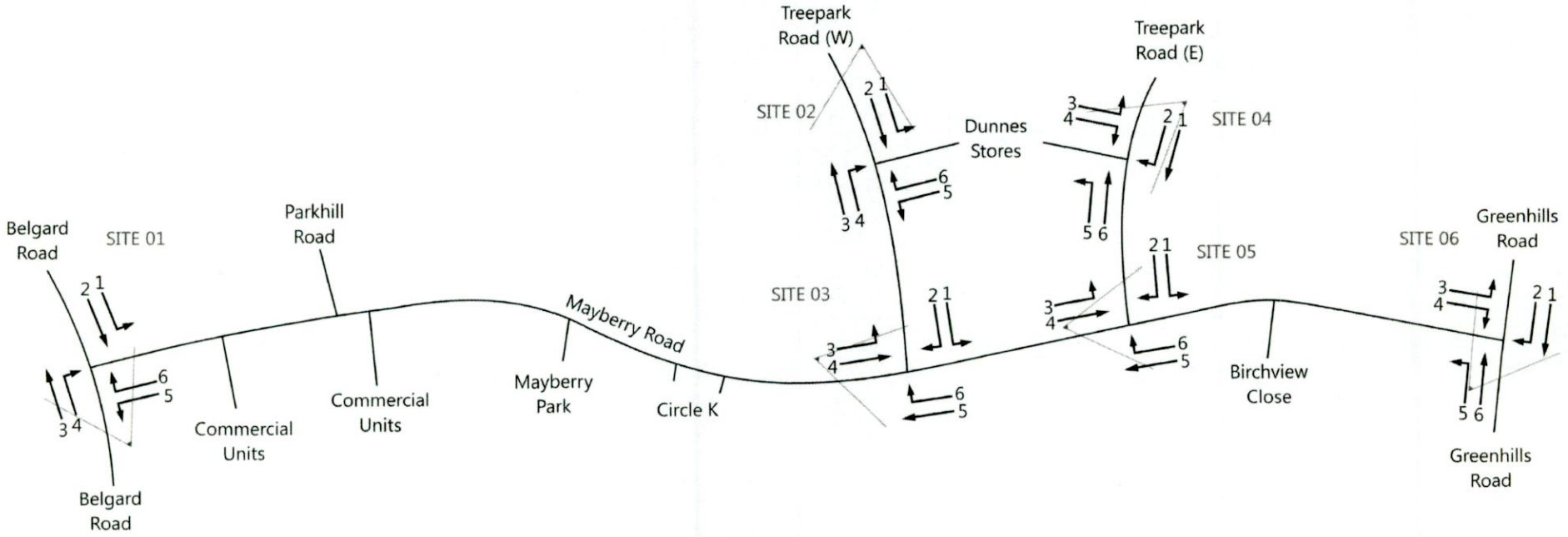
Proposed Development
Site Layout Plans/TRACKs

NRB consulting engineers

APPENDIX B

2022 Classified Interval Turning Movement Traffic Survey Output Data

Site/Movement Numbering



Job number: TRA/22/063	Job date: 3rd March 2022	Drawing No: TRA/22/063-02	traffinomics.ie
Client: NRB Consulting Engineers	Job day Thursday	Site Map SURVEY DETAILS	

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 01 DATE: 3rd March 2022

LOCATION: Belgard Road/Mayberry Road DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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
07:00	1	0	30	15	5	0	51	55	2	0	82	17	2	2	105	107	2	0	15	6	8	0	31	37
07:15	1	0	44	21	7	0	73	79	2	1	97	17	8	2	127	135	4	0	29	9	4	1	47	49
07:30	1	0	59	25	1	1	87	88	2	0	110	15	6	3	136	143	2	0	32	17	8	0	59	65
07:45	1	0	74	22	3	4	104	110	3	0	127	29	9	1	169	177	2	0	27	7	3	1	40	42
H/TOT	4	0	207	83	16	5	315	333	9	1	416	78	25	8	537	562	10	0	103	39	23	2	177	194
08:00	3	0	106	31	4	7	151	160	0	0	137	33	9	1	180	190	1	0	31	10	5	1	48	53
08:15	3	0	118	24	7	2	154	161	3	2	158	24	10	1	198	205	0	0	38	14	5	1	58	64
08:30	0	1	131	17	5	2	156	162	4	1	162	26	11	0	204	211	0	1	42	14	7	1	65	72
08:45	1	0	96	15	3	1	116	119	5	1	174	21	10	1	212	218	0	0	40	11	9	1	61	71
H/TOT	7	1	451	87	19	12	577	602	12	4	631	104	40	3	794	825	1	1	151	49	26	4	232	261
09:00	0	0	81	23	6	4	114	124	4	0	208	22	8	1	243	249	1	0	41	9	6	1	58	64
09:15	1	0	98	14	5	4	122	130	1	0	204	31	12	1	249	261	1	0	46	11	10	2	70	81
09:30	0	0	85	16	7	3	111	121	2	0	152	24	15	0	193	206	0	1	51	17	6	3	78	86
09:45	0	0	61	11	4	3	79	86	2	0	115	20	8	3	148	157	0	0	49	17	16	1	83	100
H/TOT	1	0	325	64	22	14	426	461	9	0	679	97	43	5	833	874	2	1	187	54	38	7	289	332
P/TOT	12	1	983	234	57	31	1318	1396	30	5	1726	279	108	16	2164	2261	13	2	441	142	87	13	698	786

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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	2	0	93	18	6	1	120	125	3	1	117	19	6	0	146	149	7	0	125	24	4	2	162	162
16:15	2	0	100	13	4	3	122	127	5	2	119	17	6	1	150	152	0	2	139	21	7	1	170	177
16:30	2	0	102	14	5	1	124	128	2	0	118	24	2	2	148	150	4	1	124	24	2	0	155	153
16:45	0	1	100	19	4	0	124	127	7	0	129	17	5	1	159	159	1	1	129	17	7	2	157	165
H/TOT	6	1	395	64	19	5	490	509	17	3	483	77	19	4	603	611	12	4	517	86	20	5	644	657
17:00	2	0	117	20	4	0	143	145	1	2	130	21	5	1	160	164	3	2	167	19	6	1	198	201
17:15	2	0	118	20	1	0	141	140	2	1	120	13	5	1	142	146	3	0	150	18	1	1	173	173
17:30	2	0	137	16	7	0	162	167	1	1	140	18	2	1	163	165	1	0	139	23	1	1	165	166
17:45	0	0	117	12	2	0	131	133	1	2	157	9	2	1	172	173	2	0	98	13	3	2	118	121
H/TOT	6	0	489	68	14	0	577	586	5	6	547	61	14	4	637	647	9	2	554	73	11	5	654	662
18:00	1	0	91	11	2	0	105	106	0	1	128	13	3	2	147	151	2	0	102	12	2	1	119	120
18:15	1	0	100	10	0	0	111	110	2	0	125	14	0	2	143	143	2	0	91	11	2	0	106	106
18:30	1	0	70	8	3	0	82	84	1	0	87	10	0	1	99	99	2	0	68	10	1	2	83	84
18:45	0	0	74	5	2	0	81	83	1	0	116	13	1	1	132	133	1	0	66	9	1	1	78	79
H/TOT	3	0	335	34	7	0	379	384	4	1	456	50	4	6	521	527	7	0	327	42	6	4	386	390
P/TOT	15	1	1219	166	40	5	1446	1478	26	10	1486	188	37	14	1761	1785	28	6	1398	201	37	14	1684	1709

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 01 DATE: 3rd March 2022

LOCATION: Belgard Road/Mayberry Road DAY: Thursday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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
07:00	0	0	3	3	1	0	7	8	1	0	7	1	1	0	10	10	1	2	34	17	4	0	58	60
07:15	1	0	8	2	0	0	11	10	1	0	8	4	1	1	15	16	0	1	36	12	8	2	59	68
07:30	1	0	8	3	1	0	13	13	0	0	16	1	1	0	18	19	3	0	49	7	4	1	64	67
07:45	0	0	18	3	0	1	22	23	1	0	20	1	1	0	23	23	1	0	71	15	9	1	97	106
H/TOT	2	0	37	11	2	1	53	54	3	0	51	7	4	1	66	69	5	3	190	51	25	4	278	301
08:00	0	0	20	1	0	1	22	23	2	0	14	1	1	1	19	19	0	0	69	18	2	3	92	97
08:15	0	0	27	2	1	0	30	31	1	0	23	4	0	1	29	29	0	0	63	16	4	2	85	91
08:30	0	0	22	1	0	1	24	25	1	0	20	4	1	0	26	26	2	0	87	13	3	0	105	106
08:45	1	0	27	3	1	0	32	32	1	0	42	1	0	0	44	43	1	0	66	27	7	2	103	111
H/TOT	1	0	96	7	2	2	108	111	5	0	99	10	2	2	118	118	3	0	285	74	16	7	385	406
09:00	0	1	28	1	1	0	31	31	2	0	27	5	1	0	35	34	1	0	92	14	2	1	110	112
09:15	0	0	20	3	0	0	23	23	0	0	28	3	1	0	32	33	0	0	44	13	5	1	63	69
09:30	0	0	22	3	0	0	25	25	0	0	29	3	0	1	33	34	0	0	48	6	1	1	56	58
09:45	0	0	15	3	2	0	20	22	0	0	28	2	1	0	31	32	0	0	60	11	6	1	78	85
H/TOT	0	1	85	10	3	0	99	101	2	0	112	13	3	1	131	133	1	0	244	44	14	4	307	324
P/TOT	3	1	218	28	7	3	260	267	10	0	262	30	9	4	315	320	9	3	719	169	55	15	970	1031

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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	33	7	1	0	41	42	1	1	22	2	2	0	28	29	1	1	78	14	2	2	98	101
16:15	0	0	36	1	0	0	37	37	0	0	28	4	0	0	32	32	0	0	72	13	3	2	90	95
16:30	1	0	39	4	0	0	44	43	0	0	21	2	0	0	23	23	2	1	75	18	3	1	100	102
16:45	0	0	38	6	0	0	44	44	0	0	28	2	1	0	31	32	2	0	75	12	2	0	91	91
H/TOT	1	0	146	18	1	0	166	166	1	1	99	10	3	0	114	116	5	2	300	57	10	5	379	389
17:00	2	0	25	2	1	0	30	29	3	0	21	1	0	0	25	23	3	0	70	13	2	0	88	88
17:15	0	1	28	2	0	0	31	30	1	2	33	5	0	0	41	39	0	1	76	16	3	0	96	98
17:30	3	0	43	2	0	0	48	46	0	0	30	1	0	0	31	31	1	2	77	7	5	0	92	95
17:45	0	0	39	2	0	0	41	41	0	0	26	2	0	0	28	28	2	0	85	12	2	0	101	101
H/TOT	5	1	135	8	1	0	150	146	4	2	110	9	0	0	125	121	6	3	308	48	12	0	377	382
18:00	1	0	34	1	0	0	36	35	0	0	26	1	0	0	27	27	1	0	86	11	2	0	100	101
18:15	1	0	26	0	0	0	27	26	0	1	35	0	1	0	37	37	0	0	79	13	1	1	94	96
18:30	1	0	28	1	0	0	30	29	0	0	30	2	0	0	32	32	0	0	86	8	2	1	97	100
18:45	0	0	32	2	0	0	34	34	0	0	26	4	1	0	31	32	1	0	78	8	4	3	94	100
H/TOT	3	0	120	4	0	0	127	125	0	1	117	7	2	0	127	128	2	0	329	40	9	5	385	397
P/TOT	9	1	401	30	2	0	443	437	5	4	326	26	5	0	366	365	13	5	937	145	31	10	1141	1169

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 02 DATE: 3rd March 2022

LOCATION: Treepark Road (W)/Dunnes Stores Access DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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
07:00	0	0	0	0	0	0	0	0	0	1	26	9	0	0	36	35	1	0	3	2	1	0	7	7
07:15	0	0	0	0	0	0	0	0	1	0	20	6	1	1	29	30	0	0	8	2	0	0	10	10
07:30	0	0	0	0	0	0	0	0	0	0	38	7	0	0	45	45	1	0	11	3	0	0	15	14
07:45	1	0	2	0	0	0	3	2	1	0	47	7	0	1	56	56	0	0	23	0	1	2	26	29
H/TOT	1	0	2	0	0	0	3	2	2	1	131	29	1	2	166	167	2	0	45	7	2	2	58	60
08:00	0	0	7	0	0	0	7	7	2	1	66	8	0	0	77	75	0	0	19	4	0	1	24	25
08:15	0	0	5	0	0	0	5	5	1	0	49	8	0	0	58	57	0	0	31	4	0	0	35	35
08:30	0	0	11	0	0	0	11	11	2	0	68	6	1	0	77	76	0	0	39	1	1	1	42	44
08:45	0	0	18	1	0	0	19	19	0	1	54	3	1	1	60	61	0	0	30	2	0	1	33	34
H/TOT	0	0	41	1	0	0	42	42	5	2	237	25	2	1	272	270	0	0	119	11	1	3	134	138
09:00	0	0	15	0	0	0	15	15	0	0	41	4	1	0	46	47	0	0	16	8	1	0	25	26
09:15	0	0	5	0	0	0	5	5	1	0	27	2	0	1	31	31	0	0	23	4	1	0	28	29
09:30	0	0	4	1	0	0	5	5	1	0	32	3	2	0	38	39	0	0	23	4	1	2	30	33
09:45	0	0	3	1	0	0	4	4	0	0	30	4	1	0	35	36	0	0	17	3	1	1	22	24
H/TOT	0	0	27	2	0	0	29	29	2	0	130	13	4	1	150	153	0	0	79	19	4	3	105	112
P/TOT	1	0	70	3	0	0	74	73	9	3	498	67	7	4	588	590	2	0	243	37	7	8	297	310

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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	11	0	0	0	11	11	0	0	30	4	1	2	37	40	1	0	47	7	1	0	56	56
16:15	0	0	11	0	0	0	11	11	0	0	20	2	0	0	22	22	0	0	41	2	0	0	43	43
16:30	0	0	11	1	0	0	12	12	1	0	24	2	0	0	27	26	1	0	53	1	0	0	55	54
16:45	1	0	9	1	0	0	11	10	1	0	31	7	0	0	39	38	0	0	35	12	0	1	48	49
H/TOT	1	0	42	2	0	0	45	44	2	0	105	15	1	2	125	126	2	0	176	22	1	1	202	202
17:00	0	1	12	0	0	0	13	12	0	0	21	4	0	0	25	25	0	0	46	14	0	0	60	60
17:15	0	0	7	0	0	0	7	7	0	0	38	1	0	0	39	39	1	1	47	3	0	0	52	51
17:30	0	0	3	1	0	0	4	4	0	0	18	1	0	0	19	19	1	0	46	12	0	0	59	58
17:45	0	0	11	1	0	0	12	12	1	0	37	1	0	0	39	38	0	0	47	4	0	0	51	51
H/TOT	0	1	33	2	0	0	36	35	1	0	114	7	0	0	122	121	2	1	186	33	0	0	222	220
18:00	1	0	8	1	0	0	10	9	1	0	32	2	0	0	35	34	1	0	43	3	0	0	47	46
18:15	0	0	10	0	0	0	10	10	0	0	41	6	1	0	48	49	1	0	51	2	0	0	54	53
18:30	0	0	8	2	0	0	10	10	0	0	32	5	1	0	38	39	0	0	51	3	0	0	54	54
18:45	0	0	10	1	0	0	11	11	0	0	50	3	1	0	54	55	1	0	26	1	0	0	28	27
H/TOT	1	0	36	4	0	0	41	40	1	0	155	16	3	0	175	177	3	0	171	9	0	0	183	181
P/TOT	2	1	111	8	0	0	122	120	4	0	374	38	4	2	422	425	7	1	533	64	1	1	607	603

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 02 DATE: 3rd March 2022

LOCATION: Treepark Road (W)/Dunnes Stores Access DAY: Thursday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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
07:00	0	0	0	3	0	0	3	3	0	0	1	0	1	0	2	3	0	0	0	0	0	0	0	0
07:15	0	0	2	0	0	0	2	2	0	0	1	1	1	0	3	4	0	0	0	0	0	0	0	0
07:30	0	0	2	1	0	0	3	3	0	0	1	2	0	0	3	3	0	0	0	0	0	0	0	0
07:45	1	0	3	1	1	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	7	5	1	0	14	14	0	0	3	3	2	0	8	10	0	0	0	0	0	0	0	0
08:00	0	0	7	3	0	1	11	12	0	0	2	2	1	0	5	6	0	0	1	0	0	0	1	1
08:15	0	0	10	0	1	0	11	12	0	0	10	2	1	0	13	14	0	0	6	0	0	0	6	6
08:30	0	0	14	4	0	0	18	18	0	0	7	3	0	0	10	10	0	0	5	0	0	0	5	5
08:45	0	0	10	1	1	0	12	13	0	0	8	1	0	0	9	9	0	0	8	0	0	0	8	8
H/TOT	0	0	41	8	2	1	52	55	0	0	27	8	2	0	37	39	0	0	20	0	0	0	20	20
09:00	0	0	12	3	0	0	15	15	0	0	10	0	1	0	11	12	0	0	6	1	0	0	7	7
09:15	0	0	25	3	2	0	30	32	0	0	10	0	0	0	10	10	0	0	11	0	0	0	11	11
09:30	0	0	21	1	4	0	26	30	0	0	12	0	0	0	12	12	0	0	2	0	0	0	2	2
09:45	0	0	22	2	0	0	24	24	0	0	17	1	0	0	18	18	0	0	9	1	0	0	10	10
H/TOT	0	0	80	9	6	0	95	101	0	0	49	1	1	0	51	52	0	0	28	2	0	0	30	30
P/TOT	1	0	128	22	9	1	161	170	0	0	79	12	5	0	96	101	0	0	48	2	0	0	50	50

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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	11	0	0	0	11	11	1	0	13	1	0	0	15	14	0	0	10	0	0	0	10	10
16:15	0	0	20	1	0	0	21	21	0	0	13	1	1	0	15	16	0	0	10	0	0	0	10	10
16:30	0	0	19	1	1	0	21	22	0	0	15	2	1	0	18	19	0	0	12	1	0	0	13	13
16:45	1	1	34	1	0	0	37	36	1	0	15	0	0	0	16	15	0	1	10	1	1	0	13	13
H/TOT	1	1	84	3	1	0	90	90	2	0	56	4	2	0	64	64	0	1	42	2	1	0	46	46
17:00	0	0	22	3	1	0	26	27	1	0	19	1	0	0	21	20	2	0	16	0	0	0	18	16
17:15	0	0	17	2	0	0	19	19	1	1	10	0	1	0	13	13	0	0	9	0	0	0	9	9
17:30	0	0	30	0	0	0	30	30	0	0	14	1	0	0	15	15	0	0	11	0	0	0	11	11
17:45	1	0	15	1	0	0	17	16	0	0	11	5	0	0	16	16	0	0	11	0	0	0	11	11
H/TOT	1	0	84	6	1	0	92	92	2	1	54	7	1	0	65	64	2	0	47	0	0	0	49	47
18:00	0	0	19	1	0	0	20	20	0	0	20	0	1	0	21	22	0	0	16	0	0	0	16	16
18:15	0	0	16	2	0	0	18	18	0	0	19	2	0	0	21	21	0	0	16	1	0	0	17	17
18:30	0	0	12	0	0	0	12	12	0	0	19	1	0	0	20	20	0	0	5	2	0	0	7	7
18:45	0	0	13	0	0	0	13	13	0	0	13	0	0	0	13	13	0	0	13	1	0	0	14	14
H/TOT	0	0	60	3	0	0	63	63	0	0	71	3	1	0	75	76	0	0	50	4	0	0	54	54
P/TOT	2	1	228	12	2	0	245	245	4	1	181	14	4	0	204	204	2	1	139	6	1	0	149	148

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 03 DATE: 3rd March 2022

LOCATION: Treepark Road (W)/Mayberry Road DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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
07:00	0	1	16	3	0	0	20	19	0	0	11	6	1	0	18	19	0	0	2	5	1	0	8	9
07:15	1	0	13	3	1	0	18	18	0	0	8	4	1	1	14	16	0	0	7	2	0	0	9	9
07:30	0	0	18	5	0	0	23	23	0	0	21	4	0	0	25	25	1	0	5	3	0	0	9	8
07:45	1	0	26	4	0	1	32	32	0	0	21	3	0	0	24	24	1	0	16	1	2	2	22	25
H/TOT	2	1	73	15	1	1	93	93	0	0	61	17	2	1	81	84	2	0	30	11	3	2	48	51
08:00	2	1	46	5	0	0	54	52	0	0	22	5	1	0	28	29	0	0	19	6	0	2	27	29
08:15	1	0	32	6	0	0	39	38	0	0	27	4	1	0	32	33	0	0	29	3	1	0	33	34
08:30	2	0	43	4	0	0	49	47	0	0	32	5	1	0	38	39	0	0	38	4	0	1	43	44
08:45	0	1	28	3	1	1	34	35	0	0	34	1	0	0	35	35	0	0	28	0	1	0	29	30
H/TOT	5	2	149	18	1	1	176	173	0	0	115	15	3	0	133	136	0	0	114	13	2	3	132	137
09:00	0	0	23	3	1	0	27	28	0	0	28	1	1	0	30	31	0	0	19	7	1	0	27	28
09:15	1	0	23	1	0	1	26	26	0	0	14	1	0	0	15	15	0	0	35	5	3	0	43	46
09:30	1	0	15	2	2	0	20	21	0	0	29	1	0	0	30	30	0	0	35	4	2	1	42	45
09:45	0	0	21	3	0	0	24	24	0	0	26	2	1	0	29	30	0	0	28	4	1	0	33	34
H/TOT	2	0	82	9	3	1	97	99	0	0	97	5	2	0	104	106	0	0	117	20	7	1	145	153
P/TOT	9	3	304	42	5	3	366	365	0	0	273	37	7	1	318	326	2	0	261	44	12	6	325	341

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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	15	1	1	0	18	18	0	0	28	4	0	2	34	36	0	0	28	3	0	0	31	31
16:15	0	0	19	2	0	0	21	21	0	0	14	1	1	0	16	17	0	0	42	1	0	0	43	43
16:30	1	0	15	3	0	0	19	18	0	0	24	1	1	0	26	27	0	0	45	1	1	0	47	48
16:45	2	0	22	4	0	0	28	26	0	0	24	3	0	0	27	27	0	1	44	5	0	0	50	49
H/TOT	4	0	71	10	1	0	86	84	0	0	90	9	2	2	103	107	0	1	159	10	1	0	171	171
17:00	0	0	14	1	0	0	15	15	1	0	26	4	0	0	31	30	0	0	47	9	1	0	57	58
17:15	1	0	29	0	0	0	30	29	0	1	19	1	1	0	22	22	0	1	40	3	0	0	44	43
17:30	0	0	12	0	0	0	12	12	0	0	20	2	0	0	22	22	0	0	44	6	0	0	50	50
17:45	1	0	29	3	0	0	33	32	0	0	19	3	0	0	22	22	0	0	31	3	0	0	34	34
H/TOT	2	0	84	4	0	0	90	88	1	1	84	10	1	0	97	97	0	1	162	21	1	0	185	185
18:00	1	0	13	0	1	0	15	15	0	0	39	2	0	0	41	41	0	0	31	2	0	0	33	33
18:15	0	0	29	6	0	0	35	35	0	0	31	2	1	0	34	35	0	0	38	3	0	0	41	41
18:30	0	0	28	2	0	0	30	30	0	0	23	4	1	0	28	29	0	0	34	2	0	0	36	36
18:45	0	0	31	2	0	0	33	33	0	0	32	1	1	0	34	35	0	0	19	1	0	0	20	20
H/TOT	1	0	101	10	1	0	113	113	0	0	125	9	3	0	137	140	0	0	122	8	0	0	130	130
P/TOT	7	0	256	24	2	0	289	285	1	1	299	28	6	2	337	344	0	2	443	39	2	0	486	487

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 03 DATE: 3rd March 2022

LOCATION: Treepark Road (W)/Mayberry Road DAY: Thursday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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
07:00	1	0	31	8	3	0	43	45	1	0	17	10	4	0	32	35	1	0	1	0	0	0	2	1
07:15	1	0	46	13	6	1	67	73	1	0	31	3	2	1	38	40	0	0	3	0	0	0	3	3
07:30	0	0	56	14	1	1	72	74	2	0	32	7	1	0	42	41	0	0	8	1	0	0	9	9
07:45	0	0	71	24	3	4	102	109	3	0	52	5	2	2	64	66	0	0	10	0	0	0	10	10
H/TOT	2	0	204	59	13	6	284	301	7	0	132	25	9	3	176	182	1	0	22	1	0	0	24	23
08:00	1	0	118	17	4	4	144	151	2	0	42	11	1	1	57	57	0	0	7	1	0	0	8	8
08:15	5	0	107	15	6	1	134	137	2	0	53	12	3	1	71	73	0	0	12	1	0	0	13	13
08:30	1	1	108	12	6	2	130	137	3	0	46	5	1	0	55	54	0	0	15	1	1	0	17	18
08:45	2	0	97	22	9	1	131	139	3	0	67	11	2	2	85	87	0	0	12	3	0	1	16	17
H/TOT	9	1	430	66	25	8	539	564	10	0	208	39	7	4	268	271	0	0	46	6	1	1	54	56
09:00	0	0	76	17	5	3	101	109	0	0	64	6	5	1	76	82	0	0	9	4	0	0	13	13
09:15	1	0	66	9	3	2	81	85	0	0	29	7	2	3	41	46	0	0	13	2	0	0	15	15
09:30	0	0	62	14	2	1	79	82	0	0	43	8	3	1	55	59	0	0	9	1	3	1	14	18
09:45	0	0	77	10	4	2	93	99	0	0	44	11	4	1	60	65	0	0	11	1	0	1	13	14
H/TOT	1	0	281	50	14	8	354	375	0	0	180	32	14	6	232	252	0	0	42	8	3	2	55	60
P/TOT	12	1	915	175	52	22	1177	1241	17	0	520	96	30	13	676	705	1	0	110	15	4	3	133	139

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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	86	15	4	0	106	109	5	1	79	10	1	1	97	94	1	0	30	4	1	0	36	36
16:15	2	0	69	8	3	2	84	87	2	0	59	13	2	1	77	78	0	0	19	2	0	0	21	21
16:30	3	0	77	15	3	1	99	101	1	0	70	11	0	1	83	83	1	0	27	1	0	0	29	28
16:45	3	0	89	14	3	0	109	110	0	0	54	9	3	0	66	69	1	0	25	8	0	1	35	35
H/TOT	9	0	321	52	13	3	398	407	8	1	262	43	6	3	323	325	3	0	101	15	1	1	121	121
17:00	4	0	82	6	2	0	94	93	1	0	70	15	3	0	89	91	0	0	21	8	0	0	29	29
17:15	2	0	91	13	0	0	106	104	0	1	59	9	2	0	71	72	1	0	24	2	0	0	27	26
17:30	5	0	90	10	1	0	106	103	2	1	75	7	2	0	87	87	1	0	32	6	0	0	39	38
17:45	0	0	115	11	1	0	127	128	1	0	64	8	1	0	74	74	1	0	31	2	0	0	34	33
H/TOT	11	0	378	40	4	0	433	428	4	2	268	39	8	0	321	325	3	0	108	18	0	0	129	127
18:00	2	0	73	6	1	0	82	81	2	0	63	7	2	1	75	76	1	0	31	2	0	0	34	33
18:15	1	0	67	5	1	0	74	74	0	0	71	6	1	0	78	79	1	0	29	1	0	0	31	30
18:30	2	0	63	6	1	0	72	71	0	0	74	9	2	1	86	89	0	0	29	1	0	0	30	30
18:45	0	0	73	5	0	0	78	78	1	0	53	7	1	0	62	62	1	0	20	0	0	0	21	20
H/TOT	5	0	276	22	3	0	306	305	3	0	261	29	6	2	301	307	3	0	109	4	0	0	116	114
P/TOT	25	0	975	114	20	3	1137	1140	15	3	791	111	20	5	945	956	9	0	318	37	1	1	366	361

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 04 DATE: 3rd March 2022

LOCATION: Treepark Road (E)/Dunnes Stores Access DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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
07:00	0	0	14	9	0	0	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	19	3	0	2	24	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	18	4	0	1	23	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	32	5	0	1	38	39	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	83	21	0	4	108	112	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
08:00	0	0	31	3	0	1	35	36	0	0	6	1	0	0	7	7	0	0	6	1	0	0	7	7
08:15	0	0	33	8	0	2	43	45	0	0	5	0	0	0	5	5	0	0	12	0	0	0	12	12
08:30	1	0	39	7	0	0	47	46	0	0	6	0	0	0	6	6	0	0	6	0	0	0	6	6
08:45	0	0	58	4	0	1	63	64	1	0	16	0	0	0	17	16	0	0	11	1	0	0	12	12
H/TOT	1	0	161	22	0	4	188	191	1	0	33	1	0	0	35	34	0	0	35	2	0	0	37	37
09:00	0	0	46	7	1	0	54	55	0	0	7	0	0	0	7	7	0	0	4	0	0	0	4	4
09:15	0	0	18	1	0	3	22	25	0	0	6	0	0	0	6	6	0	0	4	0	0	0	4	4
09:30	0	0	29	2	1	1	33	35	0	0	8	0	0	1	9	10	0	0	3	0	0	0	3	3
09:45	0	0	15	2	2	0	19	21	0	0	5	0	0	0	5	5	0	0	6	1	0	0	7	7
H/TOT	0	0	108	12	4	4	128	136	0	0	26	0	0	1	27	28	0	0	17	1	0	0	18	18
P/TOT	1	0	352	55	4	12	424	439	1	0	60	1	0	1	63	63	0	0	52	3	0	0	55	55

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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	2	0	30	3	1	1	37	37	1	0	5	0	0	0	6	5	0	0	7	0	0	0	7	7
16:15	0	0	18	4	1	2	25	28	0	0	5	0	0	0	5	5	1	0	15	0	0	0	16	15
16:30	0	0	24	1	0	0	25	25	0	0	5	1	0	0	6	6	0	0	10	1	0	0	11	11
16:45	0	0	15	4	0	0	19	19	0	0	5	0	0	0	5	5	0	0	15	0	0	0	15	15
H/TOT	2	0	87	12	2	3	106	109	1	0	20	1	0	0	22	21	1	0	47	1	0	0	49	48
17:00	0	0	27	2	0	0	29	29	2	0	2	0	0	0	4	2	0	0	9	2	0	0	11	11
17:15	0	0	22	2	0	0	24	24	1	0	8	0	0	0	9	8	1	0	13	0	0	0	14	13
17:30	0	0	17	2	0	0	19	19	0	0	6	0	0	0	6	6	0	0	12	1	0	0	13	13
17:45	0	0	26	6	0	0	32	32	0	0	8	0	0	0	8	8	0	0	9	0	0	0	9	9
H/TOT	0	0	92	12	0	0	104	104	3	0	24	0	0	0	27	25	1	0	43	3	0	0	47	46
18:00	0	0	42	2	0	1	45	46	0	0	9	0	0	0	9	9	0	0	6	1	0	0	7	7
18:15	0	0	40	1	0	0	41	41	0	0	9	0	0	0	9	9	0	0	10	1	0	0	11	11
18:30	0	0	40	3	1	1	45	47	0	0	4	1	0	0	5	5	0	0	9	2	0	0	11	11
18:45	0	0	25	1	0	0	26	26	0	0	6	0	0	0	6	6	1	0	11	0	0	0	12	11
H/TOT	0	0	147	7	1	2	157	160	0	0	28	1	0	0	29	29	1	0	36	4	0	0	41	40
P/TOT	2	0	326	31	3	5	367	373	4	0	72	2	0	0	78	75	3	0	126	8	0	0	137	135

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 04 DATE: 3rd March 2022

LOCATION: Treepark Road (E)/Dunnes Stores Access DAY: Thursday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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
07:00	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
07:15	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2	0	0	5	0	0	0	5	5
07:30	0	0	2	0	0	0	2	2	0	0	3	0	0	0	3	3	0	0	5	1	0	0	6	6
07:45	0	0	1	1	0	0	2	2	0	0	15	4	0	0	19	19	0	0	10	3	0	0	13	13
H/TOT	0	0	5	1	1	0	7	8	0	0	20	4	0	0	24	24	0	0	23	4	0	0	27	27
08:00	0	0	5	3	0	0	8	8	0	0	18	3	0	0	21	21	0	0	27	4	0	1	32	33
08:15	0	0	6	1	0	0	7	7	0	0	18	0	1	0	19	20	0	0	34	1	0	1	36	37
08:30	0	0	13	1	0	0	14	14	0	0	17	0	0	0	17	17	0	0	62	4	0	1	67	68
08:45	0	0	22	1	0	1	24	25	0	0	24	2	0	1	27	28	0	0	53	2	0	0	55	55
H/TOT	0	0	46	6	0	1	53	54	0	0	77	5	1	1	84	86	0	0	176	11	0	3	190	193
09:00	0	0	20	2	0	0	22	22	0	0	29	0	0	0	29	29	0	0	14	3	1	1	19	21
09:15	0	0	14	1	1	0	16	17	1	0	27	2	0	0	30	29	0	0	27	4	0	2	33	35
09:30	0	0	22	3	0	0	25	25	0	0	27	1	0	0	28	28	1	0	21	0	1	2	25	27
09:45	0	0	28	3	3	1	35	39	0	0	22	3	0	0	25	25	0	0	10	0	0	2	12	14
H/TOT	0	0	84	9	4	1	98	103	1	0	105	6	0	0	112	111	1	0	72	7	2	7	89	97
P/TOT	0	0	135	16	5	2	158	165	1	0	202	15	1	1	220	221	1	0	271	22	2	10	306	317

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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	1	38	1	0	0	40	39	0	0	24	2	1	0	27	28	0	0	32	7	1	0	40	41
16:15	0	0	23	2	0	0	25	25	0	0	24	1	0	0	25	25	0	0	25	3	1	2	31	34
16:30	0	0	30	3	0	0	33	33	0	0	30	3	0	0	33	33	0	0	33	6	0	1	40	41
16:45	1	0	24	4	0	0	29	28	0	0	34	2	0	0	36	36	0	0	29	10	0	1	40	41
H/TOT	1	1	115	10	0	0	127	126	0	0	112	8	1	0	121	122	0	0	119	26	2	4	151	157
17:00	0	1	26	1	0	0	28	27	1	0	17	2	0	0	20	19	0	0	29	6	0	0	35	35
17:15	0	0	29	1	0	0	30	30	0	0	39	2	0	0	41	41	0	0	47	6	1	1	55	57
17:30	0	0	26	1	0	0	27	27	0	0	41	0	0	0	41	41	1	0	56	4	0	0	61	60
17:45	0	0	35	2	0	0	37	37	0	0	35	4	1	0	40	41	0	0	56	6	3	0	65	68
H/TOT	0	1	116	5	0	0	122	121	1	0	132	8	1	0	142	142	1	0	188	22	4	1	216	220
18:00	1	0	40	2	0	0	43	42	0	0	28	5	0	0	33	33	0	0	36	6	0	0	42	42
18:15	0	0	38	3	0	0	41	41	0	0	31	3	0	0	34	34	0	0	44	4	0	0	48	48
18:30	0	0	24	1	0	0	25	25	0	0	20	0	0	0	20	20	0	0	59	3	1	0	63	64
18:45	0	0	20	2	0	0	22	22	0	0	37	1	0	0	38	38	0	0	46	2	0	1	49	50
H/TOT	1	0	122	8	0	0	131	130	0	0	116	9	0	0	125	125	0	0	185	15	1	1	202	204
P/TOT	2	2	353	23	0	0	380	377	1	0	360	25	2	0	388	389	1	0	492	63	7	6	569	581

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 05 DATE: 3rd March 2022

LOCATION: Treepark Road (E)/Mayberry Road DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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
07:00	0	0	10	5	1	0	16	17	0	0	4	4	0	0	8	8	0	0	2	0	0	0	2	2
07:15	0	0	11	3	0	1	15	16	0	0	10	0	0	1	11	12	0	0	4	0	0	0	4	4
07:30	0	0	16	4	0	1	21	22	0	0	4	0	0	0	4	4	0	0	5	0	0	0	5	5
07:45	0	0	21	6	0	1	28	29	0	0	12	0	0	0	12	12	0	0	13	5	0	0	18	18
H/TOT	0	0	58	18	1	3	80	84	0	0	30	4	0	1	35	36	0	0	24	5	0	0	29	29
08:00	0	0	26	5	0	1	32	33	0	0	10	1	0	0	11	11	0	0	20	1	0	0	21	21
08:15	0	0	24	7	0	2	33	35	0	0	15	2	0	0	17	17	0	0	22	0	0	1	23	24
08:30	0	0	32	5	0	0	37	37	1	0	20	3	0	0	24	23	0	0	33	2	0	0	35	35
08:45	0	0	61	4	0	0	65	65	0	0	19	1	0	2	22	24	0	0	36	3	0	0	39	39
H/TOT	0	0	143	21	0	3	167	170	1	0	64	7	0	2	74	75	0	0	111	6	0	1	118	119
09:00	0	0	39	6	0	0	45	45	0	0	27	3	1	0	31	32	0	0	19	2	1	1	23	25
09:15	0	0	23	2	1	1	27	29	0	0	9	0	0	2	11	13	0	0	14	0	0	0	14	14
09:30	0	0	36	3	0	0	39	39	0	0	15	2	1	1	19	21	0	0	18	1	0	0	19	19
09:45	0	0	31	4	4	0	39	43	0	0	12	1	1	1	15	17	0	0	18	1	0	1	20	21
H/TOT	0	0	129	15	5	1	150	156	0	0	63	6	3	4	76	83	0	0	69	4	1	2	76	79
P/TOT	0	0	330	54	6	7	397	410	1	0	157	17	3	7	185	194	0	0	204	15	1	3	223	227

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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	1	39	3	1	1	46	47	1	0	29	1	0	0	31	30	0	0	29	5	0	0	34	34
16:15	0	0	21	2	0	2	25	27	0	0	20	4	1	0	25	26	0	0	23	2	1	1	27	29
16:30	0	0	36	4	0	0	40	40	0	0	18	0	0	0	18	18	0	0	22	6	0	1	29	30
16:45	1	0	27	7	0	0	35	34	0	0	12	1	0	0	13	13	0	0	23	5	0	0	28	28
H/TOT	2	1	123	16	1	3	146	148	1	0	79	6	1	0	87	87	0	0	97	18	1	2	118	121
17:00	0	1	37	2	0	0	40	39	0	0	16	1	0	0	17	17	1	0	22	3	0	0	26	25
17:15	0	0	33	1	0	0	34	34	0	0	18	2	0	0	20	20	0	0	29	2	0	0	31	31
17:30	0	0	28	3	0	0	31	31	0	0	15	0	0	0	15	15	1	0	35	2	0	0	38	37
17:45	0	0	44	7	0	0	51	51	0	0	17	1	0	0	18	18	0	0	43	2	1	0	46	47
H/TOT	0	1	142	13	0	0	156	155	0	0	66	4	0	0	70	70	2	0	129	9	1	0	141	140
18:00	1	0	50	3	0	0	54	53	0	0	32	1	0	1	34	35	0	0	17	2	0	0	19	19
18:15	0	0	43	3	0	0	46	46	0	0	35	1	0	0	36	36	0	0	28	4	0	0	32	32
18:30	0	0	35	2	0	1	38	39	0	0	29	2	1	0	32	33	0	0	35	2	1	0	38	39
18:45	0	0	25	1	0	0	26	26	0	0	20	2	0	0	22	22	0	0	30	1	0	0	31	31
H/TOT	1	0	153	9	0	1	164	164	0	0	116	6	1	1	124	126	0	0	110	9	1	0	120	121
P/TOT	3	2	418	38	1	4	466	467	1	0	261	16	2	1	281	283	2	0	336	36	3	2	379	382

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS

MARCH 2022
TRA/22/063

SITE: 05 DATE: 3rd March 2022

LOCATION: Treepark Road (E)/Mayberry Road DAY: Thursday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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
07:00	1	1	45	11	3	0	61	63	2	0	14	6	4	0	26	28	0	0	1	0	0	0	1	1
07:15	2	0	55	16	7	1	81	87	1	0	24	3	2	0	30	31	0	0	3	0	0	0	3	3
07:30	0	0	69	19	1	1	90	92	2	0	36	8	1	0	47	46	0	0	3	1	0	0	4	4
07:45	1	0	84	23	3	5	116	123	3	0	50	5	2	2	62	64	0	0	12	2	0	0	14	14
H/TOT	4	1	253	69	14	7	348	365	8	0	124	22	9	2	165	170	0	0	19	3	0	0	22	22
08:00	3	1	144	21	4	4	177	182	2	0	39	11	1	1	54	54	0	0	25	6	0	1	32	33
08:15	6	0	117	21	6	0	150	151	2	0	50	11	3	1	67	69	0	0	30	1	1	0	32	33
08:30	3	1	118	14	6	2	144	149	2	0	41	3	2	0	48	48	0	0	46	2	0	1	49	50
08:45	2	1	89	22	10	2	126	136	3	0	60	13	2	1	79	80	0	0	41	1	0	1	43	44
H/TOT	14	3	468	78	26	8	597	618	9	0	190	38	8	3	248	252	0	0	142	10	1	3	156	160
09:00	0	0	80	18	5	2	105	112	0	0	46	7	4	1	58	63	0	0	24	1	0	0	25	25
09:15	2	0	75	10	3	3	93	97	0	0	33	9	2	1	45	48	1	0	40	6	0	2	49	50
09:30	1	0	59	15	4	1	80	84	0	0	37	7	5	1	50	56	1	0	30	0	1	2	34	36
09:45	0	0	80	12	4	1	97	102	0	0	43	11	3	1	58	62	0	0	14	2	0	1	17	18
H/TOT	3	0	294	55	16	7	375	396	0	0	159	34	14	4	211	229	2	0	108	9	1	5	125	129
P/TOT	21	4	1015	202	56	22	1320	1379	17	0	473	94	31	9	624	650	2	0	269	22	2	8	303	311

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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	2	0	72	11	5	0	90	93	5	1	80	13	2	1	102	100	0	0	27	4	2	0	33	35
16:15	2	0	65	8	2	1	78	79	2	0	58	11	1	1	73	73	0	0	26	2	0	1	29	30
16:30	4	0	70	12	3	0	89	89	2	0	79	12	0	1	94	93	0	0	41	3	0	0	44	44
16:45	5	0	88	13	3	0	109	108	1	0	67	16	3	1	88	91	0	0	40	7	0	1	48	49
H/TOT	13	0	295	44	13	1	366	370	10	1	284	52	6	4	357	358	0	0	134	16	2	2	154	158
17:00	3	0	74	4	2	0	83	83	1	0	75	22	3	0	101	103	0	0	24	5	0	0	29	29
17:15	3	0	91	11	0	0	105	103	1	1	65	9	2	0	78	79	0	0	57	6	1	1	65	67
17:30	4	0	67	8	1	0	80	78	3	1	92	13	2	0	111	110	0	0	62	2	0	0	64	64
17:45	1	0	101	12	0	0	114	113	2	0	78	9	1	0	90	89	0	0	48	8	3	0	59	62
H/TOT	11	0	333	35	3	0	382	376	7	2	310	53	8	0	380	381	0	0	191	21	4	1	217	222
18:00	3	0	69	4	2	0	78	78	3	0	62	8	2	0	75	75	0	0	47	9	0	0	56	56
18:15	1	0	68	7	1	0	77	77	1	0	65	6	1	0	73	73	0	0	47	3	0	0	50	50
18:30	2	0	56	6	0	0	64	62	0	0	74	8	1	1	84	86	0	0	44	1	0	0	45	45
18:45	0	0	74	6	0	0	80	80	2	0	53	5	1	0	61	60	0	0	53	2	0	1	56	57
H/TOT	6	0	267	23	3	0	299	297	6	0	254	27	5	1	293	294	0	0	191	15	0	1	207	208
P/TOT	30	0	895	102	19	1	1047	1043	23	3	848	132	19	5	1030	1034	0	0	516	52	6	4	578	588

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 06 DATE: 3rd March 2022

LOCATION: Greenhills Road/Mayberry Road DAY: Thursday

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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
07:00	1	0	39	10	3	4	57	63	1	0	9	6	2	0	18	19	1	0	40	11	3	4	59	65
07:15	2	0	52	17	1	4	76	79	0	0	14	1	2	1	18	21	1	0	48	9	2	4	64	69
07:30	4	0	89	18	3	4	118	122	2	0	31	5	0	0	38	36	2	0	91	16	2	4	115	119
07:45	4	1	91	13	2	1	112	111	1	0	52	5	1	1	60	61	2	1	88	20	2	1	114	115
H/TOT	11	1	271	58	9	13	363	376	4	0	106	17	5	2	134	138	6	1	267	56	9	13	352	369
08:00	4	0	78	16	6	4	108	115	1	0	41	12	0	2	56	57	2	1	75	17	4	4	103	109
08:15	1	1	126	22	3	2	155	159	1	0	70	10	1	1	83	84	2	0	121	21	4	2	150	154
08:30	1	0	81	12	4	0	98	101	1	0	65	7	1	1	75	76	2	0	81	11	4	0	98	100
08:45	7	0	109	17	3	2	138	137	2	0	75	11	2	1	91	92	2	0	105	17	3	2	129	132
H/TOT	13	1	394	67	16	8	499	512	5	0	251	40	4	5	305	310	8	1	382	66	15	8	480	496
09:00	0	0	47	13	1	0	61	62	1	0	61	5	1	2	70	72	1	0	71	14	2	1	89	91
09:15	1	0	41	5	3	0	50	52	0	0	56	9	0	3	68	71	0	0	62	7	3	2	74	79
09:30	0	0	21	7	2	0	30	32	1	0	34	3	4	2	44	49	0	0	48	8	3	0	59	62
09:45	1	0	34	5	2	0	42	43	0	0	39	3	1	2	45	48	0	0	49	9	4	1	63	68
H/TOT	2	0	143	30	8	0	183	189	2	0	190	20	6	9	227	240	1	0	230	38	12	4	285	300
P/TOT	26	2	808	155	33	21	1045	1077	11	0	547	77	15	16	666	688	15	2	879	160	36	25	1117	1165

	MOVEMENT 1								MOVEMENT 2								MOVEMENT 3							
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	2	0	89	19	4	1	115	118	0	2	69	11	1	0	83	83	2	0	89	14	4	1	110	113
16:15	5	2	60	15	2	2	86	85	2	0	66	7	1	2	78	79	4	1	61	11	2	2	81	81
16:30	4	2	61	20	1	3	91	91	2	1	72	10	0	1	86	85	3	1	61	19	1	2	87	87
16:45	2	1	82	18	2	1	106	107	1	0	79	17	3	1	101	104	2	1	82	18	2	1	106	107
H/TOT	13	5	292	72	9	7	398	401	5	3	286	45	5	4	348	351	11	3	293	62	9	6	384	388
17:00	6	1	66	10	2	3	88	88	0	0	53	15	1	1	70	72	5	1	74	10	2	2	94	93
17:15	3	0	55	12	0	1	71	70	1	0	78	13	1	0	93	93	3	0	68	12	0	1	84	83
17:30	3	1	77	20	0	1	102	100	0	1	95	7	2	0	105	106	2	1	71	15	0	1	90	89
17:45	2	1	87	14	0	1	105	104	2	0	79	18	3	0	102	103	2	1	90	14	0	1	108	107
H/TOT	14	3	285	56	2	6	366	361	3	1	305	53	7	1	370	375	12	3	303	51	2	5	376	372
18:00	3	2	82	16	1	2	106	105	1	0	85	5	1	0	92	92	3	1	84	13	2	1	104	104
18:15	0	0	124	14	1	2	141	144	0	0	60	9	0	0	69	69	0	0	102	12	0	2	116	118
18:30	0	0	66	6	0	2	74	76	0	0	61	1	1	0	63	64	0	0	70	7	0	2	79	81
18:45	1	0	85	9	0	1	96	96	1	0	54	6	0	1	62	62	1	0	66	7	0	1	75	75
H/TOT	4	2	357	45	2	7	417	422	2	0	260	21	2	1	286	287	4	1	322	39	2	6	374	378
P/TOT	31	10	934	173	13	20	1181	1183	10	4	851	119	14	6	1004	1014	27	7	918	152	13	17	1134	1138

DUNNES STORES, KILNAMANAGH TRAFFIC COUNTS **MARCH 2022**
MANUAL CLASSIFIED JUNCTION TURNING COUNTS **TRA/22/063**

SITE: 06 DATE: 3rd March 2022

LOCATION: Greenhills Road/Mayberry Road DAY: Thursday

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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
07:00	1	0	14	10	1	0	26	26	1	0	6	1	1	0	9	9	4	0	50	11	7	2	74	80
07:15	1	0	10	5	2	0	18	19	0	0	8	1	1	0	10	11	2	0	43	19	4	1	69	72
07:30	2	0	28	8	0	0	38	36	0	0	7	2	1	0	10	11	6	0	67	21	3	1	98	97
07:45	1	0	21	6	0	0	28	27	0	0	8	5	1	0	14	15	1	0	66	27	4	1	99	103
H/TOT	5	0	73	29	3	0	110	109	1	0	29	9	4	0	43	46	13	0	226	78	18	5	340	353
08:00	0	0	40	13	0	0	53	53	0	0	18	2	1	0	21	22	1	1	76	25	4	2	109	114
08:15	1	0	41	15	2	0	59	60	0	0	16	2	2	0	20	22	1	0	58	21	3	3	86	91
08:30	2	0	25	4	1	0	32	31	1	0	14	1	1	0	17	17	0	0	53	15	1	1	70	72
08:45	1	0	29	10	1	0	41	41	0	0	16	3	1	0	20	21	0	1	58	20	3	1	83	86
H/TOT	4	0	135	42	4	0	185	186	1	0	64	8	5	0	78	82	2	2	245	81	11	7	348	363
09:00	1	0	88	19	5	1	114	119	0	0	9	3	3	0	15	18	0	1	61	28	5	2	97	103
09:15	2	0	72	13	4	1	92	95	1	0	22	4	2	0	29	30	3	0	79	26	6	2	116	122
09:30	0	1	44	22	4	0	71	74	0	0	22	5	2	1	30	33	0	0	54	22	5	1	82	88
09:45	2	0	68	27	3	3	103	107	0	0	23	8	0	0	31	31	1	3	67	22	5	3	101	106
H/TOT	5	1	272	81	16	5	380	396	1	0	76	20	7	1	105	112	4	4	261	98	21	8	396	419
P/TOT	14	1	480	152	23	5	675	691	3	0	169	37	16	1	226	241	19	6	732	257	50	20	1084	1135

	MOVEMENT 4								MOVEMENT 5								MOVEMENT 6							
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	1	46	10	2	0	59	60	2	0	35	4	2	0	43	43	1	0	96	18	6	2	123	130
16:15	1	1	17	4	1	0	24	24	0	0	27	5	1	1	34	36	4	0	84	11	2	2	103	104
16:30	0	1	30	4	2	1	38	40	0	0	36	7	0	0	43	43	2	3	89	12	1	3	110	111
16:45	0	0	26	5	1	0	32	33	1	0	32	6	0	0	39	38	5	0	69	16	0	1	91	88
H/TOT	1	3	119	23	6	1	153	157	3	0	130	22	3	1	159	161	12	3	338	57	9	8	427	433
17:00	1	0	25	3	1	1	31	32	2	0	44	7	1	1	55	55	0	1	104	17	1	1	124	125
17:15	2	0	21	4	0	0	27	25	0	0	39	6	2	0	47	49	0	0	89	17	1	3	110	114
17:30	0	0	20	9	1	0	30	31	1	1	56	4	1	0	63	63	3	1	86	8	1	2	101	101
17:45	0	0	50	11	1	0	62	63	3	0	49	4	1	0	57	56	0	1	74	12	1	1	89	90
H/TOT	3	0	116	27	3	1	150	152	6	1	188	21	5	1	222	223	3	3	353	54	4	7	424	431
18:00	0	1	35	6	0	1	43	43	2	0	41	8	2	0	53	53	2	0	86	9	0	3	100	101
18:15	0	0	78	8	1	0	87	88	2	0	37	3	0	0	42	40	0	1	78	6	1	1	87	88
18:30	0	0	24	3	0	0	27	27	0	0	55	3	1	0	59	60	2	0	96	8	1	3	110	112
18:45	0	0	59	4	0	0	63	63	1	0	51	1	0	0	53	52	0	0	50	1	0	2	53	55
H/TOT	0	1	196	21	1	1	220	221	5	0	184	15	3	0	207	206	4	1	310	24	2	9	350	357
P/TOT	4	4	431	71	10	3	523	530	14	1	502	58	11	2	588	589	19	7	1001	135	15	24	1201	1221

NRB consulting engineers

APPENDIX C

TRICS Output Data
Non Food Retail, Medical Centre & Gym

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE

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									
07:00 - 08:00	2	2550	0.118	2	2550	0.039	2	2550	0.157
08:00 - 09:00	6	1969	0.220	6	1969	0.042	6	1969	0.262
09:00 - 10:00	6	1969	0.593	6	1969	0.356	6	1969	0.949
10:00 - 11:00	6	1969	0.694	6	1969	0.457	6	1969	1.151
11:00 - 12:00	6	1969	0.711	6	1969	0.711	6	1969	1.422
12:00 - 13:00	6	1969	0.720	6	1969	0.660	6	1969	1.380
13:00 - 14:00	6	1969	0.737	6	1969	0.796	6	1969	1.533
14:00 - 15:00	6	1969	0.694	6	1969	0.610	6	1969	1.304
15:00 - 16:00	6	1969	0.457	6	1969	0.533	6	1969	0.990
16:00 - 17:00	6	1969	0.627	6	1969	0.610	6	1969	1.237
17:00 - 18:00	6	1969	0.669	6	1969	0.686	6	1969	1.355
18:00 - 19:00	**5**	**2162**	**0.740**	**5**	**2162**	**0.934**	**5**	**2162**	**1.674**
19:00 - 20:00	4	2418	0.517	4	2418	0.755	4	2418	1.272
20:00 - 21:00	3	2868	0.128	3	2868	0.349	3	2868	0.477
21:00 - 22:00	1	2903	0.069	1	2903	0.482	1	2903	0.551
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			7.694			8.020			15.714

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:	1000 - 4100 (units: sqm)
Survey date date range:	01/01/14 - 18/09/21
Number of weekdays (Monday-Friday):	6
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.

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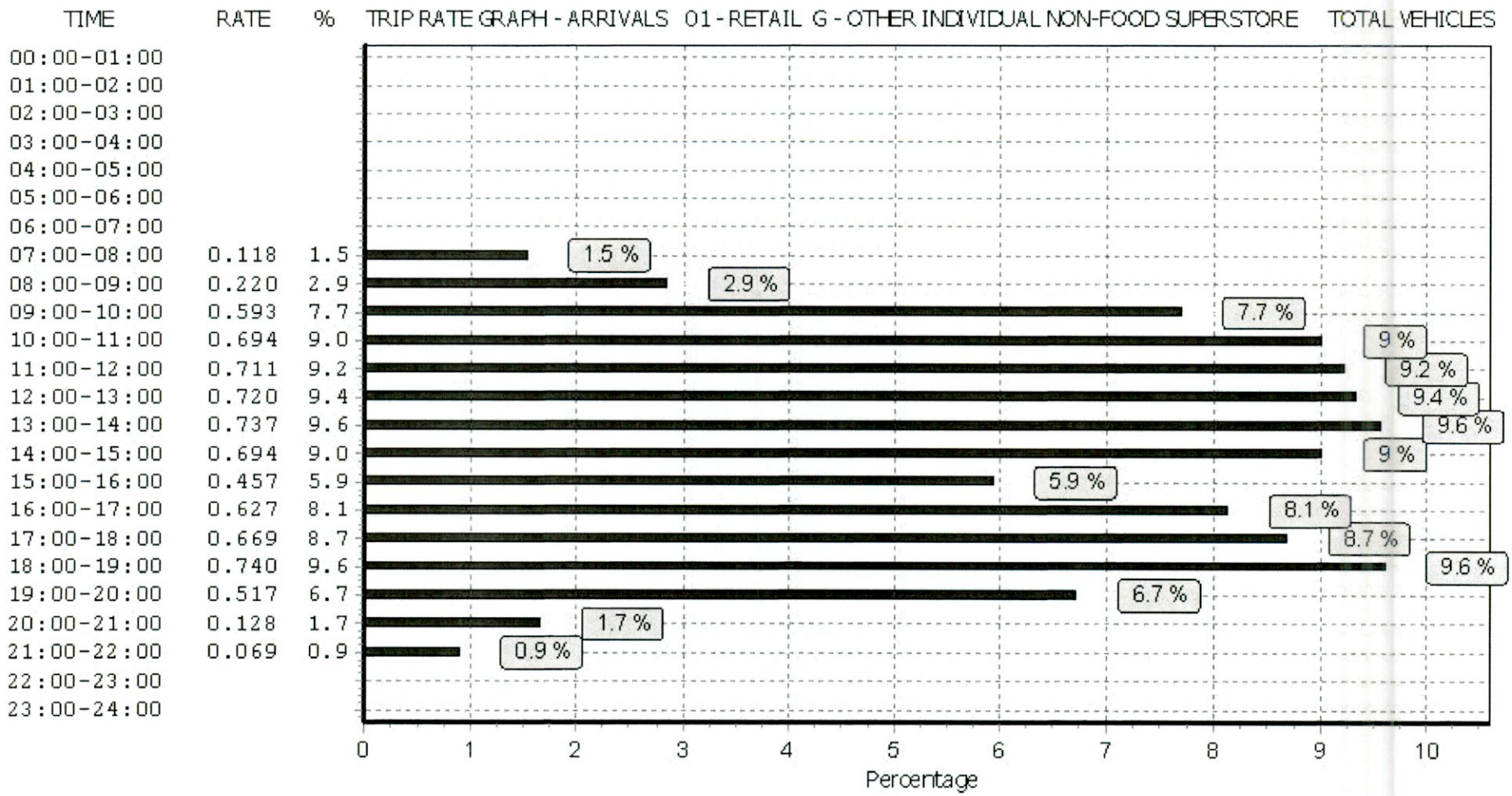
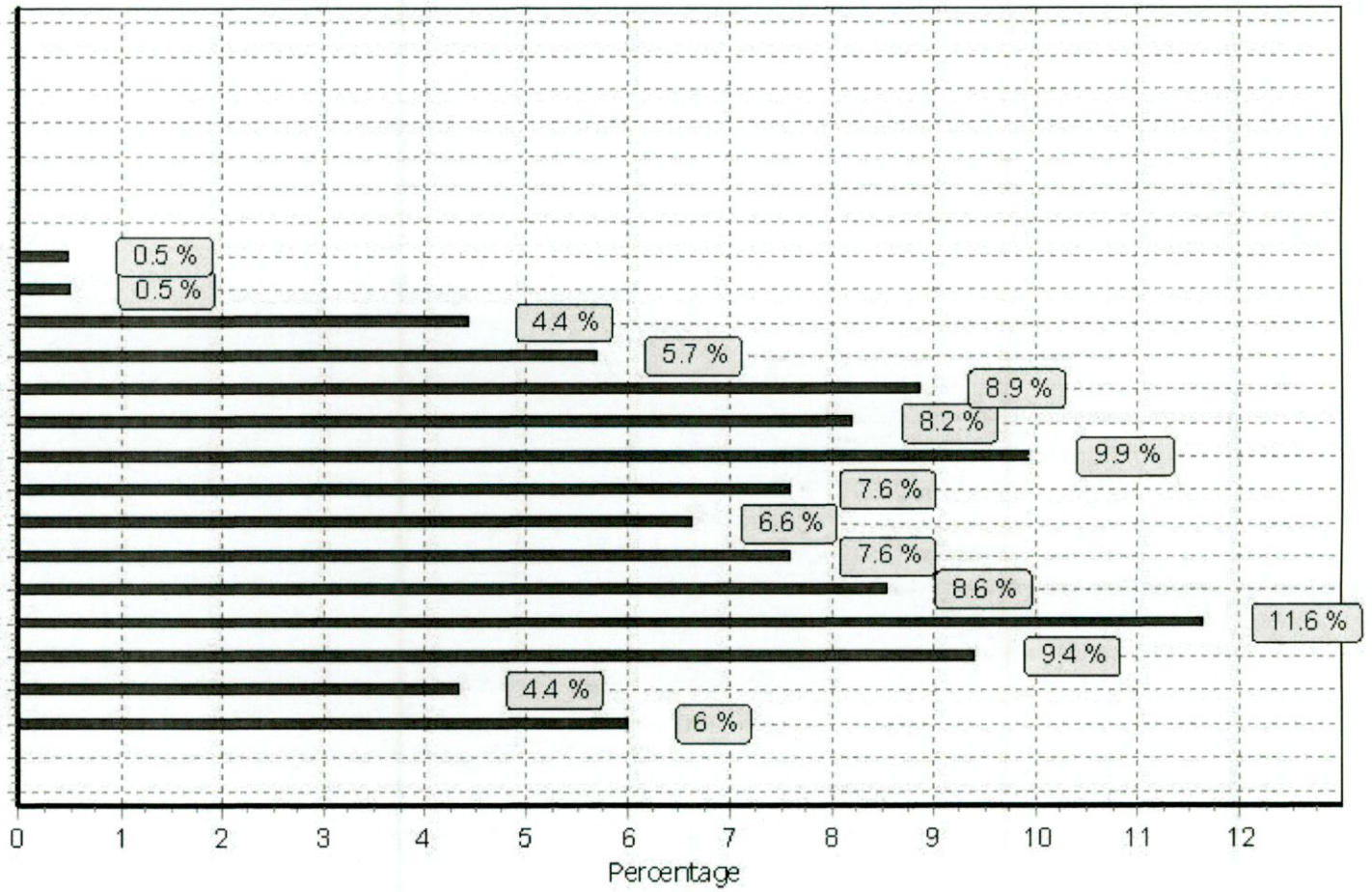


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

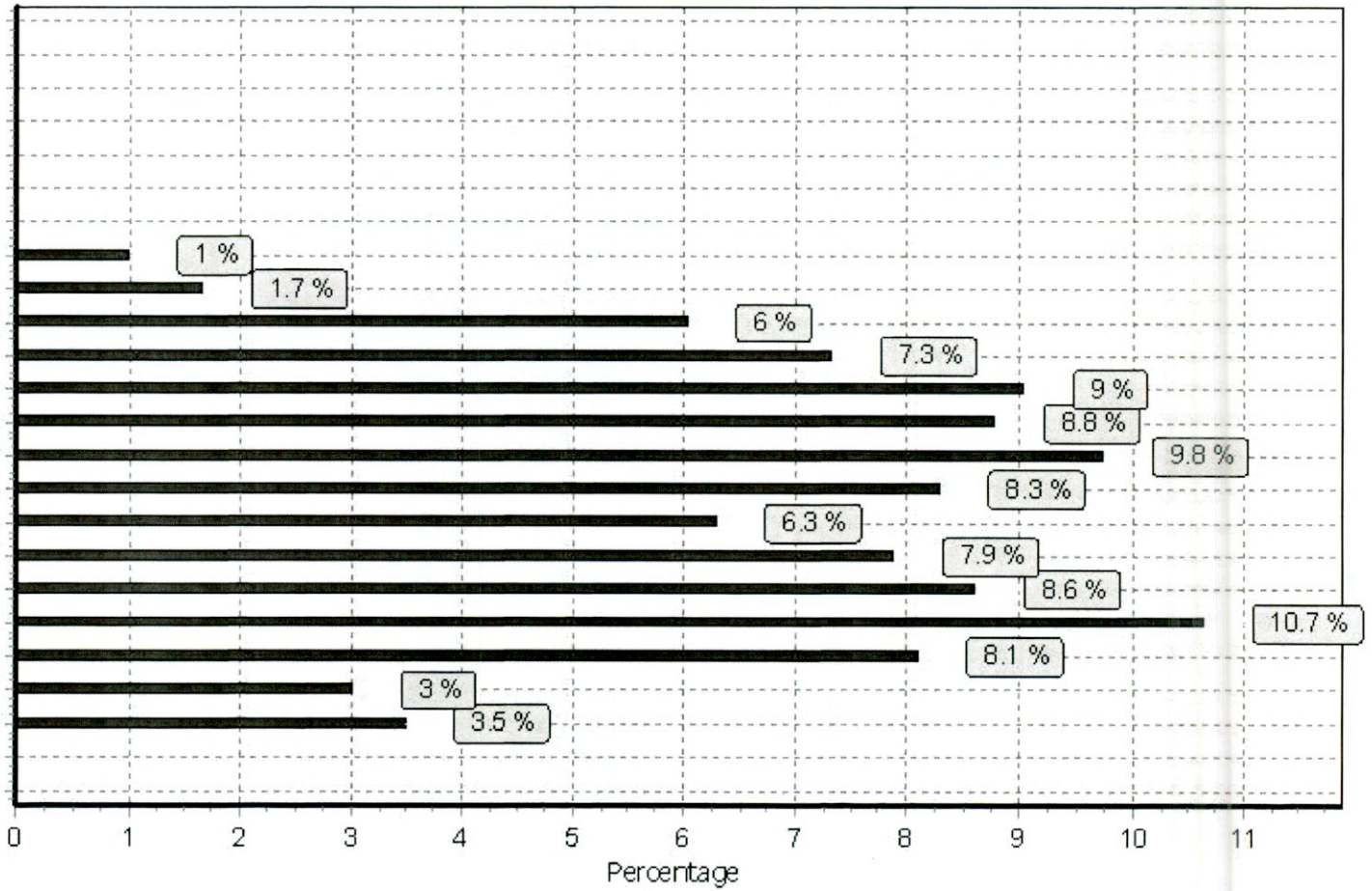
TIME	RATE	%
00:00-01:00		
01:00-02:00		
02:00-03:00		
03:00-04:00		
04:00-05:00		
05:00-06:00		
06:00-07:00		
07:00-08:00	0.039	0.5
08:00-09:00	0.042	0.5
09:00-10:00	0.356	4.4
10:00-11:00	0.457	5.7
11:00-12:00	0.711	8.9
12:00-13:00	0.660	8.2
13:00-14:00	0.796	9.9
14:00-15:00	0.610	7.6
15:00-16:00	0.533	6.6
16:00-17:00	0.610	7.6
17:00-18:00	0.686	8.6
18:00-19:00	0.934	11.6
19:00-20:00	0.755	9.4
20:00-21:00	0.349	4.4
21:00-22:00	0.482	6.0
22:00-23:00		
23:00-24:00		



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

TIME	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	0.157	1.0
08:00-09:00	0.262	1.7
09:00-10:00	0.949	6.0
10:00-11:00	1.151	7.3
11:00-12:00	1.422	9.0
12:00-13:00	1.380	8.8
13:00-14:00	1.533	9.8
14:00-15:00	1.304	8.3
15:00-16:00	0.990	6.3
16:00-17:00	1.237	7.9
17:00-18:00	1.355	8.6
18:00-19:00	1.674	10.7
19:00-20:00	1.272	8.1
20:00-21:00	0.477	3.0
21:00-22:00	0.551	3.5
22:00-23:00		
23:00-24:00		



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 05 - HEALTH/E - CLINICS

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									
07:00 - 08:00	4	634	0.079	4	634	0.079	4	634	0.158
08:00 - 09:00	8	486	0.514	8	486	0.051	8	486	0.565
09:00 - 10:00	**8**	**486**	**0.823**	8	486	0.334	8	486	1.157
10:00 - 11:00	8	486	0.643	8	486	0.617	8	486	1.260
11:00 - 12:00	8	486	0.720	**8**	**486**	**0.900**	**8**	**486**	**1.620**
12:00 - 13:00	8	486	0.488	8	486	0.437	8	486	0.925
13:00 - 14:00	8	486	0.334	8	486	0.437	8	486	0.771
14:00 - 15:00	8	486	0.643	8	486	0.566	8	486	1.209
15:00 - 16:00	8	486	0.514	8	486	0.488	8	486	1.002
16:00 - 17:00	8	486	0.411	8	486	0.566	8	486	0.977
17:00 - 18:00	8	486	0.334	8	486	0.386	8	486	0.720
18:00 - 19:00	8	486	0.360	8	486	0.514	8	486	0.874
19:00 - 20:00	4	681	0.037	4	681	0.183	4	681	0.220
20:00 - 21:00	1	615	0.000	1	615	0.000	1	615	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			5.900			5.558			11.458

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

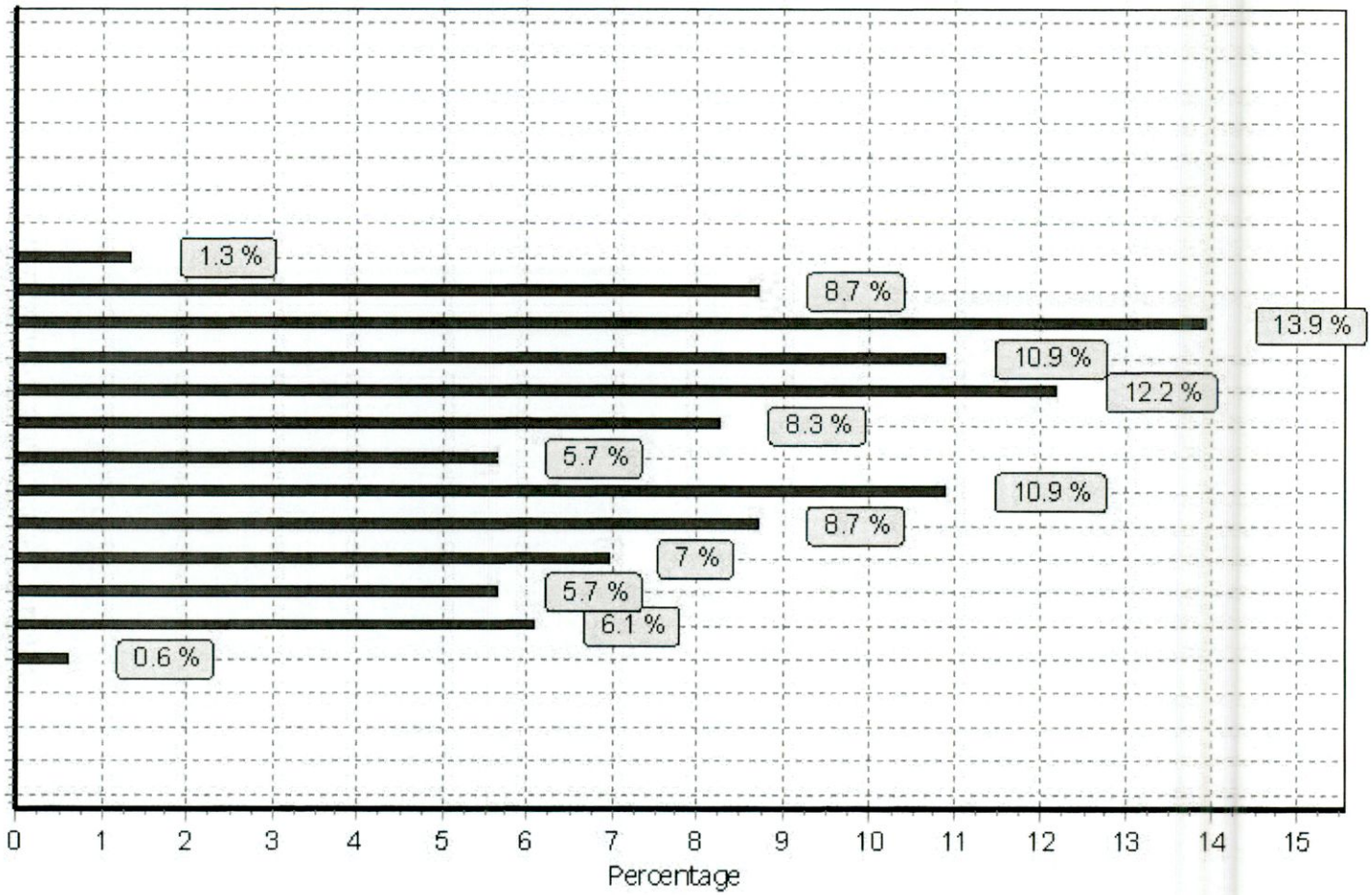
Trip rate parameter range selected:	80 - 1720 (units: sqm)
Survey date date range:	01/01/14 - 26/11/19
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

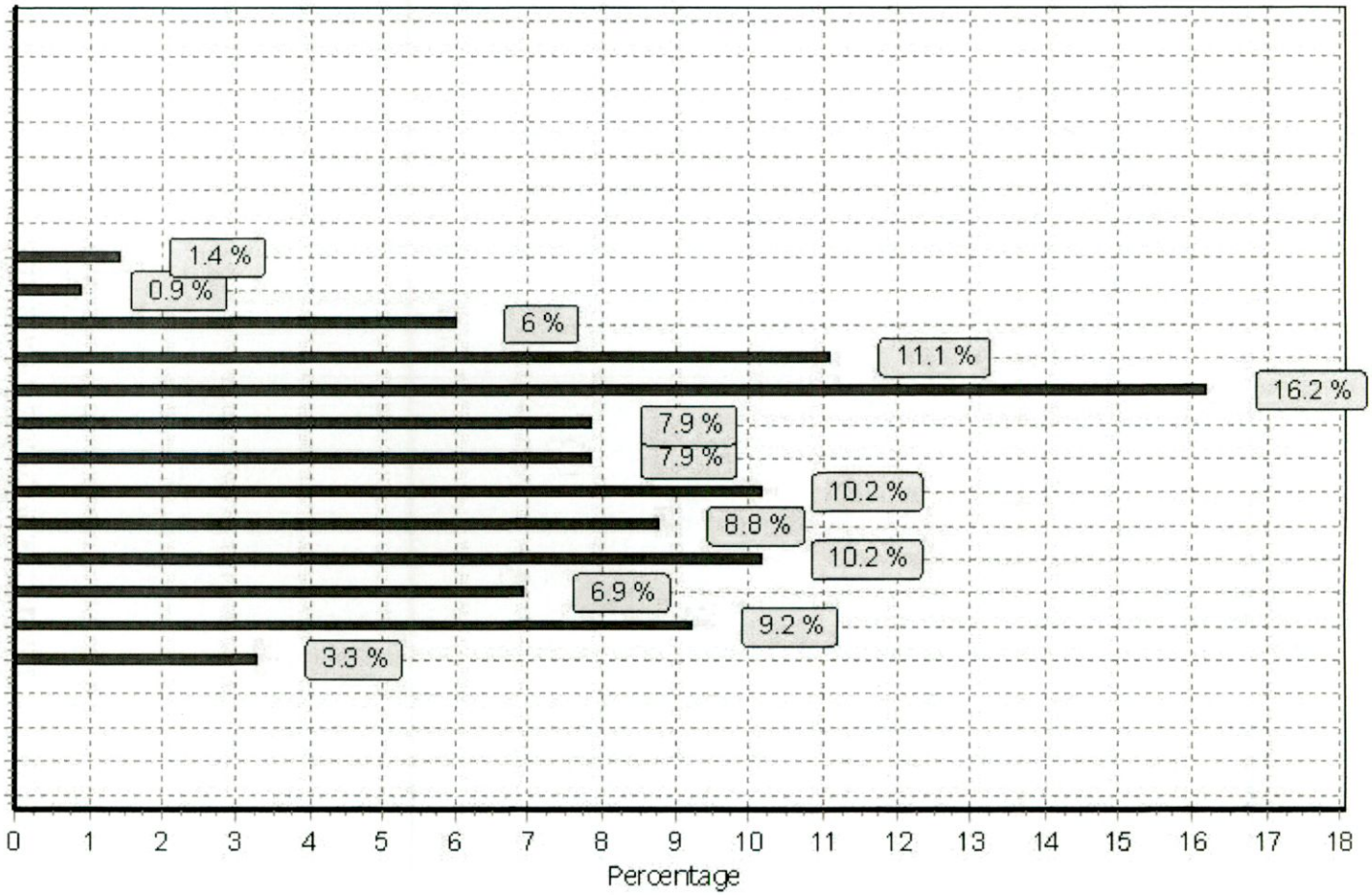
TRIP RATE GRAPH - ARRIVALS 05 - HEALTH E - CLINICS TOTAL VEHICLES

TIME	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	0.079	1.3
08:00-09:00	0.514	8.7
09:00-10:00	0.823	13.9
10:00-11:00	0.643	10.9
11:00-12:00	0.720	12.2
12:00-13:00	0.488	8.3
13:00-14:00	0.334	5.7
14:00-15:00	0.643	10.9
15:00-16:00	0.514	8.7
16:00-17:00	0.411	7.0
17:00-18:00	0.334	5.7
18:00-19:00	0.360	6.1
19:00-20:00	0.037	0.6
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



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.

TIME	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	0.079	1.4
08:00-09:00	0.051	0.9
09:00-10:00	0.334	6.0
10:00-11:00	0.617	11.1
11:00-12:00	0.900	16.2
12:00-13:00	0.437	7.9
13:00-14:00	0.437	7.9
14:00-15:00	0.566	10.2
15:00-16:00	0.488	8.8
16:00-17:00	0.566	10.2
17:00-18:00	0.386	6.9
18:00-19:00	0.514	9.2
19:00-20:00	0.183	3.3
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



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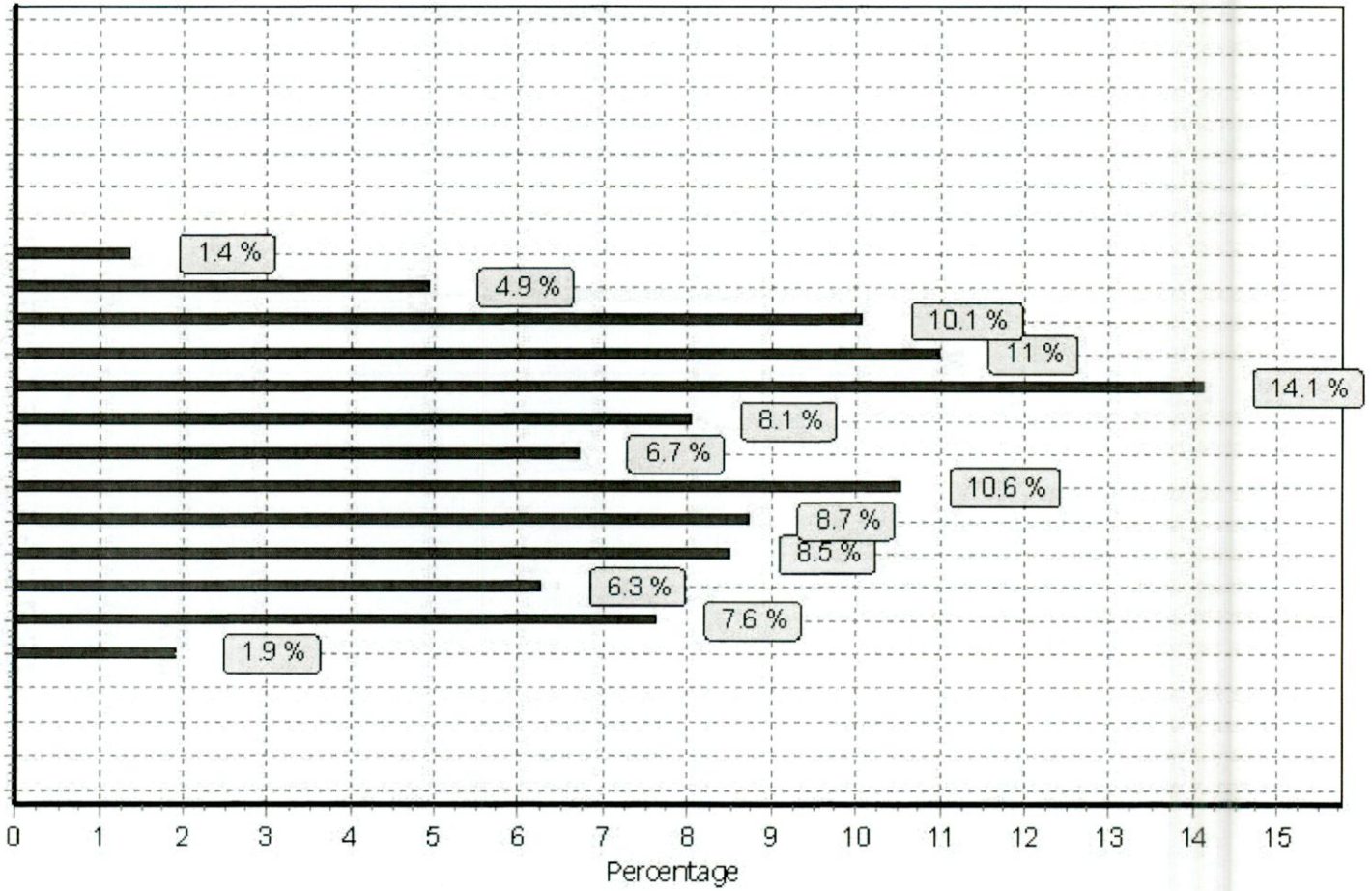
NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301

TIME	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	0.158	1.4
08:00-09:00	0.565	4.9
09:00-10:00	1.157	10.1
10:00-11:00	1.260	11.0
11:00-12:00	1.620	14.1
12:00-13:00	0.925	8.1
13:00-14:00	0.771	6.7
14:00-15:00	1.209	10.6
15:00-16:00	1.002	8.7
16:00-17:00	0.977	8.5
17:00-18:00	0.720	6.3
18:00-19:00	0.874	7.6
19:00-20:00	0.220	1.9
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



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 07 - LEISURE/K - FITNESS CLUB (PRIVATE)

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	15	3836	0.831	15	3836	0.111	15	3836	0.942
07:00 - 08:00	15	3836	0.553	15	3836	0.608	15	3836	1.161
08:00 - 09:00	15	3836	0.853	15	3836	0.586	15	3836	1.439
09:00 - 10:00	15	3836	1.312	15	3836	0.617	15	3836	1.929
10:00 - 11:00	15	3836	0.949	15	3836	0.852	15	3836	1.801
11:00 - 12:00	15	3836	0.589	15	3836	0.951	15	3836	1.540
12:00 - 13:00	15	3836	0.544	15	3836	0.834	15	3836	1.378
13:00 - 14:00	15	3836	0.594	15	3836	0.721	15	3836	1.315
14:00 - 15:00	15	3836	0.580	15	3836	0.561	15	3836	1.141
15:00 - 16:00	15	3836	0.898	15	3836	0.685	15	3836	1.583
16:00 - 17:00	15	3836	1.225	15	3836	0.892	15	3836	2.117
17:00 - 18:00	**15**	**3836**	**1.606**	15	3836	1.062	15	3836	2.668
18:00 - 19:00	15	3836	1.554	15	3836	1.439	**15**	**3836**	**2.993**
19:00 - 20:00	15	3836	1.034	**15**	**3836**	**1.540**	15	3836	2.574
20:00 - 21:00	15	3836	0.601	15	3836	1.256	15	3836	1.857
21:00 - 22:00	14	3500	0.157	14	3500	0.888	14	3500	1.045
22:00 - 23:00	2	1002	0.050	2	1002	0.200	2	1002	0.250
23:00 - 24:00									
Total Rates:			13.930			13.803			27.733

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.

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Parameter summary

Trip rate parameter range selected:	404 - 9000 (units: sqm)
Survey date date range:	01/01/14 - 19/11/22
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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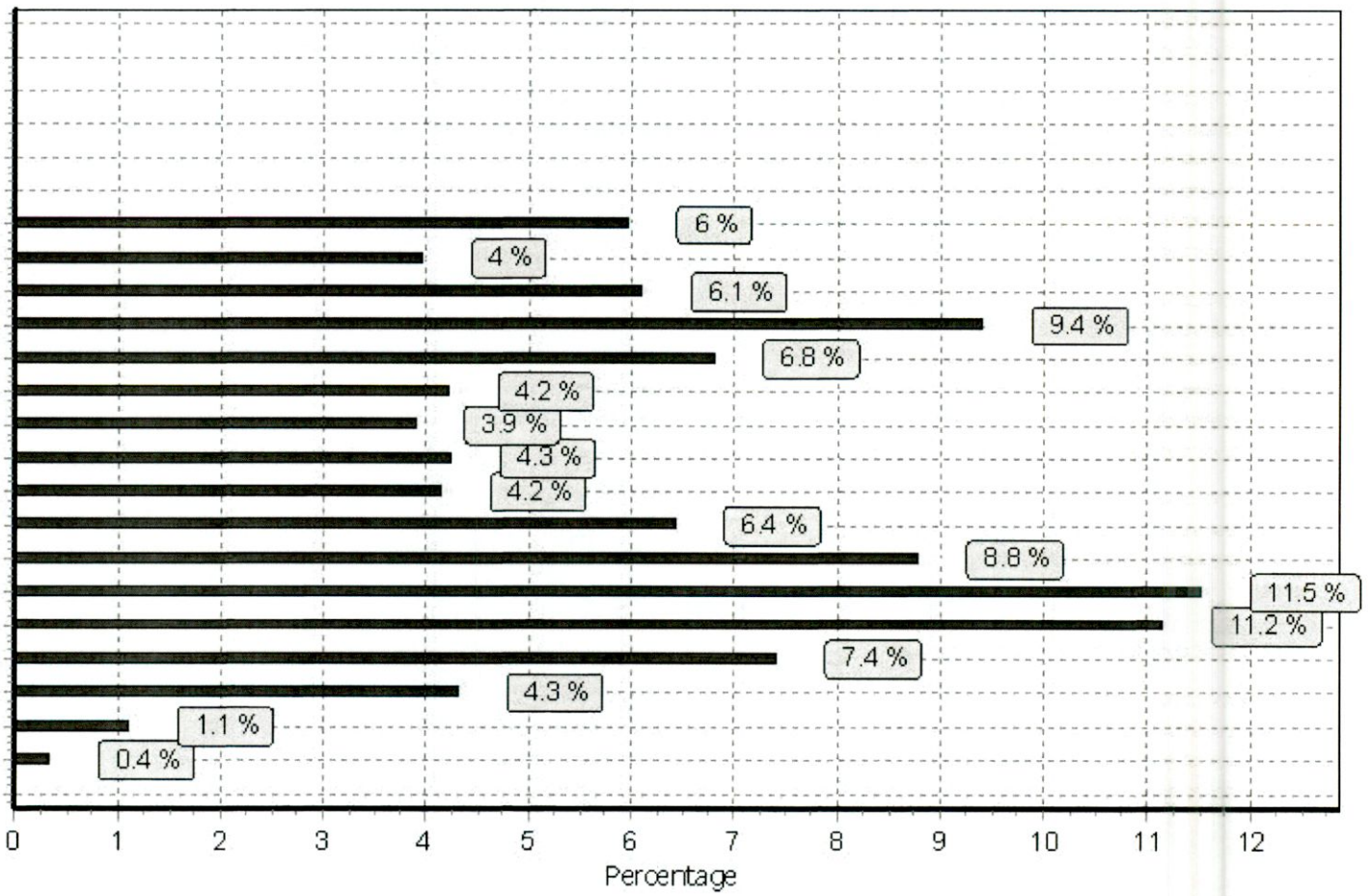
NRB Consulting Engineers Ltd 8 Leopardstown Business Centre, Ballyogan Avenue Dublin 18 Licence No: 160301

TIME	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	0.831	6.0
07:00-08:00	0.553	4.0
08:00-09:00	0.853	6.1
09:00-10:00	1.312	9.4
10:00-11:00	0.949	6.8
11:00-12:00	0.589	4.2
12:00-13:00	0.544	3.9
13:00-14:00	0.594	4.3
14:00-15:00	0.580	4.2
15:00-16:00	0.898	6.4
16:00-17:00	1.225	8.8
17:00-18:00	1.606	11.5
18:00-19:00	1.554	11.2
19:00-20:00	1.034	7.4
20:00-21:00	0.601	4.3
21:00-22:00	0.157	1.1
22:00-23:00	0.050	0.4
23:00-24:00		



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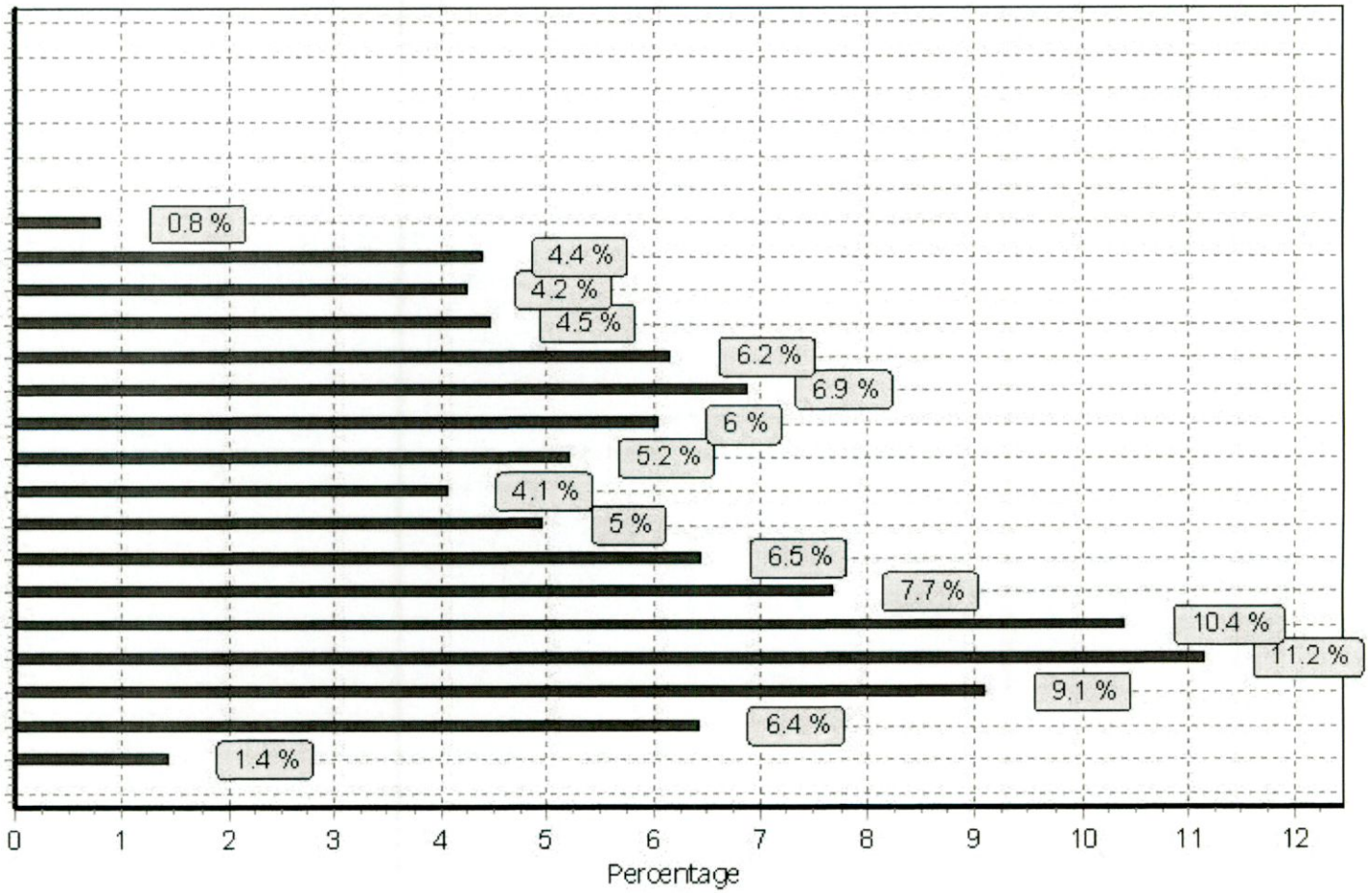
TIME	RATE	%
00:00-01:00		
01:00-02:00		
02:00-03:00		
03:00-04:00		
04:00-05:00		
05:00-06:00		
06:00-07:00	0.111	0.8
07:00-08:00	0.608	4.4
08:00-09:00	0.586	4.2
09:00-10:00	0.617	4.5
10:00-11:00	0.852	6.2
11:00-12:00	0.951	6.9
12:00-13:00	0.834	6.0
13:00-14:00	0.721	5.2
14:00-15:00	0.561	4.1
15:00-16:00	0.685	5.0
16:00-17:00	0.892	6.5
17:00-18:00	1.062	7.7
18:00-19:00	1.439	10.4
19:00-20:00	1.540	11.2
20:00-21:00	1.256	9.1
21:00-22:00	0.888	6.4
22:00-23:00	0.200	1.4
23:00-24:00		



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.

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.25	9.09	0.3	A
C-AB	0.19	7.09	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	92	560	0.164	91	0.2	7.668	A
C-AB	80	618	0.130	80	0.2	6.680	A
C-A	168			168			
A-B	29			29			
A-C	94			94			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	110	548	0.200	109	0.2	8.211	A
C-AB	98	622	0.157	97	0.2	6.860	A
C-A	199			199			
A-B	35			35			
A-C	112			112			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	134	531	0.253	134	0.3	9.068	A
C-AB	123	631	0.195	123	0.3	7.087	A
C-A	240			240			
A-B	43			43			
A-C	138			138			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	134	531	0.253	134	0.3	9.085	A
C-AB	123	631	0.195	123	0.3	7.094	A
C-A	240			240			
A-B	43			43			
A-C	138			138			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	110	548	0.200	110	0.3	8.235	A
C-AB	98	622	0.157	98	0.2	6.871	A
C-A	199			199			
A-B	35			35			
A-C	112			112			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	92	560	0.164	92	0.2	7.704	A
C-AB	80	618	0.130	81	0.2	6.701	A
C-A	168			168			
A-B	29			29			
A-C	94			94			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

Filename: 2039 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2022\22-027 DS Kilnamanagh\Calculations\Western Access Capacity
Report generation date: 06/07/2022 15:24:22

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2039							
Stream B-AC	0.2	8.55	0.16	A	0.4	9.99	0.30	A
Stream C-AB	0.2	7.66	0.15	A	0.3	7.27	0.23	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	19/04/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2039	AM	ONE HOUR	07:45	09:15	15
D2	2039	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	1.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Treespark N		Major
B	DS Access		Minor
C	Treespark S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	377	100.000
B		✓	74	100.000
C		✓	237	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	52	325
	B	25	0	49
	C	166	71	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.16	8.55	0.2	A
C-AB	0.15	7.66	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	56	544	0.102	55	0.1	7.360	A
C-AB	55	569	0.096	54	0.1	6.985	A
C-A	124			124			
A-B	39			39			
A-C	245			245			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	67	527	0.126	66	0.1	7.822	A
C-AB	66	561	0.117	66	0.1	7.263	A
C-A	147			147			
A-B	47			47			
A-C	292			292			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	81	502	0.162	81	0.2	8.547	A
C-AB	82	553	0.149	82	0.2	7.653	A
C-A	179			179			
A-B	57			57			
A-C	358			358			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	81	502	0.162	81	0.2	8.554	A
C-AB	82	553	0.149	82	0.2	7.660	A
C-A	179			179			
A-B	57			57			
A-C	358			358			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	67	527	0.126	67	0.1	7.833	A
C-AB	66	561	0.117	66	0.1	7.275	A
C-A	147			147			
A-B	47			47			
A-C	292			292			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	56	544	0.102	56	0.1	7.377	A
C-AB	55	569	0.096	55	0.1	7.002	A
C-A	124			124			
A-B	39			39			
A-C	245			245			

2039, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	3.28	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	2039	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	190	100.000
B		✓	141	100.000
C		✓	384	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	45	145
	B	60	0	81
	C	265	119	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.30	9.99	0.4	A
C-AB	0.23	7.27	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	106	550	0.193	105	0.2	8.077	A
C-AB	94	622	0.151	93	0.2	6.811	A
C-A	195			195			
A-B	34			34			
A-C	109			109			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	127	536	0.237	126	0.3	8.791	A
C-AB	115	628	0.183	115	0.2	7.014	A
C-A	230			230			
A-B	40			40			
A-C	130			130			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	155	516	0.301	155	0.4	9.966	A
C-AB	146	642	0.228	146	0.3	7.264	A
C-A	277			277			
A-B	50			50			
A-C	160			160			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	155	515	0.301	155	0.4	9.994	A
C-AB	146	642	0.228	146	0.3	7.273	A
C-A	277			277			
A-B	50			50			
A-C	160			160			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	127	536	0.237	127	0.3	8.826	A
C-AB	115	628	0.183	115	0.2	7.028	A
C-A	230			230			
A-B	40			40			
A-C	130			130			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	106	550	0.193	106	0.2	8.126	A
C-AB	94	622	0.151	94	0.2	6.834	A
C-A	195			195			
A-B	34			34			
A-C	109			109			

NRB consulting engineers

APPENDIX F

PiCADY Model Output
Existing Eastern Site Access T-Junction

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

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2024 Opening Year AM Peak Hr	0.3	0.22
2024 Opening Year PM Peak Hr	0.7	0.43
2039 Design Year AM Peak Hr	0.4	0.27
2039 Design Year PM Peak Hr	1	0.51

All Results Above are WAY below the recommended RFC of 0.85 (85% Capacity) and therefore no problems whatsoever are anticipated at the Junction in terms of Capacity or excessive vehicle Queues

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

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: 2024 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2022\22-027 DS Kilnamanagh\Calculations\Eastern Access Capacity
Report generation date: 06/07/2022 15:28:07

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2024							
Stream B-AC	0.3	9.37	0.22	A	0.7	13.20	0.43	B
Stream C-AB	0.1	6.92	0.08	A	0.1	7.22	0.06	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	19/04/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	07:45	09:15	15
D2	2024	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Eastern Site Access	T-Junction	Two-way	1.91	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Treespark S		Major
B	DS Access		Minor
C	Treespark N		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	295	100.000
B		✓	100	100.000
C		✓	235	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	96	199
	B	59	0	41
	C	197	38	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.22	9.37	0.3	A
C-AB	0.08	6.92	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	75	528	0.143	75	0.2	7.936	A
C-AB	29	580	0.050	29	0.1	6.535	A
C-A	148			148			
A-B	72			72			
A-C	150			150			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	90	514	0.175	90	0.2	8.489	A
C-AB	35	573	0.061	35	0.1	6.695	A
C-A	176			176			
A-B	86			86			
A-C	179			179			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	110	494	0.223	110	0.3	9.367	A
C-AB	43	564	0.076	43	0.1	6.914	A
C-A	216			216			
A-B	106			106			
A-C	219			219			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	110	494	0.223	110	0.3	9.374	A
C-AB	43	564	0.076	43	0.1	6.916	A
C-A	216			216			
A-B	106			106			
A-C	219			219			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	90	514	0.175	90	0.2	8.509	A
C-AB	35	573	0.061	35	0.1	6.700	A
C-A	176			176			
A-B	86			86			
A-C	179			179			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	75	528	0.143	75	0.2	7.967	A
C-AB	29	580	0.050	29	0.1	6.539	A
C-A	148			148			
A-B	72			72			
A-C	150			150			

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Eastern Site Access	T-Junction	Two-way	3.73	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	386	100.000
B		✓	184	100.000
C		✓	135	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	159	227
	B	133	0	51
	C	107	28	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.43	13.20	0.7	B
C-AB	0.06	7.22	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	139	509	0.272	137	0.4	9.631	A
C-AB	21	559	0.038	21	0.0	6.695	A
C-A	80			80			
A-B	120			120			
A-C	171			171			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	165	495	0.334	165	0.5	10.902	B
C-AB	25	546	0.046	25	0.0	6.909	A
C-A	96			96			
A-B	143			143			
A-C	204			204			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	203	475	0.426	202	0.7	13.110	B
C-AB	31	530	0.059	31	0.1	7.218	A
C-A	117			117			
A-B	175			175			
A-C	250			250			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	203	475	0.426	203	0.7	13.196	B
C-AB	31	530	0.059	31	0.1	7.218	A
C-A	117			117			
A-B	175			175			
A-C	250			250			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	165	495	0.334	166	0.5	10.979	B
C-AB	25	546	0.046	25	0.0	6.913	A
C-A	96			96			
A-B	143			143			
A-C	204			204			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	139	509	0.272	139	0.4	9.734	A
C-AB	21	559	0.038	21	0.0	6.701	A
C-A	80			80			
A-B	120			120			
A-C	171			171			

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: 2039 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2022\22-027 DS Kilnamanagh\Calculations\Eastern Access Capacity
Report generation date: 06/07/2022 15:30:41

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2039							
Stream B-AC	0.4	10.34	0.27	B	1.0	16.12	0.51	C
Stream C-AB	0.1	7.10	0.09	A	0.1	7.50	0.07	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	19/04/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2039	AM	ONE HOUR	07:45	09:15	15
D2	2039	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Eastern Site Access	T-Junction	Two-way	2.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Treespark S		Major
B	DS Access		Minor
C	Treespark N		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	343	100.000
B		✓	116	100.000
C		✓	274	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	111	232
	B	69	0	47
	C	230	44	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.27	10.34	0.4	B
C-AB	0.09	7.10	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	87	515	0.170	87	0.2	8.384	A
C-AB	34	574	0.059	33	0.1	6.663	A
C-A	173			173			
A-B	84			84			
A-C	175			175			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	104	499	0.209	104	0.3	9.118	A
C-AB	41	566	0.072	41	0.1	6.851	A
C-A	206			206			
A-B	100			100			
A-C	209			209			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	128	476	0.268	127	0.4	10.316	B
C-AB	51	557	0.091	50	0.1	7.103	A
C-A	251			251			
A-B	122			122			
A-C	255			255			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	128	476	0.268	128	0.4	10.344	B
C-AB	51	557	0.091	51	0.1	7.104	A
C-A	251			251			
A-B	122			122			
A-C	255			255			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	104	499	0.209	105	0.3	9.150	A
C-AB	41	566	0.072	41	0.1	6.854	A
C-A	206			206			
A-B	100			100			
A-C	209			209			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	87	515	0.170	88	0.2	8.429	A
C-AB	34	574	0.059	34	0.1	6.672	A
C-A	173			173			
A-B	84			84			
A-C	175			175			

2039, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Eastern Site Access	T-Junction	Two-way	4.49	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	2039	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	448	100.000
B		✓	213	100.000
C		✓	157	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	183	265
	B	154	0	59
	C	125	32	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.51	16.12	1.0	C
C-AB	0.07	7.50	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	160	497	0.322	158	0.5	10.564	B
C-AB	24	548	0.044	24	0.0	6.865	A
C-A	94			94			
A-B	138			138			
A-C	200			200			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	191	481	0.398	191	0.6	12.381	B
C-AB	29	534	0.054	29	0.1	7.122	A
C-A	112			112			
A-B	165			165			
A-C	238			238			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	235	458	0.512	233	1.0	15.921	C
C-AB	36	516	0.070	36	0.1	7.498	A
C-A	137			137			
A-B	201			201			
A-C	292			292			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	235	458	0.513	234	1.0	16.116	C
C-AB	36	516	0.070	36	0.1	7.498	A
C-A	137			137			
A-B	201			201			
A-C	292			292			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	191	481	0.398	193	0.7	12.569	B
C-AB	29	535	0.054	29	0.1	7.124	A
C-A	112			112			
A-B	165			165			
A-C	238			238			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	160	497	0.322	161	0.5	10.730	B
C-AB	24	548	0.044	24	0.0	6.871	A
C-A	94			94			
A-B	138			138			
A-C	200			200			

NRB consulting engineers

APPENDIX G

Preliminary Mobility Management Plan/Travel Plan

consulting engineers

NRB

Development Travel Plan
(Mobility Management Plan)

Appendix G

For

Proposed

Amendments/New Elements

At

Kilnamanagh Shopping Cntre,

Treepark Rd/Mayberry Rd,

Kilnamanagh Dublin 24.

SUBMISSION ISSUE

1st Floor, Apollo Building, Dundrum Road, Dundrum, Dublin 14
Tel: +353 1 292 1941, E-mail: info@nrb.ie, Web: www.nrb.ie

Registered in Ireland No. 491679

Contents

1.0 INTRODUCTION

1.1 NRB Consulting Engineers have been commissioned to prepare an outline Mobility Management Plan (MMP, also known as a Travel Plan) for Kilnamanagh Shopping Centre (including the proposed Gym & Health Centre) located at Treepark Rd/Mayberry Rd, Kilnamanagh.

1.2 The intention is that subject to planning and once a Staff Questionnaire is undertaken, specific and achievable travel mode share targets for the site will be set, together with proposed measures to be introduced and implemented.

1.3 These measures and recommendations for the implementation of a working MMP are in accordance with the ***National Transport Authority Guidance for Workplace Travel Planning***.

What is a Mobility Management Plan?

1.4 Mobility Management Plans (MMPs) or Travel Plans 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.

1.5 MMPs consist of a package of measures put in place by an organisation to encourage and support more sustainable travel patterns amongst staff (and in some cases amongst other visitors). For Dunnes Stores, such a plan concentrates primarily on staff commuting patterns.

1.6 In essence, the MMP 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 modes such as buses and trains.

Aims and Objectives of this Mobility Management Plan

1.7 The Kilnamanagh Shopping Centre MMP package will include measures to promote and improve the attractiveness of using public transport, cycling, walking, car sharing, flexible working where feasible or a combination of these, as alternatives to single-occupancy car journeys to work. This MMP also identifies the nominated Mobility Manager and sets out strategies, targets and measurable goals for them to effect change to established travel behaviour.

1.8 The MMP considers all travel associated with the work site. It is considered as a dynamic process where a package of measures and campaigns are identified, piloted, and monitored on an on-going basis. This MMP also recognises the fact that, for some employees, car use is often essential as part of the home to work commute, as the work commute is often combined with other important trips (for example having to drop children to school or crèche on the way).

1.9 The changes which are being sought as part of this 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.

1.10 It is envisaged that once in place, the MMP will enable the following benefits to be realised for Kilnamanagh Shopping Centre:

- Reduced staff 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,
- Resulting improved safety for pedestrians, with reduced staff cars,
- Direct financial savings for those taking part in the developed initiatives, through higher-than-average vehicle occupancy rates,
- A reduction in staff car parking required and car set-down demand, resulting in improved operational efficiency and safety for all,
- Improved staff social networking between all those participating in the shared initiatives, resulting in improved relationships between staff and management,
- Improved environmental consideration and performance,
- Improved public image for the development, which sets an example to the broader community and may lead to staff making better travel decisions in the future,
- Improved health and well-being for those using active non-car transport modes,
- On-going liaison with South Dublin County Council and public transport providers to maintain, improve, and support transportation linkages with the site,
- Improved attractiveness of the development to prospective staff,
- Optimal levels of safety for all staff and visitors.

Methodology

1.11 As part of this Mobility Management Plan, reference has been made to the following documents:

- Work Place Travel Plans - A Guide for Implementers (NTA),
- Your Step By Step Guide To Travel Plans (NTA 2012),
- Achieving Effective Workplace Travel Plans (NTA 2011),
- Traffic and Transport Assessment Guidelines (TII),
- Traffic Management Guidelines (DoELG, 2003),
- Mobility Management Plans – DTO Advice Note (DTO, 2002),
  The Route to Sustainable Commuting (DTO 2001),
- Smarter Travel: A Sustainable Transport Future (DOT)

1.12 Consultation with key stakeholders is an essential part of any MMP. To this end, at the outset all staff will be asked to complete a detailed questionnaire to explore the existing travel patterns - data which will then be used both to determine the MMP Strategies and also to provide a benchmark from which to measure success.

1.13 The information collected will be used as the basis for the assessment, conclusions, and recommendations of the MMP.

1.14 The Plan includes the nomination of a dedicated **Mobility Manager** who will be the point of contact responsible for implementation, delivery, and monitoring of the MMP.

2.0 ACCESS TO THE SITE - BY MODE

2.1 Dunnes Stores Kilnamanagh is designated as a District Shopping Centre. The entire development currently comprises the Dunnes Stores Unit and a range of other complimentary ancillary shops and uses located in a typical mall arrangement. The now-proposed development includes the addition of a Health Centre and a Gym, both of which will have employees. A location plan is shown below as ***Figure 2.1***.

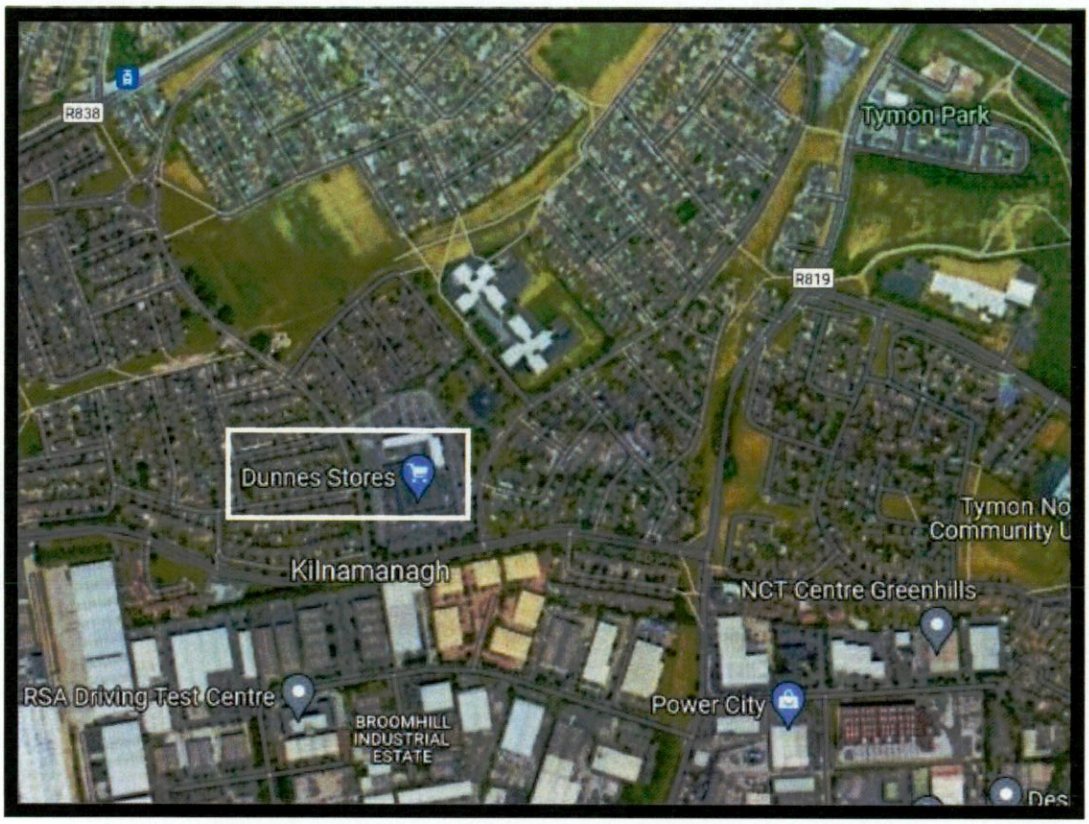


Figure 2.1 –Kilnamanagh Shopping Centre; Site Location

2.2 In terms of vehicular access, the site is accessed from both the east and west vis Treepark Road. Pedestrian and cyclists access is provided on both east and west and on the southern boundary on Mayberry Road, representing a highly permeable and accessible local facility.

Cycling and Walking Facilities

2.3 At present, pedestrian/cycle traffic at/to the existing site is served by an extensive network of footpaths and formal and informal but improving cycle lanes/facilities. These are ever improving, and of course the nature of Active Travel promotion is that the GDA cycle network will be rolled out as the nature of the environment changes and improves. There is clearly scope to provide the facilities to create the plan as set out in the NTA's GDA Cycle Network Plan for this area of Dublin. An extract from the plan is as illustrated in ***Figure 2.1*** below.

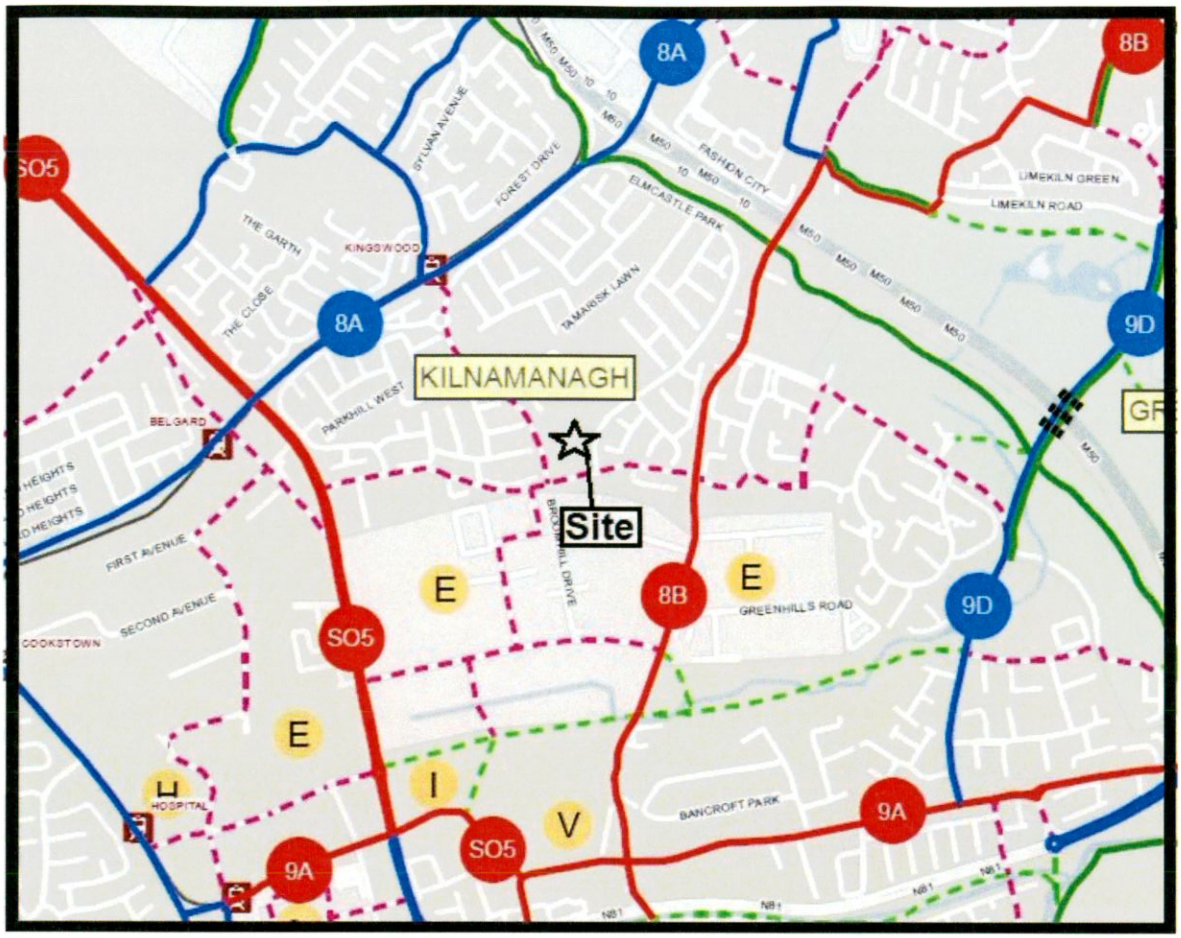


Figure 2.1 – NTA's GDA Cycle Network, Showing the Site

2.4 In terms of the 'Legend' for this extract, this is included below as Figure 2.2

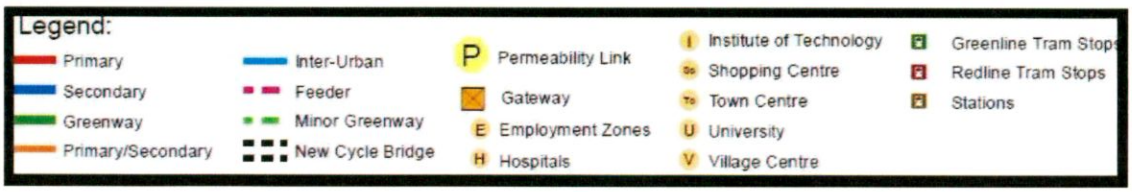


Figure 2.2 – Legend for NTA's GDA Cycle Network

2.5 The site is therefore ideally placed to take advantage of the Feeder Route serving the site, leading to 2 x Primary Routes on Belgard Road and Greenhills Road.

2.6 These Primary Routes and Greenways in turn feed into the overall GDA Network Plan, an extract of which is included below as ***Figure 2.3*** showing the site in context and demonstrating the cyclist permeability of the location to the overall Dublin City Area.

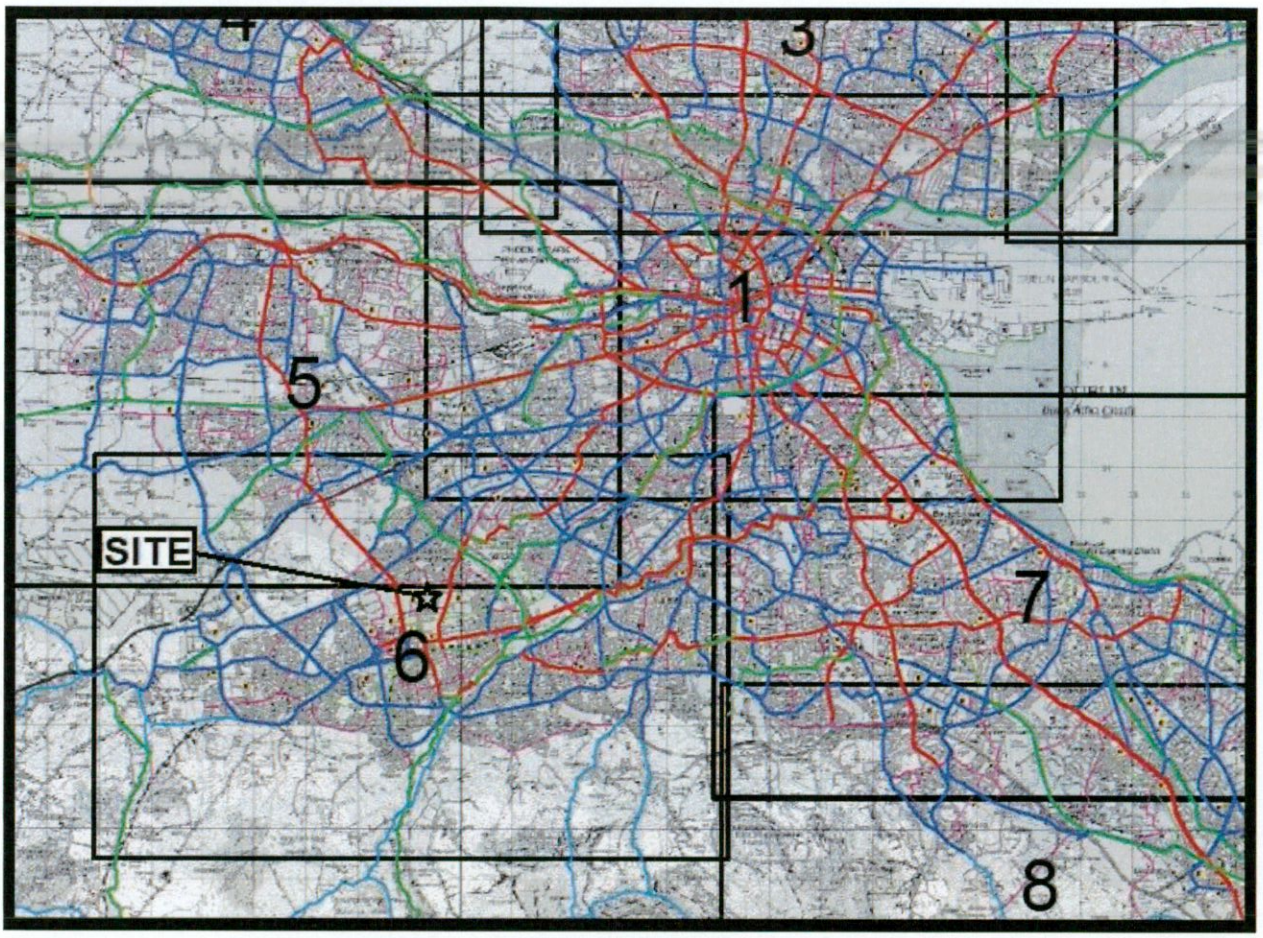


Figure 2.3 – Overall GDA Cycle Network Plan, Showing Site Location

2.7 The key to cycle accessibility is convenient safe links, with secure and carefully sited cycle parking. Cycling is ideal for shorter journeys. Cycle parking is provided within the site for customers and staff.

2.8 For journeys greater than 8km, it is 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.

2.9 To illustrate the extent of the GDA accessible by both Bicycle (8km) and on foot (2km) we have included below approximate 'Iso-Distance Mapping' for an 8km and 2km Radius from the site. These illustrate the extent of the employment, retail, and schools within sustainable travel distance of the site, as ***Figure 2.4*** and ***Figure 2.5***. In these terms, residents would not have a requirement to own a car, supporting sustainable living.

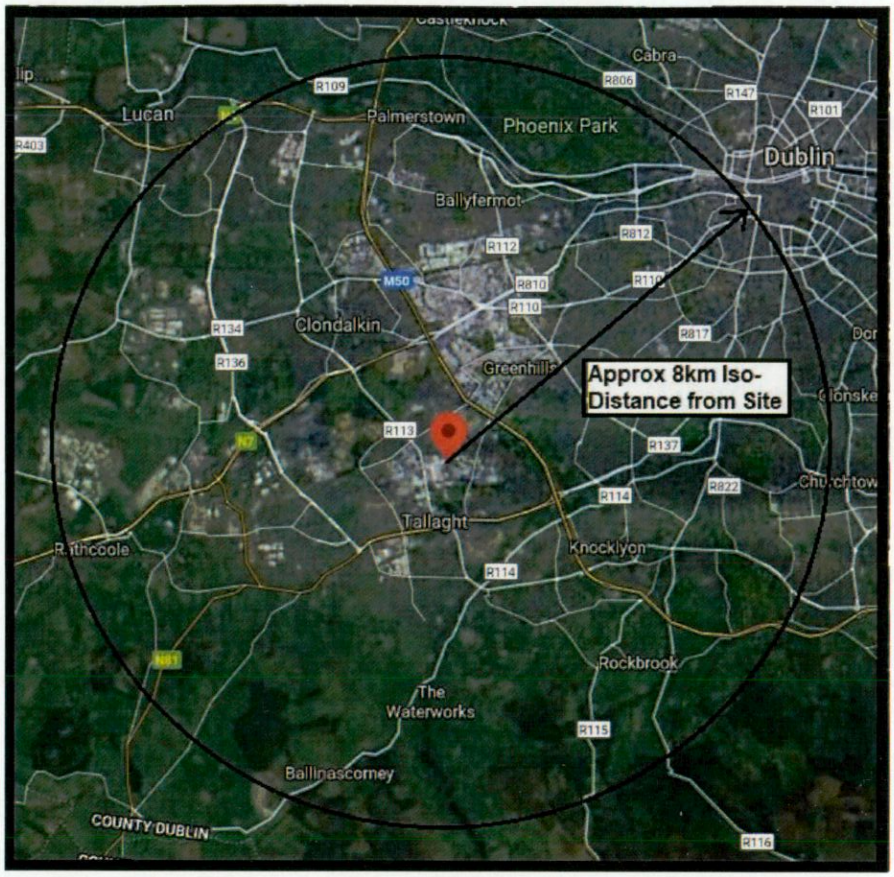


Figure 2.4 – 8km Radius Iso-Distance of the Site (Cycle)

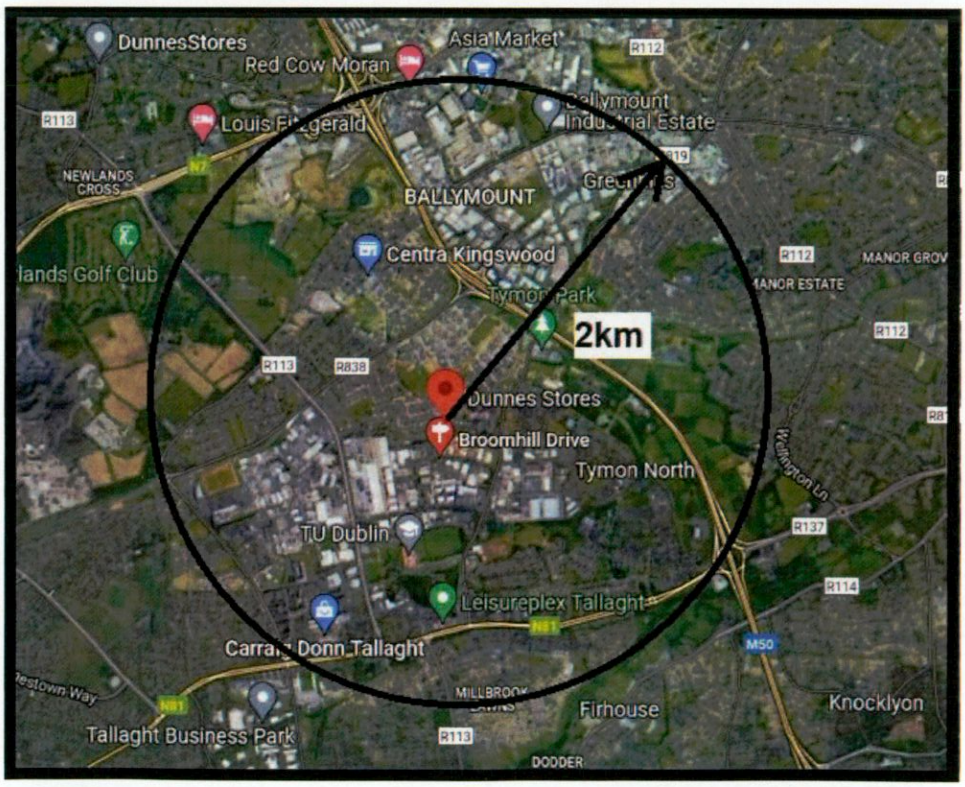


Figure 2.5 – 2km Radius Iso-Distance of the Site (Walk)

2.10 The site clearly can support sustainable living in terms of cycle and walking accessibility for a wide range of local staff as set out above.

2.11 Bicycle sharing facilities are becoming ever more popular with the Dublin Bikes and BleeperBike initiatives spreading ever further throughout the City and into Suburbs. These facilities offer a bicycle sharing alternative mode of transport and are easily accessible from the site.

Cycle Parking

2.12 It is expected that a significant number of staff are, or can be encouraged to cycle to work, with the safe links and secure parking that are in place. 30 new bicycle parking spaces are being provided as part of the current application (30 at the SE and 10 at the NE). The demand for bike racks will be monitored and additional provided if the necessary. Advice will be provided on routes, possibly with the help of a bicycle user group to be instigated by the Mobility Manager. This can be further facilitated in consultation with SDCC consistent with the Active Travel & Cycling Strategy. The SDCC Development Plan and Policy Documents vision is to cultivate a cycling culture, through the implementation of appropriate infrastructure and promotional measures, which positively encourages all members of the community to cycle at all life stages and abilities as a mode of sustainable transport that delivers environmental, health and economic benefits to both the individual and the community.

2.13 It is acknowledged that cyclists need to be confident that their cycles will not be tampered with while they are at work. With this in mind, the cycle parking is in locations with racks which allow both frame and wheels to be secured. These cycle racks are located in an active, well lit & security monitored place.

2.14 The arriving and departing cyclists may be required to dismount and walk through the operational car park with their cycles in a safe manner, as occurs without difficulty at similar facilities in cities throughout the world. Puncture repair kits, a basic tool kit and pump will be kept behind the information / reception desk, for the complimentary benefit of employees or customers/visitors

2.15 The Mobility Manager will organise Cycling Information Events and communicate same to employees through email, call-ins, and Staff Noticeboard/Reception notices.

BUS ACCESSIBILITY

2.16 The development is well placed to take advantage of the existing and future Dublin Bus and services, with existing stops within easy walking distance of the site. The location and proximity to the established bus stops and services (NB accurate at the time of writing) are illustrated on ***Figure 2.6*** below.

Figure 2.6 – Existing Dublin Bus Services

2.17 In addition to the stops adjacent the site on Belgard Road and Greenhills Road, there are a number of other Dublin Bus Stops operating locally, with the closest Terminus Points with multiple services being located on Belgard square North and Belgard Road. The services available at the time of writing are as outlined in ***Figure 2.7*** below.

Route	Description
27	Clare Hall - Jobstown
49	Pearse Street - Tallaght (The Square)
54a	Pearse St. - Ellensborough / Kiltipper Way
56a	Ringsend Rd. - Tallaght (The Square)
65	Poolbeg St. - Blessington / Ballymore
75	The Square Tallaght - Dun Laoghaire
76	Chapelizod - Tallaght (The Square)
76a	Blanchardstown Centre - Tallaght (The Square)
77a	Ringsend Rd. - Citywest

Figure 2.7 – Existing Dublin Bus Services Available

2.18 All of the Dublin Bus routes passing the development are operated using new low-floor wheelchair accessible city buses. Details of route, timetables and fares are provided on www.dublinbus.ie and on the Transport for Ireland National Journey Planner App.

2.19 Bus Éireann also has a stop on Belgard Square which is served by Route No 132, linking Dublin

Connolly with Bunclody in Co Wexford. Busarus is also accessible via the LUAS Red Line which is on the doorstep. The site is therefore highly accessible to a wide range of national mainline rail services serving all destinations around Ireland, and of course linking to Dublin Airport. The ***Airport Hopper*** Tallaght Mini Bus Service operates between The Square Tallaght Town Centre and Dublin Airport, on an approximate hourly basis over the course of the working day.

2.20 In terms of **Future Planned Services**, the NTA have recently published details of the overall bus network for the GDA, the 'New Dublin Area Network' - showing Spine Routes, Feeder and Orbital Routes. An extract from the NTA Plans showing the site location is included below as ***Figure 2.8.***

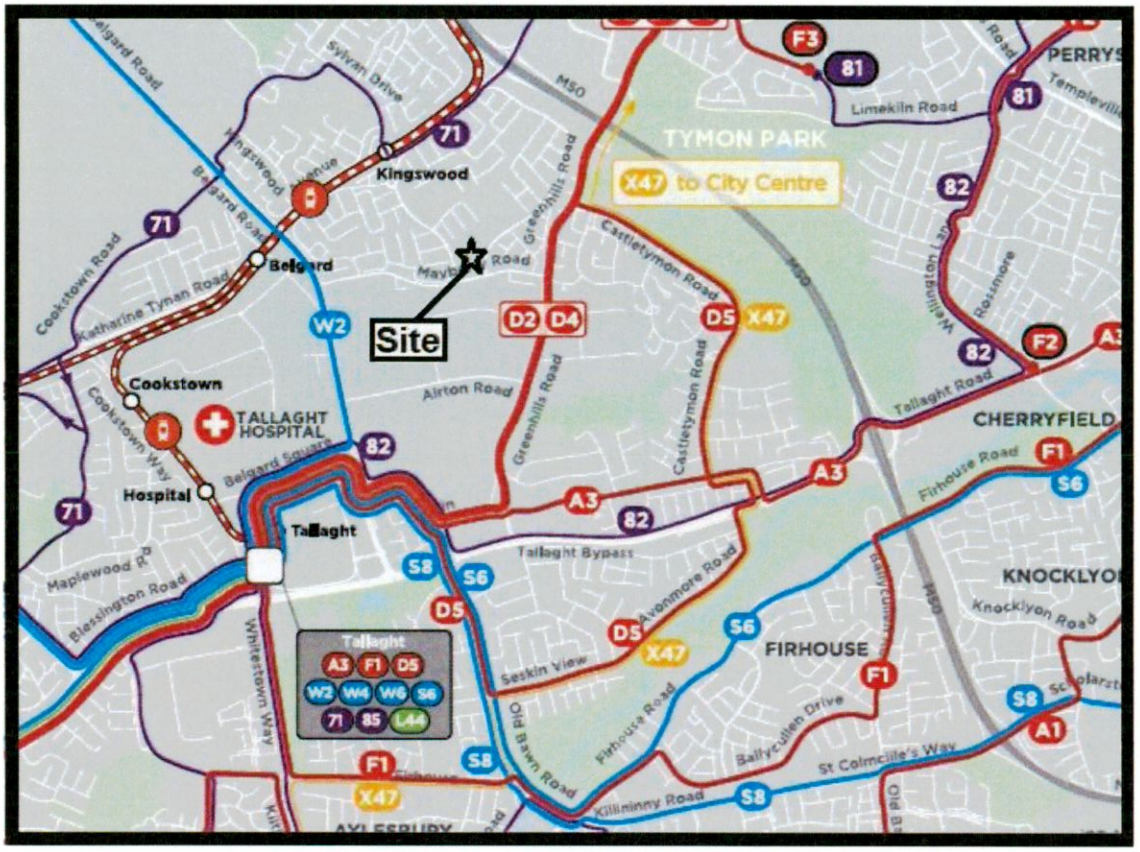


Figure 2.8 – NTA GDA New Dublin Area Network - Bus Services

2.21 This future network shows that the site's accessibility to bus services will be further enhanced, with a high frequency and permeable service to be provided via 2 'Main Spine Routes' provided on Greenhills Road a very short distance from the site.

LUAS

2.22 The LUAS Red Line stops (Cookstown & Belgard) are accessible to the site and high-quality improved pedestrian links are provided. LUAS has become a highly successful travel mode linking Tallaght with local areas and onwards to the city centre. It is a semi-segregated light rail tram service operating at street level but generally gets priority over motorised vehicles at junctions.

2.23 The LUAS Red Line serving the site provides a regular service between the 3 Arena/Connolly Station and Tallaght/Saggart with intermediate stops at key locations including Busarus, Heuston Station, Red Cow and City West. The normal day to day operating times are 05:30-24:00. The recently extended Green Line now provides a good degree of connectivity with the Red Line and their respective stops intersecting at O'Connell Street and Abbey Street.

2.24 The Green Line provides a service between Sandyford and Broombridge with intermediate stops at St Stephens Green, Westmoreland, Cabra, Phibsborough and Broadstone DIT. LUAS runs on a frequency of service which changes depending upon the time of day to adequately cater for demand. The proximity to LUAS is illustrated below as ***Figure 2.9.***

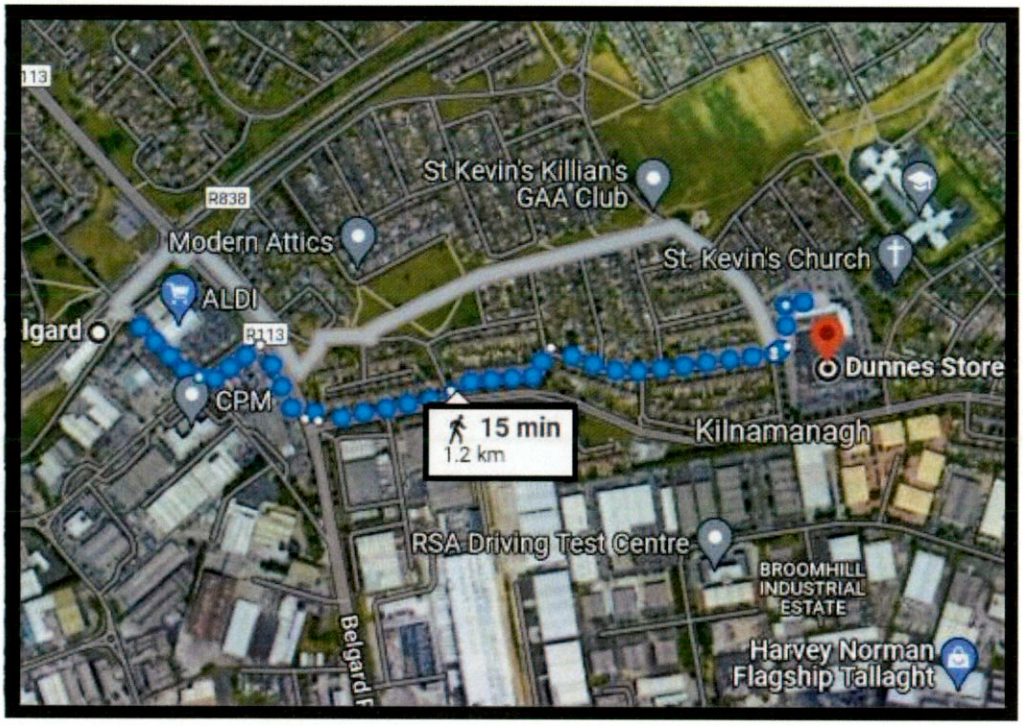


Figure 2.9 – Walk Distance/Proximity to LUAS Services at Belgard

MAINLINE BUS AND RAIL

2.25 Of course, with the high frequency existing and proposed bus & LUAS services to/from the city, the site is therefore also within easy reach of the mainline Nationwide Bus & Train Services - trains via Connolly & Heuston Stations and Buses via Busarus Terminus.

2.26 With ease of accessibility by Bus and Rail, and in particular with the high frequency existing bus services, and with the clear accessibility for walking and cycling, it is therefore considered that the site is highly sustainable in terms of public transport accessibility. The proximity of the site to existing public transport services means that staff and customers have viable alternatives to the private car for accessing the site and will not be reliant whatsoever upon the car as a primary mode of travel.

TAXI ACCESSIBILITY

2.27 In terms of taxis, modern communication devices (e.g., 'FreeNow' and 'Lynk') now allow taxis to be ordered on a demand-basis, without any requirement for formal taxi ranks or dedicated taxi holding areas. A significant number of customers use taxi services.

WALKING

2.28 The permeability locally for walking by staff and customers is addressed above – and of course, being within close proximity to the major centres of Tallaght and Ballymount (amongst others), this means that a very significant number of Schools, Services, Employment Destinations and Offices are also within an easy and acceptable commute of the site.

3.0 COLLECTION OF BASELINE INFORMATION

Travel Pattern Staff Questionnaires

3.1 The ***first step*** for the appointed Mobility Manager will be the collection of data by way of a Staff Questionnaire for all staff within the Centre. The aim of the travel questionnaire will be to establish current staff travel patterns. The information gathered from the survey will be the basis for the continued monitoring of the MMP.

3.2 Full details of a typical survey questionnaire will follow the recommendations and questionnaire format of the ***NTA's Step By Step Guide to Travel Plans***.

3.3 Analysis of the questionnaires will provide vital information in relation to the staffs current travel habits, between work and home. The results of the survey will indicate whether there is significant scope to improve the availability and attractiveness of non-car modes of travel for staff, and the measures that can be deployed in doing so.

3.4 It is informative to note that the "Smarter Travel: A Sustainable Transport Future" (DOT) Objective for 2020 is to achieve a reduced work-related commuting by car modal share of 65% to 45% nationally.

3.5 The staff response will indicate if these significant travel improvements are achievable, and what can be done to help achieve a change, however small. The mobility management plan will need to maintain an improving and positive modal split through continued intervention and targets by the Mobility Manager.

3.6 The mobility management plan is not seeking a radical and immediate change in terms of a modal shift, as it is recognised that the use of the car is often essential for many users. Instead, the mobility management plan seeks small but consistent increments of change annually in the approach to, and the use of, alternatives to the car.

4.0 IMPLEMENTING THE MMP & THE MOBILITY MANAGER

4.1 The successful implementation of a Mobility Management 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.

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 staff during peak times.

Walking

Walking - Key Information	
Approx. Zone of Influence	2.0km
Percentage of Staff Surveyed known to live in area of influence	TBC
Percentage of Staff interested in Walking	TBC

Table 4: Key Information - Walking

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

- **W** - Wake Up! - Studies have shown that staff who walk to work 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 to work can be a great way to meet other walkers, share the experience, and develop personal skills.
- **N** - New adventures - Walking to work 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 to and from work helps people incorporate physical activity into their daily routines. Research shows that regular physical activity can benefit your body and mind.

4.5 Most adults will consider walking a maximum of 2-3.0 km (Approx. 25/40 minutes) to work. Staff living within a 2-3.0 km radius of the site will be encouraged to walk to work as often as their schedule permits.

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 and from work public transport helps staff 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.

4.13 The following initiatives and incentives will be used to encourage staff to take public transport to work and will be implemented by the Mobility Manager during 2020:

- Encourage public transport use for business travel by encouraging same.
- Provide maps of local bus routes and the nearest bus stops, and the length of time it takes to walk to them,
- Contact local providers about issues such as location of existing and new bus stops, timing of routes, or where you have market information about a potential new route.

Car Sharing

Car Sharing – Key Information	
Approx. zone of influence	All Staff
Percentage of Staff Surveyed known to live in area of influence	TBC
Percentage of Staff currently Car Sharing	TBC

Table 7: Key Information - Car Sharing

4.14 Every day thousands of commuters drive to work 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 driver carried another driver, there would be 50% less cars on the road at peak times.

4.15 Although use of the car to get to work is essential for a large proportion of staff, car sharing schemes have the potential to deliver a reduction in private vehicle trips by promoting higher than average occupancy rates for each vehicle.

4.16 A car sharing scheme relies on a database containing staff domicile information, working hours, and their preferences such as gender/driver/passenger and their preferred route to and from work.

4.17 The car-sharing database can be a map showing where employees live, a database of car-sharers' details hosted on an organisations intranet site, or an on map-based matching website.

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

4.19 Encouraging more staff to share car journeys to work rather than driving alone, as well as encouraging more staff 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.

4.20 The following initiatives and incentives could be used to encourage car sharing and will be implemented by the Mobility Manager during 2020:

- Draw up a car-sharing policy for how the scheme will operate, and issue car-sharing permits to those qualifying to use the car-sharing spaces, which can be located nearer the store,
- 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.
- Encourage the use of existing online databases for car sharing. For example, the development could set up its own private car sharing site using www.carsharing.ie.
- Allocate the best staff parking spaces for use solely by car sharers, for example near to building entrances.

The Appointed Mobility Manager

4.21 The nominated and appointed Mobility Manager for Kilnamanagh Shopping Centre is:

Patrick O'Neill,
Property,
Dunnes Stores,
46-50 South Great Georges St.,
Dublin 2.
Direct Dial Telephone: 01 6112766

5.0 THE MMP ACTION PLAN

Background

5.1 Setting realistic targets and a sustained approach to the promotion of the mobility management 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 mobility management 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 the Plan's success and ensures that the targets remain realistic.

The Mobility Manager

5.4 The key objective of this mobility management plan is to ensure that the traffic impacts associated with the operation of Dunnes for staff are minimised. Achieving this objective will result in a wide array of benefits for the development and its stakeholders.

5.5 To ensure the mobility management plan is effective a mobility manager has been appointed for Kilnamanagh Shopping Centre. The appointed Manager is a key permanent employee of DS, the owners of the Centre.

5.6 The Mobility Manager (MM) will implement the clear strategies identified in Section 4.0 above, and as set out in the Action Plan Summary Table below:

Table 5.1: MMP Action Plan to end 2020

Mode	Incentive/Actions by MM	Action
Walking	1. Organise/Promote 'Walk on Wednesdays' 2. Provide Umbrellas in all Staff Areas 3. Walking Maps on Staff Notice-boards 4. Highlight annual Savings on same	MM
Cycling	1. Posters showing cycle parking to all Staff and Customers 2. Contact other Tenants to inform of Bike to Work Scheme 3. Clear Cycle Maps provided and displayed 4. organised 2 Cycle Information Lunchtime 5. Pump/Repair Kit at Reception 6. Organise 1 Bike Supplier Trial	MM
Public Transport	1. Encourage Alternative Transport for Business Travel by Staff 2. Provide Bus Maps and Routes to all Staff and Tenants 3. Contact local Bus Service Providers	MM
Car Sharing	1. Draw up and issue Tenant Car Sharing Draft Policy for possible adoption, including benefits accruing (as set out in Section 4 above)	MM

6.0 MONITORING AND REVIEW

6.1 The Mobility Manager will liaise with officials in the Planning Authority in writing on a bi-annual basis to provide an update with respect to the status of the Action Plan.

6.2 The intention is that, subject to planning, the entire Action Plan will be implemented by end Dec 2024.

6.3 In early December 2024, a new comprehensive Mode of Travel Survey will be undertaken of all Staff within Kilnamanagh Shopping Centre, and the results will be maintained to enable success of initiatives to be measured. Surveys will then be undertaken annually.

6.4 The results of the survey and the comparison with the Baseline information will be provided annually to SDCC in the form of a Kilnamanagh Shopping Centre MMP Status Report.

6.5 Part of this Report will be to set and agree a clear Action Plan annually, setting out objectives and incentives for the following year.

NRB consulting engineers

APPENDIX H

Stage 1 Independent Road Safety Audit
(incl Designer Feedback Form)

BRUTON CONSULTING ENGINEERS

Title: **Stage 1 ROAD SAFETY AUDIT**

For;

Proposed Amendments/New Elements at Dunnes Stores, Kilnamanagh

Client: **NRB Consulting Engineers**

Date: **July 2022**

Report reference: **1551R01**

VERSION: **FINAL (22-7-2022)**

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol
Clogherhead
Drogheda
Co. Louth.

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BRUTON CONSULTING ENGINEERS

CONTENTS SHEET

Contents

BRUTON CONSULTING ENGINEERS

1.0 Introduction

This report was prepared in response to a request from Mr. Eoin Reynolds, NRB Consulting Engineers, for a Stage 1 Road Safety Audit of the proposed amendments and new elements at the existing Dunnes Stores in Kilnamanagh, Tallaght, Dublin 24.

The Road Safety 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 Road Safety Audit involved the examination of drawings and other material provided by NRB and a site visit on the 7th of July 2022.

The weather at the time of the site visit was dry and the road surface was also dry.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

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 this safety audit report 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**.

A plan Drawings showing a revised layout with some minor changes and which has addressed the problems raised is contained in **Appendix D.**

BRUTON CONSULTING ENGINEERS

2.0 Background

It is proposed to make amendments to the existing Dunnes Stores shopping centre in Kilnamanagh. The amendments will include internal works and external works in the car park and service yard. There is expected to be a small increase in traffic volumes as a result of the proposed changes.

The existing priority junctions onto Treepark Road West and Treepark Road East are being maintained and the cyclist and pedestrian access from Mayberry Road is to be improved.

The site location is shown below.

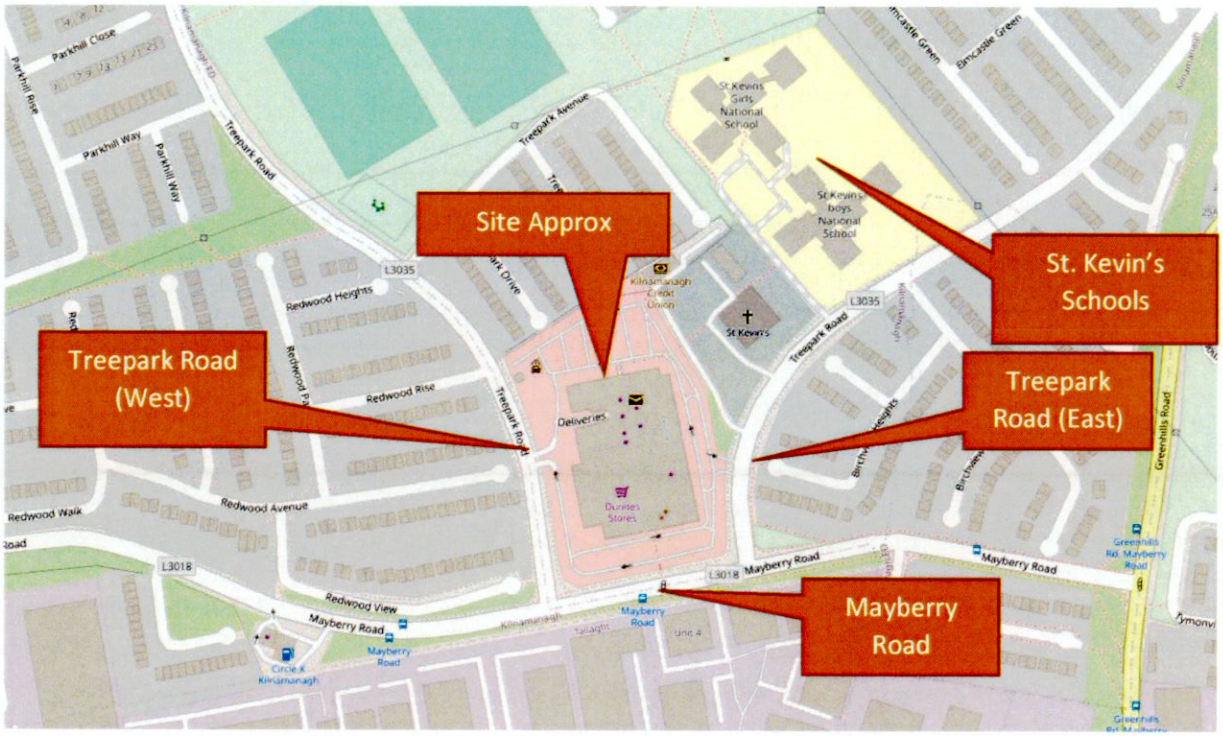


Image courtesy of openstreetmap.org

3.0 Items Raised in This Stage 1 Road Safety Audit.

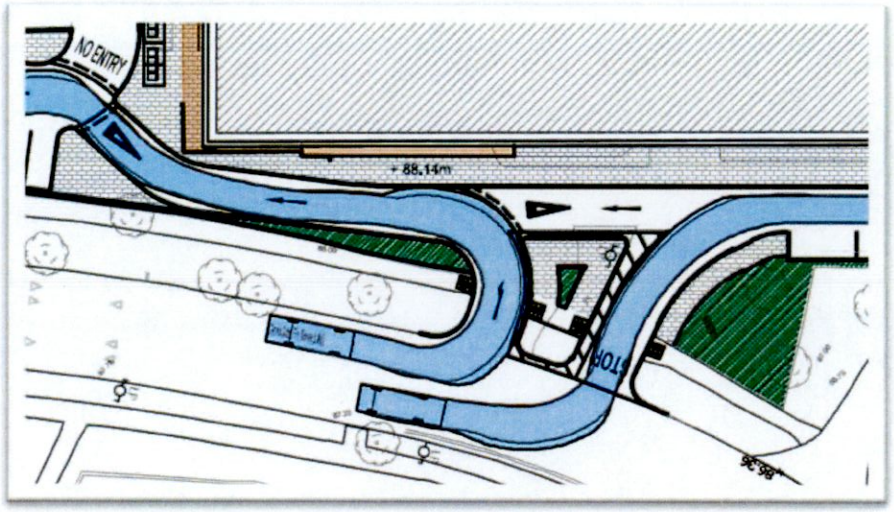
3.1 Problem

LOCATION

Drawing NRB-TA-003, Treepark Road (East)

PROBLEM

The is no clear route for pedestrians entering the site from Treepark Road (East) to get to the shopping centre's main entrance. This could lead to pedestrians stepping into the one-way carriageway and being at risk of getting struck by a passing vehicle.



RECOMMENDATION

Ensure a route is provided for pedestrians.

BRUTON CONSULTING ENGINEERS

4.0 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.

Norman Bruton **Signed:** Norman Bruton

(Audit Team Leader) **Dated:** 22-7-2022

Owen O'Reilly **Signed:** Owen O'Reilly

(Audit Team Member) **Dated:** 22-7-2022

Appendix A

List of Material Supplied for this Road Safety Audit;

- Drawing NRB TA-001
- Drawing NRB TA-002
- Drawing NRB TA-003
- Drawing NRB TA-004
- Drawing NRB TA-005
- Drawing DS-69-PL-09 Project Design Architects

List of Background Material Provided

- Audit Brief
- Transport Assessment Report (Draft), NRB dated 7th July 2022.

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Appendix B

Feedback Form

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: Dunnes Stores Kilnamanagh
Stage: 1 Road Safety Audit
Date Audit (Site Visit) Completed: 7-7-2022

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)
3.1	Yes	YEs	A Pedestrian Route together with associated DKs and Tactile Paving to safely lead pedestrians to the building perimeter to/from the central island has now been added, (Crossings leading to the building from where there is a clear unobstructed Route & pathway around the building).	

Signed..... **Date** 18 July 2022.
Design Team Leader

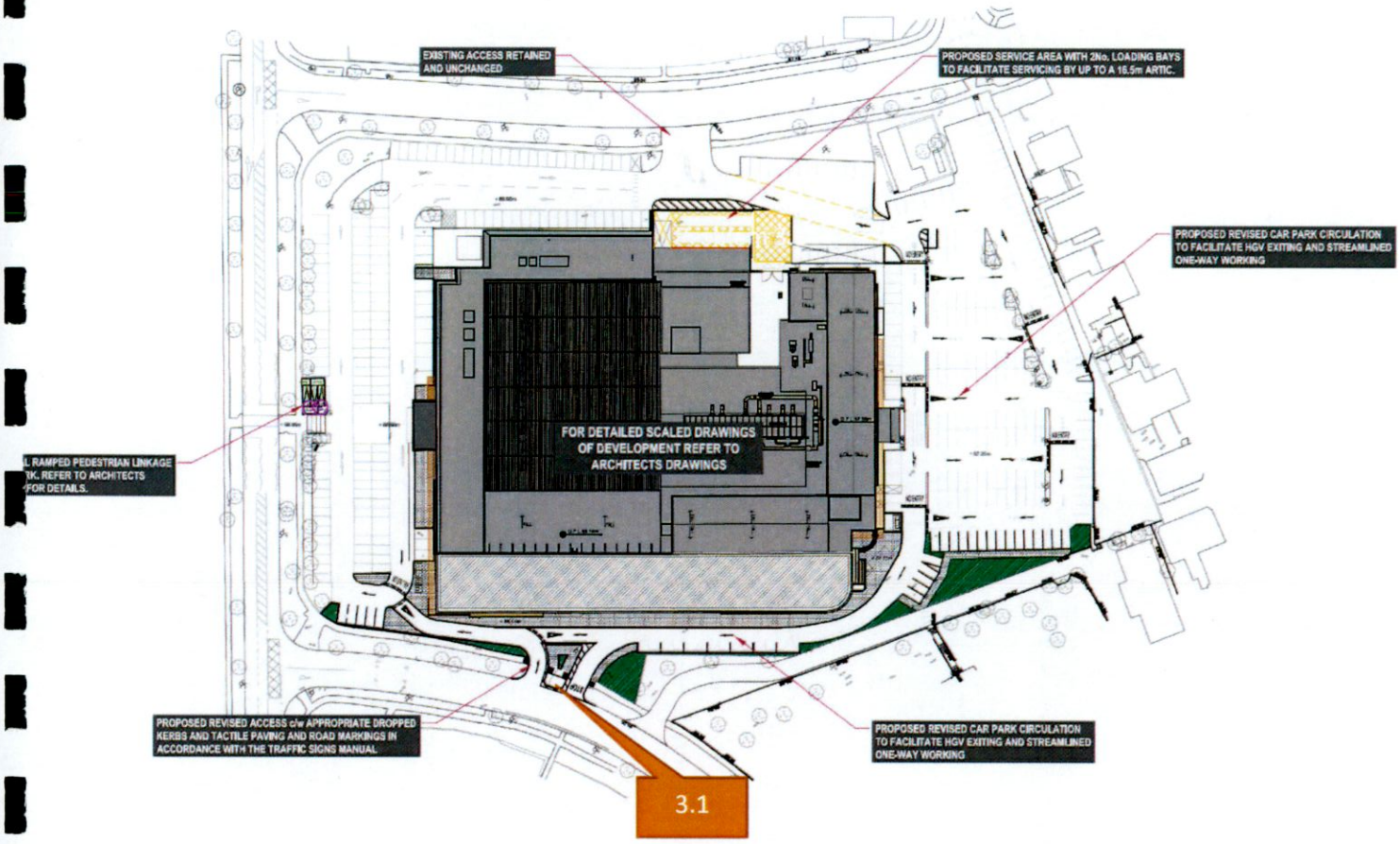
Signed..... **Date**..22-7-2022.....
Audit Team Leader

Signed..... **Date**..21/07/2022
for and on behalf of Better Value Unlimited Company
Employer/Developer

BRUTON CONSULTING ENGINEERS

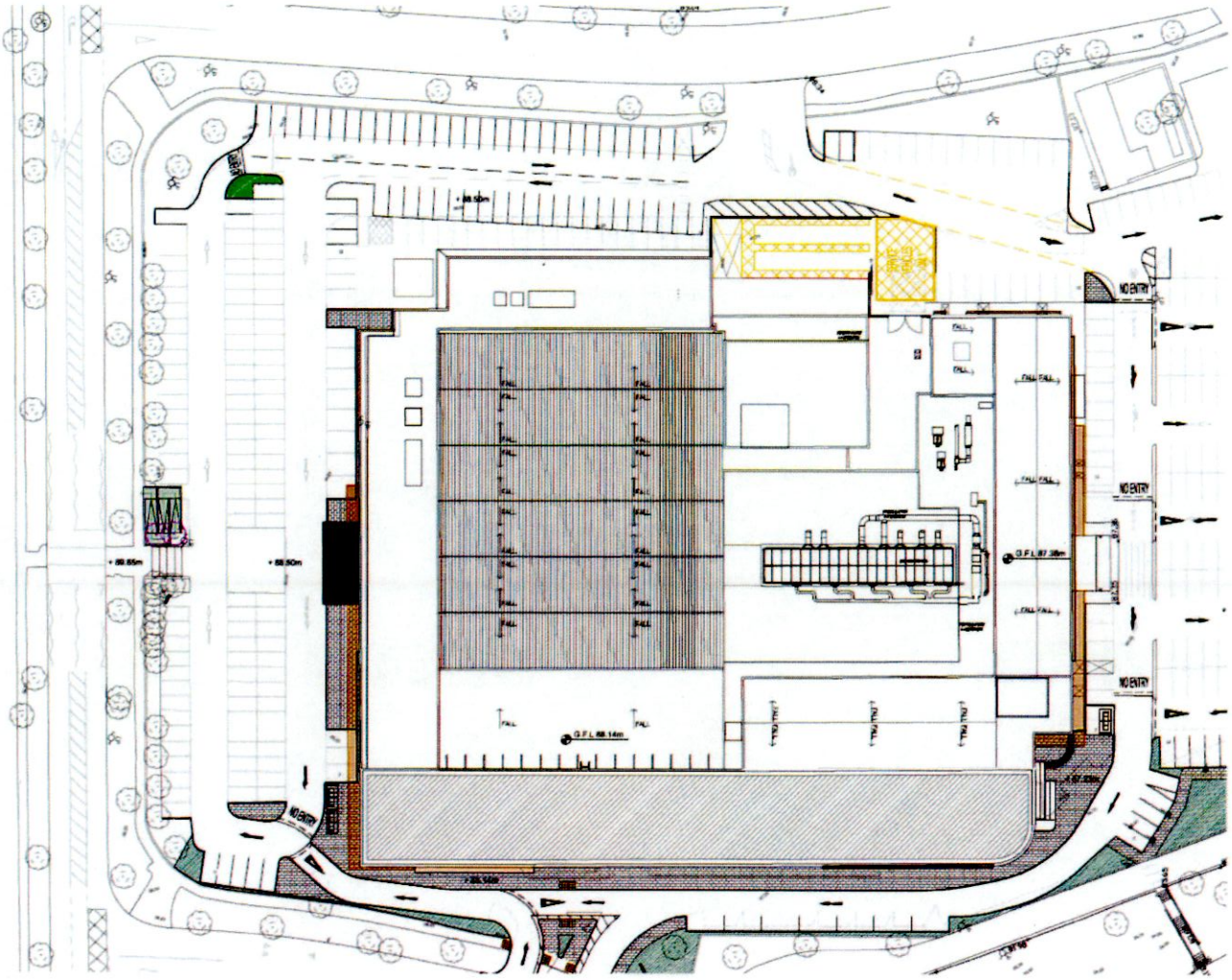
Appendix C

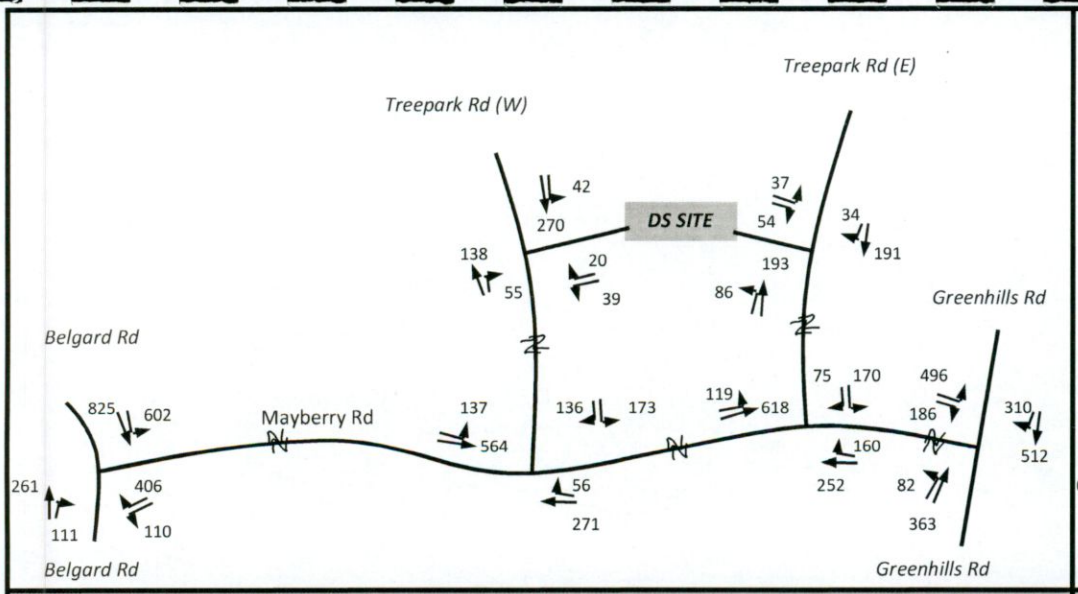
Problem Location Plan.


EXISTING ACCESS RETAINED AND UNCHANGED
PROPOSED SERVICE AREA WITH 2No. LOADING BAYS TO FACILITATE SERVICING BY UP TO A 16.5m ARTIC.
PROPOSED REVISED CAR PARK CIRCULATION TO FACILITATE HGV EXITING AND STREAMLINED ONE-WAY WORKING
L RAMPED PEDESTRIAN LINKAGE RK. REFER TO ARCHITECTS FOR DETAILS.
FOR DETAILED SCALED DRAWINGS OF DEVELOPMENT REFER TO ARCHITECTS DRAWINGS
PROPOSED REVISED ACCESS c/w APPROPRIATE DROPPED KERBS AND TACTILE PAVING AND ROAD MARKINGS IN ACCORDANCE WITH THE TRAFFIC SIGNS MANUAL
PROPOSED REVISED CAR PARK CIRCULATION TO FACILITATE HGV EXITING AND STREAMLINED ONE-WAY WORKING
3.1

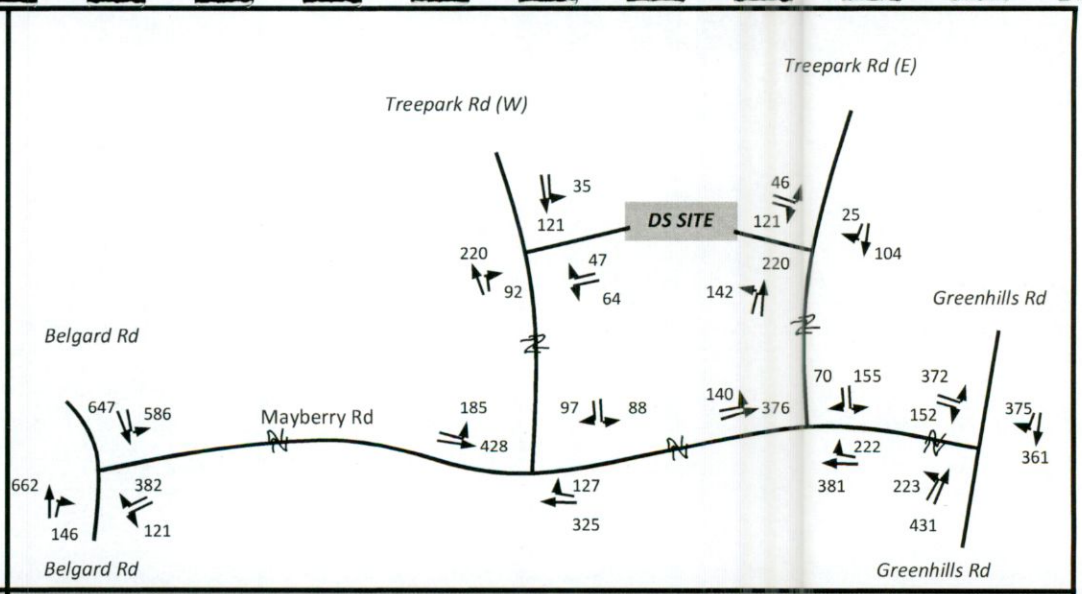
Appendix D

Updated Layout Plan





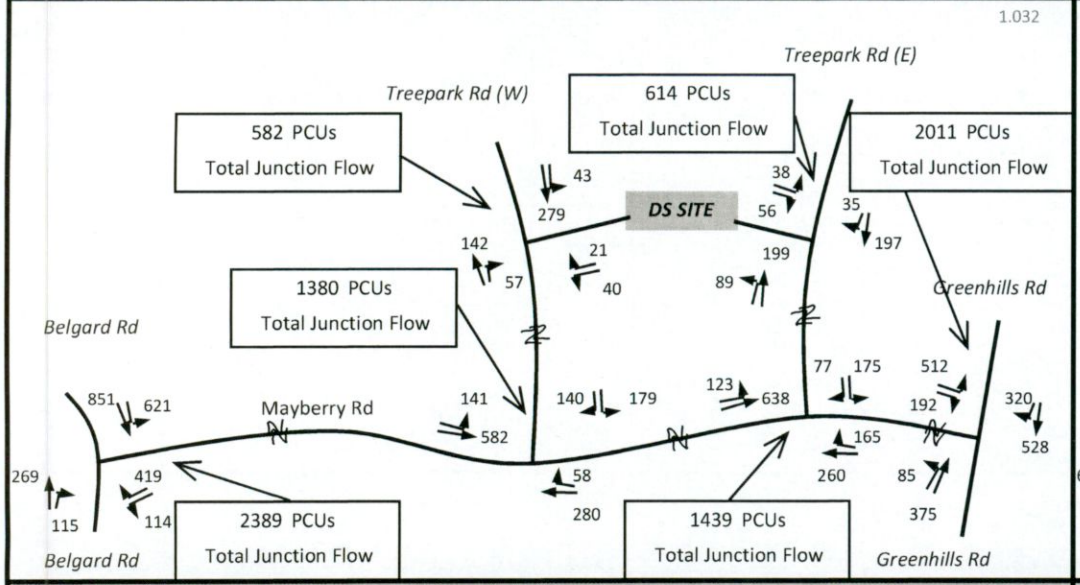
AM PEAK HR 8-9am



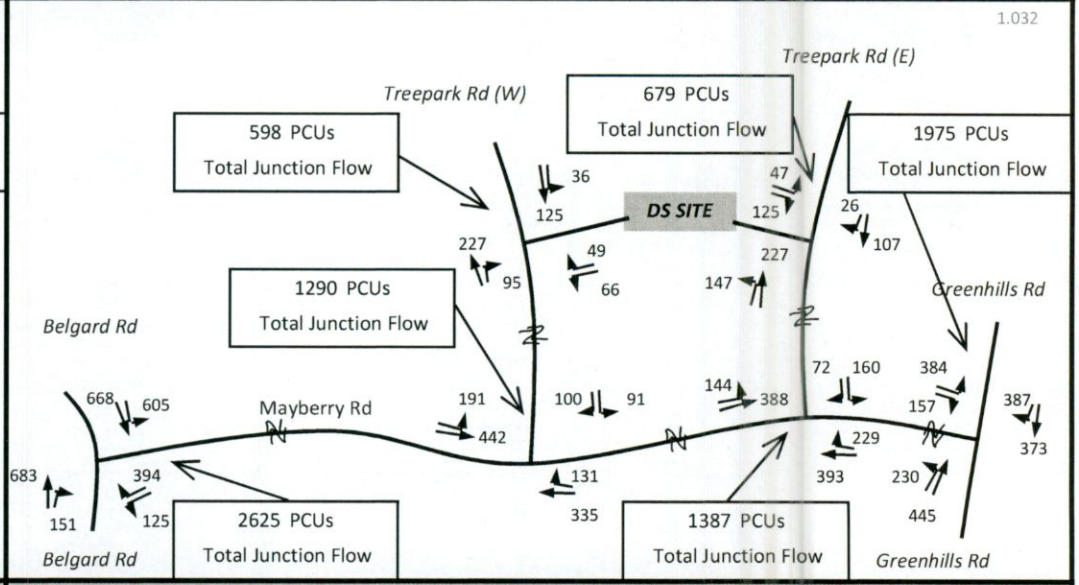
PM PEAK HR 5-6pm

Existing As Surveyed 2022 Traffic (PCUs) - WITHOUT NEW DEVELOPMENT (Refer Appendix B).

TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3	**2022 to 2024 = 1.032**
(Travel Demand Projections 2019, Table 6.1: Central Growth Rates: Annual Growth Factors Metropolitan Dublin)	**2024 to 2039 = 1.165**

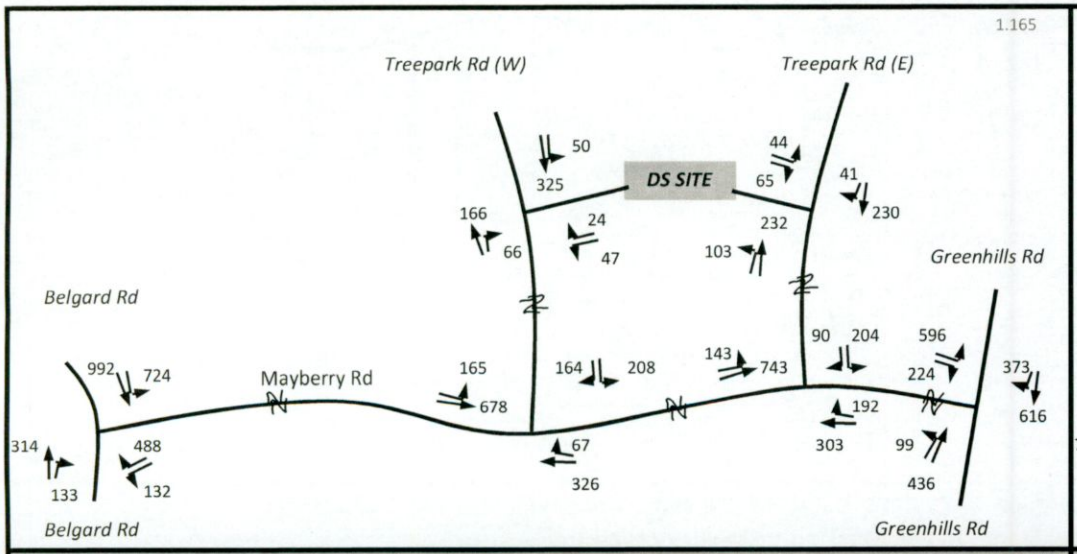


AM PEAK HR 8-9am

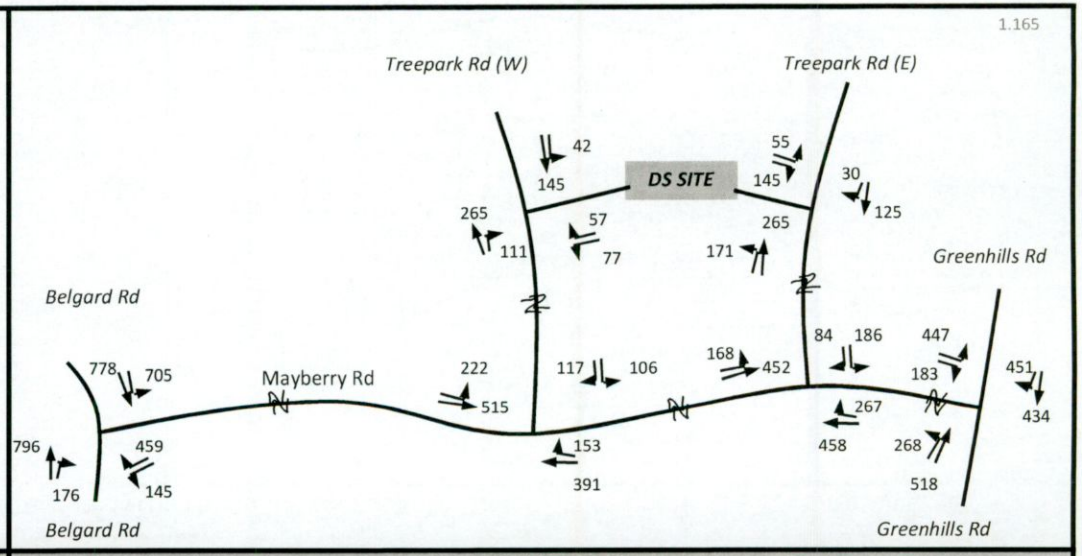


PM PEAK HR 5-6pm

Projected Selected Opening Year 2024 Weekday Peak Hour Traffic Volumes - TII Annual Growth Factors Applied (PCUs) - WITHOUT NEW DEVELOPMENT



AM PEAK HR 8-9am



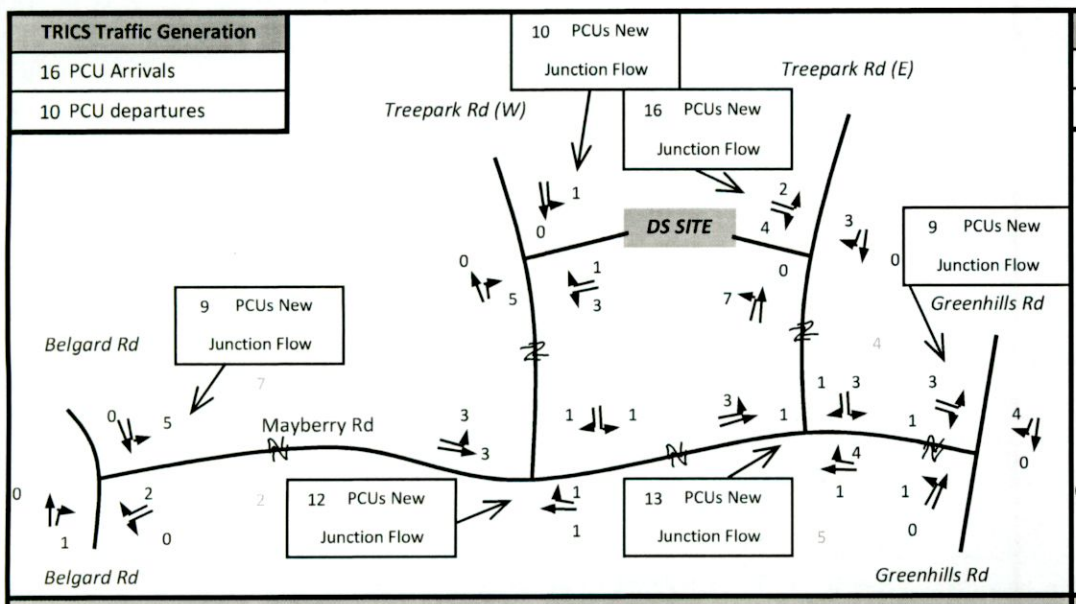
PM PEAK HR 5-6pm

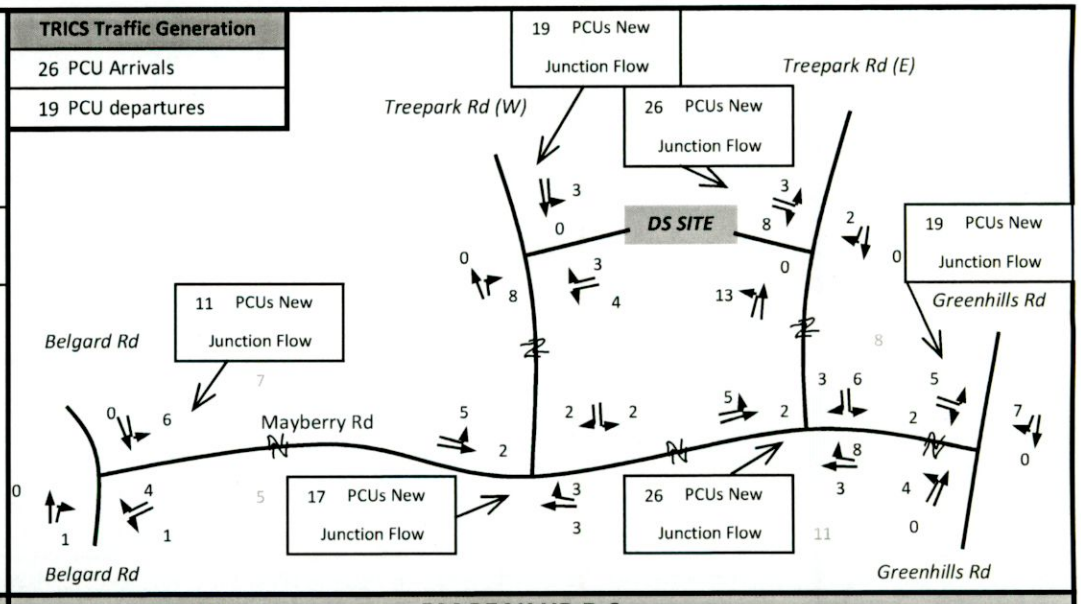
Associated Design Year 2039 Weekday Peak Hour Traffic Volumes - TII Annual Growth Factors Applied (PCUs) - WITHOUT NEW DEVELOPMENT

TRICS ASSESSMENT OF WORST-CASE TRAFFIC GENERATED BY PROPOSED DEVELOPMENT (Refer Output as Appendix C)

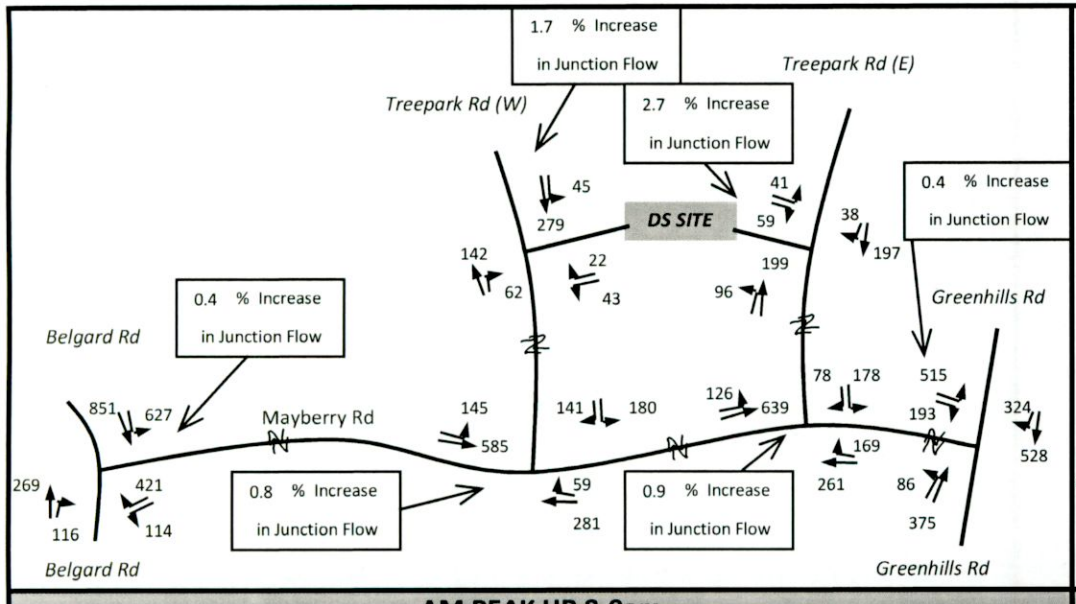
1678 m2 GFA Comp	Arrivals (PCUs)		Departures (PCUs)		Total 2-Way Vehicular Traffic Generated	
Network Hour	/100m2	Dev	/100m2	Dev		New Comparison Area
Weekday AM Peak Hr 8-9	0.220	4	0.042	1	4	
Weekday PM Peak Hr 5-6	0.669	11	0.686	12	23	
1504 m2 Textiles	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Vehicular Traffic Generated**	
Network Hour	**/100m2**	**Dev**	**/100m2**	**Dev**		**Balanced By Reduction in Textiles Area**
Weekday AM Peak Hr 8-9	0.220	-3	0.042	-1	-4	
Weekday PM Peak Hr 5-6	0.669	-10	0.686	-10	-20	
790 m2 Medical Cnt	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Vehicular Traffic Generated**	
Network Hour	**/100m2**	**Dev**	**/100m2**	**Dev**		**New Medical Centre Use**
Weekday AM Peak Hr 8-9	0.514	4	0.051	1	5	
Weekday PM Peak Hr 5-6	0.334	3	0.386	3	6	
1411 m2 Gym	**Arrivals (PCUs)**		**Departures (PCUs)**		**Total 2-Way Vehicular Traffic Generated**	
Network Hour	**/100m2**	**Dev**	**/100m2**	**Dev**		**New Gym Use**
Weekday AM Peak Hr 8-9	0.853	12	0.586	9	21	
Weekday PM Peak Hr 5-6	1.606	23	1.062	15	38	

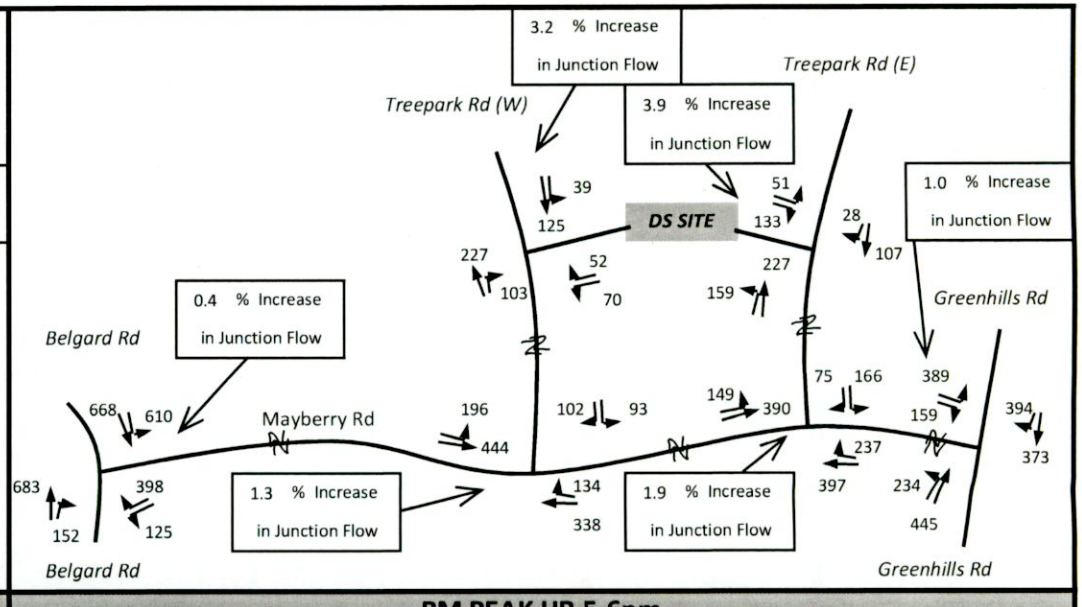
COMBINATION OF ABOVE ELEMENTS - NEW TRAFFIC GENERATED (PCUs)				
Network Hour	Arrivals	Departures	Total 2-Way	
Weekday AM Peak Hr 8-9	16	10	26	**Full Site**
Weekday PM Peak Hr 5-6	26	19	45	



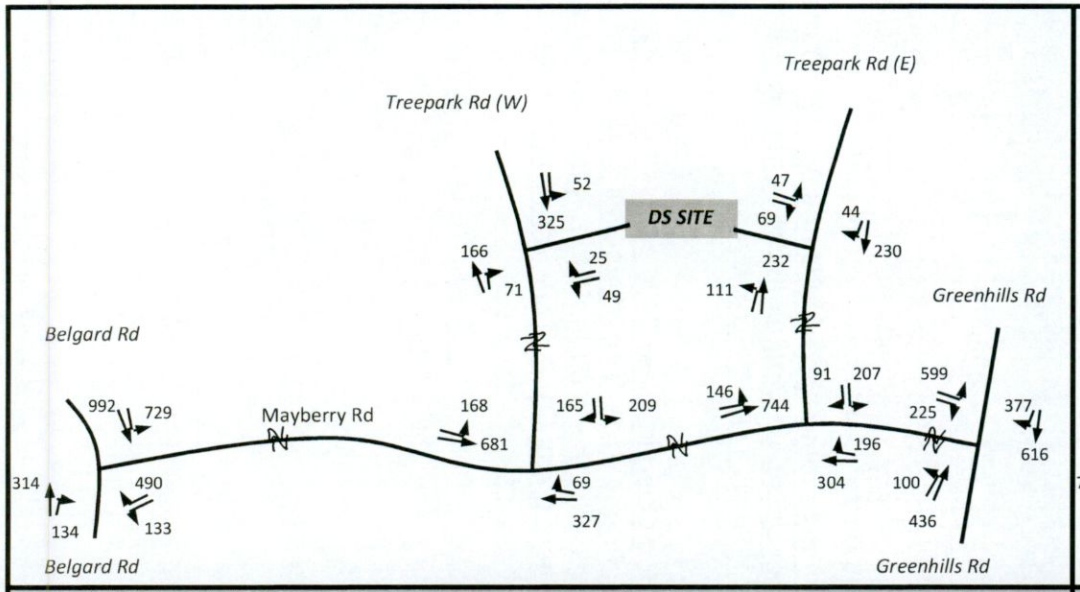


ASSIGNMENT OF 'NEW' DEVELOPMENT TRAFFIC ONLY TO NETWORK ***(BASED ON ESTABLISHED OBSERVED PROPORTIONS, BEING INDUSTRY STANDARD PRACTICE)***

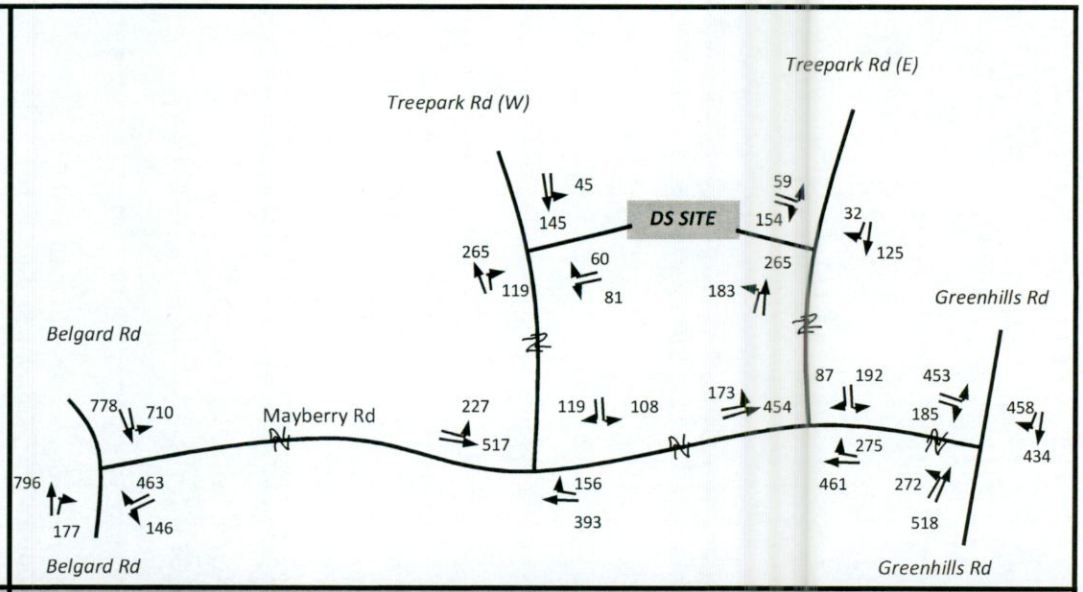




Projected Selected Opening Year 2024 Weekday Peak Hour Traffic Volumes - WITH NEW DEVELOPMENT OPEN & OPERATING



AM PEAK HR 8-9am



PM PEAK HR 5-6pm

Associated Design Year 2039 (Ope +15) Weekday Peak Hour Traffic Volumes - WITH NEW DEVELOPMENT OPEN & OPERATING

NRB consulting engineers

APPENDIX E

PiCADY Model Output
Existing Western Site Access T-Junction

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

Modelled Scenario	Period Mean Max Q (PCUs)	Period Max RFC
2024 Opening Year AM Peak Hr	0.2	0.14
2024 Opening Year PM Peak Hr	0.3	0.25
2039 Design Year AM Peak Hr	0.2	0.16
2039 Design Year PM Peak Hr	0.4	0.3

All Results Above are WAY below the recommended RFC of 0.85 (85% Capacity) and therefore no problems whatsoever are anticipated at the Junction in terms of Capacity or excessive vehicle Queues

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

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []

Filename: 2024 AM PM.j9
Path: C:\Users\Eoin\NRB Consulting Engineers Ltd\NRB Server - Documents\2022\22-027 DS Kilnamanagh\Calculations\Western Access Capacity
Report generation date: 06/07/2022 15:21:57

Summary of junction performance

	AM				PM			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
	2024							
Stream B-AC	0.2	8.01	0.14	A	0.3	9.09	0.25	A
Stream C-AB	0.1	7.37	0.13	A	0.3	7.09	0.19	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	19/04/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NRB-004\Eoin
Description	

Units

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

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	07:45	09:15	15
D2	2024	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	1.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Treespark N		Major
B	DS Access		Minor
C	Treespark S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	90	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.101	0.254	0.160	0.363
1	B-C	681	0.104	0.264	-	-
1	C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	324	100.000
B		✓	65	100.000
C		✓	204	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	45	279
	B	22	0	43
	C	142	62	0

Vehicle Mix

HV %s

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS
B-AC	0.14	8.01	0.2	A
C-AB	0.13	7.37	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	49	556	0.088	49	0.1	7.087	A
C-AB	47	576	0.082	47	0.1	6.806	A
C-A	106			106			
A-B	34			34			
A-C	210			210			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	58	541	0.108	58	0.1	7.450	A
C-AB	57	568	0.100	57	0.1	7.042	A
C-A	126			126			
A-B	40			40			
A-C	251			251			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	72	521	0.137	71	0.2	8.010	A
C-AB	71	559	0.127	71	0.1	7.367	A
C-A	154			154			
A-B	50			50			
A-C	307			307			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	72	521	0.137	72	0.2	8.015	A
C-AB	71	559	0.127	71	0.1	7.370	A
C-A	154			154			
A-B	50			50			
A-C	307			307			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	58	541	0.108	59	0.1	7.461	A
C-AB	57	568	0.100	57	0.1	7.046	A
C-A	126			126			
A-B	40			40			
A-C	251			251			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	49	556	0.088	49	0.1	7.099	A
C-AB	47	576	0.082	47	0.1	6.816	A
C-A	106			106			
A-B	34			34			
A-C	210			210			

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	3.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		✓	164	100.000
B		✓	122	100.000
C		✓	330	100.000

Origin-Destination Data

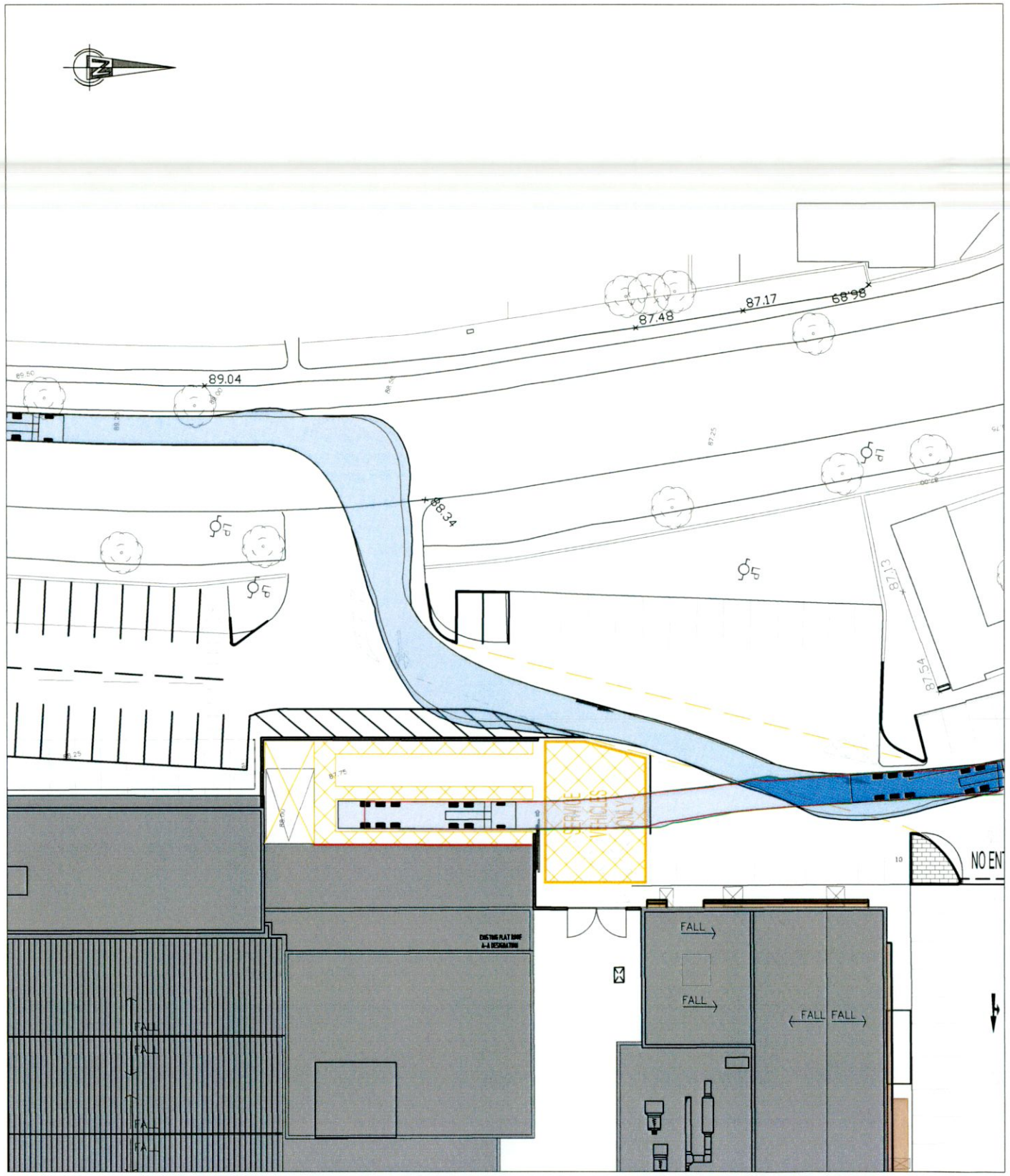
Demand (PCU/hr)

		To		
		A	B	C
From	A	0	39	125
	B	52	0	70
	C	227	103	0

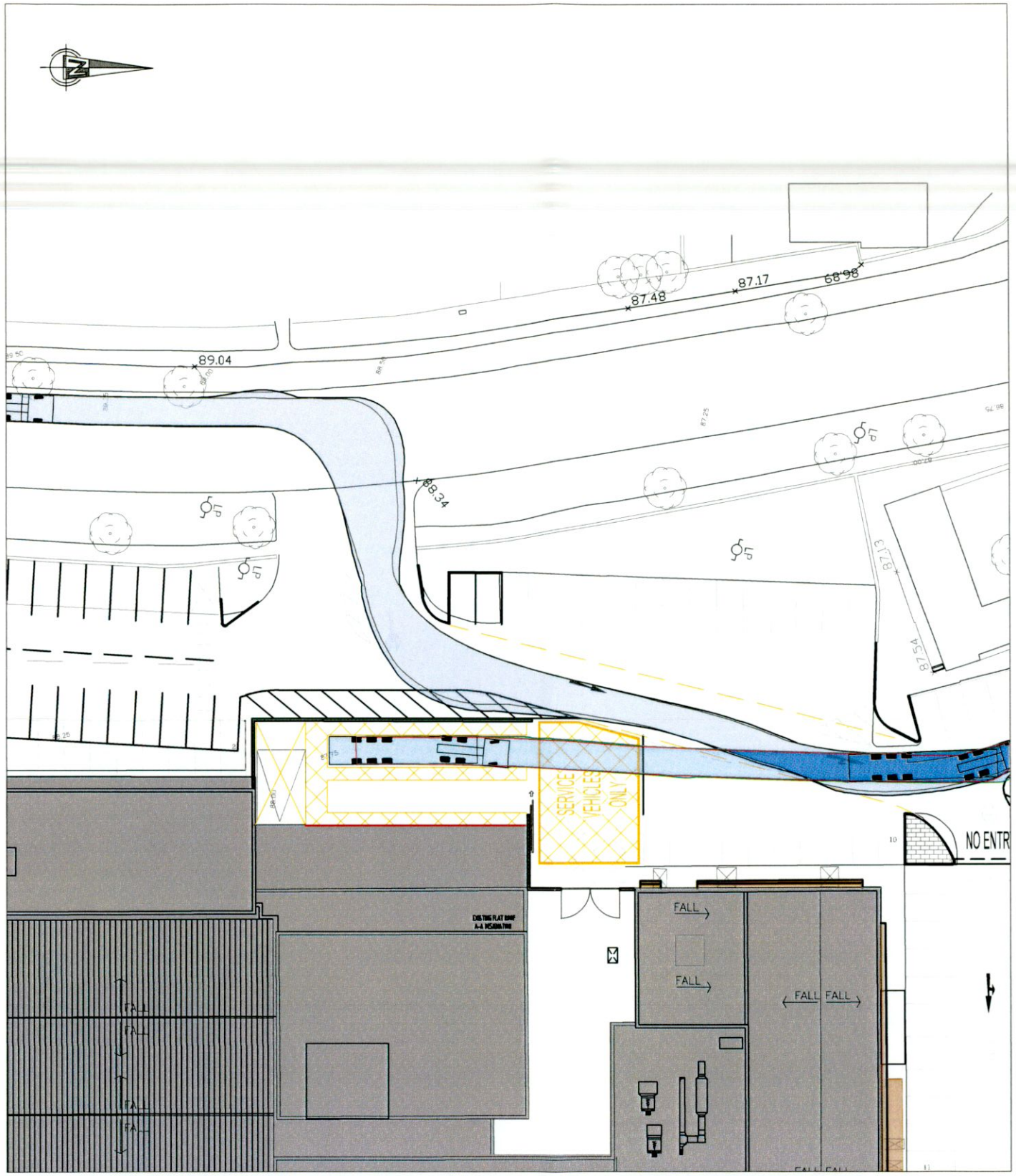
Vehicle Mix

HV %s

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



AUTOTRACK OF A 16.5m ARTIC ENTERING THE PROPOSED LOADING BAYS



AUTOTRACK OF A 16.5m ARTIC ENTERING THE PROPOSED LOADING BAYS

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 architects drawing PDA_DS-69-PL-2022.07.03_Proposed Site Layout, received 13/07/22. NRB Consulting Engineers Ltd shall not be liable for any inaccuracies or deficiencies.

REV	DATE	AMENDMENTS	DRAWN	CHK	APP

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Dundrum Road
Dundrum
Dublin 14

Phone/Fax: +353 1 292 1941
Email: info@nrb.ie
Web: www.nrb.ie
Registered in Ireland No. 491679

Client

Project: Kilnamanagh SC, Dublin

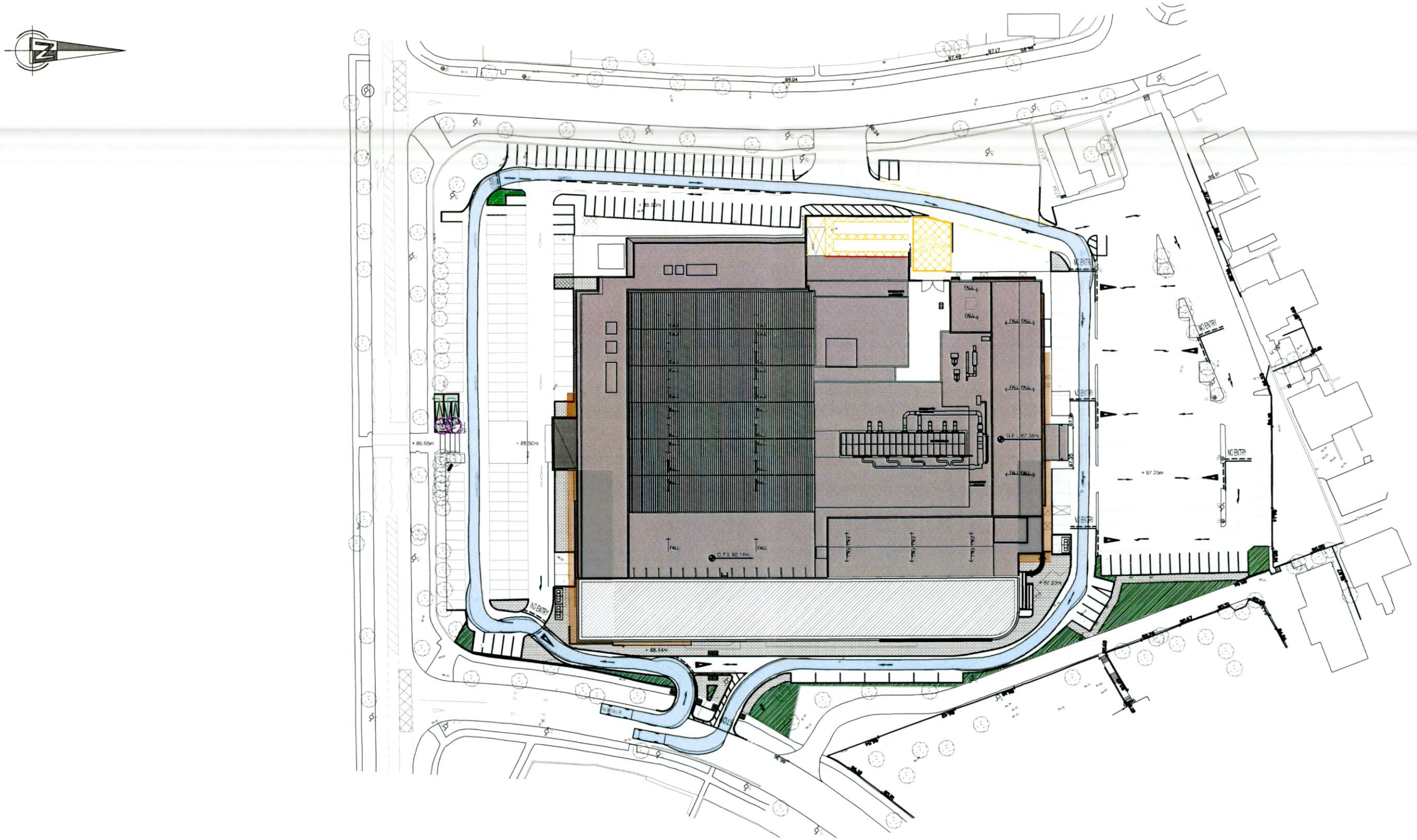
Title: AutoTRACKs of a 16.5m Artic Entering the Proposed Loading Bays

Project No.	Drawing No.
22-027	NRB-TA-004

Drawn	Checked	Approved
PB	ER 22/07/22	ER 22/07/22

Date	Scale @ A3	Rev
July 2022	1:500	-

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



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Client

Project: Kilnamanagh SC, Dublin

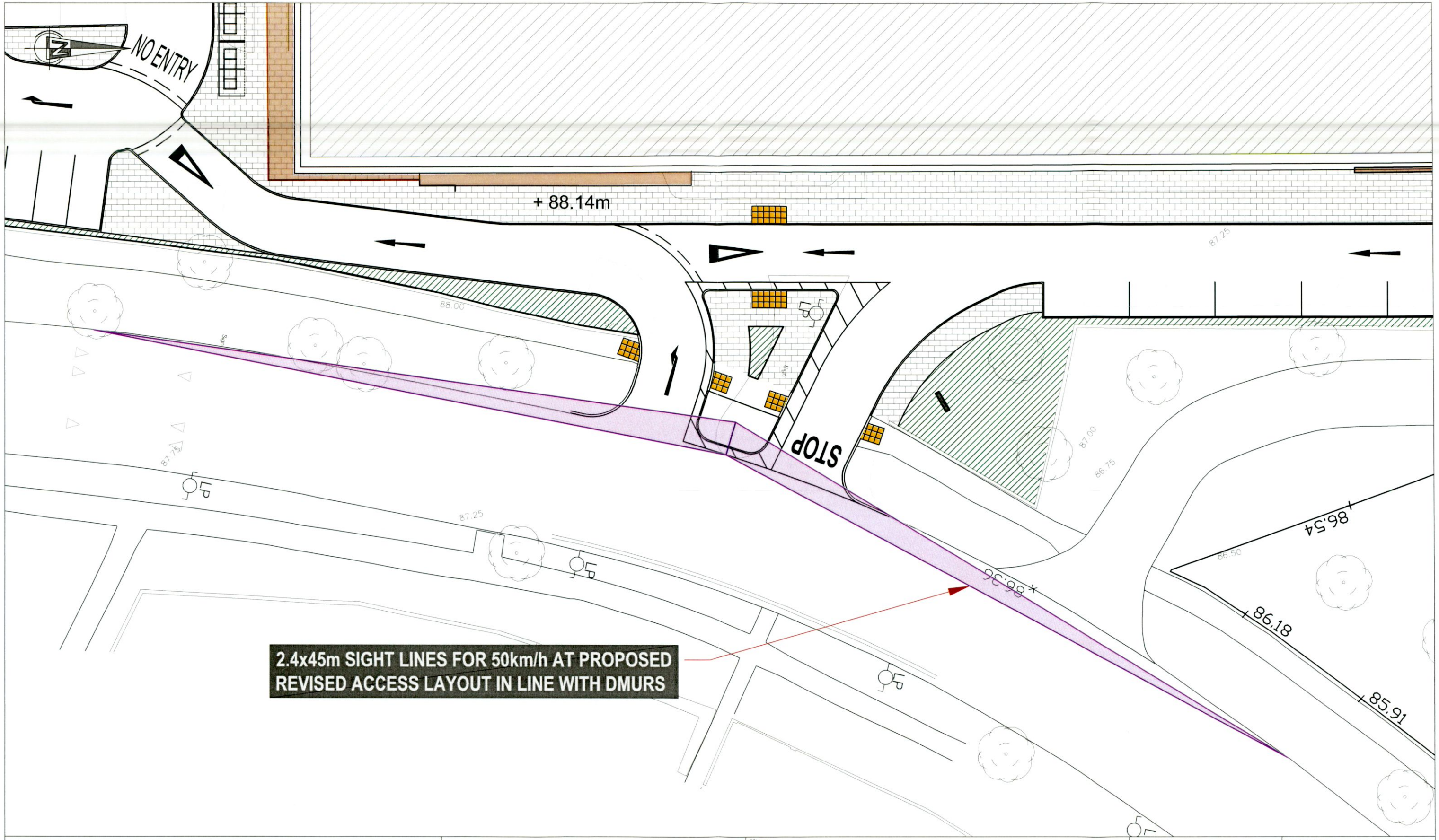
Title: AutoTRACK of a Long Wheelbase Fire Tender Traversing the Development

Project No.	Drawing No.
22-027	NRB-TA-003

Drawn	Checked	Approved
PB	ER 22/07/22	ER 22/07/22

Date	Scale @ A3	Rev
July 2022	1:1000	-

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



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Client

Project: Kilnamanagh SC
Dublin

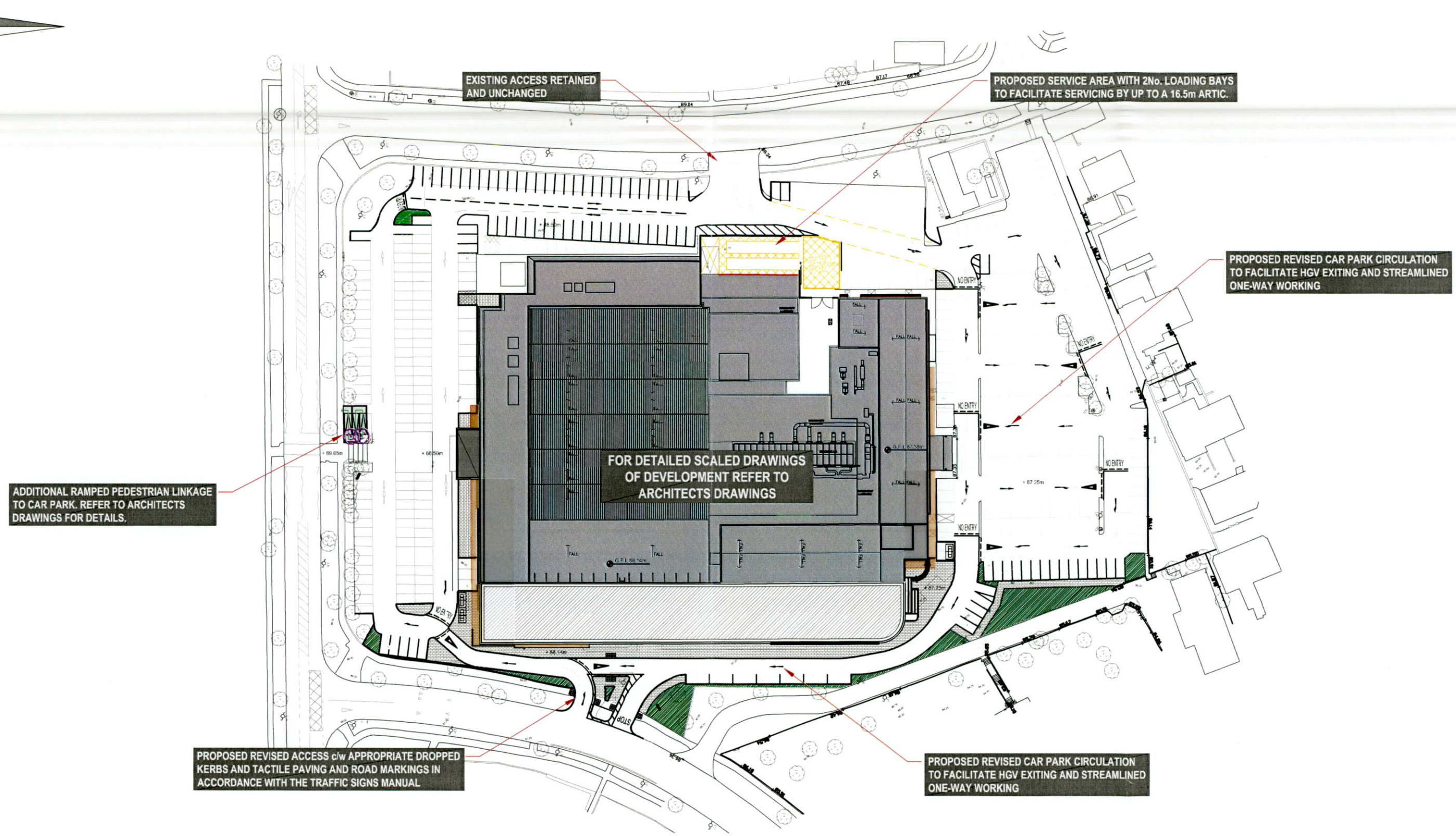
Title: Revised Development
Access Sight Lines

Project No.	Drawing No.
22-027	NRB-TA-002

Drawn	Checked	Approved
PB	ER 22/07/22	ER 22/07/22

Date	Scale @ A3	Rev
July 2022	1:250	-

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



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Client

Project: Kilnamanagh SC, Dublin

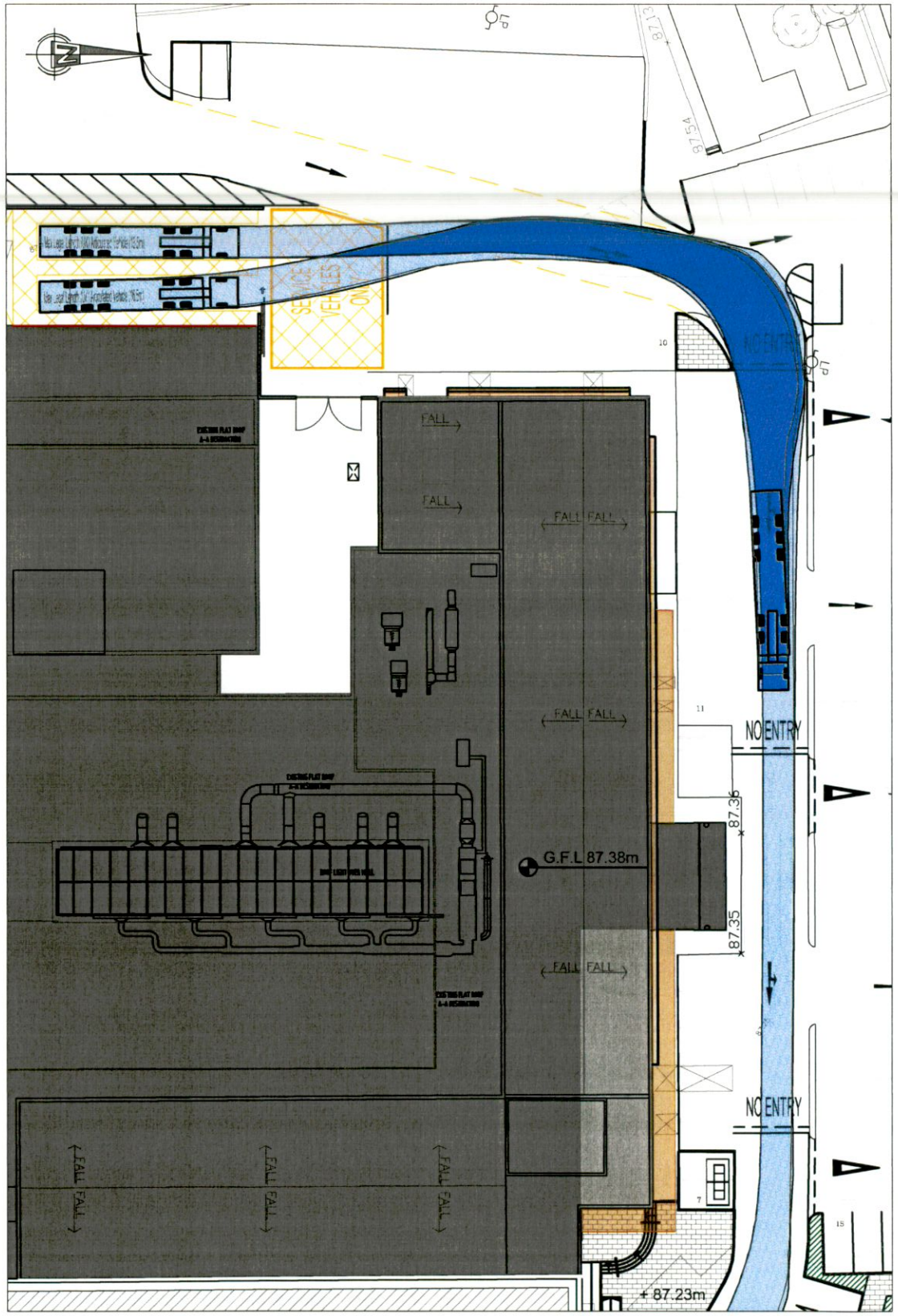
Title: Proposed Site Layout

Project No.	Drawing No.
22-027	NRB-TA-001

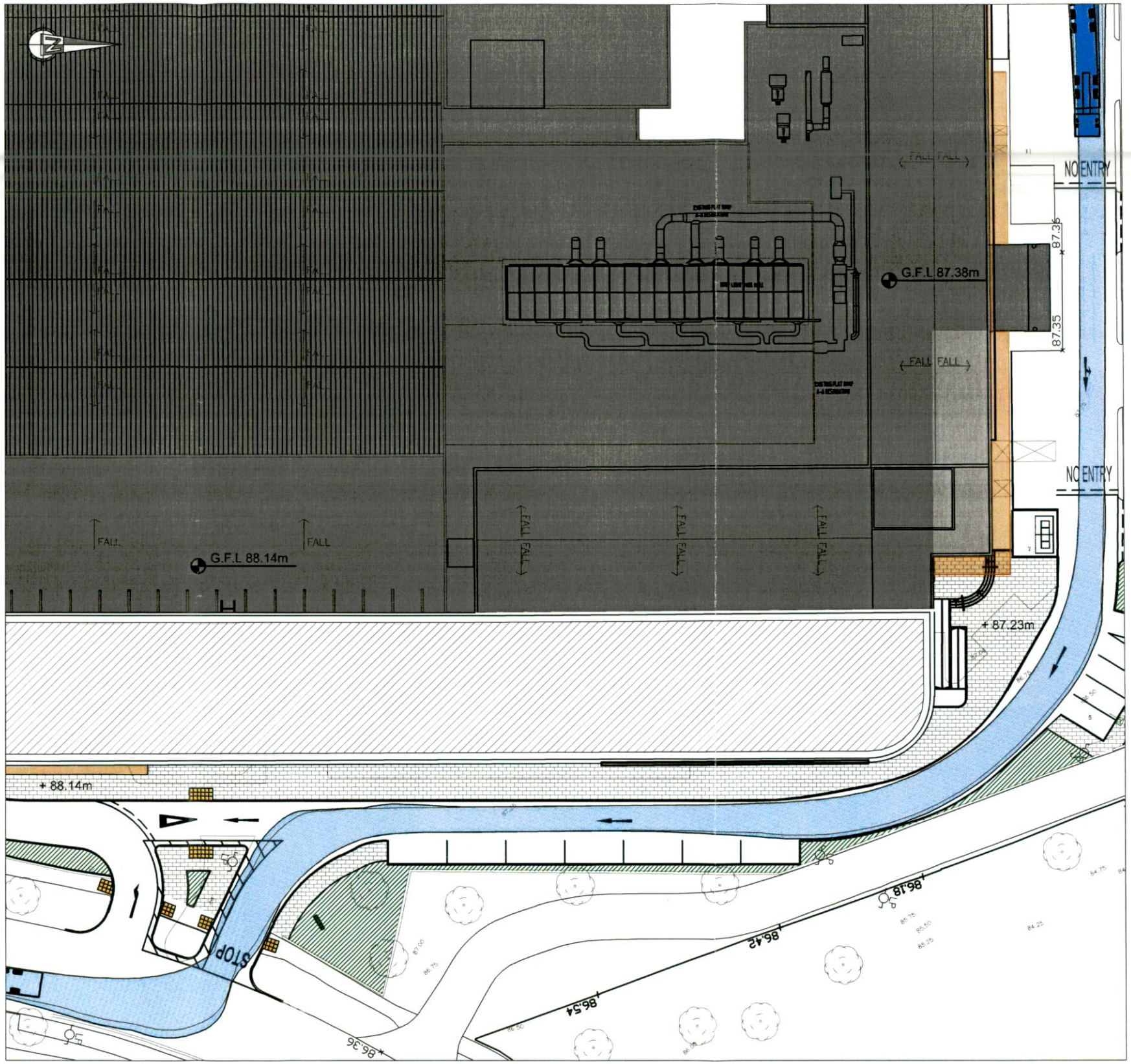
Drawn	Checked	Approved
PB	ER 22/07/22	ER 22/07/22

Date	Scale @ A3	Rev
July 2022	1:1000	-

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



AUTOTRACKS OF A 16.5m ARTIC EXITING THE PROPOSED LOADING BAYS



AUTOTRACKS OF A 16.5m ARTIC EXITING THE PROPOSED LOADING BAYS (cont.)

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Client		Project No. 22-027	Drawing No. NRB-TA-005
Project	Kilnamanagh SC Dublin	Drawn PB / Checked ER 22/07/22	Approved ER 22/07/22
Title	AutoTRACKs of a 16.5m Artic Exiting the Proposed Loading Bays	Date July 2022	Scale @ A3 1:500 / 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	